

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Focus

This book presents a collection of writings on the issue of focus in its broadest sense. While commonly being considered as related to phenomena such as presupposition and anaphora, focusing is much more widespread, and it is this pervasiveness that the current collection addresses. The volume brings together theoretical, psychological, and descriptive approaches to focus, at the same time maintaining the overall interest in how these notions apply to the larger problem of evolving some formal representation of the semantic aspects of linguistic content.

The chapters in this volume have been reworked from a selection of original papers presented at a conference held in 1994 in Schloss Wolfsbrunnen in Germany.

Peter Bosch is the head of IBM's Institute for Logic and Linguistics in Heidelberg and holds the position of privatdozent at the Institute for Semantic Information Processing at the University of Osnabrück. Rob van der Sandt is a senior lecturer in logic and philosophy in the Department of Philosophy at the University of Nijmegen.

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Studies in Natural Language Processing

Douglas E. Appelt, *Planning English Sentences*

Madeleine Bates and Ralph M. Weischedel (eds.), *Challenges in Natural Language Processing*

Steven Bird, *Computational Phonology*

Peter Bosch and Rob van der Sandt, *Focus*

T. Briscoe, Ann Copestake, and Valeria Paiva (eds.), *Inheritance, Defaults and the Lexicon*

Ronald Cole, Joseph Mariani, Hans Uszkoreit, Giovanni Varile, Annie Zaenen, Antonio Zampolli, and Victor Zue (eds.), *Survey of the State of the Art in Human Language Technology*

David R. Dowty, Lauri Karttunen, and Arnold M. Zwicky (eds.), *Natural Language Parsing*

Ralph Grishman, *Computational Linguistics*

Graeme Hirst, *Semantic Interpretation and the Resolution of Ambiguity*

András Kornai, *Extended Finite State Models of Language*

Kathleen R. McKeown, *Text Generation*

Martha Stone Palmer, *Semantic Processing for Finite Domains*

Terry Patten, *Systemic Text Generation as Problem Solving*

Michael Rosner and Roderick Johnson (eds.), *Computational Linguistics and Formal Semantics*

Patrick Saint-Dizier and Evelyn Viegas (eds.), *Computational Lexical Semantics*

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Focus

Linguistic, Cognitive, and Computational Perspectives

Edited by

Peter Bosch and Rob van der Sandt



**CAMBRIDGE
UNIVERSITY PRESS**

Cambridge University Press
978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives
Edited by Peter Bosch and Rob van der Sandt
Frontmatter
[More information](#)

CAMBRIDGE UNIVERSITY PRESS

32 Avenue of the Americas, New York NY 10013-2473, USA

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9780521583053

© Cambridge University Press 1999

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 1999

First paperback edition 2010

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

Focus: Linguistic, Cognitive, and Computational Perspectives / edited by Peter Bosch, Rob van der Sandt.

p. cm.

Rev. papers originally presented at a conference held 1994, Schloss Wolfsbrunnen, Ger.

Includes bibliographical references and index.

ISBN 0-521-58305-5 (hardbound)

1. Focus (Linguistics) 2. Computational linguistics. I. Bosch, Peter.

II. Sandt, Rob A. van der.

P299.F63F63 1998

401.41 - dc21 98-17211

ISBN 978-0-521-58305-3 Hardback

ISBN 978-0-521-16850-2 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Contents

List of Contributors	<i>page</i> ix
Preface	xi
<i>Peter Bosch and Rob van der Sandt</i>	
Part I Surface Realization of Focus	
1 Contrastive Stress, Contrariety, and Focus	3
<i>Kees van Deemter</i>	
2 The Processing of Information Structure	18
<i>Carsten Günther, Claudia Maienborn, Andrea Schopp</i>	
3 On the Limits of Focus Projection in English	43
<i>Carlos Gussenhoven</i>	
4 Informational Autonomy	56
<i>Joachim Jacobs</i>	
5 Subject-Prodrop in Yiddish	82
<i>Ellen F. Prince</i>	
Part II Semantic Interpretation of Focus Phenomena	
6 What Is the Alternative? The Computation of Focus Alternatives from Lexical and Sortal Information	105
<i>Peter I. Blok and Kurt Eberle</i>	
7 The Treatment of Focusing Particles in Underspecified Discourse Representations	121
<i>Johan Bos</i>	
8 Topic	142
<i>Daniel Büring</i>	
9 Focus with Nominal Quantifiers	166
<i>Regine Eckardt</i>	
	vii

