

Negative Contexts

Ton van der Wouden



Groningen Dissertations in Linguistics
Dutch Department
University of Groningen
1994

The work reported here is part of a larger project entitled *Reflections of Logical Patterns in Language Structure and Language Use*, which is supported by the Netherlands organization for scientific research (NWO) within the framework of the so-called *PIONIER*-program (PGS 30-329)

Copyright © Ton van der Wouden, Groningen

Typeset in L^AT_EX by the author

Cover design by Sharon Parry

Printed in the Netherlands by Grafisch Bedrijf Ponsen & Looijen BV Wageningen

Groningen Dissertations in Linguistics 12

ISSN 0928-0030

Rijksuniversiteit Groningen

Negative Contexts

Proefschrift

ter verkrijging van het doctoraat in de
Letteren
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus Dr. S.K. Kuipers
in het openbaar te verdedigen op
donderdag 23 juni 1994
des namiddags te 1.15 uur precies

door

Anton van der Wouden

geboren op 20 september 1958
te Gouda

Promotores: Prof. dr. F. Zwarts
Prof. dr. H.J. Verkuyl
Copromotor: Dr. J. Hoeksema

voor Olga
voor d'r trouwen

Acknowledgements

This dissertation would never been written without Teun Hoekstra, Frans Zwarts, Henk Verkuyl and Jack Hoeksema.

Teun taught me linguistics and convinced me that I should take a major in it. I still thank him for that. He also proposed that I read Zwarts (1981), the paper that once and for all established my development in a semantic rather than a syntactic direction. According to Teun, this book should have been completed much earlier and under the supervision of himself and Hans Bennis. I know I have disappointed Hans and Teun by not accepting the graduate position in Leiden in 1986, and they probably do not agree with me on anything proposed in this dissertation; I nevertheless hope that the book meets their high scientific standards.

When I read Frans's 1981 article for the first time I knew this was the type of linguistics I wanted to be involved in. The paper inspired my MA thesis and since then we have been discussing polarity, negation and many other topics. I have learnt a lot of him in his roles of teacher, roommate, promotor, co-author and friend to drink jenever with. The interaction with Frans has only one serious drawback: it is governed by Hofstadter's Law. It pays, however, to learn to live with that. If Frans's comments or contributions to a paper finally arrive, they are always of very high quality. I am honored to have a scientist of this level as my first promotor.

Frans and Sharon are also extremely warm and hospitable people, the best landlords and hosts one can imagine. Sharon was moreover kind enough to design the cover picture, which deserves a big 'thank you'.

In 1991 I asked Henk Verkuyl to help me to write a grant proposal for a dissertation on collocation. He immediately agreed. Things have developed in quite another direction than we hoped and expected then: the dissertation is not written in Utrecht but in Groningen, Henk is not the first supervisor, and only a modest part of the book deals with collocation. Henk never complained or protested. He agreed with every change, without ever losing his enthusiasm, his trust in me, or his willingness to read and sharply but always positively comment on new side-paths I decided to travel. He will probably be amazed again by the final version of the book. I am glad he is my promotor, and I hope he appreciates our cooperation as much as I do.

Jack Hoeksema offered me a job in his PIONIER project ‘Reflections of Logical Relations in Language Structure and Language Use’, which finally gave me the opportunity to write a dissertation. Jack is a fine person, a nice boss and a great linguist. His knowledge of facts and theories is amazing. Only in very exceptional cases Jack didn’t have an answer to my questions, and only in very exceptional cases Jack didn’t have a counterargument or a counterexample against anything I proposed. I learnt of every conversation we had. It is an honor to work with and under him.

This book would have been much worse than it is without Bill Ladusaw and Víctor Sánchez Valencia. Bill and I have been occasionally discussing polarity and negation since 1986. We often do not agree, but I learnt a lot of him. I am glad and honored that he agreed to be in the thesis committee. Víctor joined the PIONIER project only a year ago; his contributions to this dissertation, however, are uncountable.

Furthermore I want to thank the following people for discussion, support, and other types of contributions to the completion of this dissertation: Marcel Albers Roos Ankaert Renate Bartsch Harry Bego Hans Beelen Filippo Beghelli Hans Bennis Johan van Benthem Martin van den Berg Peter Blok Ale de Boer Bert Bos Gosse Bouma Thomas de Bruijn Cleo Condoravdi Crit Cremers Jaap van der Does Jan Don Joke Dorrepaal Frank Drijkoningen Jan van Eijck Victor Eijkhout Antoon Erftemeijer Martin Everaert Anastasia Gianakidou Cyriel Gieles Dicky Gilbers Ger de Haan Diana Hagens Herman Hendriks Suzanne Heering Lex Hermans Dirk Heylen Eric Hoekstra Heleen Hoekstra Jarich Hoekstra Helen de Hoop Geer Hoppenbrouwers Larry Horn Matthias Hüning Jaap de Jong Bob de Jonge Peter Kahrel Makoto Kanazawa Mark Kas Ed Keenan Henry Klein Ana von Klopp Wilma Knoppert(†) Johan Koppenol Charlotte Koster Jan Koster Domien Kusters Hilligt van’t Land Rita Landeweerd Liesbeth Laport Karen Lattewitz Erik-Jan van der Linden Sietze Looyenga Alexis Manaster-Ramer Frans van Marion Frans van Marion jr. Petra van Marion-van der Pol Rina van Marion-Bruggeling Harrie Mazeland Sjaak de Mey Arie Molendijk Michael Moortgat Gertjan van Noord Charles van Os Han van Overbeeke Sharon Parry Barbara Partee Yulma Perk Hans Pijnenburg Chris Piñon Renée Pohlmann Arie Pos Karin Robbers Hotze Rullmann Eddy Ruys Ben Salemans Ariane van Santen Pieter Seuren Majidah Shadid Laetitia Smit Agnes Sneller Jaume Sola Nanne Streekstra Henriëtte de Swart Eric Tjong Kim Sang Louis des Tombe Lucia Tovená Enric Vallduví Peter van Veen Linda Verstraten Co Vet Rob Visser Arie Vogel Sjoukje van der Wal Ad Welschen Ruurd van der Weij Maarten de Wind Liesbet Winkelmolen Corrie van der Wouden-van Zoest Hans van der Wouden Joop van der Wouden Rob van der Wouden Wim van der Wouden Shoji Yoshikawa Ron van Zonneveld Jan-Wouter Zwart Simone Zwarts and the members of the L^AT_EX-community and the LINGUIST discussion list.

Olga van Marion, finally, deserves special mention. I am glad we’ll be husband and wife soon.

Contents

Acknowledgements	<i>vii</i>
Introduction	<i>1</i>
1 Polarity items	3
1.1 <i>Introduction</i>	<i>3</i>
1.2 <i>The classification of polarity items</i>	<i>7</i>
1.2.1 An etymological classification	<i>7</i>
1.2.2 Syntactic classifications	<i>7</i>
1.2.3 Semantic-pragmatic classifications and explanations	<i>10</i>
1.2.4 Concluding remarks	<i>19</i>
1.3 <i>What is a negative context?</i>	<i>21</i>
1.3.1 Syntactic approaches	<i>21</i>
1.3.2 Pragmatic approaches	<i>22</i>
1.3.3 Semantic approaches	<i>25</i>
1.3.4 Concluding remarks	<i>27</i>
1.4 <i>Degrees of negativity</i>	<i>28</i>
1.4.1 Negations weak and strong	<i>28</i>
1.4.2 Boolean properties	<i>29</i>
1.4.3 Downward monotonicity and degrees of negativity	<i>36</i>
1.4.4 Concluding remarks	<i>40</i>
1.5 <i>Negations and polarity items</i>	<i>42</i>
1.5.1 Polarity items and monotone decreasing contexts	<i>42</i>
1.5.2 Polarity items and anti-additive contexts	<i>46</i>
1.5.3 Polarity items and antimorphic contexts	<i>50</i>
1.5.4 A semantic classification of polarity items	<i>55</i>
1.5.5 Bipolar elements	<i>57</i>
1.5.6 Where is antimultiplicativity?	<i>59</i>
1.5.7 A note on the situation in other languages	<i>64</i>
1.5.8 Concluding remarks	<i>67</i>
1.6 <i>Negative contexts and downward monotonicity</i>	<i>68</i>
1.6.1 Grammatical PPIs in negative contexts	<i>68</i>
1.6.2 Ungrammatical NPIs in negative contexts	<i>69</i>
1.6.3 Metalinguistic negation	<i>70</i>

1.6.4	Are all negative contexts downward monotonic?	72
1.6.5	Concluding remarks	81
1.7	<i>Some remarks on scope</i>	82
1.7.1	Scope: the basic facts	82
1.7.2	Scope extensions	84
1.7.3	Double negations again	86
1.7.4	Rule ordering?	88
1.7.5	Concluding remarks	89
1.8	<i>Conclusion: polarity items</i>	90
2	Multiple negations	93
2.1	<i>Introduction</i>	93
2.2	<i>Negative concord</i>	95
2.2.1	Introduction	95
2.2.2	The contexts of negative concord	96
2.2.3	Context-sensitive semantics	98
2.2.4	Negative spread: French	101
2.2.5	Negative doubling: Afrikaans	103
2.2.6	NC across clause boundaries: paratactic negation	107
2.2.7	Towards an explanation of paratactic negation	111
2.2.8	A theory of paratactic negation	114
2.2.9	Parametrizing negative concord	115
2.2.10	Concluding remarks	121
2.3	<i>Weakening of negation: litotes</i>	122
2.3.1	Introduction	122
2.3.2	Horn's analysis of litotes	122
2.3.3	More than negation	125
2.3.4	A note on scope	127
2.3.5	Litotes below the word level	128
2.3.6	Reconsidering the semantics and pragmatics of litotes	129
2.3.7	Litotes in various MD environments	131
2.3.8	Why litotes does not occur in certain types of MD contexts	136
2.3.9	Concluding remarks	137
2.4	<i>Denial</i>	139
2.4.1	Introduction	139
2.4.2	The functions of denial	139
2.4.3	More than negation: denial in Dutch	140
2.4.4	A new MD context	142
2.4.5	Concluding remarks	143
2.5	<i>Emphatic negation</i>	145
2.5.1	Introduction	145
2.5.2	Emphatic negation in Dutch	146
2.5.3	Resumptive negation	149
2.5.4	Various types of resumptive negation	150

2.5.5	The syntactic status of resumptive negation	156
2.5.6	More than negation	160
2.5.7	Concluding remarks	161
2.6	<i>Conclusion</i>	163
3	Collocation	165
3.1	<i>Introduction</i>	165
3.2	<i>First orientation</i>	166
3.2.1	Collocation: a definition	166
3.2.2	Illustration of the definition	166
3.2.3	A note on the history of the term collocation	168
3.2.4	The importance of the study of collocations	168
3.2.5	Collocations and other fixed expressions	169
3.2.6	Concluding remarks	171
3.3	<i>Lexical items</i>	173
3.3.1	Collocations across categories	173
3.3.2	Collocations below the word level	178
3.3.3	Collocations above the word level	179
3.3.4	Polarity sensitivities as collocational restrictions	180
3.3.5	Concluding remarks: the lexical items in collocations	181
3.4	<i>The nature of collocational restrictions</i>	183
3.4.1	Reduction to syntax	183
3.4.2	Reduction to semantics	185
3.4.3	Reduction to statistics	186
3.4.4	Reducing everything to collocational behavior	189
3.4.5	A separate level	189
3.4.6	Listing all collocations	190
3.4.7	On having no head	192
3.4.8	Concluding remarks: what are collocational restrictions	194
3.5	<i>Combinability</i>	196
3.5.1	The scalar character of collocational behavior	196
3.5.2	Hapax legomena	196
3.5.3	Collocations proper	197
3.5.4	Restrictions that are too strong	198
3.5.5	The interplay of constraints	199
3.5.6	Concluding remarks: types of constraints	199
3.6	<i>The idiosyncrasy of collocations</i>	201
3.7	<i>Summary and concluding remarks</i>	203
	To conclude	205
	Bibliography	207
	Samenvatting in het Nederlands	223
	Index	227

Introduction

Negative polarity items are lexical elements with a restricted distribution: they occur in negative contexts only. Positive polarity items, on the other hand, are in general excluded from negative contexts. Chapter 1 discusses the notion of negative context as it is relevant for the distribution of polarity items, chapter 2 shows that the same notion is relevant in other areas of natural language phenomena as well, and chapter 3 offers a general discussion of lexical elements with restricted distribution, i.e., collocation.

The characterization of negative contexts in chapter 1 takes as a starting point Ladusaw's hypothesis that downward monotonicity is the mathematical property underlying and responsible for the negative character of negative contexts. Building upon results of Zwarts, Hoeksema and others I develop a hierarchy of negative contexts based on the properties of downward monotonicity and other, related mathematical properties. I argue that several classes of negative and positive polarity items should be distinguished on the basis of their compatibility with the various classes within the hierarchy of negative contexts.

Upon closer inspection, all or most polarity items appear to have their own idiosyncratic distribution. I present several types of explanation of the distributional patterns of individual lexical items. First, I argue that there exist bipolar elements that have properties both of positive and of negative polarity items. Next, I show that not all polarity items are sensitive to all downward monotonic contexts. And finally I argue that the theory developed only defines the borderlines of the possible distribution of polarity items, and that this is the maximum that can be gained. The actual pattern of occurrence of individual items is a matter of lexical stipulation, although governed both by collocational principles and by grammatical mechanisms.

Chapter 2 supports the approach of chapter 1. It deals with a wide range of data, all involving the interplay of more than one negative element. It shows that negative concord, litotes, denial and emphatic negation are governed by mechanisms comparable to the ones underlying polarity sensitivity, i.e. downward monotonicity. Again the theory developed has two parts: in principle, the multiple negation phenomena discussed are governed by general grammatical, i.e. semantic principles, in practice the differences in behavior found between

languages and between individual lexical items within one language call for additional constraints in terms of collocational properties.

The third and final chapter offers a general discussion of collocation, the phenomenon of lexical elements having a restricted distribution. I argue that collocation covers more than the interplay of words: we also find collocational restrictions between larger linguistic units, such as phrases, and between smaller ones, viz. morphemes.

This dissertation is not written as a quest for an answer to a certain problem. Rather, it tries to defend an explicit claim, viz., that Ladusaw's hypothesis that negative polarity items are licensed by downward monotonicity is essentially right. It does so by offering and discussing a rather rich collection of old and new data.

Downward monotonicity is shown to define the most elementary of a hierarchical structure of negative contexts. A second central claim is that polarity sensitivity is not a homogeneous phenomenon. The hierarchy of negative contexts is shown to define a number of natural classes of polarity items. Next to that, there is ample space and need for lexical stipulation.

The first chapter of this dissertation gives more or less direct evidence for the central claims of this thesis, whereas the evidence put forward in chapter 2 is more circumstantial in nature, as it tries to show that many other phenomena that are apparently sensitive to negation are actually governed by the same mechanisms as polarity licensing. Chapter 3 offers the necessary background for the recurrent theme that the theory developed in this study only defines the borderlines of how polarity items and multiple negations behave. The variation found in the phenomena is vast: languages show ample difference in the way polarity items and multiple negations behave, individual speakers differ considerably in their exact usage of polarity items and multiple negations, and the various polarity items and elements entering in multiple negation constructions are not at all alike. This calls for lexical stipulation of the combinatorial possibilities of individual lexical items. Chapter 3 sketches the outline of such a theory of collocational restrictions.

Chapter 1

Polarity items

1.1 Introduction

The distribution of many lexical items is restricted one way or another. Certain lexical items, such as English *any*, are “limited to contexts involving negation and some other things” (McCawley 1988:562):

- (1) a. John didn’t talk to anybody
- b. *John talked to anybody
- c. Nobody said anything
- d. *Everybody said anything

Other elements with a comparable distributional pattern are *yet*, *ever*, *bother to*, *give a red cent* etc. As negation has been felt to be the crucial factor in the distribution of these elements, it seemed appropriate to name them NEGATIVE POLARITY ITEM (NPIs).

The phenomenon of negative polarity is not restricted to contemporary English: Hein (1890) gives hundreds of examples from Middle English, and it is found in other languages as well: cf. Kürschner (1983:301–27), who lists hundreds of NPIs from German, Aalders (1982), who collects a large number of Dutch NPIs, Wagenaar (1930) for lists of NPIs of the *a + Noun*-type from Old Spanish, Bosque (1980) for negative polarity in modern Spanish, and Fauconnier (1977) for French. Probably, negative polarity occurs in most or all languages of the world; cf. Hoppenbrouwers (1983:109 ff.) for data from Latin, Sranan, Bahasa Indonesia and other languages; Edmondson (1981) for examples from Malagasy, Mandarin, Italian, Latin and Thai, Mahajan (1990) for Hindi, Laka Mugarza (1990) for Basque, Progovac (1988) for Serbo-Croatian, and Horn (1989) for many other languages.

In English, if you cannot use the indefinite *any*, you may often use *some*, and when you cannot use *some*, *any* is usually in its place.¹

1. Following Baker (1970:footnote 2), I mark sentences with a positive polarity items in the scope of a negative with an asterisk. This is meant “to indicate their unacceptability when they are read with normal intonation and occur in no special context.” The mark is not supposed to mean that the sentences are ungrammatical under every possible reading. Cf. section 1.6 for discussion.

- (2) a. *John didn't talk to somebody
 b. John talked to somebody
 c. *Nobody said something
 d. Everybody said something

Although the distribution of *some* and *any* is not completely complementary, it seemed appropriate to call *some* a POSITIVE POLARITY ITEM (PPI) (in the literature one also finds the term AFFIRMATIVE POLARITY ITEM), as it seems to be excluded from contexts with a negative flavor. The distribution of *already*, *would rather* and *still* is comparable to that of *some*, which shows that *some* is not the only PPI in English.

Note, incidentally, that the sentences are not really ungrammatical. As Seuren (1985:233) writes, PPIs

do not, as one might expect, refuse to stand in the scope of negation. They do admit of a higher negation, but when there is one, the so-called 'echo-effect' is produced, i.e. there is the feeling that the non-negated sentence has been uttered just before, and the negation is felt to have the function of indicating that there is something radically amiss with that sentence as a whole.

I will ignore these echo-readings for the time being, and count sentences with only an echo-reading available as ungrammatical. I return to echo in section 1.6.3.

English is certainly not the only language with PPIs. Hoppenbrouwers (1983:115–24) lists examples from French and Dutch, Seuren (1985:233) gives quite a few English cases, Progovac (1994) discusses examples from Serbo-Croatian and Hasegawa (1991) from Japanese. PPIs have been the topic of linguistic research far less than NPIs, which at least partially explains why I haven't been able to locate lists of PPIs in other languages. I assume, however, that positive polarity occurs just as universally across languages as negative polarity does.²

Positive and negative polarity items are lexical items with defective distribution: they do not occur freely in all contexts. As such, they fit into the more general patterns of collocational behavior (cf. chapter 3). As polarity items, and especially NPIs, have been the subject of a considerable amount of linguistic research, their behavior is relatively well understood.

In this chapter I will focus on the classification of polarity items, and on the mechanisms governing their distribution and interpretation. The mechanisms explored and the notions defined in this chapter will be shown to be fruitful in later chapters as well.

2. I thus disagree with Horn's (1978b), 154 claim that "PPIs are a more marginal phenomenon than NPIs: rarer [. . .], less semantically well-defined into natural classes (although often including a subset of indefinite adverbs), and less environmentally controlled (resulting from PPIs being anti-triggered by the absence of a negative rather than normally triggered as are NPIs, it being a consequence of the markedness of negation that most languages contain negative but not affirmative morphemes)." One argument in favor of my disagreement is the observation of Van Os (1989:147) that intensifiers are far more often PPI than they are NPI.

A first, purely descriptive, attempt at a definition of positive and negative polarity items runs as follows:³

- (3) **Definition** *Positive polarity items* (PPIs) are expressions which cannot felicitously appear in negative contexts.
- (4) **Definition** *Negative polarity items* (NPIs) are expressions which can only appear felicitously in negative contexts.

In the remainder of this chapter, various parts of these definitions will be discussed. In section 1.2 some attention will be given to the question what kinds of *expressions* may be polarity items. It will be demonstrated that polarity items are found in various syntactic and semantic classes. Section 1.3 discusses attempts to characterize negative contexts in the light of their relevance in the description of polarity items. In 1.4 it will be shown that various degrees of “negativity” may be defined, and in 1.5 these degrees of negativity are used to define various classes of polarity items. These degrees of negativity will be shown in chapter 2 to have considerable value outside the field of polarity as well. Some problematic cases will be addressed in 1.6. Some aspects of the notion of ‘scope’ as it is relevant for polarity items will be discussed in 1.7. At the end of the chapter there is a final section with some concluding remarks.

It should be noted that there is another *any* in English next to negative polarity *any*, the so-called free choice *any*. Carlson (1981:9) lists the following differences between free choice *any* (FCA) and polarity sensitive *any* (PSA):

- FCA may be modified by *nearly* and *almost*, whereas PSA may not:
 - (5) a. Nearly anyone can ride a bicycle (FCA)
 - b. *Did almost anyone just walk into the room? (PSA)
- FCA may occur prior to numerals, PSA (normally) may not:
 - (6) a. Any three men could move this stone
 - b. *Did any five waiters just walk in?⁴
- FCA licenses the presence of an ‘amount relative’, PSA cannot do so:
 - (7) a. Any man there is can move this stone
 - b. *Did any man there is just ring our doorbell?

Although free-choice *any* does not need a negative context, its distribution isn’t unrestricted either, as the following contrasts show (Carlson 1981):

- (8) a. Anyone could be in that room
- b. *Anyone must be in that room
- c. John is likely to kick any politician
- d. *John is certain to kick any politician

There is a tradition of trying to reduce free choice *any* and negative polarity *any* to one and the same indefinite. The latest instance of this approach I know of is Kadmon & Landman (1993). They claim that the function of *any* is uniformly to “indicate reduced tolerance of exceptions”.

I will not pay much attention to free-choice *any* in the rest of this dissertation, although items such as *any* with a free choice reading and a polarity

3. Cf. Seuren (1985:232, 233), McCawley (1988:562, 570), Horn (1989:48–9), Von Bergen & Von Bergen (1993:111–2), etc.

4. This sentence is fine in certain dialects but not in standard English.

sensitive one are far from rare in the world's languages. The variation one finds is immense and asks for a dissertation all by itself: cf. Haspelmath (1993).

There exists a third type of polarity items, the so-called super-positive polarity items as discussed in Hinds (1974). These "are restricted not merely to affirmative clauses but to declarative and exclamative clauses in which the speaker expresses a reaction to the thing in question" (McCawley 1988:570):

- (9) a. This cake is /*isn't *delicious*
- b. Is this cake ever *delicious*!
- c. *Is this cake *delicious*?
- (10) a. Horne's performance was /*wasn't *superb*
- b. What a *superb* performance Horne gave!
- c. *How *superb* a performance did Horne give?

Jack Hoeksema's text corpus contains 87 instances of *superb*. The following one is an apparent counterexample to the claim that this word is restricted to affirmative clauses:

- (11) *No Soviet* was more *superb* than Lydia Skoblikova
- Since I have nothing else to say about these items, this is the last time they are mentioned in this dissertation.

1.2 The classification of polarity items

This section tries to answer the question what kinds of polarity items one finds, on the one hand, and what, if anything, these items have in common.

1.2.1 An etymological classification

As far as I know, Buysens (1959) is the first one to try to categorize and characterize polarity items — without using the term. He distinguishes four groups of “data peculiar to negative contexts”. His classification amounts to three classes consisting of NPIs and one class containing PPIs. It runs as follows:

- “The history of the words listed in this section reveals that at a certain moment they assumed a new meaning or use in negative contexts.”
- “In this second section will be found words that have apparently always been used with a peculiar meaning in negative contexts.”
- “With the following words it looks as if the negation had protected certain uses or meanings which are obsolete or obsolescent in other constructions.”
- “There are a few words whose meaning cannot be modified by *not*.”

Buysens claims to classify his NPIs on historical principles but he never gives any etymologies. Moreover, Buysens’ grouping may look plausible at first sight, but it results in heterogeneous groups of elements that have nothing in common. The heterogeneity becomes clear if one compares the ways in which the distribution of the first three elements of the first class is described (Buysens 1959:163):

- (12) a. *Backbone*, meaning ‘strength of character’ is chiefly used with a negative word or one implying absence
 b. *Be* may mean ‘to become’ in a negative question
 c. *Bear*, meaning ‘to like’, is used negatively, interrogatively or hypothetically

Comparable differences are found in the other groups. In my opinion, Von Bergen & Von Bergen (1993:128-30) are therefore justified in their conclusion that the history of the change in meaning of the elements is irrelevant for a synchronic description of NPIs⁵ and that Buysens’s classification should be rejected as useless.

1.2.2 Syntactic classifications

In section 1.1, I gave the following examples of English NPIs:

- (13) a. Any
 b. Yet
 c. Ever
 d. Bother to
 e. Give a red cent

This small inventory already shows that negative polarity is not restricted to one syntactic category: *any* is an indefinite determiner or pronoun, *yet* and

5. “Die Art des Bedeutungswandels scheint für die heutige Verwendung einer lexikalischen Einheit als NPI irrelevant zu sein.” (Von Bergen & Von Bergen 1993:130).

ever are adverbs, *bother* is a verb and *give a red cent* is a verbal idiom. On the other hand, it is not the case that all members of some special syntactic category are negative polarity items either: for example, the existence of *some* proves that not all indefinite determiners/pronouns are NPis.

It is moreover clear that the property 'negative polarity' is not restricted to words alone. Apart from words, such as *ever* and *any*, one finds word combinations such as *at all* and construction schemata such as *Verb + NP*, instantiated by the idiomatic expressions *give a red cent*, *lift a finger*, *budge an inch* and many others. Kürschner (1983:327) even gives examples of what he considers to be negative polarity sentences:

- (14) a. Nicht mit mir
Not with me
'Count me out'
b. Man kann ja nie wissen
One can but never know
'You never can tell'
c. Nichts zu danken
Nothing to thank
'Don't mention it'

Negative polarity items do not lose the NPI property below the word level. For example, the Dutch NPI *kunnen uitstaan* 'can stand' partakes in morphological derivations, but only if some negative element is present.⁶

- (15) a. *Iedereen kan Frans uitstaan
Everybody can Frans stand
b. Niemand kan Frans uitstaan
Nobody can Frans stand
'Nobody can stand Frans'
c. *Uitstaanbaar
'Standable'
d. Onuitstaanbaar
Unstandable
'Intolerable'

It is therefore not unreasonable to assume that, in principle, negative polarity items may be expected among all the "words" in the lexicon (Di Sciullo & Williams 1987).

It might be claimed that reference to Di Sciullo & Williams (1987) is not in its place here: Di Sciullo & Williams (1987) depict the lexicon as a kind of prison, where "only the lawless" reside, whereas I concentrate on the more or less lawlike behavior of polarity items. However, just as prisons have their rules and (perhaps unwritten) laws, and criminals may be classified and are subject to generalization, lexical items show lawlike behavior next to unexpected idiosyncrasies that need to be stipulated.

Now, consider again the examples of positive polarity items already given in section 1.1 and repeated below:

6. The observation is due to Jack Hoeksema.

- (16) a. Some
 b. Already
 c. Would rather
 d. Still

A small list such as this one already justifies the conclusion that positive polarity items are found in various syntactic categories again: *would rather* is a complex verbal expression, *already* and *still* are adverbs, and *some* should be classified as an indefinite or an article. On the other hand it is obviously also not the case that all members of some special syntactic category, say the adverbs, are PPIs.

Again, the property of positive polarity is not restricted to words: apart from words such as *still* and *already*, word combinations such as *would rather* count as PPIs as well. Next to these, construction schemata like *as Adjective as ever* qualify as PPIs (Hoppenbrouwers 1983:120–4). Furthermore, intensifying subordinate clauses such as *(He lied) till he was blue in the face* and idiomatic sentences such as *(It's raining) cats and dogs* show positive polarity behavior.

At the sentential (or utterance) level performatives such as the following cannot be negated without losing their performative force. That is, they show a kind of positive polarity behavior too:

- (17) a. I name this ship *Queen Elizabeth*
 b. *I do not name this ship *Queen Elizabeth*
 c. I bet you sixpence it will rain tomorrow
 d. *I don't bet you sixpence it will rain tomorrow

One also finds positive counterparts of *onuitstaanbaar*, i.e., PPIs below the word level. For example, Dutch *verdienstelijk* 'meritorious' is a PPI, as the contrast (18a – 18b) suggests. This claim seems to be refuted by the fact that *verdienstelijk* may be negated morphologically by the prefix *on-* 'un'. The examples (18c – 18d) demonstrate, however, that the resulting form *onverdienstelijk* may occur in negative contexts only, where the negative force of the negative prefix is canceled, so to speak, by the other negation:

- (18) a. Hij is een *verdienstelijk* schilder
 'He is a meritorious painter'
 b. *Hij is geen *verdienstelijk* schilder
 He is no meritorious painter
 c. *Hij is een *onverdienstelijk* schilder
 He is an un-meritorious painter
 d. Hij is een niet *onverdienstelijk* schilder
 He is a not un-meritorious painter
 'He is a painter of some distinction'

I therefore conclude that positive polarity, just like negative polarity, is a property that may, in principle, be attributed to any lexical item in the sense of Di Sciullo & Williams (1987). This, however, doesn't mean that every lexical item might have the property. For example, no positive polarity noun or numeral seems to exist in English or Dutch.

The need for lexical stipulation notwithstanding, there seem to exist systematic gaps in the lexicon where no polarity items are found. For example, I

don't know of any negative polarity numerals. Actually, most words are not likely to be polarity items. Take any content noun, from *aardvark* to *zymurgy*, and you can be sure that if it is used literally it will not be a polarity item. Only certain (perhaps semantically definable) subclasses of the class of nouns, such as nouns denoting minimal amounts of one thing or another (*a drop, a bit, a finger*), may develop a polarity sensitive meaning.

The same seems to hold for verbs: most simple verbs are not polarity items and will never develop into such things. Only auxiliary-like verbs (such as uninflected *need* and its Dutch and German counterparts *hoeven* and *brauchen* (NPIs) and *would rather* (a PPI); cf. Edmondson (1983)) and verbal idioms (such as the NPIs *lift a finger, make head or tail of it* and *have notion*, and the PPIs *be crowded* and *be all Greek to someone*) seem to be possible candidates to become polarity items.

1.2.3 Semantic-pragmatic classifications and explanations

It will be shown in section 1.4 below that it is possible to classify both positive and negative polarity items on the basis of their compatibility with various (semantically definable) types of negation. In the current section I will discuss some attempts to semantically and/or pragmatically classify (negative) polarity items. A derived question I will try to answer is the following: is it possible to predict from the meaning of a certain lexical item whether or not it will be a polarity item?

Both positive and negative polarity appear to be lexical, semantic properties of words and expressions. According to some researchers (Klima 1964; Jackendoff 1969; Linebarger 1980) these properties are not predictable from their truth-conditional or implicative meaning — which probably means that they have to be stipulated in the lexicon.⁷ Ladusaw (1979:166-8) briefly discusses two approaches that may be somewhat less ad hoc.

Ladusaw's first suggestion is that the polarity properties of lexical elements "are simply independent properties of expressions which should act as instructions to the projection device on how the meanings of those expressions are to be treated." He notes that quantifying expressions such as *several, each* and *some* have inherent scope properties with respect to other quantifiers (Ioup 1975; Kroch 1974).

It is, however, a fact that many polarity items, for example most Dutch negative polarity verb clusters, are not quantificational in any sense. This may be taken as an argument against this explanation of the polarity properties of lexical items in general.

Ladusaw's second suggestion is that the polarity character of words and expressions may be derivable from "parts of a word's meaning which escape

7. The observation made in Klein & Hoeksema (1994) that Dutch adverbs such as *bar* and *bijster* 'rather' show different polarity behavior depending on whether they intensify a negative or a positive adjective is a possible counterargument against lexical stipulation of polarity items as such.

the net of truth-conditions and conventional implicature.” He points out that an important argument in favor of viewing polarity as a derived property is found in the semantic similarity of the “open class” of NPIs (Schmerling 1971; Fauconnier 1975a): the list of *a + noun*-NPIs can be extended *ad infinitum*. The lexical stipulation of a feature marking for all members of an open set of lexical items is of course less than desirable.

This argument is strengthened by the fact that the same type of construction is found in other languages as well (Jespersen 1917; Horn 1989). These constructions may likewise function as or develop into NPIs.

- (19) a. Ne pas manger une bouche (French: Hoppenbrouwers (1983))
 Not eat a mouth
 ‘Not eat anything’
 b. Sans le sou
 Without the penny
 ‘Without a red cent’
- (20) a. Geen hap door je keel kunnen krijgen (Dutch)
 No bite through your throat can get
 ‘Not be able to eat one bite’
 b. Zonder een cent op zak
 Without a cent on pocket
 ‘Without any money at all’
- (21) a. Der er ikke en kat der veed det (Danish: Jespersen (1917))
 There is not a cat that knows it
 ‘Nobody knows it’
 b. Han læser ikke spor
 He reads no trace
 ‘He doesn’t read a word’

Another argument against simple marking of polarity items as such in the lexicon is put forward by Fauconnier (e.g. in his 1975b). Fauconnier observes that superlatives and other end-points of (pragmatic) scales may denote the null set or a minimal amount, just like indefinite noun phrases such as *a finger*, *a bite* etc. Moreover, the contexts where these expressions have this denotation are exactly the same contexts where negative polarity items (of this type) show up. On the other hand positive polarity items such as “free choice *any*” denote a “universal set” in certain contexts, just like certain scalar endpoints:⁸

- (22) a. Ron cannot solve the easiest problem →
 Ron cannot solve any problem
 b. Ron can lift the heaviest weight →
 Ron can lift any weight

As *a finger*, *a bite*, *any N* etc. function pragmatically as scalar endpoints, it has been suggested that many, if not all, negative polarity items are scalar endpoints and that the underlying mechanisms are a source of new polarity items.

8. For an attempt to formalize Fauconnier’s scales in terms of lattice theory, cf. Krifka (1990a).

Yet another argument against stipulative lexical marking of polarity items and in favor of a semantic approach arises from the observation that it is possible to state cross-linguistic generalizations.

Firstly, many languages have negative polarity items of the *any*-type and positive polarity items of the *some*-type: cf. Haspelmath (1993) for an overview.

Secondly, it has been reported for various languages that many members of the class of intensifying expressions (Bolinger 1972) are polarity items. For example, Van Os (1989:145) observes that most intensifiers in German are positive polarity items: "Die Klasse der positiv polaren IM [= Intensivierungsmittel] ist wesentlich umfangreicher als die der negativ polaren. Man kann sogar sagen, daß die meisten IM positiv polar sind." On the other hand, Ponelis (1985:370) claims that many intensifiers in Afrikaans are negative polarity items: "Onder die NEG-geassosieerde vorme tel verder die formatiewe en konstruksies wat te doen het met kleur (versterking en verswakking)".

Thirdly, Hoeksema (1991) notes that in Dutch, "most negative polarity clusters are formed with the modal verb *kunnen*" e.g. *kunnen verkroppen* 'be able to stand' and *ijzer met handen kunnen breken* 'to be able to break iron with [your] hands'.

If polarity were indeed a matter of pure lexical stipulation one wouldn't expect the possibility of such generalizations. It is therefore reasonable to assume that some underlying mechanism or property of the lexical items involved is responsible for the polarity character of these items.⁹

Note, however, that the generalizations express only tendencies, not laws. For example, notwithstanding the fact that many polarity items may be seen as end-points of scales, this doesn't hold for all of them, for example Dutch *hoeven* 'need' and its German counterpart *brauchen* (Van der Wouden 1985).¹⁰ The observations by Van Os and Ponelis that many intensifiers are polarity items are again nothing more than generalizations: the predictions derivable from them are mere tendencies as not all intensifiers turn out to be polarity items. The same holds for Hoeksema's observation: many negative polarity clusters contain *kunnen* but not all of them, nor is it the case that all verbal clusters containing *kunnen* are negative polarity items. Furthermore, not all languages have NPIs of the *any*-type, one example being Dutch. Finally it has to be pointed out that polarity items may lose their polarity character, whereas other lexical items may (suddenly?) become polarity items. Paramount examples are English *ever* that used to mean "always" but has developed into a negative polarity item, and its Dutch counterpart *ooit* that has undergone the same development, but that is now rapidly developing new, non-polar usage possibilities.¹¹

The most fine-grained and exhaustive classification of NPIs is found in Von Bergen & Von Bergen (1993), who base themselves on earlier proposals of

9. This doesn't imply that one and the same mechanism or property is responsible for the polarity behavior of all polarity items: cf. De Mey (1990:Ch. 9).

10. More examples of "polarized auxiliaries" in Edmondson (1983).

11. Cf. footnote 70.

Jespersen (1917), Bolinger (1972), Fauconnier (1975a), Fauconnier (1975b) and Linebarger (1980:155-64). Von Bergen & Von Bergen (1993) distinguish no less than five classes of NPIs, of which the most important one, strengthening of negation, falls apart in four subclasses. The following picture summarizes the classes and shows their relations.

(23)	1 Strengthening of negation
	1.1 Denotative strengthening of negation
	1.2 Affective strengthening of negation
	1.3 Strengthening of negation by means of minimal amounts
	1.4 Strengthening of negation by means of maximal amounts
	2 Plain and elaborated forms
	3 Nonreferential indefinites
	4 Understatement
	5 Presuppositionally marked verbal phrases

The various classes are explained and illustrated below:

- 1. Strengthening of negation

- 1.1. Denotative strengthening of negation

To this class belong *at all*, *whatever* and *possibly*, as exemplified below:

- (24)
- a. I don't agree with you *at all*
 - b. I have no money *whatever*
 - c. You can't *possibly* walk 20 miles in an hour!

According to Von Bergen & Von Bergen (1993:131-5) the NPIs of this class may be left out from the examples without any dramatic change in meaning. The strengthening of the meaning is both phonetic and semantic-pragmatic: negation is expressed by means of more sounds, and the variant with the NPI leaves less room for exceptions than the one without (cf. also Kadmon & Landman (1993)).

- 1.2. Affective strengthening of negation

In this group are NPIs such as *the hell*, *on earth* and *the fuck*, as in the following examples (Von Bergen & Von Bergen 1993:136-8):

- (25)
- a. They don't know *the hell* what they are doing
 - b. What *on earth* is he doing?
 - c. I don't know where *the fuck* the car keys are

In this case, negation is only strengthened emotionally: the denotation and the truth conditions of *they don't know what they are doing* and *they don't know the hell what they are doing* are the same. The *connotation*, or emotional value, however, is different.

- 1.3. Strengthening of negation by means of minimal amounts

This group — the largest subgroup of the intensifiers of negation — strengthens negation by means of an element denoting a minimal quantity. It contains well-known elements like the following (Von Bergen & Von Bergen 1993:139-54):

- (26)
- a. I tried every argument, but she didn't *budge an inch*
 - b. Robert doesn't *drink a drop*
 - c. He can't sing *a note*

According to Fauconnier (1975a, 1975b), expressions such as a *drop* function as the endpoint of a pragmatical scale as regards to drinking: you can't drink less than a drop. In negative contexts it is possible to reason from such an endpoint to the whole scale: if you don't (even) drink a drop, you don't drink anything at all (cf. below).

Syntactic, semantic, and cognitive factors constrain the possibilities for lexical elements to function as NPI intensifiers of negation. Moreover, fossilization plays a role, i.e., many of these combinations are collocational in nature (chapter 3):¹²

- (27) a. I didn't drink a drop / *an inch
 b. I didn't say a word / *a morpheme / a syllable / *a foot
 c. Je hebt geen vinger/geen poot uitgestoken (Dutch)
 You have no finger/no paw stretched out
 'You didn't lift a finger/*a paw'

Von Bergen & Von Bergen (1993:141) do not fail to note that the defining aspects of the earlier subgroups, viz. denotational and emotional strengthening of the negative, are present in these examples as well. That is to say: this subgroup is defined by its content (viz. minimal amounts) but it shares the defining properties of other subgroups (viz. denotative or connotative strengthening of negation).

— 1.4. Strengthening of negation by means of maximal amounts

This list includes examples such as the following (Von Bergen & Von Bergen 1993:155–7):¹³

- (28) a. I wouldn't hurt her *for the world*
 b. I wouldn't touch it *with a ten-foot pole*
 c. I wouldn't go back to that job *for all the tea in China*

The reasoning why these expressions may be used to strengthen negation runs as follows: if it is true that I wouldn't hurt her for the world, then it is (by implication) true that I wouldn't hurt her for anything less than the world; as everything is less than the world (taken as a whole) this implies that it is true that I wouldn't hurt her at all.

Von Bergen & Von Bergen (1993:156) point at the fact that their use of the term 'maximal element' is not entirely correct. For example, a ten-foot pole is not the maximal element on a scale of poles. Apparently, any element on the scale that is exceptionally large will do in principle. Lexical convention has to explain the rest, i.e., fossilization or collocation again plays a role.

• 2. Plain and elaborated forms

English has a few lexical items with more or less complementary distribution; Lott (1962) suggests that negative contexts select, or tend to select, the plain variant or shorter of the two (Von Bergen & Von Bergen 1993:158–60):

12. This fossilization needn't be the endpoint of the development: French *pas* 'step' started off as an intensifier of sentence negation *ne* with verbs of movement, but in current colloquial French it expresses negation all by itself (Jespersen 1917).

13. Examples such as Von Bergen & Von Bergen's (1993), 157 (5a) *I wouldn't do it! Not in a hundred years* are treated in chapter 2 on multiple negations.

- (29) a. He didn't say *much*
 b. He said *a lot*
 c. It's not *far* from here
 d. It's *a long way* from here

Lott (1962) and Von Bergen & Von Bergen (1993) note that there is indeed nothing more than a tendency here: counterexamples of plain forms in affirmative sentences are easy to find. Von Bergen & Von Bergen (1993:160) conclude that *much*, *many*, *far* and *long* are NPIs only in a certain register, viz. colloquial speech. Moreover, not all elements that occur in negative contexts are shorter than those with a preference for affirmative environments, e.g. *any* (two syllables) vs. *some* (one syllable). From the comparable list of pairs given in Bolinger (1960:380–3) I add *either*, an NPI with two syllables, vs. *both* and *too*, no NPIs, one syllable. This makes the group rather uninteresting.¹⁴

• 3. Nonreferential indefinites

The class of nonreferential indefinites comprises the following examples (Von Bergen & Von Bergen 1993:161–8):

- (30) a. There aren't *any* left
 b. There are *some* left¹⁵
 c. He won't *ever* admit that he's made a mistake
 d. He will *sometimes* admit that he's made a mistake
 e. I don't want *either* of them
 f. I want *both* of them
 g. I don't want that one, *either*
 h. I want that one, *too*

Von Bergen & Von Bergen (1993) admit that these examples look very much like those in the class of plain and elaborated forms above. The NPIs involved, however, are indefinite pronouns — at least in a number of cases, as I don't see why one would characterize *ever* and *either* as (indefinite) pronouns. Perhaps a more interesting argument for a separate class is the fact that in the contexts where both variants are possible, the elements of the last class only yield a stylistic difference, whereas the current examples yield a true semantic difference. Compare:

- (31) a. I live *far* from the centre of town
 b. I live *a long way* from the centre of town
 c. The student couldn't answer *some* of the questions
 d. The student couldn't answer *any* of the questions

The lack of complementary distribution of *any* and *some* is explained in the following way (Von Bergen & Von Bergen 1993:164):

14. Cf. also Bolinger (1977:Ch. 2).

15. Cf. also the adverbial use of *some* and *any*:

i That didn't help us *any*
 ii That helped us *some*

— a. *Some* is always referential, and therefore refers to objects that are available in context or imagination. Affirmative sentences are *mostly* referential. Therefore, *some* prefers affirmative contexts.

— b. *Any* always carries the feature ‘no matter which’: the individual choice of the objects is unimportant. Negated sentences are *mostly* nonreferential in this sense. Therefore, *any* prefers negative contexts.

- 4. Understatement

This group comprises two subgroups: modifiers and idiomatic expressions (Von Bergen & Von Bergen 1993:169–74).

- (32) a. I haven’t been *too* well lately
 b. I’m not *overly* interested
 c. She’s not *exactly* beautiful
- (33) a. I won’t forget her kindness *in a hurry*
 b. Jim will never *set the Thames on fire*
 c. He’s no *great shakes* as a piano player
 d. She *made no bones* about her prejudice against them

For a discussion of the semantics and pragmatics of what is going on here, I refer to the section on litotes in chapter 2.

Several of the examples of the first subgroup of this class of understaters given by Von Bergen & Von Bergen (1993) are not strict NPIs in the sense that they occur in negative contexts only, e.g. *overly*, *exactly*,¹⁶ *quite*, whereas *much of a*, *all that* and *overmuch* are strict NPIs in this sense. On the other hand, the idiomatic cases are NPIs, but the understatement character is far from clear in cases such as *he wasn’t born yesterday* and *there are no flies on him*.

- 5. Presuppositionally marked verbal phrases

This group covers NPIs such as the following:

- (34) a. I *can’t* quite *place* her
 b. He *is* not as *black* as *he is painted*
 c. I *dare* not say anything against him
 d. I don’t *mind* doing the washing up
 e. It doesn’t *matter* if I miss my train

Von Bergen & Von Bergen’s (1993), 175–83 treatment of this group of NPIs is largely based on Givón (1975). According to Givón, negative utterances are presuppositionally marked: “Negative assertions are used in language contexts where the corresponding affirmative has been mentioned, deemed likely, or where the speaker assumes that the hearer — erroneously — holds to a belief in the truth of that affirmative” (Givón 1975:83).¹⁷

Von Bergen & Von Bergen (1993:177) suggest that this class of NPIs is justified by the existence of contexts in which correction of an error makes sense, whereas the affirmative analogue has no informative power. Consider the following pair:

16. The polarity sensitivity of *exactly* may be dependent on the element it modifies: cf. footnote 7.

17. Cf. section 1.6.3 on metalinguistic negation and section 2.4 on denial.

- (35) a. I'm sure I have met her before, but I *can't* quite *place* her
 b. *I'm sure I have met her before, and I *can* *place* her

In a culture where one is supposed to remember the names and antecedents of people one has met only a few times, it is informative to state that one doesn't, but not, that one does. Therefore, sentence (35a) is pragmatically well-formed, but sentence (35b) is not.¹⁸

Von Bergen & Von Bergen's (1993) classification is an interesting and useful attempt to draw a picture of the minefield of negative polarity. It makes perfectly clear that the borderlines between the various regions are fuzzy: a paradigmatic NPI such as *any* strengthens negation both denotatively (group 1.1) and affectively (1.2); it denotes a minimal amount (1.3), it belongs in group 2 as it has been characterized as member of a pair consisting of a plain and an elaborated form, and it is a nonreferential indefinite (3). In such cases, the factor that is most important should decide in which group an item belongs (Von Bergen & Von Bergen 1993:138). This may, however, turn out to be rather difficult, as the criteria for classification are rather heterogeneous. A concept such as 'nonreferential indefinite' is a notion from syntax, 'affective strengthening' is a functional notion, and 'denotative strengthening' is a semantic one.

Furthermore, the various regions are hard to define: Von Bergen & Von Bergen (1993) put *either* in the group of nonreferential indefinites, although it is not an indefinite. For other NPIs it is hard to find any group in which they fit, for example modal *need*.

The predictive power of the classification is small, for various reasons. Firstly, *any* and *some* are both indefinites, but only nonreferential *any* is an NPI. Secondly, the various members of the groups exhibit different behavior: *either* and *any* both belong to the class of nonreferential indefinite NPIs, but the distribution of *any* is much wider than that of *either* (Klima 1964). Thirdly, certain elements in a group may rapidly develop or lose NPI properties. For example, English *ever* used to have a non-polarity meaning 'always' that mostly survives in fossilized expressions such as *he is ever a gentleman*, whereas its Dutch counterpart *ooit* is rapidly losing its negative polarity character (cf. footnote 70). Fourthly, notwithstanding the fact that one is supposed to use knife and fork and to obey one's parents in our culture, *eat with knife and fork* and *obey one's parents* are not NPIs. And finally, certain groups contain more elements than just NPIs. There are other means of strengthening negation than NPIs, for example various types of emphatic multiple negation (on which much more in chapter 2), the adverb *absolutely* that is also used to emphasize or strengthen truth and possibility, etc.

Moreover, different situations exist in other languages. The contrast *any* vs. *some* has always been in the centre of NPI research concerning English

18. One might object that the difference in grammaticality between sentences (35a) and (35b) calls for something stronger than just pragmatic felicity conditions. Hoeksema (1994) argues that collocational fossilization plays a role that is at least as important as pragmatics.

(Klima 1964) but such a minimal pair doesn't exist in the related languages German and Dutch. The elements that come closest to *any* are German *auch nur* and Dutch *ook maar*, but these combinations have a much more restricted distribution than *any*: they do not occur in just any negative context, but only in anti-additive environments (cf. Sánchez Valencia *et al.* (1994) and section 1.4).

This is, moreover, not the whole story: German *irgendjemand* 'anybody' has an existential reading that its Dutch counterpart *ook maar* lacks (Von Bergen & Von Bergen 1993:197n):

- (36) a. Es hat tatsächlich *irgendjemand* nach Ihnen gefragt (German)
 It has factually anybody after you asked
 'Actually, someone asked for you indeed (but I don't know who)'
 b. *Inderdaad heeft er *ook maar iemand* naar je gevraagd (Dutch)
 Indeed has there anybody to you asked

And that is not the only type of variation found between languages. For instance, one of the many possibilities to affectively strengthen negation doesn't use negation at all (Von Bergen & Von Bergen 1993:195–8). Below are three examples from English, German, and Dutch.

- (37) a. He knows shit about GB¹⁹
 b. Das *interessiert mich einen Dreck* (German)
 That interests me a shit
 'I don't care a damn'
 c. Daar snap ik *de ballen* van (Dutch)
 There understand I the balls of
 'I don't understand a bit of it'²⁰

In German, minimal pairs such as *long/a long time* hardly exist: the only example Von Bergen & Von Bergen (1993) give is *gar/ganz und gar*:

- (38) a. Das verstehe ich *gar* nicht (German)
 That understand I at-all not
 'I don't understand that at all'
 b. *Das verstehe ich *gar*
 That understand I at-all
 c. Das verstehe ich *ganz und gar*
 That understand I totally and at-all
 'I understand that completely'

Von Bergen & Von Bergen (1993:198–9) reach the conclusion that there is not one single principle that may explain negative polarity uniformly. Syntax, semantics and pragmatics interact in a complex way here. They are still uncertain whether (negative) polarity is more than a descriptive term that covers common behavior of lexical items. Cf. also De Mey's (1990), 116 conclusion that polarity is not a homogeneous phenomenon, and that it is therefore pointless to look for a general explanation of the polarity character of all polarity items.

But is there reason to be that pessimistic? Without doubt, certain strong tendencies can be formulated. To justify this optimism consider the possibility

19. A variant of this sentence does use negation: *he doesn't know shit about GB*.

20. Variant with negation: *Daar snap ik geen bal van* 'There understand I no ball of'.

of looking at a theory of polarity as defining the borderlines of possible, rather than actual languages. Fauconnier and Ladusaw offer a recipe for an open class of negative polarity items, and they offer a theory that explains why they function as NPIs. However, whether a language will express the minimal amount of activity as *lift a finger*, as in English, or as *extend a hand*, as is one of the possibilities in Dutch, is idiomatic or collocational, i.e., part of the arbitrariness of the lexicon.

In other words: pick any language, and you will always find NPIs of the minimal amount type and NPIs of the verbal idiom type. There is moreover an explanation of how these NPIs work, although their exact form and all the subtleties of their distribution are unpredictable.

Next to that, many languages possess the rhetorical figures of understatement and litotes. That again is a productive source of NPIs, via the lexical mechanisms of collocation and fossilization. NPI indefinites (*any, ever*) are also found in many languages, but perhaps not in all. We can, however, be sure that the possibility of development into NPIs is a property of this type of elements, although we don't know when this possibility is used. Again, this fits into our general conceptions of the arbitrariness of the lexicon.

Moreover, it seems to be the case that intensification is somehow or other closely related to polarity. Many intensifiers are either NPIs or PPIs. Next to that, many, perhaps all, lexical elements that are inherently intensified are positive polarity items. I am thinking of verbs such as *devour, swarm, teem*, of nouns such as *crowd* and *multitude*, and of adjectives such as *stone drunk* and *stark naked*.²¹

Apart from these cases, the language learner has to learn all NPIs. But once (s)he has met them, (s)he knows how to cope with them, how to interpret them, and how to use them. In other words, the mechanisms underlying the behavior of polarity items are part of grammar, the specific behavior of individual polarity items is part of the lexicon.²² In the rest of this chapter I will therefore assume that it is possible to make certain generalizations about all polarity items, or at least about large classes of them.

1.2.4 Concluding remarks

It has been shown that classification of polarity items on historical grounds is not very fruitful. It moreover turned out to be impossible to characterize polarity items on purely syntactic grounds, as polarity is a property that is found in lexical items of many syntactic categories, and also below and beyond the word level. It made more sense to look for relations between polarity behavior and semantic properties. Although the arbitrariness of the lexicon precludes

21. Apparent counterexamples such as *he didn't exactly devour the cake* and *the river didn't really teem with fish* are instances of metalinguistic negation (cf. section 1.6.3): they can be paraphrased as '“devour” is not exactly the right word to describe what he did with the cake’ and ‘one couldn't say “the river teemed with fish” in this situation’.

22. Cf. also Fillmore *et al.* (1988).

any absolute predictive statements of the type “this element will be an NPI or PPI in that language”, it is beyond doubt that certain correlations exist between membership of a semantic class on the one hand and polarity character at the other: one may be sure to find polarity items in certain semantic classes. On the other hand, most words are predictably not polarity items.

1.3 What is a negative context?

Given the notions of negative and positive polarity and the definitions of NPIs and PPIs in (3) and (4), an obvious question to ask is what constitutes a negative context. Answers to this question have been given in terms of syntax, semantics and pragmatics. In this section I give an overview of the various types of answers, whereas I will present an alternative in the next one. Note that certain authors use approaches that mix various modules of grammar: for example, various theories have a syntactic core with pragmatic extensions.

1.3.1 Syntactic approaches

The first formalized proposal to negative polarity triggering is found in Klima (1964), whose ideas are based partially on Chomsky (1957) and Lees (1960). Klima coined the term *AFFECTIVE* to refer to the feature that all triggers, i.e. all contexts that license NPIs, (are supposed to) have in common.²³

Klima conjectured that a negative polarity item would yield a grammatical sentence if it was “in construction with” a negative operator. This notion “in construction with” is defined as follows:

- (39) **Definition** A constituent *X* is *in construction with* another constituent *Y* if the former is dominated by (that is, occurs somewhere lower down the branch of) the first branching node that dominates the latter. (Klima 1964:297)

This “in construction with” is the reverse of the more well-known “c-command” relation, first described in Reinhart (1976):

- (40) **Definition** A node *a* *c-commands* a node *b* if the first branching node dominating *a* also dominates *b*. (Barker & Pullum 1990:8)

Klima (1964) assumes that sentence negation *not* and *n't*, the negative aspect of negative noun phrases such as *nobody* and *nothing*, of inherently negative or adversative verbs such as *doubt*, and of negatively affixed words such as *unable* and *impossible*, all correspond to an abstract constituent *neg*, as these lexical items constitute appropriate environments for NPIs such as *any*.

According to Jackendoff (1969:219), Ross (1967) claims that *in construction with* is not the proper structural relation to use to account for the scope of negation, but that it is *command*, as defined by Langacker.

- (41) **Definition** A node *B* *commands* a node *A* if and only if the lowest *S* node dominating *B* also dominates *A*.

23. Actually, Klima’s analysis was not cast in terms of licensing NPIs but in terms of transformations spelling out an indefinite as *any* or *some*, depending on whether or not an affective was present. See Lakoff (1970) for counterarguments against such an approach.

There is also a tradition that relates *any* to *every* or *all* rather than to *some* (Reichenbach (1947:§21), Quine (1960:138–41)). Hintikka (1979:99) formulates the following “any-thesis”:

“The word ‘any’ is acceptable (grammatical) in a given context *X – any Y – Z* if and only if an exchange of ‘any’ for ‘every’ results in a grammatical expression which is not identical in meaning with *X – any Y – Z*.”

This may be descriptively right (but cf. Peacocke (1979) and Hand (1985)) but it is not very useful as an explanation since it cannot be generalized to other polarity items.

Jackendoff (1969) himself argues for a more semantic approach to negation and polarity items: “we observe that the surface structure position of neg is always included in the interpreted scope. This suggests that the principle of the scope rule is expansion of the scope of neg to larger and larger constituents. Such expansion can be expressed by a rule that raises neg from the node on which it is generated to a dominating node.” The exact mechanism of this raising operation is not spelled out. The scope of negation is defined as “anything commanded by the negative morpheme and to its right” in Jackendoff (1972).

More recent versions of syntactic approaches to the problem describe the relation between negation and polarity items in parametrized variants of the c-command relation (Linebarger 1980; Hornstein 1984; Progovac 1988; Laka Mugarza 1990; Zanuttini 1991; Hoekstra 1991). Progovac (1988, 1993, 1994) suggests that the relation between polarity items and negation may be cast in terms of (one of the versions of) the Binding Theory (Chomsky 1981; Aoun 1986). I return to these matters in section 1.7.

1.3.2 Pragmatic approaches

Baker (1970) calls attention to the fact that two negative expressions may sometimes “cancel out” each other:

- (42) a. *I *wouldn't rather* be in Montpellier
 b. There *isn't anyone* in this camp who *wouldn't rather* be in Montpellier
 c. *Someone *hasn't already* solved this problem
 d. You *can't* convince me that someone *hasn't already* solved this problem

Example (42a) shows that a sentence containing both the PPI *would rather* and negation *n't* is ungrammatical all by itself. Embedding this sentence in a negative matrix clause, however, yields a grammatical result (42b). The same effect occurs with the PPI *already* (42c – 42d).

Baker (1970) notes that a story in terms of simple cancellation of negation will not do justice to facts such as the following, where both the NPI *any* and the PPI *some* are fine in a context comparable to (42b) and (42d).

- (43) a. You'll *never* convince me that George *didn't* eat any of that pie
 b. You'll *never* convince me that George *didn't* eat some of that pie

Baker's (1970) proposal for the distribution of polarity items has two parts. The first part is reminiscent of Klima's, the second one is new:

- (44) Negative-polarity items are appropriate within the scope of negations, whereas affirmative-polarity items are appropriate elsewhere (Baker 1970:(47a))
 (45) Given semantic representations P_1 and P_2 satisfying the following conditions:
 (A) $P_1 = X_1Y Z_1$ and $P_2 = X_2Y Z_2$, where Y is itself a well-formed semantic representation;
 (B) P_1 entails P_2 ;
 then the lexical representation appropriate to Y in P_2 (by [(44)]) is also appropriate to Y in P_1 . (Baker 1970:(47b))

According to Baker, sentence (42b) has the following “simplified paraphrase in sentential-calculus notation”:

- (46) neg $\exists x$ neg x would rather be in Montpellier

This formula entails (47a), which can be expressed by (47b):

- (47) a. $\forall x x$ would rather be in Montpellier
 b. Everyone in this camp would rather be in Montpellier

Baker's approach has met considerable criticism (Ladusaw 1979; Linebarger 1980; Zwarts 1981; Hoppenbrouwers 1983). One counterargument runs as follows. Since every proposition entails its double negation, the theory wrongly predicts that every NPI might occur in every positive sentence, as the NPI will be in the scope of neg in a sentence entailed by it:

- (48) a. *John reads any book
 b. It is *not* the case that John doesn't read any book

Moreover, the procedure proposed by Baker to check the grammaticality of sentences involving NPIs will never end: as every proposition entails an infinite number of equivalent propositions, the search space connected with Baker's approach is infinite as well.

The essence of Baker's approach is adopted by Linebarger (1980, 1987) and Von Bergen & Von Bergen (1993).

Linebarger's approach amounts to the following (the exact details of the various technical notions are irrelevant):

The Immediate Scope Constraint marks as unacceptable $\langle SS, LF \rangle$ pairs if the representation of an NPI in LF is not in the immediate scope of NOT. A great number of ultimately acceptable sentences, therefore, are marked as unacceptable by the ISC. [...] these sentences are acceptable because they in some way allude to the paradigm case. That is, a $\langle SS, LF \rangle$ pair which fails the ISC — i.e. which contains an 'untriggered' NPI — may be deemed acceptable by virtue of a pair $\langle \langle SS, LF \rangle, I \rangle$, where 'I' denotes some implicature of the form X NOT NPI Y, an environment in which the representation of the NPI is in the immediate scope of NOT. (Linebarger 1980:67)

On the basis of examples such as the following (after Linebarger (1987:379)), Von Bergen & Von Bergen (1993:85 ff.) conclude that a purely syntactic characterization is impossible, and that a pragmatic part is called for:²⁴

- (49) a. *The mule sighed before it *budged an inch*
 b. The mule sighed for hours before the heartless owner *budged an inch*

Other arguments in favor of allowing at least some pragmatics are the following: only rhetorical questions and no other types of questions license NPIs (Borkin 1971; Lawler 1971; Horn 1970), and *if*-clauses are far better triggers when used as threats than as promises (Lakoff 1970):

- (50) a. Who *lifted a finger* when I needed it? None of you did!
 b. *Who *lifted a finger* when I needed it? It was John, I think.
 c. I warn you that if you eat *any* candy, I'll whip you
 d. *I promise you that if you eat *any* candy, I'll whip you

At one moment in their book, Von Bergen & Von Bergen (1993) become completely agnostic and define negative contexts as follows:

24. Cf. also Sánchez Valencia *et al.* (1993:footnote 6).

(51) **Definition** *Negative contexts* are contexts that license the occurrence of undisputed NPIs (such as *any* and *ever*).²⁵ (Von Bergen & Von Bergen 1993:34) Later on (90 ff.) they distinguish three main types of negative contexts, referred to as *not p*, *(not p) and p'*, and *(not p) or p*, respectively. Examples of these three types are given below:²⁶

- (52) a. I'd rather die than do *anything* illegal
 b. John is sorry that *anything* happened
 c. If you see *anything* suspicious, report it at once

The reasoning that is supposed to underly this classification of negative contexts is beyond my understanding. Moreover, is not without empirical problems. In the first place, certain specific cases are hard to characterize or fit into more than one class. Von Bergen & Von Bergen (1993:115) themselves give the example of *if*-clauses that belong to different groups depending on the function of the conditional. Consider the following cases:

- (53) a. If *anything* is missing, you'll have to pay for it
 b. I'll eat my hat if *anything* is missing

According to Von Bergen & Von Bergen (1993:115), the first one is a perfect example of the type *(not p) or p*, for both possibilities *not p* ('nothing is missing') and *p* ('something is missing') are possible. The second example, however, is much more of the type *not p*, as the chance of the speaker eating his hat is close to zero, which implies that the chance of something missing is denied. That is to say, the form of certain negative contexts doesn't give a clue about the category to which it belongs.

Moreover, this classification has hardly any predictive power. It is an old observation that certain NPIs have a more restricted distribution than others (Klima 1964). In section 1.5 I will discuss at great length that Dutch *hoeven* 'need' and many NPI verbal idioms occur in almost all negative contexts, whereas *ook maar* 'at all' and certain others occur with the Dutch counterparts of *nobody*, *nothing*, *nowhere*, with the comparative and in certain other contexts, but not with words such as *zelden* 'seldom', *weinig* 'few', etc. Hence the group of negative contexts licensing *ook maar* is not a natural class or subclass in the grouping of Von Bergen & Von Bergen (1993). Finally, there is a (probably small) group of Dutch NPIs that occurs only in contexts created by *niet* 'not', *allerminst* 'not in the least' and *allesbehalve* 'anything but'. This is again not a class in Von Bergen & Von Bergen's (1993) system, but only a subclass of class 1.

Another example of the heterogeneous behavior of contexts within one and the same class is formed by information questions, on the one hand, and relatives headed by indefinites, on the other. Consider the following examples:

25. "Negative Kontexte sind dadurch definiert, daß sie das Auftreten unstrittiger Standard-NPIs (wie *any* und *ever*) gestatten."

26. Emphasis, as in *but I DID lift a finger to help you*, is distinguished as a special group (Von Bergen & Von Bergen 1993:113 ff.). Cf. section 1.6.3 below.

- (54) a. Do you want *anything* to eat?
 b. Anyone who knows *anything* about English knows that it is SVO
 c. *Who *gives a damn* about the refugees? I think it is John
 d. Anyone who *gives a damn* about the refugees will act now

The only NPIs allowed in information questions seem to be *any* and *ever*; a much wider range of NPIs occurs in relative clauses. These two contexts, however, are in the same group according to Von Bergen & Von Bergen (1993).

In the following sections I will develop a different system to characterize negative contexts. I claim that it is more useful in that it uses objective criteria. Although it doesn't predict the distribution of NPIs and PPIs completely, it does a better job than Von Bergen & Von Bergen (1993). My theory leans heavily on the semantic approach proposed by Ladusaw which will be discussed first.

1.3.3 Semantic approaches

Building on work by Horn and Fauconnier, among others, Ladusaw (1979) formulates the following characterization of negative contexts:

- (55) **Hypothesis** δ is a trigger for NPIs if and only if δ is downward-entailing.
 (Ladusaw 1979:113)

This generalization — let me call it Ladusaw's hypothesis — is attractive for its elegance. It is also wrong. But let me first make clear what is meant by it.

The property of being DOWNWARD ENTAILING is defined in (56). MONOTONE DECREASING and DOWNWARD MONOTONIC are other terms one finds in the literature. I'll use all three terms, as well as the abbreviations DE and MD.

- (56) **Definition** An expression δ is downward-entailing iff²⁷
 $\forall X \forall Y (X \subseteq Y) \rightarrow (\delta'(Y) \subseteq \delta'(X)).$

MD contexts allow one to reason from sets to subsets. The validity of the following reasoning shows that the prototypical trigger of NPIs, sentence negation, is downward entailing:

- (57) John doesn't eat vegetables
 [[spinach] \subseteq [vegetables]]

John doesn't eat spinach

Application of the same test shows that the adverb *seldom* denote a DE function as well:

- (58) John seldom eats vegetables
 [[spinach] \subseteq [vegetables]]

John seldom eats spinach

And the same holds for the noun phrase *few congressmen*.

- (59) Few congressmen eat vegetables
 [[spinach] \subseteq [vegetables]]

Few congressmen eat spinach

27. Following the custom in logic, I'll occasionally write *iff* for 'if and only if'. δ' denotes the interpretation of δ .

Ladusaw's hypothesis as stated in (55) is falsified by two types of counterexamples. Certain NPIs do not occur in all MD contexts, and on the other hand there are cases of NPIs occurring in contexts that are not MD.

Zwarts (1981) pointed out that Dutch NPI *ook maar*, whose meaning is more or less comparable to that of *at all*, cannot occur in all MD contexts:

- (60) a. *Weinig kinderen hebben ook maar iets gezien (Dutch)
 Few children have at all anything seen
 'Few children have seen anything at all'
 b. Geen van de kinderen heeft ook maar iets gezien
 None of the children has at all anything seen
 'None of the children has seen anything at all'

Linebarger (1980) showed that expressions such as *exactly four men* are not monotone decreasing:

- (61) Exactly four men have ever read that dissertation: Bill, Mary, Tom and Ed
 They may nevertheless trigger NPIs:

- (62) Exactly four men eat vegetables
 $[[\text{spinach}] \subseteq [\text{vegetables}]]$
 \neq Exactly four men eat spinach

I will return to these cases below. As regards PPIs, Ladusaw (1979:135) makes the following claim:

- (63) **Hypothesis** PPIs resist overt negation.

This is wrong again. On the one hand, PPIs such as *would rather* may yield ungrammaticality in a comparative construction, as is shown below. Note that the alternative with *prefer* suggests that the restrictions on the distribution of *would rather* are indeed the source of ungrammaticality:

- (64) a. *John is more often away from home than he would rather be
 b. John is more often away from home than he prefers to be

On the other hand, *would rather* is perfectly fine in the context of an expression such as *no less than five congressmen*, although it contains an overt negation:²⁸

- (65) No less than five congressmen would rather be in Florida now

Finally, it is conceptually unelegant to dismiss negation as an explanatory device when talking about NPIs, and still use this concept in one's treatment of PPIs.

In the following sections I will try and show that Ladusaw's hypothesis is a fruitful starting point for a more refined theory of both positive and negative polarity and of negative contexts in general. I will argue that downward monotonicity plays an extremely important role in natural language.²⁹ Actually, what I would like to claim — but don't have time nor the space to prove — is that in all natural language phenomena where negation seems to be at work, description and explanation in terms of downward monotonicity is both more fruitful and more correct.

28. Cf. the following examples from the corpus Hoeksema:

- i She showed no sign that she would rather not have even touched him.
 ii He replies that there is nothing he would rather do.
 iii "There is no outfit in the universe I would rather be associated with — absolutely none."

29. Cf. also Van Benthem (1986), Hoeksema (1986a), Sánchez Valencia (1991) and Dowty (1994).

1.3.4 Concluding remarks

There exist several approaches to the problem of how to characterize negative contexts as they are relevant to the distribution of polarity items. Syntactic approaches circle round some sort of negative operator. Such an operator is either present or not present, which would predict that in a certain environment either all NPIs may occur, or none may. As will become clear below, this prediction is not borne out. Although I do admit that pragmatic factors play a role, the pragmatic explanations that have been proposed are too loosely formulated to constitute a predictive and restrictive theory of polarity licensing. The semantic approach of Ladusaw was shown to meet empirical problems, but it will nevertheless be taken as a starting point in the remainder.

1.4 Degrees of negativity

In section 1.3.3 I discussed the concept of downward monotonicity as it was introduced by Ladusaw (1979). In this section it will become clear that downward monotonicity is only one of the many mathematical properties occurring in natural language and relevant for the description of natural language phenomena (cf. Partee *et al.* (1990) for an introduction and overview).

Following Zwarts (1986a), I will try to relate the semantic properties held responsible for triggering polarity effects to negation in a direct way. In order to do that, I will first discuss various relevant semantic properties of natural language elements. These properties will be used to construct a natural hierarchical typology of negative contexts. It will be shown in section 1.5 that various classes of positive and negative polarity items may be distinguished on the basis of their sensitivity to one or more of these properties. But before I do that, I will briefly discuss earlier proposals for a hierarchy of negative contexts.

1.4.1 Negations weak and strong

Jespersen (1917) distinguishes between strong negative expressions (like *not* and *never*) and weak ones (such as *hardly* and *seldom*). Klima (1964) observes that, at least according to certain speakers of English, *neither*-tags only attach to sentences containing what he takes to be the strongest negations, *not* and *never*. Edmondson proposes no less than four classes of affective contexts in his (1981, 1983), that constitute a “graded, implicational hierarchy” of a type widely known from Keenan & Comrie’s (1977) work on accessibility:

(66) comparative \supset conditional \supset interrogatives \supset negatives

Edmondson (1983:51) claims that if an NPI can occur in some affective context, it will also appear in all contexts that are to the right of it in this hierarchy. “This stepped gradience [...] supports the name *negative polarity* for the phenomena, as the negative seems strongest of the four” (*ibidem*)

Comparable but totally different and even more complex hierarchies of negative contexts, based on comparable small amounts of evidence, have been proposed in the literature. I give two examples (from one and the same researcher):

(67) *few* in object \supset *few* in subject \supset *seldom* \supset *hardly* \supset *nothing* in object
 \supset *no* in subject \supset *not* (Ross (1973a) cited in Tottie (1977))

(68) Post-verbal *seldom* \supset Post-verbal *never* \supset Pre-verbal *not* \supset Pre-verbal *never*
 \supset *no* in subject \supset *few* in subject \supset *not* in subject (Ross 1973b)

Van der Wouden & van der Wouden (1994) argue that the discrepancies between the various proposals plus the fact that they are based on a small amount of data or on the researcher’s intuitions only is reason enough to reject this type of hierarchies of negative expressions. Next to that, there are empirical arguments against hierarchical scales such as the ones given above. These involve NPIs such as Dutch *hoeven* ‘need’ and *meer* ‘anymore’ that fail to obey the implicational hierarchy. For example, *hoeven* occurs in negative sentences, not

in questions or conditionals, but again in comparatives (cf. section 1.6.4 below and Hoppenbrouwers (1983:55–7)).