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

viii	<i>Contents</i>	
10	Topic, Focus, and Weak Quantifiers <i>Gerhard Jäger</i>	187
11	Focus, Quantification, and Semantics-Pragmatics Issues <i>Barbara H. Partee</i>	213
12	Association with Focus or Association with Presupposition? <i>Mats Rooth</i>	232
	Part III The Function of Focus in Discourse	
13	Discourse and the Focus/Background Distinction <i>Nicholas Asher</i>	247
14	Domain Restriction <i>Bart Geurts and Rob van der Sandt</i>	268
15	On Different Kinds of Focus <i>Jeanette K. Gundel</i>	293
16	Stressed and Unstressed Pronouns: Complementary Preferences <i>Megumi Kameyama</i>	306
17	Discourse Linking and Discourse Subordination <i>Kjell Johan Sæbø</i>	322
18	Position and Meaning: Time Adverbials in Context <i>Henriëtte de Swart</i>	336
	Name Index	363
	Subject Index	366

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Contributors

Nicholas Asher, University of Texas, Austin
Peter I. Blok, University of Amsterdam
Johan Bos, University of the Saarland
Peter Bosch, IBM Germany, Heidelberg
Daniel Buring, University of Cologne
Kees van Deemter, Philips Electronic Labs, Eindhoven
Kurt Eberle, IBM Germany, Heidelberg
Regine Eckardt, University of Konstanz
Bart Geurts, University of Osnabrück
Jeanette K. Gundel, University of Minnesota
Carsten Günther, IBM Germany, Heidelberg
Carlos Gussenhoven, University of Nijmegen
Joachim Jacobs, University of Wuppertal
Gerhard Jäger, University of Pennsylvania
Megumi Kameyama, SRI International, Stanford
Claudia Maienborn, Humboldt University of Berlin
Barbara H. Partee, University of Massachusetts, Amherst
Ellen F. Prince, University of Pennsylvania
Mats Rooth, University of Stuttgart
Kjell Johan Sæbø, University of Oslo
Rob van der Sandt, University of Nijmegen
Andrea Schopp, University of Hamburg
Henriëtte de Swart, University of Utrecht

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)

Preface

Some of the more exciting developments in theoretical linguistics as well as in natural language processing during the past decade have taken place in the study of discourse.

After a period of linguistic investigation that was characterized by the words (though not necessarily the spirit) of Richard Montague's title "English as a Formal Language," that is, a period that followed the paradigm of modeling natural languages after formal languages, the study of discourse started in the late 1970s to emphasize features of natural language that are not typically found in formal languages, without, of course, turning away from the formal methods that had been developed.

The particular excitement of this development derives from the fact that in discourse the "naturalness" of natural language becomes clearly visible. Many of the features of natural language that show up in discourse phenomena are not commonly features of formal languages, nor would it make much sense to incorporate them into formal languages. We are thinking here, first of all, of coherence phenomena. For what distinguishes a discourse from a set of sentences or utterances is crucially the requirement of coherence. And coherence has its semantic as well as, in a broad, Carnapian sense, its syntactic side. Logical and referential coherence, as in presupposition and anaphora, show up the semantic side, and the "grammaticalness" of a sequence of utterances with respect to word order and intonation shows up the syntactic side of coherence. In formal languages there is little reason to have anaphoric relations (except for the somewhat special case of variable binding). Similarly, there is probably no good reason for introducing presupposition into a formal language, unless the purpose is to have the formal language model certain aspects of a natural language. Word order in formal languages is a matter of right or wrong, but not a means of expression; and intonation, if you like, the phonological equivalent of word order in natural language, can have a place only in a spoken language – but not many of these are formal languages.

But what has all this to do with focus? From the point of view of natural language discourse, focusing is a means of structuring a series of utterances and, at the same time, from the point of view of processing discourse, it is a way of partitioning information. From a computational perspective the need for some such device is clear: the complexity and the amount of data relevant in processing discourse are too great for formal and computationally tractable approaches to cope with.

xii *Preface*

And of course, the human mind is no better off in this respect than the computer. There is, therefore, a need to find ways of partitioning the data according to the informational requirements of particular processing steps for the human mind as well as for the machine, that is, for one or the other form of focusing.

Focusing, along this line of thought, is, psychologically or computationally speaking, a matter of managing the working memory of the discourse processor. What is in focus – in this parlance – is what is in the working memory, occasionally also called *focused memory* by psychologists. Accordingly, if you permit continued simplification, a coherent discourse is one that is processed with greater ease because there is not much erratic swapping of the contents of the working memory, but rather a regular movement from *given* (i.e., focus) to *new*.

Not really different in content, but quite opposed in the wording, is the linguistic tradition, in which one thinks of coherence typically as topic continuity and where discourse moves ahead from *given* (i.e., topic) to *new* by adding new foci, often in what syntacticians call focus position and with a special intonation contour. What in the processing world is called “focus” is associated with Givenness and what most linguists call “focus” is associated with Newness.

It is mainly a historical accident, due to the fact that the phenomenon has attracted attention from diverse disciplines, that the term *focus* has come to be used in different and mutually opposed meanings. But the terminological opposition is no reason to think that the subject matter of the various approaches to *focus* should be different. It is rather that this blatant opposition in usage drives to an extreme what we can otherwise perceive as unclarity and incompleteness of definition in this area. Notions like *given* and *new*, *topic* and *focus*, *theme* and *rheme*, and even *subject* and *predicate* all suffer from this problem. At the root of it is not any lack of interest in clear and well-defined terminology, but rather the fact that precision can only be achieved with respect to particular sets of data or domains of application, and different researchers, at least for the time being, seem to have different data in mind.

There is not yet a complete theory that simultaneously handles all these notions in a coherent way, let alone a comprehensive theory that integrates the intonational and syntactic realization, the interpretation, and the discourse functions of focus. There are, however, clear signs that lead us to think that a more integrated approach to the subsets of phenomena treated in existing theories is feasible.

The motivation for bringing together the contributions in this volume lies in our conviction that only an integration of the approaches from various disciplines will do justice to the actual complexity of the phenomena and ultimately lead to an integrated theory that comprises the various subsets of data and outlooks from different disciplines. We therefore brought together researchers from different backgrounds and had them react to, and comment on, each other's work to give the reader a chance to make the links and prepare for the next steps.

We have classified the chapters according to where the actual emphasis of each contribution is into a section on *surface realization of focus*, on questions

of *semantic interpretation of focus phenomena*, and on the *function of focus in discourse*. This rough division cannot, of course, do justice to the interrelations that hold among the chapters. Nearly all chapters in this volume show that the problems are too closely interconnected to allow for clean surgery. Just as several contributions in the first section relate intonational issues directly to semantics and discourse, most of those on semantics show that a proper semantic analysis cannot be obtained unless we take a closer look at its syntactic realization and the structure of the surrounding discourse. The following paragraphs, far from being a comprehensive survey, are intended to give the reader some guidance as to where some of the more interesting connections are found.

Surveys and comparisons of various approaches to focus are found in the contributions by Gundel and by Partee. *Gundel's* chapter is the one we should recommend as the first to be read in this collection by anybody who either is new to focus research or has so far only been concerned with a narrow section of this subject matter. Gundel gives an overview of various notions of focus in linguistics, AI, and psychology and shows how they are interrelated. She distinguishes focus in the psychological sense of center of attention from semantic focus – in the sense of new information – and contrastive focus, which is closely related to linguistic prominence. While semantic focus is truth-conditionally relevant, it does not necessarily bring its object into the focus of attention; contrastive focus, on the other hand, is not truth-conditionally relevant, but always moves its objects into psychological focus.