The following sections will be dedicated to developing a hierarchy of negations based on the logical properties of the items involved.

1.4.2 Boolean properties

Rather than sticking to the traditional perspective of set theory, I will shift to the powerful mechanism of Boolean algebra's.³⁰ This shift is not uncommon these days in formal semantics (Keenan & Faltz 1985; Zwarts 1986a; Kas 1993), as it allows for generalization over implicational relations between (expressions denoting) sets of arbitrary type.

From the Boolean perspective every set corresponds with a unique function, the characteristic function, that maps all elements in the universe onto the Boolean algebra $\{1, 0\}$ in such a way that all members of the set are mapped onto the element 1 (or 'True'), whereas all nonmembers are mapped onto the element 0 (or 'False'). This mapping is a bijection, which implies that no information is lost in going from sets to characteristic functions or from characteristic functions to sets. In other words, a set defines a unique characteristic function, and a characteristic function defines a unique set (cf. Partee *et al.* (1990:Ch. 11–12) for formal definitions.)

Given this perspective, the earlier definition of downward monotonicity (56) can be replaced by the following (Kas 1993:18):

- (69) **Definition** Let B and B^* be two Boolean algebras. A function f from B to B^* is *monotone decreasing* iff for arbitrary elements $X, Y \in B$:
- $$X \subseteq Y \rightarrow f(Y) \subseteq f(X).$$

The mirror image of the property of downward monotonicity is called upward monotonicity, or being monotone increasing. It is defined below (Kas 1993:17):

- (70) **Definition** Let B and B^* be two Boolean algebras. A function f from B to B^* is *monotone increasing* iff for arbitrary elements $X, Y \in B$:
- $$X \subseteq Y \rightarrow f(X) \subseteq f(Y).$$

In section 1.3.3 I already showed that sentence negation and elements such as *seldom* and *few congressmen* are downward monotonic. The following shows that *few congressmen* is not upward monotonic.³¹

- (71) Few congressmen eat spinach
 $\llbracket \text{spinach} \rrbracket \subseteq \llbracket \text{vegetables} \rrbracket$
 \neq Few congressmen eat vegetables

As the following reasoning is valid, *many congressmen* must be monotone increasing.

- (72) Many congressmen eat spinach
 $\llbracket \text{spinach} \rrbracket \subseteq \llbracket \text{vegetables} \rrbracket$
-
- Many congressmen eat vegetables

30. This section follows Kas (1993:Ch. 2) and Zwarts (1986a) rather closely.

31. Cf. Zwarts (1986a) and Kas (1993) for discussion of the validity of these tests.

The reader is invited to check that the other elements characterized as MD aren't upward monotonic either, and that *many congressmen* is not MD.

Upward monotonicity is not restricted to noun phrases: the validity of the following reasoning shows that the adverb *often* also possesses this property:³²

- (73) John often eats spinach
 $\llbracket \text{spinach} \rrbracket \subseteq \llbracket \text{vegetables} \rrbracket$

John often eats vegetables

It was also shown in section 1.3.3 that the noun phrase *exactly four men* is not downward monotonic; the invalidity of the following shows that it isn't upward monotonic either:

- (74) Exactly four men people eat spinach
 $\llbracket \text{spinach} \rrbracket \subseteq \llbracket \text{vegetables} \rrbracket$
 $\not\vdash$ Exactly four men eat vegetables

The class of upward monotonic expressions may be further subdivided by adding constraints. The properties *multiplicativity* and *additivity* will turn out to be relevant. They are defined as follows (Kas 1993:22–3):

- (75) **Definition** Let B and B^* be two Boolean algebras.
 A function f from B to B^* is *multiplicative* iff for arbitrary elements $X, Y \in B$:
 $f(X \cap Y) = f(X) \cap f(Y)$.
- (76) **Definition** Let B and B^* be two Boolean algebras.
 A function f from B to B^* is *additive* iff for arbitrary elements $X, Y \in B$:
 $f(X \cup Y) = f(X) \cup f(Y)$.

In other words, multiplicative functions preserve meets, whereas additive functions preserve joins.

Noun phrases of the form *at least n* ($n > 1$) are monotone increasing but not multiplicative or additive. However, *at least one N* denotes an additive function. The validity of the following equivalence demonstrates this:

- (77) At least one girl sings or dances \leftrightarrow
 At least one girl sings or at least one girl dances

Although noun phrases of the form *at least one N* denote an additive function, they are not multiplicative:

- (78) a. At least one girl sings and dances \rightarrow
 At least one girl sings and at least one girl dances
 b. At least one girl sings and dances $\not\rightarrow$
 At least one girl sings and at least one girl dances

This doesn't mean, however, that there exist no multiplicative noun phrases. The validity of the equivalence below shows that noun phrases of the form *the N* (plural) possess this property:

- (79) The girls sing and dance \leftrightarrow The girls sing and the girls dance

Again, multiplicativity and additivity are not restricted to the syntactic class of nouns and noun phrases. The adverb *always*, for example, is additive whereas *sometimes* is multiplicative:

32. If the vague and context-sensitive character of *often* is taken seriously, the validity of this inference is questionable: cf. De Swart (1991).

- (80) a. The girls always sing and dance \leftrightarrow
 The girls always sing and the girls always dance
 b. The girls sometimes sing or dance \leftrightarrow
 The girls sometimes sing or the girls sometimes dance

This doesn't exhaust the matter: noun phrases of the form *the N* (singular) are both additive and multiplicative:

- (81) a. The girl sings and dances \leftrightarrow The girl sings and the girl dances
 b. The girl sings or dances \leftrightarrow The girl sings or the girl dances

Functions that are both additive and multiplicative are called homomorphisms if they are also consistent and complete, i.e., if the following two properties apply as well:

- (82) **Definition** Let B and B^* be two Boolean algebras.
 A function f from B to B^* is *consistent* iff for an arbitrary element $X \in B$:
 $f(-X) \subseteq -f(X)$.

- (83) **Definition** Let B and B^* be two Boolean algebras.
 A function f from B to B^* is *complete* iff for an arbitrary element $X \in B$:
 $-f(X) \subseteq f(-X)$.

That is to say, f is a homomorphism from B into B^* just in case f preserves joins, meets, and complements (Keenan & Faltz 1985:91).

It has been claimed (Zwarts 1986a; Kas 1993) that proper names (*John*) and definite descriptions (*the king of France*) are homomorphisms living in the world of noun phrases, and that these are moreover the *only* homomorphisms in this class. Given a semantics for these noun phrases that is of type e (or reduces to that type) one indeed expects them to behave like homomorphisms. To prove that these expressions denote consistent and complete functions, equivalences such as the following have been claimed to be valid (Kas 1993:39, 43):³³

- (84) Haroun did not talk \leftrightarrow It is not the case that Haroun talked

Extensional transitive verbs have been claimed to be homomorphisms as well.

Keenan & Faltz (1985:12) give the following suggestive schemas:

- (85) a. sleep(John and Mary) = sleep(John) and sleep(Mary)
 b. sleep(John or Mary) = sleep(John) or sleep(Mary)
 c. sleep(not(every student)) = not(sleep(every student))

Kas (1993) argues at length that this cannot be completely right. He states that [both intensional and extensional] verbs are increasing with respect to their direct object NP, but extensional verbs denote both multiplicative and additive functions, whereas intensional verbs (on the preferred non-Boolean reading of the disjuncted NPs) only denote multiplicative ones. (Kas 1993:83)

It is easy to see that not all verbs can be homomorphisms in the sense that they are also consistent and complete. Assume all verbs would be consistent, i.e., all verbs would allow reasoning from $X V \text{ not } Y$ to $X \text{ not } V Y$. If one doesn't assume consistency of beliefs, this is falsified by the facts:

33. I will return to the validity of such equivalences shortly.

- (86) a. John believes that Mary doesn't come \nrightarrow
 John doesn't believe that Mary comes
 b. John knows that Mary doesn't come \nrightarrow
 John doesn't know that Mary comes

On the other hand, if all verbs would be complete, they all would allow the derivation of $XV \text{ not } Y$ from $X \text{ not } VY$. This again is not the case:

- (87) John doesn't say that Mary comes \nrightarrow
 John says that Mary doesn't come

There is, however, a small class of so-called "negative raising verbs" (Horn 1978a).³⁴ When negated, the scope of the negation is either the verb or its complement. The following sentence is a case in point:

- (88) I don't believe Frans will come in time

In the neg raising reading, this is a polite or roundabout way of saying that I believe that Frans will not come in time; the predicate negation reading expresses that I absolutely do not believe that Frans will come in time.

Given the possibility of division of monotone increasing expressions, it is hardly surprising that it is possible to subdivide the class of downward monotonic expressions by adding constraints as well. The mirror images, so to speak, of *multiplicativity* and *additivity* are known as *antimultiplicativity* and *anti-additivity*, respectively. They are defined as follows (Kas 1993:28):

- (89) *Definition* Let B and B^* be two Boolean algebras.
 A function f from B to B^* is *antimultiplicative* iff for arbitrary elements $X, Y \in B$:
 $f(X \cap Y) = f(X) \cup f(Y)$
 (90) *Definition* Let B and B^* be two Boolean algebras.
 A function f from B to B^* is *anti-additive* iff for arbitrary elements $X, Y \in B$:
 $f(X \cup Y) = f(X) \cap f(Y)$

In other words, antimultiplicativity reverses meets, whereas anti-additivity reverses joins.

Downward monotonicity does not imply anti-additivity or antimultiplicativity: MD noun phrases such as *at most two children* or *few congressmen* possess neither of the two additional properties. That doesn't mean that antimultiplicativity or anti-additivity are irrelevant in natural language. For example, the validity of the following equivalence shows that noun phrases of the form *not every N* should be characterized as antimultiplicative:

- (91) Not every girl sings and dances \leftrightarrow
 Not every girl sings or not every girl dances

Moreover, noun phrases such as *no N* and *nobody* are anti-additive:

- (92) a. No girl sings or dances \leftrightarrow No girl sings and no girls dances
 b. Nobody sings or dances \leftrightarrow Nobody sings and nobody dances

Again, anti-additivity and antimultiplicativity are found in other syntactic categories as well. For example, the English preposition *without* and its Dutch

34. I use terms such as 'neg(ative) raising' purely descriptively, i.e., my usage of the term doesn't necessarily imply that I believe in the existence of a transformation that raises negation: cf. Horn (1971) and Bartsch (1973).

counterpart *zonder* are anti-additive as well (the reader is invited to check for him/herself that it is not antimultiplicative):³⁵

- (93) a. De dief ontsnapte zonder geld of juwelen ↔ (Dutch)
 De dief ontsnapte zonder geld en de dief ontsnapte zonder juwelen
 b. The thief escaped without any money or jewels ↔
 The thief escaped without any money and the thief escaped without any
 jewels (= 93a)
 c. De pest kwam zonder dat iemand er acht op sloeg of aandacht aan besteedde
 ↔
 De pest kwam zonder dat iemand er acht op sloeg en zonder dat iemand er
 aandacht aan besteedde
 'The pest came without anybody paying attention to it or noticing it'

On the other hand, expressions such as Dutch *niet altijd* 'not always' and *niet iedereen* 'not everybody' denote antimultiplicative functions:³⁶

- (94) a. Niet iedereen rookt en drinkt ↔
 Niet iedereen rookt of niet iedereen drinkt
 b. Not everybody smokes and drinks ↔
 Not everybody smokes or not everybody drinks (= 94a)
 c. Jan rookt en drinkt niet altijd ↔
 Jan rookt niet altijd of Jan drinkt niet altijd
 d. Not always does John smoke and drink ↔
 Not always does John smoke or not always does John drink (= 94c)

This is not all: certain types of noun phrases are claimed to be both anti-additive and antimultiplicative at the same time (Zwarts 1981; Zwarts 1986a; Kas 1993). The only cases in point are negated proper names (*not Judas*) and negated singular definites (*not the king of France*).³⁷

35. The differences between *zonder* and *zonder dat* are not important here. Cf. Paardekooper (1975).

36. Antimultiplicative expressions are either composite expressions or both antimultiplicative and anti-additive. In other words: there are no simplex lexical elements that are antimultiplicative without being anti-additive as well. Horn (1989:253) attributes this observation to Saint Thomas. Why are there no such things? Suggestion (thanks to Henriëtte de Swart): Generalize Monotonicity correspondence universal U5 of Barwise & Cooper (1981:186–7) which states "There is a simple [N]P which expresses the mon ↓ quantifier ~ Q if and only if there is a simple NP with a weak non-cardinal determiner which expresses the mon ↑ quantifier Q." "This proposal would predict that no language would have basic operators meaning *not most*, *not every* or *not the* since *most*, *every* and *the* are strong. It would also predict that no language would have a basic determiner meaning *not (at least) two* since *two* is a cardinal determiner." Cf. also Huybregts (1979:107 ff.) who relates the non-existence of **n-alles* 'not everything' to the ungrammaticality of the string **alles niet* 'everything not', Horn (1972:Ch. 4) and Horn (1989:253 ff.).

37. Van der Wouden (1988:184) questions the grammaticality of the sentences in (95). It might be the case that negated proper names and negated definite descriptions may only occur as part of a conjunction *niet . . . maar* 'not . . . but'. According to Paardekooper ([n.d.]:848 ff.), this *niet* is to be distinguished from normal *niet* on the basis of its interaction with NPIs:

- i Ik hoef Jan niet te zien
 I need John not to see
 I need not see John
- ii *Ik hoef niet Jan maar Piet te zien
 *I need see not John but Pete
- iii Ik hoef Jan niet maar Piet te zien
 I need not see John, but Pete

- (95) a. Niet Judas weent of treurt ↔ (Dutch)
 Niet Judas weent en niet Judas treurt
 'Not Judas weeps or sorrows'
 b. Niet Judas weent en treurt ↔
 Niet Judas weent en niet Judas treurt
 'Not Judas weeps and sorrows'
 c. Niet de boer zit in de tuin of wandelt in het park ↔
 Niet de boer zit in de tuin en niet de boer wandelt in het park
 'Not the farmer sits in the garden or strolls in the park'
 d. Niet de boer zit in de tuin en wandelt in het park ↔
 Niet de boer zit in de tuin of niet de boer wandelt in het park
 'Not the farmer sits in the garden and strolls in the park'

Other elements that are both anti-additive and antimultiplicative are sentence negation *niet* in Dutch and *not* in English, as well as the Dutch adverbs *allesbehalve* 'anything but' and *allerminst* 'least of all, not at all':

- (96) a. Jan rookt of drinkt niet ↔ (Dutch)
 Jan rookt niet en drinkt niet
 b. John doesn't smoke or drink ↔ (= 96a)
 John doesn't smoke and doesn't drink
 c. Jan rookt en drinkt niet ↔
 Jan rookt niet of drinkt niet
 d. John doesn't smoke and drink ↔ (= 96c)
 John doesn't smoke or doesn't drink
 (97) a. Marie is allesbehalve gelukkig en tevreden ↔
 Marie is allesbehalve gelukkig of allesbehalve tevreden
 'Mary is anything but happy and satisfied'
 b. Marie is allesbehalve gelukkig of tevreden ↔
 Marie is allesbehalve gelukkig en allesbehalve tevreden
 'Mary is anything but happy or satisfied'
 (98) a. Het sneeuwt of regent allerminst ↔
 Het sneeuwt allerminst en het regent allerminst
 'It snows or rains not-at-all'
 b. Het sneeuwt en regent allerminst ↔
 Het sneeuwt allerminst of het regent allerminst
 'It snows and rains not-at-all'

Functions that are both anti-additive and antimultiplicative are called antimorphisms if they are also consistent and complete, i.e., if the properties defined in (82) and (83) apply as well. Given that sentence negation traditionally has been associated with the semantic notion of complementation, one would expect it to be antimorphic, and the same appears to hold for *allesbehalve* and *allerminst*. Zwarts (1986a) proves that noun phrases of the form *not Judas* and *not the teacher* are antimorphic as well, and that these must be the only types of antimorphic noun phrases.

The glosses show that a comparable situation exists in English. Cf. Van der Wouden (1988:171 n.12) and Jacobs (1982) for German.

It is, however, not easy to show linguistic reflections of consistency and completeness with these elements.

It is more easy to see that verbs cannot be antimorphisms in the sense that they are also consistent and complete. This would imply that these (MD) verbs would show the properties of negative raising and negative lowering as well. That is to say, these verbs would allow reasoning from $X V \text{ not } Y$ to $X \text{ not } V Y$ and backwards. Horn (1978a) observes that there exist no neg raising verbs with negative import; I assume that this amounts to saying that there are no MD verbs that show neg raising, which means that the relations in (82) do not hold, which in turn implies that there are no consistent MD verbs. Likewise, I do not know any complete MD verb, i.e. a MD verb that shows neg lowering.

It is probably good to give an overview of the relationships that exist between the various Boolean properties discussed thus far. I started with distinguishing upward and downward monotonic functions. These fall in the larger group of *continuous* functions. Continuous functions are defined as follows (Kas 1993:16):

(99) **Definition** Let B and B^* be two Boolean algebras.

A function f from B to B^* is *continuous* iff for arbitrary elements $X, Y, Z \in B$:
 $f(X \cap Y) \cap f(Y \cup Z) \subseteq f(Y)$.

Exactly $n N$ ($n > 1$) is an example of a NP denoting a continuous function that is neither upward nor downward monotonic. The counterpart of the continuous functions are the *discontinuous* functions: these lack the above property. Examples of such discontinuous functions from the realm of NPs are *less than two or more than four neighbors* and *an odd number of princes*.

The following picture shows the relations between the various subclasses; here and in the following, sets are supposed to contain all the sets below them.

(100)	continuous		discontinuous
	$f(X \cap Y) \cap f(Y \cup Z) \subseteq f(Y)$		$f(X \cap Y) \cap f(Y \cup Z) \not\subseteq f(Y)$
	increasing	decreasing	

The monotone increasing functions were further subdivided into additive functions and multiplicative ones; abstracting away from the extra requirements of consistency and completeness, the combination of additive and multiplicative properties results in homomorphisms. This is depicted below:

(101)	monotone increasing	
	$f(X \subseteq Y) \rightarrow f(X) \subseteq f(Y)$	
	multiplicative	additive
	$f(X \cap Y) = f(X) \cap f(Y)$	$f(X \cup Y) = f(X) \cup f(Y)$
	homomorphic	
	$f(X \cap Y) = f(X) \cap f(Y)$	
	$f(X \cup Y) = f(X) \cup f(Y)$	

Monotone decreasing functions, on the other hand, were subdivided into anti-additive and antimultiplicative functions. Again abstracting away from prob-

lems concerning completeness and consistency, antimorphisms can be seen as the cross-section of anti-additivity and antimultiplicativity. This yields the picture in (102):

monotone decreasing $f(X \subseteq Y) \rightarrow f(Y) \subseteq f(X)$	
antimultiplicative $f(X \cap Y) = f(X) \cup f(Y)$	anti-additive $f(X \cup Y) = f(X) \cap f(Y)$
antimorphic $f(X \cap Y) = f(X) \cup f(Y)$ $f(X \cup Y) = f(X) \cap f(Y)$	

This concludes my general overview of Boolean functions. In the next section I take a closer look at the decreasing ones.

1.4.3 Downward monotonicity and degrees of negativity

In the last section I showed that various types of natural language expressions correspond to various subclasses of downward monotonic functions. The overview is repeated below, with some examples for each of the subclasses. Note that all examples of linguistic expressions denoting monotone decreasing functions given here are more or less negative in an intuitive way.

monotone decreasing $f(X \subseteq Y) \rightarrow f(Y) \subseteq f(X)$ <i>few, seldom, hardly</i>	
antimultiplicative $f(X \cap Y) = f(X) \cup f(Y)$ <i>not every, not always</i>	anti-additive $f(X \cup Y) = f(X) \cap f(Y)$ <i>nobody, never, nothing</i>
antimorphic $f(X \cap Y) = f(X) \cup f(Y)$ $f(X \cup Y) = f(X) \cap f(Y)$ <i>not, not the teacher, not Judas</i> <i>allerminst, allesbehalve</i>	

Next to that, note that antimorphic functions are defined as the intersection of antimultiplicative and anti-additive ones, i.e., by the validity of the equivalences:

- (104) a. $f(X \cap Y) = f(X) \cup f(Y)$
b. $f(X \cup Y) = f(X) \cap f(Y)$

These equivalences are a generalization from the complement function \neg to arbitrary functions f of DeMorgan's laws known from classical logic, i.e., the proposition calculus and set theory:

- (105) a. $\neg(X \cap Y) = \neg(X) \cup \neg(Y)$
b. $\neg(X \cup Y) = \neg(X) \cap \neg(Y)$

In other words, antimorphic expressions correspond to *classical negation* (cf. Zwarts (1986a)).³⁸

38. Cf. Vondeling (1987) for criticism on Zwarts's usage of the terms minimal, regular and classical

The identity statement involving the operator = in the definitions in (104) can be taken apart into two statements with the subset operator \subseteq . This yields four implications:

- (106) a. $f(X \cap Y) \subseteq f(X) \cup f(Y)$
 b. $f(X) \cup f(Y) \subseteq f(X \cap Y)$
 c. $f(X \cup Y) \subseteq f(X) \cap f(Y)$
 d. $f(X) \cap f(Y) \subseteq f(X \cup Y)$

Zwarts (1981:357: n.27) notes that for monotone decreasing functions only (106b) and (106c) are valid.³⁹ According to Zwarts (1986a), this implies that downward monotonicity corresponds to negation in minimal logic. In other words, downward monotonicity can be seen as *minimal negation*.⁴⁰

Given that the property of downward monotonicity corresponds to (106b) and (106c), and that antimorphy validates all four rules in (106), it hardly will come as a surprise that the definitions of anti-additivity and antimultiplicativity correspond to subsets of (106) as well. In both cases three of the four implications are valid. Anti-additivity turns out to correspond to (106b), (106c), and (106d). Zwarts (1986a:351) calls this *regular negation*. This leaves no other possibility than that antimultiplicativity implies the validity of (106a), (106b), and (106c) (Zwarts 1986a:350). As far as I know, there is no special name for this type of negation.

The following table gives an overview of the dependencies between the various types of negation:

monotone decreasing (106b) and (106c) $f(X) \cup f(Y) \subseteq f(X \cap Y)$ $f(X \cup Y) \subseteq f(X) \cap f(Y)$	
antimultiplicative (106b), (106c), and (106d) $f(X) \cup f(Y) \subseteq f(X \cap Y)$ $f(X \cap Y) \subseteq f(X) \cup f(Y)$ $f(X \cup Y) \subseteq f(X) \cap f(Y)$ $f(X) \cap f(Y) \subseteq f(X \cup Y)$	anti-additive (106a), (106b), and (106c) $f(X \cap Y) \subseteq f(X) \cup f(Y)$ $f(X) \cup f(Y) \subseteq f(X \cap Y)$ $f(X \cup Y) \subseteq f(X) \cap f(Y)$ $f(X) \cap f(Y) \subseteq f(X \cup Y)$
antimorphic (106a), (106b), (106c), and (106d) $f(X \cap Y) \subseteq f(X) \cup f(Y)$ $f(X) \cup f(Y) \subseteq f(X \cap Y)$ $f(X \cup Y) \subseteq f(X) \cap f(Y)$ $f(X) \cap f(Y) \subseteq f(X \cup Y)$	

There exist many more downward monotonic expressions in natural language than those depicted in table (103). Some of these, however, lack the negative flavor of the earlier ones.

negation.

39. Proof that (106b) and (106c) follow from the definition of downward monotonicity is given in Zwarts (1986a:238).

40. Seuren (1985) uses the term *minimal negation*, as opposed to *radical negation*, to refer to 'ordinary' negation.

Consider for example the Dutch determiners *geen* 'no' and *alle* 'all'. Both are anti-additive in their first argument position (Zwarts 1983; Zwarts 1986a):

- (108) a. Alle kinderen die drinken of roken worden gestraft ↔ (Dutch)
 Alle kinderen die drinken worden gestraft en alle kinderen die roken worden gestraft
 'All children that drink or smoke will be punished'
 b. Geen kok die fluit of zingt is ongelukkig ↔
 Geen kok die fluit is ongelukkig en geen kok die zingt is ongelukkig
 'No cook who whistles or sings is unhappy'

These determiners are not antimultiplicative, hence not antimorphic, in their first argument, as the following biconditionals are certainly invalid:

- (109) a. Alle kinderen die drinken en roken worden gestraft ↯
 Alle kinderen die drinken worden gestraft of alle kinderen die roken worden gestraft
 'All children that drink and smoke will be punished'
 b. Geen kok die fluit en zingt is ongelukkig ↯
 Geen kok die fluit is ongelukkig of geen kok die zingt is ongelukkig
 'No cook who whistles and sings is unhappy'

The monotonicity properties of the first and second arguments of determiners turn out to be unrelated. For instance, although both *geen* and *alle* are both anti-additive in their first arguments, only *geen* is anti-additive in its second argument as well (Zwarts 1986a):

- (110) a. Geen piraat roofde of moordde ↔
 Geen piraat roofde en geen piraat moordde
 'No pirate robbed or murdered'
 b. Alle piraten roofden of moordden ↯
 Alle piraten roofden en alle piraten moordden
 'All pirates robbed or murdered'

Certain verbs are anti-additive as well. It has been claimed (Hoeksema 1983; Hoekstra 1989; Hoekstra 1991; Progovac 1992; Kas 1993) that verbs can only be anti-additive in their sentential arguments and not in noun phrase arguments.⁴¹ Next to that, it seems to be the case that if a verb has some negative properties, then it is anti-additive, i.e., on the one hand one doesn't find verbs that are antimorphic (cf. below), whereas on the other hand one doesn't find verbs that are only monotone decreasing.⁴²

41. Following Zwarts (1986a), Kas (1993:90) analyses apparent counterexamples such as the following as instances of free choice any:

- i The dean avoided any scandal
- ii This paper lacks any content

[iii] below, however, is treated differently:

- iii Hopoe disliked any crumbs on the carpet
- iv Hopoe disliked there being any crumbs on the carpet

[iii] is interpreted as an ellipsis or small clause construction, as it is claimed to be equivalent to, and perhaps derived from, [iv] (Kas 1993:97–8).

42. De Mey (1990:130) "I have not been able to find embedding verbs that are decreasing without being at the same time anti-additives."

- (111) a. Jan weigert te stelen of te roven ↔
 Jan weigert te stelen en Jan weigert te roven
 'John refuses to steal or to rob'
 b. De postbode ontkent dat hij rookt of drinkt ↔
 De postbode ontkent dat hij rookt en de postbode ontkent dat hij drinkt
 'The postman denies that he smokes or drinks'

The observation that certain comparative constructions may license NPIs is old (Jespersen 1917). Hoeksema (1983) has shown that the S-comparative (112a) — as opposed to the NP-comparative in (112b) — is anti-additive as well.⁴³ The same can be shown for the second argument of complex determiners of the type *more A than B* (Keenan 1992):

- (112) a. She is younger than Dave assumed or Sam expected ↔
 She is younger than Dave assumed and she is younger than Sam expected
 b. She is younger than Dave or Sam ↯
 She is younger than Dave and she is younger than Sam⁴⁴
 c. There are more sheep than cows or horses in the pasture ↔
 There are more sheep than cows in the pasture and there are more sheep than horses in the pasture

More evidence that the negative properties of the first and second arguments are independent is found in facts such as the following: *hoogstens n* 'at most n' is monotone decreasing in its first argument, but *niet alle* 'not all' is not, although both are MD in their second argument.

- (113) a. Hoogstens vijf sterren of kometen flonkeren →
 Hoogstens vijf sterren flonkeren en hoogstens vijf kometen flonkeren
 b. At most five stars or comets twinkle →
 At most five stars twinkle and at most five comets twinkle (= 113a)
 c. Niet alle tantes of ooms drinken koffie ↯
 Niet alle tantes drinken koffie en niet alle ooms drinken koffie
 d. Not all aunts or uncles drink coffee ↯
 Not all aunts drink coffee and not all uncles drink coffee (= 113c)

As far as I can see there exist no morphologically simple noun phrases that are monotone decreasing without being anti-additive at the same time (as is the case with *nobody* as we saw earlier). However, next to NP's such as *at most n N* and *few N*, complex NP's such as *bijna niemand* "almost nobody" and *vrijwel niets* "practically nothing" are simply monotone decreasing. The validity of the following implication shows this for English *almost nobody*:

- (114) Almost nobody bought a car
 $\llbracket \text{small car} \rrbracket \subseteq \llbracket \text{car} \rrbracket$

Almost nobody bought a small car

To see the validity of this reasoning, assume that *almost nobody P* is true for a predicate P iff the cardinality of the set P is less than say 20% of the cardinality of the set of people in the domain, and that *almost nobody P* is defined if it

43. Cf. however Hendriks (1993) and Hendriks (in progress).

44. This equivalence is valid under a "free choice" reading, which also occurs in *dogs or cats are allowed here*. Cf. Hoeksema (1983).

is actually true that *nobody P*.⁴⁵ Then reasoning from *almost nobody P* to a subset of *P* will never pass the threshold.

Does this quantifier possess other, stronger monotonicity properties? The answer must be no: *almost nobody* is not anti-additive. To see this, assume it were anti-additive. Then the following would hold:

(115) Almost nobody *P* or *Q* \leftrightarrow almost nobody *P* and almost nobody *Q*

Given the earlier assumptions, a model consisting of five people of which one person *Ps* and another one *Qs* constitutes a counterexample.

But the quantifier is not antimultiplicative either. If *almost nobody* were antimultiplicative the following would hold:

(116) Almost nobody *P* and *Q* \leftrightarrow almost nobody *P* or almost nobody *Q*

Again, given the earlier assumptions, a model consisting of five people of which *A* and *B* are in the denotation of *P* whereas *A* and *C* are in the denotation of *Q* is a counterexample.

The semantic properties of *vrijwel niets* ‘practically nothing’ follow the same pattern; discussion of the negativity of questions, superlatives etc. is postponed until section 1.6.

1.4.4 Concluding remarks

In this section I have discussed a typology of negative expressions based on Boolean properties. This typology resulted in the hierarchy given in (107). The weakest form of negation, minimal negation, corresponds to the Boolean property of downward monotonicity, whereas the strongest form, classical negation, corresponds to a combination of anti-additivity and antimultiplicativity, and may perhaps be seen as antimorphism in a linguistic guise. There turned out to be two intermediate forms, one corresponding to anti-additivity and known as regular negation, and one corresponding to antimultiplicativity.

Abstracting away from all technical details, it is still possible to develop some intuitions about negative contexts — although one should regularly return to the tests discussed in this section to check one’s intuitions. As a rule of thumb, assume that everything that feels negative, and everything that licenses NPIs, is monotone decreasing. This rule of thumb will be shown to be wrong as it stands, but it sort of works, like any rule of thumb.

The second rule of thumb is that antimorphic operators look and feel like sentence negation. This one I don’t particularly like, as it doesn’t work too well: it is hard for me to explain why I think that *not Judas*, *allerminst* and *not*, that are antimorphic, look and feel more like sentence negation than *never* and *nowhere* which are not.

The next rule of thumb is that one shall recognize antimultiplicative operators by their form. As far as I know, all antimultiplicative operators (if they are not anti-additive as well) are of the form of negated universals: *not all*, *not every*, *not always*, etc.

45. The latter assumption is not shared by everyone.

Finally, the difference between ‘ordinary’ monotone decreasing operators and anti-additives is that anti-additives do not allow for exceptions. Consider the monotone decreasing determiner *few* and its anti-additive counterpart *no*: one moment of reflection is enough to realize that a sentence with *no* may be falsified by one counterexample, whereas the same sentence with *few* doesn’t become false if one counterexample turns up. This means that *no* is a (negative) universal, whereas *few*, *not every* etc. are not. A comparable reasoning explains the difference between *John seldom sleeps* (with MD *seldom*) and *John never sleeps* (with anti-additive *never*): any moment of sleep will make the latter sentence a false one, whereas the former is not equally sensitive to counterevidence.

In the next section I will show how this hierarchy of negative expressions can be used to distinguish various classes of polarity items.

1.5 Negations and polarity items

Lexical items such as *allerminst* ‘not at all’, *een beetje* ‘a bit’ and *al* ‘already’ are positive polarity items, as they all yield ungrammaticality (or an echo-reading, which will be ignored until section 1.6.3) in the scope of sentence negation *niet*.

- (117) a. *De schoolmeester is *niet allerminst* gelukkig (Dutch)
The teacher is not not-at-all happy
b. *De schoolmeester is *niet een beetje* gelukkig
The teacher is not a bit happy
c. *De schoolmeester is *niet al* gelukkig
The teacher is not already happy

On the other hand, negative polarity items such as *kunnen uitstaan* ‘can stand’, *ook maar* ‘at all’ and *mals* in its idiomatic reading may be licensed by sentence negation, as the following examples show:

- (118) a. De kinderen *kunnen* de schoolmeester *niet uitstaan*
The children can the schoolmaster not stand
‘The children can’t stand the teacher’
b. De abt heeft het geheim *niet* aan *ook maar* iemand verteld⁴⁶
The abbot has the secret not to any body told
‘The abbot didn’t tell the secret to anybody’
c. Zijn oordeel was *niet mals*
His judgement was not tender
‘He was very harsh in his judgement’

In what follows I will show that these PPIs and NPIs do not show the same consequent behavior in other negative contexts. It will turn out that it is possible and fruitful to devise a typology of polarity items based on the acceptability of these items in the various classes of negative contexts that were defined in the last section.

It goes without saying that this typology is an idealization in the sense that every polarity item has its own unique, idiosyncratic distribution. But the same holds for all other lexical elements. For example, each and every verb has its own unique, idiosyncratic distributional pattern. Nevertheless, it is still possible to abstract away from some of the idiosyncrasies of the individual verbs and to generalize over verb classes such as transitives, factives, verb raising predicates, inchoative verbs and distributive predicates. The classes distinguished below should be appreciated at a comparable level of abstraction. This, in turn, doesn’t exclude occasional discussion of the idiosyncrasies of individual lexical items.

1.5.1 Polarity items and monotone decreasing contexts

Consider the following examples where positive polarity items interact with the monotone decreasing noun phrase *weinig monniken* ‘few monks’:

- (119) a. **Weinig monniken* zijn *allerminst* gelukkig
Few monks are not-at-all happy

46. Cf. footnote 69.

- b. *Weinig monniken zijn een beetje gelukkig*
Few monks are a bit happy
'Few monks are a bit happy'
- c. *Weinig monniken zijn al naar Rome geweest*
Few monks are already to Rome been
'Few monks have already been to Rome'

Of these three PPIs only *allerminst* resists combination with the NP *weinig monniken* (119a) and leads to ungrammaticality.

The second argument of determiners of the type *hoogstens n* 'at most n' shows the same picture:

- (120) a. **Hoogstens vier sterren flonkeren allerminst*
At most four stars twinkle not-at-all
- b. *Hoogstens vier sterren flonkeren een beetje*
At most four stars twinkle a bit
'At most four stars twinkle a bit'
- c. *Hoogstens zeven kometen zijn al door mensen bezocht*
At most seven comets are already by people visited
'At most seven comets have already been visited by man'

The pattern returns in the first argument of this determiner:

- (121) a. **Hoogstens zes paarden die de haver allerminst verdienen krijgen ze ook*
At most six horses that the oats not-at-all deserve get it also
- b. *Hoogstens zes paarden die de haver een beetje verdienen krijgen ze ook*
At most six horses that the oats a bit deserve get it also
'At most six horses that deserve the oats a bit get it as well'
- c. *Hoogstens zes paarden die de haver al verdiend hebben krijgen ze ook*
At most six horses that the oats already deserved have get it also
'At most six horses that have deserved the oats already get it as well'

Here are the relevant examples with some other types of monotone decreasing operators: the adverb *nauwelijks* 'hardly' and the noun phrase *vrijwel niets* 'practically nothing':

- (122) a. **Paarden krijgen nauwelijks allerminst haver*
Horses hardly get not-at-all oats
- b. *Oude paarden krijgen nauwelijks een beetje aandacht*
Old horses get hardly a bit attention
'Old horses hardly get a bit of attention'
- c. *We hadden nauwelijks al de maaltijd beëindigd toen tante belde*
We had hardly already the meal finished when aunt called
'Hardly had we finished our meal, when aunt called up'
- (123) a. **Vader abt is met vrijwel niets allerminst tevreden*
Father abbot is with practically nothing not-at-all happy
- b. *Vader abt is met vrijwel niets een beetje tevreden*
Father abbot is with practically nothing a bit happy
'Father abbot is reasonably happy with almost nothing'
- c. *Vader abt is met vrijwel niets al tevreden*
Father abbot is with practically nothing already happy
'Father abbot is already happy with the minimum'

Note that *allerminst* yields ungrammaticality in all sentences where it is in the scope of a monotone decreasing expression, independent of whether or not this expression contains an overt negation. It thus constitutes a counterexample to Ladusaw's claim in (63) that PPIs resist overt negation (unless the examples above are considered to be cases of overt negation — which makes the claim more or less vacuous).

Allerminst is not alone in this respect: on the basis of examples comparable to the following, Van der Wouden (1988) concludes that *inderdaad* 'indeed, actually', *niet* 'not' and *verre van* 'far from' resist monotone decreasing operators as well:

- (124) a. **Hoogstens vier sterren flonkeren inderdaad*
At most four stars twinkle indeed
b. **Paarden krijgen nauwelijks inderdaad haver*
Horses get hardly indeed oats
c. **Vader abt is met vrijwel niets niet tevreden*⁴⁷
Father abbot is with practically nothing not satisfied
d. **Hoogstens zes paarden die verre van oud zijn worden geslacht*
At most six horses that far from old are are butchered

I will call elements that are incompatible with downward monotonicity strong PPIs, along the following lines:

(125) **Definition** *Strong PPIs* are incompatible with all monotone decreasing contexts. In the light of this result, combined with Ladusaw's hypothesis concerning the characterization of contexts licensing negative polarity items (55), it is reasonable to pay some attention to the interaction of monotone decreasing contexts and NPIs. Consider the following examples:

- (126) a. *Weinig monniken kunnen vader abt uitstaan*
Few monks can father abbot stand
'Few monks can stand father abbot'
b. **Weinig monniken zullen ook maar iets bereiken*
Few monks will at all anything achieve
c. **Van weinig monniken was de kritiek mals*
Of few monks the criticism was tender

Note that both the sentence with *mals* (126c) and the one with *ook maar* (126b) are ungrammatical; only *kunnen uitstaan* yields a grammatical result in combination with the NP *weinig monniken* (126a).

Parallel results are obtained when the NPIs occur in the second argument of the determiner *hoogstens n*, that is downward monotonic as well.⁴⁸

47. This sentence is grammatical if *niet* has scope over *vrijwel niets*, i.e., under the reading 'Father abbot is not satisfied with practically nothing (he wants more)'.

48. Linebarger (1987:375) claims that *at most QP* does *not* license NPIs unless *QP* represents a small number within the domain under consideration.

i At most three people in this room have anything to say about Cantonese reversible verbs

ii *At most 99 out of 100 linguists has anything to say about Cantonese reversible verbs

Linebarger's reasoning is invalid, since she is comparing two quantifiers that are not of the same type, viz. *at most X* and *at most X out of Y*. The following shows that these two quantifiers do not have the same monotonicity properties:

- (127) a. *Hoogstens drie monniken kunnen de abt uitstaan*
At most three monks can the abbot stand
'At most three monks can stand the abbot'
- b. **Hoogstens drie nonnen kennen ook maar een paar woorden Fries*
At most three nuns know any a few words Frisian
- c. **Na hoogstens drie lezingen was de kritiek mals*
After at most three lectures was the criticism tender

The first argument of the determiner *hoogstens n* doesn't behave differently, as the following examples show:

- (128) a. *Hoogstens drie monniken die de abt kunnen uitstaan zullen heilig worden*
At most three monks that the abbot can stand will holy become
'At most three monks that can stand the abbot will become holy'
- b. **Hoogstens zes nonnen die ook maar een woord Fries kenden bleven over*
At most six nuns that any words Frisian knew were left
- c. **Hoogstens drie lezingen waarop de kritiek mals was werden gepubliceerd*
At most three lectures which-on the criticism tender was were published

Finally, the same pattern is found when these NPIs are combined with the adverb *nauwelijks* 'hardly' or an NP such as *vrijwel niemand*:

- (129) a. *De abt kan de meeste monniken nauwelijks uitstaan*
The abbot can the most monks hardly stand
'The abbot can hardly stand most of the monks'
- b. **Nauwelijks heeft ook maar iemand een woord gezegd*
Hardly has any body a word said
- c. **De kritiek op de lezing was nauwelijks mals*
The criticism on the lecture was hardly tender
- (130) a. *De abt kan vrijwel niemand uitstaan*
The abbot can practically nobody stand
'The abbot can stand practically nobody'
- b. **Vrijwel niemand heeft ook maar een woord gezegd*
Practically nobody has any a word said
- c. **Vrijwel niemand had malse kritiek op de lezing*
Practically nobody had tender criticism on the lecture

The examples involving *ook maar* and *mals* leave no other conclusion than that Ladusaw's hypothesis (55) that monotone decreasing contexts may function unconditionally as triggers for NPIs is wrong. I propose the following alternative:

- (131) **Hypothesis** Downward monotonicity is a necessary condition for licensing of NPIs, but for certain NPIs it is not a sufficient condition.

Kunnen uitstaan is not alone in its behavior. Consider the following examples, involving *ooit* 'ever', *een pretje* 'a bit of fun' and *hoeven* 'need' (Zwarts 1981; Van der Wouden 1985; Van der Wouden 1992b; Zwarts 1993):

iii At most three people in this room snore or dream → At most three people in this room snore and at most three people in this room dream

iv At most 2 out of 3 linguists snore or dream ↗ At most 2 out of 3 linguists snore and at most 2 out of 3 linguists dream

- (132) a. *Hoogstens dertig mensen zijn ooit op de maan geweest*
 At most thirty people are ever on the moon been
 'At most thirty people have ever been on the moon'
 b. *Het is niet altijd een pretje om aan je proefschrift te werken*
 It is not always a fun to on your dissertation to work
 'It's not always fun to work on your dissertation'
 c. *Je hoeft here nauwelijks huiswerk te maken*
 You need hier hardly homework to make
 'You hardly need make homework here'

From this I conclude that there exists a class of NPIs that occurs in all monotone decreasing contexts.⁴⁹ These items will be called weak negative polarity items.

- (133) **Definition** *Weak negative polarity items* are expressions which can felicitously occur in monotone decreasing contexts.

Why they are called weak negative polarity items will become clear shortly.

1.5.2 Polarity items and anti-additive contexts

Zwarts (1981) conjectures that Ladusaw's hypothesis should be reformulated in such a way that two classes of NPIs are distinguished. According to Zwarts, *hoeven* and other members of that class may be licensed by all monotone decreasing contexts, whereas *ook maar* is only happy in anti-additive contexts.⁵⁰ I showed in my (1985, 1988) that anti-additivity is a relevant factor in the distribution of PPIs as well.

Consider the following examples, where the anti-additive noun phrase *geen schoolmeester* 'no teacher' is combined with various PPIs:

- (134) a. **Geen schoolmeester is allerminst gelukkig* (Dutch)
 No teacher is not-at-all happy
 b. **Geen schoolmeester is een beetje gelukkig*
 No teacher is a bit happy
 c. *Geen schoolmeester is al gelukkig*
 No teacher is already happy
 'No teacher is already happy'

Note that the NP *geen schoolmeester* yields an ungrammatical result when it is combined with the PPIs *allerminst* (134a) or *een beetje* (134b), but that its combination with *al* is fine (134c). The following examples show that this is no accident, as the same effect is found with the anti-additive noun phrase *niemand* 'nobody':

- (135) a. **Niemand is allerminst gelukkig*
 Nobody is not-at-all happy
 b. **Niemand is een beetje gelukkig*
 Nobody is a bit happy

49. For problems involving the distribution of *ooit* and *hoeven* I refer to sections 1.5.5 and 1.6.4.

50. Actually, Zwarts (1981) uses set theoretical terminology and talks about 'filters' and 'ideals' (cf. section 1.5.6). The current terminology is more useful since it generalizes properties of quantifiers to functions in general.

- c. *Niemand is al gelukkig*
 Nobody is already happy
 'Nobody is happy already'

The very same effect can be found in the first argument of the determiner *alle* 'all', another anti-additive context.

- (136) a. **Alle* varkens die *allerminst* mager zijn worden geslacht
 All pigs that not-at-all skinny are will be slaughtered
 b. **Alle* varkens die *een beetje* vet zijn worden geslacht⁵¹
 All pigs that a bit fat are will be slaughtered
 c. *Alle* varkens die *al* vet zijn worden geslacht
 All pigs that already bit fat are will be slaughtered
 'All pigs that are already fat will be slaughtered'

This pattern returns with other types of anti-additive contexts: constructions involving the preposition *zonder* 'without', the adverb *nooit* 'never', and certain verbs and comparative constructions.⁵² Relevant examples are given below.

- (137) a. *De koning kwam aan *zonder* dat het land *allerminst* verheugd was
 The king arrived without that the country not-at-all delighted was
 b. *De storm trok voorbij *zonder een beetje* schade aan te richten
 The tempest passed without a bit of harm to do
 c. De abt gaf een aanwijzing *zonder al* direct het hele geheim te vertellen
 The abbot gave a hint without already immediately the whole secret to tell
 'The abbot gave a hint without spilling the beans completely'
- (138) a. *De bakker heeft *nooit allerminst* sigaren gerookt
 The baker has never not-at-all cigars smoked
 b. **Nooit* heeft de student *een beetje* gesjoemeld met zijn examens
 Never has the student a bit cheated with his exams
 c. *Nooit* eerder heeft vader abt *al* over het geheim gesproken
 Never before father abbot has talked about the secret
 'Never before father abbot has talked about the secret'
- (139) a. *De dief *weigert allerminst* te stelen
 The thief refuses not-at-all to steal
 b. *De agent *ontkent* de verdachte *een beetje* te hebben geslagen
 The policeman denies the suspect a bit to have hit
 c. De abt *ontkent* het geheim *al* door te hebben verteld
 The abbot denies the secret already through to have told
 'The abbot denies to already have spilled the beans'
- (140) a. *Ze is jonger *dan* David *allerminst* verwacht had
 She is younger than David not-at-all expected had
 b. *Zijn moeder liet minder na *dan* Gerard *een beetje* verwacht had
 His mother left less than Gerard a bit expected had

51. This sentence is rather acceptable: cf. section 1.6.4 for discussion.

52. Hoeksema (1983) explains the observation that *ook maar* turns up in some comparative constructions (viz., the S-comparative) and not in others (viz., the NP-comparative) in terms of the fact that the S-comparative denotes an anti-additive function, whereas the NP-comparative doesn't. Cf., however, the work of Petra Hendriks (1993, in progress) for a somewhat different view.

- c. Zijn moeder liet nog minder na *dan* Gerard *al* verwacht had
 His mother left even less than Gerard already expected had
 'His mother left even less than Gerard had already expected'

The anti-additive contexts discussed here show again that it is the *semantic* properties of certain contexts that PPIs are sensitive to. Strong PPIs such as *allerminst* that are excluded from monotone decreasing contexts yield ungrammaticality in anti-additive contexts as well. As the latter class is a proper subset of the former, this is hardly surprising.

It has moreover become clear that PPIs such as *een beetje* that are allowed to occur in MD contexts are forbidden in anti-additive environments. I will call these elements PPIs of medium strength.⁵³ I claim:

(141) **Definition** PPIs of medium strength are compatible with downward monotonic contexts but incompatible with anti-additive ones.

Een beetje is not the only PPI of medium strength: in my (1988) I claim that expressions such as *nogal* 'rather', *maar* 'but' and *soms* 'sometimes' belong to this class as well. This claim is justified by means of examples such as the following:

- (142) a. **Geen van de krijgsheren is nogal mager geworden*
 None of the warlords is rather skinny become
 b. **Niemand ging maar naar huis*⁵⁴
 Nobody went but home
 c. **Geen monnik is soms plotseling heilig*
 No monk is sometimes suddenly holy

Consideration of the following sentences makes clear that comparable things happen with negative polarity items.

- (143) a. *Geen kind kan de schoolmeester uitstaan*
 No child can the schoolmaster stand
 'No child can stand the teacher'
 b. *Geen kind zal ook maar iets bereiken*
 No child will anything reach
 'No child will reach anything'
 c. **Geen oordeel was mals*
 No judgement was tender

The expression *mals* in its idiomatic reading turns out to be equally ungrammatical in an anti-additive context (143c) as it was in MD contexts, and *kunnen uitstaan* yields grammatical sentences in both types of negative contexts. Interestingly enough, however, *ook maar* has shifted from ungrammaticality in MD contexts to grammaticality in an anti-additive one.

The following examples show that this is again not an accident, as the same effect is found with the anti-additive noun phrase *niemand* 'nobody':

53. They are called "strong" in Zwarts (1993) and Kas (1993).

54. In my (1988), I base my classification of *maar* on sentences such as *Niemand heeft maar één boek gelezen* 'Nobody has but one book read', but that sentence is completely acceptable for most speakers. I assume that the various meanings of *maar* distinguished in Foolen (1993) may have different properties in terms of polarity sensitivity.

- (144) a. *Niemand kan de schoolmeester uitstaan*
 Nobody can the schoolmaster stand
 'Nobody can stand the teacher'
 b. *Niemand zal ook maar iets bereiken*
 Nobody will anything reach
 'Nobody will reach anything'
 c. **Je kunt van niemand een mals oordeel verwachten*
 You can from nobody a tender criticism expect

Another anti-additive context, the first argument of the determiner *alle* 'all', shows the same picture:⁵⁵

- (145) a. *Alle leerlingen die de meester kunnen uitstaan* geven hem een cadeau
 All students that the teacher can stand give him a present
 'All students that can stand the teacher give him a present'
 b. *Alle honden die ook maar iemand gebeten hebben* worden afgemaakt
 All dogs that any body bitten have are killed
 'All dogs that have bitten anybody are killed'
 c. **Alle kritiek die mals is* wordt genegeerd
 All criticism that tender is is ignored

Need I say that the same pattern is found in the other anti-additive contexts: *zonder*, *nooit*, verbs and comparatives? The following host of examples demonstrates this.

- (146) a. *De koning regeerde jarenlang zonder dat iemand hem kon uitstaan*
 The king ruled years-long without that anybody him could stand
 'The king ruled for years while nobody could stand him'
 b. *De storm trok voorbij zonder ook maar enige schade aan te richten*
 The tempest passed without any harm to do
 'The tempest passed without doing any harm'
 c. **De kritiek was serieus zonder mals te zijn*
 The criticism was serious without tender to be
- (147) a. *De bakker heeft zijn vrouw nooit kunnen uitstaan*
 The baker has his wife never can stand
 'The baker never could stand his wife'
 b. *Nooit heeft deze student ook maar iets gepresteerd*
 Never has this student any thing achieved
 'This student has never achieved anything'
 c. **De kritiek van vader abt was nooit mals*
 The criticism of father abbot was never tender
- (148) a. *De dief ontkent de agent te kunnen uitstaan*
 The thief denies the policeman to can stand
 'The thief denies that he can stand the policeman'
 b. *Vader abt weigert ook maar iets van het geheim te vertellen*
 Father abbot refuses any thing of the secret to tell
 'Father abbot refuses to tell anything of the secret'
 c. **De schoolmeester ontkent dat de kritiek mals was*
 The teacher denies that the criticism was tender

⁵⁵ Seuren (1985:241n) observes that *each*, although MD in its first argument, does not license NPIs there. Cf. Kadmon & Landman (1993:378 ff.) for discussion.

- (149) a. Ze is jonger *dan* David *kan uitstaan*
 'She is younger than David can stand'
 b. Zijn moeder liet minder na *dan ook maar* iemand verwacht had
 His mother left less than anybody expected had
 'His mother left less than anybody had expected'
 c. *De champagne was beter *dan* de kritiek *mals* was
 The champagne was better than the criticism tender was

The above examples show a consistent pattern of grammaticality judgements over the various types of negative contexts: the syntactic properties of the various triggers do not play any role.

The behavior of *ook maar* is not unique: rather, *ook maar* is a member of a larger class. Many expressions of minimal quantity seem to fall into this class, for example the verbal idioms *een hand voor ogen zien* 'see a hand before the face' and *met een vinger aanroeren* 'touch with a finger'.

- (150) a. **Niet alle kinderen konden een hand voor ogen zien*
 Not all children could a hand before eyes see
 b. *Geen van de padvinders kon een hand voor ogen zien*
 None of the scouts could a hand before eyes see
 'None of the scouts could see his hand before his face'
 c. *Niemand kon een hand voor ogen zien*
 Nobody could a hand before eyes see
 'Nobody could see his hand before his face'
 d. *De padvinder zag geen hand voor ogen*
 The scout saw no hand before eyes
 'The scout couldn't see his hand before his face'
- (151) a. **Weinig Nederlanders hebben de schat met een vinger aangeroerd*
 Few Dutch have the treasure with a finger touched
 b. *Geen Nederlander heeft de schat met een vinger aangeroerd*
 No Dutch has the treasure with a finger touched
 'No Dutchman has touched the treasure'

I will call *ook maar* and its colleagues negative polarity items of medium strength.⁵⁶ They are defined by their potential to be triggered by anti-additivity. In other words:

- (152) **Definition** *NPIs of medium strength* may be licensed by anti-additive contexts but not by downward monotonic ones.

1.5.3 Polarity items and antimorphic contexts

In (117) it was shown that no positive polarity item is allowed to occur in the scope of sentence negation. Sentence negation, however, is not the only element that triggers this effect: an antimorphic adverb such as *allesbehalve* 'anything but' triggers the same ungrammaticality judgements.

- (153) a. **De schoolmeester is allesbehalve allerminst gelukkig*
 The teacher is anything but not-at-all happy

⁵⁶ These items are called "strong" in Zwarts (1993) and Kas (1993).

- b. *De schoolmeester is *allesbehalve een beetje* gelukkig
The teacher is anything but a bit happy
- c. *De schoolmeester is *allesbehalve al* gelukkig
The teacher is anything but already happy

Replacement of *allesbehalve* by the adverb *dikwijls* ‘often’ that is not antimorphic makes the sentences impeccable, which proves that it is indeed antimorphism that causes the ungrammaticality:

- (154)
- a. De schoolmeester is *dikwijls allerminst* gelukkig
The teacher is often not-at-all happy
‘The teacher is often not at all happy’
 - b. De schoolmeester is *dikwijls een beetje* gelukkig
The teacher is often a bit happy
‘The teacher is often quite happy’
 - c. De schoolmeester was *dikwijls al* gelukkig
The teacher was often already happy
‘The teacher was often happy already’

Additional proof comes from the fact that the antimorphic adverb *allerminst* yields ungrammaticality again with all PPIs under discussion:

- (155)
- a. *De schoolmeester is *allerminst allerminst* gelukkig
The teacher is not-at-all not-at-all happy
 - b. *De schoolmeester is *allerminst een beetje* gelukkig
The teacher is not-at-all a bit happy
 - c. *De schoolmeester is *allerminst al* gelukkig
The teacher is *allerminst* already happy

Allerminst and *een beetje* are still ungrammatical when combined with the various antimorphic operators — a fact that is hardly surprising in the light of the fact that antimorphic operators form a subset of the anti-additives. The PPI *al* ‘already’, however, yields ungrammaticality in the various antimorphic contexts as well. In my (1985, 1988), I showed that *al* is not alone in this respect: among others, *nog* ‘still’ and *ooit* ‘ever’ have comparable distributional patterns: they are fine with anti-additive *niemand* ‘nobody’, but lead to ungrammaticality with antimorphic expressions such as *niet* ‘not’, *allerminst* and *geenszins* ‘not at all’.⁵⁷

- (156)
- a. *Niemand* wil *nog* Donne lezen
Nobody wants still Donne read
‘Nobody wants to read Donne anymore’
 - b. *Jan wil *niet nog* Donne lezen
John wants not still Donne read
 - c. *Jan wil *allerminst nog* Donne lezen
John wants not-at-all still Donne read
- (157)
- a. *Niemand* wil mij *ooit* helpen
Nobody wants me ever help
‘Nobody ever wants to help me’

⁵⁷. Note that *ooit* is characterized as a (weak) PPI here, whereas it was called a (weak) NPI earlier in 1.5.1. This problem will be solved in section 1.5.5.

- b. *Iedereen wil mij *niet ooit* helpen
Everybody wants me not ever help
- c. *Iedereen wil mij *geenszins ooit* helpen
Everybody wants me not-at-all ever help

That is reason to distinguish a third class of PPIs, the weak ones. I define them as follows:

(158) **Definition** *Weak PPIs* may occur in downward monotonic and anti-additive contexts, but they incompatible with antimorphic ones.

Moreover, on the basis of the grammaticality patterns in (117), (153) and (155), I come to the conclusion that negation and other antimorphic contexts are indistinguishable as far as positive polarity items are concerned. This leads to the following generalization:

(159) **Hypothesis** No PPI is compatible with antimorphic contexts.

How about NPIs and antimorphic contexts? Negative polarity items such as *kunnen uitstaan* 'can stand', *ook maar* 'at all', and *mals* in its idiomatic reading may be licensed by sentence negation, as was already demonstrated in (118).

Replacing *niet* by the antimorphic adverb *allerminst* 'not at all' results in the same grammaticality patterns:

- (160)
- a. De kinderen *kunnen* de schoolmeester *allerminst uitstaan*
The children can the schoolmaster not-at-all stand
'The children can't stand the teacher in the least'
 - b. De abt heeft het geheim *allerminst* aan *ook maar* iemand willen vertellen⁵⁸
The abbot has the secret not-at-all to any body want tell
'The abbot didn't want to tell the secret to anybody at all'
 - c. Zijn oordeel was *allerminst mals*
His judgement was not-at-all tender
'He was pretty harsh in his judgement'

On the other hand, if *allerminst* is replaced by *dikwijls* 'often' that is not antimorphic the result is dramatically ungrammatical:

- (161)
- a. *De kinderen *kunnen* de schoolmeester *dikwijls uitstaan*
The children can the schoolmaster often stand
 - b. *De abt heeft het geheim *dikwijls* aan *ook maar* iemand willen vertellen
The abbot has the secret often to any body want tell
 - c. *Zijn oordeel was *dikwijls mals*
His judgement was often tender

It must be concluded from these and other examples that negation and other antimorphic contexts are indistinguishable as far as negative polarity items are concerned. In other words, with respect to the semantic properties relevant for the triggering of polarity effects, all antimorphic contexts are alike.⁵⁹ Moreover, *mals* is not the only NPI that may only be triggered by antimorphic contexts,

58. Cf. footnote 69.

59. As Jack Hoeksema points out to me, this is not completely true, as certain NPIs may be triggered by a few MD elements only. A case in point is Dutch *eens* 'once' in its use as a modal particle meaning 'even' (cf. also Kürschner (1983:121) on German *einmal*):

- i Hij wou me niet eens helpen
He wanted me not once help
'He didn't even want to help me'

i.e., classical negations.⁶⁰ Idiomatic *pluis* (literally ‘plush’) and *voor de poes* (literally ‘for the cat’) show comparable behavior: they are ungrammatical in anti-additive contexts, but fine in antimorphic ones:⁶¹

- (162) a. *Het is *nooit pluis* in Leeuwarden
It is never PLUIS in Leeuwarden
b. Het is *niet pluis* in Leeuwarden
It is not PLUIS in Leeuwarden
‘There is something wrong in Leeuwarden’
c. Het is *allerminst pluis* in Leeuwarden
It is not-at-all PLUIS in Leeuwarden
‘There is definitely something wrong in Leeuwarden’
- (163) a. Die AIO is *niet voor de poes*
That graduate student is not for the cat
‘That graduate student is not to be trifled with’
b. *Die AIO is *nooit voor de poes*
That graduate student is never for the cat
c. *Die AIO is *nergens voor de poes*
That graduate student is nowhere for the cat
d. Die AIO is *geenszins voor de poes*
That graduate student is not-at-all for the cat
‘That graduate student is certainly not to be trifled’
e. *Die AIO is *niet altijd voor de poes*
That graduate student is not always for the cat
f. *Die AIO is *zelden voor de poes*
That graduate student seldom for the cat

That means that there is reason to postulate a third class of strong negative polarity items.⁶² I claim that they have to be defined as follows:

- (164) **Definition** Strong NPIs may only be licensed by antimorphic contexts.

ii *Jij wilt me *allerminst eens helpen*
You want me not at all once help

I assume that this is a collocational effect: cf. section 1.6.4 and chapter 3.

60. In Jack Hoeksema’s corpus I found one example of *mals* triggered by *geen* ‘no’: *geen malse kritiek* ‘no tender criticism’, which sounds pretty good to me. Note that *mals* may not occur in relative clauses depending on *geen*: **geen kritiek die mals is blijft ongestraft* ‘no criticism that tender is remains unpunished’ is ungrammatical. Perhaps the first argument of *geen* is antimorphic, but composition with the complementizer of the subordinate clause results in a context that is only anti-additive.

61. Some informants have the following judgements:

- i *Het is *nooit pluis* in Leeuwarden
It is never PLUIS in Leeuwarden
ii Het is *niet altijd pluis* in Leeuwarden
It is not always PLUIS in Leeuwarden
‘There is sometimes something wrong in Leeuwarden’
iii *Het is *zelden pluis* in Leeuwarden
It is seldom PLUIS in Leeuwarden
iv Het is *niet pluis* in Leeuwarden
It is not PLUIS in Leeuwarden
‘There is something wrong in Leeuwarden’

Perhaps antimultiplicativity defines yet another class of NPIs for these speakers: cf. section 1.5.6.

62. This class is called ‘superstrong’ in Zwarts (1993) and Kas (1993).

Krifka (1994) claims that there is no need to distinguish such a class of strong NPIs: according to Krifka, these NPIs “are nothing but a part of an idiom, consisting of a VP-negation and a particle.” The examples given above where strong NPIs such as *mals*, *pluis* and *voor de poes* are licensed by antimorphic operators like *allerminst* and *allesbehalve* show that this position cannot be maintained.

I finish this section by noting that the strong NPI *mals* that needs an antimorphic licenser cannot be licensed by *niet* in a superordinate clause. Compare the following sentences:

- (165) a. De kritiek zal *niet mals* zijn
The criticism will not tender be
'The criticism will be harsh'
- b. *Het is *niet* zo dat de kritiek *mals* zal zijn
It is not so that the criticism tender will be
- c. Het is te verwachten dat de kritiek *niet mals* zal zijn
It is to expect that the criticism not tender will be
'It is to be expected that the criticism will be harsh'
- d. *Het is *niet* te verwachten dat de kritiek *mals* zal zijn
It is not to be expected that the criticism tender will be
- e. Ik denk dat de kritiek *niet mals* zal zijn
I think that the criticism not tender will be
'I expect the criticism to be harsh'
- f. *Ik denk *niet* dat de kritiek *mals* zal zijn⁶³
I think not that the criticism tender will be

Suppose that these observations are correct. Then there are three ways of taking care of them: the generalization about the distribution of *mals* is augmented by the restriction that its trigger should be in the same clause, it is shown that *mals* in the above examples is not in an antimorphic position, or it is assumed that consistency (82) and completeness (83) play a role after all.

The validity of the following equivalences shows that the second approach should not be taken:

- (166) a. Het is niet zo dat de kritiek vriendelijk of aardig was ↔
Het is niet zo dat de kritiek vriendelijk was en het is niet zo dat de kritiek aardig was
- b. It is not the case that the criticism was nice or friendly ↔
It is not the case that the criticism was nice and it is not the case that the criticism was friendly (= 166a)
- c. Het is niet zo dat de kritiek vriendelijk en aardig was ↔
Het is niet zo dat de kritiek vriendelijk was of het is niet zo dat de kritiek aardig was
- d. It is not the case that the criticism was nice and friendly ↔
It is not the case that the criticism was nice or it is not the case that the criticism was friendly (= 166c)

63. For some of my informants, this sentence is fine.

This indicates that the sentential prefix *het is niet zo dat* and its English counterpart *it is not the case that* are both antimultiplicative and antimorphic.

Rather than stipulating a clausemate restriction for *mals* and its trigger, I want to argue that consistency and completeness play a role in the licensing of this NPI.⁶⁴ Consider the following examples:

- (167) a. Het is niet zo dat Jan dood is \leftrightarrow Het is zo dat Jan niet dood is
 b. It is not the case that John is dead \leftrightarrow It is the case that John is not dead

In the case of absolute predicates such as *dead*, denying the statement that the predicate holds is equivalent to asserting that the predicate doesn't hold. In other words, in that case the sentential prefix is consistent and complete.

But now consider the following examples involving the somewhat more complex predicate *ongelukkig* and its equivalent *unhappy*:

- (168) a. Het is niet zo dat Jan ongelukkig is \nrightarrow Het is zo dat Jan niet ongelukkig is
 b. It is not the case that John is unhappy \nrightarrow It is the case that John is not unhappy

I claim that the equivalences do not hold anymore. Consider a scale of happiness such as the following:

- (169) happy | neither happy nor unhappy | unhappy

From the theory of litotes developed in section 2.3 (cf. also Horn (1991)) it follows that an utterance such as *John is not unhappy* refers to the middle area of the scale above, i.e., that the sentence is equivalent to the statement *John is neither happy nor unhappy*. However, the statement *it is not the case that John is happy* is true if John's happiness is anywhere on the scale to the left of the rightmost section. If that is right, it implies that *it is not the case that John is unhappy* is not equivalent to *it is the case that John is not unhappy*. This proves that the sentential prefix *it is the case that* is not a homomorphism in the strict sense that it is additive, multiplicative, consistent and complete.

But given the fact that only the composition of an antimorphic functor such as *niet* or *not* with a homomorphic operator yields an antimorphism (Zwarts 1986a; Kas 1993), this result implies that the sentential prefixes *het is niet zo dat* and *it is not the case that* are not antimorphisms, at least not in the strict sense that they are consistent (82) and complete (83). If it is assumed that *mals* needs an antimorphic licenser in this strict sense, it follows that it cannot be licensed by the sentential prefix *het is niet zo dat* without any stipulation of a clause mate restriction.

1.5.4 A semantic classification of polarity items

It is probably good to repeat and list the results with respect to Dutch polarity items. Following Zwarts, I will talk about "laws" instead of "generalizations":⁶⁵

64. Cf. also footnote 60.

65. In Van der Wouden (1985) I proposed no less than four degrees of PPIs. This very fine-grained division was based on rather controversial grammaticality judgements (Zwarts 1986a; De Hoop 1987). In later work (Van der Wouden 1988; Van der Wouden 1992b) a three-fold division comparable

(170) **Laws of polarity**

- a. Strong PPIs are incompatible with all monotone decreasing contexts (125)
- b. PPIs of medium strength are compatible with downward monotonic contexts but incompatible with anti-additive ones (141)
- c. Weak PPIs are compatible with downward monotonic and anti-additive contexts, but incompatible with antimorphic ones (158)
- d. Weak NPIs are expressions which can felicitously occur in monotone decreasing contexts (133)
- e. NPIs of medium strength may be licensed by anti-additive contexts but not by downward monotonic ones (152)
- f. Strong NPIs may only be licensed by antimorphic contexts (164)

Replacing terminology from Boolean algebra by more linguistic terms, this amounts to a hierarchy of polarity items that is directly related to the hierarchy of negative expressions developed in section 1.4:

(171) **Corollary**

- a. Minimal negation prohibits the occurrence of strong PPIs and licenses the occurrence of weak NPIs
- b. Regular negation prohibits the occurrence of PPIs of medium strength and licenses the occurrence of NPIs of medium strength
- c. Classical negation prohibits the occurrence of all PPIs and licenses the occurrence of all NPIs

The following table (where '+' denotes grammaticality and '-' ungrammaticality) illustrates that PPIs and NPIs are not in complementary distribution, but rather show a sort of mirror image structure.

Negation	PPI			NPI		
	strong	medium	weak	strong	medium	weak
(172) Minimal	-	+	+	-	-	+
Regular	-	-	+	-	+	+
Classical	-	-	-	+	+	+

The fine-structure demonstrated in this table yields a host of counterexamples and problems for all theories that claim the presence or absence of an abstract negative element *NEG* or *not* to be the crucial factor in triggering polarity effects, either semantically or syntactically. There is no way in which a binary system may account for the rich variation of polarity items found in natural language; a more fine-grained semantics is called for.⁶⁶

to the one given here is defended, which seems to be more acceptable (Zwarts 1993). Cf., however, section 1.6.4.

66. Actually, this is not completely true: Progovac (1988) does a pretty fine job in distinguishing various classes of negative polarity items and explaining differences in behavior by means of assuming a number of additional parameters such as (obligatory, optional, forbidden) raising at LF (logical form), variations in the part or parts of the Binding Theory involved, and the structural position of the negative operator in (deep) syntax or at logical form. If one doesn't share these assumptions her story collapses.

1.5.5 Bipolar elements

In the above, three classes of Dutch positive polarity items were distinguished, and three classes of negative polarity items. I list them in the table below. If you combine this table with the last one, you can read off acceptability predictions for the various combinations of polarity items and negative contexts.

PPI		
strong	medium	weak
allerminst inderdaad niet verre van	een beetje nogal maar soms	al nog ooit

(173)

NPI		
strong	medium	weak
mals pluis voor de poes	ook maar hand voor ogen met een vinger	kunnen uitstaan ooit een beetje hoeven

Note that the element *ooit* 'ever' occurs twice in the table, both as a weak PPI and a weak NPI. How is this possible? Seuren (1976:n. 3) and Hoeksema (1986b) assume that there exist two lexical items *ooit*, one NPI and one PPI. The theory given above offers an alternative. I assume that it is not impossible that there exist lexical elements that show a combination of NPI and PPI behavior, and I think that *ooit* exemplifies this possibility. Nothing in the theory so far forbids such a conspiracy of various factors, i.e., the simultaneous operation of several restrictions on the distribution of words (cf. also chapter 3). This being said, consider the following sentences:

- (174)
- *Een van de kinderen gaat *ooit* bij oma op bezoek
One of the children goes ever with granny on visit
 - Weinig kinderen gaan *ooit* bij oma op bezoek
Few children go ever with granny on visit
'Few children ever visit granny'
 - Geen van de kinderen gaat *ooit* bij oma op bezoek
None of the children goes ever with granny on visit
'None of the children ever visits granny'
 - *Een van de kinderen gaat niet *ooit* bij oma op bezoek
One of the children goes not ever with granny on visit

The theory developed here offers a way to explain these data. Assume that *ooit* 'ever' combines properties of negative and positive polarity items. I propose to call it a 'bipolar item'.⁶⁷ In this view, it is a negative polarity item (of the weakest type) as it is uncomfortable in a context that is not monotone decreasing, such as (174a), and fine in monotone decreasing (174b) and anti-additive (174c) contexts. On the other hand, it is a (weak) positive polarity item in causing un-

67. Van Os (1989) uses the term 'bipolar' to denote elements that are neither PPI nor NPI.

grammaticality in antimorphic contexts (174d). Note that the ungrammaticality of the last sentence is problematic for the approach with two items *ooit*, as NPI *ooit* should be fine with MD *niet*.