Partee's contribution contains a comparison of recent work in formal semantics and the work done in the very different tradition of the Prague school. She also gives a summary of her earlier work on the way focus affects the interpretation of quantificational structures and thus brings up issues and sets the stage for some of the chapters (notably Eckardt's and Büring's) found in the second and third sections. Partee's is the only chapter in this volume that gives a central place to the Prague school approach to focus. Partee, having worked with Eva Hajičová and Petr Sgall for extended periods over several years, writes, as it were, her account of how to make sense of the Prague theory from the point of view of her own background in formal syntax and semantics and looks at ways of coming to a full understanding of the Prague work in the sense of incorporating its insights into formal approaches. The discussion shows that if we take the latter work seriously, focus phenomena force us to rethink the way the relations among syntax, semantics, and pragmatics are traditionally conceived of.

Intonational and syntactic issues and their connection with discourse are the main theme of Part I of this book. *Gussenhoven* discusses the phonological realization of focus and contrasts the major views on focus projection in English. Focus projection, or the ability of a pitch accent to mark a larger constituent than the word it is placed on as focused, has been given different treatments in the recent literature. Gussenhoven reviews the major points in the recent history of the controversy and argues in his chapter, on the basis of so-called focus ambiguity

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)xiv *Preface*

as well as a range of further empirical grounds, that focus projection is restricted to a sequence of an argument and its predicate. He shows that this view of focus projection not only provides a better empirical account than its competitors, but is also conceptually simpler.

The contributions by Jacobs and van Deemter interrelate intonation and semantics. *Jacobs's* chapter investigates what he calls the informational autonomy of constituents. This notion is related to the way a constituent's interpretation is constrained by the meaning of constituents with which it combines. Jacobs demonstrates correlations of informational autonomy with sentence accent (and also with word accent in compound words) and with feature projection in syntax and works out the details of semantic processing of informational autonomy as well as the syntactic conditions that constrain informational autonomy. He shows that existing syntactic theories cannot account for the full range of syntactic and stress data as well as the observed semantic phenomena. *Van Deemter* draws attention to a number of cases of contrasting accents that elude treatments by theories of Given and New as well as theories that are based on the notion of syntactic or semantic parallelism. He develops an alternative that is based on the logical notion of contrariety. The chapter contains a detailed discussion of the notions of novelty and contrastiveness as the source of accents and gives a formalization of the notion of contrast based on the logical notion of contrariety.

The chapters by Kameyama and by Prince link intonation and syntax, respectively, to the requirements of the surrounding discourse. The theoretical background of both chapters is Centering Theory, which brings together previous work on discourse focusing and the modeling of attentional state in discourse. *Kameyama* offers a perspective on the interpretation of stressed pronouns that is well in line with the philosophy of Rooth's focus theory: that is, she views the semantics of focused constituents in the first place as a matter of contrast between a set of background options and the interpretation of the actually focused constituent. For focused, and hence stressed, pronouns this means that their reference options come, as it were, from the same pool as those for unstressed anaphoric pronouns, but that the pool is divided into the two complementary sets, one of which interprets focused pronouns and the other anaphoric pronouns. For practical purposes of pronoun resolution this means that once we have an algorithm for anaphoric pronouns, it is relatively easy to build an extension for the resolution of focused pronouns on top, as it were. *Kameyama* makes a detailed proposal for how this would work.

Prince's chapter on subject prodrop is probably the most strongly empirically oriented chapter in our collection. Subject prodrop has been studied fairly widely from both syntactic and discourse perspectives and for quite a variety of languages. The common assumption of virtually all these studies was that subject prodrop is a unitary phenomenon. *Prince* shows in her corpus-based study that this is certainly not true of Yiddish, where subject prodrop had not been studied. A highly plausible speculation one might link to *Prince's* chapter is that similar empirical work on

Italian, Spanish, and other prodrop languages may well show that also there the phenomenon may be less uniform than has hitherto been assumed.

Two central themes pervade Parts II and III. One of these themes is the relation between the topic/focus division and the presupposition/assertion dichotomy. Another is the way focus and presupposition affect the interpretation of quantified structures.

As for the first point it has often been remarked that there are nontrivial relations between the topic/focus dichotomy on the one hand and the presupposition/assertion dichotomy on the other. Both distinctions and their interrelations have been discussed since the 1950s, notably by Strawson, by the Prague school, and by a variety of authors after them. Take, for instance, the position of Jackendoff, who identifies focus with asserted information and uses the term *presupposition* for what is more commonly referred to as focal background. It has equally often been observed that in spite of their resemblances these dichotomies cannot be reduced to each other. This historical situation is reflected in various contributions that explore the interrelations between these pairs from current views on dynamic interpretation and information structure.

Rooth addresses the issue of whether the semantics of intonational focus can be strengthened so as to yield existential presupposition in the framework of alternative semantics. This would associate with focus constructions the same presupposition as is generally assumed for cleft sentences. *Rooth* points out that such an analysis can easily be accomplished in the framework of alternative semantics by requiring that at least one member of the set of alternatives derived from the focal structure is true. On the basis of a careful comparison between focus and cleft constructions in counterfactual environments he reaches a negative conclusion. It is argued that an existential presupposition semantics for focus is at odds with the flexibility in the licensing of focus we find in counterfactual environments.

Focus particles have attracted considerable attention from researchers in both focus and presupposition theory. Focus affects both the meaning and the presuppositions of sentences in which such particles occur. This phenomenon is analyzed in detail in the contribution by *Bos*, who presents a description language for underspecified discourse representations and shows how ambiguities arising from focus particles can be treated. His account incorporates and integrates ideas from *Rooth's* alternative semantics and from the presupposition-as-anaphora theory. After a detailed presentation of the formalism *Bos* applies his language to a small fragment of English and shows how scope ambiguities and focus adverbs can be treated in his framework.

A central issue in the recent literature on focus and presupposition concerns the interaction of focus and quantification, and quite a lot of this work centers on the observation made by a variety of authors that focus and presupposition affect the interpretation of quantificational domains. Quantifiers depend for their interpretation on context, and so does the interpretation of focus and presupposition. It is generally agreed that the domain of quantification is severely underdetermined by

xvi *Preface*

information provided by the restrictor; it is also uncontroversial that topicality and presupposition are among the crucial factors involved in determining the actual domain of quantification. There is no consensus, however, on how this determination is actually achieved.

As discussed in a series of papers by Partee and summarized in her contribution to this volume, the focus/background division and presuppositions triggered in the nuclear scope of a quantifier may influence the interpretation of the quantifier's domain. *Eckardt's* chapter focuses on cases where nominal quantifiers seem to associate with focus just as adverbial quantifiers do. The generalization is that backgrounded or presuppositional material in the quantifier's nuclear scope tends to be interpreted as if it originated in the restrictor while focused material remains part of its nuclear scope. Again there is a general consensus about the reality of this phenomenon, but there is no unanimity as to whether syntactic, semantic, or pragmatic processes are responsible for it. A tendency found in a number of chapters is that focus and presupposition are not directly responsible for the interpretation of quantificational domains but affect it in a more indirect way.

The issue how information structure affects the interpretation of quantifiers is discussed from various points of view in the contributions of Büring, Eckardt, Geurts and van der Sandt, Jäger, and Sæbø. Eckardt and Büring analyze the phenomenon building on Rooth's alternative semantics. Jäger implements his account in an extension of dynamic predicate logic, and Sæbø whereas Geurts and van der Sandt discuss it from the point of view of the presupposition-as-anaphora theory. The discussions show the intricate relationship among anaphoric processes, topicality, and presupposition.

Eckardt discusses cases where nominal quantifiers behave in the same way as adverbial quantifiers when focus is involved and argues that the interpretation of the arguments of a quantifier is not syntax but focus driven. She shows furthermore that the semantics of focus will do only part of the job. A further restriction of the context of interpretation is required. In the appendix to her paper she gives a formal account of the data discussed.

The analysis of focus as given in alternative semantics is extended by Büring to account for sentence topics. Büring then applies the resulting theory to the analysis of nominal quantifiers. He claims, just as Eckardt does, that the semantic effects observed in the literature don't result from the syntax. These effects can instead be attributed to the workings of the topic/focus/background structure. It is argued that partitive, proportional, and focus-affected readings can be derived by the topic/focus semantics given in conjunction with a Westerståhl-type use of domain variables.