In order to deal with such cases one might be inclined to claim that the sequence *niet ooit* 'not ever' is blocked by the existence of the word *nooit* 'never'. One might also think of an ad hoc adjacency filter that explicitly rules out strings where negation and *ooit* are too close together, e.g. the 'Berührungsbeschränkung' of Jacobs (1982). The data below, however, suggest that (174d) is ungrammatical for the reason given. The examples clearly show that *ooit* is also excluded from the scope of the antimorphic operators *allesbehalve* 'anything but' and *allerminst* 'not at all'.

- (175) a. *Een van de kinderen gaat *allesbehalve ooit* bij oma op bezoek⁶⁸
 One of the children goes anything-but ever with granny on visit
 b. *Een van de kinderen gaat *allerminst ooit* bij oma op bezoek
 One of the children goes not at all ever with granny on visit

This account seems to be refuted by the fact that there are cases where *ooit* occurs together with *niet* and *allesbehalve*, such as in the following examples:

- (176) a. Het is *niet* zo dat een van de kinderen *ooit* bij oma op bezoek gaat
 It is not so that one of the children ever with granny on visit goes
 'It is not the case that one of the children ever visits granny'
 b. Het is *allerminst* gemakkelijk om *ooit* de top te bereiken
 It is not-at-all easy to ever the top to reach
 'It is not at all easy to ever reach the top'

Note, however, that *niet* and *allerminst* are not in the same clause as *ooit* in these examples. I think this is crucial. In section 1.4 it was claimed that transitive verbs are additive and multiplicative, but not consistent and complete. Assume then that the composition of an antimorphic operator in the main clause and the complementizer results in a context that is anti-additive but not antimorphic, thus creating a context where *ooit* feels fine (cf. also the discussion of the sentences in (166)).⁶⁹

In theories that attribute polarity effects to (underlying or surface) negation, examples such as (174a) through (174d) are both unexpected and unexplainable. They fit, however, perfectly well in a semantically oriented theory such as the one developed here.⁷⁰

68. Actually, this sentence is grammatical, but only under a different reading: cf. footnote 70.

69. Some of my informants are less than happy with sentences where *niet* or *allerminst* is in the same clause as *ook maar*, such as (118) and (160). It might be the case that *ook maar* is bipolar as well, i.e., that it is a negative polarity item of medium strength and a weak positive polarity item at the same time. All other things being equal, I prefer such an approach over yet another adjacency filter that explicitly rules out strings where negation (or any other antimorphic operator) and *ook maar* are too close together.

70. Matters with respect to *ooit* are slightly more complicated than is suggested here. This is caused by the fact that *ooit* is losing part of its NPI character (Hoeksema (1992c) and Zwarts and Hoeksema in unpublished research), or rather, develops a kind of free choice reading. Nowadays one finds sentences such as *Ik ben ooit in Parijs geweest* 'I have ever [i.e. once upon a time] been in Paris' that were considered ungrammatical at the beginning of this century.

The I-NPIs of Serbo-Croatian (Progovac 1988; Progovac 1993) may constitute another instance of bipolar elements. Assume that Progovac's claim that I-NPIs (beginning with the particle *i*) can indeed be licensed by a distant negation, but not by a local negation, is descriptively right.

- (177) a. Ne kažem [da je iko dolazio] (Serbo-Croatian)
 Not say-1SG that is anyone come
 'I am not saying that anyone came'
- b. *Milan ne vidi i-ko-ga
 Milan not sees any-who-Acc
- c. *Milan ne tvrdi [da Marija misli [da je iko dolazio]]
 Milan not claims that Mary thinks that is anyone come
 'Milan does not claim that Mary thinks that anyone came'

Rather than postulating all kinds of movement at various syntactic and semantic levels, assume that Serbo-Croatian I-NPIs are bipolar elements. This means that they are, on the one hand, NPIs in the sense that they occur in monotone decreasing (or perhaps anti-additive: there is not enough data here) contexts only. On the other hand they are strong PPIs in the sense that they do not occur in antimorphic contexts, which explains why they do not occur in the (direct) scope of clausemate negation. I predict that these items are fine with negative quantifiers such as *nobody* or *never* in the same clause — if such things exist in this language.

1.5.6 Where is antimultiplicativity?

In the hierarchy of negative expressions of section 1.4, there are two classes of intermediate strength: antimultiplicativity and anti-additivity. Anti-additivity plays an important role in the typology of polarity items developed in this section, but antimultiplicativity is nowhere to be found. Why not?

A priori there are two possibilities. On the one hand there may exist a principled reason why anti-additivity does play a role in natural language and why antimultiplicativity doesn't. Bill Ladusaw suggested that the latter may be the case. On the other hand, it is also possible that I haven't looked closely enough, and that there do exist elements or phenomena that are sensitive to antimultiplicativity. I will pursue both possibilities below.

According to Ladusaw's suggestion, anti-additivity is the combination, or rather intersection, of two independent properties, viz. end of scale polarity and downward monotonicity. At least since Ladusaw (1979) it is known that downward monotonicity is a relevant notion in language (cf. also Van Benthem (1986), Hoeksema (1986a) and Sánchez Valencia (1991)). How about end of scale polarity?

Apart from Fauconnier's work on pragmatic scales as an explanation for the behavior of certain types of negative polarity items (cf. section 1.2), scalar endpoints have been discussed in the context of the distribution of words such as English *absolutely* (Horn 1972) and Dutch *vrijwel* 'virtually' (Klein 1993).

Following McCawley (in unpublished work) and Dahl (1970), Horn observes that *absolutely* may be used only to modify endpoints of linearly ordered scales (Horn 1972:113 ff.). Consider the following examples:

- (178) a. Absolutely all
b. *Absolutely some
c. Absolutely no
- (179) a. Absolutely always/everywhere
b. *Absolutely sometimes/somewhere
c. Absolutely never/nowhere
- (180) a. That is absolutely wonderful
b. *That is absolutely good
c. *That is absolutely bad
d. That is absolutely terrible
- (181) a. I absolutely love snails
b. *I absolutely like snails
c. *I absolutely dislike snails
d. I absolutely loathe snails

Horn formulates the following

- (182) **Hypothesis** *Absolutely* is restricted so as to precede the ‘universal’ element, the end-point, on any scale. (Horn 1972:116)

The same notion seems to play a role in the distribution of the Dutch adverb *vrijwel*. Klein (1993) generalizes:

- (183) **Hypothesis** An expression modified by *vrijwel* must contain a zero-point in its meaning. Approximation of this zero-point must be possible.⁷¹ (Klein 1993:118)

The following examples show that an endpoint is indeed needed:

- (184) a. Hij is vrijwel blind (Dutch)
‘He is virtually blind’
b. *Hij is vrijwel slechtziend
He is virtually with poor eyesight
c. Hij kan vrijwel niet zien
‘He can virtually not see’
d. Vrijwel alle studenten zijn geslaagd
‘Virtually all students passed’
e. *Vrijwel de meeste studenten zijn geslaagd
‘Virtually the most students passed’
f. Vrijwel geen student is geslaagd
‘Virtually no students passed’

71. The condition that it must be possible to approximate the endpoint means that the ordering has to be dense (Partee *et al.* 1990:51), i.e. that there exists a third element on the scale between any two elements on the scale. If that constraint is too tight then at least trivial dichotomous orderings such as {1, 0} and {pregnant, not pregnant} should be ruled out. Compare the following cases:

- i *Wat je zegt is vrijwel waar
What you say is virtually true
ii *Marie is vrijwel zwanger
Mary is virtually pregnant
iii What you say is absolutely true

The last example shows that this density constraint doesn’t hold for *absolutely*, at least not as strongly.

In lattice theoretic terms, Horn's (explicit) and Klein's (implicit) notion of scale corresponds to a partial ordering. As a partial ordering differs from a simple scale in that it has a vertical direction, the endpoint of a scale is either the top element or the bottom element, if there is one.

A partial ordering with a bottom element is known as an ideal (Partee *et al.* 1990:Ch. 11):

(185) **Definition** An ideal I of a lattice L is a non-empty subset of L such that both of the following hold:

if $a \in I, b \in L$ and $b \leq a$, then $b \in I$

if $a, b \in I$, then $(a \vee b) \in I$.

In other words, ideals are closed under subsets and unions.

The duals of ideals are known as filters. That is, a filter is a partial ordering with a top element (Partee *et al.* 1990:Ch. 11):

(186) **Definition** A filter F of a lattice L is a non-empty subset of L such that both of the following hold:

if $a \in F, b \in L$ and $b \geq a$, then $b \in F$

if $a, b \in F$, then $(a \wedge b) \in F$.

In other words, filters are closed under supersets and intersections.

The restrictions on the distribution of *absolutely* and *vrijwel* may now be reformulated as follows:⁷²

(187) **Hypothesis** *Absolutely* and *vrijwel* may only modify filters and ideals.

Boolean algebras are special types of lattices.⁷³ This implies that it must be possible to map the lattice theoretic terms just used unto Boolean terminology. And indeed this is the case: Zwarts (1986a) relates ideals to anti-additive functions and filters to multiplicative functions.⁷⁴ In other words: multiplicative functions correspond to upward monotonic semilattices, whereas anti-additive functions correspond to downward monotonic semilattices. This yields the following:

(188) **Corollary** *Absolutely* and *vrijwel* may only modify multiplicative and anti-additive functions.

Shifting terminology again, and given that filters and ideals are in 1-to-1 correspondence to the endpoints of join and meet semilattices respectively, and that these two types of semilattices are the only types of semilattices that exist, this can be restated as follows:

(189) **Corollary** *Absolutely* and *vrijwel* may only modify endpoints of semilattices.

If that is true, the absence of antimultiplicativity in the classification of polarity items may be explained away. Given that there exist lexical items that occur in monotone decreasing contexts only, and given that there exist lexical elements that are sensitive to endpoints of semilattices, it is not surprising that there exist elements that are sensitive to both properties (cf. section 1.5.5 and chapter 3 for discussion of the interaction of various types of constraints). But the intersection

72. Abstracting away from the density demand discussed in footnote 71.

73. To be precise (Partee *et al.* 1990:197): A Boolean algebra is a Boolean lattice, i.e. a complemented distributed lattice, in which 0, 1, and complementation are also considered to be operations.

74. Actually, the relations established are those between quasi-filters and multiplicative functions (Zwarts 1986a:332) and between quasi-ideals and anti-additive functions (Zwarts 1986a:334).

of downward monotonicity and semilattices is anti-additivity.

According to this line of thinking, negative polarity items of medium strength such as *ook maar* combine some of the properties of *any* and *absolutely*: they demand that their context is downward monotonic and they need a top or bottom element, i.e. a semilattice structure, to which they can refer. If this reasoning is correct, positive polarity items of medium strength like *een beetje* are excluded both from monotone decreasing contexts and from semilattices.

Note that this notion of combinations of constraints offers additional justification for the earlier suggestion that there exist bipolar elements, i.e., lexical items that combine properties of NPIs and PPIs.

Of course this reduction of anti-additivity to other properties is highly speculative and not without problems. To make this approach more plausible, one should be able to come up with the dual of *absolutely* or *vrijwel*, i.e., a modifier that cannot combine with filters and ideals.⁷⁵ Next to that, it is an open question whether it is possible to find a comparable explanation for the existence of strong negative polarity items and weak positive polarity items, i.e., NPIs that occur in antimorphic contexts only and PPIs that are excluded from such contexts only. Perhaps an answer may be found in terms of sensitivity to (strict) complementation.

The following Dutch data involving the element *even* constitute an empirical problem for this approach.⁷⁶ The literal meaning of *even* is 'equally'; under this reading it is not a polarity item. But the word has an idiomatic reading as well that is restricted to certain negative contexts. The following examples give an impression of *even*'s distribution under this idiomatic reading:

- (190)
- a. We zijn niet allemaal even gelukkig met dit voorstel
We are not all equally happy with this proposal
'We're not all that happy with this proposal'
 - b. *We zijn niet even gelukkig met dit voorstel
We are not equally happy with this proposal
 - c. Niet iedereen is even gelukkig met dit voorstel
Not everybody is equally happy with this proposal
'Not everybody is all that happy with this proposal'
 - d. *Iedereen is even gelukkig met dit voorstel⁷⁷
Everybody is equally happy with this proposal
 - e. *Niemand is even gelukkig met dit voorstel
Nobody is equally happy with this proposal
 - f. Ik heb niet altijd even veel geluk in de loterij
I have not always equally much luck in the lottery
'I am not always that happy in the lottery'
 - g. *Weinig mensen zijn even gelukkig met dit voorstel
Few people are equally happy with this proposal

75. Jack Hoeksema (P.C.) suggests that *nogal* 'rather' might be such an element.

76. Thanks to Jack Hoeksema for the observation.

77. This sentence is grammatical, but only if it means 'everybody is totally happy with this proposal', and not under the intended reading.

Example (190a) shows that *even* is fine with the antimultiplicative operator *niet allemaal* ‘not all’; (190b) shows that sentence negation, that is antimorphic, cannot license *even*. The element is fine with antimultiplicative *niet iedereen* ‘not everybody’ (190c), but combination with its counterpart *iedereen* ‘everybody’ in (190d) yields ungrammaticality again. Combination with anti-additive *niemand* results in ungrammaticality in (190e), but the combination with antimultiplicative *niet altijd* ‘not always’ in (190f) is again fine. Finally, monotone decreasing contexts such as produced by *weinig mensen* ‘few people’ cannot license *even* in the idiomatic reading.

These data suggest that *even* occurs in antimultiplicative contexts only. If *even* were the only element with this type of behavior, I would ignore it or explain its distribution by collocational effects (chapter 3). The following examples, however, seem to indicate that *rozegeur en maneschijn* ‘perfume of roses and moonshine’ shows a comparable distribution:⁷⁸

- (191) a. Het leven is niet alles rozegeur en maneschijn
The life is not all perfume of roses and moonshine
‘Life is not a bed of roses’
- b. *Het leven is alles rozegeur en maneschijn
The life is all perfume of roses and moonshine
- c. *Het leven is allerminst rozegeur en maneschijn
The life is not-at-all perfume of roses and moonshine
- d. *Het leven is nooit rozegeur en maneschijn
The life is never perfume of roses and moonshine
- e. *Het is zelden rozegeur en maneschijn
It is seldom perfume of roses and moonshine
- f. Het is niet altijd rozegeur en maneschijn
It is not always perfume of roses and moonshine
‘Life is not a bed of roses’

These examples show that *rozegeur en maneschijn* can only occur in the scope of antimultiplicatives such as *niet alles* ‘not all’ and *niet altijd* ‘not always’. Combinations of this NPI with the downward entailing expression *zelden* ‘seldom’, anti-additive *nooit* ‘never’, and antimorphic *allerminst* ‘not at all’ are ungrammatical.

The examples in (190) and (191) suggest that perhaps a fourth class of negative polarity items should be distinguished after all (one wonders how it should be named). Moreover, if the data in footnote 61 are trustworthy, there

78. A possible counterexample to the idea that *rozegeur en maneschijn* can be licensed by antimultiplicatives only is *Jij denkt maar dat het altijd rozegeur en maneschijn is* ‘You think that life is a bed of roses (but it isn’t)’. The modal particle *maar* has a lot of usage possibilities (Foolen 1993). In some of its uses *maar* triggers indisputable NPIs such as *hoeven*: *Je hoeft maar te bellen en ik sta voor je klaar* ‘You just call me and I’ll be ready for you’. Other real text counterexamples are *die de ontkenning zijn van rozegeur en maneschijn* ‘that the negation are of perfume of roses and moonshine’, *Het levensverhaal van Simon Wiesenthal is er geen van rozegeur en maneschijn* ‘the life story of S.W. is not one of perfume of roses and moonshine’, and *niet alleen maar rozegeur en maneschijn* ‘not only perfume of roses and moonshine’. The last one is perfectly natural, the others sound more like wordplay or extensions of normal use.

exist NPIs that may be licensed by antimultiplicatives only (viz. *even* and *rozegeur en maneschijn*) as well as NPIs whose licenser should be antimultiplicative or stronger (viz. *pluis*).

The following table gives an overview of the distribution of the Dutch negative polarity items I discussed thus far:⁷⁹

	MD	anti-add.	antimult.	antimorph.
(192) <i>hoeven</i>	+	+	+	+
<i>ooit</i>	+	+	+	-
<i>ook maar</i>	-	+	-	-
<i>hand voor ogen</i>	-	+	-	+
<i>pluis</i>	-	-	+	+
<i>even</i>	-	-	+	-
<i>mals</i>	-	-	-	+

This table may be taken as counterevidence against a reductionist approach to semantic properties such as anti-additivity as discussed above. This counterevidence, however, is not conclusive as yet: it is based on subtle judgements of only a few informants about rare lexical items.

Given that there are four factors that all can have either the value + or -, there are 16 types possible. The table only gives 7. If all possible types could be found, the reductionist approach could be rejected. Until then, I am hesitant to draw any definitive conclusion, and prefer to leave settlement of this uncertainty for further research.

1.5.7 A note on the situation in other languages

In the foregoing sections I have shown that Dutch PPIs and NPIs come in sorts. I will now argue that this is not an idiosyncrasy of Dutch.

In Van der Wouden (1992b) the claim is made that various types of English NPIs should be distinguished, just as it is the case in Dutch. Consider the following examples involving the NPIs *a bit*, *yet* and *any*:

- (193) a. Chomsky wasn't a bit happy about these facts
 b. Chomsky didn't talk about these facts yet
 c. Chomsky didn't talk about any of these facts
- (194) a. *No one was a bit happy about these facts
 b. No one has talked about these facts yet
 c. No one talked about any of these facts
- (195) a. *At most three linguists were a bit happy about these facts
 b. *At most three linguists have talked about these facts yet
 c. At most three linguists have talked about any of these facts

Given that *at most three* is downward monotonic, *no one* anti-additive and *not* antimorphic, these data suggest that *any* is a weak NPI, *yet* is an NPI of medium strength, and that *a bit* cannot be anything else than a strong NPI.⁸⁰

79. I assume that footnote 69 justifies the - for *ook maar* in the antimorphic column.

80. Progovac (1993:165) claims that English punctual *until* can only be licensed by negation, which I take as an indication that it is a strong NPI. According to McCawley (1988:562-3), something comparable holds for *half bad*.

As regards English PPIs, the situation is less clear. Ladusaw (1979:Ch. 6) claims that in English all PPI's are excluded from monotone decreasing contexts containing a negation (cf. section 1.3.3 above). This generalization is refuted by examples given there and others such as the following, where the PPIs *some* and *already* seem to be fine in such contexts:

- (196) a. Not more than three guests have eaten *some* of the soup
 b. Not more than seven customers have *already* paid their bills

I therefore propose to re-interpret Ladusaw's generalization as equivalent to the statement that English PPI's uniformly abhor *anti-additive* contexts: neither *already* nor *some* or *rather* may be combined with sentence negation either. The following examples, taken from Ladusaw (1979:134), however, suggest that something more is at stake, viz., that there exist various types of PPI's in English as well:⁸¹

- (197) a. *Someone hasn't eaten *some* of his soup
 b. *John hasn't *already* finished the exam
 c. *John wouldn't *rather* be in Cleveland
- (198) a. *No one ate *some* of the soup
 b. *No one has *already* finished the exam
 c. *No one would *rather* be in Cleveland
- (199) a. ?Few people ate *some* of the soup
 b. Few people have *already* finished the exam
 c. Few people would *rather* be in Cleveland
- (200) a. ?Hardly anyone ate *some* of the soup
 b. ?Hardly anyone has *already* finished the exam
 c. Hardly anyone would *rather* be in Cleveland

No other conclusion is possible than that English PPIs come in sorts as well, just like English NPIs and just like PPIs in Dutch. And the null hypothesis would be that the same factors, viz. degrees of negativity, play an important role in the definition of these sorts.

It has been claimed that there exist two types of negative polarity items in Serbo-Croatian (Progovac 1988; Progovac 1993). According to Progovac (1993), NI-NPIs (beginning with the prefix *ni-*) are licensed only by clausemate negation:

- (201) a. Milan ne voli niko-ga (Serbo-Croatian)
 Milan not loves noone-ACC
 'Milan does not love anyone'
- b. *Ne tvrđi-m da Milan voli niko-ga
 Not claim-1SG that Milan loves noone-ACC
 'I do not claim that Milan loves anyone'

81. The judgements are Ladusaw's, who admits they are delicate; sentences (197) have no star, but a question mark in Ladusaw (1979), but according to the text these sentences can only be denials, readings that are excluded from the current discussion. The asterisks in these examples are, as usual, not intended to mean 'ungrammatical under any meaning', but rather 'ungrammatical under the intended meaning', the intended meaning being the one where the positive polarity item is construed within the scope of sentence negation.

- c. *Sumnja-m da Milan voli niko-ga
 Doubt-1SG that Milan love noone-ACC
 'I doubt that Milan loves anyone'

An alternative explanation of these facts would run as follows: suppose that NI-NPIs are of the strong type, and suppose that complement sentences constitute at most anti-additive, but never antimorphic contexts (cf. sections 1.4 and 1.7). Then these facts follow immediately.⁸²

I-NPIs, on the other hand, beginning with the particle *i*, can be licensed by a distant negation, but not by a clausemate negation. Such cases have been dealt with in section 1.5.5, where they were analyzed as bipolar elements.

Finally, the difference in behavior between the Chinese NPIs *renhe* 'any' and *conglai* 'ever' as described by Progovac (1988) fits in this approach as well.

Conglai 'ever' only occurs with clausemate negation. It is ungrammatical without negation, but also in questions, in conditionals, or complements of adversative predicates. It is likewise not licensed by superordinate negation.⁸³

- (202) a. *Ta conglai kanjian Mali (Chinese)
 He ever see Mary
 *'He has ever seen Mary'
- b. Ta conglai meiyou kanjian Mali
 He ever did-not see Mary
 'He has never seen Mary'
- c. *Ta conglai kanjian Mali ma?
 He ever see Mary Q
 *'Has he ever seen Mary?'
- d. *Ta conglai kan-meikanjian Mali
 He ever see-not-see Mary
 *'Has he ever seen Mary?'
- e. *Ruguo ta conglai kanjian Mali qing gaosu wo
 If he ever see Mary then tell me
 *'If he has ever seen Mary, tell me'
- f. *Ta jujue conglai gen Mali shuo-ha
 He refuse ever with Mary talk-language
 *'He refused to ever talk with Mary'
- g. *Zhangasan meiyou shuo ta conglai kanjian quo Mali
 John did-not say he ever see Asp Mary
 *'John did not say that he had ever seen Mary'

This suggests that *conglai* is a negative polarity item of the strongest type, comparable to Dutch *mals*: only an antimorphic context is negative enough to license this element.

82. In Van der Wouden & Zwarts (1992) an alternative analysis of NI-NPIs in terms of negative concord is proposed. I will return to this issue in chapter 2.

83. Normally I don't give translations of ungrammatical sentences, but in this case I follow Progovac in doing so.

Renhe, on the other hand, is more like an NPI of the weak sort, as it occurs in the other downward entailing contexts:⁸⁴

- (203) a. Ta bu xihuan renhe dongxi (Chinese)
 He not like any thing
 'He does not like anything'
 b. Ruguo ta xihuan renhe dongxi qing gaosu wo
 If he like any thing then tell me
 'If he likes anything, tell me'
 c. Ta jujue gen renhe ren shuo-hua
 He refuse with any one talk-language
 'He refuses to talk to anyone'

More research is needed to prove the validity of the suggestive remarks made above. I hope to have made clear, however, that the theory developed here offers enough freedom to cover a large body of data without having to postulate movement, raising at LF and things like that.

1.5.8 Concluding remarks

In this section I argued for a classification of polarity items, both positive and negative ones, based on mathematical, i.e. semantic properties. I showed that the classification of negative contexts developed in section 1.4 defines a tripartite classification of negative and positive polarity items in a straightforward and consistent way. I claimed that the distribution of certain lexical items, bipolar elements, are best described by assuming that they combine NPI-like and PPI-like behavior. This approach carries over to polarity items in other languages.

I have tried to give an explanation for the existence of such a tripartite classification by describing the middle group of polarity items in terms of a combination of negative polarity (understood as restriction to monotone decreasing contexts) and end of scale polarity (seen as sensitivity to filters and ideals). After that, I gave empirical arguments against such a reduction: there are indications that a fourth group of polarity items, sensitive to antimultiplicativity, should be distinguished.

In chapter 2, I will demonstrate that the classification of negative contexts proposed here is also fruitful to describe and explain other natural language phenomena for which negation is held responsible traditionally.

84. *Renhe* is reportedly not licensed by long distance negation:

- i *Wo meiyou gaosu guo ta ni zuo renhe shiqing
 I did-not tell ASP he you do any matter
 'I did not tell him that you did anything'

NPI licensing is clause bound in general: only negative raising predicates may license NPIs over the boundary of a clause (section 1.7.1). Compare the following English sentences with *think*, which is a neg raising verb, and *say*, which is not:

- ii Nobody thinks John will lift a finger to help Mary
 iii *Nobody says John will lift a finger to help Mary

I assume that *gaosu* 'tell' is not a NR predicate either. Negative raising is a lexical property: although the possibility of being a neg raising predicate is restricted to a certain class of predicates, it is unpredictable whether or not a particular element of this class has the property (Horn 1978a). The examples in (177) suggest that the Serbo-Croatian verbs 'say', 'see' and 'claim' are NR predicates.

1.6 Negative contexts and downward monotonicity

This section discusses some apparent or real challenges for the theory developed so far. Sometimes positive polarity items occur in negative contexts without causing ungrammaticality; it also happens that negative polarity items lead to ungrammaticality, although they seem to be in a negative context. Moreover, sometimes negative polarity items show up in contexts that are apparently or provably not monotone decreasing. Puzzles of this kind are addressed below.

1.6.1 Grammatical PPIs in negative contexts

There are various cases of a positive polarity item co-occurring with a negation or, more general, an expression that is monotone decreasing. Firstly, a negation can be used to explicitly deny a statement containing a PPI:

- (204) a. A: I'd *rather* be in Greenland.
 B: I'm sure you *wouldn't rather* be in Greenland — You're just saying that to please me
 b. A: We'd *better* leave now
 B: No, we *hadn't better* leave now — we've still got a lot to do

The explicit denial of positive polarity items is the clearest instance of Seuren's 'echo-effect' where "the negation is felt to have the function of indicating that there is something radically amiss with that sentence as a whole" (Seuren 1985:233) (cf. also section 2.4).

I assume that all echo readings are instances of metalinguistic negation, a topic that will be addressed below (section 1.6.3).⁸⁵

Secondly, some apparent negations do "not count as negative for the purposes of syntactic rules that are sensitive to negation" (McCawley 1988:571 ff.). This becomes clear from the fact that they do not license *any* or other NPI's. McCawley's term is "fake negations":

- (205) a. You *wouldn't rather* be in Tahiti, would you?
 b. I wonder if we *hadn't better* call Fred before we leave
 (206) a. *You *wouldn't rather* eat *anything*, would you?
 b. *I wonder if we *hadn't better* *budge*

In my view, the *n't* in questions and other NPI-licensing environments is an instance of the more general phenomenon of paratactic negation (Jespersen 1917; Van der Wouden 1992b). I will return to this type of "illogical negation" in chapter 2.⁸⁶

Thirdly, there are the cases originally discussed by Baker (1970), reviewed in section 1.3, and repeated below.

85. Seuren talks about "radical negation" here, which for him is a special negation that cancels all presuppositions. He explicitly denies that radical negation is the same as metalinguistic negation: see Seuren (1985:240–1) for discussion.

86. Another possibility is that these cases reduce to the Baker cases of the next group. Note that this fake negation cannot be left out without dramatically changing the meaning of the sentence, whereas concordant negation as it occurs in paratactic negation usually is optional, i.e., it has no influence on the meaning of the whole.

- (207) a. *I *wouldn't rather* be in Montpellier
 b. There *isn't anyone* in this camp who *wouldn't rather* be in Montpellier
 c. *Someone *hasn't already* solved this problem
 d. You *can't* convince me that someone *hasn't already* solved this problem

Various approaches have been proposed for this type of examples. Ladusaw (1979) assumes that negation *n't* is ambiguous between normal negation and metalinguistic negation (cf. below 1.6.3), and that the highest negation necessarily gets the metalinguistic reading. Van der Wouden (1987) argues that this leads to massive lexical ambiguity, as many, if not all, MD contexts seem to be able to cancel the effect of an embedded negation. Under Ladusaw's assumption all MD contexts having this property should have a metalinguistic reading as well. Van der Wouden (1987) therefore proposes a solution in terms of function composition of monotone decreasing functions. In general, the composition of two MD functions yields a monotone increasing function; Zwarts (1986a) and Kas (1993) give many details concerning the composition of the various subclasses of MD functions. This approach seems to work for PPIs. For NPIs it is, however, not unproblematic, as will become clear in the next section.

Finally, combinations of weak negations and weak PPIs are fine: a weak PPI such as Dutch *al* 'already' isn't bothered by an expression of minimal negation such as *weinig* 'few'. Such cases were already discussed in section 1.5.

1.6.2 Ungrammatical NPIs in negative contexts

There also exist cases of negative sentences in which (certain) NPIs yield ungrammaticality or an echo-reading (cf. below). The various types parallel the cases of PPIs allowed under negation:

Firstly, as metalinguistic negation (on which section 1.6.3) functions differently from normal negation with respect to positive polarity items, it is hardly surprising that it cannot license negative polarity items.⁸⁷

- (208) a. A: Have you ever been in Canada?
 *B: I have NOT ever been in Canada: I was born and raised there
 b. A: Did he bat an eyelash when his guppyfish died?
 *B: He did not exactly bat an eyelash: he cried his heart out for days!

Secondly, "fake negations" in questions may not license negative polarity items, as they do not express negation. Examples already given in (206) are repeated below. The topic will be discussed in chapter 2 in the section on paratactic negation.⁸⁸

87. Following footnote 1, the sentences in echo-reading are marked ungrammatical here. In the intended (echo-)reading they are, however, perfectly fine.

88. Probably, reduction to the Baker cases (cf. footnote 86) is more appropriate here, as the sentences here are ungrammatical under all interpretations, including echo-reading. What may be more relevant is the effect described in section 1.7.3 that in general NPIs (such as *any* here) and PPIs (*would rather*) cannot occur in one and the same clause.

- (209) a. *You wouldn't rather eat anything, would you?
 b. *I wonder if we hadn't better budge

Thirdly, negative contexts may "cancel out": although the NPI *any* is usually perfectly fine in the scope of sentence negation, this effect may be canceled by other negative elements in the sentence.⁸⁹

- (210) a. *There isn't anyone here who wouldn't rather do *anything* down town
 (Baker 1970:(46a))
 b. *We are *surprised* that more people haven't yet asked for *any* evidence of progress
 (Baker 1970:(75))

This cancellation, however, doesn't occur always:

- (211) a. There isn't anyone here who wouldn't do *anything* down town
 b. We are *surprised* that more people haven't asked for *any* evidence of progress

These examples will be dealt with in the section on scope (1.7).

Finally, strong negative polarity items such as *half bad* and *a bit* cannot be combined with weak negative expressions such as *only NP* or *at most three linguists*. This type of cases was already discussed in section 1.5.

1.6.3 Metalinguistic negation

Metalinguistic negation is defined by Horn (1989:363) as "a device for objecting to a previous utterance on any grounds whatever, including the conventional or conversational implicata it potentially induces, its morphology, its style or register, or its phonetic realization." This kind of negation may, for example, deny the felicity of the usage of certain linguistic means to convey a meaning in a given context.⁹⁰

- (212) a. It's not BernstEEn, it's BernstAin!
 b. It's not wait on, it is wait for
 c. You do not loath me: you just dislike me.

Claims about the ambiguity, real or apparent, of negation, and proposals for solving the problem go back as far as Aristotle (Horn 1989:Ch. 6). The solutions proposed take almost any form thought of in linguistics. I refer to Horn's (1989) book for a thorough discussion of all the variants and all their problems, and to Blok (1993) and Wiche (1993) for an overview of the most recent literature.

Metalinguistic negation is an instance of the more general effect of metalinguistic usage of language, in which language is used as a means to talk about language. Consider the following examples:

- (213) a. Is it BernstAIn or BernstEEn?
 b. Tom, Dick and Harry entered the room, but not in that order
 c. Coffee has six letters
 d. I will call this a strong polarity item

89. Note that NPI *yet* is OK here!

90. Bolinger (1972) uses the term 'hypostasis' for metalinguistic use of language. Page 107 reads "We can say *It is truly good* but would not be apt to say *It is literally good* — instead we say *It is literally excellent* 'no other term but *excellent* will serve'. This is a hypostatic use of language: the speaker in effect comments on the appropriateness of the word."

Horn (1989) favors a pragmatic approach to metalinguistic usage(s) of linguistic elements. If this is the only alternative to the stipulation of massive ambiguity, I agree with him.

Metalinguistic language is often, although not always, accompanied by contrastive or special intonation. In the above examples, I sometimes showed this by means of capitalization. The examples in (204) show both the echo-effect and this intonational effect.

Echo-effects also occur with negative polarity items. Two cases should be distinguished: NPIs may give rise to echo-effects under double negation and without any negation at all. Strong intonation is obligatory in the latter case:⁹¹

- (214) a. A: John didn't *lift a finger* to help you. B: O yes, he DID *lift a finger*
 b. A: Turn of the radio. Who *cares* about fire storms in Sidney? B: I *care*!

Note that in English one often finds the auxiliary *do* to strengthen the emphasis, as in the earlier examples; in Dutch, the adverb *wel* is often found:

- (215) a. A: Je *hoeft* toch geen huiswerk te maken? B: Ik *hoef* WEL huiswerk te maken
 You need PART no homework to make? I need WEL homework to make
 'You don't need to make homework, do you? I do need to make homework'
 b. A: Niemand hier is *ooit* in Parijs geweest B: IK ben WEL *ooit* in Parijs geweest
 Nobody here is ever in Paris been. I am WEL ever in Paris been
 A: 'Nobody here has ever been in Paris. B: I have ever been in Paris!'

One of the possible approaches to these cases is to stipulate an underlying double negation for these cases (Carter 1974; Sassen 1977; Von Bergen & Von Bergen 1993); if one's favorite theory circles round negation as trigger, this is hardly illogical.

Such an underlying double negation doesn't, however, fit in the theory developed here. Two possibilities come to mind. The first one, trying to prove that this type of intonation is downward entailing, is bound to fail. The second one, claiming that polarity items do not have to be licensed in cases of metalinguistic use, seems to be pretty ad hoc at first sight. Note, however, that almost all laws of grammar may be offended in metalinguistic use. Consider the following examples involving violations of the Binding Theory and agreement, respectively:

- (216) a. She doesn't wash HIMSELF, she washes HERSELF
 b. You don't wait ON, you wait FOR
 c. It's wrong to say that two possibilities COMES to mind

Next to that, it has been observed that not all NPIs may be triggered by this emphasis. Horn (1978b) and Von Bergen & Von Bergen (1993) point at examples such as the following:

- (217) a. *He DID give you *anything*
 b. *She HAS retired *yet*
 c. *She DID arrive *until* midnight

91. Cf. also footnote 26.

These latter cases seem to call for lexical stipulation, in other words, the co-occurrence of polarity items and emphasis is collocationally constrained, at least in certain cases. But in general I assume that an explanation of echo-effects will depend on a proper understanding of the phenomenon of metalinguistic use of language.⁹² Until then, I remain agnostic about the unacceptability of the examples in (217) — unless they are instances of collocation. In Chapter 3 I argue that the fact that certain lexical items do not occur in some types of performatives is collocational; restrictions on the co-occurrence of lexical items with certain intonational patterns may be collocational then as well.

1.6.4 Are all negative contexts downward monotonic?

According to the claims made above, it should be possible to analyze all contexts in which NPIs occur as negative contexts, i.e. as downward monotonic environments. On the other hand, all monotone decreasing contexts should be able to license (weak) NPIs and disallow (strong) PPIs. This, however, is not always easy to prove. Below I discuss some apparent or real counterexamples, as put forward by Linebarger and others.

Extra restrictions? Hoeven and meer

Although Dutch *ook maar* ‘at all’ is a stronger NPI than *hoeven* ‘need’ in the sense that *ook maar* needs an anti-additive context, whereas *hoeven* only needs a downward monotonic one, there are certain contexts that allow *ook maar* and disallow *hoeven* (Zwarts 1981; De Mey 1990). Relative clauses depending on universal quantifiers such as *alle* ‘all’ and *geen* ‘no’ are cases in point:

- (218) a. Alle boeren die ook maar een ezel bezitten worden geslagen
All farmers that at all one donkey own are beaten
‘All farmers that own any donkeys at all are beaten’
b. *Alle boeren die geslagen hoeven te worden bezitten een ezel
All farmers that beaten need to become own a donkey
c. Geen boer die ook maar een ezel bezit wordt geslagen
No farmer who at all one donkey owns is beaten
‘No farmer who owns any donkey at all is beaten’
d. *Geen boer die een ezel hoeft te bezitten wordt geslagen
No farmer who a donkey needs to own is beaten

Other contexts that allow *ook maar* and disallow *hoeven* are questions and conditionals:

- (219) a. Denk je dat er ook maar iemand op je feestje komt?
Think you that there at all anybody at your party comes?
‘Do you think anyone will come to your party at all?’

92. Perhaps this is too optimistic: “One important question which I did not, and will not, directly address here is just how metalinguistic negation is to be represented within a formal theory of natural language discourse; this question, along with the larger issue of the relation between language and metalanguage in linguistic theory, would put us beyond the purview of this study. We must be content for now with the negative fact extracted from this chapter: some instances of negation in natural language are not formally representable in an interpreted propositional language” (Horn 1989:444).

- b. *Hoef je huiswerk te maken?
Need you homework to make?
- c. Als je ook maar iets van Marie hoort, bel me
If you at all anything of Mary hear, call me
'If you hear anything from Mary at all, call me'
- d. *Als je huiswerk hoeft te maken mag je geen tv kijken
If you homework need to make may you no tv watch

Hoeven is not alone in this strange behavior: the NPI adverb *meer* 'anymore' seems to be excluded from the same types of contexts. The following examples show that *meer* is indeed a NPI; the last example shows that MD expressions such as *weinig* 'few' may trigger *meer*.⁹³

- (220)
- a. *Ik wil koffie meer
I want coffee anymore
 - b. Ik wil geen koffie meer
I want no coffee anymore
'I don't want coffee anymore'
 - c. Er hoeft weinig koffie meer gezet te worden
There needs few coffee anymore made to be
'Little coffee has to be made anymore'

The following examples show *meer*'s unwellformedness in the relatives, questions and conditionals just discussed:

- (221)
- a. *Alle boeren die ezels meer bezitten worden geslagen
All farmers who donkeys anymore own are beaten
 - b. *Geen boer die ezels meer bezit wordt geslagen
No farmer who owns donkeys is beaten
 - c. *Wil je koffie meer?
Want you coffee anymore?
 - d. *Als je koffie meer wilt, daar is de thermoskan
If you coffee anymore want, there is the thermos

It appears that *hoeven* and *meer* have a comparable distribution. Is this a matter of coincidence or is there a principled reason for this parallelism?

In a recent approach to natural language quantification (Diesing 1990; De Hoop 1992), all quantificational structures have a tripartite structure, consisting of a quantifier, a restrictor, and a nuclear scope. For example, in the sentence *all Scots are protestant*, *all* is the quantifier, *Scots* is the restrictor and *are protestant* is the nuclear scope. In a more complex case such as *farmers who beat their donkeys are seldom happy lovers*, *seldom* is the quantifier, the restrictor clause consists of *farmers who beat their donkeys* and *are happy lovers* corresponds with the nuclear scope.

It has been suggested by Bill Ladusaw and Frans Zwarts that it might be the case that *meer* and *hoeven* only occur in the nuclear scope of their trigger, whereas *ook maar* etc. is fine both in the restrictor and the nuclear scope.

93. *Meer* can have several meanings and occurs in various positions. It is most restricted if it occurs after NPs, probably because of the fact that inference of nonpolarity *meer* 'more' is minimal. For example, the sentence *Ik wil meer koffie* 'I want more coffee' is, although impolite, perfectly grammatical.

This, however, cannot be completely correct. Note that *hoeven* sometimes occurs in subordinate clauses, for instance those dependent on comparatives (Klooster 1978; Schermer-Vermeer 1981; Seuren 1979).⁹⁴ Probably, these qualify as restrictor clauses. *Meer*, on the other hand, is not allowed here:

- (222) a. Hij rijdt harder dan hij hoeft
 He drives faster than he needs
 ‘He drives faster than he needs to do’
 b. *Hij wil liever bier dan dat hij koffie meer wil
 He wants rather beer than that he coffee more wants

Superlatives show the same picture:

- (223) a. Dit is de laatste student die we hoeven te bestraffen
 This is the last student we need to punish
 ‘This is the last student we have to punish’
 b. *Dit is de laatste student die koffie meer wil
 This is the last student who coffee anymore wants

Another difference between *hoeven* and *meer* is that *hoeven* may occur in certain relatives depending on the universal quantifier *alles* ‘everything’ and under negated negative raising predicates, while *meer* is not allowed there.⁹⁵

The same holds for *before*-clauses:

- (224) a. Alles wat we hoeven te weten staat in dit boek
 Everything which we need to know stands in this book
 ‘This book contains everything we need to know’
 b. *Alles wat meer in de weg staat wordt verwijderd
 Everything which anymore in the way stands is removed
 c. Ik geloof niet, dat we nog iemand hoeven te waarschuwen
 I believe not, that we still anybody need to warn
 ‘I don’t believe we need to warn anyone (else)’
 d. *Ik geloof niet, dat we iemand meer hoeven te waarschuwen
 I believe not, that we anybody anymore need to warn
 e. Ik heb nog een uur voordat ik weg hoef
 I have still an hour before I away need
 ‘I have an hour left before I have to go’
 f. *Voordat de gasten koffie meer willen moeten we maar bijzetten
 Before the guests coffee anymore want must we but more-make

That is to say, on closer inspection the distribution of *meer* and *hoeven* turn out to be not as parallel as was suggested earlier.

To get a clear picture of the situation, the facts concerning *hoeven*, *ook maar* and *meer* are summarized in the following table:

94. Not all speakers accept *hoeven* in restrictor clauses: several of my informants judge sentences such as (222a), (223a), (224a) and (224e) ungrammatical. For many others, however, they are fine. Cases comparable to these examples occur in print as well.

95. Thanks to Jack Hoeksema who pointed this out to me.

	item →	hoeven	ook maar	meer
	↓ context			
(225)	MD operators	ok	*	ok
	anti-additive NPs	ok	ok	ok
	conditionals	*	ok	*
	1st arg. of <i>geen</i>	*	ok	*
	1st arg. of <i>alle</i>	*	ok	*
	relatives to <i>alles</i>	ok	ok	*
	questions	*	ok	*
	comparatives	ok	ok	*
	superlatives	ok	ok	*
	<i>before</i>	ok	ok	*

It must be concluded from this table that there is no reason to assume that *hoeven* and *meer* form a class in terms of their distribution. Perhaps it is true that *meer* is excluded from Restrictor clauses, but the same cannot be maintained for *hoeven*.

Now it may be interesting to reconsider sentence (136b), repeated below.

- (226) *Alle varkens die een beetje vet zijn worden geslacht* (= 136b)
 All pigs that a bit fat are are slaughtered
 'All pigs with a bit of fat are slaughtered'

As *een beetje* 'a bit is a strong PPI, it should be ungrammatical in all anti-additive contexts. In the discussion of this sentence I observed that it was not bad enough, i.e., better than the theory predicted. Assume, then, that this sentence is grammatical. How to explain its grammaticality, given that *een beetje* leads to ungrammaticality (or echo) in other anti-additive contexts?

Suppose that *een beetje* is a PPI mirror image of the NPI *meer*, that was shown to be sensitive to additional properties of its triggers. An argument in favor of this approach is the grammaticality of *een beetje* in questions and conditionals such as the following:

- (227) a. Ben je een beetje gelukkig de laatste tijd?
 Are you a bit happy the last time?
 'Are you happy lately?'
 b. Als je een beetje verstandig bent dan maak je nu je proefschrift af
 If you a bit wise are than make you now your dissertation off
 'If you are wise you finish your dissertation now'

This looks promising. Here are examples with other relevant negative contexts:

- (228) a. Geen varken dat ook maar een beetje vet is wordt geslacht
 No pig that at all a bit fat is is slaughtered
 'No pig with the least bit of fat is slaughtered'
 b. Hij eet alles wat maar een beetje eetbaar lijkt
 He eats everything what but a bit edible resembles
 'He eats everything that looks a bit edible'
 c. Hij is meer dan een beetje verliefd
 He is more than a bit in-love
 'He is totally in love'

- d. Hij is de leukste jongen die ik ken en die een beetje kan dansen
 He is the nicest boy that I know and that a bit can dance
 'He is the nicest boy I know who knows how to dance'
- e. Voordat hij een beetje kon wennen moest hij al weer verhuizen
 Before he a bit could get-accustomed must he already again move
 'He had to move again before he had even time to get accustomed'

It appears from the above examples that *een beetje* is systematically insensitive to the same type of triggers as *meer*. The following table gives an overview of the distribution of the individual polarity items discussed in this section.

	item →	hoeven	ook maar	meer	een beetje
(229)	↓ context				
	MD operators	ok	*	ok	*
	anti-additive NPs	ok	ok	ok	*
	conditionals	*	ok	*	ok
	1st arg. of <i>geen</i>	*	ok	*	ok
	1st arg. of <i>alle</i>	*	ok	*	ok
	relatives to <i>alles</i>	ok	ok	*	ok
	questions	*	ok	*	ok
	comparatives	ok	ok	*	ok
	superlatives	ok	ok	*	ok
	<i>before</i>	ok	ok	*	ok

If these data are trustworthy it is tempting to take a closer look at the possible interconnections between looking at quantification in terms of tripartite structures and the type of algebraic semantics advocated here. It is, however, beyond the scope of this dissertation to further pursue this line of research.

Superlatives

Hoeksema (1986b) observes that certain Dutch negative polarity items, e.g. *ooit* 'ever', show up in the scope of superlatives, whereas several positive polarity items, such as *allerminst*, are excluded from this context:

- (230) a. De grootste snoek die hier *ooit* gevangen is woog 20 kg
 The biggest pike that here ever caught is weighed 20 kg
 'The biggest pike that was ever caught here weighed 20 kg'
- b. *Frank is de kleinste speler die *allerminst* in dit bed past
 Frank is the smallest player who not-at-all into this bed fits

The same holds for English, as the glosses show: *ever* is fine in this context, and *not at all*, which I assume to be a PPI in English, is definitely out.

According to Hoeksema, the denotation of an expression *superlative N* is the set of elements that are identical to the biggest element of the denotation of *N* with respect to the gradation relation of *superlative*. In the case of singular superlatives this set is either empty or a set with one unique element.

He argues that, given this semantics, the construction *superlative N* is neither monotone increasing nor monotone decreasing: if *A* is contained in *B*, then it does not follow that the set of elements identical to *superlative A* is

contained in the set of elements identical to *superlative B*, nor the other way round. For the biggest mouse of France is not necessarily the biggest mouse of Paris, nor is the biggest mouse of Paris the biggest mouse of France.

However, the superlative construction possesses another, weaker form of downward monotonicity. To wit, if x is $\llbracket \text{superlative } N \rrbracket$, then x is an upper boundary for the reflexive closure of the gradation relation of *superlative*, and also for all substructures of $\llbracket N \rrbracket$. That is to say, the biggest mouse is the biggest of all mice. Apparently, lexical elements may be sensitive to this property.

Hoeksema moreover notes that this same property is also found in the first argument of *the only*,⁹⁶ a context that is known to also trigger (certain) NPIs but that is provably not MD (Linebarger 1980; Linebarger 1987):

- (231) a. The only one who could ever reach me was a preacher
b. The only man who ever loved me is the only of all men who ever loved me

The first example shows that this context may trigger NPI *ever*, the second one illustrates this monotonicity property of the construction.

I think that a comparable property is found in the rare cases that the nonmonotonic determiner *exactly n N* triggers NPIs, as in the example below.

- (232) a. Exactly four people have ever read that book: Bill, Mary, Tom and Ed
b. Exactly four people have ever read that book: Bill, Mary, Tom and Ed →
Of all people, exactly four people have ever read that book: Bill, Mary, Tom and Ed

These cases likewise show a comparable form of monotonicity, as they entail that it is allowed to maximally extend the denotation of N .

Questions

In simple yes-no questions both PPIs such as *already* and *would rather* and NPIs like *any* and *ever* may occur, as is shown in the following examples (McCawley 1988; Fauconnier 1980; Jackendoff 1971; Borkin 1971; Lawler 1971):

- (233) a. Did you have soup *already*?
b. Would you *rather* be on the beach now?
c. Do you want *any* soup?
d. Did you *ever* hear such a story?

These examples hardly become worse if a negation is added:

- (234) a. Didn't you have soup *already*?
b. Wouldn't you *rather* be on the beach now?
c. Don't you want *any* soup?
d. Didn't you *ever* hear such a story?

For the simple-minded, these examples are a death blow for any theory that would postulate a negative in some structure underlying questions to explain the occurrence of NPIs. Of course, the somewhat less simple-minded may claim that the negation we see in the surface here is "fake negation" (cf. the discussion of examples (206)) or paratactic negation (chapter 2). But that doesn't help explain why both NPIs and PPIs may occur in questions.

96. Actually, Hoeksema doesn't talk about *the only* but about its Dutch equivalent *de enige*.

The hierarchy of negative expressions developed above offers a perspective on a possible answer. Note that strong PPIs and strong NPIs are excluded from questions:

- (235) a. *Is hij allerminst tevreden?
Is he not-at-all happy?
b. *Was de kritiek mals na je lezing?
Was the criticism tender after your lecture?

If the conclusions of earlier sections are correct, the ungrammaticality of (235a) suggests that questions are at least downward monotonic, as the strong PPI *allerminst* cannot be felicitously used in such contexts. On the other hand, from the ungrammaticality of (235b) it may be inferred that questions are not antimorphic, since *mals* is a strong NPI and therefore needs such a context.

The tests proposed for the various types of negativity, however, do not work: it is hard to have intuitions on entailment relations between questions. Víctor Sánchez Valencia suggested a solution. Consider the following yes/no question:

- (236) Is he happy?

The minimal possible answers are the following:

- (237) a. He is happy
b. He is not happy

Conjecture: the set of admissible answers (SAS) to question (236) contains (237a) and (237b) as greatest elements. Moreover, SAS has the typical closure of an ideal, i.e., an anti-additive (cf. section 1.5.6): if B is an admissible answer to Q and C implies B, then C is an admissible answer as well. According to this idea, the sentences below are admissible answers to (236):

- (238) a. He is pretty happy
b. Nobody is happy
c. Everybody is happy

Hence, questions are in a sense downward monotonic. In the strong reading of this idea, a question is to be identified with the set of its answers (to know a question is to know its possible answers). But it is also possible to remain neutral with respect to the ontological status of questions, only claiming that they are naturally associated with certain ideals.

The role of pragmatics

Until now, I was able to explain all cases of polarity licensing in terms of downward monotonicity or a related semantic notion didn't work. There are, however, certain cases of non-licensing that are almost certainly pragmatic in nature. Consider the following examples that are equivalent to ones that Smith (1974:48) gives.

- (239) a. Not 10 % of the audience *batted an eye* when Jay hit a home run
b. *Not 90 % of the audience *batted an eye* when Jay hit a home run

The complex determiner *not X % of the audience* is always monotone decreasing if the value is between 0 and 100 %:

- (240) Not 10 % of the audience wears a hat
 $\llbracket \text{red hat} \rrbracket \subseteq \llbracket \text{hat} \rrbracket$
-
- (241) Not 10 % of the audience wears a red hat
 Not 90 % of the audience wears a hat
 $\llbracket \text{red hat} \rrbracket \subseteq \llbracket \text{hat} \rrbracket$
-
- Not 90 % of the audience wears a red hat

This means that semantics alone cannot account for the difference in acceptability between the sentences of (239). How about pragmatics? Some things are more relevant to communicate than others. Note that sentences containing the expression *not 90 % of the N* may be rather odd without a NPI as well:

- (242) a. Not 10 % of the audience applauded when Jay hit a home run
 b. ?Not 90 % of the audience applauded when Jay hit a home run

Next to that, sentences containing the expression *not 90 % of the N* may sometimes license negative polarity items, if only the right context is available, i.e., if pragmatic demands are met:

- (243) I had imagined that all children in this class would love to get this new Michael Jackson album for free. However, not 90% of the kids have shown *any* interest *at all*

I assume that a comparable story in terms of pragmatic and relevance constraints holds for the following minimal pair (Linebarger 1980):

- (244) a. The mad general kept issuing orders long after there was anyone to obey him
 b. *The mad general kept issuing orders seconds after there was anyone to obey him

The time scale relevant for issuing orders is not counted in seconds: the following example is just as unacceptable as the last one:

- (245) *The mad general kept issuing orders seconds after the explosion

Comparable things probably hold for the difference in acceptability of NPIs (other than *any* and *ever*) between rhetorical questions and information questions discussed in section 1.3.2, and for the following contrast (Linebarger 1987):

- (246) a. Cows fly more often than John visits any relatives
 b. *The sun rises more often than John visits any relatives

Kadmon & Landman (1993:377) argue that the second sentence is already odd without any NPI at all:

- (247) ?The sun rises more often than John visits relatives

According to Kadmon & Landman (1993:378), addition of *any* makes (247) worse, as it makes pragmatically no sense to widen such an assertion. "The use of widening on *relatives* indicates that the speaker is lenient about what counts as a relative. [...] Since [(246b)] doesn't tell us if John visits relative[s] often or seldom, there is no point in trying to be lenient: no view is expressed about the frequency of visits, so no view could be changed by taking a lenient approach."

A last case where pragmatics plays a role is the following: NPIs sound considerably more appropriate in conditionals used as threats than in conditionals used as promises (Lakoff 1970).

- (248) a. If you give a red cent to those guys, I'll never speak to you again
 b. *If you give a red cent to those guys, you'll get a medal

Semantics helps to understand that and how certain contexts may trigger NPIs, but it doesn't help much in predicting in what situations a certain NPI in a certain negative context will be of any communicative use.

Inner-system and outer-system monotonicity

Adversative predicates such as *surprised* and *sorry* may license NPIs but predicates such as *sure* and *glad* only allow *any* and *ever*:

- (249) a. She was surprised/sorry that there was any food left
 b. I was surprised/sorry that he budgeted an inch
 c. I am sure/glad that there is any food left
 d. *I am sure/glad that that he budgeted an inch

It has been argued (Ladusaw (1979), Linebarger (1987), etc.) that *be surprised* is not monotone decreasing. The following inference is clearly invalid:

- (250) a. I'm surprised she bought a car
 b. [Honda] \subseteq [car]
 c. $\not\subseteq$ I'm surprised she bought a Honda

Ladusaw (1979) proposes that downward monotonicity only has to hold *without* the factive presupposition of the predicate; Linebarger (1987) argues against this and suggests the possibility of a weaker relation 'psychological entailment', which she rejects herself as this relation wouldn't distinguish between *surprised* and *glad*. Kadmon & Landman (1993) argue for adoption of the idea of entailment 'on a constant perspective': according to them, (250a) entails that I am surprised that she "bought a Honda, in as much as the Honda is a car".

A comparable solution to this problem is found in Kas (1993), who refers to Van Benthem (1988). Kas coins the term *inner-system monotonicity* (Van Benthem's 'local monotonicity') "to cover the idea that [certain] inferences [...] need not refer to data outside the inferential engine itself" (Kas 1993:119-20), whereas *outer-system monotonicity* (Van Benthem's 'global monotonicity') "has to rely on data outside the inferential system" (ibidem). If adversative predicates have monotonicity properties at all, the monotonicity will be of the inner-system type. Note that this type of monotonicity is not Boolean anymore.

If the solutions hinted at are anywhere near right, they may be helpful for the problematic cases of conditionals as well. Conditionals may trigger NPIs in their antecedent, but inferences such as the following are clearly not valid, which has been taken as a proof that conditionals are not MD (Linebarger 1980; Heim 1984; Krifka 1990a; Krifka 1990b; Kadmon & Landman 1993):

- (251) If you ever go to Yemen, you will enjoy it
 [go to Yemen and get sick there] \subseteq [go to Yemen]
 $\not\subseteq$ If you ever go to Yemen and get sick there, you will enjoy it

Víctor Sánchez Valencia informs me that Frank Veltman has argued that this kind of example is not inclusive. Veltman's argument is as follows: if one rejects the above argument, one accepts the premise and rejects the conclusion. But then one should accept the following sentences as well:

- (252) a. Maybe you get sick in Yemen
 b. If you go to Yemen, you will enjoy it

Veltman's suggestion is that these sentences are not acceptable.

If one, however, wishes to accept that the sentences in (251) prove that conditionals are not MD, one can still explain why NPIs may occur there, for the inference is valid if one remains within the system, so to speak, and keeps the linguistic material constant.⁹⁷

- (253) If you ever go to Italy or visit an Italian bar, try an espresso
[[ever go to Italy]] ⊆ [[ever go to Italy or visit an Italian bar]]

If you ever go to Italy, try an espresso

That is to say, I claim that conditionals are at least downward monotonic system-internally, which explains, on the one hand, that the standard tests for downward monotonicity do not always work, and, on the other hand, why negative polarity items felicitously occur in this context.

1.6.5 Concluding remarks

In this section I addressed some apparent and real problems for any theory that uniformly tries to explain polarity effects in terms of downward monotonicity. Some of the problems turned out to be solvable with the help of minor extensions of this notion. Certain other cases were argued to be real counterexamples to the approach adopted here: only a pragmatic explanation can account for the fact that the MD noun phrase *not N % of the audience* is a better licenser for NPIs if the value of N is smaller.

97. Víctor Sánchez Valencia as quoted by Kas (1993:120).

1.7 Some remarks on scope

1.7.1 Scope: the basic facts

Even when a proper negative element is present in the sentence, a negative polarity item does not always yield a grammatical result. On the other hand, a positive polarity item may occur in a sentence containing a negation without any trace of ungrammaticality or echo-effects. That is to say, cooccurrence of a MD expression and a polarity item is not enough to explain polarity effects: a NPI not only has to be in the same sentence as the MD operator of the right type, it also has to be in its scope in order to be properly licensed. On the other hand, PPIs may not be in the scope of certain MD expressions. Consider the following examples:

- (254) a. *Few congressmen* attended any of the meetings
 b. **Any congressman* attended *few* of the meetings
 c. *Some congressmen* attended *none* of the meetings
 d. **None* of the congressmen attended *some* meetings

The contrast in grammaticality between (254a) and (254b) shows that a monotone decreasing operator in subject position may license a NPI direct object, but a MD object cannot license a NPI subject. Likewise, a PPI in subject position is not harmed by a MD operator in object position (254c), but if the MD operator is in the subject position, a PPI in the object yields ungrammaticality (254d). That is to say, in English the direct object is in the scope of the subject (as far as polarity phenomena are concerned) but the subject is not in the scope of the direct object.

Comparable things happen between direct objects and indirect objects. In simple cases the MD operator has to be to the left of the NPI:

- (255) a. He gave nobody any credit
 b. *He gave anybody no credit
 c. He gave no credit to anybody
 d. *He gave any credit to nobody

These facts may be explained by stipulating that NPIs have to be c-commanded (e.g., as defined in (40)) by a monotone decreasing operator of the appropriate type (without any barrier intervening; cf. below) and that PPIs may not be c-commanded by a MD operator of the type they are incompatible with. As I am not offering a syntax here, I remain agnostic as regards the precise details. I will also remain silent about the precise syntactic (or semantic level) at which this c-command relation is supposed to hold.⁹⁸

Note that the subject position in English and Dutch is not in the scope of sentence negation, as no NPIs are found in subject position in these languages.

98. According to Mahajan (1990), Hasegawa (1991) and others this c-command relation holds at the level of LF. Ladusaw (1979, 1983) claims that scope should be defined in terms of function argument relations rather than in structural relations. At the current level of impreciseness, semantic and syntactic notions of scope will be equivalent, I assume.

- (256) a. *Anybody can't solve this problem
 b. *Ook maar iemand kan dit probleem niet oplossen
 Anybody can this problem not solve

Under the assumption that French *ne* is the locus of sentence negation and that *aucun* is an NPI like *any*,⁹⁹ the subject position in French is in the scope of sentence negation, as *aucun* may occur in subject position:

- (257) a. *Aucun chaussure ne me va*
 Any shoe not me fits
 'No shoe fits me'
 b. **Aucun chaussure me va*
 Any shoe me fits

There are two exceptions to the generalization that NPIs do not occur in subject position in Dutch and English. Firstly, NPIs may be licensed by a topicalized MD operator:

- (258) a. Never will anybody be able to solve this problem
 b. *Nooit zal ook maar iemand dit probleem kunnen oplossen*
 Never will anybody this problem can solve
 'Never will anybody be able to solve this problem'

The other possibility for a NPI to occur in subject position is that it is licensed from a superordinate clause, either by an adversative predicate (259a – 259b) that takes the sentence containing the NPI as a complement, or by a MD operator (259c – 259d):

- (259) a. I deny that anybody can solve this problem
 b. *Ik ontken dat ook maar iemand dit probleem kan oplossen*
 I deny that anybody this problem can solve
 'I deny that anybody can solve this problem'
 c. Nobody thinks that anybody can solve this problem
 d. *Niemand denkt dat ook maar iemand dit probleem kan oplossen*
 Nobody thinks that anybody this problem can solve
 'Nobody thinks that anybody can solve this problem'

Sentences such as (259c – 259d) become much worse if the verb is changed from a negative raising predicate into a non negative raising one:¹⁰⁰

- (260) a. ?Nobody says that anybody can solve this problem
 b. ?*Niemand zegt dat ook maar iemand dit probleem kan oplossen*
 Nobody says that anybody this problem can solve
 'Nobody says that anybody can solve this problem'

The distribution of polarity items, then, is to a certain extent reminiscent of that of anaphors and pronouns, respectively. One might even say that a variant of Binding Theory of Chomsky (1981) (or one of its modern variants) is applicable here (cf. also Progovac (1988), Hoekstra (1991), Ladusaw (1992), Progovac (1994)). NPIs behave like anaphors in the sense that they have to be locally bound, i.e., they have to be licensed by a monotone decreasing functor (of the

99. Cf. chapter 2 for an alternative view.

100 In the semantic terms of section 1.4, this amounts to changing a consistent verb into one that is not consistent.

proper type) in the local domain (say: the clause, with possible extensions in the case of neg raising predicates). PPIs, on the other hand, are somewhat like pronouns: they have to be locally free, which implies that they may not be c-commanded (or something like that) by a monotone decreasing functor of the wrong type.

1.7.2 Scope extensions

In the previous section I suggested that polarity licensing is in general clause bound. Negative raising predicates are only one way of extending this domain. Van der Wouden (1985) discusses another type of domain extension. I repeat the data without giving much explanation.

Consider the following examples involving the weak NPI *bijster* 'rather'.¹⁰¹

- (261) a. *Piet_i hoort dat hij_i bijster mooi zingt¹⁰²
 Pete hears that he rather beautiful sings
 b. Piet_i hoort dat niemand bijster mooi zingt
 Pete hears that nobody rather beautiful sings
 'Pete hears that no one sings reasonably beautiful'
 c. *Niemand hoort dat Piet bijster mooi zingt
 Nobody hears that Pete rather beautiful sings
 d. ?Niemand_i hoort dat hij_i bijster mooi zingt
 Nobody hears that he rather beautiful sings
 'Nobody hears that he (himself) sings rather beautiful'
 e. ?Niemand_i hoort zichzelf_i bijster mooi zingen
 Nobody hears himself rather beautiful sing
 'Nobody hears himself sing rather beautiful'

The conclusion must be that a pronoun or anaphor in a subordinate clause that is co-indexed or coreferential with a MD operator in a superordinate clause increases the acceptability of a negative polarity item in the subordinate clause.

Van der Wouden (1985) observes that the effect becomes stronger if the intervening verb (in this case *hoort*) 'hears' is changed into a negative raising predicate, for example *vindt* 'finds':

- (262) a. *Piet_i vindt dat hij_i bijster mooi zingt
 Pete finds that he rather beautiful sings
 b. Piet_i vindt dat niemand bijster mooi zingt
 Pete finds that nobody rather beautiful sings
 'Pete thinks that no one sings reasonably beautiful'
 c. ?Niemand vindt dat Piet bijster mooi zingt
 Nobody finds that Pete rather beautiful sings
 d. Niemand_i vindt dat hij_i bijster mooi zingt
 Nobody finds that he rather beautiful sings
 'Nobody thinks that he (himself) sings rather beautiful'
 e. Niemand_i vindt zichzelf_i bijster mooi zingen
 Nobody finds himself rather beautiful sing
 'Nobody considers himself to sing rather beautiful'

¹⁰¹Cf. footnote 7 for complications involving *bijster*.

¹⁰²The subscripts are meant to indicate coreference.

The inverse happens if *bijster* is replaced by the strong PPI *allerminst* ‘not at all’. In this case a pronoun or anaphor in a subordinate clause coreferential with a MD operator in the superordinate clause decreases the acceptability of a positive polarity item in the subordinate clause.

- (263)
- a. Piet_i hoort dat hij_i allerminst mooi zingt
Pete hears that he not-at-all beautiful sings
‘Pete hears that he doesn’t sing beautiful at all’
 - b. *Piet_i hoort dat niemand allerminst mooi zingt
Pete hears that nobody not at all beautiful sings
 - c. Niemand hoort dat Piet allerminst mooi zingt
Nobody hears that Pete not at all beautiful sings
‘Nobody hears that Pete doesn’t sing beautiful at all’
 - d. ?Niemand_i hoort dat hij_i allerminst mooi zingt
Nobody hears that he not at all beautiful sings
‘Nobody hears that he (himself) sings beautiful at all’
 - e. ?Niemand_i hoort zichzelf_i allerminst mooi zingen
Nobody hears himself not at all beautiful sing
‘Nobody hears himself sing beautiful at all’

Again, the effect becomes stronger with a negative raising predicate:

- (264)
- a. Piet_i vindt dat hij_i allerminst mooi zingt
Pete finds that he not-at-all beautiful sings
‘Pete finds that he doesn’t sing beautiful at all’
 - b. *Piet_i vindt dat niemand allerminst mooi zingt
Pete finds that nobody not at all beautiful sings
 - c. ?Niemand vindt dat Piet allerminst mooi zingt
Nobody finds that Pete not at all beautiful sings
‘Nobody thinks that Pete doesn’t sing beautiful at all’
 - d. *Niemand_i vindt dat hij_i allerminst mooi zingt
Nobody finds that he not at all beautiful sings
 - e. *Niemand_i vindt zichzelf_i allerminst mooi zingen
Nobody finds himself not at all beautiful sing

One wonders what these facts imply for the semantics of anaphors and pronouns. If these elements can really inherit the monotonicity properties of quantifiers they are coreferential with, they have to be of the same generalized quantifier type: functors of type *e* (entity) are monotone increasing without exception (Keenan & Faltz 1985).

The relation between MD element and polarity item may be obstructed by intervening material that functions as a sort of barrier (Linebarger 1980; Linebarger 1987). According to Linebarger, the contrast between the sentences below is caused by “the presence of the intervening universal quantifier that renders the NPI inappropriate” (Linebarger 1987:352).¹⁰³

¹⁰³The pseudo-logical representation is Linebarger’s. A wide scope reading for the universal quantifier with respect to negation is available for (265b), but that is irrelevant here.

- (265) a. John didn't give a red cent to charity
 NOT (John gave-a-red-cent-to charity)
 b. *John didn't give a red cent to every charity
 NOT $\forall x$ (John gave-a-red-cent-to x)
 where $x = a$ charity
 *'It wasn't every charity that John gave a red cent to'

Note again the parallel with binding phenomena, although the effect is much stronger there:

- a. *John_i thinks Mary should wash himself_i
 b. John_i thinks he_i should wash himself_i
 c. John_i thinks Mary should wash him_i
 d. *John_i thinks he_i should wash him_i

This again points into the direction of comparable mechanisms underlying both polarity and binding. I refer to the work of Progovac (1988, 1994) who argues that it is indeed exactly the same mechanism (viz., Generalized Binding) that is at work here, and to Hoekstra (1991) for an interesting attempt to combine GB syntax and generalized quantifier semantics.

1.7.3 Double negations again

Given this sketch of a scope theory offers a new perspective on the problematic sentences observed by Baker (1970) and discussed in section 1.3.2. For ease of exposition I repeat the relevant examples:

- (266) a. *I *wouldn't rather* be in Montpellier (42a)
 b. There *isn't anyone* in this camp who *wouldn't rather* be in Montpellier (42b)
 c. *Someone *hasn't already* solved this problem (42c)
 d. You *can't* convince me that someone *hasn't already* solved this problem (42d)
 e. *There *isn't anyone* here who *wouldn't rather* do *anything* down town (210a)
 f. *We are *surprised* that more people haven't yet asked for *any* evidence of progress (210b)
 g. There *isn't anyone* here who *wouldn't do anything* down town (211a)
 h. We are *surprised* that more people haven't asked for *any* evidence of progress (211b)

The facts can be described as follows: for a NPI, life is fine if the right type of MD operator is present in the local domain. A PPI may not be in the scope of a MD expression (of the relevant type) unless this MD expression is canceled by another one. (210a) and (210b) show that NPI and PPI must be checked at the same time or under the same construal: if the MD expression is canceled for the PPI it is not available for the NPI, or, the other way round, if the MD expression has to be available for the NPI it cannot be canceled for the PPI at the same time.

These results are complicated when they are combined with facts from an earlier section. Remember that *hoeven* could not be triggered by conditionals

and questions, whereas *ook maar* could. The relevant sentences from (219) are repeated below.

- (267) a. Denk je dat er ook maar iemand op je feestje komt?
Think you that there at all anybody at your party comes?
'Do you think anyone will come to your party at all?'
- b. *Hoef je huiswerk te maken?
Need you homework to make?
- c. Als je ook maar iets van Marie hoort, bel me
If you at all anything of Mary hear, call me
'If you hear anything from Mary at all, call me'
- d. *Als je huiswerk hoeft te maken mag je geen tv kijken
If you homework need to make may you no tv watch

Suppose that an extra negative operator is added, close to the NPI. A simple story in terms of cancellation of negation, or a somewhat more complex monotonicity calculus in which minus times minus equals plus, predicts the grammaticality judgements to show the reverse pattern. Here, however, are the real judgments:

- (268) a. Denk je dat er niemand ook maar even op je feestje komt?
Think you that there nobody at all for-a-moment at your party comes?
'Do you think nobody will come to your party, not even for a moment?'
- b. Hoef je geen huiswerk te maken?
Need you not homework to make?
'Don't you need to make homework?'
- c. Als binnen een week niemand ook maar iets van Marie hoort, bel me
If within a week nobody at all anything of Mary hear, call me
'If nobody hears anything from Mary at all within a week, call me'
- d. Als je geen huiswerk hoeft te maken mag je tv kijken
If you homework need to make may you no tv watch
'If you don't have to make homework, you may watch television'

All sentences are grammatical now. This is not surprising if the reasoning below sentence (211b) is correct that NPIs are happy whenever a MD operator of the appropriate kind is available in the local domain. For *ook maar* the conditional and the question count as licensers, but if an extra MD operator is added, then that one is taken. For *hoeven*, the conditional and the question do not count as licensers, so this NPI is only grammatical if an extra MD operator is present.

The next examples show what happens with positive polarity items in these cases.