Jäger's analysis of focus and quantification adopts a dynamic semantics in the Groenendijk/Stokhof/Veltman style. Like Büring, Jäger argues against postulating a syntactic or semantic ambiguity in weak quantifiers. The difference between the existential or weak reading and the presuppositional or strong one should instead be attributed to the information structure of the entire sentence. The strong

reading is limited to environments where the quantifier is a topic. Jäger argues that the familiar distinction between established and new discourse referents is to account for the anaphoric reading of weak quantifiers. Building on this analysis he distinguishes between two types of discourse entities, which differ in terms of prominence or some related notion. On Jäger's account indefinites that are part of the comment introduce new discourse markers. Indefinite topics on the other hand merely activate old discourse referents. A formal account of the resulting theory is given in an appendix.

The contributions of Sæbø as well as Geurts and van der Sandt discuss quantification and domain restriction from the point of view of the presupposition-as-anaphora theory. Sæbø's chapter concentrates on the type of domain restriction that comes about as a result of anaphoric take-up of given information. His account of discourse linking and discourse subordination is given as a presuppositional extension of Kamp and Reyle's proposal to deal with dependent plural pronouns. It is argued that a generalization of Kamp and Reyle's proposal makes it applicable to a much wider range of data, while giving a more principled account of discourse subordination.

Geurts and van der Sandt argue that given a few independently motivated assumptions concerning the representation of quantifiers, and given a Jackendoff-type account of the interrelation between focus and presupposition, the presupposition-as-anaphora theory accounts for the three major ways in which quantificational domains may be restricted. It is shown that they may be restricted by anaphoric take-up of contextual information, by accommodation of presupposed material, and by means of focusing. They also respond to some criticisms that were raised with respect to their notion of (intermediate or restrictor) accommodation.

Both de Swart and Asher integrate their account in a wider framework of discourse and discourse structure. Their analyses build on earlier work on discourse structure by Asher and Lascarides and Asher. De Swart develops an analysis of phrasal and clausal time adverbials in a framework that, in contrast to the Reichenbachian view, does not make use of reference times. The interpretation of such adverbials is taken to reside in their presuppositional character. Inference rules about the presuppositional properties and the topic/focus structure determine the order in which they are processed. Preposed time adverbials are topical and thus set the stage for the interpretation of the main clause and the background for focus. Postposed time adverbials may or may not be in focus and thus create ambiguities. The analysis is extended to quantificational environments and to cases where temporal adverbs occur with focus adverbs like *only* or *even*.

Asher aims to integrate the semantic treatments of focus as found in work by, for example, Rooth and Krifka with the more informal pragmatic and discourse-related accounts found in the work of, for instance, Hopper and Givon. The basis of this analysis is the theory of discourse structure and discourse relations he developed in earlier work. His chapter focuses on a phenomenon that has proved to be notoriously difficult to incorporate in a purely semantic account, that is,

Cambridge University Press

978-0-521-58305-3 - Focus: Linguistic, Cognitive, and Computational Perspectives

Edited by Peter Bosch and Rob van der Sandt

Frontmatter

[More information](#)xviii *Preface*

VP-ellipsis. Asher's central conclusion is that there is a nontrivial relation between discourse focus as found in the discourse-related analyses and sentential focus (as analyzed in, e.g., alternative semantics). He explores their interrelations in detail, thereby producing a unified theory that integrates the semantics in his theory of discourse structure.

Computational linguistics and machine translation enter the stage in the contributions by Günther, Maienborn, and Schopp and by Blok and Eberle. *Günther, Maienborn, and Schopp* report on an implemented system of speech production from their SYNPHONICS project. SYNPHONICS offers an integrated view of information structure in speech production from a cognitive perspective. This includes all processes and modules from the computation of information structure of utterances in discourse context to their phonetic realization. The major theoretical point of the chapter is that it shows how the processing requirement of incrementality can be reconciled with structural requirements. *Blok and Eberle* tackle the problem of how to make practical use of Rooth's notion of alternative semantics: given that the interpretation of focused constituents depends on the set of interpretation alternatives available, how do we compute this set of alternatives? Blok and Eberle look at this problem in the context of machine translation, where the alternatives are not only determined semantically or conceptually, but also crucially by the lexical material available in source and target language. Their proposal shows a piece of integrated processing of linguistic and nonlinguistic knowledge resources.

Peter Bosch
Rob van der Sandt