- (269) a. *Als je *allerminst* tevreden bent . . .
If you not-at-all happy are
- b. Als je *een beetje* karakter bezit bied je je verontschuldiging aan
If you a bit character possess offer you your apologies on
'If you possess the least bit of character, you offer your apologies'
- c. ?Als niemand *allerminst* tevreden is, dan veranderen we niets
If nobody not-at-all happy is, then change we nothing
'If nobody is unhappy, we don't change anything'

- d. *Als niemand een beetje honger heeft, dan wachten we met eten
If nobody a bit hunger has, then wait we with eat

The ungrammaticality of the first sentence is explained by the fact that *al-lerminst*, being a strong PPI, is ungrammatical in all MD contexts. The next sentence is fine: I suggested already in section 1.6.4 that *een beetje* is the counterpart of *hoeven* and *meer* in that it is insensitive to questions and conditionals. The third sentence is pretty good: the two MD contexts composed together constitute an operator that is in any case no longer MD (Kas 1993). The fourth sentence, however, is much worse. If it is indeed true that *een beetje* is only sensitive to one of the MD operators, this follows: *Een beetje* only sees one MD operator; the other one is invisible and cannot become visible by means of composition. But then this PPI is in a context from which it is excluded, and therefore it should be ungrammatical, which it is.

1.7.4 Rule ordering?

I finish this section on scope with a problem involving rule ordering — if there are any rules. This problem is perhaps an argument against a uniform approach of scope with respect to polarity phenomena. Consider the following set of data:

- (270) a. Jan *hoeft* het huiswerk van geen van de kinderen na te kijken
Jan needs the homework of none of the children after to look
'John need not correct the homework of any of the children'
b. (dat) Jan het huiswerk van geen van de kinderen *hoeft* na te kijken
(that) John the homework of none of the children needs after to look
c. **Ook maar iemand* is daar nooit geweest
Also but somebody is there never been
d. Nooit is daar *ook maar iemand* geweest
Never is there also but somebody been
'Nobody has ever been there'

Sentence (270a) demonstrates that a negative quantifier (*geen van de kinderen*) embedded in a noun phrase may license a negative polarity item such as *hoeven* to its left. This is a problem for approaches such as proposed in Zwarts (1986b) that handle scope in a left-to-right order. For Ladusaw's idea that the NPI should be the argument of a negative in order to be in its scope, this case is equally problematic, as transitive verbs take direct objects as arguments and not the other way round.

The example is problematic for syntactic approaches as well, for comparable reasons: transitive verbs govern their direct object, and operators embedded in this object usually do not govern the verb. Of course one might refer to some underlying level of representation. Actually, one has to refer to such a level: whatever one's favorite approach to word order in Dutch, one has to explain how *geen van de kinderen* may license *hoeven* to its left in the main clause (270a) and to its right in the subordinate clause (270b).

One possible way out seems to be to assume some sort of V2 analysis, i.e., assume that the subordinate clause order is taken to be the underlying one

and that the finite verb is moved to second position in main clauses (Koster 1975).¹⁰⁴ Then the licensing of the polarity item *hoeven* must be checked at a level before V2 has taken place. But then consider (270c) and (270d). Normally, a negative polarity item such as *ook maar* ‘at all’ in subject position cannot be licensed by a negative adverb such as *nooit* ‘never’, the only exception being topicalization of the adverb. We must thus assume that licensing of the polarity item *ook maar* is checked at a level after topicalization has taken place. However, topicalization is usually assumed to take place after V2, since V2 is understood as movement of the verb to the first position of the sentence and topicalization as some sort of adjunction to this first position. But then there is an ordering paradox: some checking, viz. of *hoeven*, takes place before V2, and some, such as that of *ook maar*, afterwards. Cf. Hoekstra (1991) for discussion.

Hoeksema (1991) suggests that some of these problems might be solved by assuming that the direct object is a functor taking the verb as its argument (Keenan 1989). This assumption is corroborated by the fact that a negative quantifier embedded in the direct object may induce the familiar implicational patterns on the verb, both in main clauses and in subordinate clauses, i.e., with or without verb second taking place.

- (271) a. De schoolmeester wil of kan het huiswerk van geen van de kinderen nakijken
 → De schoolmeester wil het huiswerk van geen van de kinderen nakijken
 en de schoolmeester kan het huiswerk van geen van de kinderen nakijken
 The teacher wants or can the homework of none of the children correct
 ‘The teacher doesn’t want or isn’t able to correct the homework of any of the children’
- b. Het is een feit dat de schoolmeester het huiswerk van geen van de kinderen wil of kan nakijken →
 Het is een feit dat de schoolmeester het huiswerk van geen van de kinderen wil nakijken en het is een feit dat de schoolmeester het huiswerk van geen van de kinderen wil nakijken
 It is a fact that the teacher the homework of none of the children wants or can correct
 ‘It is a fact that the teacher will nor can correct the homework of any of the children’

Perhaps this should be taken as an argument in favor of a more semantic notion of scope. Elaboration hereon is beyond the scope of this dissertation.

1.7.5 Concluding remarks

In this section I briefly addressed the topic of scope as it is relevant for polarity items. As elsewhere in grammar, c-command appears to be a descriptively adequate theory of the relevant scope relations. Polarity licensing is clause bound in principle, just like many other phenomena in natural language. A negative operator in one clause can license a negative polarity item in another one only if a coreferential pronoun or negative raising verb intervenes.

¹⁰⁴Cf. Zwart (1993) for a different view.

1.8 Conclusion: polarity items

In this chapter I have discussed the classification and the distribution of negative and positive polarity items at great length. The question why there are polarity items in the first place and why they behave the way they do has been avoided carefully. In this final section, I want to spend a few words on this topic.

One type of answer given is pragmatic in nature. The largest class of negative polarity items distinguished by Von Bergen & Von Bergen (1993) is defined by means of their function: many negative polarity items are used to strengthen negation.

Although this may be right at a descriptive level, it doesn't answer the question why there are polarity items: next to negative polarity items, there are other ways to strengthen negative statements. Apart from the various types of multiple negations that the next chapter will discuss, there are, for instance, intonation and adverbs such as *really* and *absolutely* to intensify negation:

- (272) a. I am NOT interested
 b. I am really not interested
 c. Absolutely nobody can solve this problem

Moreover, such an explanation hasn't anything to say about the existence of positive polarity items.

Another type of explanation one finds in the literature is that NPIs function as scope markers. This suggestion may, among others, be found in Sommers (1982): their presence shows the hearer that the scope of negation (or downward monotonicity) extends at least as far as the NPI.

In recent work of David Dowty (1994) this answer is repeated and extended in terms of downward monotonicity: according to Dowty NPIs, like flags, indicate that they are in a downward monotonic position and that the hearer is allowed to make the well-known inferences from sets to subsets. Positive polarity items indicate the reverse: these are signals that the hearer may infer from sets to supersets.

This explanation may work for some of the polarity items, for example for NPIs such as *any*, but in my opinion it cannot explain the existence of all of them: I don't see how it can work for NPIs of the auxiliary type, such as *need*, *brauchen*, *hoeven*. Moreover, it cannot in any way explain why there exist classes of polarity items, such as the medium NPIs that are sensitive to anti-additivity (or to the combination of downward monotonicity and ends of scales) or the strong NPIs that occur in antimorphic contexts only.

Yet another explanation of the existence of polarity items, going back to Jespersen (1917) and Bolinger (1972) and perhaps even earlier, is in terms of their rhetorical function. This view was advocated recently again by Hoeksema (1992b). According to Hoeksema, the main function of many — but certainly not of all — NPIs is to “add emphasis to operators such as negation or universal quantification, operators which themselves also tend to lend an emphatic character to a text.” An argument in favor of this explanation is that NPIs with

this rhetorical function often co-occur with other explicit markers of intensity.

Again, this explanation works quite well for NPIs such as *ever* and *any*, *lift a finger* and *in a thousand years*. For other types, such as the auxiliaries just mentioned, it doesn't work too well. Moreover, it hardly offers an explanation for the various classes of NPIs, nor for the existence of PPIs.

This means there is no universal explanation for the existence of all polarity items. Different classes of polarity items may have different reasons to exist. But whatever the reason of its existence, any polarity item is governed by the same mechanisms.

Chapter 2

Multiple negations

2.1 Introduction

Having established in the first chapter that the notion of downward monotonicity is instrumental in the description of the distribution of polarity items, I will continue my discussion showing that the same concept is fruitful in other areas of language as well. Rather than undertaking the Herculean task of trying to explain all phenomena that have been claimed to be sensitive to negation in terms of downward monotonicity, I will restrict myself to one area only, viz. multiple negations.

Perhaps the most striking feature of natural language negation is that it is often not Boolean. If two negations cooccur in a proposition in classical logic the negations are usually canceled; cancellation three negations are equivalent to one negation, four negations are equivalent to two negations, and thus to no negation at all, etc.

The situation is different in natural language. If a negation is added to a construction that is already negative, the following possibilities exist:

- nothing happens semantically: the construction containing several negations is equivalent to one with only one negation
- the two negations weaken each other: the result is less negative (or less positive) than would be the case if only one negation were present, but it is more negative than without any negation at all
- the two negations cancel each other: just as is the case in logic, the result is no negation
- the two negations enhance each other: the result is more negative than the same construction with only one negation

Interestingly enough, all possibilities are found in natural language. The first type of multiple negation falls apart into two subtypes. The first subtype, where the negative feature is spread, so to speak, over all elements in the sentence (or the clause) that can bear it, is known under names such as *NEGATIVE CONCORD* and *NEGATIVE ATTRACTION*. The second subtype, where one extra negation turns

up in certain contexts, has been called PARATACTIC NEGATION, EXPLETIVE NEGATION, etc. The two types are exemplified below:

- (1) a. It ain't no cat can't get in no coop (Black English (Labov 1972))
 'No cat can get into any coop'
 b. Timeo ne veniat (Latin)
 I-fear that-not he-come (Subj)
 'I fear that he comes'

In the rhetorical figure of LITOTES two or more (usually exactly two) negative meanings weaken each other:

- (2) His new book is *not bad*

The meaning of this sentence is that the book under discussion is neither good nor bad, but somewhere in between. Independent pragmatic mechanisms such as understatement and irony may give this sentence extra usage possibilities. For example, the sentence can be used to express that the book is very good. This effect, however, is pragmatic rather than semantic, for the sentence can be continued both with *it's brilliant* and with *it's terrible* without contradiction.

The third type of multiple negation, known as DENIAL among other things, often involves a modal operator. The resulting meaning is positive:

- (3) We cannot *not* go
 'We have to go'

The fourth and final type of multiple negation is one of the means to strengthen the force of a negative utterance. Various subtypes of this EMPHATIC NEGATION may be distinguished. I give three examples below:

- (4) a. He *never* sleeps, *not even* after taking an opiate
 b. Ik krijg *nooit geen* aandacht van je (Dutch)
 I get never no attention of you
 'You never pay me any attention at all'
 c. We gaan nog *niet* naar huis, nog lange *niet*, nog lange *niet*
 We go not yet to house, yet long not, yet long not
 'We're not going home yet'

This chapter has four sections in which the four types of multiple negations I distinguish are addressed — although I have to add that this is an idealization, since the borderlines between the various types may sometimes be fuzzy. For each type I show that it occurs in other monotone decreasing contexts than just negation. Both the behavior of the various subtypes of negative concord and that of emphatic negation will be argued to be very closely related to that of negative polarity items. Litotes and denial are shown to occur outside purely negative contexts as well, whereas the means to strengthen negation are also available to emphasize other types of downward monotonic contexts.

2.2 Negative concord

2.2.1 Introduction

In this section I will use NEGATIVE CONCORD as the general term for the many cases where multiple occurrences of morphologically negative constituents express a single semantic negation (Labov 1972).

Negative concord (NC) may take either of two forms. Following Den Besten (1986) and Van der Wouden & Zwarts (1993) I will call these two types of concord NEGATIVE SPREAD and NEGATIVE DOUBLING,¹ respectively. They are loosely defined as follows:

- (5) NEGATIVE SPREAD: the negative feature is 'spread' or distributed over any number of indefinite expressions within its scope.
 (6) NEGATIVE DOUBLING: a distinguished negative element shows up in all sentences that contain a negative expression.

Languages may show either of the two types, or none, or both.

Patterns typical of negative spread and negative doubling are exemplified in (7) and (8) below, combinations of them are given in (9).²

- (7) a. *Nobody said nothing to nobody* (NS English)
 b. *Personne a rien dit* (Spoken French)
 Nobody has nothing said
 'Nobody said anything'
 c. *Valère ging nooit nieverst noatoe* (West Flemish)
 V. went never nowhere to
 'V. never went anywhere'
- (8) a. *Je n'ai vu personne* (Standard French)
 I not-have seen nobody
 'I haven't seen anybody'
 b. *Valère en-klaapt tegen geen mens* (West Flemish)
 V. not-talks to no person
 'V doesn't talk to anybody'
 c. *Hulle het nooit gesing nie* (Afrikaans)
 They have never sung not
 'They have never sung'
- (9) a. *Personne n'a rien dit* (French)
 Nobody not-has nothing said
 'Nobody said anything'
 b. *Valère en-ging nooit nieverst noatoe* (West Flemish)
 V. not-went never nowhere to
 'V. never went anywhere'

I assume that both types of negative concord involve one (and only one) *triggering* element and one (or more) *concordant* or *doubling* element(s). I will

1. *Negative doubling* should be carefully distinguished from *double negation*: the latter term refers to two logical negations in the semantics, whereas the former applies to one logical negation. On double negation, cf. sections 2.3 and 2.4.

2. The examples from non-standard (NS) English are from Labov (1972) and Ladusaw (1991); the Afrikaans ones from Ponelis (1985), Den Besten (1986), De Stadler (1989), Robbers (1992) and Donaldson (1993), those from the West Flemish dialect of Dutch from Haegeman & Zanuttini (1990).

return to the problem of deciding which is which in spread structures shortly.

By definition, no such problem exists in doubling constructions. In French, the doubling element is *ne* or (before vowels) *n* (8a), in West Flemish it is *en*³ (8b), and in Afrikaans it is *nie* or (in spoken language) *ie* (8c). Note that the position of the doubling element may vary, even between closely related languages: in West Flemish (as in French) it cliticizes onto the finite verb, whereas it is sentence-final in Afrikaans. Discussion of this variation is beyond the scope of the present study.

In a way, negative concord is reminiscent of other types of grammatical concord, i.e., agreement. Here is Vilém Mathesius about NC in Czech:

I do not hesitate to call this phenomenon *negation concord*, for it has all the fundamental features of other kinds of grammatical concord. If we look at the respective facts closely we see that the very nature of grammatical concord lies in the circumstance that one member of a sentence points, by a formal sign which is not necessary from the point of view of its own expressive function, to the onomatological aspect or syntactical function of another member of the same sentence or the same context, [t]o which it syntactically refers, or with which it is connected by the same (or an analogous) syntactical function. Mathesius (1937:81)

There is considerable variation in the way and to which extent negative concord occurs in language (Jespersen 1917; Ladusaw 1992). In this section I will discuss some of this variation. First I will restrict myself to cases where the phenomenon is restricted to one and the same clause, but I will show that under certain conditions the phenomenon may cross clause boundaries.

2.2.2 The contexts of negative concord

The term 'negative concord' is a misnomer in the sense that it may be triggered in certain languages by various types of monotone decreasing elements and constructions. This is exemplified below: in the (non-standard) English sentence (10a) the downward monotonic adverb *hardly* triggers the effect, in the Italian (10b) it is the comparative, an anti-additive construction, in the Afrikaans (10c) it is the antimultiplicative noun phrase *nie alle bestuurders* 'not all drivers' and in the French (10d) the downward monotonic noun phrase *presque personne* 'almost nobody' creates the effect.

- (10) a. There was *hardly no* money *nor* hardly *no* bread⁴ (Cockney)
 b. Maria è piú intelligente di quanto *non* sia Carlo⁵ (Italian)
 Maria is more intelligent than Carlo not is
 'Maria is more intelligent than Carlo'
 c. *Nie alle bestuurders* sal dit in die stad waag *nie*⁶ (Afrikaans)
 Not all drivers will this in the city dare not
 'Not all drivers will dare this in the city'

3. This *en* occurred in many earlier Dutch dialects: cf. Stoett (1923) and the discussion of the sentences in (46).

4. From Seuren (1991).

5. From Napoli & Nespore (1976).

6. After Ponelis (1985).

- d. *Presque personne n'a vu l'accident* (French)
 Almost nobody not-has seen the-accident
 'Almost nobody saw the accident'

Example (10a) shows that it is possible in principle that negative concord is triggered by downward monotonic expressions. This doesn't mean, however, that this regularly occurs in all NC languages. The choice of the operator(s) inducing negative concord defines a dimension of variation next to the dimension spread, doubling, both, or none. Furthermore, negative concord may be either optional or obligatory, and the notion 'in the scope of' constitutes yet another degree of freedom.

There exist considerable but subtle differences between languages with respect to their NC behavior. Rather intricate patterns are found in the Romance languages. Various people have tried to account for these. Vallduví (1993) distinguishes three types of approaches to negative concord. Zanuttini (1991) is one of the advocates of the theory that all words involved in NC structures are negative universal quantifiers. In order to get the correct readings such an approach needs a process of factorization, a gathering of all negative meanings and conflating them to one logical negation. In the second type of approach, advocated by Bosque (1980), Laka Mugarza (1990) and others, the apparent negative words in NC structures are negative polarity items, licensed by some negative operator. In this approach the apparent negative words denote positive existentials. The third type of approach distinguished by Vallduví is a hybrid of the earlier two: Ladusaw (1991, 1992) claims that the apparent negatives are nonnegative indefinites that license themselves.

My analysis should probably be called hybrid as well. It closely follows the one developed in Van der Wouden & Zwarts (1993). The fact that negative concord is not just triggered by negation but also by various other kinds of downward entailing operators is taken very serious in our approach. This implies that explanations in terms of factorization of negation are unavailable to us. The same holds for an analysis as negative polarity items licensed by an underlying negative operator: this approach was already abandoned for clear-cut cases of polarity licensing in chapter 1, so adoption of this approach for NC would lead to inconsistency.

Central in our approach is the notion of context-sensitive semantics. We claim that negative quantifiers (and perhaps some other negative operators) in negative concord languages are systematically ambiguous between negative universals and positive existentials (cf. also Longobardi (1987).) This lexical ambiguity, however, does not lead to massive ambiguity at the sentential level because of the fact that the existential meaning is available only if the apparent negative occurs in a negative context (a MD environment of the appropriate type), whereas the negative universal meaning is available elsewhere.

2.2.3 Context-sensitive semantics

Consider a sentence with an even number of negative lexical elements in a negative concord language such as (spoken) French.

- (11) a. *Personne a rien vu* (= 7b)
 Nobody has nothing seen
 'Nobody saw anything'
- b. *J'ai rien vu* (spoken French)
 I-have nothing seen
 'I didn't see anything'

If negation would behave according to the laws of classical logic the two negations in sentence (11a) would cancel and the sentence would mean 'everybody saw something'. However, the sentence means 'nobody saw anything'. But it is not the case that *rien* simply means 'anything', since it cannot mean anything else than 'nothing' in (11b). What can one say, then, about the semantics of lexical elements such as *rien* that sometimes mean 'nothing' and at other moments 'anything', if one wishes to adhere to a compositional semantics, i.e., to the assumption that the meaning of the whole is a function of the meaning of its parts and the way they are combined?

Assume that the assignment of semantic values may be context-sensitive, i.e. that the semantic contribution of a lexical element may be dependent on the meaning of the construction it is part of.⁷

If this is a valid move, then this might be a way to implement the intuition that words such as *personne* denote an existential quantifier when they are in the scope of a negative element and a universal negative quantifier in all other cases. This means that the denotation of a negative word can vary between an existential quantifier and its complement.

Is such an extension of the Fregean principle of compositionality justified? Van der Wouden & Zwarts (1993) claim that the answer should be affirmative (cf. also Dowty (1994)). To begin with, it has been suggested in the literature (Keenan 1974; Partee 1984) that the polysemy of adjectives such as *red* and *flat* in combinations like the ones below can (and should) be implemented by adopting a disjunctive meaning function for the adjective, along the lines of (13).⁸ This meaning function would then associate the form *red* with various semantic values, depending on the noun being modified.

- (12) a. red grapefruit, red army, red carpet
 b. flat tire, flat beer, flat surface

7. This move can be seen as a weakened form of the Fregean principle of CONTEXTUALITY, the 'mirror image' of compositionality: *Nur im Zusammenhang eines Satzes bedeuten die Wörter etwas* 'Only in the context of a sentence does a word stand for anything'. Cf. Dummett (1973:192ff.) and Janssen (1983:6ff.).

8. Note that the combinations are more or less fixed, i.e. collocational, which guarantees that the number of different meanings attributed to *red* and *flat* will be finite.

$$(13) \quad f(x) = \begin{cases} \dots \text{ if } P_1(x) \\ \dots \text{ if } P_2(x) \\ \dots \\ \dots \text{ otherwise} \end{cases}$$

In different contexts P_i , this function will attribute different meanings to one and the same function word. In other words, the output of the function is different for different groups of cases. "What the function *does* to its argument depends on the argument, all right, but that's inherent in the notion of a function. The interpretation of the function [...] does *not* vary with the argument" (Partee 1984:290).

Secondly, verb meanings may differ with respect to the environment in which they occur (Pustejovsky 1989):

- (14) a. To bake a cake
 b. To bake a potato
- (15) a. Mary hammered the metal
 b. Mary hammered the metal flat
- (16) a. Mary ran yesterday
 b. Mary ran to the store yesterday

It has been proposed in the literature (e.g. Atkins *et al.* (1988)) that verbs such as *bake* are ambiguous between a creation verb, as in (14a), and a change of state verb, as in (14b). In (14a) there is no cake before the act of baking: it comes into being by the act of baking. In (14b), on the other hand, a potato exists both before and after the baking, the only difference being the change of state from unbaked into baked. It has likewise been claimed (Dowty 1979) that the verb *hammer* should have two lexical representations, one for its resultative usage (15b) and one for the other (15a). Finally, verbs of the *run*-type have been described as being polysemous (between the meanings 'move by running' (16a) and 'go to by means of running' (16b)) as well (Talmy 1985).

Rather than accepting this massive and systematic lexical ambiguity, Pustejovsky proposes to leave the aspect type of verbs underspecified, and to make them sensitive to properties of their argument(s) instead. The word *cake*, for example, that refers to a thing that is an artifact, inherits in the lexicon certain general features that are typical for artifacts, such as the property of being able to be created. If it is combined with a verb like *bake* that is aspectually unspecified it triggers a creation reading for the verb. On the other hand, words like *potato* that are not lexically specified as artifacts are not able to trigger this reading. In those cases only the change of state reading is available. A comparable approach is advocated for the other types of verbs discussed.

Thirdly, negative polarity idioms such as *lift a finger* and *hold a candle to* have an idiomatic reading only in contexts such as (17), i.e., in downward monotonic contexts. Note, however, that many of these negative polarity idioms also occur in grammatical sentences which do not provide such a negative context (18).

- (17) a. Ernie wouldn't *lift a finger* to help a lady in distress
 b. His proposal doesn't *hold a candle to* ours

- (18) a. Ernie *lifted a finger* and the whole orchestra started to play
 b. John would like to *hold a candle to* ours in order to light it

In a sense it is therefore unjustified to call the strings under discussion negative polarity items, if this term is understood in the usual way, i.e. as denoting elements that occur only in negative contexts. It might therefore be better to re-analyze this phenomenon as another case of context-sensitive meaning attribution. The expression *lift a finger* would then be polysemous in much the same way that the adjective *red* is: it would mean ‘do anything’ (the ‘idiomatic’ meaning) when construed in the scope of a downward monotonic operator, and ‘move a certain body part in upward direction’ (the ‘literal’ meaning) elsewhere.⁹ Note that this instance of context-sensitive assignment of semantic values is sensitive to the same type of contextual properties as the negative concord cases, viz. the family of downward monotonic functions.

Therefore, given that the concept of context-sensitive semantics is not new and that a comparable mechanism turns up elsewhere, I suggest the following:¹⁰

- (19) **Hypothesis** Negative concord involves context sensitive semantics of lexical items.

The difference between negative spread and negative doubling can then be described in terms of the elements that receive a context-sensitive semantic value. In cases of negative spread, all universal negative quantifiers within the scope of a negative quantifier shift towards existential quantifiers. In all other cases of more than one universal negative, one expects either double negation

9. It should be noted that negative polarity items like the ones discussed, though infinite in number (Schmerling 1971), do not necessarily correspond to an infinite number of disjunctive meaning functions. Without exception, the idiomatic reading of these elements involves some ‘basic’ verb such as ‘give’, ‘do’, ‘move’ etcetera, in combination with a negated existential quantifier. That is to say, a productive semantic rule (perhaps based on pragmatic principles: Fauconnier (1975a)) seems to be at work that maps verb phrases containing an activity verb and an argument with the (denotational or implied) meaning ‘a small bit’ to the combination meaning of the hyperonym of the verb + existential quantifier, in the contexts discussed.

The context-sensitive meanings of NC elements and of NP idioms live in the same world of quantificational operators. The change in verbal meaning remains in the world of sets and supersets (the operation is monotonic) and the same holds for the nominal meaning (as the existential quantifier is the top element in the hierarchy of indefinite noun phrases). It is therefore intuitively plausible that children will be able to learn such a rule, as it maps more complex verbal meanings (a specialized verb such as ‘lift’) onto simpler verbal meanings (‘move’) and complex nominal meanings (‘finger’) onto the simplest (Boolean) type of nominal meanings.

The shift is monotonic and Boolean as well in the other type of context sensitive meaning change Fauconnier (1975a) discusses. In these cases, noun phrases containing a superlative denote universal quantifiers (*John can solve the most difficult problems*, ‘John can solve every problem’). A specific noun phrase meaning is mapped here onto the most general noun phrase meaning, viz. the universal quantifier.

10. As Bill Ladusaw pointed out to me (P.C.), the notion of context sensitive semantics may be useful for describing negative concord and NPI licensing, but an implementation with a disjunctive meaning function as in (13) might not work properly because of the fact that the domains in which the various meanings occur overlap. This would make the function nondeterministic or undefined in certain contexts. Perhaps the idea is right, but the implementation wrong. But it might also be the case that this overlap is exactly what we want, as it predicts ambiguity in those contexts.

readings or ungrammaticality. In terms of the classical square of opposition, what this means is that the meaning shifts along the complement axis.

(20)	all (\forall)	some (\exists)
	no ($\neg\exists$ or $\forall\neg$)	not all ($\neg\forall$ or $\exists\neg$)

A similar pattern is displayed by English quantifiers of the *any*-type, which can shift from a universal (“free-choice *any*”) to an existential reading (“polarity sensitive *any*”), depending on the semantic properties of the context. In this case, the shift proceeds along the duality axis. In other words:¹¹

- (21) **Hypothesis** Negative spread involves context-dependent assignment of semantic values to quantifying expressions. In particular, a universal negative within the scope of an appropriate negative is interpreted as an existential quantifier. From a semantic point of view, universal negatives can be characterized as anti-additive. The corresponding existential quantifier belongs to the class of additive expressions.

In the case of negative doubling, on the other hand, only one designated element is polysemous in this way. The element in question is usually identical or historically related to sentence negation ‘not’, which comes as no surprise: its meaning shifts (again, in the appropriate contexts) between negation \neg and identity. The domain of the meaning function of *not* is the set $\{1, 0\}$ of truth values.

As a null hypothesis I assume that all context-sensitive meaning shifts are heavily restricted in terms of semantic types. That is, a shift is allowed between the complement and identity functions, as these two meanings belong to a natural class, but not between complement and “red” or “chair” or “achieve”. In the case at hand, this means that identity and negation are the only two non-trivial possibilities, as shown in (22):

(22)	$1 \rightarrow 1, 0 \rightarrow 1$	trivial: all values mapped on <i>true</i>
	$1 \rightarrow 0, 0 \rightarrow 1$	negation
	$1 \rightarrow 0, 0 \rightarrow 0$	trivial: all values mapped on <i>false</i>
	$1 \rightarrow 1, 0 \rightarrow 0$	identity

This results in the following hypothesis:

- (23) **Hypothesis** Negative doubling involves context-sensitive semantics of one lexical element. Depending on the context, this element either denotes the complement function (i.e., negation) or the identity function.

In the following, I will discuss the details of the hypotheses formulated in this section.

2.2.4 Negative spread: French

Traditionally, French *ne* is seen as the locus of negation. This approach is echoed in modern generative analyses such as Kayne (1981) and Pollock (1989) where *ne* spells out an abstract negative feature. The optionality of *ne* is then implemented by making the spelling out rule optional.

11. Dutch *ooit* ‘ever’ used to behave in the same way (WNT, Stoett (1923)).

Another approach, however, is possible. Following Lawler (1974)¹² and Miller (1991),¹³ I will argue that *ne* is a concordant element, in other words, that it is an instance of negative doubling.

For the time being, however, I will ignore *ne* that is completely optional in the colloquial language and concentrate on the interaction of negative quantifiers. Consider the following French sentences.

- (24) a. *Personne a rien dit* (Spoken French (7b))
 Nobody has nothing said
 'Nobody said anything'
 b. *Personne n'a rien dit* (Standard French (9a))
 Nobody not-has nothing said
 'Nobody said anything'
 c. *Presque personne n'a vu rien* (Standard French)
 Almost nobody not-has seen nothing
 'Almost nobody saw anything'

If it is assumed that negative spread is from left to right (I will return to this), *personne* 'nobody' in (24a) has a negative meaning whereas *rien* 'nothing' functions as a positive existential 'anything'.

How can one characterize the contexts that trigger negative spread in French? Example (24a) shows that anti-additive *personne* 'nobody' triggers the effect, and example (24c) shows the same for *presque personne* 'almost nobody'.

It was established in section 1.4.3 that *almost nobody* is a monotone decreasing operator and that it lacks the properties anti-additivity and anti-multiplicativity. Under the assumption that this result carries over to *presque personne*, it must be concluded that negative spread in French can be triggered by monotone decreasing operators. This is hardly surprising in the light of the Cockney sentence (10a), repeated below as (25a), where the MD adverb *hardly* must be held responsible for the effect. Note, however, that this does not mean that all MD contexts may trigger the effect: sentence (25b) below with the MD noun phrase *peu professeurs* does not have a negative concord reading.

- (25) a. There was *hardly no* money *nor* *hardly no* bread (Cockney)
 b. *Peu professeurs n'ont vu personne qui soit disponible*
 Few professors not-have seen nobody whoSUBJ was available
 'Few professors have seen nobody who was available'
 (i.e., most professors have seen someone who was available)

Moreover, antimultiplicative operators such as *pas tout le monde* 'not everybody' are not able to trigger the effect:

- (26) a. **Pas tout le monde n'a vu rien*
 Not all the world not-has seen nothing

12. "the usual negative morpheme in that language [French] is *pas*, not *ne* (. . . *pas*), as the grammar texts claim" (Lawler 1974:358).

13. "*ne* is assumed to be the realization of a morphosyntactic feature triggered on the VP by the presence of the feature [NEG,+]" Miller (1991:145–6). Cf. also Van der Wouden & Zwarts (1993).

- b. Pas tout le monde n'a vu qu'elque chose
Not all the world not-has seen something
'Not everybody saw anything'

Antimultiplicatives cannot trigger negative spread in Catalan, Modern Greek, Portuguese and Spanish either. In Italian, however, both anti-additives and antimultiplicatives trigger negative spread:

- (27) a. Nessuno ha visto niente
Nobody has seen nothing
'Nobody saw anything'
- b. Quasi nessuno ha visto niente
Almost nobody has seen nothing
'Almost nobody saw anything'
- c. Non tutti hanno viste niente
Not everybody has seen nothing
'Not everybody saw anything'

For completeness sake, I note that the antimorphic operators corresponding to *not* (French *pas*, Italian *non*, etc.) all trigger negative spread, and that none of the downward monotonic operators corresponding to *few children* (French *peu d'enfants*) triggers the effect.

The following table gives an overview of the monotonicity properties of the triggers of negative spread in the various languages discussed so far:

	French etc.	Italian
(28) antimorphics (<i>not</i>)	spread	spread
anti-additives (<i>nobody</i>)	spread	spread
antimultiplicatives (<i>not everybody</i>)	no spread	spread
MD 1 (<i>almost nobody</i>)	spread	spread
MD 2 (<i>few children</i>)	no spread	no spread

As a descriptive generalization, one can say that in Italian all MD operators containing an overt negation trigger the effect and that it is a subclass thereof in the other languages. I will return to the topic of what qualifies as a trigger for negative spread. But I must warn the reader that no final predictive answer should be expected: I assume that the theory developed here only sketches the borderlines of what is possible in negative concord languages. Lexical idiosyncrasies, the topic of chapter 3, will remain a recurring theme in this chapter.

2.2.5 Negative doubling: Afrikaans

Now consider the case of Afrikaans. This is a pure doubling language: whenever negative words occur in a sentence, *nie* shows up sentence-finally.¹⁴ This *nie*, I claim, is the same lexical element as the *nie* that functions as the sentence negation. In the appropriate context, however, its meaning is the dual of the negation operator, viz. identity.

14. If the negative element is sentence final itself, *nie* is optional, as in *Ek weet neks (nie)* 'I know nothing', *Ek ken niemand (nie)* 'I know nobody' (Donaldson 1993:408-9).

In standard Afrikaans, doubling is obligatory, but in colloquial Afrikaans, advertisements, headlines etc. the reduplicator *nie* may be left out.

- (29) a. Ek het hom *nie* gesien *nie* (Afrikaans)
I have him not seen not
'I have not seen him'
b. *Niemand* het dit gesien *nie*
Nobody has this seen not
'Nobody has seen this'
c. Hulle het *nooit* gesing *nie*
They have never sung not
'They have never sung'

Negative spread does not occur in Afrikaans: the occurrence of more than one negative quantifier in a sentence results in (logical) double negation.¹⁵ Traditionally, the concordant element *nie* is interpreted as a marker of the scope of negation (Heiberg 1974; Waher 1978; Robbers 1992; Donaldson 1993).¹⁶ This approach to *nie* is not unproblematic, however: Ponelis (1985:370-1) notes that not all contexts that may license negative polarity items such as *ooit* 'ever' also trigger concord. He gives examples such as the following:

- (30) a. Sy is *nêrens* ooit tevrede *nie*
She is nowhere ever happy not
'She is nowhere happy'
b. Sy is met *niks* ooit tevrede *nie*
She is with nothing ever happy
'Nothing satisfies her'
c. *Niemand* is ooit tevrede *nie*
Nobody is ever happy
'Nobody is ever satisfied'
- (31) a. Sy is *allermens/allesbehalve* ooit tevrede (**nie*)
She is not-at-all ever happy
'She is never satisfied at all'

15. This is not completely true. The following examples are from Donaldson (1993:401):

- i Permissie het hy nog *nooit* van *geniemand* gevra *nie*
Permission has he yet never of nobody-at all asked not
'He has never asked anybody's permission yet'
ii Ek krij geen hulp van *niemand* *nie*
I get no help from nobody not
'I don't get any help from anybody'

These are to be analyzed as cases of emphatic negation (cf. section 2.5).

16. Nienaber (1934) reports that repetition (reduplication) of of adverbs is a rather productive means of emphasis in Afrikaans.

- i Hy was daar *al* lank voor my *al*
He was there already long before me already
'He was there long before me'
ii Hy is net so fluks soos altyd
He is just so fast so as ever
'He is just as fast as ever'

Given this effect, and given that *nie* is an adverb, one might be inclined to think that Afrikaans double negation is a weakened form of emphatic multiple negation as described in section 2.5. This is probably not correct (Den Besten 1986), although "[t]he exact origins of the so-called double negative in Afrikaans are still not fully understood" (Donaldson 1993:401).

- b. Sy verseg om ooit tevrede gestel te word (*nie)
 She refuses to ever satisfied made to be
 'She refuses to be ever satisfied'
- c. Hy het hard gewerk, sonder om haar ooit tevrede te stel (*nie)
 He has hard worked, without to her ever happy to make
 'He has worked hard, without ever satisfying her'

Assume one had a theory saying that negation licenses negative polarity items and that negative concord of the Afrikaans type marks the scope of negation. Then the above facts are problematic, as certain negative elements do license NPIs without triggering *nie*. To put it bluntly, negation licenses NPIs in these cases without having scope, or, at least, without having its scope marked explicitly. This is hardly attractive.

Assume instead that *nie* is a negative polarity item itself. Given the analysis of negative polarity put forward in chapter 1, one predicts that *nie* will be licensed by downward monotonic elements or some subclass thereof.

How can one classify the licensers of *nie*? If Afrikaans *ooit* is comparable to Dutch *ooit*, a weak NPI (chapter 1, leaving aside the complications from section 1.5.5), one expects *nie* to be a NPI of a stronger type.

According to Ponelis (1985:371), *nie* is found in the following contexts:

- (32) a. the adjuncts *nie* 'not', *gan* 'no' and *geensins* 'not at all'
 b. the adverbs *nooit* 'never' and *nêrens* 'nowhere'
 c. the adverb of degree *niks* 'nothing, not at all'
 d. the negative pronominal forms *niemand*, *g'n mens* 'nobody, no one' and *niks*, *geeneen* 'nothing'
 e. negated noun phrases such as *geen speler nie* 'no player', *niks heuning nie* 'no honey' and *nie een van die kêrels nie* 'none of the men'

All elements listed are anti-additive or antimorphic. Under the assumption that *nie* is a negative polarity item, this implies that *nie* is a negative polarity item of medium strength in the terminology of chapter 1.

This cannot be the whole story, however. Antimultiplicative noun phrases such as *nie alle bestuurders* 'not all drivers' and *nie almal* 'not everybody' trigger *nie* as well:

- (33) a. *Nie alle bestuurders* sal dit in die stad waag *nie* (= 10c)
 Not all drivers will this in the city dare not
 'Not all drivers will dare this in the city'
 b. *Nie almal* sal dit in die stad waag *nie*¹⁷
 Not everybody will this in the city dare not
 'Not everyone will dare this in the city'

This suggests that all antimultiplicative and anti-additive operators may license *nie*. If this were right, *nie* would be the first member of again a new class of NPIs, but not one that is excluded by the theory. However, the following elements do not license *nie* (Ponelis 1985:371-2):

17. After Ponelis (1985:372).

- (34) a. strong negative adjuncts such as *not 'n wiel* 'not a hoot', *allermens* 'not at all', *allesbehalwe* 'anything but'
 b. weaker negative adjuncts such as *kwalik* 'difficultly', *onmoontlik* 'impossibly' and *verniet* 'for nothing'
 c. the preposition *sonder* 'without'
 d. the conjunction *nòg . . . nòg* 'neither . . . nor'
 e. the adversative predicate *verseg* 'refuse'

This set contains antimorphic elements such as *allesbehalwe* and *allermens*, anti-additives such as *sonder*, and downward monotonic expressions such as *kwalik*, at least if the logical properties of more or less logical elements are constant across languages.¹⁸ The following table depicts the triggers of *nie*; keep in mind that all of them license weak NPIs such as *ooit*:

triggers of <i>nie</i> :
antimorphisms:
<i>nie, gan, geensins</i>
antimultiplicatives:
<i>nie alle bestuurders, nie almal</i>
anti-additives:
<i>nooit, nêrens, niks, niemand, g'n mens, geeneen, geen speler, niks heuning, nie een van die kêrels</i>
no triggers of <i>nie</i> :
antimorphisms:
<i>not 'n wiel, allermens, allesbehalwe</i>
anti-additives:
<i>sonder, nòg . . . nòg</i>
monotone decreaseers:
<i>kwalik, onmoontlik, verniet, verseg</i>

The conclusion to be drawn from this table is that only a subset of the set of antimultiplicative plus anti-additive operators may license *nie*: downward monotonic expressions seem to be excluded as licensers of Afrikaans *nie*.

How to account for this? At least three explanations are possible. The first is that the assumption underlying the division in table (35) that comparable lexical items have the same logical properties across languages is unjustified.¹⁹ Another possibility is that descriptivism plays a role. At least since the 1920s normative grammars address the topic of the occurrence of *nie* (Waher 1978). It might be the case that the logicism in normative grammar has selected certain overtly negative elements to be accompanied by *nie* and forbids the element's appearance in the scope of elements that are less overtly negative.²⁰

18. This assumption is not a priori justified: Tottie (1977:29) reports that where English *hardly* is felt to be more negative than *seldom*, the situation is the other way round with their Swedish translations. On the other hand, Van der Wouden & van der Wouden (1994) argue that speakers' intuitions about the strength of negations are not a trustworthy predictor of logical strength or of the possibilities of the licensing of various types of NPIs.

19. Cf. footnote 18.

20. An indication for the validity of this is the fact that one regularly finds *nie* in clauses headed

Finally, collocational effects could play a role (chapter 3). In this view, the theory developed here defines the borderlines of what is possible within negative concord, but it cannot predict the distributional idiosyncrasies of individual lexical items. Note that not all polarity items of one and the same class have the same distribution: additional distributional constraints play a role without exception. If Afrikaans *nie* is (comparable to) a negative polarity item, it is hardly surprising that it shows comparable distributional idiosyncrasies as well.

2.2.6 NC across clause boundaries: paratactic negation

In this section, the question will be addressed whether or not negative concord is clause bound; in a later section it will be shown how the theory may be parametrized in such a way that it can account for the variations one finds in NC languages.

Negative concord is not restricted to the clause: various languages and dialects show the effect that a verb (or something else) of negative import triggers a superfluous negation in a subordinate clause. This effect is known as ‘redundant negation’, ‘expletive negation’, ‘sympathetic negation’ or, with Jespersen (1917), PARATACTIC NEGATION (PN), the term I will use.

Paratactic negation falls apart into two subtypes: the elements with ‘negative import’ either trigger the occurrence of one or more negative morphemes in their complement clause, or they select a special type of complementizer that may or may not be homophonous to a negation operator. The following sentences are instances of the two types of PN:

- (36) a. Nature [. . .] forbedeth that *no man* make hymself riche (Chaucer)
 b. First he denied you had in him *no* right (Shakespeare)
 c. Je crains qu’il *ne* vienne (French)
 I fear that-he not comeSUBJ
 ‘I fear that he may come’
 d. Evitez qu’il *ne* vous parle (French)
 Prevent that-he not to-you speak
 ‘Prevent that he talks to you’
- (37) a. Timeo *ne* veniat (Latin)
 ‘I fear that he may come’
 b. Then fearing *lest*²¹ we should have fallen upon rocks, they cast four
 anchors out of the stern, and wished for the day (Acts 27:29)

by *tensy* ‘unless’ or *voordat* ‘before’, although the grammars explicitly forbid this (Donaldson 1993:405): *Jy kan nie gaan (nie) tensy/voordat jou werk nie klaar is nie* ‘You can’t go unless/before you’ve (not) finished your work’. Cf. Paardekooper (1992) who discusses the distribution of this ‘error’ in other Germanic languages such as Dutch, German and Swedish.

21. To show that *lest* in itself has a negative meaning, cf. Acts 27:42: *And the soldiers’ counsel was to kill the prisoners, lest any of them should swim out, and escape.* ‘And the soldiers’ counsel was to kill the prisoners, in order that none of them would swim away and escape’. Whether *ne* in (37a) should be characterized as a negative complementizer is unclear to me: in the oldest Latin, *ne* is the normal negation, later it still occurs as a negator of imperatives etc. (Lewis & Short 1879).

- c. Fobamai *mipos* kano lathos (modern Greek: Ruge (1986))
 fear-1SG that-not make-1SG error
 'I am afraid to make an error'

Paratactic negation behaves relatively uniform across languages. For instance, if the occurrence of the phenomenon in modern French (according to Grévisse (1980)) is compared with that in seventeenth century Dutch as used by Vondel²² the same pattern arises. Van Helten (1883) states the following generalizations:

- 1. Paratactic negation is never obligatory
- 2. PN often coincides with subjunctive, conjunctive and other moods that are typically used to express counterfactuals, irrealis etc.
- 3. PN occurs after words expressing FEAR:
 - (38) a. J'ai *peur* qu'il *ne* vienne (French)
 I-fear that-he not come SUBJ
 'I fear he will come'
 - b. J'ai *peur* que l'événement *ne* vous trompe (French)
 I-have fear that the-event not you mislead SUBJ
 'I am afraid the event will mislead you'
 - (39) a. Uyt *vreeze* dat de Staet *niet* strande (Vondel)
 From fear that the state not go-under SUBJ
 'Out of fear that the state would collapse'
 - b. Van *vreeze* datze *niet* wierd nae haer dood mishandelt (Vondel)
 Of fear that-she not would after her death ill-treated
 'Fearing that she would be treated badly after death'
- 4. PN may be triggered by words expressing HINDER, PRECAUTION, and PROHIBITION:²³
 - (40) a. J'*empêche* qu'il *ne* vienne (French)
 I-prevent that-he not come SUBJ
 'I prevent that he come'
 - b. Donnez-vous *garde* qu'on *ne* vous attaque (French)
 Give-you guard that-one not you attack SUBJ
 'Take care of being attacked'
 - (41) a. Men *hindre* dat hier *niet* de weiflaers 't zamenrotten (Vondel)
 One prevent SUBJ that here not the hesitants to gether-come
 'One should prevent that the hesitants come together here'
 - b. *Keer*, [. . .] Dat de schoone Abizag *niet* [. . .] stof bestelle, tot verdriet van getrouwe burgeryen [. . .] (Vondel)
 Prevent that the beautiful Abizag not stuff bring about to grief of faithful citizenships
 'Prevent that the beautiful Abizag cause the sorrow of faithful citizens'

22. Joost van den Vondel (1587–1679) is the most famous Dutch writer of the 17th century. Thanks to Ben J. Salemans, who made available Salemans & Schaars (1990) in machine readable form.

23. Van Helten (1883) states that Vondel always uses paratactic negation after verbs such as *hindere* 'to hinder', which contradicts his claim that PN is never obligatory. The following example, however, contains *hinder* without PN:

i Pluck weelde, en *hinder* dat de quicxse lent des levens Voorby vloey (Vondel)
 'Seize the day, and prevent that the joyful springtime of life flow away'

This shows that PN is optional after *hinder* as well.

- 5. PN is absent after words of DUBITATION:²⁴

(42) a. Je doute fort que cela soit (French)
I doubt strongly that that be SUBJ
'I seriously doubt that that should be'

b. Il nie que ce soit trouvé dans cette maison (French)
He denies that it be SUBJ found in that house
'He denies that it is found in that house'

(43) In twyffel, of hy met den hals syn' schuld sou boeten (Vondel)
In doubt, if he with the neck his debt would pay
'Doubting whether he was going to pay with his life'
- 6. PN is found in various types of COMPARATIVE constructions:

(44) a. Il est autre que je ne croyais (French)
He is other than I not believed SUBJ
'He is different than I thought'

b. Paris était alors plus aimable qu'il n'est aujourd'hui (French)
Paris was then more amiable than-it not-is today
'Paris was more amiable then than it is today'
- 7. PN may also occur in subordinate constructions governed by 'CONJUNCTIVE' elements such as (French) *avant que* ('before'),²⁵ *sans que* ('without'),²⁶ *à moins que* ('unless'), etc.²⁷

(45) a. Avant qu'il ne fasse froid
Before that-it not gets cold
'Before it gets cold'

b. Le lieutenant répondit [...] au salut sans qu'un muscle de sa figure ne bougeât
'The lieutenant answered the salute in a military way without moving a muscle in his face'

Seventeenth century Dutch and contemporary French show comparable patterns with respect to the distribution of paratactic negation: French and Dutch verbs of dubitation do not trigger the effect, whereas verbs of hinder and fear do. This suggests that some semantic factor is at play here. If the phenomenon would be a matter of idiosyncratic properties of lexical items, be they subcategorizational or collocational in nature, this patterning would be unexpected.

24. In Latin, words of dubitation sometimes license paratactic negation:

i Dubito ne veniat
I doubt that-not he come
'I doubt that he will come'

In all the other cases discussed here, Latin has paratactic negation as well. I assume that the phenomenon of PN is parametrized in such a way that in some languages, all and only the MD contexts license PN, in other languages, a subset of these contexts (perhaps Vondel's Dutch is a case in point), in a third class of languages, a superset thereof.

25. On *before*, cf. Sánchez Valencia *et al.* (1994).

26. Sources disagree on whether paratactic negation occurs after *sans que*: according to Kukenheim (1968), this element is not followed by *ne*, according to Grévisse (1980), it is.

27. Browsing the Vondel corpus didn't yield any clear cases of paratactic negation after *eer* 'before' or *zonder* 'without'. Van Helten (1883) doesn't discuss these cases.

According to Overdiep (1937:458), the dialect of Ghent still had paratactic negation in 1933.²⁸ Overdiep lists examples of PN depending on comparatives, a negative in the superordinate clause, *unless* and *before*:

- (46) a. Hij es veel slimmer of dat er hij uit en ziet
He is much smarter if that he there out not sees
'He is much smarter than he looks'
- b. De leugenaere sprikt anders dan hij en denkt
The liar speaks differently than he not thinks
'The liar speaks differently than he thinks'
- (47) 't En es nog zoo laote niet as dat ge wel en mient
It not is yet so late not as that you well not think
'It is not as late yet as you think'
- (48) a. Tenzij da ge 't hem en zegt
Unless that you it hem not says
'Unless you tell him'
- b. Ten waore dat 't waor en waore
Unless that it true not was
'Unless it was true'
- (49) a. Ge moet niet kome veur da 'k e geschreven en he(p)
You must not come before that I you written not have
'You mustn't come before I have written you'
- b. Ier dat hij et en zach, wast al te laote
Before that he it not saw, was-it already too late
'Before he saw it, it was already too late'

Although there exists considerable cross-linguistic, diachronic, dialectal and even individual variation, paratactic negation is generally found in the following contexts:

- clauses dependent on adversative predicates such as *fear*, *hinder*, *forbid* and perhaps *doubt*
- clauses depending on comparative constructions²⁹
- clauses depending on words such as *before*, *unless*, *without*

In other words, the set of words and constructions that license paratactic negation and the set of words and constructions that license polarity effects in subordinate clause overlap to a very large extent. All contexts where negative polarity items may occur are downward monotonic to a certain extent (chapter 1). Paratactic negation occurs in the same type of contexts where one also finds negative polarity items. This calls for a uniform approach to the two phenomena. In short, I claim that the distributional data with respect to paratactic negation all point in one and the same direction: the phenomenon is dependent on downward monotonicity.

28. According to my informants, the phenomenon is still not extinct in Ghent today.

29. Occasionally, a kind of paratactic negation seems to occur in clauses depending on superlatives, as in the following example from Middle Dutch (Stoett 1923):

i Dat hi die *beste* ridder was, die *noit* quam in sconinx hof
That he the best knight was, that never came in the king's court
'That he was the best knight that ever visited the king's court'

This might, however, be an instance of emphatic negation (on which 2.5) as well.

2.2.7 Towards an explanation of paratactic negation

Suppose for the sake of the argument that PN is not comparable to polarity. How to account for it then? Explanations take one of the following forms.

1. According to a line of thinking that leads back at least as far as Paul (1886) and others, *I fear that he may not come* (meaning 'I fear that he comes') is a CONTAMINATION of *I fear that he will come* and *I hope that he will not come*.
2. Van Ginneken (1907) and others stress the EMOTIONAL character of repeated negation: 'the negative prefix is, very unmathematical, placed both before and inside the brackets, in order to spread the negative feeling across the whole proposition'.³⁰
3. More modern sources (Seuren 1991; Progovac 1992) postulate an underlying NEGATION in the words that license paratactic negation.
4. Finally, some verbs (etc.) might be SUBCATEGORIZED (Jackendoff 1977)) for a (paratactically) negative complement or for a negative complementizer.

Each of these explanations is problematic. Explanation 1 does not explain *why* verbs and other lexical elements tend to contaminate, and why some words with a negative flavor show the effect, whereas others don't.

Explanation 2 may be intuitively plausible, but it is too impressionistic and too vague to make any predictions; therefore, it can be dispensed with.

Explanation 3 suffers from circularity: an abstract element is postulated to explain a fact or a group of facts, but these facts are the only argument in favor of the postulated element: there is hardly any independent evidence for its presence.³¹ Moreover, such a postulated difference is counterintuitive: all verbs under discussion do have some negative-like meaning, as may be demonstrated in the following sketchy analyses: *hinder*'(X) = cause X not to become the case; *refuse*'(X) = not allow that X becomes the case; *doubt*'(X) = not believe that X is true; *fear*'(X) = believe that X will be the case and hope that X will not be the case. If these are anywhere near right, they are not of any help: all verbs contain an underlying negation, but only some of them trigger PN.

Explanation 4 is not without problems either. If paratactic negation would be a case of subcategorization, it should be rather easy to learn and use. In the normal case of subcategorization, the language learner hears that a word is used with a certain complement (or may be used with some argument, in the case of optionality), (s)he remembers this, and that's it. One very seldom meets a native speaker who fails to use verbs like *devour* or *wonder* with the right complements, i.e., with a (optional) noun phrase and a clause starting with *if* or a question word, respectively. However, things are different in the case of paratactic negation. In modern standard Dutch, paratactic negation is supposed to be extinct; normative grammarians nonetheless still need to forbid examples

30. Van Ginneken (1907:198).

31. Cf. chapter 1.

such as (50).³² The same holds for modern French where the grammar books allow paratactic negation in some constructions and forbid it in others, but where errors against these rules may be found even with the best writers (51).³³ If paratactic negation is a case of subcategorization, it is of a special, error-prone kind indeed, unlike the ordinary cases of subcategorization.

- (50) a. *Hij verbood mij dat ik het raam *niet* zou opendoen (Dutch)
 He forbade me that I the window not would open
 'He forbade me to open the window'
- b. *De beklaagde ontkende dat hij de misdaad *niet* begaan had (Dutch)
 The accused denied that he the crime not committed had
 'The accused plead "not guilty"'
- (51) a. J'ai peur que ce *ne* soit trop fatigant (French)
 I have fear that it not be too tiresome
 'I fear that it may be too tiresome'
- b. Il faut éviter que les relations *ne* se dégradent (French)
 One must avoid that the relations not themselves deteriorate
 'The relations shouldn't get worse'

This leaves as an alternative that paratactic negation is triggered by semantic properties.

The monotone decreasing character of the operators under discussion can be demonstrated with familiar means:

- (52) a. Hij verbood mij een *raam* te openen →
 Hij verbood mij een *keukenraam* te openen
 'He forbade me to open a window →
 he forbade me to open a kitchen window'
- b. J'ai peur que *personne* ne vienne →
 J'ai peur que *personne de mes amis* ne vienne
 'I fear nobody will come →
 I fear that nobody of my friends will come'

The downward monotonicity of the verbs *ontkennen* 'deny', *éviter* 'avoid' and *defense* 'forbidden' may be demonstrated analogously.

The fact that comparable 'double negation effects' occur is an additional argument in favor of the assumption that the same mechanism is at work both in paratactic negation and polarity effects. Baker (1970) noticed that, contrary to what one would expect, positive polarity items (such as *would rather* in the examples below) may occur in the scope of downward entailing items if these are in the scope of downward entailing items themselves (cf. chapter 1). In cases such as these, two negations seem to behave logically, i.e., they cancel out:

- (53) a. Everybody in this camp *would rather* be in Montpellier
 b. *Everybody in this camp *would n't rather* be in Montpellier
 c. *Nobody in this camp *would rather* be in Montpellier
 d. Nobody in this camp *would n't rather* be in Montpellier

32. Examples from Tacx (1961). Elsewhere in this dissertation asteris denote ungrammaticality, but hear they mean 'forbidden by normative grammar'.

33. Kukenheim (1968:181). Examples from Kukenheim (1968) and Cristea (1971). The asterisks mean 'forbidden by normative grammar' here.

In this type of contexts, negative polarity items are less than perfect. Native speakers sometimes judge these sentences grammatical, but they seldom know what their meaning might be:

(54) ?*Nobody* in this camp doesn't like *any* green vegetables

Words that are able to license paratactic negation likewise lose that property under negation.³⁴ On the other hand, verbs such as *to doubt* that do not trigger paratactic negation, may 'inherit' this property from negation. Note, however, that not all verbs taking a sentential complement may inherit the possibility of licensing paratactic negation and negative polarity from a polarity reverser governing them. Remember from section 1.7.1 that (in Dutch) only negative raising verbs allow monotone decreasing noun phrases in the matrix sentence to license negative polarity items in the subordinate clause. On the basis of this result, one would likewise expect that only negative raising verbs may in this way acquire the possibility of triggering paratactic negation. This is borne out by the facts, as the following examples reveal:

- (55) a. Je *ne* crains *pas* qu'il (**ne*) fasse cette faute
I not fear not that-he makeSUBJ that error
'I am not afraid he will make that mistake'
- b. Je *ne* doute *point* que la vraie dévotion (*ne*) soit la source du repos
I not fear not that the true devotion not beSUBJ the source of rest
'I do not doubt at all that devotion is the true source of rest'
- c. Votre mère *n'est* peut-être *pas* aussi malade que vous (**ne*) croyez
'Your mother may be not as ill as you think'
- d. *Fobamai *mipos* kano lathos (Modern Greek)
fear-1SG that-not make-1SG error
'I am not afraid to make an error' (cf. (37c))
- e. *Den* fobamai oti kano lathos
fear-1SG that make-1SG error
'I am not afraid to make an error'

Double negation effects such as the ones described above form an additional argument against analyzing paratactic negation in terms of subcategorization, as this would be the only case where the subcategorization frame of a word depends on the presence or absence of an external operator, in this case of the monotone decreasing type.

34. The same should hold for other downward entailing expressions that have scope over these lexical items. This prediction seems to be borne out:

- i Il y a quelques enfants qui craignent qu'il ne vienne
There are some children that fear that-he not come SUBJ
'Some children fear that he may come'
- ii Il y a peu d'enfants qui craignent qu'il (**ne*) vienne
There are few of children that fear that-he come SUBJ
'Few children fear that he may come'
- iii Il n'y a pas d'enfants qui craignent qu'il (**ne*) vienne
There not are of children that fear that-he come SUBJ
'No children fear that he may come'

2.2.8 A theory of paratactic negation

On the basis of the foregoing, the following hypothesis concerning paratactic negation can be formulated:

- (56) **Hypothesis** Paratactic negation is non-local negative doubling, i.e. a negative polarity item licensed by an operator in a higher clause.

This hypothesis offers an explanation for (and may be a step towards understanding) a number of facts.

Across languages, certain patterns in the distribution of paratactic negation occur over and over again. This suggests that some fundamental mechanism is at work. On the other hand, paratactic negation shows considerable variation, not only across languages but even between speakers within one language community. The same, however, holds for the distribution of negative and positive polarity items and of other types of negative concord. In the discussion of Dutch *ooit* in chapter 1, it became clear that the polarity character of lexical items can change radically within a century. The same kind of rapid changes is found in the case of paratactic negation: most cases found in Vondel are totally ungrammatical now. Native speakers of French nowadays judge some of the examples given earlier as 'highly archaic'. Next to that, the phenomenon may be totally extinct in one region and alive and kicking in a dialect a few miles away, as Overdiep's examples from the Ghent dialect demonstrate. That is to say: this variation, although not understood, doesn't come as a surprise.

My hypothesis also offers an explanation for the 'double negation' facts discussed earlier. There exist several theories explaining how an operator with the power to license an NPI may lose this power when it is in the scope of another such operator. No matter which of the theories one chooses, its scope may be extended in a natural way to cover the facts discussed in section 2.2.7.

An extra argument in favor of the hypothesis that the same mechanism underlies the distribution of both negative (and affirmative) polarity items and paratactic negation involves the conceptual elegance of the theory. In general, comparable phenomena should be explained in comparable ways. In the discussion above, I have shown that polarity phenomena and paratactic negation are comparable to a large extent. Efforts to explain the distribution of polarity items in one way (viz., in terms of downward entailment) and the distribution of paratactic negation in another way (viz., in terms of negation) are apt to miss generalizations, and are bound to result in theories that are less than optimal from a parsimonious point of view. All things being equal, a theory that explains both polarity effects and paratactic negation in the same terms (viz., downward monotonicity) is superior to a theory that explains one phenomenon in terms of downward entailment and the other one in terms of negation.³⁵

35. Cf. Van der Wouden (1992b) for discussion of cases where both paratactic negation and negative polarity items occur in the same subordinate clause.

2.2.9 Parametrizing negative concord

In this section, I will try to shed light on some of the differences one finds between the various negative concord languages. Note that the occurrence of negative concord in a language does not preclude the existence of negative polarity items in the same languages. Given that they occur in comparable environments, viz. negative contexts, and may denote comparable meanings, at least in these negative contexts, NPIs and concordant negative quantifiers may be difficult to distinguish.

Vallduví (1993) discusses the following diagnostics that have been used in the literature to distinguish NPIs and concordant elements:

- (57)
- a. Ability to occur in isolation
 - b. Ability to be modified by *almost* or *absolutely*
 - c. grammaticality in preverbal position
 - d. Ability to appear in *yes/no* and *if* contexts with a nonnegative value

Vallduví argues that not all diagnostics yield the same results with all elements in all languages, which suggests that the diagnostics measure different things. This means that they have to be used with a certain caution.

First, consider the following cases of negative doubling in French.

- (58)
- a. *Presque personne n'a vu Jean*
Almost nobody not has seen John
'Almost nobody has seen John'
 - b. *Je n'ai pratiquement rien vu*
I not-have practically nothing seen
'I have seen practically nothing'
 - c. *Pas plus de trois enfants n'ont lu ce livre*
Not more than three children not-have read that book
'Not more than three children have read that book'

These examples show that *ne* cooccurs with downward monotonic operators.

Carlson (1981) reports that modifiers such as *absolutely* may modify universal terms only (cf. chapter 1 for discussion). Assume (with, e.g., Zanuttini (1991)) that *pratiquement*, *presque* and words with a comparable meaning behave in the same way.³⁶ Then the examples above show that the terms modified by *presque* and *pratiquement* must have a universal meaning. That implies that examples such as (58) are a counterargument to the popular analysis which treats these negative elements as negative polarity items, licensed by the negative head *ne*: that approach predicts these negative elements to be interpreted as existential quantifiers, but existentials cannot be modified by *presque* and *pratiquement*.

Following the same line of argumentation, but contrary to what is commonly accepted, *aucun* should be analyzed as a negative quantifier and not as a negative polarity item. The relevant examples are presented in (59):

36. *Presque* may be used to modify cardinal numbers as well: *J'ai lu presque 500 livres* 'I have read almost 500 books' is fine. *Pratiquement*, however, cannot be used in this way. The sentence **J'ai lu pratiquement 500 livres* is ungrammatical unless *pratiquement* is given sentential scope.

- (59) a. *Aucune* paire de chaussures *ne* me va
No pair of shoes not me goes
'No pair of shoes fits me'
- b. *Presque aucune* paire de chaussures *ne* me va
Almost no pair of shoes not me goes
'Almost no/hardly any pair of shoes fits me'
- c. Je *ne* connais *aucun* professeur dans cette université
I not know no professor in this university
'I don't know any professor in this university'
- d. Je *ne* connais *pratiquement aucun* professeur dans cette université
I not know practically no professor in this university
'I practically don't know any professor in this university'
- e. As-tu acheté des bouquets de fleurs pour maman? Non, *aucun*.
Have-you bought of bunches of flowers for mommy? No, none.
'Have you bought any bunches of flowers for mommy? None.'

These sentences show that *aucun* can be modified by *presque* and *pratiquement* (which is not the case with negative polarity *any*), and that it can occur in isolation (which is again not the case with negative polarity *any*).³⁷ This means that I almost analyze French as the counterpart of Afrikaans: apart from differences in the placement of the reduplicator, and apart from the fact that *ne* always denotes the identity function, the languages behave alike.

A difference, however, between the two languages is the fact that French has negative spread as well, as I discussed earlier.

- (60) a. *Personne* n'a rien dit
Nobody not has nothing said
'Nobody has said nothing'
- b. *Jean* n'a jamais rien dit
John not has never nothing said
'John never said anything'
- c. **Jean* n'a jamais dit quelque chose
John not has never something said
- d. *Personne* n'a jamais rien dit contre toi
Nobody not has never nothing said to you
'Nobody ever said anything to you'
- e. *Personne* ne rit plus
Nobody not laughs no-more
'Nobody laughs anymore'

These facts follow immediately from the analysis presented above: universal negative quantifiers get an existential reading in spread environments. Spread virtually becomes obligatory, as alternative constructions involving existential quantifiers such as *quelque chose* 'something' are ruled out on the basis of the fact that they are positive polarity items (just like English *some*).

37. Note that the Italian counterpart of *aucun*, *alcuno*, is a negative polarity item: it doesn't occur in isolation, nor can it be modified with *quasi*. That is, French *personne* and *aucun* belong, together with Italian *nessuno*, to the class of negative quantifiers (with a context-sensitive semantics), and Italian *alcuno* belongs to another class, that of negative polarity items.

The asymmetry in (61) also follows from the analysis:

- (61) a. *Pratiquement* personne n'a rien dit
 Practically nobody not has nothing said
 'Practically nobody said anything'
 b. **Personne* n'a *pratiquement* rien dit³⁸
 Nobody not has practically nothing said

Pratiquement *personne* in subject position creates a spread context, as it is downward monotonic. *Pratiquement* *personne* itself, however, is excluded from these environments: *personne* gets an existential meaning there, but then it may no longer be modified by *pratiquement*, as this element may only modify elements with a universal meaning.

Note that the contrast between (59d) and (61b) is very hard to explain in theories where negation is located in *ne*: in either case, *pratiquement* is in its scope, but only if the purported negative polarity item *personne* is present, the sentence is ungrammatical. Moreover, this contrast is problematic for approaches such as Ladusaw's (1991, 1992) who analyzes all negative quantifiers in negative concord structures as indefinites. Under such an approach it should be impossible to modify these negative quantifiers with words such as *presque* and *pratiquement*.

The analysis presented here predicts that it should be possible to use French words such as *plus* "more" to denote "not anymore" in certain cases, such as answers to questions. According to my informants, this prediction is borne out. A uniform analysis of the element *ne* predicts moreover that *ne* would be optional in the *ne . . . que* construction as well. This prediction seems to be justified by the facts again (Laurent Dekydtspotter and Paul Hirschbüller, P.C.). This opens promising perspectives to an alternative analysis of this construction, in which *que* means 'only', and *ne* is semantically vacuous, as usual. Discussion of the consequences of this approach is beyond the scope of this dissertation.

Next, consider the Italian data in (62). These are taken from Ladusaw (1991). Ladusaw (1992:footnote 10) suggests that not all native speakers of Italian will agree with all the judgements presented here.

- (62) a. Gianni non ha visto Maria
 John not has seen Maria
 'John hasn't seen Maria'
 b. Mario non ha visto nessuno
 Mario not has seen nobody
 'Mario has seen no one'
 c. Mario non ha parlato di niente con nessuno
 Mario not has spoken of nothing with nobody
 'Mario hasn't spoken with anyone about anything'
 d. Nessuno ha parlato con nessuno
 Nobody has spoken with nobody
 'No one has spoken with anyone'

38. This sentence is grammatical on a double negation reading, which is irrelevant here.

- e. *Mario ha visto nessuno
Mario has seen nobody
- f. Nessuno ha visto Mario
Nobody has seen Mario
'Nobody has seen Mario'
- g. *Nessuno non ha visto Mario
Nobody not has seen Mario
- h. Con nessuno ha parlato nessuno
With nobody has spoken nobody
'Nobody has spoken to anybody'
- i. *Con nessuno non ha parlato nessuno
With nobody not has spoken nobody
- j. Non ha telefonato nessuno
Not has telephoned nobody
'Nobody called'

From these examples it is clear that preverbal negative quantifiers never co-occur with *non*, except under a double negation reading (as in (62i)), and that postverbal negative quantifiers always co-occur with *non*, unless some negative quantifier occurs preverbally, in which case *non* is forbidden.

Assume that negative spread occurs freely in Italian (cf. e.g. (62d)), that is, the meaning of a negative quantifier shifts, in the appropriate contexts, from a universal negative to an existential. Moreover, doubling occurs as well, but only from right to left.³⁹ I.e., only postverbal quantifiers trigger doubling.

The difference between (62c), where doubling is obligatory, and (62h), where it is forbidden on the concord reading, then follows. In (62c) *niente*, being a postverbal quantifier, triggers doubling to its left. On the other hand, it also triggers an existential reading of *nessuno* to its right. In (62h), the preverbal *nessuno* triggers the existential reading for its postverbal counterpart. But existential quantifiers are never able to trigger doubling. Then, the only interpretation available for *non* is negation, \neg , i.e., if the sentence is interpretable at all, it is under a double negation reading: 'with nobody not has spoken anybody'.

Next, consider the Catalan data in (63) (taken from Vallduví (1993)):

- (63) a. Qui ha vist? Ningú
Who 2s-perf-see noone
'Who did you see? Noone'
- b. Qui ha vist? Gairebé ningú
Who 2s-perf-see almost noone
'Who did you see? Almost noone'
- c. No funciona res
No 3s-work nothing
'Nothing works'

39. For implementation details cf. Van der Wouden & Zwarts (1993) and Dowty (1994).

- d. Res (no) funciona
3s-Work nothing
'Nothing works'
- e. Que vol res ningú?
Q 3s-want nothing noone
'Does anyone want anything?'
- f. Si vol res ningú, aviseu-me
If 3s-want nothing noone 2p-imp-warn.me
'If anyone wants anything, let me know'
- g. Ho havies vist mai enlloc, això?
Obj 2s-pastperf-see never nowhere this
'Had you ever seen this anywhere?'
- h. Si ho veus mai enlloc, avisa'm
If 2s-lose many things more 2s-fut-lose the head
'If you lose many more things, you'll lose your head'

The examples clearly show that apparent negative elements like *ningú* 'noone' and *enlloc* 'nowhere' can occur all by themselves, can be modified by *gairebé* 'almost', occur without an extra negation preverbally, and have an existential reading under negation but also in questions and conditionals. This implies that negative concord in Catalan is triggered by downward monotonicity rather than negation.

In order to understand the distribution of *no*, assume that Catalan combines negative spread with negative doubling. Assume moreover that the preverbal position is a special one, let's say topic. This topic position falls outside the domain of negative doubling. The domain of doubling is the sentence without the topic; if this domain contains a MD operator, the verb has to be marked with a negative marker. Just as is the case in French, this marker is enclitic to the verb.

The following sentence is perfectly grammatical, which proves our point. The postverbal negative subject clearly has scope over the *no* here. Would it be the other way round, then *gairebé* 'almost' would be modifying an existential, which is impossible.

- (64) No funciona gairebé res
Not works almost nothing
'Almost nothing works'

Negative spread in Catalan proceeds again from left to right. All negative operators, whether they are quantifiers such as *enlloc* 'nowhere' or the logical operator *no* 'not', have a context-sensitive semantics of the type described.

The distribution of *no* elements follows from the above: the domain of negative doubling is the sentence without the topic position. Postverbal negative elements trigger its occurrence as a doubling element, therefore it is obligatory. As *no* has a context-sensitive meaning it is itself optional with preverbal negatives. In these cases, *no* denotes the identity function and can be left out without any change in meaning.

Note that apparently indisputable negative polarity items such as *una ànima* ‘a soul’ and *un dit* ‘a finger’ behave somewhat differently in Catalan. As Vallduví (1993) observes, these NPIs always occur with the element *ni*. Interestingly enough, they occur in isolation together, they can be modified by *gairebé*, they occur in preverbal position with or without *no*, and they do not occur in questions and *if*-clauses:

- (65) a. Qui hi havia? Ni una ànima
Who 3s-impf-loc/exist not a soul
‘Who was there? Not a soul’
- b. Qui hi havia? Gairebé ni una ànima
Who 3s-impf-loc/exist not a soul
‘Who was there? Almost noone’
- c. A la cerimònia no hi va comparixer ni una ànima
At the ceremony no loc 3s-past-appear *ni* a soul
‘There didn’t appear a soul at the ceremony’
- d. Ni una ànima a la cerimònia (no) hi va comparixer
Not a soul at the ceremony (not) loc 3-past-appear
‘There didn’t appear a soul at the ceremony’
- e. *Que mouries ni un dit, per ell?
Q 2s-cond-move *ni* a finger for him
‘Would you lift a finger for him?’
- f. *Que va dir ni paraula?
Q 3s-past-say *ni* word
‘Did he say a word?’
- g. *Si li toca ni un pèl, avisa’m
If iobj 3s-touch *ni* a hair, 2s-imp-warn.me
‘If s/he touches him/her at all, let me know’

Given that these elements always occur together with *ni*, and that this combination has the same distribution as a negative quantifier, I assume that Catalan NPIs of the minimal amount type are collocationally restricted in such a way that they can be licensed by the MD element *ni* only. The combination as a whole functions as a negative quantifier, somewhat comparable to English *not a soul* (*was at the party*) or Dutch *geen mens* ‘no man’. The difference with the negative quantifiers in these languages is that *ni paraula* ‘not a word’ and other quantifiers also enter into the NC system of Catalan: they trigger negative spread (65c) and they trigger context-sensitive readings in other negative functors (65d).

The fact that *ni paraula* ‘not a word’ etc. cannot occur in questions and conditionals can be accounted for by assuming or stipulating that although *ni paraula* has a context-sensitive meaning itself (it can mean ‘any word’ when it is in the scope of *ningú* ‘nobody’), the contexts in which it may have this meaning form only a subset of the negative contexts.

Incidentally, there is also a ‘real’ NPI in Catalan: *gaire* ‘much’. It does not form a fixed combination with *ni*, it cannot occur in isolation, it cannot occur preverbally, and it cannot be modified by *gairebé* ‘almost’. It occurs in all MD

contexts, as far as I know, including questions, conditionals, and in the scope of antimultiplicatives: cf. Vallduví (1993) for the relevant data.

2.2.10 Concluding remarks

In this section, I have tried to give an impression of the variation one finds in negative concord languages, and how my theory would account for this variation. The notion of context-sensitive semantics was the central point in this account. I have shown that lexical stipulation of the elements which have such a context-sensitive semantics and variation in the exact contexts for which an element is sensitive, together with parameters such as directionality and domains, notions that are needed anyway in grammar, offer enough degrees of freedom to describe and explain the NC behavior of various languages.

I cannot claim to be able to deal with all NC languages in the world. For example, I haven't looked at any of the Slavic languages yet. Investigation of other types of NC systems is however outside the scope of this dissertation.

2.3 Weakening of negation: litotes

2.3.1 Introduction

LITOTES, in which an affirmative is expressed by the negative of the contrary (Jespersen 1917:62–3), is a rhetorical figure with a long tradition. Horn (1991) quotes Aristotle as the first of a series of authors, including the “Auctor ad Herennium” (1st century B.C.), Quintilian (1st century), Erasmus (1512, 1518), Puttenham (1593), Peacham (1589), Fowler (1926) and Leech (1983), who all recommend the usage of a double negative for certain rhetorical purposes.

The phenomenon is exemplified below in (66); note that not all examples involve two (overt or covert) negations:

- (66) a. It is *not unwise* to take precautions
'Rather wise'
- b. She doesn't look *too bad*
'Quite good'
- c. This type of phenomenon is *far* from *unusual*
- d. He lifted his hat with respect, and *not without* gallantry
- e. *Nobody* will *deny* that negation is a difficult matter
'Everyone will agree'
- f. We can *hardly doubt* that litotes is an interesting phenomenon

This section follows the treatment of litotes in Horn (1991) to a large extent. It is organized as follows: Section 2.3.2 is a summary of the relevant parts of Horn's paper. Section 2.3.3 argues that litotes is not restricted to overt negation: other monotone decreasing contexts also trigger the effect. Not every two negatives in every configuration give rise to litotes: 2.3.4 briefly discusses the notion of scope. Section 2.3.5 shows that litotes occurs below the word level as well; 2.3.6 discusses how Horn's theory may be adapted to account for these facts, and 2.3.7 compares the environments for litotes with those for negative polarity items and claims that, in principle, all downward monotonic contexts trigger the effect. The last section contains the conclusion that litotes shares many properties with other phenomena that are sensitive to negative contexts, and that Horn's theory should be extended in order to account for that.

2.3.2 Horn's analysis of litotes

The analysis of litotes in Horn (1991) has two parts, a semantic one and a pragmatic one.⁴⁰ The semantic part is straightforward: in Horn's view, semantics is compositional and, in the case of litotes, logical: two negations make an affirmative.

The pragmatics of this type of double negation is explained by means of a variation on one of Grice's maxims (Grice 1989):

40. Horn (1991:footnote 10) points at Leech (1983), Hübler (1983), Hoffmann (1987) and Caffi (1989) as predecessors of his views. Cf. also the treatment of litotes in Bolinger (1972).

- (67) **Division of Pragmatic Labor** The use of a longer, marked expression in lieu of a shorter expression involving less effort on the part of the speaker tends to signal that the speaker was not in a position to employ the simpler version felicitously. (Horn 1991)

Let me explain the interplay of these two mechanisms first, before adding complications. Assume a speaker utters sentence (66a), repeated below as (68):

- (68) It is not unwise to take precautions

Upon hearing this utterance the cooperative hearer will reason as follows. Literally, the speaker says that it is 'not not-wise' to take precautions. Logically, this is equivalent to saying that it is wise to take precautions. But the speaker doesn't say this, so, according to (67), and assuming he is reasonable and cooperative as well, he'll have his reasons for saying what he wants to say in this roundabout way. So probably he doesn't want to claim that it is wise to take precautions. Evidently, he doesn't want to claim that it is unwise to take precautions either, given the fact that that statement is explicitly denied. Presumably, then, the speaker wants to refer to the grey zone somewhere between *wise* and *unwise* (Sapir 1944), comparable to expressions such as 'it is rather wise to take precautions', 'it is pretty wise to take precautions', 'it is reasonably wise to take precautions', 'it is neither wise nor unwise to take precautions', etc.

The following picture may be of some help to see what is going on (the dotted areas are not available for interpretation):

	a	unwise	.....	wise
	b	not wise		....
(69)	c	.....	not unwise	
	d	.....	not unwise	....

The a-row depicts a scale of wisdom, going from unwise on the left to wise on the other extreme. There is an area in between the two extremes where neither *wise* nor *unwise* apply (of course, there is no sharp boundary between the extremes and the middle part). The b-row shows the logical denotation of *not wise*: it covers all of the scale that is not covered by *wise*. The c-row is a picture of the logical denotation of *not unwise*: that expression covers all of the scale that is not covered by *unwise*. The d-row, finally, depicts the pragmatic possibilities of *not unwise*: the principle in (67) restricts the usage of the expression to the middle area, the grey zone in between the two extremes.

It might be claimed that this approach predicts that the meaning of *not wise* is either the same as that of *not unwise*, or of *wise*. That, however, is incorrect: *not unwise* refers only to the middle area in the picture above and *unwise* refers to the left column only, whereas *not wise* covers the two columns to the left, i.e., the complete area not covered by *wise*.

Various properties of and restrictions on litotes follow immediately from this analysis. Firstly, litotetic constructions with nongradable predicates are ungrammatical or unfelicitous, equivalent to the straightforward expression, or figurative by necessity. Consider the following cases:

- (70) a. ?A not unmarried woman entered the room
 b. This food is not non-toxic
 c. It is not impossible that I'll attend the meeting

As regards the first example: one is either married or unmarried, and there is no grey zone in between the two for the litotetic construction to allude to. Hence the sentence form an unfelicitous utterance. The following picture may help:

(71)	<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-bottom: 1px solid black; padding: 2px 10px;">married</td> <td style="border-bottom: 1px solid black; padding: 2px 10px;">unmarried</td> </tr> <tr> <td style="padding: 2px 10px;">not unmarried</td> <td style="padding: 2px 10px;">not married</td> </tr> </table>	married	unmarried	not unmarried	not married
married	unmarried				
not unmarried	not married				

The truth value of (70b) is the same as that of the simple expression *this food is toxic*, the only difference being that (70b) explicitly denies expectations or presupposition of the opposite. For these purposes the sentence is fine, but not for conveying a meaning along the lines of 'the food is somewhere in the grey area between toxic and non-toxic', i.e., a litotetic meaning, since such a grey area doesn't exist. In terms of usage possibilities, this means that this statement can be used felicitously to react to a certain statement, i.e. as a case of denial (section 2.4), but not, e.g., as a warning:

- (72) a. This food may taste good, but it is not non-toxic!
 b. Beware, this food is not non-toxic!

In order to be able to make sense of (70c) the hearer must (and automatically will) construct a nonlogical scale of possibilities on which 'not impossible' is somewhat less possible than 'possible'. That is to say, *impossible* doesn't have its logical meaning here but rather refers to a certain degree of (im)probability.

Secondly, certain predicates are bad in litotetic constructions:

- (73) a. *A not unblack dog
 b. *A not unsmall amount

One reason that a construction such as **a not unblack dog* is unwellformed was already mentioned in the discussion of (70b): there is no such thing as being somewhere on a scale between *black* and *non-black*. A second reason for the unwellformedness of **a not unblack dog* and **a not unsmall amount* may be that morphological blocking plays a role. Note that *un-*prefixation is impossible with monosyllabic Germanic adjectives that have a monosyllabic Germanic antonym (Zimmer 1964): **unblack* and **unsmall* are already ungrammatical all by themselves. A third possible reason for the ungrammaticality of **a not unblack dog* is that the construction is extremely uninformative: *black* is not the endpoint of a linear scale. If we know that something is not black, than we only know that it will probably have some color, but we don't know which color. Negation of this unspecified non-black color doesn't pinpoint a specific color. In other words, the double negation of *black* doesn't unambiguously denote a region in the color spectrum. The use of this specific construction would be restricted to very special situations, since it offends the Gricean maxim to be as informative as possible.

To end this section, I mention two collocational effects within the area of litotes. Not every lexical item enters into litotetic constructions equally easy.

Hübler (1983) observes that lexicalized extremes are often bad in this type of construction (cf. also Fletcher (1980), Van Os (1989)). This hardly comes as a surprise: in chapter 1 it became clear that intensifiers are often positive polarity items, especially when they are collocational, i.e., lexicalized.

- (74) a. ?Not stone deaf
 b. *It doesn't rain cats and dogs
 c. Not too deaf
 d. It doesn't rain very hard

And secondly, certain cases of litotes occur statistically much more often than others. Recurrent combinations may thus develop a collocational flavor, to the effect that e.g. *nobody denies* 'sounds' much better than e.g. *no woman denies*.

Again, the theory developed here has nothing much to say about the exact lexical details. It sketches the outlines of what combinations may function as litotes, and it describes the mechanisms underlying the effect, but it cannot predict exactly which specific lexical items will enter into such combinations. There is ample space and need for lexical stipulation.

2.3.3 More than negation

Hoffmann (1987) is a recent monograph on litotes in Latin. Hoffmann follows the terminology of Gerard Vossius⁴¹ and talks about NEGATIO CONTRARIUM ('negation of the opposite', NC) instead of litotes. The relevant part of Hoffman's view on litotes is given below:

- (75) **Hypothesis** In litotes, the process of negation is effected by NEG particles only (Hoffmann 1987:216)

According to this hypothesis, the second of the following construction types is excluded from the discussion of NC: only the first is supposed to be an instance of litotes:

- (76) a. I don't deny she is right litotes
 'Of course she is right'
 b. Nobody denies she is right no litotes
 'Of course she is right according to everyone'

Hoffmann's restriction is motivated by the framework she is working in, Dik's Functional Grammar (Dik 1989). In FG, as in many other frameworks, negation phenomena are explained in terms of an abstract negative operator NEG (cf. Bossuyt (1982) for the most complete treatment of negation within the FG framework).

The restriction to NEG is unsatisfactory for several reasons. The first problem is already noted by Hoffmann herself:

For NC-expressions in other languages adaptations will be necessary. In e.g. English, Dutch and German, litotes expressions are used that contain zero-quantifiers, for instance: *He is no fool*, *Dat is geen gek idee* ('That's no foolish idea'), *Er ist kein Tor* ('He is no fool'). In Latin, expressions of the form **nullus stultus est* are ungrammatical if used as NC-expressions. (Hoffmann 1987:229 n41)

41. *Commentariorum rhetoricum sive oratorium institutionem libri VI*, Leyden, 1643.

Although Latin expressions of the form **nullus stultus est* are ungrammatical if used as NC-expressions, constructions of the type *nemo negat* ('nobody denies') are perfectly well-formed. They are, however, still excluded from the discussion because they do not fit into the framework as it stands. The following table depicts this ad hoc and unsatisfactory division between what counts as litotes and what not:

	litotes (Hoffmann 1987)	no litotes (Hoffmann 1987)
(77)	He is <i>not</i> a <i>bad</i> guy <i>Non nego</i> I don't <i>deny</i>	He is <i>no</i> <i>fool</i> <i>Nemo negat</i> <i>nobody denies</i>

The second problem is that negative adverbs such as *never*, *nowhere* and *not at all* show the same effect, just like the negative conjunct *neither*; these are also left out from Hoffmann's discussion:

- (78)
- a. Success never lasts
'Success is bound to stop'
 - b. That way the children were never in danger
'The children were always rather safe'
 - c. Of course, some acts may be neither unjust nor immoral
'Some acts may be just and moral at the same time'
 - d. I was nowhere near the cottage
'I was quite far away from the cottage'
 - e. As it turned out, the dragon was not at all annoyed.
'The dragon could smile about it'

Thirdly, monotone decreasing operators such as *seldom*, *hardly* and Dutch *weinig* 'little, few' may also trigger the effect of litotes:

- (79)
- a. I recognize that this is scarcely tightly formulated
'Rather loosely formulated'
 - b. The weather was seldom uncomfortable
'Pretty comfortable most of the time'
 - c. This is scarcely little less than infanticide
'Almost the same as'
 - d. Met deze soep is weinig mis
With this soup is little wrong
'Nice soup' (Dutch)

Finally, it is methodologically unattractive to invoke an explanation in terms of an abstract negative operator NEG for one type of natural language phenomenon involving negation when it is dispensed with for other natural language phenomena involving negation such as polarity and concord.

Taken together, these four reasons lead me to the hypothesis that litotes may in principle occur in all types of negative contexts. In other words:

- (80) **Hypothesis** Downward monotonicity triggers litotes

In section 2.3.6 below, I will explain how Horn's analysis of litotes may be revised and expanded in order to cope with the monotone decreasing contexts that trigger litotes, and why not all MD contexts do.

Note that hypothesis (80) has nothing to say about the semantic properties of the elements in the scope of the downward monotonic operator, and I think that hardly anything general can be said about them in formal terms. One finds elements that are provably downward monotonic themselves, such as the verb *doubt* in *nobody doubts that* (cf. chapter 1).

Others elements, however, are not MD, for example adjectives such as *bad* as in *that is hardly a bad idea* or *small* as in *to no small degree*. These adjectives are negative in an intuitive and conventionalized way, but they are not monotone decreasing. Among other things, they cannot be used to ask unbiased questions (cf. *how big is he?* vs. *?how small is he?*). The following examples show that addition of such an adjective to a quantifier consisting of a determiner and a noun apparently does not change the NPI triggering potential of the quantifier: *no child* may license the NPI *any*, and *no small child* may do so as well. On the other hand the noun phrase *his ideas* cannot license the NPI *hold a candle to*, and neither can the modified noun phrase *his bad ideas*.

- (81) a. No child attended any of the meetings
 b. No small child attended any of the meetings
 c. *His ideas hold a candle to ours
 d. *His bad ideas hold a candle to ours

The parallelism between the two implications below shows that modification by means of an adjective such as *bad* does not change the monotonicity properties of the quantifier.

- (82) a. Every man sings a folk song → Every man sings a song
 b. Every bad man sings a folk song → Every bad man sings a song

In the light of the monotonicity calculus put forward in Zwarts (1986a) and Kas (1993) these data suggest that *small* and *bad* are monotone increasing.

The above discussion shows that the ‘lowest negative elements’ in *litotes* construction cannot be characterized easily in terms of monotonicity properties. Both monotone decreasing elements like *doubt* and *nobody* and monotone increasing elements such as *bad* may occur in this position.

2.3.4 A note on scope

Another topic that should be addressed briefly is that of scope. Given the parallels with polarity phenomena I assume that the domain of *litotes* is local in principle, with some possibilities of extension of the domain. The following contrast gives just one example of an extension of the domain that is completely parallel to one of the cases discussed in chapter 1:

- (83) a. Nobody *thinks* his plan holds a candle to ours
 b. *Nobody *says* his plan holds a candle to ours
 c. Nobody *thinks* this is a bad idea
 ‘Everybody thinks that this is a rather good idea’
 d. Nobody *says* this is a bad idea
 ≠ ‘Everybody says this is a rather good idea’

These examples show that a negation in a higher clause only yields the relevant effects in a subordinate clause if a bridge verb, i.e. a negative raising predicate,

intervenes. *Think* has the appropriate properties, *say* doesn't; a NPI such as *hold a candle to* is ungrammatical if it is to be licensed by *nobody* in the superordinate clause, unless a negative raising predicate such as *think* extends the domain. *Bad* is not ungrammatical in a subordinate clause, but it doesn't have a litotes reading when combined with a negative element in a superordinate clause, unless a bridge verb builds a link.

A comparable situation holds in Dutch: the word *onverdienselijk* 'unmeritorious' — that is restricted to litotes constructions — is fine in a clause dependent on a negated NR predicate. If the verb is changed into one that is not NR only a metalinguistic negation reading is available, which denies the applicability of the word *onverdienselijk*:

- (84) a. Ik geloof niet dat hij onverdienselijk werk levert
I believe not that he unmeritorious work delivers
'I think his work is quite good'
- b. Ik zeg niet dat hij onverdienselijk werk levert
I say not that he unmeritorious work delivers
'I don't say his work is UNMERITORIOUS'

This parallelism again suggests that comparable mechanisms are at work in negative polarity licensing and litotes.

2.3.5 Litotes below the word level

An ancillary argument in favor of a parallel treatment of polarity phenomena and litotes may be found in the fact that both are found below the word level. The negative polarity item (*kunnen*) *uitstaan* retains this property if it partakes in morphological processes:

- (85) a. *Iedereen kan Frans uitstaan
Everybody can Frans stand
- b. Niemand kan Frans uitstaan
Nobody can Frans stand
'Nobody can stand Frans'
- c. *Uitstaanbaar
'Standable'
- d. Onuitstaanbaar
Unstandable
'Intolerable'

The positive polarity item *verdienselijk* 'meritorious' discussed earlier has a negatively prefixed form that occurs in litotes constructions only:

- (86) a. Hij is een verdienselijk schilder
'He is a meritorious painter'
- b. *Hij is geen verdienselijk schilder
He is no meritorious painter
- c. Hij is een niet onverdienselijk schilder
He is a not un+meritorious painter
'He is a painter of some distinction'

One also finds cases of litotes below the word level, i.e., words containing a double negation.

- (87) English:
- a. Undeniable 'true'
 - b. Undecaying 'robust'
 - c. Doubtless 'sure'
 - d. Unacceptable 'forbidden'
- (88) Dutch:
- a. Onaanvechtbaar 'unfightable, true'
 - b. Ongerust 'uneasy, anxious'
 - c. Ongenadig 'merciless, terrible'
 - d. Onvermoeid 'unfatigued, fit'
- (89) Latin:
- a. Impiger 'unlazy, industrious'
 - b. Nonnulli 'not nobody, some people'

These cases are problematic for theories of litotes that attribute everything to an underlying negative morpheme that is to be spelt out as a negative particle in syntax, for the complete litotetic construction is ready, so to speak, before it enters syntax. It goes without saying that it is always possible to keep the examples given above outside one's theory of litotes, but then one needs an independent theory to explain that comparable meaning effects occur elsewhere as well.

The theory defended here, on the other hand, puts no restrictions on the domain where litotetic effects may happen. This may be too strong, empirically, but it correctly predicts examples like the ones given above.

The following English and Dutch cases demonstrate that sometimes even recursion is possible in litotes, in the sense that more than two negations may interact. Especially a lexicalized litotes may occasionally be negated again in order to form a new one:

- (90)
- a. Not unproblematic 'difficult'
 - b. Niet onaanvechtbaar 'not unfightable, doubtful'
 - c. Niet onbeweegbaar 'not immovable, flexible'
 - d. Niet ongemoeid 'not untouched, disturbed'

Again, this is totally unexpected in a theory based on one negative particle that is responsible for all litotetic effects.

2.3.6 Reconsidering the semantics and pragmatics of litotes

If it is indeed the case that litotetic effects may be caused by weak negations, i.e., if the hypothesis in (80) is correct, I have to come up with a new story about the meaning of litotes.

First an approach that is incorrect. Consider a combination such as *hardly doubt*. Given a scale on which *doubt* is an endpoint, the modification with *hardly* might mean that the term *doubt* is hardly applicable to the situation. That is to say, this analysis boils down to a type of metalinguistic negation.

Consider first an uncontroversial case of metalinguistic negation where a speaker corrects the pronunciation of a proper name:

(91) It is not *BernstEEEn*, it is *BernstAln*

Compare this to an undisputable case of litotes:

(92) It is not unwise to take precautions

Note that the intonation in the two examples is different: in (91) the negation is necessarily stressed whereas negation is (necessarily?) unstressed in (92). If negation is stressed in the latter case, one feels the need to offer an alternative, which yields a metalinguistic reading. That reading however is radically different from the original one, as is illustrated by the pictures.

(93) a. It is not unwise to take precautions

b.

unwise	.....	wise
.....	not unwise	....

c. It is NOT UNWISE to take precautions, it is downright stupid

d.

stupid	unwise		wise
NOT UNWISE	.....	...	....

That means that the litotetic interpretation is different from the one where the presence of metalinguistic negation is beyond doubt. But if the interpretations are different, it cannot be metalinguistic negation in both cases, which implies that metalinguistic negation is not the crucial factor in litotes.⁴²

Let me therefore try to attack the problem of why weak negations may trigger litotetic readings from the semantic side. Consider the following scale:

(94) stupid | unwise | more or less wise | wise

All monotone decreasing environments, that is, negations weak and strong, allow for reasoning from sets to subsets, i.e., from predicates to more specific predicates. In other words, logic allows the following reasoning:

(95) a. It is hardly unwise to take precautions

b. $\llbracket \text{stupid} \rrbracket \subseteq \llbracket \text{unwise} \rrbracket$

c. It is hardly stupid to take precautions

But then the interpretation of litotetic constructions involving weak negations such as *hardly* must be unambiguous, in principle: although the double negation is not on an endpoint of a scale, logic excludes reasoning in one direction, so only the other direction is left over. That is to say: *hardly unwise* is completely comparable to *not unwise* in as far as the two expressions denote the same degree of wisdom.

This state of affairs is depicted in the following illustration:

(96)

a	stupid	unwise	more or less wise	wise
b	hardly unwise	.....	hardly unwise	
c	.....	.....	hardly unwise	

42. Unless one distinguishes various types of metalinguistic negation, as in Wiche (1993).

The a-row just repeats the scale of wisdom already familiar from (94). The b-row shows the interpretations of *hardly unwise* that are logically possible: all regions of the scale that are not *unwise*. The c-row depicts the inference that is allowed according to (95): because of the fact that *hardly* is monotone decreasing, *hardly unwise* entails *hardly stupid*. That leaves only the right hand part of the scale as a possible interpretation. That is to say, the meaning of *hardly unwise* ranges from *more or less wise* to *wise*.

If this is the right approach to litotes under weak negation, an obvious question to ask is the following: if *not unwise* and *hardly unwise* refer to the same part of the scale of wisdom, that is, if pragmatics causes them to mean the same, why would one ever prefer the more complex form *hardly unwise* over the simple *not unwise*?

The answer to this question will be pragmatic. Consider a linguistic context where litotes is used very often. The “normal” litotes construction *not unwise* may become fossilized in such a way that it is hardly appropriate anymore. That is to say, frequent use of such a combination may weaken its subtleties; if a pragmatic principle — such as tact (Leech 1980) — asks for a very subtle wording, the expression *hardly unwise* may be useful, although it is more costly and more elaborate than *not unwise*, but also more friendly and less worn out. But, as these situations are rare, so are litotes constructions with weak negations such as *hardly*.

There is some uncertainty about the exact meaning of litotes. The rhetorical tradition (Erasmus, Lausberg (1973:§586)) states that the litotes construction is strongly positive, whereas the linguistic tradition (Jespersen 1917; Bolinger 1972; Horn 1991) tells us that the doubly negated expression is somewhat weaker than the straightforwardly positive one. Given the analysis of litotes that I have chosen, I believe in the latter option. The (truth-functional) meaning of a lexical item such as *unwise* is vague: it covers the area between *rather wise* and *extremely wise*. The independent mechanism of understatement (Berg 1978; Hübler 1983) is responsible for the fact that litotes constructions may be used to express occasionally strong positive statements.

2.3.7 Litotes in various MD environments

The hypothesis in (80) predicts that litotes may occur in all monotone decreasing contexts. This is not completely borne out by the facts: although litotes certainly occurs in many monotone decreasing contexts, it doesn’t show up in all. Two options are possible here: either one takes the point of view that litotes occurs with negation only — but then one needs a story about the cases of litotes in other monotone decreasing contexts — or that litotes occurs in all monotone decreasing contexts — and then one needs to explain why it doesn’t in all those monotone decreasing contexts. It will probably not come as a surprise that I will try and defend the latter option.

In order to stress the parallels between polarity phenomena and litotes once more, I will now discuss various contexts where negative polarity items may show up, whereas many positive polarity items do not occur there. I will try and show that litotes occurs in these contexts as well. In chapter 1, it became clear that not all NPIs have the same distribution: there is not only variation in the type of negative context the elements are sensitive to, there are additional restrictions that must be held responsible for the fact that certain NPIs do not collocate with all downward monotonic expressions of the appropriate type.

It will turn out that a comparable situation exists in the case of litotes. Not all negative predicates will give rise to a litotetic meaning when they are combined with just any MD operator. I will give an account for several of such cases. The examples I discuss are mostly Dutch because the judgements are sometimes rather subtle and my judgements concerning Dutch are more trustworthy than those concerning English. I trust, however, that the results will carry over to English and other languages.

Conditionals

Conditionals are well-known places for negative polarity items. Not all predicates, however, give rise to litotes in this context. Let me illustrate this with the adjective *onverdienselijk* 'unmeritorious', that occurs in litotes constructions only (WNT).⁴³ The following examples show ungrammatical sentences with this adjective in the antecedent clause of a conditional:

- (97) *Als hij een onverdienselijk schilder is, ontsla hem dan
If he is a painter without merit, fire him!

A formation comparable to *onverdienselijk*, *onbetuigd*, is also restricted to litotes constructions.

- (98) a. Hij liet zich niet onbetuigd
He left himself not un-testified'
'He acquitted himself well'
b. *Hij liet zich onbetuigd

But that word is acceptable in conditionals:

- (99) Als je je onbetuigd gelaten had waren er ongelukken gebeurd
If you hadn't acquitted yourself well accidents would have happened

Remember from chapter 1 that not all negative polarity items are well-formed in this context either: *hoeven* 'need' and *meer* 'anymore' do not occur here, although the fact that *ook maar* 'at all' is fine in this context suggests that the context is monotone decreasing, and even anti-additive.

- (100) a. Als er ook maar iets gebeurt moet je me bellen
If there at all something happens must you me call
'If anything happens at all, call me'
b. *Als je hoeft te werken, kun je daar gaan zitten
If you need to work, can you there go sit

43. Cf. the discussion of *(on)verdienselijk* in section 2.3.5.

- c. *Als je koffie meer wilt, daar is de thermoskan
If you coffee anymore want, there is the thermos

To complicate matters even more, remember that *hoeven* does occur in conditional sentences, provided a negation is present as well. One can also get litotes in the antecedent of a conditional if an extra negation is present:

- (101) a. Als je niet hoeft te werken morgen kun je nog wat drinken
If you not need to work tomorrow can you still something drink
'If you don't have to work tomorrow you can take another drink'
b. Waarom ontsla je hem als hij geen onverdienstelijk werk aflevert?
Why fire you him if he not undeserving work produces?
'If he is doing a good job, why fire him?'

From the data involving *onbetuigd*, I conclude that the conditional may in principle trigger litotetic effects. Often, however, it doesn't: in the following example the readings 'somewhere between good and bad' and 'neither wise nor unwise' are very hard to get:

- (102) a. If this is a bad idea, don't do it
b. If it is unwise to take precautions, why bother?

I will return to the question why not all occurrences of a negative element in a downward monotonic context lead to litotes in section 2.3.8.

Before

Litotes isn't found too often in *before*-clauses, although they are provably downward entailing (Landman 1991) and even anti-additive (Sánchez Valencia *et al.* 1994). In chapter 1, it was established that the Dutch NPI *ooit* 'ever' is fine in *before*-clauses, whereas *meer* 'anymore' cannot occur there:

- (103) a. Voordat je ooit naar Frankrijk gaat moet je dit boek lezen
Before you ever to France go must you this book read
'You must read this book before you ever go to France'
b. *Voordat de gasten koffie meer willen moeten we maar bijzetten
Before the guests coffee anymore want must we but more-make

The next example shows that this context may produce litotetic effects in principle too: although it doesn't work with *onverdienstelijk*, it does with *slecht* 'bad':

- (104) a. *Voordat je onverdienstelijk werk levert word je ontslagen
Before you undeserving work produce are you fired
b. Voordat hij slecht werk aflevert moet er heel wat gebeuren
Before he produces inferior work, a lot has to happen
'He'll never produce work that is below standards'

Downward monotonic determiners

Determiners such as *geen* are monotone decreasing both in their first and their second argument (chapter 1, Zwarts (1981), Zwarts (1983)). Yet, there is a difference in the possibility of litotes between the two arguments:

- (105) a. Geen middel is onbeproefd gebleven
No means has untried stayed
'All means have been tried'
- b. *Geen middel dat onbeproefd is gebleven heeft geholpen
No means that untried is stayed has helped

There are also differences in the behavior of negative polarity items in the first argument of *geen* (cf. chapter 1):

- (106) a. Geen kind heeft ook maar iets vermoed
No child has at all something suspected
'No child suspected anything at all'
- b. Geen kind dat ook maar iets vermoed heeft is gevluht
No child that at all something suspected is fled
'No child that suspected anything at all fled'
- c. Geen kind hoeft huiswerk te maken
No child needs homework to make
'No child needs to make homework'
- d. *Geen kind dat huiswerk hoeft te maken mag tv kijken
No child that homework needs to make may watch television

I haven't found a litotetic effect in the MD first argument clause of any determiner. The situation, however, is complicated by examples such as the following, where the adjective *onverdienselijk* is found in the first argument of *geen*, but only if it is not in a clause.

- (107) a. *Hij is geen schilder die onverdienselijk werk levert
He is no painter who unmeritorious work produces
- b. Hij is geen onverdienselijk schilder
He is no unmeritorious painter
'He is a painter not without merits'

Note that a comparable contrast was observed in chapter 1 with respect to the strong NPI *mals*: that item doesn't occur in a subordinate clause in the first argument of *geen*, but if it occurs as a premodifier between *geen* and the noun, the result is fine. The following pair of sentences exemplifies the effect:

- (108) a. *Dat was geen kritiek die mals was die je kreeg
That was no criticism that tender was that you received
- b. Dat was geen malse kritiek die je kreeg
That was no tender criticism that you received
'The criticism you got was rather harsh'

That means that there is again a rather strong parallelism between polarity licensing and litotes.

Questions

Questions are a good place for negative polarity items, especially rhetorical questions where a negative answer is expected (indefinites such as *any* and *ever* (and its Dutch counterpart *ooit*) are also found in neutral questions). In rhetorical questions, one also finds litotes:

- (109) a. Kan iemand Frans uitstaan dan?
Can somebody Frans stand then?
'Don't tell me anyone can stand Frans'
- b. Hebben wij enig middel onbeproefd gelaten?
Have we any means untried let?
'We tried everything, didn't we?'
- c. Wat kon ik anders doen?
What could I else do?
'What else could I do? (I had to do this)'

Without

Without-clauses trigger negative polarity items and *litotes* alike:

- (110) a. Karel verliet het gebouw zonder ook maar iets te zeggen
Karel left the building without at all something to say
'Karel left the building without saying anything'
- b. Karel verliet het gebouw zonder zijn pasje te hoeven laten zien
Karel left the building without his badge to need let see
'Karel left the building without having to show his badge'
- c. We zullen u helpen zonder een middel onbeproefd te laten
We will you help without a means untried to leave
'We will help you with all means'

Many negative polarity items are fine in clauses headed by *zonder* 'without' (apart from the strong ones, such as *mals*, but remember from chapter 1 that this is because of the fact that *zonder* is anti-additive and not antimorphic). However, certain items that flourish in other *litotes* constructions are hard to get in *zonder*-clauses:

- (111) ?Zonder een onverdienstelijk schilder te zijn krijg je geen prijs
Without an unmeritorious painter to be get you no prize
'Without being an unmeritorious painter you'll get no prize'

In section 2.3.8 I will return to possible answers to the question why *litotes* sometimes doesn't occur here as well.

Comparatives

In chapter 1 I also discussed the fact that NPIs occur in (certain) comparatives. It seems to be the case that *litotes* is found there as well:

- (112) Ze is onaardiger dan ze eruitziet
She is unkindier than she looks
'She acts worse than she looks'

This last sentence is perhaps the most striking case of *litotes* without anything negative. Not all my informants agree on this, but some of them tell me that there is a *litotes* meaning effect. The sentence suggests that the subject's beauty is comparable to that expressed by *she doesn't look (too) bad*, i.e., rather good, and that her behavior is definitely worse than that degree. That is to say, the same vagueness occurs both in undisputable *litotes* constructions and in this strange sentence.

Superlatives and only

As superlatives may trigger NPIs (chapter 1), one expects that litotes should be able to occur in their scope as well. I haven't been able to construct any acceptable litotetic constructions in superlatives, however.

- (113) *De beste schilder die onverdienstelijk werk levert wordt ontslagen
The best painter who unmeritorious work produces is fired

In the construction depending on *de enige* 'the only', that has been argued to be comparable (Hoeksema 1986b), one does find litotes:

- (114) a. ?De enige schilder die onverdienstelijk werk levert wordt ontslagen
The only painter who unmeritorious work produces is fired
b. De enige atleet die zich onbetuigd gelaten heeft is hij
The only athlete who himself unattested has let is he
'He is the only athlete who didn't acquit himself well'

2.3.8 Why litotes does not occur in certain types of MD contexts

I conclude from the last section that litotes occurs in various monotone decreasing contexts. Often, however, it doesn't. Why not?

To get a clear view of the situation, compare the distribution of litotes over various MD environments with that of several negative polarity items. Consider the following chart, based on the last section (with subtleties left aside) combined with the findings from chapter 1 as summarized in table (229):

item → ↓ context	hoeven	ook maar	meer	een beetje	litotes
MD operators	ok	*	ok	*	ok
anti-additives	ok	ok	ok	*	ok
conditionals	*	ok	*	ok	ok
1st arg. of <i>geen</i>	*	ok	*	ok	*
(115) 1st arg. of <i>alle</i>	*	ok	*	ok	*
relatives to <i>alles</i>	ok	ok	*	ok	*
questions	*	ok	*	ok	ok
comparatives	ok	ok	*	ok	ok
superlatives	ok	ok	*	ok	*
<i>the only</i>	ok	ok	*	ok	ok
<i>before</i>	ok	ok	*	ok	ok

Clearly, there is no complete parallelism between the distributional pattern of any negative polarity item and that of litotes. That means that either various types of litotes have to be distinguished, or that an explanation for the restricted distribution of litotes should be found elsewhere.

Note firstly that collocational effects play a role.⁴⁴ Many litotetic expressions are subject to fossilization, sometimes even to the degree that the

44. Langendoen & Bever (1973) and Aitchison & Bailey (1979) discuss various syntactic restrictions on the usage of *not un-* formations. Bolinger (1980) re-interprets these restriction in pragmatic terms. Perhaps some of them carry over to other types of litotes as well, which would offer a partial explanation of this instance of collocational behavior (cf. chapter 3).

negated element becomes a negative polarity item. Cases such as *not bad*, *it is beyond doubt* and *weinig mis* 'little wrong' have developed into completely fixed clichés or idioms.⁴⁵

Next to that, an explanation of the remaining cases (or even most cases) might be found along the following lines. Horn's analysis of the semantics and pragmatics of litotes, which I follow, crucially involves scales: an expression such as *not unwise* means what it means because of the fact that a scale can be constructed on which *wise* and *unwise* are endpoints, and the double negation denotes a grey area between these endpoints.

The negated predicate, however, is not the only element that is associated with a scale. Negation or, more general, any monotone decreasing context, is associated with a scale itself. In the case of simple negation (*not*, *n't*) this is a trivial scale of truth values on which 0 ('not') and 1 ('true') are endpoints. This scale is compatible with almost any scale a predicate may be associated with, which explains why litotes with normal negation is the unmarked case (Hoffmann 1987). The weak negations *hardly*, *scarcely*, *barely* are associated with the same scale of truth values, so these elements may occur in litotetic constructions with many predicates as well. There exist, however, pragmatic restrictions on litotes with these elements: I discussed these at the end of section 2.3.6. These restrictions explain why litotes with weak negations is comparatively rare.

Most other downward monotonic operators have more semantic content, so to speak. They are associated with scales that may be incompatible with the scale of the negated predicate. I assume that this scale clash or category mistake is responsible for the fact that one often cannot make a litotes construction by putting some negative predicate in just any monotone decreasing context.

If this is right, this is an explanation for the observation of Jespersen (1924:332) that the two negations in the double negation construction known as litotes have to refer to the same idea. This can be restated as follows:

- (116) **Hypothesis** The two negations in litotes constructions have to be associated with compatible scales.

2.3.9 Concluding remarks

I have shown that litotes can be described within accepted linguistic frameworks. Just like other types of multiple negations in natural language, litotes is found in almost any downward monotonic context. It is certainly not restricted to negation. The fact that litotes is traditionally seen as an instance of double negation has various reasons: firstly, negation is the most frequent, prototypical type of monotone decreasing context; secondly, pragmatic reasons may forbid usage of a weak negation in many cases where a normal negative is already effective, thirdly, collocational effects play a role in the sense that many litotes constructions involve rather fixed combinations of lexical elements, and finally,

45. The reader may convince him/herself of the MD character of the construction *it is beyond* by contemplating on the relationship between *it is beyond doubt* and *it is beyond all doubt*, or on that between *it is beyond control* and *it is beyond our control*.

the semantics of downward monotonic context and negated expression may be incompatible. The conclusion, however, can be no other than that it is unwise to restrict the study of litotes to cases that involve double negations.

2.4 Denial

2.4.1 Introduction

A type of multiple negation with a completely logical behavior, at least at first sight, is what I will call DENIAL. In denial, one negation explicitly cancels the other. Horn (1978b:163) notes that “direct denials [. . .] seem to be full force and not weakened affirmations.” Examples in point are the following:

- (117) a. You shouldn't not go to the party (just because of the rain)
 b. You can't not go (= You must go, you have to go)

“The last example, with one negation each outside and within the scope of a possibility (or permission) operator [. . .] represents a paradigm case of double negation.” After Harries (1973), Horn gives the following parallel cases (cf. also Jespersen (1917)):

- (118) a. Hans kann *nicht* den Mann *nicht* hassen (German)
 Hans can not the man not hate
 ‘Hans must hate the man’
 b. John *nem* tudta *nem* szeretni őt (Hungarian)
 ‘John couldn't not love her’
 c. *Non* possum *non* amare (Latin)
 Not I-can not love
 ‘I must love’
 d. Ja *ne* mog *ne* dat' emu nagrădu (Russian)
 I not could not give him reward
 ‘I couldn't not give him a reward’

Furthermore, the normal expression for necessity in Malagasy is *tsy maintsy* (lit. ‘not able not’), and in Basque it is *ezin bertze* (lit. ‘impossible not’) (Horn 1978b:164).

The main purpose of this small section is to show that other downward monotonic operators than just negation likewise may create denial effects.

2.4.2 The functions of denial

The term ‘denial’ is used for various types of explicit negation. For example, Gabbay & Moravcsik (1978) state:

In everyday discourse [. . .] negative sentences are used to formulate denials of various sorts. In fact, even the notion of a denial is too narrow; denial, objection, criticism, etc. are all everyday activities, the point of which is to say: “No, it is not like this; rather, it is like that”. In short, in everyday discourse our use of negative sentences typically prepares the way for positive assertion; we use the negative to indicate that something is wrong with a claim under consideration, and then go on to suggest alternatives. Thus the point of a denial in most typical contexts is not only to pose a contradictory to some proposition, but to claim that something is wrong with a proposition, and to indicate — insofar as possible — which is the objectionable item. It is thus not surprising that ordinary negatives apply to some sub-sentential unit. Needless to say, these ordinary activities could not take place if we did not have the more logically oriented notion of negation as well. (Gabbay & Moravcsik 1978:251)

Seuren (1976), Van der Sandt (1988:93) and others observe that there are heavy restrictions on the use of denials. For example, it doesn't make sense to state out of the blue that the King of Buganda isn't bald, since he doesn't exist. Such an utterance is felicitous only as a reaction to a previous utterance, a previous suggestion, or a shared belief that such a sovereign exists.

Since Frege, this type of explicit negation has been analyzed as a denial of an assertion, rather than as an assertion of a negative sentence: cf. Van der Sandt (1988:93 ff.) and Horn (1989:168 ff.) for an overview.

2.4.3 More than negation: denial in Dutch

Consider the following Dutch sentences involving denial; I add some context to make them more plausible:

- (119) a. Q: Gaan we naar Jack's verjaardag? A: We kunnen niet niet gaan
 Q: Go we to Jack's birthday? A: We can not not go
 'Are we going to Jack's birthday? We cannot not go'
- b. Q: Ga je veel mensen vragen? A: Ik kan niet niemand uitnodigen.
 Q: Go you many people ask? A: I can not nobody invite.
 'I cannot invite nobody'

I note in passing that the sentences above are only felicitous with a strong intonational accent on the second negation, the denied one. Seuren (1976, 1985) takes this special intonation as one of the characteristics of this type of negation, which he calls 'radical negation'. I think Seuren is essentially right here. At times, I will use this intonational pattern as a litmus test to find out whether a certain double negation is a case of denial or not.

Denial is not restricted to sentential negation *niet* 'not': the effect is also found in other negative contexts, triggered by MD operators. The following examples involve a negative quantifier *geen mens* 'no man', a weak negative adverb *nauwelijks* 'hardly', and a monotone decreasing noun phrase *hoogstens drie keer* 'at most three times':

- (120) a. Geen mens kan helemaal nooit ziek zijn
 No man can totally never ill be
 'Everybody has got to be ill sometimes'
- b. Q: Ga je naar die verjaardag? A: Ik kan nauwelijks niet gaan
 Q: Go you to this birthday? A: I can hardly not go
 'Are you going to this birthday? I am almost obliged to go'
- c. Julie mogen hoogstens drie keer niet komen
 You may at-most three times not come
 'You may miss at most three times (i.e., classes etc.)'

In the light of the results in other cases of multiple negations, I assume that all downward monotonic contexts have, in principle, the possibility to yield a denial reading. The following examples show the effect rather strongly in comparatives, *too*-phrases,⁴⁶ and the downward monotonic first argument of

46. I haven't discussed the indisputable fact that *too*-phrases may license negative polarity items, as in *She is too angry to shed a tear over her brother's death*. The construction is downward

certain determiners. Superlatives show the same picture, although they are not exactly monotone decreasing (cf. above):

- (121) a. Q: Heb je wat aan dat boek? A: Het is beter dan niets.
Have you what on this book? It is better than nothing.
'Can you use this book? It is at least something'
- b. Het weer is te mooi om niet te gaan wandelen
The weather is too beautiful for not to go walk
'The weather is so beautiful that we have to go for a walk'
- c. Iedereen die zijn tentamen niet gehaald heeft moet hier weg
Everybody who his exam not passed has, must here away
'those who passed the exam may stay'
- d. Geen student die zijn jaar niet gehaald heeft wordt toegelaten
No student who his year not passed has is allowed
'Only students who passed their exams are allowed'
- e. Dit is de stomste student die dit vak niet gehaald heeft⁴⁷
This is the stupidest student that this course not passed has
'All students that are less stupid than this guy passed this course'

Questions form another type of context that license (certain) negative polarity items (chapter 1). It appears that denial occurs in questions as well. Several readings are possible for questions containing a negation, but if the negation is stressed in the way described earlier, the negation appears to be annulled.

- (122) Ga je NIET naar Jack zijn verjaardag?
Go you NOT to Jack his birthday
You are not going to Jack's birthday? (Come on, you have to go!)

Finally, *before*-clauses are provably downward monotonic and anti-additive (cf. above). One doesn't find denial in this context too often, as negation is usually not allowed here (Heinämäki 1974) — probably for aspectual reasons. The following examples seem to exhibit the effect as may be derived from the familiar intonational pattern and semantics.

- (123) a. Eer vader NIET meer drinkt moet er heel wat gebeuren
Before father no more drinks must there quite something happen
'A lot has to happen yet before father stops drinking'
- b. We moeten adverteren voordat NIEMAND ons produkt koopt
We must advertise before nobody our product buys
'We must advertize and then some people will buy our product'

I conclude from the above that it is in principle possible to find denials in all contexts known to allow negative polarity items regularly. Once again it turns out that in a domain where negation seemed to play the crucial role, the more wide-spread property of downward monotonicity must be held responsible for the effect.

monotonic, as can be deduced from the validity of the following reasoning: *She is too angry to shed tears* → *She is too angry to shed many tears*.

47. Not all of my informants can get a denial reading here. It may help to heavily stress *niet*.

Given that *moeilijk* (etc.) is monotone decreasing, how to explain that it cannot trigger *hoeven*? Suppose that *moeilijk* is the weakening counterpart of verb intensifiers such as *deep* (which can be used as an intensifier with *sleep*, but not with *rain*) and *cats and dogs* (that can only intensify *rain*). In chapter 3, I will return to this matter. It will be shown there that verb intensifiers are often collocational, i.e., almost each verb selects its own intensifier. *Moeilijk* seems to have a comparable behavior in that it is restricted to predicates expressing a possibility.

Moeilijk etc. can also easily modify formations with the suffix *-baar*, the Dutch counterpart of *-able*. As these suffixes express a possibility, this collocability hardly comes as a surprise.

- (128)
- a. Moeilijk opvoedbare kinderen
Difficultly raiseable children
'Problem children'
 - b. Slecht uitstaanbare hoogleraren
Bad standable professors
'Professors that few people can stand'
 - c. Lastig oplosbare suikerklontjes
Hard soluble sugar lumps
'Sugar lumps that do not dissolve easily'

Finally, the so-called 'modal infinitive' has a comparable meaning. *Moeilijk* can go with this construction as well:

- (129)
- a. Een moeilijk te verkroppen stand van zaken
A difficult to stand state of affairs
'A state of affairs that is difficult to accept'
 - b. Moeilijk te verklaren feiten
Hard to explain facts
'Difficult facts'
 - c. Moeilijk op te lossen suikerklontjes
Hard dis to solve sugar lumps
'Sugar lumps that do not dissolve easily'

These facts allow for no other conclusion than that *moeilijk* etc. is downward monotonic but that it may only be used as a modifier of elements expressing possibility. In other words, the close connection between collocational effects and the phenomena occurring in negative contexts is once again established.

2.4.5 Concluding remarks

In this section, I showed that denial occurs in the context of explicit negation, but also in the scope of other monotone decreasing operators. Various questions remain open.

Some of the examples discussed seem to be counterexamples to Van der Sandt's (1988), 93 claim that "cases of explicit cancellation only occur as a reaction to an utterance of a previous speaker", or at least they do not show this effect too strongly. Why?

In the light of earlier discussions, it would be interesting to look for interesting cases of denial below the word level. Perhaps the prefix *non* is a point in case. Bauer (1983:279 ff.) notes that “the prefixation with *non-* divides the world up into two classes: those things denoted by the non-prefixed lexeme, and those denoted by the prefixed lexeme.” Here are some relevant examples (Bauer (1983:279) after Algeo (1971)):

- (130) a. A Moslem is a *non-Christian*, but only a Christian can be *un-Christian* in behavior
b. A *nonrealistic* novel is one whose goal is other than a realistic view of the world, but an *unrealistic* novel is likely to be one that aims at, and fails to achieve, realism

A remaining question that I will not try to answer here concerns the exact relation between metalinguistic negation and denial. It is unclear to me whether there a sharp borderline, or how the two phenomena should be distinguished.

2.5 Emphatic negation

2.5.1 Introduction

Emphatic negation, the usage of multiple negation to strengthen the force of the negation, fits into a more general pattern of double or multiple marking, the mechanism that if you want to stress something, you say it more than once. For instance, modality operators such as necessity or possibility may be expressed more than once.⁴⁸ The following examples, based on real text, are usually forbidden by normative grammars as PLEONASM, REDUNDANCY or TAUTOLOGY, the differences between which are irrelevant for the present discussion.

- (131)
- a. We are *very, very* happy with this result
 - b. We *must necessarily* assume that the clock has operated
 - c. Any help you *might could* give us would be appreciated.
 - d. The *surrounding circumstances* (Fowler & Fowler 1906:342–3)
 - e. Miss Tox was *often* in the *habit* of assuring . . . (ibidem)
 - f. The counselors [. . .] *continue to remain* sceptical (ibidem)
 - g. It *might possibly*, we think, be mildly entertaining⁴⁹

One also finds examples of multiple marking in morphology. Double comparative, double negation, double feminine, and double diminutive are exemplified below.⁵⁰

- (132)
- a. More bigger
 - b. Groterder (Dutch)
Bigger-er
 - c. Irregardless
 - d. Unzweiffellos (German)
Un-doubt-less
'Doubtless'
 - e. Baronesse (Dutch)
Baron-FEM-FEM
'Barones'
 - f. Klein huisje (Dutch)
Small house-DIM
'Small little house'

Quirk *et al.* (1972:970–1) see repetition of intensifiers and other such elements for emphatic means (as in *It's far, far too expensive* and *I agree with every word you've said — every single word*) as a special case of "Reinforcement by repetition":

48. Cf. also footnote 16.

49. H.W. and F.G. Fowler in a letter cited in Burchfield (1989:131).

50. The status of the examples is not exactly alike: the first two belong to child language, the next three are occasionally found in normal text, and the last one is extremely common. Note, however, that the meaning of the two diminutive elements in *klein huisje* is not exactly the same: *klein* refers more or less neutrally to the size of the house, whereas the suffix's meaning is mostly affective in the emotional sense.

Reinforcement is a feature of colloquial style whereby some item is repeated (either *in toto* or by pronoun substitution) for purposes of emphasis, focus, or thematic arrangement. Its simplest form is merely the reiteration of a word or a phrase for emphasis or clarity.

As in other cases of double marking, double negation for emphatic means is usually forbidden by prescriptive grammarians. Occasionally, however, even the most prescriptive of grammarians allow that “certain double negations, by virtue of their more forcible sound, might perhaps be used not with an ill grace” (Baker 1779 quoted in Horn (1991:footnote 3)).⁵¹

Ideally, the difference between this type of double negation and negative concord, paratactic negation and the like is that here the addition of negative elements adds to the (subjective) strength of the negation of the whole sentence or utterance, whereas the addition of negations is semantically neutral in the other case. The crucial difference is that emphatic negation is optional.

A principle such as Horn’s Division of Pragmatic Labor (67) again explains the meaning of emphatic negation: if the speaker has the choice to express a negative meaning either in a simple way (using one negation) or in a more elaborate way (using more than one negation), then the hearer may assume that the speaker doesn’t use the more complex form for nothing. Given his knowledge of language, the hearer may assume that the speaker wants to convey some sort of emphasis.

This doesn’t necessarily imply that the borderline between emphatic negation and other types of multiple negations is always easy to draw: as emphatic means tend to lose their force in the course of time.

Various sorts of emphatic negation may be distinguished. I will discuss a number of cases in the rest of this section. Again, my main goal will be to show that the type of strengthening one finds with negation is found with other downward monotonic expressions as well.

2.5.2 Emphatic negation in Dutch

Prescriptive grammar notwithstanding, emphatic negation is very frequent in colloquial Dutch. The following examples are from De Vries (1910:14):

51. Erasmus (1512:§51) is more liberal:

Conduplicare negationem asseuerandi gratia Latinis etiam receptum est, si modo non iteretur sola: ‘non faciam, non, inquam’. Graecam solam iterant, interdum etiam citra asseuerationem [. . .] Est autem Atticis familiare plures negationes pro vna congere.

“The practice of doubling a negative for emphasis is found among Latin speakers as well, provided the repeated negative has some other words to accompany it, for example, *non faciam, non inquam* ‘I will not do it, not, I say.’ The Greeks however use the bare negatives side by side, sometimes without any particular emphasis [. . .] It is a common habit of writers of Attic Greek to heap up several negatives in place of one.”
(translation Erasmus (1978–))

Note that Erasmus already notices the difference between emphatic negation (as in Latin) and negative concord (as in the Attic dialect of Greek).

- (133) a. Dat heb ik *nooit niet* gezien
That have I never not seen
'I never saw that'
- b. Der is *nooit geen* mensch⁵² geweest
There is never no man been
'Nobody was ever there'
- c. Zij heeft er *nooit niks* voor betaald
She has there never nothing for paid
'She never paid anything for it'
- d. Wij hadden *nooit nergens* last mee
We had nothing never problems with
'Nothing ever bothered us'
- e. Zij heeft er *niks geen* verstand van
She has there nothing no understanding of
'She no understanding whatsoever of it'

Not everything is possible, however. De Vries (1910) observes that the following cases are ungrammatical:

- (134) a. **Niemand* weet daar *niks* van
Nobody knows there nothing of
- b. **Geen een* weet daar *niks* van
No one knows there nothing of
- c. **Geen mens* die daar *nooit* van gehoord heeft
No man who there never of heard has
- d. *Dat heb ik *niet nooit* gezien
That have I not never seen

Fronting of the first negative in the examples in (133) results in sentences that are equally ungrammatical. A few examples are given below:

- (135) a. **Nooit* heb ik dat *niet* gezien
Never have I not seen that
- b. **Nooit* is der *geen* mensch geweest
Never is there no man been
- c. **Niks* heeft zij er *geen* verstand van
Nothing has she there understanding of

This type of emphatic double or multiple negation appears to be possible only if the negative elements are close together. Haegeman & Zanuttini (1990) observe comparable adjacency constraints in West Flemish. They account for them in terms of LF movement:

We believe that these constraints [. . .] are related to the LF process of factorization we have described above. In particular, they can be accounted for by assuming that negative constituents raise at LF in a stepwise fashion. At each step, a

52. I follow De Vries' old-fashioned, sometimes regionally colored spelling. Note that emphatic multiple negation has not disappeared since the time of De Vries (1910). July 31st 1993, the newspaper *Trouw* quoted a Dutch horse riding champion:

i Vroeger had ik *nooit niks* te verliezen. Nu wel.
Earlier had I never nothing to lose. Now well.
'I used to have nothing to lose. Now I do.'

negative constituent will adjoin to the next higher constituent in the structure and undergo a process of factorization with this constituent, under the condition that the heads of the two negative constituents which are being factorized are elements of the same type.

As I don't share their assumptions about LF and factorization Haegeman & Zanuttini's (1990) explanation is not available to me. Suppose on the contrary that the same mechanisms play a role in emphatic negation as in the case of negative concord (cf. section 2.2). That is to say, a restricted number of lexical items has a context-sensitive semantics. The first 'negative element' has its full negative force, the following ones turn into existential quantifiers instead. Horn's principle (67) explains that the combination of negations has a somewhat different meaning or usage potential than the variant with only one negation.

The phenomenon is heavily restricted lexically, as it is found in a few combinations of lexical items only: *nooit geen* is fine, **geen nooit* is ungrammatical or only fine in a (logical) double negation reading.⁵³

There is a problem with the elements *niets* and *niks* 'nothing' as they occur in sentences such as (133e). If *niks* would have a quantifier reading here there would be too many arguments for too few argument positions, i.e., a violation of the theta criterion (Chomsky 1981). This problem can be solved by assuming that *niks* functions here as an adverbial modifier rather than as a quantifier. Jack Hoeksema (P.C) supplied me with the following sentence:

- (136) Zegt u maar aan Cis, dat ik het niks erg vind van dat boek
 Say you but to Cis, that I it nothing bad find of that book
 'Please tell Cis that I don't care about that book at all'

This example constitutes independent evidence that *niks* can function as a modifier, as it cannot mean anything else than 'not at all' here.

An interesting point to note is the contrast between the grammatical (133a), with the order *nooit niet* 'never not', and the ungrammatical (134d), with the reverse order. This contrast may, again, have various reasons. The first possibility is that *nooit* has no context-sensitive meaning: it always means 'never' and it cannot mean 'ever', at least as far as this context type is concerned. Secondly, it might be the case that this order effect has nothing to do with negation: as Co Vet (P.C.) informs me, the universal negative adverbs *nooit* 'never' and *altijd* 'always' are, in the unmarked case, in first position whenever they occur in a string of adverbs, and the same seems to hold for their counterparts in other languages:

- (137) a. Hij kan altijd overal slapen
 He can always everywhere sleep
 'He can always sleep everywhere'

53. De Vries (1910) notes that *geen* is obligatory present in noun phrases such as (133e). If this is indeed true, then this might be a counterexample to the following observation from Jespersen (1924:333): "There is one very important observation to be made, without which I do not think that we shall be able to understand the matter, namely that repeated negation becomes a habitual phenomenon in those languages only in which the ordinary negative element is comparatively small in phonetic bulk." Note, however, that *niks* is optional in this sentence.

- b. ?Hij kan overal altijd slapen
He can everywhere always sleep
'He can always sleep everywhere'
- c. Hij komt nooit ergens één keer op tijd
He comes never anywhere one time in time
'He is never ever in time anywhere'
- d. *Hij komt ergens nooit één keer op tijd
- e. *Hij komt één keer ergens nooit op tijd

Yet another explanation is that *nooit* is a positive polarity item of the weakest type, i.e., a PPI that is excluded only from antimorphic contexts, such as the position immediately following *niet*. Function composition of *niet* with other material yields a negative operator of a somewhat weaker type, which explains that sentences such as the following are grammatical in the appropriate dialects.

- (138) *Niemand* vertelt mij *nooit* *niks*
Nobody tells me never nothing
'Nobody ever tells me anything'

Anyway, it is clear that there are strong locality restrictions on the type of emphatic negation in Dutch described here. I assume that these restrictions are best treated lexically, i.e. as a form of collocational restrictions.

2.5.3 Resumptive negation

Next to emphatic negation in the sentence, we find emphatic negation as a kind of appendix to the negated sentence. Consider the following section from Jespersen (1917:72–5), from which it becomes immediately clear that the borderlines with other types of emphatic negation are not absolute:

A second class [of emphatic negation] comprises what may be termed *resumptive negation*, the characteristic of which is that after a negative sentence has been completed, something is added in a negative form with the obvious result that the negative result is heightened. This is covered by Delbrück's expression "Ergänzungsnegation". In its pure form, the supplementary negative is added outside the frame of the first sentence, generally as an afterthought, as in "I shall never do it, not under any circumstances, not on any condition, neither at home nor abroad", etc. [. . .] But as no limits of sentences can be drawn with absolute certainty, the supplementary negative may be felt as belonging within the sentence, which accordingly comes to contain two negatives. [. . .] The most important instances in this class are those in which *not* is followed by a disjunctive combination with *neither . . . nor* or a restrictive addition with *not even*.

The examples below show that there is considerable variation even within this subclass of emphatic negation (examples from Jespersen (1917) and Jespersen (1924)):

- (139) a. He cannot sleep, neither at night nor in the daytime
b. He cannot sleep, not even after taking an opiate
c. He had not the discretion neither to stop his ears, nor to know
d. He wasn't changed at all hardly

This list is not exhaustive. Lawler (1974) discusses extreme examples such as the following, reportedly grammatical in various dialects of American English.

- (140) a. Bill can touch the ceiling, and so can't I
 b. Can linguists study negation? Not and stay sane, I don't think

As I don't have intuitions about anything that resembles this last type of resumptive negation, I will not discuss it anymore. The interested reader is referred to Lawler (1974), Horn (1978b) and Horn (1989) for discussion.

2.5.4 Various types of resumptive negation

Upon closer inspection, not all of Jespersen's examples appear to be of the same type. The following examples show that all types given so far are compatible with a main clause containing a weak negative such as *hardly*, except for *not in his life*:

- (141) a. He cannot sleep, not even after taking an opiate
 b. He cannot sleep, neither at night nor in the daytime
 c. He cannot sleep, not in his life
 d. He hardly slept, not even after taking an opiate
 e. He hardly slept, neither at night nor in the daytime⁵⁴
 f. *He hardly slept, not in his life

Another difference is that only *even* (with negation) has a variant without a negation. The sequence *neither . . . nor* changes into something like *both . . . and* in those cases:

- (142) a. He always sleeps for hours, even after gallons of coffee
 b. He always sleeps for hours, even without taking an opiate
 c. *He always sleeps for hours, in his life
 d. *He always sleeps for hours, neither at night nor in the daytime
 e. He always sleeps for hours, both at night and in the daytime

I take this as sufficient reason for separate discussion of the various types. In the following, I will distinguish the following types:

1. *not in my life*: the appendix consists of a copy or a variant of a negative constituent of the sentence
2. *not even*: the negated sentence is followed by something headed by *not even* (or its counterpart in other languages)
3. *neither*: the negated sentence is followed by an appendix headed by the conjunct *neither* or its counterparts

Not in my life

Resumptive negation of the *not in my life*-type is found in various languages. As I haven't been able to find any systematic description of the phenomenon, this section will be rather explorative. My informants helped me to construct the following examples:

- (143) Spanish:
 (Yo) no volveré a España, nunca jamás
 I not will-go to Spain, never never
 'I will not go back to Spain, never in my life'

54. Klima (1964) reports dialect differences with respect to the acceptability of sentences where *neither* occurs under *hardly*: cf. the discussion of the sentences (159a – 159b) below.

(144) French:

- a. Je n'ai rien vu, rien du tout
I not-have nothing seen, nothing at all
'I didn't see anything, nothing at all'
- b. Je t'ai dit je ne l'ai jamais vu, jamais de ma vie!
I you-have told I not him-have never seen, never of my life
'I told you I never saw him, never in my life'

(145) German:

- a. Er fährt nicht nach Frankreich, für sein Leben nicht
He travels not to France, for his life not
'He will not travel to France, not in his life'
- b. Ich fahre nicht nach Frankreich, für mein Leben nicht⁵⁵
I travels not to France, for my life not
'I will not travel to France, not in my life'
- c. Das werde ich nicht tun, niemals!
That will I not do, never
'I will not do that, never ever'

(146) Dutch:⁵⁶

- a. Ik ga niet meer naar Frankrijk, van m'n levensdagen niet
I go not more to France, of my lifedays not
'I don't go to France anymore, not in my life'
- b. En we gaan nog niet naar huis, nog lange niet nog lange niet⁵⁷
And we go yet not to home, yet long not yet long not
'We're not going home yet'

The following examples show that the phenomenon is not restricted to one syntactic function:⁵⁸

- | | | | |
|-------|----|---|----|
| (147) | a. | Niemand heeft hem geholpen, geen mens | S |
| | | Nobody has helped him, no human | |
| | | 'Nobody helped him, no one at all' | |
| | b. | Hij kent niemand hier, geen mens | DO |
| | | He knows nobody here, no human | |
| | | 'He doesn't know anybody here, not a soul' | |
| | c. | Hij heeft niemand het geheim verteld, geen mens | IO |
| | | He has nobody the secret told, no human | |
| | | 'He told nobody the secret, to no one' | |

55. Note the agreement.

56. Overdiep (1937:455-456) gives a few examples from the Dutch dialect spoken in the village of Katwijk:

- i Piet, hè-je me mes ècht iet ezien? Neen Jaep, in gangs iet!
Piet, have-you my knife really not seen? No Jaep, at all not!
'Piet, have you seen my knife? No, J., not at all!'
- ii Neen, Wullempje, je mo-d-iet denke datte we je dwors zitte wulle, in-gàngs-iet man!
No, Wullempje, you must-not think that we you cross sit want, in-all-not, man!
'You mustn't think we want to frustrate you, Wullempje, not at all'

57. Dutch song.

58. S = subject, DO = direct object, IO = indirect object, PP = prepositional argument, Adv = adverbial phrase.

- (150) a. *Hij heeft het aan niemand verteld, geen mens
He has it to nobody told, no man
b. *Nooit gaan we meer naar Frankrijk, niemand
Never go we anymore to France, nobody
c. ?Niemand heeft hem geholpen, nooit⁶¹
Nobody has him helped, never
d. *Hij kent niemand hier, nooit
He knows nobody here, never
e. *Hij heeft niemand het geheim verteld, nergens
He has nobody the secret told, nowhere

Finally, the negative in the appendix has to be at least as informative and as emphatic as the one in the main clause.

- (151) a. *Hij kent hoogstens drie nonnen hier, weinig mensen
He knows at most three nuns here, few people
b. *Ik ga van mijn leven niet naar Frankrijk meer, nooit
I go of my life not to France anymore, never
c. *Ik ga bijna nooit meer naar de kroeg, nauwelijks
I go almost never anymore to the pub, hardly⁶²

Gricean maxims must be held responsible for this last constraint: addition of material that is less informative than what is already known from the main clause violates relevance or quality.

Not even

The type of negative appendix that contains *not even* is already described in Jespersen (1917) (cf. above). Klima (1964) uses the possibility of appending *not even* as a test for the negativity, the strength of the negation of sentences. Here is McCawley's (1988), 588–9 description of Klima's reasoning:

Klima (1964:262–3) noted that the possibility of adding to a sentence what he called a "negative appositive tag" of the form *not even X*, with *X* matching a constituent of the host *S*, is contingent on the host *S* being in some sense negative:

- (152) a. The writer will not/never/seldom/rarely accept suggestions, not even reasonable ones
b. *The publisher (often/commonly/always) disregards suggestions, not even reasonable ones

The *X* of *not even X* has to refer to a "special case" of a "general" constituent that is in the scope of a negation in the host *S*:

- (153) a. Writers don't like working for Smith, not even hacks
b. No writers like working for Smith, not even hacks
c. Nothing pleases Smith, not even good wine
d. Sam won't let his friends use his car, not even Otto

61. This sentence is pretty good. *Nooit* 'never' appears to be rather free in this type of emphatic negation: it doesn't seem to need another temporal quantifier in the main clause: *ik ga niet naar Frankrijk, nooit (van zijn leven)* 'I don't go to France, never in my life' is fine. Cf. also the examples in (143 ff.)

62. Contrary to Dutch, English has the possibility of using *hardly* as a postmodifier to a negative sentence, as demonstrated in (139d). See section 2.5.7 for some discussion.

- e. Sam won't let me use his car, not even on Saturdays
 - f. 1964 wasn't a good year for Bordeaux, not even for Mouton-Rothschild
 - g. Agnes won't consider living in New York, not even in Brooklyn Heights
- As (153a – 153c) show, it is immaterial whether the “general” constituent precedes, follows, or is fused with the relative negation. And as (153e) shows, the matching general constituent in the host S is sometimes an understood constituent, in this case “on any day of the week.”

Cf. also the treatment of this construction in Horn (1989).

The lexical item in Dutch that corresponds to English *even* is *zelfs*. The negation follows *zelfs* rather than precedes it, as is the case in English. Consider the following idiomatic translations of some of the examples given above.⁶³

- (154) a. Schrijvers werken niet graag voor Smit, zelfs prutsers niet (= 153a)
 Writers work not rather for Smith, not hacks even
 ‘Writers don’t like working for Smith, not even hacks’
- b. Smit doe je nergens plezier mee, zelfs niet met goede wijn (= 153c)
 Smith do you nowhere fun with, even not with good wine
 ‘Nothing pleases Smith, not even good wine’
- c. Sam leent mij zijn auto niet uit, zelfs niet op zaterdag (= 153e)
 Sam lends me his car not, not even on Saturday
 ‘Sam won’t let me use his car, not even on Saturdays’

An interesting difference with the English cases, however, is that Dutch sometimes allows for two variants.⁶⁴ The first one has external negation and mirrors the English case, the second one has internal negation and has no direct English counterpart.

- (155) a. John didn't invite anybody, not even colleagues
 b. Jan heeft niemand uitgenodigd, zelfs zijn collega's niet (= 155a)
 John has nobody invited, even his colleagues not
- c. Jan heeft niemand uitgenodigd, zelfs geen collega's (= 155a)
 John has nobody invited, even no colleagues

Both variants occur with weak negative noun phrases but in this case a meaning difference shows up:

- (156) a. Hij heeft weinig mensen uitgenodigd, zelfs zijn collega's niet
 He has few people invited, not even his colleagues
 He invited few people, not even colleagues

63. Comparable constructions can be built round *ook* ‘also’ and *zeker* ‘certain(ly)’:

- i Schrijvers werken niet graag voor Smit, ook prutsers niet
 Writers work not rather for Smith, also hacks not
 Writers don't like working for Smith, not even hacks
- ii Schrijvers werken niet graag voor Smit, zeker goede schrijvers niet
 Writers work not rather for Smith, certainly good writers not
 Writers don't like working for Smith, especially good writers don't

Exploration of the subtleties of these constructions is beyond the scope of this thesis.

64. Kraak (1966:100ff.) investigates the value of Klima's hypotheses for Dutch. As a translation of the *even*-test, he uses *zelfs* with “incorporated negation”. Note that there is variation with respect to the placement of the non-incorporated negation (154). As far as I know, no meaning difference corresponds to this variation in word order.

- b. Hij heeft weinig mensen uitgenodigd, zelfs weinig collega's
 He has few people invited, even few colleagues
 He invited few people, hardly even colleagues

That is to say, the first Dutch variant expresses that he didn't invite any colleagues at all, whereas the second states or implies that he invited at least a few colleagues.

Note that both types of emphatic negation in Dutch involving *zelfs* 'even' are triggered by weakly negative operators such as *weinig* 'few' and *zelden* 'seldom'. Both types add some information.⁶⁵

- (157) a. Hij heeft weinig mensen uitgenodigd, zelfs weinig mensen van zijn werk
 He has few people invited, even few people from his work
 He has invited few people, even few people from the office
 b. Hij heeft veel mensen uitgenodigd, zelfs veel mensen van zijn werk
 He has many people invited, even many people from his work
 He has invited many people, even many from the office
 c. Ik kom nauwelijks in de kroeg, zelfs nauwelijks op vakantie
 I come hardly in the pub, even hardly in the holiday
 I hardly go to the pub, even during holidays
 d. Ik kom vaak in de kroeg, zelfs vaak op vakantie
 I come often in the pub, even often on holiday
 I often go to the pub, even during holidays
 e. Hij kent niemand hier, zelfs niemand in de keuken
 He knows nobody here, even nobody in the kitchen
 He doesn't know anybody here, not even the people in the kitchen
 f. Hij kent iedereen hier, zelfs iedereen in de keuken
 He knows everyone here, even everyone in the kitchen
 He knows everyone here, even the people in the kitchen

Intuitively, the first type closely resembles the English *not even* cases, whereas the second type seems to be a negated variant of tags with the focus operator *zelfs*, 'even' (Horn 1969; De Mey 1992).

Neither

Klima (1964:265) analyzes examples such as (158a) below as "a truncated and inverted form of [...] *either*-conjoining". In other words, (158a) is derived from (the same underlying form as) a sentence such as (158b):

- (158) a. Writers won't accept suggestions, and neither will publishers
 b. Writers won't accept suggestions, and publishers won't either

Klima (1964:265) observes that there is a problem with respect to the equivalence of these constructions in that certain speakers do not accept *neither*-tags with all weak negations they accept *either*-tags with. That is to say, for those speakers sentence (159a) is unacceptable:

- (159) a. Writers will seldom accept suggestions, and neither will publishers
 b. Writers won't accept suggestions, and publishers will seldom accept them either

65. Strengthening in the sense of Kadmon & Landman (1993).

All speakers, however, accept *neither*-tags after sentences containing *never* (Klima 1964:266). This suggests that there is some lexical variation here: *neither*-tags are fine with all antimorphic operators, I assume. For some speakers this set of licensors is extended only to the anti-additive operator *never*, whereas more liberal speakers accept *neither*-tags after all or most downward monotonic expressions.

As far as I know, most native speakers of English accept the sentences below (after Jespersen (1917)), which suggests that not all *neither*-tags are alike:

- (160) a. He cannot sleep, neither at night nor in the daytime
b. He hardly can sleep, neither at night nor in the daytime

An additional argument against a uniform analysis of all constructions involving *neither* is found in the fact that they are translated differently into Dutch:⁶⁶

- (161) a. Schrijvers accepteren geen suggesties, en uitgevers evenmin (=158a)
b. Hij kan niet slapen, (noch) 's nachts noch overdag (=160a)

The differences notwithstanding, both Dutch tag constructions emphasize the main clause in a certain way. Moreover, both can be triggered by a weakly negative adverb such as *zelden* 'seldom' or *nauwelijks* 'hardly':

- (162) a. Schrijvers accepteren zelden suggesties, en uitgevers evenmin
'Writers seldom accept suggestions, and neither do publishers'
b. Hij kan nauwelijks slapen, (noch) 's nachts noch overdag
'He can hardly sleep, (neither) at night nor in the daytime'

2.5.5 The syntactic status of resumptive negation

In this section, I will try and compare this type of emphatic negation to three other phenomena which show some parallelism: coordination, right dislocation, and extraposition of apposition.

Examples such as the following may be seen as an argument in favor of an analysis in terms of coordination (perhaps of a complex type, e.g. gapping):

- (163) a. Hij heeft geen poot uitgestoken, geen vinger [uitgestoken]
He has no paw stretched, no finger [stretched]
'He hasn't lifted a finger'
b. *Hij heeft geen poot uitgestoken om te helpen, geen vin [verroerd]
He has no paw stretched, no fin [moved]
c. Hij heeft geen poot uitgestoken om te helpen en geen vin verroerd
He has no paw stretched for to help and no fin moved
'He hasn't lifted a finger nor batted an eyelash to help'

geen vinger 'no finger' can be used to emphasize a sentence with *geen poot* 'no paw', because both noun phrases collocate with the verb *uitsteken* 'to stretch' to form a negative polarity idiom with the meaning '(not) lift a finger'. On the other hand, *geen vin* 'no fin' can not be used in an emphasizing appendix because of the fact that it combines with *verroeren*. The fact that *geen vinger uitsteken*, *geen poot uitsteken* and *geen vin verroeren* alle mean the same, viz. 'not lift a finger' is not enough.

66. Cf. also Paardekooper ([n.d.]:852).

In other words, it is possible to have the nominal part of a negative polarity idiom in the appendix but only if it takes the same verb as the one that plays the verbal role in the negative polarity idiom in the main clause.⁶⁷

A more serious problem of trying to analyze emphatic negation of the *not in my life*-type as a type of coordination is that it is unlike any other type of coordination in the sense that is always asyndetic. The following examples clearly show that it is impossible to add an overt coordinator.

- (164) a. *Ik ga niet meer naar Frankrijk en van z'n leven niet
I go not anymore to France and of his life not
b. *Hij kent weinig mensen hier maar hoogstens drie van de nonnen
He knows few people here but at most three of the nuns
c. *Niemand heeft hem geholpen want geen mens
Nobody has helped him for no human

As far as I know, no other type of coordination is obligatorily asyndetic (Dik 1968), which makes analysis of resumptive negation as a type of coordination less attractive.

A next possibility is to try and analyze this type of emphatic negation as an instance of right dislocation. Consider vanilla cases such as the following (Ross 1967):

- (165) a. Ik mag hem_i niet, de zak_i
I don't like him_i, the bastard_i
b. Heb je ze_i de stad zien binnentrekken, onze helden_i?
Have you seen them_i enter the city, our heroes_i?
c. Dan_i gaan we naar Spanje, na je proefschrift_i
Then_i we go to Spain, after your dissertation_i

Note that what is left in the main clause after right dislocation in these cases is an anaphoric element and not a full referential expression. The possibility, however, of using such an anaphoric element is excluded in the case of emphatic negation:

- (166) a. *He then_i cannot sleep, neither at night nor in the daytime;
b. *He thus_i cannot sleep, not even after taking an opiate;
c. *He wasn't so_i changed hardly_i

Moreover, negative constituents are in general excluded from right (and left) dislocation, as the following examples show.⁶⁸

- (167) a. *I don't like him_i, no bastard_i
b. *Have you seen them_i enter the city, few fugitives_i?

67. The validity of this argument in favor of some sort of coordination analysis, however, is unclear (Grinder & Postal 1971). Note in this respect the translation in footnote 52: *I used to have nothing to lose. Now I do*: completion of the ellipsis yields either the ungrammatical **Now I do have anything to lose* or *Now I do have nothing to lose*, with the wrong meaning.

68. An exception to this generalization is formed by clauses with *zonder* 'without', that certainly qualifies as negative according to various criteria: *Ik vind het zo wel zo lekker, zonder jas* 'I like it better this way, without a coat'. Because of the existence of this exception the reasoning is perhaps not circular.

- c. *Dan_i gaan we naar Spanje, nooit,⁶⁹
Then go we to Spain, never

Given these differences between standard right dislocation and emphatic negation, it seems improbable that it will be possible to analyze the latter phenomenon in the terms of the former without radically changing the definition of dislocation.

A final possibility I will consider is that we are dealing with appositional constructions. Consider standard cases such as the following:⁷⁰

- (168) a. There is John, the new professor
b. We went to Paris, the capital of France, to buy some books

Klein (1977:Ch. 4) deals with the extraposition possibilities of (short) appositions. He shows that a transformational analysis runs into serious problems with subadjacency, as the extraposed element may be coreferential with a noun phrase at any level of embedding, in principle:

- (169) We hebben het ivoor van de toetsen van de piano van de broer van Maurizio Pollini mogen bewonderen, de beste pianist ter wereld
We have the ivory of the keys of the piano of the brother of Maurizio Pollini may admire, the best piano player of the world
'We were allowed to admire the ivory of the keys of the piano of the brother of Maurizio Pollini, the best piano player in the world'

Comparable extraction possibilities are found with several of the emphatic double negations, especially with noun phrases:

- (170) a. We hebben het ivoor van de toetsen van de piano van de broer van geen enkele pianist mogen bewonderen, van helemaal niemand
We have the ivory of the keys of the piano of the brother of not one piano player may admire, of totally nobody
'We were allowed to admire the ivory of the keys of the piano of no piano player, of no one at all'
b. We hebben tot op heden de strookjes van de inschrijfformulieren van maar weinig deelnemers ontvangen, hoogstens vier semanticci
We have until now the slips of the subscription forms of only few participants received, at most four semanticists
'Until now, only few participants — four semanticists — have sent in the slips of their subscription forms'⁷¹

The most important restriction on the extraposition of appositions discussed by Klein (1977) is that only appositions to constituents in focus may be extraposed. According to Hoffmann (1987), negative constituents always carry focus, which

69. Note that the sentence is fine if the negative quantifier is circumscribed: *Als Pasen en Pinksteren op een dag vallen, dan gaan we naar Spanje* 'If Easter and Whitsuntide on one day fall (i.e., never), then we go to Spain'.

70. Note that I do not deal with appositional phrases such as the following ones discussed in Ross (1967):

- i Even Harold, and he is the smartest boy in our class, failed
ii Even Harold, who is the smartest boy in our class, failed

71. It should be noted that the preposition *van* is often obligatory here, which doesn't seem to be the case in most of the examples Klein discusses.

explains why their appositions may be extraposed — if that is the mechanism that is going on here.

Note that it is often possible to have the appendix as a kind of parenthesis, i.e. adjacent to the element it is associated with. In transformational terms one might say that the extraposed appositions may be moved back to their original position. The following examples demonstrate this.

- (171)
- a. We gaan niet, nog lang niet, naar huis
We go not, yet long not, to house
'We're not going home yet'
 - b. Er was niemand, geen mens, op het feestje
There was nobody, no human, at the party
'Not a soul was at the party'
 - c. We hebben de toetsen van de piano van de broer van niemand, van geen pianist ter wereld, mogen bewonderen
We have the keys of the piano of the brother of nobody, of no piano player in the world, may admire
'We were not allowed to admire the keys of anybody's brother's piano'
 - d. Mij zien ze nooit meer, van z'n levensdagen niet, in Frankrijk
Me see they never more, of his life's days, in France
'They'll never see me in France anymore, not in my life'

If resumptive negation indeed involves extraposition of appositions, the following questions arise.

Firstly all literature about apposition deals exclusively with noun phrases. Resumptive negation typically involves other types of constituents: *never in my life, nowhere in the world*, etc. How do these fit in? Perhaps elegantly. Consider the following examples:

- (172)
- a. Ze heeft de brief gelijk geschreven, onmiddellijk
She has the letter directly written, immediately
'She wrote the letter right away, instantly'
 - b. Ze heeft de brief zelf geschreven, helemaal zonder hulp
She has the letter herself written, wholly without help
'She has written the letter herself, without any help'

These examples show that it is also possible to reinforce non-negative adverbial clauses by means of an appendix containing an element of the same class. These appendices may also occur adjacent to the modifier, that is, not extraposed:

- (173)
- a. Ze heeft de brief gelijk, onmiddellijk, geschreven
She has the letter directly, immediately, written
'She wrote the letter right away, instantly'
 - b. Ze heeft de brief zelf, helemaal zonder hulp, geschreven,
She has the letter herself, wholly without help, written
'She has written the letter herself, without any help'

Secondly, why do the constituent in the main clause and the extraposed constituent have to agree in certain respects, such as degree of negativity (i.e., place in the monotonicity hierarchy), and not in other semantic aspects? Inspection of the following example shows that agreement in definiteness is not called for:

- (174) a. We met John Doe, a friend of your father
 b. We hebben Jan de Bruyn ontmoet, een vriend van je vader (= 174a)

As I don't have an answer to this question, I will not conclude anything with respect to the exact syntactic status of the appendix in resumptive negation constructions: there are parallels with coordination, dislocation and extraposed appositions, but there are differences as well.

2.5.6 More than negation

Given the main claim of this dissertation I predict that emphatic negation shows up in other negative contexts than just negation, i.e., that other types of monotone decreasing operators may create the effect as well.

In the section on *neither* I already give some examples involving weak negations such as *seldom* and *hardly* that pointed in that direction (sentences (159a – 162b)).

The following examples show that comparative and superlative constructions corroborate my claim; the same holds for adversative predicates and *before*-clauses, although the easiness seems to be dependent on the type of emphatic negation involved:

- (175) a. Goedkoper als nooit tevoren⁷²
 Cheaper as never before
 'Cheaper than ever before'
 b. This is the finest tea you never tasted⁷³
 c. John denies he has kissed any woman, not even his mother
 d. John denies he kissed anyone, neither at night nor in the daytime
 e. Sam died before he saw any of his grandchildren, not even Sue

On the other hand, I cannot think of any clear cut cases of emphatic negation with conditionals:

- (176) a. *If you would have helped me, not even one moment, I would have been saved
 b. *If you can sleep, not even after taking an opiate, you are to pity
 c. *If you can sleep, neither at night nor in the daytime, you are very unlucky

Questions, finally, are problematic: one finds negations in questions that may look superfluous or illogical. However, whether their function is emphatic or other I don't know, as this negation may have other functions as well, such as suggesting that a certain type of answer (negative or positive) is expected (Hoepelman 1981). The examples below suggest an expectation towards a positive answer, the neutral variants are lacking.

- (177) a. Haven't we met before? (We have, haven't we?)
 b. Won't you close the window, please? (You will, won't you)
 c. Heb je niet een vuurtje voor me (Ja toch?)
 Have you not a fire for me
 'Have you got a light? You do, don't you?'

72. Advertisement *Groninger Gezinsbode*, 14/12/92

73. Text on tea box. Cf. also the Middle Dutch case discussed in footnote 29.

The following rhetorical questions, however, also contain an extra negation but they suggest a negative answer:

- (178) a. Quis nescit (Latin)
Who not-knows
'Who does not know? (Everyone knows)
- b. Quis dubitet, quin in virtute divitiae sint
Who doubts, whether in virtue riches are?
'Who doubts whether richness is in virtue
(nobody doubts, everyone knows)
- c. Quis ignorat maximam illecebram esse peccandi impunitatis spem?
Who ignores most attractive to-be sinning unpunished hope?
'Who doesn't know that the hope not to be punished attracts most to sin?
(everyone knows)'
- d. Quis est homo qui non fleret?
Who is man who not weeps
'Who wouldn't weep? (Everybody would weep)'

Further investigation of the interaction of negation and questions is beyond the scope of this dissertation, and is left as a topic for further research.

2.5.7 Concluding remarks

In this section, various ways of emphasizing negation by means of other negative elements have been addressed. I argued that all types are sensitive to downward monotonicity rather than negation per se.

Do not think that the discussion in this section exhausts the matter. The following examples list some other possibilities of emphasizing or strengthening negation:

- (179) a. Absolutely not
b. Nobody at all
c. Never in my life

Dutch:

- (180) a. In het geheel niet
in the whole not
'absolutely not'
- b. Om de(n) dood niet
for the dead not
'absolutely not'
- c. Waarachtig niet
truly not
'absolutely not'

De Vries (1910:15) draws a parallel with positive emphasis such as *wezenlijk waar* 'really true'. He notes that they are rather illogical: things are true or not true; one true thing is not more true than another.⁷⁴ Psychologically, however, there is a difference.

74. Of course, multi-valued logics and fuzzy logics are of a different opinion. Another possibility, suggested by Johan van Benthem (P.C.), is that the intensifier denotes quantification over possible worlds.

Yet another important means of strengthening negation is the use of negative polarity items; I discussed these at great length in chapter 1.

To conclude this section, I want to discuss briefly the possibility of weakening of negation by the same type of means we met earlier in the case of strengthening. Jespersen (1917) draws attention to this. I quote:

An English case of special interest is with *hardly* [...] in combination with a preceding negative word, which is felt to be too absolute and is therefore softened down by the addition; the two negatives thus in this case neither neutralize nor strengthen one another (Jespersen 1917:74)

Here are some examples:

- (181) a. It gave us no time hardly to say, O God! (Defoe)
 b. And nobody hardly took notice of him (Swift)
 c. He wasn't changed at all hardly (Kipling)
 d. Me not worthy scarce to touch thy kind strong hand (Swinburne)
 e. But no one scarcely could throw himself down (Morris)

Jespersen notes that *hardly* and *scarcely* are also used after *without* and other "indirect negatives".

- (182) a. Without hardly deigning a glance at that (Byron)
 b. Without scarcely hearing a word (Thackeray)
 c. I'll be hinged if I hardly know (Dickens)

Time and space forbid me to further investigate this topic of weakening of negation by means of weaker negations. The examples above, however, clearly indicate that the same type of process is going on in the weakening of negation as in the cases of strengthening of negation. I therefore assume that it is downward monotonicity again that plays the crucial role and not negation as such.

2.6 Conclusion

In this chapter, I distinguished four possible types of multiple negation:

- nothing happens semantically
- the two negations weaken each other
- the two negations cancel each other
- the two negations enhance each other

With respect to the first type I discussed, and tried to account for, some of the immense variation one finds in negative concord constructions across languages. In the second section of this chapter, I argued that Horn's theory of litotes should be extended in order to be able to account for the fact that negation is not the only trigger of the phenomenon. The short third section showed that the notion of denial covers more than two negations resulting in an affirmative, and in the last one I discussed some of the possible ways of strengthening the negative force of an utterance by means of additional negative elements.

The general conclusion from this chapter is that all cases of multiple negation are wider than the term suggests: I have tried to show that all types of multiple negation effects occur in negative contexts as described in chapter 1, and that in all cases downward monotonicity must be held responsible for the effects.

In my discussion I also met many cases where a certain type of multiple negation did not show up in a context where I predicted it. I claim that the theory developed here only describes the mechanisms going on and cannot predict the behavior of individual lexical items. It only defines the borderlines of what might occur in any possible language. The factual reality is, among other things, dependent on lexical factors, i.e., collocational effects. The next chapter deals with such effects.

The data discussed here constitute important evidence in favor of Ladusaw's hypothesis: the concepts and mechanisms used to describe one phenomenon in language, viz. polarity sensitivity, turn out to be useful and fruitful to describe other phenomena in languages, to wit, multiple negations. Grammatical theory as a whole is simpler if more phenomena are described and explained by less mechanisms.

Chapter 3

Collocation

3.1 Introduction

In the earlier chapters the idiosyncrasies of the distribution of individual lexical items were repeatedly explained by referring to collocational effects. It therefore seems appropriate to pay some attention to the phenomenon of collocation, especially since it will be argued that a straightforward definition of collocation covers polarity sensitivity as well.

The concept of collocation is not too popular in formal linguistics. It is not too well understood either, but I will remain silent about the causal relationships, if any, between these two facts. Rather, I will discuss collocation from as many viewpoints as possible, taking into account a considerable amount of literature — although I hasten to add that I do not aim for an exhaustive overview.

The chapter is organized as follows. In section 3.2 a working definition of collocation is given (1). The various parts of the definition are fleshed out consecutively. Section 3.3's main concern is the scope of collocational restrictions: it will turn out that they are not restricted to words alone, but may be found both above and below the word level as well. The possible status of collocational restrictions within various theoretical frameworks is discussed in section 3.4. Section 3.5 shows that it is reasonable and useful to distinguish degrees of collocationality. In section 3.6, some attention is paid to the notion of idiosyncrasy. The chapter ends with a summary and concluding remarks.

3.2 First orientation

3.2.1 Collocation: a definition

COLLOCATION is a term that refers to the mechanism, or fact, that certain words are regularly found in the company of other words.¹ After Geeraerts (1986:134–5) I will use the following working definition of collocation:²

- (1) **Definition** *Collocation*: idiosyncratic restriction on the combinability of lexical items.

To give just one example: the adjective *blond*³ is highly restricted in its distribution. Originally, it may be predicated of *hair* only (OED). Via the process of metonymy it is applicable to nouns denoting humans or groups of humans, which explains the occurrence of combinations such as the following:

- (2) a. Blond child
b. Blond actress
c. Blond god
d. Blond race

Outside the semantic field of *hair*, *blond* can be predicated metaphorically of things such as *beer*, *hay* and *tobacco*.⁴ As the restrictions on the distribution of *blond* are not too well understood, they qualify as collocational (cf. below).

The term COLLOCATION is used to denote idiosyncratic combinations as well, such as the strings *blond hair* or *wait for*. This shift of meaning between an abstract term for a certain phenomenon and the concrete instances of the very same phenomenon is extremely common and hardly ever leads to misunderstanding.

Much more attention will be paid to the merits and problems of this definition shortly, but I will give an illustration first.

3.2.2 Illustration of the definition

The following reasoning justifies the qualification of the combination *blond hair* as a collocation:

- (3) a. *Blond* is an adjective referring to color: just like *black*, *red*, *grey* etc. it is a reasonable answer to questions such as *how would you describe the color of your best friend's hair?*
b. *Blond* can be used attributively as well: the sentence *my best friend has blond hair* is impeccable.

1. This chapter follows Van der Wouden (1992a) rather closely.

2. Cf. Fontenelle (1992:222): "The term COLLOCATION refers to the idiosyncratic syntagmatic combination of lexical items and is independent of word class or syntactic structure". For a comparison of various opinions about the interpretation of the term collocation, cf. Bäcklund (1973:1–5). For other terms with a comparable or overlapping denotation, cf. Zgusta (1971:143).

3. If I write *blond*, I usually mean "*blond* or *blonde*". As in French, the longer form is used when the word is predicated of female subjects (OED). This longer form is about twice as frequent as the shorter one in Jack Hoeksema's corpus of English texts.

4. Interestingly enough, Dutch *blond*, that has the same meaning as its English counterpart, has also the same usage possibilities, but next to that it can be applied to *tarwe* 'wheat' and other types of crops, *duinen* 'dunes', etc. (WNT).

- c. There exist idiosyncratic restrictions on the distribution of *blond*: sentences of the type *my best friend wore a beautiful X dress* is fine if *black, red, grey* etc. are filled in for the variable *X*, but replacing *X* by *blond* in the same place results in ungrammaticality: **My best friend wore a beautiful blond dress*.
- d. It must therefore be concluded that *blond* is an adjective with restricted distribution, and that *blond hair* is a collocation.

If this type of reasoning is correct, collocation is certainly not restricted to combinations of adjectives and nouns. Collocations such as the ones given below, featuring verbs, adverbs, prepositions and nouns, should be taken into consideration as well:

- (4)
 - a. To sleep deep
 - b. *To work deep
 - c. *To sleep hard
 - d. To work hard
- (5)
 - a. To account for
 - b. *To account upon
 - c. *To operate for
 - d. To operate upon
- (6)
 - a. Sensitive to
 - b. *Sensitive on
 - c. *Dependent to
 - d. Dependent on
- (7)
 - a. To settle a disagreement
 - b. *To settle a war
 - c. *To win a disagreement
 - d. To win a war
- (8)
 - a. A shoal of fish
 - b. *A shoal of sheep
 - c. *A flock of fish
 - d. A flock of sheep

The types of collocations exemplified in (4–8) are cited often in the literature. Extensive (although not exhaustive) lists of them may be found in collocation dictionaries and idiom books. I will return to these below in section 3.4.6.

It will be shown shortly that the definition covers other kinds of collocations as well. A few examples are given below.

- (9)
 - a. Stone deaf, stark naked
 - b. Ox+en, whin+chat, cran+berry
 - c. It's raining cats and dogs, to cry one's eyes out
 - d. Nobody need help me, My brother would rather help me

Collocations such as the ones given in (9), however, are seldom, if ever, listed systematically in dictionaries of collocation or comparable works of reference, nor are they treated in theoretical studies of the subject.

3.2.3 A note on the history of the term collocation

It has been claimed that “COLLOCATION is a term introduced by Firth, particularly for the habitual accompaniment of one word by another” (Matthews 1981:23). It is not altogether correct that the term collocation was *introduced* into linguistics by Firth (cf. also Mackin (1978)). The following quotation shows that the term is considerably older (Jespersen 1917:39–40):

- (10) *Little* and *few* are also incomplete negatives: note the frequent collocation with *no*: there is *little* or *no* danger.

The OED (II, 628) defines COLLOCATION as follows:

- (11) COLLOCATION The action of setting in a place or position, esp. of placing together with, or side by side with, something else; disposition or arrangement with, or in relation to, others; the state of being so placed. Frequently applied to the arrangement of words in a sentence, of sounds, etc.

The first quotation given by the OED is from Bacon (1605), the first one with an apparently linguistic content from Harris (1750).

The considerable history of the term ‘collocation’ notwithstanding, it is true that Firth popularized both the term and the study of the subject (Mackin 1978; Palmer 1968). The following slogan expresses the importance and the content of the Firthian view of collocation (Palmer 1968:6–7):

- (12) COLLOCATION is concerned with the company that words keep.

According to Palmer (*ibidem*), “Firth [himself] seems [. . .] to have restricted his interest to specialized collocations – to *silly* with *ass*, to *cow* with *milk*. Above all there was ‘mutual expectancy’ and, in restricted languages at least, redundancy. But he does not seem to have extended his theory to comprehend the whole of the problems of lexical compatibility or to have seen that the kind of formal grammatical analysis which he recommended is dependent upon the recognition of mutually collocable classes of lexical items.”

3.2.4 The importance of the study of collocations

The importance of collocation in language use can hardly be underestimated. The following quotation stresses their importance in language learning:

In order to speak natural English, you need be familiar with collocations. You need to know, for example, that you say “a heavy smoker” because *heavy* (NOT *big*) collocates with *smoker*, and that you say “free of charge” because *free of* collocates with *charge* (NOT *cost*, *payment*, etc.). If you do not choose the right collocation, you will probably be understood but you will not sound natural.

(LDOCE :193)

According to Benson *et al.* (1986a:vii), the material in their dictionary of collocations is “of vital importance to those learners of English who are speakers of other languages.” And although collocations are much harder for second language learners than for native speakers, they are equally important for both groups of language users:

All linguistic units are context-dependent. They occur in particular settings, from which they derive much of their import, and are recognized by speakers as

distinct entities only through a process of abstraction. How far this abstraction proceeds for a given unit depends on (1) the variety of its settings, which determines the level of specificity at which its context is characterized; and (2) how consistently it appears in these settings, which determines their centrality to its value. (Langacker 1987:401)

Linguistic frameworks, however, show considerable differences as regards the amount of attention that they pay to collocation. I will return to this below.

3.2.5 Collocations and other fixed expressions

Collocations are not the only type of fixed expressions one finds in language. For example, Benson *et al.* (1986b:252 ff.) distinguish various groups of lexical combinations on the basis of their degree of cohesion:

- Free combinations: “Their components are the freest in regard to combining with other lexical items. [. . .] For example, the noun *murder* can be used with many verbs: *to analyze, boast of, condemn, describe* [. . .] These verbs, in turn, combine freely with a large number of other nouns”.
- Idioms: Idioms⁵ are “relatively frozen expressions whose meanings do not reflect the meanings of their component parts”. “Many idioms do allow some variability. Grammatical variability, for example, of the verb tense, is often possible”.
“Some frozen expressions are called *proverbs* or *sayings*. These differ from ordinary idioms in several ways. [. . .] the essential difference is that they convey folk wisdom or an alleged general truth [. . .] Consequently, proverbs are usually complete sentences [. . .] Lastly, proverbs are usually more frozen than idioms.”
- Collocations: “Between idioms, on the one hand, and free combinations, on the other, are loosely fixed combinations of the type *to commit murder*. This expression is not an idiom: the meaning of the whole does reflect the meaning of the parts. *To commit murder* differs from free combinations in two ways. Firstly, the synonymy of the verb is restricted. In this instance the only synonym seems to be *to perpetrate*. Secondly, and more importantly, the combination *to commit murder* is used frequently; it springs readily to mind; it is psychologically salient; it is a ‘fixed phrase’ in English.”
- Transitional combinations: “Some combinations appear to be transitional between idiom and collocation. These phrases are more ‘frozen’ than ordinary collocations, i.e., less variable. However, unlike idioms these phrases seem to have a meaning close to that suggested by their component parts.” Examples include *to foot the bill, to catch one’s breath, all dressed up*.
- Compounds: “Many adjective + noun combinations are completely frozen; no variations at all are possible. We are dealing here with *com-*

5. On idioms, cf. Bar-Hillel (1964), Chafe (1968), Wood (1981), Verstraten (1992), Van der Linden (1993), among others.

pounds (that is, lexical elements consisting of more than one word.") Examples include *alternating current*, *definite article*. Compounds may also consist of noun + noun combinations (*aptitude test*, *blood count*), or of a simple verb + one or two adverbs or prepositions (so-called "compound verbs" or "phrasal verbs"): *add up*, *put up with*.

The class of collocations can be subdivided further. For instance, Benson *et al.* (1986a) distinguish between LEXICAL and GRAMMATICAL collocations:

- (13) **Definition:** A *grammatical collocation* is a phrase consisting of a dominant word (noun, adjective, verb) and a preposition or grammatical structure such as an infinitive or clause. (Benson *et al.* 1986a:ix)
- (14) **Definition:** *Lexical collocations*, in contrast to grammatical collocations, normally do not contain prepositions, infinitives, or clauses. Typical lexical collocations consist of nouns, infinitives, or clauses. (Benson *et al.* 1986a:xxiv)

There is considerable disagreement with respect to the terminology that is used in distinguishing the various types of fixed expressions. E.g., Everaert (1993) uses IDIOM as the most general term. Following (1992a), I will use the term COLLOCATION as the most general term to refer to all types of fixed combinations of lexical items; in this view, idioms are a special subclass of the collocations, to wit, those collocations with a non-compositional, or opaque, semantics. An idiom might even be defined as any grammatical form whose meaning is not deducible from its structure. In this view, all morphemes are idioms.⁶

But there are more ways of distinguishing various types of fixed expressions. For instance, Van der Linden (1993:177) claims that idioms "are expressions whose semantic aspects are subject to idiomaticity. Idiomaticity is the semantic property of a complex expression that some aspects of its meaning are exclusively a part of the meaning of the whole expression." Collocations are special in the following sense (Van der Linden 1993:23):

Idiomaticity applies to *encoding* for collocations, but not to *decoding* [(Fillmore *et al.* 1988)]. This means that with respect to analysis, decoding, a collocation can be interpreted compositionally on the basis of the literal meaning or a metaphorical extension of its parts. With respect to generation, encoding, however, a speaker who does not know the expression does not know what head-argument combination to use when he wants to express something about the argument. For example, from the meaning of *begaan* (*commit*) and the meaning of *moord* (*murder*) it is possible to compositionally form the meaning of *een moord begaan* (*commit murder*). However, without knowledge of this expression, using the verb *begaan* (*commit*) is in principle as likely as using some other verb with a comparable meaning (*execute a murder*, *carry out a murder*, *do a murder*, *perform a murder*).

This position, although attractive, is untenable. A small problematic point is the following: If *een moord begaan* and *commit murder* express the same meaning compositionally, one wonders why the article in the English variant

6. "I shall regard an idiom as a constituent or a series of constituents for which the semantic interpretation is not a compositional function of the formatives of which it is composed" (Fraser 1970:22). Reasoning the other way round, idioms may be looked at as being discontinuous words.

is missing (or what the compositional contribution of the determiner *een* (“a”) may be). A more interesting problem is that Van der Linden’s claim suggests that there is a clear borderline between idioms and collocations: the semantic aspects of idioms are always idiomaticity, whereas the semantic aspects of collocations are only subject to idiomaticity with respect to generation. Many collocations, however, are opaque with respect to analysis as well. Some cases in point are pretty esoteric, such as Lipton’s (1991) *a murder of crows* that denotes a group of birds rather than the slaughter of the same. Other collocations, however, are quite normal and frequent, such as the combinations involving the verb *to look* (Benson *et al.* 1986a):⁷

- (15) a. *To look at* (‘to examine’)
 b. *To look for* (‘to seek’)
 c. *To look into* (‘to investigate’)
 d. *To look like* (‘to resemble’)
 e. *To look out* (‘to watch’)
 f. *To look through* (‘to examine’)
 g. *To look to* (‘to turn to’)

In order to be able to use and understand them, i.e. both for production and reception purposes, the language learner has to learn this type of collocations *including* their meanings.

It might be claimed that to solve this problem one should take Van der Linden’s claim as a *definition* of collocation. Consider a threefold division such as the following:

- (16) a. The meaning of free combinations is compositional both for encoding and for decoding
 b. The meaning of collocations is compositional for encoding and noncompositional for decoding
 c. The meaning of idioms is noncompositional both for encoding and for decoding

This division looks elegant and attractive. On closer inspection, however, it is somewhat simplistic. Compositionality is too fuzzy a concept to allow one to check in a simple, straightforward and objective way whether a certain combination is compositional or not (Partee 1984). Moreover, it is very well possible to define the concept in such a way that idioms are compositional after all (Gazdar *et al.* 1985:236 ff.). This implies, probably, that there exist degrees of idiomaticity, i.e. that the meaning of certain fixed combinations may be more opaque than that of others.

3.2.6 Concluding remarks

In the remainder of this chapter, I will use the term COLLOCATION as the most general term for all fixed combinations. Collocations abound in language and they are extremely important for the language user, but they are seldom ad-

7. Many more collocations consisting of *look* plus a preposition are given in the OED.

dressed in the theoretical linguistic literature. Perhaps this is not altogether without reason:

While I firmly believe that behind the notion of collocation is an intuitive reality, I have come to accept the fact that unless we can unpack the details of the relations involved in collocation in the Firthian sense, it is best to avoid the category in research. The problems of inter-subjective reliability cannot be ignored.

Hasan (1984), as quoted by Hoey (1991:7)

Still, I think it can be useful to take a closer look into the phenomenon of collocation. The lack of inter-subjective reliability is a serious problem, but it is not restricted to collocation: one also meets it in other areas of linguistic research. It is therefore not a good reason to refrain from investigating collocation.

In the following sections, I will accept Hasan's challenge and try to shed some light on collocational relations, notwithstanding the fact that I will not be able to unpack all details. In this, I will take the definition of collocation in (1) as a point of departure. I will investigate what kinds of lexical items enter into collocational relationships, whether it is possible to explain aspects of collocational behavior in terms of syntax or semantics, and I will show that some collocational bonds are stronger than others. If some insights in the idiosyncracics of the phenomenon are gained this chapter serves its goal.

3.3 Lexical items

3.3.1 Collocations across categories

It will be clear from the above already that the phenomenon of collocation is not restricted to one single syntactic category. There exist collocational fixed combinations of nouns with nouns, of nouns and adjectives, adjectives and prepositions, verbs and prepositions, verbs and adverbs, adverbs and prepositions, verbs and nouns, adverbs and adverbs, etc.

- (17)
- a. A swarm of bees, a flock of seagulls
 - b. Blond hair
 - c. Fond of, adjacent to
 - d. Adjust to, wait for
 - e. Cry loudly, sleep soundly
 - f. Straight into,
 - g. Set, start a fire, catch fire, light a fire, poke, stir a fire
 - h. Far away

Examples such as these suggest that one may not expect many constraints on collocability in terms of syntactic categories: for almost every category it seems, in principle, to be possible to partake in collocations.

One might be inclined to think that elements with a 'logical' meaning, such as determiners, numerals, and Boolean operators (negation, *and*, *or*) wouldn't occur in collocational structures. There seems, however, no principled reason for that: in section 3.4.3 it is claimed that certain interpretations of the notion of collocation force one to view the string *an apple* as a collocation (cf. **a apple*). Numerals and conjunctions are even far from rare in collocations. Below, I give some of the examples involving *two* from Seidl & McMordie (1988):

- (18)
- a. To be in two minds about something
 - b. That cuts two ways
 - c. Two wrongs don't make a right
 - d. Two's a company, three's a crowd

Or and especially *and* are even quite frequent in collocations (Seidl & McMordie 1988:79–85):

- (19)
- a. It's die or die
 - b. Without rhyme or reason
 - c. Your money or your life
 - d. Forgive and forget
 - e. Live and let live
 - f. Round and round

So, the conclusion must be that there are no constraints on collocations in terms of the syntactic categories that enter into collocational combinations. This doesn't, however, mean that there are no constraints on collocations in terms of the syntactic structures (on which cf. section 3.4.1) or on the *combinations* of syntactic categories. For example, I cannot think of many collocations of

noun plus adverb, numeral plus adverb,⁸ verb plus determiner, etc. Probably, some notion of constituency or projection is needed to constitute the necessary relationship between the collocants.

If syntactically (almost) everything is possible in collocation, how about semantic constraints on collocations? The picture is diffuse here. Note first that there is a considerable group of collocational combinations without any overt semantic motivation. The choice of the preposition in *fond of*, *adjacent to*, *adjust to*, *wait for* seems to be a case in point: intuitively, the combinations might have been *fond to*, *adjacent of*, *adjust for*, *wait to* as well.⁹ On the other hand, paradigmatic generalizations tend to occur. For example, a cluster of Dutch adjectives in the semantic field 'fond of' all take the preposition *op* 'on'; another group of adjectives, with the meaning 'happy', takes *met* 'with' more or less uniformly, whereas a group of nouns from the semantic field of assaults often go with *op* 'on':

- (20) a. Dol op, gek op, gesteld op, verkikkerd op, tuk op
 Mad on, crazy about, keen on, potty about, eager for
 b. Blij met, gelukkig met, tevreden met
 Glad of, happy with, satisfied with
 c. Moord op, aanslag op, bombardement op, aanval op
 Murder of, attack on, bombardment of, attack on

The glosses show that the principles that govern the choice of the preposition, if there are any, are not the same in Dutch and English.

Another group where the semantic motivation is not too obvious involves so-called light verbs (Cattell 1984; Everaert 1993). Light verb constructions are complex predicates in which most of the "semantic load" is carried by the noun rather than the verb. Consider the following examples:

- (21) a. I gave her a kiss
 b. I did him a favor
 c. The Beatles made this type of album popular
 d. Sue took a look at the book
 (22) a. I kissed her
 b. I favored him
 c. The Beatles popularized this type of album
 d. Sue looked at the book

Everaert (1993) claims that the semantics of these constructions is regular (cf. also Wierzbicka (1982)), whereas the choice of the verb is unmotivated to a certain extent. Although the choice of the verb may seem arbitrary, it is certainly fixed: alternative verbs with a comparable meaning usually lead to bad or at least questionable results:

- (23) a. ?I donated her a kiss
 b. *I made him a favor
 c. *The Beatles produced this type of album popular

8. Dutch *veel vijven en zessen hebben* (many fives and sixes have) 'be hard to please' might be an example, but the plural morphology also points in the direction of Adv + VP.

9. See Lakoff (1987:416–2) for a different view.

- d. *Sue seized/grabbed a look at the book

Replacing the noun by a near synonym also leads to bad results, as the following examples show:

- (24) a. *I did him an approbation
 b. *The Beatles made this type of album approved/conventional
 c. *Sue took an inspection at the book

Moreover, the 'normal' meaning of the light verb involved hardly plays a role. For instance, if *give* means something like 'transposition of possession' this meaning is not applicable in the case of *I gave her a kiss*. The first meaning of *make* is 'produce' (LDOCE) but this meaning is absent in many light verb constructions with this verb.

A final type of apparently unmotivated collocations involves conjunctions with a fixed order (Malkiel 1959; Geeraerts 1989; Everaert 1993). Consider the following items:

- (25) a. salt and pepper, ?pepper and salt
 b. flotsam and jetsam, ?jetsam and flotsam
 c. ladies and gentlemen, *gentlemen and ladies
 d. odds and ends, *ends and odds

Although *pepper and salt* is just as comprehensible as *salt and pepper*, only the latter order is the proper one.

The factors determining the order in such frozen conjunctions have been discussed at great length in Cooper & Ross (1975). Many constraints turn out to play a role: some semantic in nature (such as 'here', 'now', 'present generation', 'male', 'positive', 'singular' and 'friendly' taking precedence over their respective alternatives), and others phonological (all other things being equal, the second element contains more syllables, more initial consonants, a lower vowel, etc.). Cooper & Ross (1975) note that the constraints are not absolute, which implies that they cannot explain or predict everything. Note, for instance, that the Dutch analogue of *salt and pepper* is *peper en zout*, that is, in Dutch the order is the other way round.

Although many collocations seem to lack all semantic regularity, others don't. Modification, for example, is expressed collocationally very often. Especially in the realm of degree words, i.e. lexical items expressing intensification and diminution, one finds collocations galore.

Information about which degree intensifiers collocate with which verbs is of some importance to the foreign learner. He may easily come to form aberrant collocations by limiting himself to one intensifier [...]. Behre notes that in Agatha Christie's writings, *much* is frequently used in dialogues by foreign characters, 'who anxiously stick to it' [...]. It may be supposed that Agatha Christie is imitating the unidiomatic use of *much* by foreign speakers of English.

(Greenbaum 1970:83 ff.)

Consider the list of the adverbs discussed in Bäcklund (1973); each of these intensifiers has its own distributional pattern:¹⁰

- (26) a. adverbs expressing complete or partial absence: *almost, nearly, nigh on, practically, virtually*
 b. adverbs expressing the minimum degree or the degree just below the full presence: *barely, hardly, just, scarcely*
 c. adverbs expressing a low degree: *a bit, a little, mildly, a shade, slightly, somewhat, a trifle, little*
 d. adverbs expressing a moderate degree: *comparatively, fairly, moderately, pretty, quite, rather, relatively*
 e. adverbs expressing an increasing degree: *increasingly*
 f. adverbs expressing a high degree: *abundantly, awfully, bloody, considerably, cruciatingly, a damn sight, damn(ed), dreadfully (etc.)*
 g. adverbs expressing the highest degree: *absolutely, all, altogether, blind, clean, completely, dead(ly), downright, entirely, fully (etc.)*
 h. adverbs meeting the demands of a subsequent verbal: *enough, sufficiently*

Note that adverbs are not the only means to express a certain degree. The following examples prove the existence of intensifying adjectives and clauses:

- (27) a. Warmest regards, severe crime, strong tea
 b. It is raining cats and dogs, to sleep like a log, to cry one's eyes out

This does not exhaust the matter. Dirven (1985) shows that in Dutch even the diminutive may function as an intensifier:¹¹

- (28) a. In het hartje van de stad (Dutch)
 In the heart-DIM of the city
 'In the very heart of the city'
 b. Hartje winter
 Heart-DIM winter
 'In the dead of winter'¹²

"We are dealing with a fairly transparent metonymic extension of the central sense; the centre of an entity is necessarily of smaller dimensions than the entity in its totality. Thus the diminutive comes to denote the very essence of a thing, a thing stripped of its non-essential periphery." (Taylor 1989:8.1)

The choice of certain intensifiers seems to be motivated. For example, the fact that one uses *deep* to intensify *sleep* fits into a more general pattern: there is a conventional metaphor in the sense of Lakoff & Johnson (1980) that sleep is a pit in which one can fall, from which one can rise, etc. That doesn't mean that this choice of *deep* as an intensifier can be *predicted* from the existence of this metaphor. Moreover, for many other intensifiers the case is not so clear.

10. "[A]most each morpheme has a unique set of co-occurents. Several variables affect the set of co-occurents: idiolects, time, the speaker's combination of meanings, linguistic productivity and history, and it is at least partly determined by structural factors." Harris (1957), as paraphrased by Bäcklund (1973:3).

11. This usage of the Dutch diminutive is not discussed in Zonneveld (1983). Cf. also Dirven (1987) and Wierzbicka (1980:53ff).

12. Note the collocation in the translation.

Not all types of modification are expressed collocationally that often. Take, for instance, colors. Color names occur rather often in collocations (Bennett 1988):

- (29) a. Once in a blue moon
 b. He is suffering from yellow fever
 c. He's got a green thumb

But color names themselves are seldom expressed collocationally. Apart from the case of *blond*, and forgetting about heraldry, things that are red are called red, and *red* is the word to use for them.¹³

Material names show a comparable pattern. It is not uncommon that a material noun appears in a collocation or idiom, as the following examples show.

- (30) a. He's got a heart of stone
 b. A wooden wedding ('its fifth anniversary')
 c. I received an icy reply
 d. Every cloud has a silver lining

However, the literal meaning is hardly ever collocational. That is: stone objects are called stone, things made of wood are called things made of wood.

Perhaps there is a relation between the tendency of a class of modifiers to collocate and its place in the linear order of modifiers. Whorf (1945) claims that there is a dichotomy in English: there is one group of adjectives that expresses 'inherent' properties of the thing modified, such as color, material, function etc., and another group denoting 'accidental' properties, such as measure, form, evaluation etc. According to Whorf, members of the inherent group are closer to the noun modified than those of the other group: the unmarked order is *steep rocky hill* and not *?rocky steep hill*.¹⁴ Comparable observations have been made for Dutch: Van der Lubbe (1978) reports that the standard order in Dutch is *die mooie kleine rode houten kistjes* 'those beautiful small red wooden cases'. Hietbrink (1990:131-4) claims that French 'qualifying' adjectives are closer to the noun than 'relational' ones:

- (31) a. Un système planétaire intéressant
 b. *Un système intéressant planétaire
 'An interesting planetary system'

In the terminology borrowed from Whorf, *planetary* would denote a more inherent property than *interesting*. Whether 'inherent' adjectives are indeed generally less liable to collocation requires further investigation.

The picture arising from the above is the following: some types of meanings (SEMANTIC FUNCTIONS in the terminology of Mel'čuk *et al.* (1984): cf. section 3.4.6), for example intensification, are expressed collocationally far more often than other types of meanings, such as color terms. This means that it is possible to make certain generalizations about collocations in semantic terms. The predic-

13. Note that *intensification* of colors is often collocational again: *grass-green*, *blood-red*, *pitch black*, etc.

14. Cf. Ziff's (1960), 204-6 discussion of the differences between *a fat old man*, *an old fat pig* and *a fat old pig*.

tive power of these generalizations is, however, small: semantics cannot predict the *form* or even the *existence* of any collocation. Rather, the generalizations are about the regions, the types of meanings, where collocation may be expected to occur.

How about pragmatic constraints on collocations? There exist pragmatic factors that disallow the usage of certain collocations: It is improper for a British member of parliament to tell the Speaker to *fuck off* or to *go to hell*. More interesting is the observation in Thümmel (1977) that modal particles such as *alas* and *undoubtedly* are excluded from certain types of questions and from performatives such as declarations and imperatives:¹⁵

- (32) a. Are you ill?
 b. *Are you ill, alas?
 c. I hereby acknowledge that I received your letter
 d. *I hereby undoubtedly acknowledge that I received your letter
 e. Go to hell!
 f. *Go to hell, alas!

Other collocations, such as negative polarity items, may tend to cluster together for rhetorical reasons (Hoeksema 1992b). But for large classes of collocations, such as fixed combinations of verbs and prepositions or intensifiers and verbs, no pragmatic constraints seem to exist.

The conclusions from this section may be summarized as follows. It is impossible to formulate constraints on all collocations in terms of syntactic, semantic or pragmatic categories. In collocation, hardly anything seems to be excluded for any principled reason, although certain members of categories occur much more often in collocations than others.

There exist, however, many subregularities and tendencies. Semantics seems to play an important role in collocational restrictions, in various ways. Firstly, certain types of semantic processes, such as intensification, are much more liable to collocational idiosyncrasies than others. Secondly, if one looks at groups of collocations one sees semantic patterns arise: group names and modifiers are seldom restricted to single lexical items but rather combine with natural classes.

3.3.2 Collocations below the word level

According to current linguistic theory, the (mental) lexicon contains more than just words (Di Sciullo & Williams 1987). If this view is adopted, collocations are expected below the word level as well. Degree words often show restricted distribution (Bolinger 1972; Bäcklund 1973; Van Os 1989) and it is easy to find examples of this type of collocations below the word level. Consider the following examples of so-called absolute adjectives (Fletcher 1980).

15. Part of Thümmel's observations may already be found in Ross (1967).

- (33) a. Stone deaf
 b. *Stark deaf
 c. *Stone naked
 d. Stark naked

The reasoning that we are indeed dealing with collocational structures follows the one in (3):

- (34) a. *Stone* and *stark* may express the meaning 'very' or 'completely', i.e., these words can be used to intensify adjectives.
 b. There exist idiosyncratic restrictions on the distribution of *stone* and *stark* with the meaning 'very' or 'completely', as demonstrated in (33b – 33c).
 c. It must therefore be concluded that *stone* and *stark* are intensifiers with restricted distribution, and that *stone deaf* and *stark naked* are collocations.

Absolute adjectives are not the only collocational structures below the word level. Some more examples are given below:

- (35) a. Ox-oxen, formula-formulae
 b. *Oxe, *oxae, *formulen, *formulaen
 c. Bus-buses, corpus-corpora
 d. *Bus-bora, ?corpus-corpuses
 e. Cranberry, whinchat
 f. *Cranchat, *whinberry

Plural suffixes such as *-en*, *-ae* and *-ra* and morphemes that occur in one or two compounds only such as *cran* and *whin* are other types of morphemes with defective distribution, i.e., collocational elements below the word level.

3.3.3 Collocations above the word level

This does not exhaust the matter, as collocational relations are found above the word level as well.¹⁶ Consider the following examples, again from the domain of intensification:

- (36) a. It's raining cats and dogs
 b. *It's snowing cats and dogs
 c. *It's raining a blizzard
 d. It's snowing a blizzard

The proof that these combinations should be characterized as collocational again follows familiar lines:

- (37) a. *Cats and dogs* and *a blizzard* may express the meaning 'very', i.e., these expressions can be used to intensify verbs.
 b. There exist idiosyncratic restrictions on the distribution of *cats and dogs* and *a blizzard* with the meaning 'very', as demonstrated in (36b – 36c).
 c. Therefore, *cats and dogs* and *a blizzard* are intensifiers with restricted distribution, and *it's raining cats and dogs* and *it's snowing a blizzard* are collocations.

A few other examples of collocational intensifying phrases are given below; this list can be extended easily.

16. Cf. also Van der Wouden (1992a) and Everaert (1993).

- (38) a. To sleep like a log
 b. To cry one's eyes out
 c. To talk a blue streak
 d. He lied in his teeth

It will be clear that phrases such as *cats and dogs*, *one's eyes out*, *a blue streak* and *in his teeth* have to be listed as lexical items in the lexicon, just like words and morphemes.

Some more examples of collocations above the word level, not being intensifiers:

- (39) a. In the dead of night
 b. It's selling like a house on fire
 c. To kick the bucket

The conclusion from the last two sections is clear: there are ample reason to believe that collocation is not restricted to the word level. Therefore, there is reason to change the Firthian slogan that one shall know a word by the company it keeps into something like the following:

- (40) **Collocation:** You shall know a lexical item by the company it keeps

3.3.4 Polarity sensitivities as collocational restrictions

It will be clear from the above that collocational effects are not restricted to the interaction of words alone. Especially in the realm of intensifying expressions they are found above and below the word level as well.

Given, however, this very broad conception of collocation, polarity items and certain types of multiple negations qualify as collocations as well.¹⁷ The reasoning follows familiar patterns, as is exemplified with the NPI *lift a finger* and the PPI *be crowded* below:

- (41) a. *Lift a finger* and *be crowded* have a certain meaning, viz. 'do anything' and 'be crowded', respectively.
 b. There exist (more or less) idiosyncratic restrictions on their distribution: *lift a finger* has this meaning in downward monotonic environments only, whereas *be crowded* doesn't occur in negative contexts.
 c. Therefore, *lift a finger* and *be crowded* are lexical items with restricted distribution.

There are more arguments in favor of taking polarity items into account in a discussion of collocations. Firstly, consider the following examples:

- (42) a. Met grote heren is het (*niet) kwaad kersen eten (Dutch)
 With big gentlemen it is (not) bad cherries eat
 'He needs a long spoon who sups with the devil'
 b. Mit großen Herren ist *(nicht) gut Kirschen essen (German)
 With big gentlemen is not good cherries eat
 'He needs a long spoon who sups with the devil'

17. Cf. De Mey (1990:116): "Polarity is a form of deficient distribution of certain expressions, mainly lexical items".

Of these two cognate collocations in two closely related languages, one is lexicalized as a positive polarity item (the Dutch case), whereas it is a negative polarity item in the other language (German).

Secondly, according to Van Os (1989:145), most intensifiers are positive polarity items. This generalization seems to hold at least for some of the intensifiers we discussed so far:¹⁸

- (43) a. *My granny is not stonedead
 b. *He didn't arrive stark naked at the party
 c. *It's not raining cats and dogs
 d. *I didn't sleep like a log last night

However, nothing is wrong with other cases of negated intensifiers (Bolinger 1972):

- (44) a. I haven't worked too hard today
 b. I don't sleep very deep lately

Thirdly, I already quoted Ponelis (1985:370) in chapter 1 who notes that many degree words in Afrikaans are negative polarity items. Two examples:

- (45) a. Daar is *geheel en al* niks mee verkeerd nie (Afrikaans)
 There is totally and all nothing with wrong not
 'There is absolutely nothing wrong with that'
 b. *Daar is *geheel en al* iets mee verkeerd
 There is totally and all something with wrong
 c. Daar mag nie 'n *druppel* verlore gaan nie
 There may not a *drop* lost go not
 'Not a drop should be lost'
 d. ?Daar mag 'n *druppel* verlore gaan
 There may a *drop* lost go

Finally, just as "ordinary" collocations were found below the word level, polarity sensitivity is reflected in morphological behavior as well. I already discussed in section 1.2.2 that the NPI character of the verbal expression *kunnen uitstaan* 'can stand' constrains word formation processes as well: the adjective formed with the suffix *-baar* 'able' on the basis of *uitstaan* is acceptable only if a negative prefix is present too, i.e. **uitstaanbaar* is ungrammatical but *onuitstaanbaar* is fine.

It was also discussed already in section 1.2.2 that a comparable situation exists with certain positive polarity items. It is possible to construct the antonym of the Dutch adjective *verdienselijk* 'meritorious' by means of the prefix *on-*, but the result *onverdienselijk* is a negative polarity item.

3.3.5 Concluding remarks: the lexical items in collocations

The main conclusion of this section is that if the definition of collocation in (1) is taken seriously, collocational restrictions are almost everywhere, both

18. The examples given are not completely ungrammatical, i.e., it is possible to interpret them. This, however, is often the case with positive polarity items, especially when they denote endpoints (Horn 1989); but the only reading possible for negated positive polarity items is echoic (chapter 1) or litotetic (chapter 2).

below and beyond the word level. One finds collocational relations between words, between morphemes, and between phrases. Orthogonal to that the definition of collocation turns out to cover polarity items as well. The traditional conception of collocation is restricted to idiosyncratic relationships between *words*. It is clear that this covers too small a part of the wide-ranging and mostly unexploited collocational landscape.

3.4 The nature of collocational restrictions

How should collocational relations be represented in grammar? Different approaches to language offer different answers to this question. The easiest way is to ignore collocations altogether. Next to that, the following types of approach could be considered:

- reduce collocational behavior to syntax
- reduce collocational behavior to semantics
- reduce collocational behavior to statistics
- reduce every type of dependency to collocational behavior
- postulate a separate level or module
- list all collocations in the lexicon

Furthermore, mixed approaches that combine some of the alternatives above can be thought of as well. In this section, I will discuss the pro's and cons of the various types of approaches. The discussion of real life linguistic theories is meant as illustration, not as an exhaustive overview of the literature. Before I come to a conclusion there is a separate section on the usefulness of the notion "head" with respect to collocations.

3.4.1 Reduction to syntax

Generative grammar is a theory about syntax. Descriptions and explanations of phenomena of natural language are cast in terms of syntactic structures. If such a theory has anything to say about collocations, it will be in syntactic terms.

According to generative grammar, collocations live somewhere on the borderline between syntax and the lexicon, i.e. between free combinations on the one hand and completely fixed combinations (words and idioms) on the other hand. Their restricted combinatory potential distinguishes them from free combinations, whereas they are syntactically too flexible and semantically too transparent to qualify as idioms or words.

Consider the expression *decide on the boat* (Chomsky 1965:191). It is ambiguous between a fixed collocational reading, in which *decide on* functions as a semantic unit with the meaning 'choose', and a free combination reading, where *on the boat* functions as an adverbial phrase with a locational meaning. In the collocational reading the preposition *on* is obligatory, whereas it may be replaced by other locational prepositions in the free combination reading: *decide near the boat*, *decide in the boat* etc.

Collocational restrictions are to be distinguished both from categorial restrictions, also known as subcategorization (Jackendoff 1977) or valency (Helbig & Schenkel 1975), and from semantic or selectional restrictions (Chomsky 1965). For example, the verb *to devour* selects a noun phrase complement (subcategorization) which denotes something that is (literally or metaphorically) edible (selectional restriction):

- (46) a. The tiger devoured the lamb
b. *The tiger devoured across the lamb

- c. Noam devoured Richard's new book
- d. *Noam devoured the military-industrial complex

Collocation differs both from categorial, i.e. syntactic, and selectional, i.e. semantic restrictions, since it deals with restrictions between a head and its complement at the *individual level*, whereas in cases of syntactic and semantic restriction *any member* of a syntactic or semantic class or category will do to satisfy the restrictions.¹⁹

Assume, however, that collocational restrictions are nevertheless encoded in the lexicon in a way comparable to subcategorization. An obvious question is then whether the structural constraints on subcategorization hold for collocational restrictions as well. E.g., one would assume that a verb can put restrictions on its direct object, but not on its subject or its indirect object, just as in the case of idioms (Jackendoff 1977; Gazdar *et al.* 1985; Coopmans & Everaert 1988).²⁰ Although this type of constraints on possible restrictions seems to exist, collocational relations are not unproblematic for current theories of subcategorization, as the direction of "subcategorization" may turn out to be the reverse of the usual one. Collocations of adjective and noun and of adverb and verb are cases in point, as the specific modifier seems to subcategorize for the head modified, whereas normally heads select their modifiers: cf. the discussion of sentences (47) and section 3.4.7 below.

One can, however, also maintain that the modifier is selected by the modified element: most of the collocational modifiers discussed here occur in other contexts as well, albeit with a different meaning. One might say that the modified element has its regular meaning, whereas the modifier has its specific, collocational meaning only in this special context. I.e., the restriction is on the head. The problem, then, is what counts as the head.²¹

Consider then the possibility of describing collocational restrictions as a type of selection restrictions (Chomsky 1965). The status of this type of lexical restrictions in current linguistic theory, however, is far from clear. In recent work within the generative tradition (in a broad sense) the function of selection restrictions is taken over by thematic roles, as these are interpretable as restrictions on argument structure. In Bresnan (1982) and Gazdar *et al.* (1985) selectional restrictions are dispensed with completely: they are supposed to follow from the semantics.²²

Bresnan (1982) treats idioms (such as *to kick the bucket*) and collocations (such as *to crane one's neck*) not on a par: the former are coupled to the subcategorization restrictions of the predicate by means of so-called "constraint

19. This might be just a difference in degree. Cf. the discussion in section 3.3.4.

20. Cases such as *it rains*, where the subject may be *it* only, are possible counterexamples to this generalization.

21. Cf. section 3.4.7 and footnote 26.

22. In Word Grammar, collocation is treated as synonymous with lexical selection: "COLLOCATION: the head selects a particular, formally specified word (e.g. *decide* selects the preposition *on*)" (Hudson 1984:78).

equations”, whereas the latter allegedly follow from the “meaning restrictions” of the predicate.²³ If there were such a thing as a restrictive theory of meaning postulates of predicates, such an analysis would make certain predictions as regards the type of collocational restrictions that may turn up.

3.4.2 Reduction to semantics

In formal semantics, especially in the Montague tradition (Montague 1973; Dowty *et al.* 1981), descriptions and explanations of natural language phenomena are cast in terms of logical formulae and models. If such a theory has anything to say about collocations, it will be in semantic terms.

Keenan (1974) and Partee (1984) point out that function words (a category that in the Montague tradition of function argument structure includes adjectives and other modifiers) have a context-sensitive meaning far more often than arguments. Partee considers cases such as the following:²⁴

- (47) a. Red hair
 b. Red grapefruit
 c. Red cabbage
 d. Red army

In each of these cases, *red* has a different meaning. The modified nouns, however, keep the same meaning if the modifier is varied:²⁵

- (48) a. Red hair
 b. Blond hair
 c. Pubic hair
 d. Animal hair

If it is possible to translate these facts into subcategorization relations directly, one is forced to the conclusion that the adjective *red* subcategorizes for the noun here (as is common wisdom in categorial grammar).²⁶

At first sight, the examples in (47) are potential counterexamples for the principle of compositionality, also known as the Fregean principle:

- (49) **Principle of compositionality:** The meaning of an expression is a function of the meanings of its parts and of the way in which they are syntactically combined.

Compositionality may be saved, however. Rather than postulating massive polysemy for all functional expressions, Partee solves the problem by attributing a disjunctive interpretation function to the function words.²⁷

23. In Gazdar *et al.* (1985:236 ff.) idioms are treated by means of a mapping of parts of the idiom onto parts of the meaning of the idiom. In this way, compositionality is saved.

24. Cf. the discussion in section 2.2.3.

25. In Van der Linden (1993:138) it is argued that idioms such as *to kick the bucket* should be “analyzed as a verbal functor which takes an *np* with prosody *the+bucket* as its argument, but in the semantic dimension does not take the semantics of the *np* as its argument.” “Furthermore, idioms [are] represented as signs in a hierarchical lexicon, which inherit information from their verbal heads.” The notion of heads with respect to collocations, however, is far from clear. Cf. the discussion in section 3.4.7.

26. It is not always the adjective that is the context-sensitive element in collocational combinations of adjective plus noun: in examples such as *blond god*, *guardian angel* and *floating coffin* the adjective has a “literal” meaning and the noun a “figurative” one (Verstraten 1992).

27. Cf. discussion of (13) in section 2.2.3, and compare Bartsch (1986).

It is, however, unclear whether this is the right approach to the description of the meaning of collocations. Certain lexical elements, for example many prepositions, light verbs like *make*, *go* and *do*, and intensifying adjectives or adverbs like *long*, *deep*, *heavy*, occur in collocations very often. If a separate alternative value is needed in the disjunctive meaning functions of these elements for each and every collocation in which the element shows up, this results in extremely complex meaning functions. Whether this is indeed the case, or whether generalizations may be stated, e.g. in terms of “lexical functions” in the sense of Mel’čuk *et al.* (1984) (cf. section 3.4.6) is a topic for further research. Moreover, as Partee herself doesn’t fail to point out, the notion “functional expression” is not unproblematic and leads to circularity rather easily.²⁸

3.4.3 Reduction to statistics

The working definition of collocation in (1) is rather vague. Vague definitions are eventually useless if one wants them to put to work. For instance, as a basis for writing a dictionary of collocations, or a computer readable dictionary for machine translation (Nirenburg & Nirenburg 1988; Heid & Raab 1989; Heylen *et al.* 1991), or for developing lists of collocations for testing the relevance of collocations for psycholinguistic research into the architecture of the mental lexicon (Greenbaum 1970), the definition is too imprecise. How could one select the entries on the basis of such a vague notion of what collocation is?

In the light of these problems it is attractive to try alternative, more precise characterizations. For example, it is possible to define collocation in a quantitative way, along the following lines (Haskel 1971; Jones & Sinclair 1974; Al 1978; Church & Hanks 1989; Aarts & Meijs 1990; Sinclair 1991).²⁹

(50) **Definition** *Collocation* is the relationship a lexical item has with items that appear with greater than random probability in its (textual) context. (Hoey 1991:7)

In order to test the relevance and usefulness of this type of definition, I carried out a small experiment. From Jack Hoeksema’s corpus of English texts (mainly taken from Internet sources) I selected all sentences containing either *blond* or *hair*. A few examples are given below:

- (51) a. They raided people’s houses and forced them to give fingerprints, handwriting and *hair* samples.
 b. Common dieting induced complaints include *hair* loss, intolerance to cold, dizzy spells, weakness, headaches, and hot flashes.
 c. Rastafarians wear their *hair* in long uncombed locks and revere the late Selassie almost as a god.
- (52) a. 5’11”, 190 pounds, light *blond* hair, sharp blue eyes behind rose-tinted lenses, set on a handsome face.

28. Cf. also the discussion of heads in section 3.4.7.

29. From this perspective, positive polarity items and other elements *not* occurring in certain contexts may be seen as NEGATIVE COLLOCATIONS, to be defined as follows:

i *Negative collocation* is the relationship a lexical item has with items that appear with less than random probability in its (textual) context.

Cf. Sinclair (1991:116) on “downward collocates”, “neutral collocates” and “upward collocates”.

b. He and every other man on “The Bridges to Toko-Ri” set fell in love with the statuesque *blond* actress.

c. Scottie makes Judy dye her hair *blonde* to look like Madeleine

The results of counting are given below (corpus size = 14187622 (14 million, i.e. 14×10^6) words, 1691028 (1.6 million, i.e. 1.6×10^6) sentences):

String	sentences with string	frequency/sentence
(53) <i>blond</i>	340	201×10^{-6}
<i>hair</i>	2478	1465×10^{-6}
<i>blond</i> \cap <i>hair</i>	68	30×10^{-6}

The chance for *blond* and *hair* to occur together in one sentence is $(201 \times 10^{-6}) \times (1465 \times 10^{-6}) = 294465 \times 10^{-12} = 0.3 \times 10^{-6}$, i.e., the combination should occur not at all, or at most in one or two of the sentences in the 1.5 million sentence corpus. The frequency measured, however is 30×10^{-6} , that is 100 times or two orders of magnitude as often as could be expected.³⁰ That means that the combination *blond hair* definitely qualifies as a collocation.

This quantitative definition (50) is less vague than the earlier, qualitative one, given in (1). In order, however, to be useful, it needs to be made more precise: what counts as “combination” in its formulation? Adjacency in the string is too strong a criterion, as becomes clear upon inspection of the sentence *her hair used to be blond* containing the collocation *blond hair*. If this is not yet convincing, consider the collocation *to collect stamps* (Greenbaum 1970). Automatic search procedures will never find all instances of this combination. The following fragment shows that the collocates may be arbitrarily far apart.

(54) As to collecting, we’re not interested in coins, books, . . . Our sole concern is stamps.

On the other hand, the definition is too weak as well, since it forces us to count strings such as *an apple*, *how do you do*, and *I love you* as collocations. As regards the first example, consider the following examples from Hoeksema’s corpus.

- (55) a. An example from Locke is that of a person that picks *an apple* from a tree (growing in the wild).
 b. Once he/she has picked the *apple* it is his/her property.
 c. I had a red *apple* with me and it turned out to be the one fruit item quarantined by California due to the apple maggot (eeeyuucch!) So, I ate my *apple* at the fruit check station and headed on.

The number of occurrences of *an apple* compared with the expected frequency yields the following results:

String	sentences with string	frequency/sentence
(56) <i>apple</i>	77	48×10^{-6}
<i>an/An</i>	39311	24815×10^{-6}
<i>An/an apple</i>	26	16×10^{-6}

30. This number would be less if adjacency of the elements would be taken into account.

The chances for *an* and *apple* to occur together in one sentence is $(48 \times 10^{-6}) \times (24815 \times 10^{-6}) = 1191120 \times 10^{-12} = 1.2 \times 10^{-6}$. Again, this combination should occur in at most a few of the sentences in the 1.5 million sentence corpus.³¹ The frequency measured, however, is 16×10^{-6} , which is a factor 10 as often as could be expected. That means that the combination *an apple* qualifies as a collocation.

The only conclusion that can be drawn from this tiny experiment is that the qualitative definition (1) and the quantitative definition (50) specify different concepts. Both definitions qualify *blond hair* as a collocation. *An apple*, however, is a collocation according to the latter but not to the former, as it is clear that *an apple* occurs more often than *a apple* for phonological reasons. And as it is known why *an* and *apple* occur together and why *a* and *apple* don't, there is no idiosyncrasy in the restrictions on the distribution of the elements, so there is no collocation according to this definition.

To strengthen this conclusion, consider the following list of word pairs, the most frequent two-word combinations in a large database (ca. 200,000 examples) of word combinations in spontaneous speech (Svartvik 1992):

	you know	152
	[m] [m]	128
	yes yes	120
	I think	106
	sort of	100
	you see	95
	oh yes	94
(57)	isn't it	88
	and then	82
	which is	81
	I mean	74
	and he	73
	and they	72
	thank you	72
	at all	65

In this list, hardly any collocation of the traditional type occurs. That is to say: a purely statistical definition of collocation gives us more and other collocations than the initial definition in (1) was meant to cover. The statistical definition selects many combinations that are not collocational in an intuitive sense. Statistical methods may be useful to select word pairs as possible collocations, but they are ill suited to distinguish collocational word pairs from combinations that combine for other reasons than collocation.³²

31. Cf. footnote 30.

32. Resnik (1993) offers a numerical or statistical approach to selectional restrictions and other relationships between lexical items. Resnik uses information-theoretic measures instead of pure chances of co-occurrence. Discussion of the possible merits of his approach for a theory of collocations is beyond the scope of this dissertation.

3.4.4 Reducing everything to collocational behavior

In some linguistic frameworks, collocation seems to be the norm rather than the exception. A case in point is cognitive grammar as exemplified in the work of Ronald Langacker. Cf. the following quotation (emphasis in the original):

All linguistic units are context-dependent. They occur in particular settings, from which they derive much of their import, and are recognized by speakers as distinct entities only through a process of abstraction. How far this abstraction proceeds for a given unit depends on (1) the variety of its settings, which determines the level of specificity at which its context is characterized; and (2) how consistently it appears in these settings, which determines their centrality to its value. Rather than context-dependency, it is this process of partial *decontextualization* that requires explication. (Langacker 1987:401)

But this cannot be the whole story: several types of context are to be distinguished, and several degrees of context-dependency:

Several different types of context must be recognized. One is the *systemic context*, i.e. the position of a linguistic unit within the schematic networks that collectively constitute the grammar of a language. Another is the *situational context*: the pragmatic circumstances (centered on the speech-act participants) that give rise to a particular usage event. Yet a third is the *syntagmatic context*, pertaining to the combination of units in the formation of complex expressions. All of these are crucial to a viable conception of linguistic structure. (Langacker 1987:401)

This last quotation suggests that Langacker is conflating linguistic levels by ascribing everything to context. If various types of context are distinguished after all, one wonders which type of context has the most influence. Moreover, syntagmatic context looks almost the same as good old syntax, situational context is almost the same as pragmatics. This seems to imply that certain combinations will be context-dependent in another way than others, and that collocational combinations will be context-dependent in their own special idiosyncratic way.

3.4.5 A separate level

Certain linguistic frameworks distinguish a separate linguistic level where the interaction of individual lexical items is handled. This is for instance the case in some British frameworks building on the Firthian tradition, such as Systemic Linguistics (Halliday 1966; Sinclair 1966; Berry 1975-1977; Butler 1985). The level concerned with collocational relations is called *LEXIS* here. The difference between grammar and lexis and the position of collocations in grammar are described in the following way:

Grammar [...] is not concerned with the formal items per se; it is only interested in them at one remove as it were, when the formal items are realising elements of structure. Lexis on the other hand is interested in the formal items as individual formal items."

The patterns of lexis are called *COLLOCATIONS*. Collocations, like the structures of grammar, consist of 'things' occurring one after another in a sequence.

(Berry 1975-1977:51)

The position of the lexical element in the string is held to be unimportant for a lexical collocation, though important for a grammatical structure. Grammar involves classes of elements, i.e., grammar abstracts from the idiosyncrasies of individual lexical items, whereas lexis is concerned exactly with these idiosyncrasies. "Just as the statements made about items of collocations are less general than the statements about the elements of structures, so too the statements about collocations themselves are less general than the statements made about structures."

Within this type of theory, a lexical item is defined by its collocational properties:

The defining feature of a lexical item, by which such an item is recognized, is its pattern of co-occurrence with other items, that is its COLLOCATIONAL behavior. A lexical item is recognized as different from other lexical items because its total pattern of collocation is unique. (Butler 1985:130)

An absolute distinction between grammar, lexis, and semantics seems, however, to be untenable. On the one hand, one finds the opinion that lexis is just like grammar, albeit with only a small coverage: "Grammar and lexis may form a cline, a continuous gradation with clearly grammatical patterns at one end and clearly lexical ones at the other. In other words, the possibility of lexis as most delicate grammar remain[s] open" (Butler 1985:133). Other researchers within this tradition, however, have suggested lately that lexis should be reduced to semantics Butler (1985).

The advocates of the separate level of lexis where collocations are supposed to live come to the conclusion that this level can be dispensed with. There are no mechanisms unique for that specific level, there are no interesting predictions that can be derived from the special status of collocations, living in a separate level of lexis, and the borderlines with other levels are vague.

3.4.6 Listing all collocations

At least some information concerning some collocations will have to be stored in the mental lexicon. It is therefore not unreasonable to pay attention to the lexicographic approach to collocation: all dictionaries sum up at least a few collocations, and the larger ones list many. Perhaps results from lexicography may be useful for theoretical study of the subject as well.

According to Benson *et al.* (1986b:254 ff.), "the compiler [of a dictionary] should include as many idioms, collocations, transitional combinations, and compounds as possible. The choice of the items entered depends on the planned size of the dictionary and on the skill of the compiler in selecting those combinations that are most vital to the dictionary description of English."

Apart from factors such as lexicographers' skills and dictionary size, tradition plays a role too. Benson (1985:62) observes that grammatical collocations such as *adhere to*, *aim at*; *accusation against*, *admiration for*; *absent from*, *afraid of* are treated differently in American and British dictionaries. "The leading British Learner's dictionaries do give a large number of grammatical colloca-

tions. American general-use dictionaries are, on the other hand, unsatisfactory; they do not give a sufficient number of grammatical collocations."

Next to collocation dictionaries there exist dictionaries that deal exclusively with idioms, such as Cowie & Mackin (1975), Cowie *et al.* (1983), Spears (1990), Phythian (1993), as well as dictionaries of phrasal verbs: (e.g. McArthur & Atkins (1984)). These may or may not list collocations as well, depending on the compiler's definition of the concepts collocation and idiom, and on the exact location of the borderline.

Compared to other types of fixed expressions, collocations have proven to be the most difficult: "The critical problem for the lexicographer has been, heretofore, the treatment of collocations. It has been far more difficult to identify them than idioms or even compounds; as a result, their inclusion in dictionaries has been erratic" (Benson *et al.* 1986b:256).

Probably the most original approach to listing collocations is found in the *Explanatory and Combinatory Dictionaries* (ECDs) of Igor Mel'čuk and his colleagues (cf. the bibliography s.v. Mel'čuk). Rather than trying to list all recurrent combinations of all words, "[t]he ECD approach is to subject a relatively small number of carefully selected entries (approximately two thousand) to a very detailed grammatical and lexical treatment. Each entry is arranged in exactly the same way and provides exactly the same type of information" (Benson 1985:62).

The information in the ECD is organized with a system of so-called LEXICAL FUNCTIONS. These lexical functions, of which over forty have been identified, express extremely general concepts. Some of them have been used in dictionaries for centuries. For example, the first function is called SYN (synonym), i.e. in all ECD entries, synonyms of the headwords are given. More interesting are lexical functions such as INCEP which is used to refer to the means that can be used to express the beginning or creation of the thing denoted by the head word, FIN, that refers to the endpoint of an action, CAUS that has everything to do with causation or bringing about, and MAGN that expresses intensification. For example, "assembly of people for discussion" might be one of the SYNs of *meeting*, "to open" its INCEP and *to close* its FIN.

Although its explanatory power is next to zero, this system of lexical functions is very useful to describe collocational relations. That doesn't mean that it is without problems: as Benson (1985:62-3) points out "Some of the ECD lexical functions seem overly intricate or rare, and would be suited for inclusion in a general-use dictionary. For example, the function FIGUR (figurative) somehow produces, in the entry for *night*, the collocation *cover of night*."

Another "major drawback of the ECD approach, from the viewpoint of the lexicographer who compiles general-use dictionaries" pointed out by Benson is that some lexical functions produce *free combinations*. An example is the function *Caus*, which expresses the meaning of "to cause", "to bring about". "However, the verb *to cause*, and some of its synonyms, combine freely with hundreds of nouns (which often have a negative meaning). These combinations

are predictable. [...] A general-use dictionary would be needlessly swamped by the inclusion of all such combinations."³³

"On the other hand, some of the ECD functions do suggest significant innovations for lexicography. They are of considerable importance to compilers of general-use dictionaries. An example is *Magn* (magnus) meaning 'of the highest degree'" (Benson 1985:62–3). "[S]everal of the ECD functions are of vital interest to the compiler of a general-purpose dictionary. These functions must be utilized, however, with considerable restraint, caution, and common sense if the inclusion of unneeded free combinations is to be avoided" (ibidem).

The ECD approach is interesting from a theoretical point of view. Perhaps the ideal ECD is able to list all and only the lexical functions that may be expressed collocationally. As new words enter language every day, a default value is called for, even in the case of the lexical functions that are most collocational in nature. This explains why lexical functions cover free combinations as well. In other words, the lexical functions used by Mel'čuk *et al.* are useful guides towards meanings are expressible by means of collocation. In the ideal case they define the borderlines of the collocational landscape. Which combinations are lexicalized as collocations remains idiosyncratic and unpredictable.

3.4.7 On having no head

Collocations are implemented in many linguistic frameworks as a dependency relation between a head and a non-head, following a general (albeit usually implicit) principle that is formulated in Hoeksema (1992a:121):

(58) **Omniheddedness:** every complex structure has a head.

What is taken as the head, however, and what as the nonhead often has to be stipulated in an arbitrary way:

[I]f one is considering a collocation, there is no natural focal point, no natural headword. There is no reason why any one of the items of the collocation *The waitress spilt the soup on the tablecloth* should be regarded as a headword any more than any of the others. The items are unique and cannot be compared.

(Berry 1975-1977:55).

In collocations such as *spick and span*, none of the overt elements is a head according to any of the four definitions of head given in Hoeksema (1992a:120):³⁴

- semantic: the head of A is a hyperonym of A, i.e. when A denotes a set X, the head of A denotes a superset of X
- distributional: the head of X is a part with the same distribution as X
- morphosyntactic: the head is the locus of inflection
- technical: the head of X is the part which determines the category of X

If one nevertheless wants to adhere to the principle in (58) for collocations such as *spick and span*, then an underlying, abstract head must be postulated.

The situation is different in the case of other classes of collocations. Consider the case of the verb *look after*. None of the elements is the head

33. It should be noted that the goal of the ECD-people is *not* to compile a general-use dictionary.

34. Cf. Zwicky (1985) for other definitions and Hudson (1987) for a defense of the concept.

according to the semantic definition, since neither *look* nor *after* is a hyperonym of *look after*. The same holds for the distributional definition: *look after* usually cannot be substituted by *look* or *after*:

- (59) a. The diplomats will look after their nations' interests
 b. *The diplomats will look their nations' interests
 c. *The diplomats will after their nations' interests

The morphosyntactic definition points in the direction of *look* as the head of *look after*: inflection of the collocation yields *looked after*, *looks after* etc. The final, technical, definition is somewhat problematic, as it is unclear what counts as a category: both *look* and *look after* are verbs, but the former is intransitive, whereas the latter is transitive. In more rigid theories such as categorial grammar these categories are not the same, so within that framework one cannot say that any of the elements determines the category of the collocation.

The next type of collocation, *red army*, is a clear and simple case: according to all definitions, *army* must be the head: it is a superset of *red army*, it has (about) the same distribution, it certainly is the locus of inflection, and it probably determines the syntactic category.³⁵

If, however, the German translation of *red army*, *rote Armee* is taken into account, trouble arises again: both the adjective and the article show inflection:

(60)	Nom. sg.:	die rote Armee
	Gen. sg.:	der roten Armee
	Dat. sg.:	der roten Armee
	Acc. sg.:	die rote Armee

According to the morphosyntactic definition, the noun should be the head in *red army* and the determiner, the noun and the adjective together should be the head in *rote Armee*. That would amount to saying that one gets different heads for the same collocation in different languages.

The notion of head becomes even more complicated in the case of negative polarity items. Consider the following examples:

- (61) a. Nobody reads any book over here
 b. Nobody's father reads any books over here
 c. Nobody believes that you should read any of these books

The first problem is the following: of which construction is one of the elements of the collocations supposed to be the head: is it the clause? But in the last example, the relationship connecting *nobody* and *any* crosses a clause boundary. According to the semantic definition, neither of the elements *nobody* and *any* is the head; the same probably holds for the distributional definition. The morphosyntactic definition points towards *nobody* as being the head, unless one follows Zwarts (1986b) and takes the full noun phrase *any books* as the NPI, in which case both *nobody* and *any books* are candidates for the head status. Finally, the technical definition is useless unless there is an answer to the initial problem, i.e., unless one already knows what the relevant construction is.

35. This reasoning doesn't hold in a DP hypothesis (Abney 1986).

Finally, there is the case of negative collocations such as positive polarity items (PPIs). These are problematic for any theory that implements collocational relations by means of heads and daughters. Negative collocations involve impossible constructions, so how could one find the head of such a thing?

The results concerning what should count as the head of various types of collocations are summarized in the chart below:

definition → ↓ collocation	a	b	c	d	head
(62) spick and span	—	—	—	—	abstract
look after	—	—	look	—	look
red army	army	army	army	army	army
rote Armee	Armee	Armee	die rote Armee	Armee	???
NPIs	—	—	???	???	???
PPIs	—	—	???	—	???

The table shows that it is impossible to make uniform claims about the head in collocational structures. The various definitions lead to contradicting results. One may of course uniformly postulate an abstract head for all collocations. But this is hardly an interesting solution, as it makes the initial claim that collocations may be implemented as a dependency between a head and a non-head vacuous.

But one can also be more optimistic. Collocations are meaningful and not completely idiomatic, i.e., somewhat compositional post facto.³⁶ In advance one cannot predict that *rain cats and dogs* will mean ‘rain a lot’, but after you know what it means, you see that *cats and dogs* is an intensifier. The essence of collocation is that the assignment of *cats and dogs* to this meaning does not feed other combinations. So even though there is a meaning for it, that meaning is only valid in a certain collocation.

This will separate out the parts of a collocation. *Rain* has its regular meaning; *cats and dogs* doesn’t. So the restriction is attached to *cats and dogs*.

Now a continuum of freeness of recombining presents itself. What does the restricted item collocate with? Single lexical items, as in the case of *stone + deaf*.³⁷ Or a denotationally clear semantic field: *blond* goes with *hair*, *locks*, *tresses* etc., *school* with about everything that swims. Then what do NPIs collocate with? With negation. The puzzle is how to characterize that “field”. Logically it could be a single word (e.g. *not*) or a general class, the features of which were discussed extensively in chapter 1.

3.4.8 Concluding remarks: what are collocational restrictions

In this section, I have discussed various reductionist approaches to collocation: efforts to explain collocational relationships in terms of syntax, semantics, statistics etc. Some of these approaches are successful with certain types of

36. Cf. the discussion in section 3.2.5.

37. Historically *stone + blind* used to be a collocation too (OED).

collocations, but no theory covers all collocations. Stated more negatively: collocations as a whole do not really fit in current linguistic theories. Their status in linguistic theory is far from clear, and the only fruitful approach is to list them all in the lexicon.

An even more pessimistic conclusion would be that calling a fixed combination collocational is a euphemism for saying that you don't know why it is fixed. Collocations are condemned to live in the rubbish-heap of the lexicon, there is no place for them unless in the linguistic trash can. If this negative conclusion is right, then the goal of collocation research must be to free groups of collocations from this trash can and to offer them a more respectable place to live. In this view, the aim of collocation research is to reduce the collocational behavior of fixed combinations to a more respectable level or module of grammar, be it phonology, semantics or syntax.

But perhaps there is no reason to be that pessimistic. As COLLOCATION is a general term that covers a very heterogeneous collection of combinations of lexical items, this goal of explanation of various types of collocations in terms of linguistic mechanisms that are better understood is not a priori unfeasible. Certain types of collocations, such as light verb constructions and fixed prepositions, seem to fit in syntax quite well. Collocations of the *X and Y* type were shown to be governed by a mixed bag of semantic, phonological and cultural rules. Semantics is also a promising and interesting field to look for explanations of other types of collocational behavior. In Chapter 1 I argued that a semantic approach to the class of collocational expressions known as polarity items is superior to syntactic approaches, at least in descriptive terms. The ECD approach of Mel'čuk and his co-workers is another step in this semantic direction.

In any case, the linguistic community cannot afford to leave collocations aside. If people can handle collocations, linguists must be able to develop decent theories about them. If realistic linguistic applications of computers will ever become feasible, the ubiquity of collocational effects must be taken into account. If linguists do not take this challenge, others will. But collocation is too important and too central in language to leave it to the lexicographers and the engineers.

3.5 Combinability

3.5.1 The scalar character of collocational behavior

There exist no lexical items that can occur everywhere: all words and expressions are more or less restricted in their distribution.³⁸

For example, even determiners such as *a* and *an* cannot be followed by just any lexical item: there exist phonological, syntactical and semantical restrictions on their distribution. *A* may not be followed by a word starting with a vowel, *an* has to be followed by such a word, both determiners must be followed by some sequence of words such that the string including the determiner can be construed as a noun phrase, and they can be combined only with nouns that denote countable things:

- (63) a. An apple, a pear
 b. *A apple, *an pear
 c. John works in a library
 d. *John works in library a
 e. *John works a in library
 f. *John a works in library
 g. I will have a cup of soup for lunch
 h. *I will have cup of a soup for lunch

Still, some expressions have a more restricted distribution than others. In other words, collocational behavior interpreted as restricted distribution is a scalar phenomenon: all lexical items have restrictions on their distribution, but some lexical items are more restricted than others.

3.5.2 Hapax legomena

On the scale of restricted distribution, one of the endpoints will be occupied by so-called *hapax legomena*³⁹ or “cran morphs”, lexical items that occur in one collocation or idiom or word only, such as *cran* (as in *cranberry*, which is the source of the term), *spick* (as in *spick and span*), etcetera. In terms of information content these “crans” are precisely as informative as the complete expression: once *spick* is uttered by a speaker, *and span* is the only possible continuation. The hearer knows this as well, so the contribution of *and span* to the message is zero.⁴⁰ If language would have had a very simplistic optimality mechanism

38. One might suggest that this universal claim is refuted by epithets such as *fuckin*, that may occur almost everywhere, even between word parts.

i directing the band with his Modular like Leonard Fuckin' Bernstien or some shit!
 ii “Unbefuckinglievable.” “Impressive,” said Maria
 iii *Leonard Bern Fuckin' stien
 iv *Unbelievabfuckingle.”

The last examples show that not everything is possible (McCarthy 1982)

39. Scalise (1984) uses the term *hapax legomena* in his discussion of *cran*, but as far as I know the term was coined for lexical types that occur in a text or corpus only once, as in Baayen (1989). One might distinguish between lexical hapaxes (Scalise) and textual hapaxes (Baayen).

40. Cf. Resnik (1993) for discussion in terms of information theory. Note that there are cases of fixed strings, e.g. idioms, where insertion of lexical material is possible, e.g. *We should take pains to smoke the proverbial peace pipe with them* and *My proverbial hat off to: Mike Dunleavy*. In

in terms of as few sounds as possible, combinations such as *spick and span* and *cranberry* would be ruled out. From the existence of these formations I conclude that language does not have such a mechanism. But don't these lexical items violate the Gricean maxim of quality or Horn's Q principle, that amount to 'let your message be as simple and informative as possible'? Probably not, for the simple fact that **cran* and **spick* may not occur in isolation.

3.5.3 Collocations proper

Going from this endpoint towards the other endpoint, that of maximally unrestricted items, we first meet the group of collocations proper, that is to say, the lexical items that occur only in the vicinity of certain other lexical items. It is of course possible, and not without sense, to make a finer division of this group.

The first subgroup consists of elements that are always accompanied by one and the same element. For example, if the verb *adhere* is accompanied by any preposition, it will be *to*; likewise, if one is looking for a group name to go with *crows* or *larks*, it must be *murder* and *exaltation*, respectively, if one may trust Lipton (1991). Or perhaps the latter type dependency is rather the other way round, as groups of *crows* and *larks* may also be called *groups*, *swarm*, *bunch* etc. *Murder* and *exaltation*, however, have their group meaning only in the vicinity of *crows* and *larks*, respectively.

The next subgroup contains words that are always accompanied by an element of some closed class. For example, to denote a group of fish one may both say *shoal of fish* and *school of fish*. In the case of *bees* one may choose between *cluster*, *colony* and *swarm*. If one wants to express a high degree of *sleeping*, one can express this by means of any of the modifiers *deep*, *heavy* and *profound*. The verb *fight* can be accompanied by the prepositions *about*, *over*, *against*, *among*, *for* and *with*, depending on the exact meaning one wants to express.

The elements of the next subgroup have to be in the vicinity of an element of a large or open class. Cases in point are intensifiers such as *utterly* that may modify verbs of a negative flavor only, negative polarity items such as *ever* that have to be in some downward entailing context, and verbs such as *surround* that need a subject referring to a group.

An even less restrictive type of restriction takes the form: element X does not occur in context Y. In section 3.3.4 I suggested earlier that these might be called "negative collocations". Parallel to the distinction made in the last section, various subtypes of negative collocations may again be distinguished.

Positive polarity items such as *would rather* are examples of lexical elements that are excluded from the scope of an open class of elements. These are fine *unless* they are in a downward entailing context. But such a downward entailing context may be constituted by an infinite number of constituents:

both cases, the adjective *proverbial* is inserted. Cf. Schenk (1989) and Van der Linden (1993) for different views on the syntactic flexibility of idioms.

all noun phrases of the form *no more than n farmers* possess this semantic property, for any value of *n* greater than one.

- (64) a. Everybody would rather be in Montpellier
 b. *No more than two farmers would rather be in Montpellier
 c. *No more than three farmers would rather be in Montpellier
 d. ...
 e. *No more than twelve thousand farmers would rather be in Montpellier
 f. ...

An even weaker form of collocation is formed by the Dutch prefix *niet* 'not', that expresses a strong negation (denial). It may be attached to any adjective if only the adjective itself doesn't have an overt negative affix already (De Boer & Ophoff 1987): *niet-zwanger* 'not-pregnant', *niet-groot* 'not-great' are all perfectly well-formed. But formations such as *niet-onaardig* 'not-unkind' and *niet-hopeloos* 'not-hopeless' are ungrammatical.

An example of a class of lexical items even less restricted in their distribution is formed by the English modals. These may be used always unless another modal auxiliary is present.⁴¹

3.5.4 Restrictions that are too strong

Some attention should be paid to restrictions which are too strong:, which results in lexical items that are never allowed to occur anywhere. These 'lexical gaps' resemble the black holes in the universe: they cannot be observed directly, but they are predicted by the theory and there is indirect evidence for their existence.

From this perspective there even exist (or don't exist) various classes of lexical gaps. Firstly there is the case of words that don't exist accidentally, so to speak, as they are conceptually fine. French allegedly has two words for 'river', *rivière* and *fleuve*, the difference being that the former flows into the sea whereas the latter doesn't. In Dutch there are different names for a runway for taking off (*startbaan*, 'take-off way') and one for landing (*landingsbaan*, 'landing way'). Useful concepts such as *Angst*, *apartheid*, *Gestalt* and *karaoke* are also cases in point: English doesn't have a word for them, so it borrows the terms from other languages when necessary.

Secondly there are meanings that seem to be conceptually or logically wrong. For instance, Barwise & Cooper (1981) claim that there exist no natural language determiners that do not 'live on' a set, i.e., all determiners are conservative. Likewise, there is no natural language that expresses the complex determiner meaning 'an even number of' by means of one simple lexical item.⁴²

Thirdly, the existence of certain words or word forms may 'block' the existence of others. For instance, the existence of the irregular past participle *forgotten* blocks the formation of the regular **forgetted* – although children

41. Dialects where sentences such as *I might could go* are grammatical are even more liberal.

42. Cf. the discussion of nonexisting antimultiplicative lexical items in footnote 36 of chapter 1.

usually try this type of overgeneralization in certain stages of the language acquisition process.

Finally, one can think of 'grammatical lexical gaps', words that violate certain rules of grammar. Words such as **liablehood* and **likelity*, as opposed to *liability* and *likelihood*, are unwellformed, and therefore unexisting, because the suffixes *-hood* and *-ity* only attach to Germanic and latinate input words, respectively.

3.5.5 The interplay of constraints

Eventually, the distribution of a lexical element is determined by the interaction of all restrictions (syntactical, semantical, collocational and pragmatical) that hold. Consider an adjective such as *flagrant*. This word is an intensifier collocating with words with a negative meaning or connotation:⁴³

- (65) a. Flagrant human rights abuses
 b. *Flagrant adherence to human rights
 c. Flagrant contradiction
 d. *Flagrant tautology

Not all negative terms, however, may be intensified by *flagrant*, one important factor being that the intensified noun be gradable:⁴⁴

- (66) a. Flagrant human rights abuses
 b. *Flagrant death

Just like most intensifying adverbs, *flagrant* is a positive polarity item:

- (67) a. We should fight against flagrant human rights abuses
 b. ?Nobody should defend flagrant human rights abuses
 c. Nobody should defend human rights abuses

There are probably more factors that restrict the distribution of *flagrant*, but the picture should be clear by now: a sentence is grammatical if and only if all restrictions (syntactical, semantical, collocational and pragmatical) of all lexical elements are satisfied. In this respect, our view of grammar comes rather close to the constraint-based grammar formalisms developed in computational linguistics (Shieber 1992). Elaboration on parallels and differences is, however, beyond the scope of this thesis.

3.5.6 Concluding remarks: types of constraints

In this section on lexical combinability, I have argued that the distribution of all items is restricted one way or another: no lexical item can occur just everywhere. The distribution of some lexical items, however, is more constrained than that

43. The negative meaning may be inherited by the head of the noun phrase: **a flagrant example* is unwellformed as it stands, but *the city's most flagrant example of police misconduct* is fine. The exact properties of this mechanism of inheritance are beyond the scope of this dissertation.

44. Bill Ladusaw suggested to me that *flagrant* moreover only modifies acts, which explains the difference between **flagrant death* and *flagrant murder*. Interestingly enough, the constraints on English *flagrant* differ from those on its Dutch counterpart: in my Dutch, **flagrante dood* 'flagrant death' and **flagrante moord* 'flagrant murder' are equally ungrammatical.

of others. That is to say, collocation is a matter of degree. Large classes of items are fairly unrestricted, whereas other elements occur in very few contexts only.

If all restrictions on the distribution of lexical items are taken to be collocational, uniform listing of collocational combinations in the lexicon is impossible: certain open classes of lexical items (e.g. negative polarity items) are restricted to the neighborhoods of members of another open class (viz. monotone decreasing operators). In this case, a semantic treatment seems to be more fruitful than simple listing in the lexicon. Semantics plays a role in other types of fixed combinations as well, in the sense that it is possible to recognize semantically natural classes of elements that show the same type of collocational behavior.

3.6 The idiosyncrasy of collocations

In this section, some attention is paid to the meaning of the adjective IDIOSYNCRATIC in the definition of collocation in (1). This adjective turns out to have no precise meaning. Under the header of collocation one finds a gamut of incomparable things.

I already discussed the lexicographer's distinction between lexical and grammatical collocations. Below, I give the definitions of Benson *et al.* (1986a):

(68) A GRAMMATICAL COLLOCATION is a phrase consisting of a dominant word (noun, adjective, verb) and a preposition or grammatical structure such as an infinitive or clause. (Benson *et al.* 1986a:ix)

(69) LEXICAL COLLOCATIONS, in contrast to grammatical collocations, normally do not contain prepositions, infinitives, or clauses. Typical lexical collocations consist of nouns, adjectives, verbs, and adverbs.

(Benson *et al.* 1986a:xxiv)

The grammatical collocations of Benson *et al.* (1986a) fall apart in no less than eight types:

- (70) a. combinations of nouns plus prepositions other than *of* (which is taken as the default): *blockade against, apathy towards, love for*.
 b. nouns that take a complement of the form *to* plus infinitive: *it was a pleasure to do it, they made an attempt to do it*.⁴⁵
 c. nouns that may be followed by a *that* clause: *an agreement that she would represent us in court, an oath that he would do his duty*.
 d. combinations of preposition plus noun: *by accident, to somebody's advantage*.
 e. combinations of adjective plus preposition that may function as predicate or free adjunct: *angry at (everyone), fond of (children)*.
 f. adjectives that may be followed by a *to*-phrase: *it was necessary to work, she is easy to please*.⁴⁶
 g. adjectives that may be followed by a *that* clause: *she was afraid that she would fail the examination, it was imperative that I be there at three o'clock*.
 h. a miscellaneous category, comprising nineteen verbal patterns of English.

Benson *et al.*'s (1986a) lexical collocations aren't defined too precisely either. They fit into seven subgroups:

- (71) a. combinations of verbs denoting *creation* or *activation* with nouns or pronouns (or prepositional phrases). Examples include *come to an agreement, fly a kite, display bravery, do the laundry*.

45. Benson *et al.* (1986a) don't make a finer distinction here, but actually they should do so: some nouns show so-called subject control, and others object control. Consider the following examples:

- i John's promise to Mary to come
 ii John's request to Mary to come

In [i] the intended (or understood) subject of *to come* is *John*, in [ii] it is *Mary*.

46. A finer distinction might be made, parallel to the one discussed in footnote 45: *easy* and *eager* both take a *to*-phrase, but the meanings are different:

- i John is easy to please
 ii John is eager to please

In the case of *easy*, the pleasing act (if any) is carried out by people other than John, in the case of *eager*, John is the one who pleases.

- b. combinations of verbs meaning *eradication* or *nullification* with nouns, such as *reject an appeal*, *dispel fear*, *quench one's thirst*, *override a veto*.
- c. combinations of nouns and adjectives such as *strong/weak tea*, *reckless abandon*, *sweeping generalization*.
- d. combinations of nouns with verbs that refer to the activity characteristically associated with the noun: *adjectives modify*, *bees buzz* or *sting* or *swarm*, *blizzards rage*.
- e. names for the units associated with nouns, either group names, such as *a school of whales*, *a pride of lions*, or names of individual items, such as *a bit (piece, word) of advice*, *an article of clothing*.
- f. combinations of adjectives plus adverbs, such as *deeply absorbed*, *hopelessly devoted*, *sound asleep*.
- g. combinations of verbs and adverbs: *affect deeply*, *amuse thoroughly*, *argue heatedly* etc.

From this overview, two conclusions may be drawn. Firstly, the typology of Benson *et al.* (1986a) is not exhaustive. Earlier in this chapter I discussed types of collocations such as frozen conjunctions (*salt and pepper*, *spick and span*, *flotsam and jetsam*), morphological cases (*oxen*, *whinchat*) and polarity items.. Those are missing from this overview,

Secondly, what goes under the header of "collocation" is very heterogeneous. There are dependencies between lexical items that do not fit in current theories of syntax or semantics: these go under the general header of collocations. To put it more strongly, collocation may be viewed as the junkyard of linguistics, to borrow a lucky term from Hoeksema (1984).

There is hope, however, for these poor neglected items. At least since the appearance of Chomsky (1970) there is a tendency within linguistics to shift the explanatory load of grammar towards the lexicon (Hoekstra *et al.* 1981:1–48). Since then the lexicon receives more attention. The result is, among other things, that certain classes of fixed combinations are freed, so to speak, from this junkyard called "collocation". Certain frameworks are working on theories of fixed prepositions, of light verbs, and of lexical functions in general. One may expect that this process will continue and be fruitful. The result of this will be that the set of ill-understood fixed combinations covered by the term "collocation" will become smaller, more homogeneous and better understood. There is a lot of work to do, but it is an interesting challenge, as much is to be gained for linguistics here.

3.7 Summary and concluding remarks

Collocation is a phenomenon found almost everywhere in language; for every language user it is of vital importance to master his or her collocations. This fact notwithstanding, collocation is mostly neglected by language theoreticians.

The very general definition of collocation given in (1) proved to be even more general than was expected: comparable idiosyncratic restrictions on the distribution of lexical items were found to exist below the word level and between phrases. The behavior of polarity items was argued to be collocational as well.

No linguistic framework offers a satisfying treatment of all collocations as a group. "Collocation" turned out to be the name of a messy trash can somewhere in the junkyard of linguistics, where all relationships between lexical items that do not fit elsewhere in the theory are thrown in, never to be looked at by most linguists. The discussion of the types of idiosyncrasy one finds in collocations only gave extra arguments for this conclusion.

This amounts to saying that the first aim of collocation research should be to reduce the collocational behavior of fixed combinations to a more respectable level or module of grammar, be it phonology, semantics or syntax. As long as one doesn't have any ideas about phonology, the co-occurrence of *an* and *apple* in *an apple* is a mystery, also known as a collocation. But once one has a phonological theory, the collocational behavior of this combination can be explained away by means of notions such as vowels and consonants. A comparable story holds for subcategorization and selectional restrictions.

Stated more positively, collocation research should start off not with all combinations that qualify as collocational at once, but rather with separate subgroups. Collocations are meaningful and somewhat compositional post facto. In advance you cannot predict that the meaning of *sleep like a log* will denote an intense form of sleeping, but after you have learnt what it means you see that *like a log* is an intensifier. The essence of collocation is that the assignment of *like a log* to the meaning 'very' does not feed other combinations. So even though we have a meaning for it, that meaning is only valid in a certain collocation. At the same time it is beyond doubt that the semantic field of intensification contains a fertile soil where collocations flourish.

The same holds for other types of modifiers such as *blond*: this adjective only combines with nouns referring to hair and, via metonymy or metaphor, things having to do with hair (such as *tresses*, *whigs*, *girls*, etc.). This is a more or less natural semantic class. Group names seem to be connected with semantic fields as well: *school* and *shoal* combines with *fish* in a broad, non-biological sense (including *shrimps*, *whales* etc.), *swarm* with flying insects and other small flying things, such as (small) birds, but not with *planes*, *cranes* etc.

But first and foremost, collocation is a field that is largely unexploited. This chapter has given some suggestions as regards the directions where further research might continue.

The conclusion I draw from this discussion is that any theory about collocation will be a theory about possible collocational systems. Stated at a rather abstract level, such a theory will define the borderlines within which the various types of collocations may occur. Whether or not the combinations within these borderlines will indeed be collocational cannot be predicted, and the same holds for the exact form that collocational combinations will take. In this sense, collocational restrictions are truly idiosyncratic in nature. At the same time, not everything is possible: the idiosyncrasies are restricted themselves by the mechanisms governing collocation, i.e., grammar. Moreover, many collocational combinations make sense. Collocations are compositional post hoc: once the form and meaning of a certain collocation are known, the combination is not surprising anymore.

To conclude

All lexical items are restricted in their distribution, but some lexical items more so than others. In the last chapter of this dissertation I show that this phenomenon, collocation, is pervasive in natural language: there exist not only collocational relationships between words, but also below and beyond the word level. The futility of attempts to reduce all collocational effects to syntactic or semantic mechanisms or to statistical effects is demonstrated. In other words, the conclusion is that collocational restrictions on the distribution of lexical items have to be stipulated in the lexicon, although they are themselves governed by the syntactic and semantic mechanisms known as grammar.

The first chapter discusses a special class of collocations, viz. polarity items. Polarity items have a restricted distribution: negative polarity items only occur in negative contexts, whereas positive polarity items are excluded from such contexts. Following Ladusaw, I assume that all negative contexts share the mathematical property of downward monotonicity. Contrary to Ladusaw and others, I argue that downward monotonicity is indeed the crucial property that determines the distribution of both positive and negative polarity items: notions such as (overt or covert) negation can be dispensed with. This cannot, however, be the whole story: it is a fact that certain negative polarity items do not occur in all negative contexts, and it is a fact that certain positive polarity items, contrary to expectation, are found in certain negative contexts. The explanation of these two facts has two parts.

First, there exist other mathematical properties such as anti-additivity, antimultiplicativity and antimorphy that polarity items can be sensitive to. These mathematical properties define a hierarchy of negative contexts, with weak negatives such as *seldom* and *few*, that are downward monotonic only, at the bottom, and strong negatives like *not*, that have additional properties, at the top. This hierarchy of negative contexts, in turn, defines hierarchies of negative and positive polarity items. Matters are even more complicated: negative polarity behavior and positive polarity behavior are shown to be independent properties. This fact predicts the existence of bipolar elements, lexical items that combine these two properties. The distributional idiosyncracies of various lexical items are best captured by assuming that they are indeed bipolar elements: they behave like negative polarity items because they occur in down-

ward monotonic contexts only, and they are like positive polarity items in the sense that they are excluded from, e.g., antimorphic contexts.

Secondly, the theory developed defines the borderlines of possible polarity systems: certain distributional idiosyncrasies of polarity items have to be stipulated in the lexicon, i.e., they are truly collocational.

The second chapter proves that the characterization of negative contexts in terms of downward monotonicity and related mathematical properties is fruitful outside the domain of polarity items as well. This chapter deals with various types of multiple negations. It is shown that all variants negative concord, but also litotes, denial, and emphatic negation may all occur in downward monotonic contexts or in well-defined subclasses thereof. In practice, however, certain negative expressions are not so well-behaved as this approach predicts. Collocational factors play a role again: the theory defines the borderlines of possible polarity effects and multiple negation effects in natural languages, but the exact idiosyncratic behavior of individual lexical items calls for lexical stipulation. This amounts to saying that both polarity and multiple negations have a collocational aspect.

Bibliography

- AALDERS, GERTJAN. 1982. Niet bij brood alleen. Een onderzoek naar het optreden van negatief polaire uitdrukkingen in de omgeving van monotoon dalende elementen. Master's thesis, Vakgroep Nederlands Groningen.
- AARTS, JAN, & WILLEM MEIJS (eds.). 1990. *Theory and practice in corpus linguistics*. Amsterdam: Rodopi.
- ABNEY, S. 1986. *The English noun phrase in its sentential aspect*. MIT dissertation.
- AITCHISON, J., & G. BAILEY. 1979. Unhappiness about not unhappy people. *Journal of Linguistics* 15, 245–66.
- AL, BERNARD P.F. 1978. Thesaurus en taalkundig onderzoek. In *Wetenschap en woorden*, ed. by B.P.F. Al & P.G.J. van Sterkenburg, 118–26. Muiderberg: Coutinho.
- ALGEO, J. 1971. The voguish uses of *non*. *American Speech* 46, 87–105.
- AOUN, JOSEPH. 1986. *Generalized Binding: the syntax and logical form of Wh-interrogatives*. Dordrecht: Foris.
- ATKINS, BERYL T., JUDY KEGL, & BETH LEVIN. 1988. Anatomy of a verb entry: from linguistic theory to lexicographic practice. *International Journal of Lexicography* 1, 84–126.
- BAAYEN, R. HARALD. 1989. *A corpus-based approach to morphological productivity. Statistical analysis and psycholinguistic interpretation*. Vrije Universiteit Amsterdam dissertation.
- BÄCKLUND, ULF. 1973. *The collocation of adverbs of degree in English*. Uppsala University dissertation.
- BAKER, C.L. 1970. Double negatives. *Linguistic Inquiry* 1, 169–86.
- BAR-HILLEL, YEHOSHUA. 1964. Idioms. In *Language and information. Selected essays on their theory and application*, ed. by Yehoshua Bar-Hillel, 47–55. Reading, Mass. [etc.] and Jerusalem: Addison-Wesley and Jerusalem Academic Press.
- BARKER, CHRIS, & GEOFFREY K. PULLUM. 1990. A theory of command relations. *Linguistics and Philosophy* 13, 1–34.
- BARTSCH, RENATE. 1973. "Negative Transportation" gibt es nicht. *Linguistische Berichte* 27, 1–7.
- . 1986. Context-dependent interpretations of lexical items. In *Foundations of pragmatics and lexical semantics*, ed. by Jeroen Groenendijk, Dick de Jongh, & Martin Stokhof, 1–26. Dordrecht: Foris.
- BARWISE, JON, & ROBIN COOPER. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4, 159–219.
- BAUER, LAURIE. 1983. *English word-formation*. Cambridge [etc.]: Cambridge University Press.

- BENNETT, THOMAS J.A. 1988. *Aspects of English colour collocations and idioms*. Heidelberg: Winter.
- BENSON, MORTON. 1985. Collocations and idioms. In *Dictionaries, lexicography and language learning*, ed. by Robert Ilson, 61–8. Oxford [etc.]: Pergamon Press in association with the British Council.
- , EVELYN BENSON, & ROBERT ILSON. 1986a. *The BBI combinatory dictionary of English: A guide to word combinations*. Amsterdam [etc.]: John Benjamins.
- , —, & —. 1986b. *Lexicographic description of English*. Amsterdam [etc.]: John Benjamins.
- VAN BENTHEM, JOHAN. 1986. *Essays in logical semantics*. Dordrecht: Reidel.
- . 1988. Strategies of intensionalisation. In *Intensional logic, history of philosophy and methodology*, ed. by I. Bodnar & L. Polos, 41–59. Budapest: Department of Symbolic Logic.
- BERG, WOLFGANG. 1978. *Uneigentliches Sprechen. Zur Pragmatik und Semantik von Metapher, Metonymie, Ironie, Litotes und rhetorischer Frage*. Tübingen: TBL Verlag Gunter Narr.
- VON BERGEN, ANKE, & KARL VON BERGEN. 1993. *Negative Polarität im Englischen*. Tübingen: Narr.
- BERRY, MARGARET. 1975–1977. *An introduction to systemic linguistics*. London: Batsford. (two volumes).
- DEN BESTEN, HANS. 1986. Double negation and the genesis of Afrikaans. In *Substrata versus universals in Creole languages. Papers from the Amsterdam Creole workshop, April 1985*, ed. by Pieter Muysken & Norval Smith, 185–230. Amsterdam [etc.]: John Benjamins.
- BLOK, PETER I. 1993. *The interpretation of focus. An epistemic approach to pragmatics*. Groningen dissertation.
- DE BOER, THEO, & JOHAN OPHOFF. 1987. Wat kan niet(-) wat on- niet kan? een onderzoek naar woordnegatie in het Nederlands. Master's thesis, Vakgroep Nederlands Groningen.
- BOLINGER, DWIGHT. 1960. Linguistic science and linguistic engineering. *Word* 16, 374–91.
- . 1972. *Degree words*. The Hague: Mouton.
- . 1977. *Meaning and form*. London: Longman.
- . 1980. A not impartial review of a not impeachable theory: some new adventures of ungrammaticality. In *Language use and the uses of language*, ed. by R.W. Shuy & A. Shnukal. Washington D.C.: Georgetown University Press.
- BORKIN, ANN. 1971. Polarity items in questions. In *CLS* 5, 53–62. Chicago: Chicago Linguistic Society.
- BOSQUE, IGNACIO. 1980. *Sobre la negación*. Madrid: Cátedra.
- BOSSUYT, ALAIN. 1982. *Aspekten van de geschiedenis van de negatieve zin in het Nederlands*. Université Libre de Bruxelles dissertation.
- BRESNAN, JOAN (ed.). 1982. *The mental representation of grammatical relations*. Cambridge, Mass.: MIT Press.
- BURCHFIELD, ROBERT. 1989. *Unlocking the English language*. London [etc.]: Faber and Faber. (Paperback edition 1992).
- BUTLER, CHRISTOPHER S. 1985. *Systemic linguistics: theory and applications*. London: Batsford.
- BUYSSENS, K. 1959. Negative contexts. *English Studies* 40, 163–69.

- CAFFI, C. 1989. Litote. *Journal of Pragmatics* 13, 903–12.
- CARLSON, GREG. 1981. Distribution of free choice any. In *CLS 17*, 8–23. Chicago: Chicago Linguistic Society.
- CARTER, ROY S. 1974. A note on negative idioms. *Rapport d'activités de l'Institut de phonétique de l'Université Libre de Bruxelles 1973–74* 8, 55–6.
- CATTELL, RAY. 1984. *Composite predicates in English*. Sydney [etc.]: Academic Press.
- CHAFE, W. 1968. Idiomaticity as an anomaly in the Chomskyan paradigm. *Foundations of Language* 4, 109–27.
- CHOMSKY, NOAM. 1957. *Syntactic structures*. The Hague: Mouton.
- . 1965. *Aspects of the theory of syntax*. Cambridge, Mass.: MIT Press.
- . 1970. Remarks on nominalization. In *Readings in English transformational grammar*, ed. by Roderick A. Jacobs & Peter S. Rosenbaum. Waltham, Mass.: Ginn & Comp.
- . 1981. *Lectures on government and binding*. Dordrecht: Foris.
- CHURCH, KENNETH W., & PATRICK HANKS. 1989. Word association norms, mutual information, and lexicography. In *Proceedings of the 27th annual meeting of the association for computational linguistics*, 76–83.
- COOPER, WILLIAM E., & JOHN ROBERT ROSS. 1975. Word order. In *Papers from the parasession on functionalism*, 63–111. Chicago: Chicago Linguistic Society.
- COOPMANS, PETER, & MARTIN EVERAERT. 1988. The simplex structure of complex idioms: The morphological status of 'laten'. In *Morphology and modularity*, ed. by M. Everaert, R. Huybregts, & M. Trommelen, 75–103. Dordrecht: Foris.
- COWIE, A.P., & R. MACKIN. 1975. *Oxford dictionary of current idiomatic English*, volume 1. London: Oxford University Press.
- , ———, & R. MCCAIG. 1983. *Oxford dictionary of current idiomatic English*, volume 2. London: Oxford University Press.
- CRISTEA, TEODORA. 1971. *La structure de la phrase négative en Français contemporain*. Bucarest: Société Roumaine de Linguistique Romane.
- DAHL, ÖSTEN. 1970. Some notes on indefinites. *Language* 46.
- DI SCIULLO, ANNA-MARIA, & EDWIN S. WILLIAMS. 1987. *On the definition of word*. Cambridge, Mass.: MIT Press.
- DIESING, MOLLY. 1990. *The syntactic roots of semantic partition*. University of Massachusetts, Amherst dissertation.
- DIK, SIMON C. 1968. *Coordination: Its implications for the theory of general linguistics*. Amsterdam: North-Holland. (Diss. Amsterdam).
- . 1989. *The theory of functional grammar*, volume 1. Dordrecht [etc.]: Foris.
- DIRVEN, RENÉ. 1985. Metaphor as a basic means for extending the lexicon. In *The ubiquity of metaphor*, ed. by W. Paprotté & R. Dirven, 85–119. Amsterdam [etc.]: John Benjamins.
- . 1987. Diminutives in Afrikaans and Dutch. In *Perspectives on language in performance. Studies in linguistics, literary criticism, and language teaching and learning. To honour Werner Hüllen on the occasion of his sixtieth birthday*, ed. by W. Lörscher & R. Schulze, 100–9. Tübingen: Narr.
- DONALDSON, BRUCE C. 1993. *A grammar of Afrikaans*. Berlin / New York: Mouton de Gruyter.
- DOWTY, DAVID R. 1979. *Word meaning and Montague grammar*. Dordrecht: Reidel.

- . 1994. Monotonicity-based logic and why natural languages have negative polarity and negative concord marking. Unpublished ms. Ohio State University.
- , ROBERT E. WALL, & STANLEY PETERS. 1981. *Introduction to Montague semantics*. Dordrecht [etc.]: Reidel.
- DUMMETT, MICHAEL. 1973. *Frege: Philosophy of language*. London: Duckworth.
- EDMONDSON, JERRY A. 1981. Affectivity and gradient scope. In *CLS 17*, 38–44. Chicago: Chicago Linguistic Society.
- . 1983. Polarized auxiliaries. In *Linguistic categories: Auxiliaries and related puzzles*, ed. by F. Heny & B. Richard. Dordrecht: Reidel.
- ERASMUS, DESIDERIUS. 1512. *De copia verborum ac rerum*. Paris: Badius. Cited after: *Opera omnia Desiderii Erasmi Roterodami, recognita et adnotatione critica instructa notisque illustrata*. Amsterdam: North-Holland, 1969–; I, 6 (1988).
- . 1518. *Colloquia*. Basel: Froben. Cited after: *Opera omnia Desiderii Erasmi Roterodami, recognita et adnotatione critica instructa notisque illustrata*. Amsterdam: North-Holland, 1969–; I, 3 (1972).
- . 1978–. *Collected works of Erasmus. Section 2, Literary and educational writings*. Toronto [etc.]: University of Toronto press.
- EVERAERT, MARTIN. 1993. Vaste verbindingen (in woordenboeken). *Spektator* 22, 3–27.
- FAUCONNIER, GILLES. 1975a. Polarity and the scale principle. In *CLS 11*, 188–99. Chicago: Chicago Linguistic Society.
- . 1975b. Pragmatic scales and logical structure. *Linguistic Inquiry* 6, 353–75.
- . 1977. Polarité syntaxique et sémantique. *Linguisticae Investigationes* 1, 1–38.
- . 1980. Pragmatic entailment and questions. In *Speech act theory and pragmatics*, ed. by John Searle, 57–70. Dordrecht: Reidel.
- FILMORE, CHARLES J., PAUL KAY, & MARY CATHERINE O'CONNOR. 1988. Regularity and idiomaticity in grammatical constructions: The case of *let alone*. *Language* 64, 501–38.
- FLETCHER, WILLIAM H. 1980. 'blood-hot', 'stone-good': A preliminary report on adjective-specific intensifiers in Dutch. *Leuvense Bijdragen* 69, 445–72.
- FONTENELLE, THIERRY. 1992. Collocation acquisition from a corpus or from a dictionary: a comparison. In *EURALEX '92 Proceedings I-II. Papers submitted to the 5th EURALEX international congress on lexicography in Tampere, Finland*, ed. by Hannu Tommola, Krista Varantola, Tarja Salmi-Tolonen, & Jürgen Schopp, 221–28. Tampere: Department of translation studies, University of Tampere.
- FOOLEN, AD. 1993. *De betekenis van partikels. Een dokumentatie van de stand van het onderzoek met bijzondere aandacht voor maar*. Nijmegen dissertation.
- FOWLER, H.W., & F.G. FOWLER. 1906. *The King's English*. Oxford: At the Clarendon Press.
- FRASER, B. 1970. Idioms within a transformational grammar. *Foundations of Language* 6, 22–42.
- GABBAY, DOV. M., & JULIUS M. MORAVCSIK. 1978. Negation and denial. In *Studies in formal semantics: Intensionality, temporality, negation*, ed. by Christian Rohrer & Franz Guenther, 251–65. Amsterdam [etc.]: North-Holland.
- GAZDAR, GERALD, EWAN KLEIN, GEOFFREY PULLUM, & IVAN SAG. 1985. *Generalized phrase structure grammar*. Cambridge, Mass. and Oxford: Harvard University Press and Basil Blackwell.
- GEERAERTS, DIRK. 1986. *Woordbetekenis. Een overzicht van de lexicale semantiek*. Leuven/Amersfoort: Acco.

- . 1989. Types of meaning in idioms. In *Proceedings of the first Tilburg workshop on idioms*, ed. by Martin Everaert & Erik-Jan van der Linden. Tilburg: ITK.
- VAN GINNEKEN, JAC. 1907. *Principes de linguistique psychologique. Essay de synthèse*. Paris, Amsterdam, Leipzig: Marcel Rivière.
- GIVÓN, TALMY. 1975. Negation in language: Pragmatics, function, ontology. in *Working papers on language universals no. 18*, Stanford, Stanford University, pp. 59–116. Also in P. Cole (ed.): *Syntax and semantics vol. 9: Pragmatics*, 69–112 (1978).
- GREENBAUM, SIDNEY. 1970. *Verb-intensifier collocations in English: An experimental approach*. The Hague [etc.]: Mouton.
- GRÉVISSE, MAURICE. 1980. *Le bon usage, Grammaire française avec des remarques sur la langue française d'aujourd'hui*. Paris-Gembloux: Duculot. Onzième édition revue.
- GRICE, PAUL. 1989. *Studies in the way of words*. Cambridge, Mass [etc.]: Harvard University Press.
- GRINDER, JOHN, & PAUL M. POSTAL. 1971. Missing antecedents. *Linguistic Inquiry* 2, 289–312.
- HAEGEMAN, LILIANE, & RAFFAELLA ZANUTTINI. 1990. Negative concord in West Flemish. Unpublished Ms., to appear in A. Belletti and L. Rizzi (eds.), *Parameters and functional heads*.
- HALLIDAY, M.A.K. 1966. Lexis as a linguistic level. In *In Memory of J.R. Firth*, ed. by C.E. Bazell, J.C. Catford, M.A.K. Halliday, & R.H. Robins, 148–62. London: Longman.
- HAND, MICHAEL ROBERT. 1985. *Negation in English: An essay in game-theoretical semantics*. Florida State University dissertation.
- HARRIES, H. 1973. A note on double negation and modals as main verbs. *Working Papers on Language Universals* 11, 211–17.
- HARRIS, ZELIG S. 1957. Co-occurrence and transformation in linguistic structure. *Language* 33, 283–340.
- HASAN, RUQUIYA. 1984. Coherence and cohesive harmony. In *Understanding reading comprehension: Cognition, language, and the structure of prose*, ed. by J. Flood, 181–219. Newark, Del.: International Reading Association.
- HASEGAWA, NOBUKO. 1991. Affirmative polarity and negation in Japanese. In *Interdisciplinary approaches to language: Essays in honor of S.-Y. Kuroda*, ed. by Carol Georgopoulos & Roberta Ishihara, 271–85. Dordrecht: Kluwer.
- HASKEL, PEGGY I. 1971. Collocations as a measure of stylistic variety. In *The Computer in literary and linguistic research: Papers from a Cambridge symposium*, ed. by R. A. Wisbey, 159–69. Cambridge: Cambridge University Press.
- HASPELMATH, MARTIN. 1993. *A typological study of indefinite pronouns*. Freie Universität Berlin dissertation.
- HEIBERG, LAMBERT R. 1974. Neg placement in the Afrikaans language. In *Proceedings of the eleventh international congress of linguists, Bologna-Florence*, ed. by Luigi Heilmann, volume 1, 783–96. Bologna: Società editrice il Mulino.
- HEID, U., & S. RAAB. 1989. Collocations in multilingual generation. In *Proceedings of the fourth conference of the European chapter of the association for computational linguistics*, 130–36, Manchester.
- HEIM, IRENE. 1984. A note on negative polarity and downward entailingness. In *NELS* 14, 98–107. Amherst, Mass.: Linguistic Department, University of Massachusetts.
- HEIN, J. 1890. Über die bildliche Verneinung in der mittelenglischen Poesie. *Anglia* XV, 41–186, 396–472.

- HEINÄMÄKI, ORVOKKI TELLERVO. 1974. *Semantics of English temporal connectives*. University of Texas dissertation. Distributed by IULC, Bloomington, Indiana, 1978.
- HELBIG, GERHARD, & WOLFGANG SCHENKEL. 1975. *Wörterbuch zur Valenz und Distribution deutscher Verben*. Leipzig: Bibliographisches Institut, 3d edition.
- VAN HELTEN, W.L. 1883. *Vondel's taal. Grammatica van het Nederlandsch der zeventiende eeuw. Syntaxis*. Groningen: J.B. Wolters.
- HENDRIKS, PETRA. 1993. Comparatives and monotonicity. In *Language and cognition 3. Yearbook 1993 of the research group for theoretical and experimental linguistics of the University of Groningen*, ed. by Ale de Boer, Jelly de Jong, & Rita Landeweerd, 69–78. Groningen: TENK.
- . in progress. *Comparatives in categorial grammar*. Groningen dissertation.
- HEYLEN, DIRK, LAURA BLOK SMA, TON VAN DER WOU DEN, SUSAN WARWICK-ARMSTRONG, R. LEE HUMPHREYS, & SIMON MURISON-BOWIE. 1991. Collocations and the lexicalisation of semantic operations. Proposal Eurotra ET-10 research, Ms. Utrecht.
- HIETBRINK, MARTIN H. 1990. *Van derivatie tot interpretatie: Een generatieve analyse van Franse denominale adjectieven*. Vrije Universiteit Amsterdam dissertation.
- HINDS, MARILYN. 1974. Doubleplusgood polarity items. In *CLS 10*, 259–68. Chicago: Chicago Linguistic Society.
- HINTIKKA, JAAKKO. 1979. Quantifiers in natural languages: Some logical problems. In *Game-theoretical semantics*, ed. by Esa Saarinen, 81–117. Dordrecht: Reidel.
- HOEKSEMA, JACK. 1983. Negative polarity and the comparative. *Natural Language and Linguistic Theory* 1, 403–34.
- . 1984. *Categorial morphology*. Groningen dissertation. Published by Garland Press: Outstanding dissertations in linguistics, New York [etc.], 1985.
- . 1986a. Monotonicity phenomena in natural language. *Linguistic Analysis* 16, 25–40.
- . 1986b. Monotonie en superlatieven. In *Proeven van taalwetenschap. Ter gelegenheid van het emeritaat van Albert Sassen*, ed. by Cor Hoppenbrouwers, Joop Houtman, Ineke Schuurman, & Frans Zwarts, 38–49. Groningen: TABU.
- . 1991. A categorial theory of reanalysis phenomena. Ms. Groningen.
- . 1992a. The head parameter in morphology and syntax. In *Language and cognition 2. Yearbook 1992 of the research group for linguistic theory and knowledge representation of the University of Groningen*, ed. by Dicky Gilbers & Sietze Looyenga, 119–32. Groningen: TENK.
- . 1992b. Negative polarity items in discourse. Paper presented at the 1st international conference on literary semantics, August 1 1992, University of Kent at Canterbury.
- . 1992c. Semantische patronen in taal. Ms. Groningen, paper presented at NWO Pionier-Symposium 21 mei 1992.
- . 1994. On the grammaticalization of negative polarity items. Paper delivered at the meeting of the Berkeley Linguistic Society.
- HOEKSTRA, ERIC. 1989. Polaire asymmetrieën tussen NP en S. *Tabu* 19, 86–97.
- . 1991. *Licensing conditions on phrase structure*. Groningen dissertation.
- HOEKSTRA, TEUN, HARRY VAN DER HULST, & MICHAEL MOORTGAT (eds.). 1981. *Lexical grammar*. Dordrecht: Foris.
- HOEPELMAN, JAAP PH. 1981. On questions. In *Formal methods in the study of language*, ed. by J.A.G. Groenendijk, T.M.V. Janssen, & M.B.J. Stokhof, volume 1. Amsterdam:

- Mathematisch Centrum. (Proceedings of the third Amsterdam colloquium on formal methods in the study of language, March 25-28, 1980).
- HOEY, MICHAEL. 1991. *Patterns of lexis in text*. Oxford [etc.]: Oxford University Press.
- HOFFMANN, MARIA E. 1987. *Negatio contrarii. A study of Latin litotes*. Universiteit van Amsterdam dissertation. Published by Van Gorcum, Assen and Maastricht.
- DE HOOP, HELEN. 1987. *Positieve polariteit*. Master's thesis, Vakgroep Nederlands Groningen.
- . 1992. *Case configuration and noun phrase interpretation*. Groningen dissertation.
- HOPPENBROUWERS, GEER. 1983. *Polariteit, een literatuuronderzoek. Een onderzoek naar het syntactisch en semantisch gedrag van negatief- en positief-polaire elementen*. N.I.S. Working Papers 2, Nijmegen Institute of Semantics.
- HORN, LAURENCE ROBERT. 1969. A presuppositional analysis of *only* and *even*. In *CLS* 5, 98–107. Chicago: Chicago Linguistic Society.
- . 1970. Ain't it hard (anymore). In *CLS* 6, 318–327. Chicago: Chicago Linguistic Society.
- . 1971. Negative transportation: unsafe at any speed? In *CLS* 8. Chicago: Chicago Linguistic Society.
- . 1972. *On the semantic properties of logical operators in English*. UCLA dissertation. Distributed by IULC, Bloomington, Indiana.
- . 1978a. Remarks on neg-raising. In *Pragmatics*, ed. by Peter Cole, volume 9 of *Syntax and Semantics*, 129–220. New York: Academic Press.
- . 1978b. Some aspects of negation. In *Universals of human language. Volume 4, syntax*, ed. by Joseph H. Greenberg, Charles A. Ferguson, & Edith A. Moravcsik, 127–210. Stanford, California: Stanford University Press.
- . 1989. *A Natural History of Negation*. Chicago: University of Chicago Press.
- . 1991. *Duplex negatio affirmat . . . : the economy of double negation*. In *CLS 27-II: Papers from the parasession on negation*, Chicago. Chicago Linguistic Society.
- HORNSTEIN, NORBERT. 1984. *Logic as grammar*. Cambridge, Mass.: MIT Press.
- HÜBLER, AXEL. 1983. *Understatements and hedges in English*. Amsterdam [etc.]: John Benjamins.
- HUDSON, RICHARD A. 1984. *Word Grammar*. Oxford: Blackwell.
- . 1987. Zwicky on heads. *Journal of Linguistics* 23, 109–23.
- HUYBREGTS, RINI. 1979. De biologische kern van taal. In *Verkenningen in taal*, ed. by Rini Huybregts & Louis des Tombe, 97–189. Utrecht: Instituut A.W. de Groot voor Algemene Taalwetenschap.
- IOUP, GEORGETTE. 1975. *The treatment of quantifier scope in a transformational grammar*. New York City University dissertation. (Ann Arbor, Michigan: University Microfilms International).
- JACKENDOFF, RAY S. 1969. An interpretive theory of negation. *Foundations of Language* 5, 218–41.
- . 1971. On some questionable arguments about quantifiers and negation. *Language* 47, 282–97.
- . 1972. *Semantic interpretation in generative grammar*. Cambridge, Mass.: MIT Press.
- . 1977. *X-bar syntax*. Cambridge, Mass.: MIT Press.
- JACOBS, JOACHIM. 1982. *Syntax und Semantik der Negation im Deutschen*. München: Wilhelm Fink Verlag.

- JANSSEN, THEO M.V. 1983. *Foundations and applications of Montague grammar*. Universiteit van Amsterdam dissertation.
- JESPERSEN, OTTO. 1917. Negation in English and other languages. *Historisk-filologiske Meddeleser* 1, 1–151. Reprinted in *Selected writings of Otto Jespersen*, London and Tokyo George Allen & Unwin, Ltd. and Sejo Publishing Co., Ltd., [1962].
- . 1924. *The philosophy of grammar*. London: George Allen & Unwin.
- JONES, S., & J. SINCLAIR. 1974. English lexical collocations. *Cahiers de Lexicologie* 24, 15–61.
- KADMON, NIRIT, & FRED LANDMAN. 1993. Any. *Linguistics and Philosophy* 16, 353–422.
- KAS, MARK. 1993. *Essays on Boolean functions and negative polarity*. Groningen dissertation.
- KAYNE, RICHARD. 1981. Two notes on the NIC. In *Theory of markedness in generative grammar*, ed. by A. Belletti, L. Brandi, & L. Rizzi. Pisa: Scuola Normale Superiore. Reprinted in *Connectedness and binary branching*, Dordrecht, Foris, 1984.
- KEENAN, EDWARD L. 1974. The functional principle: Generalizing the notion of 'subject-of'. In *CLS 10*, 298–310. Chicago: Chicago Linguistic Society.
- . 1989. Semantic case theory. In *Semantics and contextual expression*, ed. by R. Bartsch, J. van Benthem, & P. van Embde Boas, 33–56. Dordrecht: Foris.
- . 1992. Beyond the Frege boundary. *Linguistics and Philosophy* 15, 199–221.
- , & BERNARD COMRIE. 1977. Noun phrase acceptability and universal grammar. *Linguistic Inquiry* 8, 63–89.
- , & LEONARD M. FALTZ. 1985. *Boolean semantics for natural language*. Dordrecht: Reidel.
- KLEIN, HENNY. 1993. 'Vrijwel', 'nauwelijks' and the negative side of the absolute. In *Language and cognition 3. Yearbook 1993 of the research group for theoretical and experimental linguistics of the University of Groningen*, ed. by Ale de Boer, Jelly de Jong, & Rita Landeweerd, 109–18. Groningen: TENK.
- , & JACK HOEKSEMA. 1994. *Bar en bijster: Een onderzoek naar twee polariteitsgevoelige adverbialen*. Ms. PIONIER-project Groningen.
- KLEIN, MAARTEN. 1977. *Appositionele constructies in het Nederlands*. Nijmegen dissertation.
- KLIMA, EDWARD S. 1964. Negation in English. In *The structure of language*, ed. by Jerry A. Fodor & Jerold J. Katz, 246–323. Englewood Cliffs: Prentice Hall.
- KLOOSTER, W.G. 1978. Minder dan hoeft. *De Nieuwe Taalgids* 71.
- KOSTER, JAN. 1975. Dutch as an SOV language. *Linguistic Analysis* 1, 111–26.
- KRAAK, A. (REMMERT). 1966. *Negatieve zinnen. Een methodologische en grammatische analyse*. Universiteit van Amsterdam dissertation.
- KRIFKA, MANFRED. 1990a. Polarity phenomena and alternative semantics. In *Proceedings of the seventh Amsterdam colloquium*, ed. by Martin Stokhof & Leen Torenvliet. Amsterdam: ITLI.
- . 1990b. Some remarks on polarity items. In *Semantic universals and universal semantics*, ed. by D. Zaefferer. Dordrecht: Foris.
- . 1994. Semantics and pragmatics of polarity items. Ms. Dep. of Ling., U. of Texas at Austin, Jan 1994.
- KROCH, ANTHONY S. 1974. *The semantics of scope in English*. MIT dissertation. (Outstanding dissertations in linguistics; 18, New York [etc.], Garland, 1979).

- KUKENHEIM, LOUIS. 1968. *Grammaire historique de la langue française. Les syntagmes*. Leiden: Universitaire Pers Leiden.
- KÜRSCHNER, WILFRIED. 1983. *Studien zur Negation im Deutschen*. Tübingen: Gunter Narr Verlag. (Habil. Univ. Freiburg i. Br., 1980).
- LABOV, WILLIAM. 1972. Negative attraction and negative concord in English grammar. *Language* 48, 773–818.
- LADUSAW, WILLIAM A. 1979. *Polarity sensitivity as inherent scope relations*. University of Texas at Austin dissertation. Distributed by IULC, Bloomington, Indiana, 1980; published by Garland Press: Outstanding Dissertations in Linguistics, New York.
- . 1983. Logical form and conditions on grammaticality. *Linguistics and Philosophy* 6, 373–92.
- . 1991. Interpreting negative concord structures. Paper read at the 1991 LSA Annual Meeting.
- . 1992. Expressing negation. In *Proceedings of the second conference on semantics and linguistic theory*, ed. by Chris Barker & David Dowty, 237–59. Columbus: The Ohio State University.
- LAKA MUGARZA, ITZIAR. 1990. *Negation in syntax: On the nature of functional categories and projections*. MIT dissertation. (MIT working papers in linguistics, Cambridge, MA.).
- LAKOFF, GEORGE. 1987. *Women, fire, and dangerous things. What categories reveal about the mind*. Chicago [etc.]: The University of Chicago Press.
- , & MARK JOHNSON. 1980. *Metaphors we live by*. Chicago and London: The University of Chicago Press.
- LAKOFF, ROBIN. 1970. Some reasons why there can't be any *some-any* rule. *Language* 45, 608–15.
- LANDMAN, FRED. 1991. *Structures for semantics*. Dordrecht [etc.]: Kluwer.
- LANGACKER, RONALD W. 1987. *Foundations of cognitive grammar*. Stanford: Stanford University Press. Volume 1: Theoretical prerequisites.
- LANGENDOEN, D. TERRENCE, & THOMAS G. BEVER. 1973. Can a not unhappy person be called a not sad one? In *A festschrift for Morris Halle*, ed. by Stephen R. Anderson & Paul Kiparsky, 392–409. New York [etc.]: Holt, Rinehart and Winston.
- LAUSBERG, HEINRICH. 1973. *Handbuch der literarischen Rhetorik: Eine Grundlegung der Literaturwissenschaft*. München: Max Hueber Verlag. 2., durch einen Nachtrag verm. Aufl.
- LAWLER, ANNE. 1971. Any questions. In *CLS 7*, 163–73. Chicago: Chicago Linguistic Society.
- LAWLER, JOHN M. 1974. Ample negatives. In *CLS 10*, 357–77. Chicago: Chicago Linguistic Society.
- LDOCE. *Longman dictionary of contemporary English*. 2nd edition. Burnt Mill, Harlow, Essex, England: Longman House, 1987.
- LEECH, GEOFFREY N. 1980. Language and tact. In *Explorations in semantics and pragmatics*, chapter 4. Amsterdam [etc.]: Benjamins.
- . 1983. *Principles of pragmatics*. London [etc.]: Longman.
- LEES, ROBERT B. 1960. The grammar of English nominalizations. Supplement to *International Journal of American Linguistics* 26. Also: The Hague 1963.

- LEWIS, CHARLTON T., & CHARLES SHORT. 1879. *A Latin dictionary, founded on Andrews' edition of Freund's Latin dictionary; revised, enlarged, and in great part rewritten*. Oxford [i.e. London]: Clarendon Press.
- VAN DER LINDEN, ERIK-JAN. 1993. *A categorial, computational theory of idioms*. ITK, Tilburg dissertation.
- LINEBARGER, MARCIA. 1980. *The grammar of negative polarity*. MIT dissertation. Distributed by IULC, Bloomington, Indiana, 1981.
- . 1987. Negative polarity and grammatical representation. *Linguistics and Philosophy* 10, 325–87.
- LIPTON, JAMES. 1991. *An exaltation of larks*. Viking. The ultimate edition.
- LONGOBARDI, GIUSEPPE. 1987. Parameters of negation in Romance dialects. Ms., University of Venice.
- LOTT, BERNARD. 1962. The restricted use of certain words and collocations in affirmative, negative and interrogative constructions. *Bulletin of the Central Institute of English (Hyderabad)* 2, 32–46.
- VAN DER LUBBE, H.F.A. 1978. *Woordvolgorde in het Nederlands. Een synchrone structurele beschouwing*. Assen: Van Gorcum, 4th edition.
- MACKIN, RONALD. 1978. On collocations: 'Words shall be known by the company they keep'. In *In honour of A.S. Hornby*, ed. by Peter Strevens, 149–65. Oxford: Oxford University Press.
- MAHAJAN, ANOOP. 1990. LF-conditions on negative polarity licencing. *Lingua* 80, 333–48.
- MALKIEL, YAKOV. 1959. Studies in irreversible binomials. *Lingua* 8, 113–60. Reprinted in *Essays on linguistic themes*, Oxford, Basil Blackwell, 1968, 311–55.
- MATHESIU, VILÉM. 1937. Double negation and grammatical concord. In *Mélanges de linguistique et de philologie, offerts à Jacq. van Ginneken à l'occasion du soixantième anniversaire de sa naissance (21 avril 1937)*, 79–83. Paris: Klincksieck.
- MATTHEWS, P.H. 1981. *Syntax*. Cambridge [etc]: Cambridge University Press.
- MCCARTHUR, TOM, & BERYL ATKINS. 1984. *Dictionary of English phrasal verbs and their idioms*. London: Collins, 8th edition.
- MCCARTHY, J.J. 1982. Prosodic structure and expletive infixation. *Language* 58, 574–90.
- MCCAWLEY, JAMES D. 1988. *The syntactic phenomena of English*. Chicago [etc.]: University of Chicago Press.
- MEL'ČUK, IGOR A., LIJA IORDANSKAYA, & NADIA ARBATCHEWSKY-JUMARIE. 1981. Un nouveau type de dictionnaire: Le dictionnaire explicatif et combinatoire du français contemporain. *Cahiers de Lexicologie* 38, 3–34.
- , NADIA ARBATCHEWSKY-JUMARIE, LÉO ELNITSKY, LIJA IORDANSKAJA, & ADÈLE LESSARD. 1984. *Dictionnaire explicatif et combinatoire du français contemporain*. Montreal: Les Presses de l'Université de Montréal.
- , —, —, —, & —. 1988. *Dictionnaire explicatif et combinatoire du français contemporain: recherches lexico-semanticques*. Montreal: Les Presses de l'Université de Montréal.
- DE MEY, SJAAK. 1990. *Determiner logic or the grammar of the NP*. Groningen dissertation.
- . 1992. Over de semantiek van *slechts, ook en zelfs*. *Tabu* 22, 75–88.
- MILLER, PHILIP H. 1991. *Clitics and constituents in phrase structure grammar*. Utrecht dissertation.

- MONTAGUE, RICHARD. 1973. The proper treatment of quantification in ordinary English. In *Approaches to natural language*, ed. by J. Moravcsik, J. Hintikka & P. Suppes. Dordrecht: Reidel. Reprinted in Richmond H. Thomason (ed.): *Formal philosophy. Collected papers of Richard Montague*, Yale University Press, 1974, 188–221.
- NAPOLI, DONNA JO, & MARINA NESPOR. 1976. Negatives in comparatives. *Language* 52, 4, 811–38.
- NIENABER, G.S. 1934. *Oor die Afrikaanse taal: 'n bydrae oor sy ontwikkeling na aanleiding van enige versterkingswyses*. Amsterdam: Swets & Zeitlinger.
- NIRENBURG, S., & I. NIRENBURG. 1988. A framework for lexical selection in natural language generation. In *Proceedings of the 12th international conference on computational linguistics*, 471–75, Budapest.
- OED. *The Oxford English dictionary: being a corrected re-issue with an introduction, supplement, and bibliography of "A new English dictionary on historical principles"; founded mainly on the materials coll. by the Philological Society; ed. by James A.H. Murray [et al.]*. Oxford: Clarendon Press, 1970.
- VAN OS, CHARLES. 1989. *Aspekte der Intensivierung im Deutschen*. Tübingen: Gunter Narr Verlag.
- OVERDIEP, G.S. 1937. *Stilistische grammatica van het moderne Nederlandsch*. Zwolle: Tjeenk Willink.
- PAARDEKOOPEL, P.C. 1975. *Zonder en zonder dat, twee ontkennende vw's*. *De Nieuwe Taalgids* 68, 401–9.
- . 1992. Ik en kan niet komen voor ik klaar en ben. *De Nieuwe Taalgids* 85, 4, 336–45.
- . [n.d.]. *Beknopte ABN-syntaksis*. Eindhoven: Uitgave in eigen beheer. Zevende druk, sterk uitgebreid.
- PALMER, F.R. (ed.). 1968. *Selected papers of J.R. Firth, 1952–1959*. Bloomington [etc.]: Indiana University Press.
- PARTEE, BARBARA H. 1984. Compositionality. In *Varieties of formal semantics. Proceedings of the fourth Amsterdam colloquium, September 1982*, ed. by Fred Landman & Frank Veltman, 281–311. Dordrecht: Foris.
- , ALICE TER MEULEN, & ROBERT E. WALL. 1990. *Mathematical methods in linguistics*. Dordrecht [etc.]: Kluwer Academic.
- PAUL, HERMANN. 1886. *Prinzipien der Sprachgeschichte*. Halle: Max Niemeyer. Zweite auflage.
- PEACOCKE, CHRISTOPHER. 1979. Game-theoretic semantics, quantifiers and truth: Comments on professor Hintikka's paper. In *Game-theoretical semantics*, ed. by Esa Saarinen. Dordrecht: Reidel.
- PHYTHIAN, B.A. (ed.). 1993. *A concise dictionary of English idioms*. London [etc.]: Hodder & Stoughton, 5th edition.
- POLLOCK, J.-Y. 1989. Verb movement, universal grammar and the structure of IP. *Linguistic Inquiry* 20, 365–424.
- PONELIS, F.A. 1985. *Afrikaanse sintaksis*. Pretoria: J.L. van Schaik. Tweede druk.
- PROGOVAC, LJILJANA. 1988. *A Binding approach to polarity sensitivity*. University of Southern California dissertation.
- . 1992. Nonnegative polarity must involve Comp. *Linguistic Inquiry* 23,2, 341–7.
- . 1993. Negative polarity: Entailment and binding. *Linguistics and Philosophy* 16, 149–80.

- . 1994. *Negative and positive polarity. A binding approach*. Cambridge: Cambridge University Press.
- PUSTEJOVSKY, JAMES. 1989. Current issues in computational lexical semantics. In *Proceedings of the fourth conference of the European chapter of the association for computational linguistics*.
- QUINE, W. V. O. 1960. *Word and object*. Cambridge, Mass.: MIT Press.
- QUIRK, R., S. GREENBAUM, G. LEECH, & J. SVARTVIK. 1972. *A grammar of contemporary English*. London: Longman.
- REICHENBACH, HANS. 1947. *Elements of Symbolic Logic*. New York: Macmillan.
- REINHART, TANYA. 1976. *The syntactic domain of anaphora*. MIT dissertation.
- RESNIK, PHILIP S. 1993. *Selection and information: A class-based approach to lexical relationships*. University of Pennsylvania dissertation.
- ROBBERS, KARIN. 1992. Properties of negation in Afrikaans and Italian. In *Linguistics in the Netherlands 1992*, ed. by Reineke Bok-Bennema & Roeland van Hout, 223–34. Amsterdam [etc.]: John Benjamins.
- ROSS, JOHN ROBERT. 1967. *Constraints on variables in syntax*. MIT dissertation. Published as *Infinite Syntax!*, Norwood, New Jersey, Ablex Publishing Company, 1986.
- . 1973a. Negginess. Paper read at the 1973 Winter Meeting of the Linguistic Society of America.
- . 1973b. Nouniness. In *Three dimensions of linguistic theory*, ed. by Osamu Fujimara, 137–257. Tokyo: TEC Company.
- RUGE, HANS. 1986. *Grammatik des Neugriechischen*. Köln: Romiosini.
- SALEMANS, BEN J., & FRANS A.M. SCHAARS. 1990. *Concordantie met alfabetische woordenlijst, frequentielijst, retrograde woordenlijst, tekstweergaven en concordantie van hoogfrequente woorden van het dramatisch werk van Joost van den Vondel (1587–1679)*. Assen: Quarto.
- SÁNCHEZ VALENCIA, VÍCTOR. 1991. *Studies on natural logic and categorial grammar*. University of Amsterdam dissertation.
- , TON VAN DER WOUDE, & FRANS ZWARTS. 1993. Polarity and the flow of time. In *Language and cognition 3. Yearbook 1993 of the research group for theoretical and experimental linguistics of the University of Groningen*, ed. by Ale de Boer, Jelly de Jong, & Rita Landeweerd, 209–18. Groningen: TENK.
- , —, & —. 1994. Polarity, veridicality, and temporal connectives. Paper presented at the ninth Amsterdam colloquium, Amsterdam, December 1993, to be published in the *Proceedings*, Amsterdam 1994.
- VAN DER SANDT, ROB A. 1988. *Context and presupposition*. London [etc.]: Croom Helm.
- SAPIR, EDWARD. 1944. Grading: A study in semantics. *Philosophy of Science* 11, 93–116. (Sapir 1985:122–49).
- . 1985. *Selected writings in language, culture and personality*. Berkeley [etc.]: University of California Press. Edited by David G. Mandelbaum, with a new epilogue by Dell H. Hymes.
- SASSEN, ALBERT. 1977. Drie chroningismen: wachten, verlet, (maar) ... meer. In *Opstellen door vrienden en vakgenoten aangeboden aan dr. C.H.A. Kruyskamp: ter gelegenheid van zijn 65ste verjaardag en van zijn afscheid als redacteur van het Woordenboek der Nederlandsche Taal en als enige bewerker van Van Dale*, ed. by Hans Heestermans, 156–68. 's-Gravenhage: Martinus Nijhoff.
- SCALISE, SERGIO. 1984. *Generative morphology*. Dordrecht: Foris.

- SCHENK, ANDRÉ. 1989. The formation of idiomatic structures. In *Proceedings of the first Tilburg workshop on idioms*, ed. by Martin Everaert & Erik-Jan van der Linden, ITK-Proceedings, 145–57. Tilburg: ITK.
- SCHERMER-VERMEER, E.C. 1981. Meer dan mag, moet en hoeft. *De Nieuwe Taalgids* 74, 221–35.
- SCHMERLING, SUSAN. 1971. A note on negative polarity. *Papers in Linguistics* 4, 200–6.
- SEIDL, JENNIFER, & W. MCMORDIE. 1988. *English idioms*. Oxford University Press, 5th edition.
- SEUREN, PIETER A.M. 1976. Echo: een studie in negatie. In *Lijnen van taaltheoretisch onderzoek. Een bundel oorspronkelijke stukken aangeboden aan prof. dr. Henk Schultink*, ed. by G. Koefoed & A. Evers, 160–84. Groningen: Tjeenk Willink.
- . 1979. Meer over minder dan hoeft. *De Nieuwe Taalgids* 72, 236–9.
- . 1985. *Discourse semantics*. Oxford: Basil Blackwell.
- . 1991. Grammatika als algorithm: rekenen met taal. *Koninklijke Nederlandse Akademie van Wetenschappen, Mededelingen van de Afdeling Letterkunde, Nieuwe Reeks* 54.
- SHIEBER, STUART M. 1992. *Constraint-based grammar formalisms: Parsing and type inference for natural and computer languages*. Cambridge, Mass. [etc.]: MIT Press.
- SINCLAIR, JOHN. 1966. Beginning the study of lexis. In *In memory of J.R. Firth*, ed. by C.E. Bazell, J.C. Catford, M.A.K. Halliday, & R.H. Robins, 410–30. London: Longman.
- . 1991. *Corpus, concordance, collocation*. Oxford [etc.]: Oxford University Press.
- SMITH, STEVEN BRADLEY. 1974. *Meaning and negation*. The Hague: Mouton.
- SOMMERS, FRED. 1982. *The logic of natural language*. Oxford: The Clarendon Press.
- SPEARS, RICHARD A. (ed.). 1990. *Essential American idioms*. Lincolnwood, Ill.: National Textbook Company.
- DE STADLER, LEON G. 1989. *Afrikaanse semantiek*. Johannesburg: Southern Boekuitgewers.
- STOETT, F.A. 1923. *Middelnederlandsche spraakkunst. Syntaxis*. 's-Gravenhage: Martinus Nijhoff. Derde herziene druk, vijfde oplage, 1977.
- SVARTVIK, JAN. 1992. Lexis in English language corpora. In *EURALEX '92 Proceedings I-II. Papers submitted to the 5th EURALEX international congress on lexicography in Tampere, Finland*, ed. by Hannu Tommola, Krista Varantola, Tarja Salmi-Tolonen, & Jürgen Schopp, 17–31. Tampere: Department of translation studies, University of Tampere.
- DE SWART, HENRIËTTE. 1991. *Adverbs of quantification: A generalized quantifier approach*. Groningen dissertation.
- TACX, J.P.M. 1961. *Nederlandse spraakkunst voor iedereen*. Utrecht: Prisma. Tweede druk.
- TALMY, LEN. 1985. Lexicalization patterns. In *Language typology and syntactic description*, ed. by Timothy Shopen. Cambridge: Cambridge University Press.
- TAYLOR, JOHN R. 1989. *Linguistic categorization: Prototypes in linguistic theory*. Oxford: The Clarendon Press.
- THÜMMEL, WOLF. 1977. Performatiefparafrase- of zinsradicaalmethode bij de beschrijving van ja-nee-vraagzinnen in het Nederlands en het Duits? *Folia Linguistica* X, 249–62.
- TOTTIE, GUNNEL. 1977. *Fuzzy negation in English and Swedish*. Stockholm: Almqvist & Wiksell.

- VALLDUVÍ, ENRIC. 1993. Polarity items, N-words, and minimizers in Catalan and Spanish. Paper presented at Going Romance 7, Utrecht, December 1993.
- VERSTRATEN, LINDA. 1992. *Vaste verbindingen. Een lexicologische studie vanuit cognitief-semantisch perspectief naar fraseologismen in het Nederlands*. Leiden dissertation.
- VONDELING, RENÉ. 1987. Orde in hiërarchieën. Master's thesis, Vakgroep Nederlands Groningen.
- DE VRIES, WOBBE. 1910. Dysmelie. Opmerkingen over syntaxis. Verhandeling behoorende bij het programma van het gymnasium der gemeente Groningen voor het jaar 1910–1911.
- WAGENAAR, KORNELIS. 1930. *Etude sur la négation en ancien Espagnol jusqu'au XV^e Siècle*. Groningen: Wolters.
- WAHER, HESTER. 1978. *Die probleem van die bereik van die ontkenning met spesiale verwysing na Afrikaans*. Kaapstad dissertation.
- WHORE, BENJAMIN LEE. 1945. Grammatical categories. *Language* 21.
- WICHE, ROB T.P. 1993. *Eén of twee negaties in filosofie en natuurlijke taal?*. Groningen dissertation.
- WIERZBICKA, ANNA. 1980. *Lingua mentalis. The semantics of natural language*. Sydney [etc.]: Academic Press.
- . 1982. Why can you *have a drink* when you can't **have an eat*. *Language* 58, 753–99.
- WNT. *Woordenboek der Nederlandsche taal*; red. M. de Vries & L.A. te Winkel [et al.]. 's-Gravenhage [etc.]: Martinus Nijhoff [etc.], 1882–.
- WOOD, MARY MCGEE. 1981. A definition of idiom. Master's thesis, Manchester. Reproduced by the Indiana University Linguistics Club, 1986.
- VAN DER WOUDE, TON. 1985. Positief polaire uitdrukkingen in het Nederlands. Master's thesis, Vakgroep Nederlands Leiden.
- . 1987. Dubbele ontkenningen. *Glott* 10, 485–501.
- . 1988. Positief polaire uitdrukkingen 1. *Glott* 11, 165–90.
- . 1992a. Beperkingen op het optreden van lexicale elementen. *De Nieuwe Taalgids* 85, 513–38.
- . 1992b. Polarity and 'illogical negation'. Ms. Groningen, to appear in Makoto Kanazawa and Christopher J. Piñón: *Dynamics, polarity, and quantification*. Stanford: CSLI, 1994.
- , & HANS VAN DER WOUDE. 1994. Negginess revisited. Paper presented at the TINdag, Utrecht, January 1994.
- , & FRANS ZWARTS. 1992. Negative concord. In *Language and cognition 2. Yearbook 1992 of the research group for linguistic theory and knowledge representation of the University of Groningen*, ed. by Dicky Gilbers & Sietze Looyenga, 317–31. Groningen: TENK.
- , & FRANS ZWARTS. 1993. A semantic analysis of negative concord. In *SALT III: Proceedings of the third conference on semantics and linguistic theory*, ed. by Utpal Lahiri & Adam Wyner. Cornell University Department of Modern Languages and Linguistics.
- ZANUTTINI, RAFFAELLA. 1991. *Syntactic properties of sentential negation. A comparative study of Romance languages*. University of Pennsylvania dissertation.
- ZGUSTA, LADISLAV. 1971. *Manual of lexicography*. Prague [etc.]: Academia and Mouton.

- ZIFF, PAUL. 1960. *Semantic analysis*. Ithaca, N.Y.: Cornell University Press.
- ZIMMER, KARL E., 1964. Affixal negation in English and other languages: An investigation of restricted productivity. Supplement to *Word* 20:2, Monograph no. 5.
- ZONNEVELD, RON VAN. 1983. *Affix-grammatika: Een onderzoek naar woordvorming in het Nederlands*. Groningen dissertation.
- ZWART, C. JAN WOUTER. 1993. *Dutch syntax. A minimalist approach*. Groningen dissertation.
- ZWARTS, FRANS. 1981. Negatief polaire uitdrukkingen 1. *Glott* 4, 35–132.
- . 1983. Determiners: a relational perspective. In *Studies in modeltheoretic semantics*, ed. by Alice ter Meulen, 37–62. Dordrecht: Foris.
- . 1986a. *Categoriale grammatica en algebraïsche semantiek. Een studie naar negatie en polariteit in het Nederlands*. Groningen dissertation.
- . 1986b. Polariteit: de reikwijdte van een lexikale eigenschap. In *Syntaxis en lexicon. Veertien artikelen bij gelegenheid van het emeritaat van Albert Sassen*, ed. by Cor Hoppenbrouwers, Ineke Schuurman, Ron van Zonneveld, & Frans Zwarts, 157–92. Dordrecht: Foris.
- . 1993. Three types of polarity. Ms. Groningen, to appear in F. Hamm and E. Hinrichs (eds.): *Semantics*.
- ZWICKY, ARNOLD M. 1985. Heads. *Journal of Linguistics* 21, 1–30.

Samenvatting in het Nederlands

Negatief-polaire uitdrukkingen zoals het werkwoord *hoeven*, de werkwoordelijke uitdrukking *kunnen uitstaan* en de zelfstandig-naamwoordgroep ook *maar iets* komen alleen in negatieve omgevingen voor. Dat verklaart waarom *Je hoeft niet te komen* en *Niemand heeft ook maar iets gezien* goede Nederlandse zinnen zijn, en **Je hoeft te komen* en **Iedereen heeft ook maar iets gezien* niet. Anderzijds zijn positief-polaire uitdrukkingen als *krioelen* of *een beetje* ongrammaticaal of raar in negatieve omgevingen. Bijvoorbeeld, *Het krioelt hier van de professoren* klinkt stukken beter dan *Het krioelt hier niet van de professoren*, en *Het gaat niet weer een beetje beter met me sinds mijn proefschrift af is* is een veel slechtere zin dan *Het gaat weer een beetje beter met me sinds mijn proefschrift af is*.

Wat is evenwel een negatieve omgeving? Veel sprekers van het Nederlands blijken *Hij rijdt harder dan hij hoeft* te accepteren, en vrijwel niemand heeft problemen met *Voordat je ook maar iets met de wasmachine doet, moet je eerst in de gebruiksaanwijzing kijken*. Daaruit volgt dat in elk geval sommige bijwoordelijke bijzinnen van vergelijking en van tijd ook tot de negatieve omgevingen gerekend moeten worden. Erg negatief zien die bijzinnen er echter niet uit.

In dit proefschrift tracht ik een antwoord te geven op de vraag wat een negatieve omgeving is. Daarbij neem ik de hypothese van de Amerikaanse taalkundige Ladusaw als uitgangspunt. Die hypothese stelt dat alle negatieve omgevingen de wiskundige eigenschap van MONOTONE DALING bezitten. Deze eigenschap, die al bij de middeleeuwse logici bekend was, staat ons toe te redeneren van verzamelingen naar deelverzamelingen.

Een voorbeeld kan dit wellicht verduidelijken. Sinaasappels zijn vruchten. Moeilijker gezegd, de verzameling der sinaasappels is een deelverzameling van de verzameling van alle vruchten. Stel nu dat het waar is dat Olga niet van vruchten houdt. Daaruit mogen we concluderen dat Olga ook niet van sinaasappels houdt. De negatieve omgeving, in dit geval gecreëerd door de zinsontkenning *niet*, laat deze conclusie toe. Als we de ontkenning weglaten is de conclusie niet meer geldig: uit het feit dat Olga van vruchten houdt volgt geenszins dat zij ook van sinaasappels houdt.

Dit zelfde redeneerpatroon is ook geldig bij de zoëven genoemde bijzinnen van tijd en van vergelijking. Stel dat het waar is dat Olga meer van patat dan van vruchten houdt: dan is het ook waar dat Olga meer van patat dan van sinaasappels houdt. En als we in een kookboek het volgende vinden: *Voordat u vruchten eet: eerst wassen of schillen*, dan weten we dat we ook sinaasappels voor het eten dienen te wassen of te schillen. Dus ook deze bijwoordelijke bijzinnen van tijd en vergelijking laten het redeneren van verzameling naar deelverzameling toe, wat betekent dat ook deze bijzinnen de eigenschap van monotone daling bezitten.

In het eerste hoofdstuk betoog ik dat de hypothese van Ladusaw een goed begin is, maar dat de werkelijkheid toch ingewikkelder is. Sommige negatief-polaire uitdrukkingen, zoals *ooit* en *kunnen uitstaan*, komen in bijna alle monotoon dalende omgevingen voor, maar een uitdrukking als *ook maar iets* is kieskeuriger. Immers, *Niemand kan Frans uitstaan* en *Weinig mensen kunnen Frans uitstaan* zijn allebei keurige Nederlandse zinnen, maar de meeste mensen vinden *Weinig mensen hebben ook maar iets gezien* stukken slechter dan *Niemand heeft ook maar iets gezien*. Nog strengere eisen stellen uitdrukkingen als *pluis* en *voor de poes*: die zijn alleen te combineren met heel sterke ontkenningen, zoals in *Sharon is geenszins voor de poes* en *Het is niet pluis in Laanhuizen*. Een vergelijkbare driedeling verdedig ik voor de positief-polaire uitdrukkingen: het woord *allerminst* is onverenigbaar met alle monotoon dalende omgevingen, *een beetje* is redelijk in dalende omgevingen maar veel slechter met *niemand*, en *al* geeft alleen aanleiding tot opgetrokken wenkbrauwen als het gecombineerd wordt met sterke ontkenningen, zoals in **Dat probleem is niet al opgelost*.

Het Nederlands is niet de enige taal met negatief-polaire uitdrukkingen: *any* is een bekend voorbeeld uit het Engels. Ook in andere talen blijkt het mogelijk om verschillende soorten negatief- en positief-polaire uitdrukkingen te onderscheiden op grond van hun combineerbaarheid met verschillende soorten negatieve omgevingen.

In het tweede hoofdstuk laat ik zien dat de in het eerste hoofdstuk ontwikkelde theorie van negatieve omgevingen ook bruikbaar is voor de beschrijving van andere taalfeiten. Ik concentreer me daarbij op meervoudige ontkenningen. In het Italiaans, maar ook in sommige varianten van het Nederlands en het Engels, zegt men zoiets als *Ik win nooit niks* in plaats van het hier op school onderwezen *Ik win nooit iets*. Ik betoog dat de eerste variant even goed een logica bezit als de tweede, zij het dan een andere dan die van de schoolmeesters. Net zo goed zit er systeem in de dubbele ontkenning van het Afrikaans (*Niemand is ooit tevrede nie*) en in de zogenaamde PARATACTISCHE NEGATIE. Bij dit verschijnsel roept een monotoon dalend woord in de hoofdzin een overbodige ontkenning in de bijzin op, zoals in Vondels *Uyt vreeze datze niet wierd nae haer dood mishandelt*. Vervolgens komt de stijlfiguur die bekend staat als LITOTES aan de beurt, de dubbele ontkenning die we gebruiken om bij voorbeeld een afgezwakt oordeel te geven. Denk hierbij aan zinnen als *Uw werk is lang niet*

slecht en *Met deze soep is weinig mis*. Het tweede voorbeeld laat meteen zien dat ook zwakke ontkenningen zoals *weinig* het verschijnsel litotes teweeg kunnen brengen. Ik betoog dat alle monotoon dalende omgevingen dat in principe kunnen. Daarna besteed ik kort aandacht aan logische dubbele ontkenningen die elkaar helemaal opheffen, zoals in *We kunnen niet niemand uitnodigen voor ons trouwen*. Een voorbeeld als *We kunnen moeilijk niemand uitnodigen voor ons trouwen* laat wederom duidelijk zien dat ook andere omgevingen dan zichtbaar negatieve hetzelfde effect kunnen bewerkstelligen. Ik besluit het tweede hoofdstuk met een beschouwing over versterkende dubbele ontkenning, een fenomeen dat door de schoolgrammatica's van verschillende talen wordt afgekeurd maar dat, zoals Erasmus al inzag, zeker functioneel kan zijn. Zo drukt *Ik win nooit niks* veel meer emotie uit dan het wat brave *Ik win nooit wat*, terwijl *Ik ga niet naar Frankrijk, van mijn levensdagen niet minder ruimte voor compromissen biedt* dan *Ik ga niet naar Frankrijk*.

Hoofdstuk drie gaat over COLLOCATIE, dat is de vakterm voor het heel algemene verschijnsel dat veel woorden bij voorkeur in de buurt van andere voorkomen. Zo vormt *blond* een collocatie met *haar*, heeft *roedel* een sterke band met *herden* en dat soort dieren, wordt het bijvoeglijk naamwoord *dol* meestal vergezeld door het voorzetsel *op*, en is het voorvoegsel *kern* in de betekenis 'erg' volgens de meeste taalgebruikers alleen bruikbaar met *gezond*. Ik betoog dat negatief-polaire uitdrukkingen ook tot de collocaties behoren, want die vinden we alleen in negatieve omgevingen.

De theoretische taalkunde heeft nooit veel aandacht besteed aan het verschijnsel collocatie. Dat komt onder meer doordat collocatie de vergaarbak is van alle afhankelijkheden die niet zonder meer vanuit de syntaxis (grammatica) of de betekenis (semantiek) verklaard kunnen worden. In het derde hoofdstuk bespreek ik pogingen om alle collocatieve afhankelijkheden toch terug te voeren op syntaxis, semantiek, of eventueel statistiek. Deze pogingen zijn tot mislukken gedoemd: collocatie is wel degelijk een speciaal type afhankelijkheid. Heel veel collocaties moeten eenvoudigweg worden opgesomd in het mentale lexicon, het deel van het menselijk taalvermogen dat de woordenschat bevat. Dat betekent evenwel geenszins dat bij collocaties alles maar mogelijk is: ook collocatieve afhankelijkheden dienen zich te houden aan de regels van de grammatica en van de semantiek. Bovendien: als we een collocatie kennen dan is de betekenis ervan ook helemaal of grotendeels doorzichtig.

In de hoofdstukken een en twee bespreek ik de syntactische en semantische mechanismen die de combinatiemogelijkheden en de betekenis bepalen van polaire uitdrukkingen en meervoudige ontkenningen. Die mechanismen definiëren de grenzen van wat mogelijk is. Wat er werkelijk gebeurt met de verschillende woorden in verschillende talen is voor een belangrijk deel onvoorspelbaar. Met andere woorden, dat moet worden verantwoord in het lexicon. Hoofdstuk drie wil niet volstaan met deze constatering, maar iets laten zien van hoe dat werkt.

Index

- baar, 143, 181
- a bit, 10, 64, 70
- a long time, 18
- a long way, 15
- a lot, 15
- a ten-foot pole, 14
- aardvark, 10
- absolutely, 17, 59–62, 90, 115
- account for, 167
- al, 42, 46, 51, 69
- alcuno, 116
- all that, 16
- alle, 38, 47, 49, 72
- allerminst, 24, 34, 42–44, 46, 48, 51, 52, 54, 58, 63, 76, 78, 85, 87, 88
- alles, 74
- allesbehalve, 24, 34, 50, 51, 54, 58
- almost nobody, 39, 40, 102
- already, 4, 9, 22, 65, 77
- altijd, 148
- always, 30
- an apple, 173, 187
- and, 173
- any, 3–5, 7, 8, 12, 15–19, 21, 24, 25, 62, 64, 69, 70, 77, 79, 90, 91, 101, 116, 127, 134, 193
- any-thesis, 21
- as black as he is painted, 16
- at all, 8, 13
- at least, 30
- at most, 32, 39, 43, 44, 46, 64
- auch nur, 18
- aucun, 83, 115, 116
- backbone, 7
- bad, 127
- bake, 99
- bar, 10
- bat an eye, 78
- be crowded, 180
- be surprised, 80
- be, 7
- bear, 7
- beer, 166
- before, 74, 109, 110, 133, 141, 160
- bijna niemand, 39
- bijster, 10, 84, 85
- blond, 166, 167, 177, 185–187, 194, 203
- bones, 16
- both, 15
- bother, 3, 7
- brauchen, 10, 12, 90
- budge an inch, 8, 13
- cake, 99
- can't place, 16
- collect stamps, 187
- conglai, 66
- cran, 179, 196
- cranberry, 167, 179, 196
- cry one's eyes out, 167
- dare, 16
- de enige, 77, 136
- dead, 55
- decide, 183
- deep, 143
- dependent on, 167
- devour, 183
- dikwijls, 51, 52
- doubt, 21, 109–111, 113, 127, 129
- (drink) a drop, 10, 13
- each, 10, 49
- eager, 201
- easy, 201
- een beetje, 42, 46, 48, 51, 75, 76, 87, 88
- een hand voor ogen zien, 50
- een pretje, 45
- een vinger uitsteken, 156

- eens*, 52
einmal, 52
either, 15, 17, 155
en, 96
enlloc, 119
even, 62–64, 150, 154
ever, 3, 7, 8, 12, 15, 17, 19, 24, 25, 76, 77, 91, 134, 197
every, 21
exactly, 16, 26, 30, 35, 77
far, 15
few, 25, 29, 32, 39
flagrant, 199
flat, 98
flock, 167
for all the tea in China, 14
for the world, 14
gaire, 120
gairebé, 119, 120
ganz und gar, 18
gaosu, 67
gar, 18
geen, 38, 53, 72, 133, 134, 148
geenszins, 51
give a red cent, 3, 7, 8
give, 175
glad, 80
great shakes, 16
hair, 166, 186, 187, 194
half bad, 64, 70
hammer, 99
hardly, 28, 96, 102, 106, 126, 129–131, 137, 153, 160, 162
hay, 166
het is niet zo dat, 55
hoeven, 10, 12, 24, 28, 45, 46, 63, 71–75, 86, 88–90, 132, 133, 142, 143
hold a candle to, 99, 127, 128
hoogstens n, 39, 45
how do you do, 187
i, 59, 66
iedereen, 63
if, 23, 24
impossible, 21
in a hurry, 16
in a thousand years, 91
inderdaad, 44
irgendjemand, 18
it is (not) the case that, 55
it, 184
kunnen uitstaan, 8, 42, 44, 45, 48, 49, 52, 128, 142, 181
kunnen verkroppen, 12
kunnen, 12
lastig, 142
lest, 107
(lift) a finger, 8, 10, 11, 91, 99, 100, 180
long, 18
look, 171, 193
maar, 48, 63
make, 175
mals, 42, 44, 45, 48, 49, 52–55, 66, 78, 134, 135
matter, 16
meer, 72–75, 88, 132, 133
met een vinger aanroeren, 50
mind, 16
moeilijk, 142, 143
more a than b, 39
much of a, 16
much, 15, 175
(murder of) crows, 169, 171
n't, 21, 22, 68, 69, 137
nauwelijks, 43, 45, 156
ne . . . que, 117
ne, 83, 96, 101, 102, 107, 109, 115–117
need, 10, 17, 90, 167
neg, 21
neither . . . nor, 149, 150
neither, 28, 126, 150, 156, 160
nessuno, 116, 118
never in my life, 159
never, 28, 47, 59, 126, 156
ni-, 65
ni, 120
nie, 96, 104–107
niemand, 46, 48, 51, 63
niet . . . maar, 33
niet alle, 39
niet allemaal, 63
niet alles, 63
niet altijd, 33, 63
niet iedereen, 33, 63
niet, 24, 33, 34, 42, 44, 51, 52, 54, 55, 58,

- 140, 149, 198
- niets*, 148
- niks*, 148
- ningú*, 119, 120
- no N*, 32
- no one*, 64
- no*, 119, 120
- nobody*, 21, 24, 32, 39, 40, 59, 128, 193
- nog*, 51
- nogal*, 48, 62
- non*, 118, 144
- nooit*, 47, 49, 58, 63, 148, 149, 153
- not X percent of the audience*, 78
- not NP*, 31, 33, 34
- not at all*, 76, 126
- not bad*, 137
- not even*, 149, 150, 153, 155
- not every N*, 32
- not in my life*, 150, 157
- not*, 21, 28, 34, 55, 64, 103, 137, 194
- nothing*, 21, 24
- nowhere*, 24, 126
- of*, 201
- often*, 30
- on earth*, 13
- onbetuigd*, 132, 133
- ongelukkig*, 55
- only*, 136
- ontkennen*, 49
- onuitstaanbaar*, 9, 181
- onverdienselijk*, 9, 128, 132–134, 181
- ooit*, 12, 17, 45, 46, 51, 57, 58, 71, 76, 101, 104–106, 133, 134
- ook maar*, 18, 24, 26, 42, 44–50, 52, 58, 62, 64, 72–74, 87, 89, 132, 142
- ook*, 154
- operate upon*, 167
- or*, 173
- overly*, 16
- overmuch*, 16
- oxen*, 167
- pas*, 14, 102
- personne*, 98, 102, 116, 117
- pluis*, 53, 54, 64
- plus*, 117
- possibly*, 13
- potato*, 99
- pratiquement*, 115–117
- presque personne*, 102
- presque*, 115–117
- promise*, 201
- quasi*, 116
- quite*, 16
- rain cats and dogs*, 143, 167, 179, 194
- rain*, 184, 194
- rather*, 65
- really*, 90
- red army*, 193
- red*, 98, 185
- renhe*, 66, 67
- request*, 201
- rien*, 98, 102
- rozegeur en maneschijn*, 63, 64
- run*, 99
- salt and pepper*, 175
- say*, 67
- scarcely*, 162
- seldom*, 25, 28, 29, 106, 126, 160
- sensitive to*, 167
- set the Thames on fire*, 16
- settle*, 167
- several*, 10
- shoal*, 167
- sing a note*, 13
- slecht*, 133, 142
- sleep like a log*, 203
- sleep*, 143, 167, 176, 203
- small*, 127
- some*, 3, 4, 9, 10, 12, 15–17, 21, 22, 65, 116
- sometimes*, 15, 30
- soms*, 48
- sorry*, 80
- spick and span*, 192, 196
- stark naked*, 167, 179
- still*, 4, 9
- stone deaf*, 167, 179, 194
- superb*, 6
- sure*, 80
- surprised*, 80
- tensy*, 107
- that*, 201
- the N*, 30, 31
- the hell*, 13

- the only*, 77
think, 67
to, 201
tobacco, 166
too, 15, 16, 140
un-prefixation, 124
una anima, 120
unable, 21
unhappy, 55
unless, 109, 110
until, 64
verdienstelijk, 9, 128
verre van, 44
vinden, 84
voor de poes, 53, 54
voordat, 74, 107
vrijwel, 39, 40, 43, 45, 59–62
weigeren, 49
weinig, 24, 69, 126, 155
wel, 71
whatever, 13
whinchat, 167, 179
win, 167
without, 32, 47, 106, 109, 110, 135, 162
work, 167
would rather, 4, 9, 22, 26, 69, 77, 112, 167
yet, 3, 7, 64
zeker, 154
zelden, 24, 63, 155, 156
zelfs, 152, 154, 155
zonder, 33, 47, 49, 135, 157
zymurgy, 10
- Aalders, G., 3
 Aarts, J., 186
 Abney, S., 193
 absolute, 55
 absolute adjective, 178
 abstract head, 192, 194
 abstract negative, 21, 56, 101, 125, 126
 accidental property, 177
 activation, 201
 activity, 202
 additional property, 75
 additional restriction, 72, 132
 additive, 30, 31, 35, 55, 58, 101
 additivity, 30, 32
- adjacency, 58, 147, 159, 187
 adjective, 127, 132, 134, 174, 176, 178, 184–186, 193, 201
 adverb, 10, 45, 47, 50–52, 60, 89, 104, 126, 142, 148, 156, 159, 173, 176, 184, 186, 199, 202
 adversative, 21, 66, 80, 83, 106, 110, 160
 affective, 21, 28, 145
 affective context, 28
 affective strengthening of negation, 13, 17, 18
 affirmation, 139
 affirmative, 6, 15, 16, 122, 163
 affirmative polarity item, 4
 Afrikaans, 12, 95, 96, 103–107, 116, 181
 afterthought, 149
 agreement, 71, 96, 159
 Aitchison, J., 136
 Al, B., 186
 algebraic semantics, 76
 Algeo, J., 144
 ambiguity, 69–71, 97, 99, 100
 American, 149, 190
 analysis, 171
 anaphor, 83–85, 157
 anti-additive, 18, 32–36, 38–41, 46–53, 56–59, 61, 63–66, 72, 75, 78, 96, 101–103, 105, 132, 133, 135, 141, 156
 anti-additive context, 56
 anti-additivity, 32, 36, 37, 40, 46, 50, 59, 62, 90, 102
 anti-trigger, 4
 antimorphic, 34, 36, 38, 40, 50, 51, 53–56, 58, 59, 62–64, 66, 78, 90, 105, 106, 135, 149, 156
 antimorphic operator, 103
 antimorphism, 34–36, 40, 51, 55
 antimorphy, 37
 antimultiplicative, 32–36, 38, 40, 55, 63, 64, 96, 102, 103, 105, 106, 121, 198
 antimultiplicativity, 32, 36, 37, 53, 59, 61, 102
 antonym, 124
 Aoun, J., 22
 apparent negation, 68

- appendix, 149–160
 apposition, 156, 158, 159
 arbitrariness, 174
 arbitrariness of the lexicon, 19
 Aristotle, 70
 artifact, 99
 aspect, 99
 assertion, 139, 140
 asterisk, 3, 65
 asyndetic, 157
 Atkins, B., 99, 191
 auxiliary, 10, 12, 71, 90, 91

 Baayen, H., 196
 Bäcklund, U., 166, 176, 178
 Bahasa Indonesia, 3
 Bailey, G., 136
 Baker, C., 3, 22, 23, 68–70, 86, 112
 Bar-Hillel, Y., 169
 Barker, C., 21
 barrier, 82, 85
 Bartsch, R., 32, 185
 Barwise, J., 33, 198
 basic verb, 100
 Basque, 3, 139
 Bauer, L., 144
 Behre, F., 175
 Bennett, T., 177
 Benson, E., 168, 170, 171, 201, 202
 Benson, M., 168, 170, 171, 190–192, 201, 202
 Van Benthem, J., 26, 59, 80, 161
 Berg, W., 131
 Von Bergen & Von Bergen, 5, 7, 12–18, 23, 25, 71, 90
 Berry, M., 189, 192
 Berührungsbeschränkung, 58
 Den Besten, H., 95, 104
 Bever, T., 136
 binary system, 56
 binding, 86
 Binding Theory, 22, 56, 71, 83
 bipolar element, 1, 57–59, 62, 66, 67
 Black English, 94
 black hole, 198
 blocking, 58, 124, 198
 Blok, P., 70
 De Boer, T., 198

 Bolinger, D., 12, 13, 15, 70, 90, 122, 131, 136, 178, 181
 Boolean, 29, 35, 36, 40, 80, 93, 100, 173
 Boolean algebra, 29, 32, 35, 56, 61
 borderline, 146
 Borkin, A., 23, 77
 Bosque, I., 3, 97
 Bossuyt, A., 125
 bottom element, 61, 62
 boundary, 67
 Bresnan, J., 184
 bridge verb, 127, 128
 British, 190
 Burchfield, R., 145
 Butler, C., 189, 190
 Buyskens, K., 7

 c-command, 21, 82, 84, 89
 Caffi, C., 122
 cancellation, 22, 70, 86, 87, 98, 112, 139, 141
 Carlson, G., 5, 115
 Carter, R., 71
 Catalan, 103, 118–120
 categorial grammar, 185, 193
 categorial restriction, 183
 category mistake, 137
 Cattell, R., 174
 Chafe, W., 169
 change of state, 99
 characteristic function, 29
 checking, 89
 Chinese, 66
 Chomsky, N., 21, 22, 83, 148, 183, 184, 202
 Christie, A., 175
 Church, K., 186
 circularity, 111, 186
 classical logic, 36, 93, 98
 classical negation, 36, 40, 56
 classification of NPIs, 12
 classification of polarity items, 61
 clause, 54, 58, 59, 69, 84, 134, 176, 193, 201
 clause bound, 67, 84, 89, 107
 clause boundary, 107, 193
 clausemate negation, 59, 65, 66
 clausemate restriction, 55

- cliché, 137
 clitic, 96, 119
 closed class, 197
 co-indexed, 84
 co-occurrence, 72, 176, 188, 190
 Cockney, 96, 102
 cognate, 181
 cognitive factor, 14
 cognitive grammar, 189
 cohesion, 169
 collocability, 143, 173
 collocate, 132, 175, 186, 194
 collocation, 1, 2, 14, 19, 72, 120, 165–203
 collocation dictionary, 167, 168, 186, 191
 collocation proper, 197
 collocational, 17, 19, 72, 98, 109, 124, 125, 149, 166, 173, 183, 194, 195
 collocational behavior, 4, 136, 190, 196, 203
 collocational combination, 14, 189
 collocational effect, 53, 63, 107, 137, 143
 collocational relation, 184, 189, 191, 194
 collocational restriction, 165, 173, 184, 204
 colloquial speech, 15
 color, 124, 166, 177
 combination, 191
 command, 21
 comparative, 24, 26, 28, 39, 47, 49, 74, 96, 109, 110, 135, 140, 145, 160
 complement, 36, 66, 101, 107, 111, 113, 184
 complementary distribution, 4, 14, 15, 56
 complementation, 34, 62
 complementizer, 58, 107, 111
 complete, 31, 32, 34, 35, 55, 58
 completeness, 35, 36, 54, 55
 compositionality, 98, 122, 170, 171, 185, 194, 203, 204
 compound, 169, 190, 191
 Comrie, B., 28
 conceptual elegance, 26, 114, 126
 concordant negation, 68, 95, 102, 104, 115
 conditional, 23, 24, 28, 66, 72, 73, 75, 80, 81, 86–88, 119–121, 132, 133, 160
 configuration, 122
 conjunct, 150
 conjunction, 173, 175
 consistency, 35, 36, 54, 55
 consistency of belief, 31
 consistent, 31, 34, 35, 55, 58, 83
 constituency, 174
 constituent, 95, 147, 150, 153, 157–159
 constraint, 173, 184, 199
 constraint equation, 185
 construal, 86
 construction schemata, 8, 9
 contamination, 111
 context, 3, 4, 11, 16, 44, 58, 79, 80, 88, 104, 131, 132, 168, 169, 186, 189
 context-dependent, 101, 168, 189
 context-sensitive, 30, 101, 185
 context-sensitive semantics, 97, 98, 100, 101, 116, 119–121, 148, 185
 contextuality, 98
 continuous function, 35
 contrary, 122
 control, 201
 conventional implicature, 11
 conventional metaphor, 176
 Cooper, R., 33, 198
 Cooper, W., 175
 cooperative, 123
 Coopmans, P., 184
 coordination, 156, 157
 coreferential, 84, 85, 158
 corpus, 186
 counterfactual, 108
 covert negation, 122
 Cowie, A., 191
 creation, 99, 201
 Cristea, T., 112
 Czech, 96
 Dahl, Ø., 60
 Danish, 11
 DE, see downward monotonic
 declaration, 178
 declarative, 6

- decreasing, 38
 defective distribution, 4, 179
 definite, 33
 definite description, 31, 33
 definiteness, 159
 degree intensifier, 175
 degree of collocationality, 165
 degree of idiomaticity, 171
 degree of negativity, 28, 36, 65, 159
 degree word, 175, 176, 178, 181
 Dekydtspotter, L., 117
 denial, 1, 16, 55, 65, 68, 94, 124, 128,
 139–144, 163
 denotation, 13
 denotative strengthening of negation,
 13, 17
 density (constraint), 60, 61
 dependency, 192, 194
 descriptivism, 106
 designated element, 101
 determiner, 43–45, 47, 49, 127, 133, 134,
 173, 193, 196, 198
 dictionary, 190–192
 Diesing, M., 73
 Dik, S., 125, 157
 diminution, 175
 diminutive, 145, 176
 direct object, 82, 88, 89, 184
 Dirven, R., 176
 discontinuous function, 35
 disjunctive meaning function, 98, 100,
 185, 186
 distant negation, 59, 66, 67
 distinguished negative element, 95
 distribution, 1, 3, 19, 42, 46, 54, 63, 90,
 93, 107, 114, 120, 136, 166,
 167, 179, 180, 188, 192, 193,
 200, 203
 distributional pattern, 176
 Division of Pragmatic Labor, 123, 146
 domain, 127
 dominant word, 201
 Donaldson, B., 95, 103, 104, 107
 double marking, 145, 146
 double negation, 23, 71, 86, 93–163
 doubling, 103, 118
 doubling element, 95
 downward entailing, 25, 63, 67, 71, 97,
 113, 133, 197
 downward monotonic, 25, 29, 32, 35,
 37, 44, 48, 50, 52, 61, 62, 64,
 72, 78, 81, 96, 97, 99, 100, 103,
 105, 106, 110, 115, 117, 122,
 137–141, 143, 146, 156, 180,
 see MD and monotone
 decreasing
 downward monotonic context, 56, 72,
 94, 133, 137
 downward monotonicity, 1, 2, 26, 28,
 29, 32, 36, 37, 40, 44, 45, 59,
 62, 68, 80–82, 90, 93, 114, 119,
 126, 141, 161–163
 Dowty, D., 26, 90, 98, 99, 118
 dual, 61, 62
 duality, 101
 dubitation, 109
 Dummett, M., 98
 Dutch, 3, 4, 9–12, 17–19, 24, 26, 28, 32,
 34, 52, 55, 57, 59, 60, 62,
 64–66, 69, 71, 72, 76, 77, 82,
 88, 94–96, 101, 105, 107, 109,
 111, 120, 125, 126, 128, 129,
 132–134, 140, 142, 143, 145,
 146, 149, 151, 153–156,
 174–177, 180, 181, 198, 199
 ECD, 191, 192, 195
 echo, 4, 42, 68, 69, 71, 72, 75, 82, 181
 Edmondson, J., 3, 10, 12, 28
 elaborated form, 14, 15, 17
 ellipsis, 38
 emotion, 111
 emotional, 145
 emphasis, 71, 104, 146, 153, 156, 160
 emphatic multiple negation, 17, 104,
 145, 147, 158
 emphatic negation, 1, 94, 145–161
 end of scale polarity, 59
 endpoint, 61, 124, 129, 181, 191
 engineer, 195
 English, 3, 4, 12, 14, 17, 18, 28, 32, 34,
 39, 59, 64, 65, 71, 76, 82, 95,
 96, 101, 106, 116, 120, 125,
 129, 132, 153–155, 174, 175,
 177, 190, 198, 199, 201

- entailment on a constant perspective, 80
 epithet, 196
 eradication, 202
 Erasmus, 122, 131, 146
 Ergänzungsnegation, 149
 etymological classification, 7
 evaluation, 177
 Everaert, M., 170, 174, 175, 179, 184
 exclamative, 6
 existential, 97, 116–119
 existential quantifier, 98, 100, 101, 115, 116, 148
 expectation, 160
 explanatory device, 26
 explanatory power, 111
 expletive negation, 94, 107
 extensional verb, 31
 external negation, 154
 extraposition, 156, 158, 159

 factive, 80
 factorization, 97, 147, 148
 fake negation, 68, 69, 77
 Faltz, L., 29, 31, 85
 Fauconnier, G., 3, 11, 13, 14, 19, 25, 59, 77, 100
 FCA, 5
 fear, 108, 109
 felicitous, 140
 felicity, 70
 feminine, 145
 FG, 125
 figurative, 123
 Fillmore, C., 19, 170
 filter, 46, 58, 61, 62
 finite verb, 89
 first argument, 43, 47, 49, 53, 133, 134
 first position, 89, 148
 Firth, J., 168, 172, 180, 189
 fixed combination, 137, 171, 183, 195, 202, 203
 fixed expression, 170, 191
 fixed string, 196
 Fletcher, W., 125, 178
 focus, 158
 Fontenelle, T., 166
 Foolen, A., 48, 63

 foreign speaker, 175
 fossilization, 14, 17, 19, 131, 136
 Fowler & Fowler, 145
 Fraser, B., 170
 free adjunct, 201
 free choice reading, 58
 free choice *any*, 5, 11, 38, 101
 free combination, 169, 183, 191
 Frege, G., 98, 140, 185
 French, 3, 4, 11, 14, 83, 95–98, 101, 102, 107–109, 112, 115–117, 119, 151, 177, 198
 frozen conjunction, 175, 202
 function, 177
 function argument relation, 82
 function argument structure, 88, 185
 function composition, 55, 58, 69, 88, 149
 function word, 99, 185
 functional expression, 185, 186
 Functional Grammar, 125
 functor, 84, 89, 120, 185
 fuzzy borderlines, 94
 fuzzy logic, 161

 Gabbay, D., 139
 gapping, 156
 Gazdar, G., 171, 184, 185
 GB, 86
 Geeraerts, D., 166, 175
 generalization, 12, 19, 186
 Generalized Binding, 86
 generalized quantifier, 85, 86
 generation, 170, 171
 generative grammar, 183, 184
 German, 3, 10, 12, 18, 34, 52, 107, 125, 145, 151, 180, 181, 193
 Germanic, 124, 199
 Van Ginneken, J., 111
 Givon, T., 16
 global monotonicity, 80
 government, 88
 GPSG, 184
 gradable, 123, 199
 gradation relation, 76, 77
 grammar, 19, 21, 71, 89, 102, 106, 107, 111, 121, 145, 146, 183–185,

- 189, 190, 193, 195, 199, 202, 203
 grammatical collocation, 170, 190, 201
 grammatical concord, 96
 grammatical pattern, 190
 Greek, 103, 108, 146
 Greenbaum, S., 145, 175, 186, 187
 Grévisse, M., 108, 109
 grey zone, 123, 124, 137
 Grice, P., 122, 124, 153, 197
 Grinder, J., 157
 group name, 178, 197, 202, 203
- Haegeman, L., 95, 147, 148
 Halliday, M., 189
 Hand, M., 21
 Hanks, P., 186
 hapax legomena, 196
 Harries, H., 139
 Harris, Z., 176
 Hasan, R., 172
 Hasegawa, N., 4, 82
 Haskel, P., 186
 Haspelmath, M., 6, 12
 head, 183–185, 192–194, 199
 headword, 191, 192
 hearer, 123, 124, 146, 196
 Heiberg, L., 104
 Heid, U., 186
 Heim, I., 80
 Hein, J., 3
 Heinämäki, O., 141
 Helbig, G., 183
 Van Helten, W., 108, 109
 Hendriks, P., 39, 47
 heraldry, 177
 Heylen, D., 186
 hierarchy of negative contexts, 1, 2, 28
 hierarchy of negative expressions, 28, 41, 56, 59
 hierarchy of polarity items, 56
 Hietbrink, M., 177
 hinder, 108, 109
 Hindi, 3
 Hinds, M., 6
 Hintikka, J., 21
 Hirschbüller, P., 117
 historical principle, 7
- Hoeksema, J., 1, 6, 8, 10, 12, 17, 26, 38, 39, 47, 52, 53, 57–59, 62, 74, 76, 77, 89, 90, 136, 148, 166, 178, 186, 187, 192, 202
 Hoekstra, E., 22, 38, 83, 86, 89
 Hoekstra, T., 202
 Hoepelman, J., 160
 Hoey, M., 172, 186
 Hoffmann, M., 122, 125, 126, 137, 158
 homomorphic, 55
 homomorphism, 31, 35, 55
 De Hoop, H., 55, 73
 Hoppenbrouwers, G., 3, 4, 9, 11, 23, 29
 Horn, L., 3–5, 11, 23, 25, 32, 33, 35, 55, 59–61, 67, 70–72, 122, 123, 126, 131, 137, 139, 140, 142, 146, 148, 150, 154, 155, 163, 181, 197
 Hornstein, N., 22
 Hübler, A., 122, 125, 131
 Hudson, R., 184, 192
 Van der Hulst, H., 202
 Huybregts, R., 33
 hyperonym, 192, 193
 hypostasis, 70
- I-NPI, 59, 66
 ideal, 46, 61, 62, 78
 identity, 101, 103, 116, 119
 idiom, 10, 54, 99, 137, 156, 157, 169–171, 177, 183–185, 190, 191, 196
 idiom book, 167
 idiom dictionary, 191
 idiomatic, 8, 9, 16, 19, 42, 48, 53, 62, 99, 100, 154, 170, 171
 idiosyncrasy, 103, 107, 165, 188, 190
 idiosyncratic, 1, 42, 109, 166, 167, 179, 180, 189, 192, 201, 203, 204
 iff, 25
 illogical, 161
 illogical negation, 68
 Ilson, R., 168, 170, 171, 201, 202
 Immediate Scope Constraint, 23
 imperative, 178
 implicational hierarchy, 28
 implicational pattern, 89
 implicative meaning, 10
 in construction with, 21

- incorporated negation, 154
 indefinite, 4, 8, 11, 15, 17, 19, 21, 24, 95,
 97, 100, 117, 134
 indirect negative, 162
 indirect object, 82, 184
 individual item, 202
 infinitive, 201
 inflection, 192
 information, 153, 188, 196
 information question, 24, 25, 79
 inherent property, 177
 inherent scope, 10
 inherently intensified, 19
 inherently negative, 21
 inheritance, 85
 inner-system monotonicity, 80, 81
 intensification, 10, 19, 91, 175–177, 179,
 180, 199, 203
 intensifier, 4, 9, 12, 13, 19, 125, 143, 145,
 161, 175, 176, 178, 179, 181,
 186, 197, 199, 203
 intensional verb, 31
 inter-subjective reliability, 172
 internal negation, 154
 interplay of constraints, 175
 interpretation, 123
 interrogative, 28
 intervening verb, 84
 intervention effect, 85
 intonation, 3, 71, 72, 90, 130, 140, 141
 intuition, 106
 invisible MD operator, 88
 Ioup, G., 10
 irrealis, 108
 ISC, 23
 Italian, 3, 96, 103, 116–118

 Jackendoff, R., 10, 21, 22, 77, 111, 183,
 184
 Jacobs, J., 34, 58
 Janssen, T., 98
 Japanese, 4
 Jespersen, O., 11, 13, 14, 28, 39, 68, 90,
 96, 107, 122, 131, 137, 139,
 148–150, 153, 156, 162, 168
 Johnson, M., 176
 join, 30–32, 61
 Jones, S., 186

 Kadmon, N., 5, 13, 49, 79, 80, 152, 155
 Kas, M., 29–33, 35, 48, 50, 53, 55, 69, 80,
 81, 88, 127
 Kay, P., 19, 170
 Kayne, R., 101
 Keenan, E., 28, 29, 31, 39, 85, 89, 98, 185
 Kegl, J., 99
 King of Buganda, 140
 Klein, E., 171, 184, 185
 Klein, H., 10, 59–61
 Klein, M., 158
 Klima, E., 10, 17, 18, 21, 22, 24, 28, 150,
 153–155
 Klooster, W., 74
 Koster, J., 89
 Kraak, R., 154
 Krifka, M., 11, 54, 80
 Kroch, A., 10
 Kuckenheim, L., 109, 112
 Kürschner, W., 3, 8, 52

 Labov, W., 94, 95
 Ladusaw's hypothesis, 25, 26
 Ladusaw, W., 1, 2, 10, 19, 23, 25, 26, 28,
 44–46, 59, 65, 69, 73, 80, 82,
 83, 88, 95–97, 100, 117, 163
 Laka Mugarza, I., 3, 22, 97
 Lakoff, G., 174, 176
 Lakoff, R., 21, 23, 80
 Landman, F., 5, 13, 49, 79, 80, 133, 152,
 155
 Langacker, R., 21, 169, 189
 Langendoen, T., 136
 language change, 114
 language learner, 19, 111, 175
 language learning, 168, 199
 language user, 203
 Latin, 3, 94, 107, 109, 125, 126, 129, 146
 lattice, 61, 62
 Lausberg, H., 131
 Lawler, A., 23, 77
 Lawler, J., 102, 149, 150
 lawlike behavior, 8
 laws of polarity, 55
 LDOCE, 168, 175
 Leech, G., 122, 131, 145
 Lees, R., 21
 level, 59, 88, 89, 122, 189, 195

- Levin, B., 99
 Lewis, C., 107
 lexical, 103
 lexical collocation, 170, 190, 201
 lexical combination, 169
 lexical element/item, 1, 3, 4, 8–11, 14, 33, 42, 57, 61, 64, 77, 100, 106, 107, 109, 125, 131, 137, 148, 154, 173, 178, 180, 186, 188–190, 196–200, 202, 203
 lexical function, 186, 191
 lexical gap, 9, 198
 lexical pattern, 190
 lexical property, 10
 lexical restriction, 184
 lexical stipulation, 1, 2, 9, 10, 12, 72, 125
 lexicalized extreme, 125
 lexicalized litotes, 129
 lexicographer, 191, 195, 201
 lexicography, 190, 192
 lexicon, 9, 10, 19, 178, 180, 183, 184, 195, 202
 lexis, 189, 190
 LF, 23, 56, 147, 148
 LF movement, 147
 LFG, 184
 license, 24, 42, 44, 45, 53–56, 59, 63–66, 71, 79, 80, 82–84, 87, 89, 97, 100, 104–106, 109–111, 113–115, 120, 127, 128, 134, 140, 141
 light verb, 174, 175, 186, 195
 Van der Linden, E.J., 169–171, 185, 197
 linear order, 60
 Linebarger, M., 10, 13, 22, 23, 26, 44, 72, 77, 79, 80, 85
 Lipton, J., 171, 197
 literal meaning, 177
 litotes, 1, 19, 55, 94, 122–138, 181
 local domain, 84, 86
 local monotonicity, 80
 locality, 127, 149
 locally bound, 83
 locally free, 84
 logical element, 106, 173
 logical meaning, 124
 logical negation, 95, 122
 logical strength, 106
 logicism, 106
 Longobardi, G., 97
 Lott, B., 14
 Van der Lubbe, H., 177

 machine translation, 186
 Mackin, R., 168, 191
 Mahajan, A., 3, 82
 main clause, 58, 89, 150, 152, 153, 156, 157, 159
 Malagasy, 3, 139
 Malkiel, Y., 175
 Mandarin, 3
 markedness of negation, 4
 material name, 177
 Mathesius, V., 96
 matrix clause, 22
 Matthews, P., 168
 maximal amount, 14
 maximally unrestricted item, 197
 McArthur, T., 191
 McCaig, G., 191
 McCarthy, J., 196
 McCawley, J., 3, 5, 6, 60, 64, 68, 77, 153
 McMordie, W., 173
 MD, 25, 30, 32, 35, 39, 48, 49, 52, 58, 80, 82, 85–88, 97, 102, 103, 119, 120, 126, 127, 132, 134, 136, 137, 140
 meaning, 10
 meaning postulate, 185
 meaning restriction, 185
 measure, 177
 medium strength, 105
 meet, 30–32, 61
 Meijs, W., 186
 De Mey, S., 12, 18, 38, 72, 155, 180
 Mel'čuk, I., 177, 186, 191, 192, 195
 mental lexicon, 186, 190
 metalinguistic negation, 16, 19, 68–70, 72, 128–130, 144
 metalinguistic use of language, 70–72
 metaphor, 166, 176, 183, 203
 metonymy, 166, 176, 203
 Middle Dutch, 110
 Middle English, 3
 Miller, P., 102

- minimal amount, 10, 11, 13, 17, 19, 50, 120
 minimal logic, 37
 minimal negation, 37, 40, 56, 69
 minimal pair, 18
 mirror image, 56
 modal, 52, 198
 modal infinitive, 143
 modal operator, 94
 modal particle, 63, 178
 modality, 145
 modification, 60, 127, 129, 175, 177
 modified element, 184
 modifier, 16, 148, 159, 178, 184, 185, 203
 modifier order, 177
 monotone decreasing, 25, 29, 35–46, 48, 56, 57, 59, 61–63, 65, 68, 69, 72, 76, 78, 80, 82–84, 94, 96, 102, 112, 113, 122, 126, 127, 130–133, 136, 137, 140, 142, 143, 152, 160, 200, *see* MD and downward monotonic
 monotone increasing, 29, 32, 35, 76, 85, 127, 152
 monotonicity, 33, 38, 40, 44, 77, 80, 85, 103, 159
 Monotonicity Calculus, 87, 127
 Montague, R., 185
 mood, 108
 Moortgat, M., 202
 Moravcsik, J., 139
 De Morgan (laws of), 36
 morpheme, 179, 180
 morphology, 95, 124, 128, 145, 192, 193, 202
 motivation, 174
 movement, 59, 147
 multi-valued logic, 161
 multiple marking, 145
 multiple negation, 14, 17, 90, 93–163, 180
 multiplicative, 30, 31, 35, 55, 58, 61
 multiplicativity, 30, 32
 Napoli, D., 96
 natural class, 4, 24, 101, 178, 203
 NC, 96, 97, 100, 107, 120, 125
 necessary condition, 45
 NEG, 56, 125, 126
 neg, 36
 Negatio Contrarii, 125
 negation, 3, 22, 26, 28, 37, 40, 50, 52, 54, 58, 59, 64–66, 68, 69, 71, 77, 82, 93–95, 97, 101, 105, 113, 114, 117–119, 122, 124–131, 133, 137, 139–141, 143, 148, 150, 153, 160–162, 173, 194
 negative, *passim*
 negative appositive tag, 153
 negative attraction, 93
 negative collocation, 186, 194, 197
 negative concord, 1, 66, 93–121, 126, 146, 148
 negative context, *passim*
 negative doubling, 95, 100–103, 114, 115, 119
 negative element, 82, 105, 115, 119, 146, 148, 152
 negative expression, 40, 56
 negative flavor, 4, 37, 111, 197
 negative import, 107
 negative lowering, 35
 negative noun phrase, 21
 negative operator, 56, 87, 97, 119
 negative particle, 129
 negative polarity (item), 1–91, 94, 97, 99, 100, 104, 105, 107, 110, 113–117, 120, 122, 128, 132, 135–137, 140–142, 156, 157, 162, 178, 181, 193, 197, 200, *see* NPI
 negative polarity item of medium strength, 50, 58, 62
 negative polarity sentence, 8
 negative quantifier, 59, 88, 89, 97, 100, 102, 115–118, 140
 negative raising, 32, 35, 67, 83–85, 89, 113, 127
 negative spread, 95, 100–103, 116, 119, 120
 negative universal, 40, 97
 negative utterance, 16
 negatively affixed, 21
 negativity, 40, 78
 Nespor, M., 96

- NI-NPI, 65, 66
 Nienaber, G., 104
 Nirenburg, I., 186
 Nirenburg, S., 186
 non-Boolean, 31
 nongradable, 123
 nonmonotonic, 77
 nonreferential, 15–17
 normal negation, 137
 normative grammar, 106, 111, 145
 NOT, 23, 56
 noun, 10, 127, 173, 174, 184, 185, 193, 196, 201, 202
 noun phrase, 43, 46, 127, 154, 158, 199
 NP-comparative, 39, 47
 NPI, 3–5, 7, 12, 13, 15–17, 19, 21, 23–26, 28, 33, 39, 40, 42, 44–46, 49, 54, 56–59, 62–67, 69, 71, 72, 75, 77, 79, 80, 82, 83, 85–88, 90, 91, 100, 105, 114, 115, 120, 127, 128, 132–136, 142, 180, 181, 193, 194, *see* (negative)
 polarity item
 NPI as flag, 90
 NPI of medium strength, 56, 64, 142
 NR, 32, 83, 128, *see* neg(ative) raising
 nuclear scope, 73
 nullification, 202
 numeral, 173

 O'Connor, M., 19, 170
 OED, 166, 168, 171, 194
 Omniheadedness, 192
 only the lawless, 8
 opaque, 171
 open class, 11, 197, 200
 operator, 173
 Ophoff, J., 198
 optimality, 196
 optionality, 68, 101, 108, 146
 order, 88
 ordering paradox, 89
 ordinary negation, 37
 Van Os, C., 4, 57, 125, 178, 181
 outer-system monotonicity, 80, 81
 Overdiep, G., 110, 151
 overgeneralization, 199
 overt negation, 44, 103, 106, 122

 Paardekooper, P., 33, 107, 156
 Palmer, F., 168
 paradigmatic generalization, 174
 parameter, 56
 parametrization, 107, 109, 115
 paratactic negation, 68, 69, 77, 94, 107–110, 112–114, 146
 parenthesis, 159
 Partee, B., 28, 29, 60, 61, 98, 99, 171, 185, 186
 partial ordering, 61
 particle, 52, 54
 Paul, H., 111
 Peacocke, C., 21
 performative, 9, 178
 permission, 139
 phonological, 175
 phonology, 195, 196, 203
 phrasal verb, 191
 Phytian, B., 191
 plain form, 14, 15, 17
 pleonasm, 145
 plural suffix, 179
 PN, 107, 108, 111
 polarity (item), 1–91, 93, 97, 107, 126–128, 134, 180, 195, 202, 203, *see* NPI and PPI
 polarity licensing, 78
 polarity phenomena, 88, 132
 polarity sensitive meaning, 10
 polarity sensitive *any*, 5, 101, 116
 polarity sensitivity, 1, 16, 48, 165, 180, 181
 Pollock, J.-Y., 101
 polysemy, 98–101, 185
 Ponelis, F., 12, 95, 96, 104, 105, 181
 Portuguese, 103
 position of doubling element, 96
 positive polarity, 10, 21, 26
 positive polarity item, 1–91, 112, 114, 116, 125, 128, 132, 149, 181, 186, 194, 197, 199, *see* PPI and polarity (item)
 positive polarity item of medium strength, 62
 possibility, 12, 139, 142, 143
 possible collocational system, 204

- possible worlds, 161
 Postal, P., 157
 PPI, 4, 5, 7, 9, 19, 21, 22, 25, 26, 42–44,
 46, 48, 51, 52, 55–57, 62, 64,
 65, 68, 69, 75, 77, 82, 84, 86,
 91, 180, 194, *see* (positive)
 polarity item
 PPI below the word level, 9
 PPI of medium strength, 56
 pragmatic classification, 10
 pragmatic restriction, 137
 pragmatic scale, 59
 pragmatics, 17, 18, 21–23, 59, 71, 78–80,
 94, 122, 129, 131, 136, 137,
 178, 189, 199
 precaution, 108
 predictive power, 12, 24, 80, 111, 125,
 175, 176, 178, 185, 190, 192,
 204
 preposition, 47, 173, 174, 178, 183, 184,
 186, 197, 201
 prescriptive grammar, 146, *see*
 prescriptive grammar
 presupposition, 16, 68, 80, 124
 principal ultrafilter, 152
 Progovac, L., 3, 4, 22, 38, 56, 59, 64–66,
 83, 86, 111
 prohibition, 108
 projection, 174
 promise, 23, 80
 pronoun, 83, 85, 89, 201
 proper name, 31, 33, 130, 152
 proposition calculus, 36
 prototypical, 137
 prototypical trigger, 25
 proverb, 169
 PSA, 5
 psycholinguistics, 186
 psychological entailment, 80
 Pullum, G., 21, 171, 184, 185
 Pustejovsky, J., 99
- qualifying adjective, 177
 qualitative definition, 187, 188
 quantification, 76, 161
 quantifier, 40, 44, 46, 73, 85, 120, 127,
 153
 quantifier reading, 148
- quantifying expression, 10, 152
 quantitative definition, 187, 188
 quasi-filter, 61
 quasi-ideal, 61
 question, 40, 66, 68, 69, 72, 73, 75, 77,
 78, 87, 88, 119–121, 134, 141,
 160, 161, 178
- Quine, W.V.O., 21
 Quirk, R., 145
- Raab, S., 186
 radical negation, 37, 68, 140
 raising, 56, 147
 random probability, 186
 reading, 3
 recursion, 129
 reductionism, 64, 194
 redundancy, 145
 redundant negation, 107
 reduplication, 104
 reduplicator, 104, 116
 referential, 16
 referential expression, 157
 reflexive closure, 77
 register, 15
 regular negation, 37, 40, 56
 Reichenbach, H., 21
 reinforcement by repetition, 145
 Reinhart, T., 21
 relational adjective, 177
 relative (clause), 5, 24, 25, 53, 72–74, 136
 relevance, 79, 153
 repetition, 145
 representation, 88
 Resnik, P., 188, 196
 restricted combinatory potential, 183
 restricted distribution, 1, 2, 5, 24, 26,
 136, 166, 167, 178, 196
 restriction, 123, 129, 136, 140, 149, 152,
 166, 167, 179, 180, 184, 188,
 198, 199, 203
 restrictor, 73, 75
 resultative, 99
 resumptive negation, 149, 150, 152,
 153, 156, 157, 159, 160
 rhetorical, 19, 90, 91, 94, 122, 131, 178
 rhetorical question, 23, 79, 134, 161
 right dislocation, 156–158

- Robbers, K., 95, 104
 Romance, 97
 Ross, J., 21, 28, 157, 158, 175, 178
 Ruge, H., 108
 rule of thumb, 40
 rule ordering, 88
- S-comparative, 39, 47
 Sag, I., 171, 184, 185
 Saint Thomas, 33
 Salemans, B., 108
 Sánchez Valencia, V., 18, 23, 26, 59, 78, 81, 109, 133
 Van der Sandt, R., 140, 143
 Sapir, E., 123
 SAS, 78
 Sassen, A., 71
 saying, 169
 scalar endpoint, 11, 12, 14, 59–61, 90, 124, 129, 130, 137
 scale, 28, 55, 60, 123, 124, 129–131, 137
 scale clash, 137
 Scalise, S., 196
 Di Sciullo, A., 8, 9, 178
 Schaars, F., 108
 Schenk, A., 197
 Schenkel, W., 183
 Schermer-Vermeer, E., 74
 Schmerling, S., 11, 100
 scope, 4, 10, 21, 42, 44, 50, 59, 63, 65, 70, 82–89, 95, 97, 98, 100, 101, 104–115, 119, 122, 127, 136, 153, 197
 scope extension, 84, 127
 scope marker, 90, 104
 scope of negation, 21, 23, 32, 90, 105
 second argument, 43, 44, 133
 Seidl, J., 173
 selectional restriction, 183, 184, 188, 203
 self correction, 152
 semantic class, 184
 semantic classification, 10
 semantic constraint on collocations, 174
 semantic difference, 15
 semantic factor, 14
 semantic field, 166, 174, 203
 semantic function, 177
 semantic load, 174
 semantic motivation, 174
 semantic regularity, 175
 semantic unit, 183
 semantics, 17, 18, 21, 25, 28, 31, 40, 48, 52, 56, 58, 59, 64, 67, 76, 79, 80, 85, 86, 89, 94, 95, 101, 112, 122, 127, 129, 130, 137, 138, 141, 146, 152, 174, 175, 178, 183–186, 190, 192–196, 198–200, 202, 203
 semilattice, 61, 62
 sentence negation, 21, 25, 29, 34, 40, 42, 50, 52, 63, 65, 70, 82, 83, 101, 140
 sentential prefix, 55
 Serbo-Croatian, 3, 4, 59, 65, 67
 set, 130
 set theory, 29, 36, 46
 Seuren, P., 4, 5, 37, 49, 57, 68, 74, 96, 111, 140
 Shieber, S., 199
 Short, C., 107
 Sinclair, J., 186, 189
 Slavic, 121
 small clause, 38
 Smith, S., 78
 Sommers, F., 90
 Spanish, 3, 103, 150
 speaker, 123, 130, 146, 155
 Spears, R., 191
 spread, 104, 116
 square of opposition, 101
 Sranan, 3
 De Stadler, L., 95
 statistics, 125, 183, 186–188, 194
 Stoett, F., 96, 101, 110
 strength of negation, 106, 146, 153
 strengthening, 155
 strengthening negation, 13, 14, 17, 18, 90, 94, 145, 146, 161–163
 strict NPI, 16
 strong negative, 28
 strong NPI, 50, 53, 54, 56, 62, 64, 66, 70, 72, 78, 134, 142
 strong PPI, 44, 48, 56, 59, 75, 78, 85, 88
 structural position, 56

- structural relation, 82
 structure, 148, 189, 194
 stylistic difference, 15
 subcategorization, 109, 111–113,
 183–185, 203
 subjacency, 158
 subject, 184, 201
 subject position, 82, 83, 89, 117
 subjunctive, 108
 subordinate clause, 53, 74, 84, 85, 88,
 89, 113, 127, 128
 subset, 37, 48, 51, 61, 130
 sufficient condition, 45
 super-positive polarity item, 6
 superfluous negation, 107
 superlative, 11, 40, 74, 76, 77, 100, 110,
 136, 141, 160
 superordinate clause, 54, 83–85, 110,
 128
 superordinate negation, 66
 superset, 61, 192
 superstrong negative polarity item, 53
 supplementary negative, 149
 Svartvik, J., 145, 188
 De Swart, H., 30, 33
 Swedish, 106, 107
 sympathetic negation, 107
 synonymy, 191
 syntactic category, 152, 167, 173, 184,
 193
 syntactic classification, 7
 syntactic constraints on collocation,
 173
 syntactic factor, 14
 syntactic flexibility, 183
 syntactic property, 50
 syntactic structure, 173, 183
 syntax, 17, 18, 21, 56, 59, 82, 86, 88, 129,
 136, 151, 156, 178, 183, 189,
 194–196, 199, 202, 203
 systematic gap, 9
 Systemic Linguistics, 189

 Tacx, J., 112
 Talmy, L., 99
 tautology, 145
 Taylor, J., 176
 tendency, 12, 15, 18

 Ter Meulen, A., 28, 29, 60, 61
 Thai, 3
 thematic role, 184
 theta criterion, 148
 threat, 23, 80
 Thummel, W., 178
 time, 79
 top element, 61, 62
 topic position, 119
 topicalization, 89
 topicalized MD operator, 83
 Tottie, G., 28, 106
 transformation, 21, 32, 158
 transitional combination, 169, 190
 transitive verb, 31, 58, 88, 193
 transparency, 183
 trigger, 4, 26, 28, 45, 50, 52, 54–56, 63,
 73, 75, 77, 80, 86, 95, 97, 102,
 103, 105, 113, 118, 119, 122,
 126, 127, 130, 133, 135, 142,
 143
 tripartite structure, 73, 76
 truth, 17
 truth conditions, 10, 11, 13, 131
 truth value, 101, 124, 137
 type *e*, 85
 type of negation, 10, 78
 typology of polarity items, 42, 59

 unacceptability, 3
 underlying double negation, 71
 underlying negative, 58, 77, 97, 111, 129
 understatement, 16, 19, 131
 unidiomatic, 175
 union, 61
 universal, 60, 115, 117
 universal negative, 98, 100, 101, 116,
 118
 universal quantifier, 72, 74, 85, 97, 98,
 100, 116
 unmotivated collocation, 175
 upper boundary, 77
 upward monotonic, 30, 35, 61
 upward monotonicity, 29, 30
 usage, 124, 136

 V2, 88, 89
 valency, 183

- Vallduví, E., 97, 115, 118, 120, 121
 variation, 56, 110, 114, 121
 Veltman, F., 81
 verb, 10, 16, 35, 38, 42, 47, 49, 58, 89, 96,
 99, 113, 127, 143, 157, 173,
 175, 178, 179, 184, 193, 197,
 201, 202
 verb cluster, 10
 verbal idiom, 16, 19, 24, 50
 verbal pattern, 201
 Verstraten, L., 169, 185
 Vet, C., 148
 Van den Vondel, J., 108
 Vondeling, R., 36
 Vossius, G., 125
 De Vries, W., 146–148, 161

 Wagenaar, C., 3
 Waher, H., 104, 106
 Wall, R., 28, 29, 60, 61
 warning, 124
 weak negation, 69, 70, 129–131, 137,
 152, 155, 160
 weak negative, 28, 140, 150, 154–156
 weak NPI, 46, 51, 57, 64, 67, 84, 106
 weak PPI, 51, 52, 56–58, 62, 69
 weakening negation, 162
 weaker form of downward
 monotonicity, 77
 West Flemish, 95, 96, 147
 Whorf, B., 177
 Wiche, R., 70, 130
 wide scope, 85
 widening, 79, 152
 Wierzbicka, A., 174, 176
 Williams, E., 8, 9, 178
 WNT, 101, 132, 166
 Wood, M., 169
 word, 8, 9, 58, 59, 62, 122, 128, 129, 167,
 178, 180, 183
 word combination, 8, 9, 188
 Word Grammar, 184
 word order, 88, 148, 154, 175
 word pair, 188
 Van der Wouden, H., 28, 106
 Van der Wouden, T., 12, 18, 23, 28, 33,
 34, 44–46, 48, 51, 55, 64, 66,
 68, 69, 84, 95, 97, 98, 102, 106,
 109, 114, 118, 133, 166, 170,
 179
 yes-no question, 77

 Zanuttini, R., 22, 95, 97, 115, 147, 148
 zero-quantifier, 125
 zeropoint, 60
 Zgusta, L., 166
 Ziff, P., 177
 Zimmer, K., 124
 Van Zonneveld, R., 176
 Zwart, J.-W., 89
 Zwarts, F., 1, 18, 23, 26, 28, 29, 31, 33,
 34, 36–38, 45, 46, 48, 50, 53,
 55, 56, 58, 61, 66, 69, 72, 73,
 88, 95, 97, 98, 102, 109, 127,
 133, 193
 Zwicky, A., 192



Groningen Dissertations in Linguistics (Grodil)

1. Henriëtte de Swart (1991). *Adverbs of quantification: a generalized quantifier approach*.
2. Eric Hoekstra (1991). *Licensing conditions on phrase structure*.
3. Dicky Gilbers (1992). *Phonological networks: a theory of segment representation*.
4. Helen de Hoop (1992). *Case configuration and noun phrase interpretation*.
5. Gosse Bouma (1993). *Nonmonotonicity and categorial unification grammar*.
6. Peter I. Blok (1993). *The interpretation of focus: an epistemic approach to pragmatics*.
7. Roelien Bastiaanse (1993). *Studies in aphasia*.
8. Bert Bos (1993). *Rapid user interface development with the script language Gist*.
9. Wim Kosmeijer (1993). *Barriers and licensing*.
10. Jan-Wouter Zwart (1993). *Dutch syntax: a minimalist approach*.
11. Mark Kas (1993). *Essays on Boolean functions and negative polarity*.
12. Ton van der Wouden (1994). *Negative contexts*.

Grodil, secretariaat Taalwetenschap
Oude Kijk in 't Jatstraat 26
9712 EK Groningen
The Netherlands
e-mail: tenk@let.rug.nl