This book introduces Chinese language-processing issues and techniques to readers who already have a basic background in natural language processing (NLP). Since the major difference between Chinese and Western languages is at the word level, the book primarily focuses on Chinese morphological analysis and introduces the concept, structure, and interword semantics of Chinese words. The following topics are covered: a general introduction to Chinese NLP; Chinese characters, morphemes, and words and the characteristics of Chinese words that have to be considered in NLP applications; Chinese word segmentation; unknown word detection; word meaning and Chinese linguistic resources; interword semantics based on word collocation and NLP techniques for collocation extraction. Table of Contents: Introduction / Words in Chinese / Challenges in Chinese Morphological Processing / Chinese Word Segmentation / Unknown Word Identification / Word Meaning / Chinese Collocations / Automatic Chinese Collocation Extraction / Appendix / References / Author

Biographies

Meaning is a fundamental concept in Natural Language Processing (NLP), in the tasks of both Natural Language Understanding (NLU) and Natural Language Generation (NLG). This is because the aims of these fields are to build systems that understand what people mean when they speak or write, and that can produce linguistic strings that successfully express to people the intended content. In order for NLP to scale beyond partial, task-specific solutions, researchers in these fields must be informed by what is known about how humans use language to express and understand communicative intents. The purpose of this book is to present a selection of useful information about semantics and pragmatics, as understood in linguistics, in a way that’s accessible to and useful for NLP practitioners with minimal (or even no) prior training in linguistics. How can computers distinguish the coherent from the unintelligible, recognize new information in a sentence, or draw inferences from a natural language passage? Computational semantics is an exciting new field that seeks answers to these questions, and this volume is the first textbook wholly devoted to this growing subdiscipline. The book explains the underlying theoretical issues and fundamental techniques for computing semantic representations for fragments of natural language. This volume will be
an essential text for computer scientists, linguists, and anyone interested in the development of computational semantics. A survey of computational methods for understanding, generating, and manipulating human language, which offers a synthesis of classical representations and algorithms with contemporary machine learning techniques. This textbook provides a technical perspective on natural language processing—methods for building computer software that understands, generates, and manipulates human language. It emphasizes contemporary data-driven approaches, focusing on techniques from supervised and unsupervised machine learning. The first section establishes a foundation in machine learning by building a set of tools that will be used throughout the book and applying them to word-based textual analysis. The second section introduces structured representations of language, including sequences, trees, and graphs. The third section explores different approaches to the representation and analysis of linguistic meaning, ranging from formal logic to neural word embeddings. The final section offers chapter-length treatments of three transformative applications of natural language processing: information extraction, machine translation, and text generation. End-of-chapter exercises include both paper-and-pencil analysis and software implementation. The text synthesizes and distills a broad and diverse research literature, linking contemporary machine learning techniques with the field's linguistic and computational foundations. It is suitable for use in advanced undergraduate and graduate-level courses and as a reference for software engineers and data scientists. Readers should have a background in computer programming and college-level mathematics. After mastering the material presented, students will have the technical skill to build and analyze novel natural language processing systems and to understand the latest research in the field. This book offers a highly accessible introduction to natural language processing, the field that supports a variety of language technologies, from predictive text and email filtering to automatic summarization and translation. With it, you'll learn how to write Python programs that work with large collections of unstructured text. You'll access richly annotated datasets using a comprehensive range of linguistic data structures, and you'll understand the main algorithms for analyzing the content and structure of written communication. Packed with examples and exercises, Natural Language Processing with Python will help you: Extract information from unstructured text, either to guess the topic or identify "named entities" Analyze linguistic structure in text, including parsing and semantic analysis Access popular linguistic databases, including WordNet and treebanks Integrate techniques drawn from fields as diverse as linguistics and artificial intelligence This book will help you gain practical skills in natural language processing using the Python programming language and the Natural Language Toolkit (NLTK) open source library. If you're interested in developing web applications, analyzing multilingual news sources, or documenting endangered languages -- or if you're simply curious to have a programmer's perspective on how human language works -- you'll find Natural Language Processing with Python both fascinating and immensely useful. Bringing together an international group of researchers, this innovative volume presents the state-of-the-art in research into countability. Friederike Moltmann presents an original approach to philosophical issues to do with abstract objects. She focuses on natural language, and finds that reference to abstract objects such as properties, numbers, and propositions is much more restricted than is generally thought, and she offers a substantially new ontological picture. In the spring of 1978, one of the authors of this book was sitting in on a course in logic for linguists given by the other author. In attempting to present some of Montague's insights in an elementary way (hopefully avoiding the notation which many find difficult at first), the authors began discussions aimed towards the construction of a simple model-theoretical semantic apparatus which could be applied directly to a small English-like language and used to illustrate the methods of formal logical interpretation. In these discussions two points impressed themselves on us. First, our task could be simplified by using boolean algebras and boolean homomorphisms in the
models; and second, the boolean approach we were developing had much more widespread relevance to the logical structure of English than we first thought. During the summer and fall of 1978 we continued work on the system, proving the more fundamental theorems (including what we have come to call the Justification Theorem) and outlining the way in which an intensional interpretation scheme could be developed which made use of the boolean approach (which was originally strictly extensional). We presented our findings in a monograph (Keenan and Faltz, 1978) which the UCLA Linguistics Department kindly published as part of their series called Occasional Papers in Linguistics; one of the authors also presented the system at a colloquium held at the Winter Meeting of the Linguistic Society of America in December 1978.
The study of meaning in language has developed dramatically over the last fifty years. Semantics is distinctive as it not only presents a general introduction to the topic, including the most recent developments, but it also provides a unique perspective for addressing current issues. It opens by introducing readers to the study of logic (natural deduction) as the background against which developments have taken place. This demonstrates the link between semantics and the study of reasoning and how this view can provide new solutions to the puzzles that have plagued the approaches presented in other textbooks. The major subject areas of semantics are discussed, including quantification, anaphora and discourse, tense and aspect, ellipsis and context, and word meaning. The book also presents state-of-the-art research in topics at the forefront of semantics.
Introducing some of the foundational concepts, principles and techniques in the formal semantics of natural language, Elements of Formal Semantics outlines the mathematical principles that underlie linguistic meaning. Making use of a wide range of concrete English examples, the book presents the most useful tools and concepts of formal semantics in an accessible style and includes a variety of practical exercises so that readers can learn to utilise these tools effectively. For readers with an elementary background in set theory and linguistics or with an interest in mathematical modelling, this fascinating study is an ideal introduction to natural language semantics. Designed as a quick yet thorough introduction to one of the most vibrant areas of research in modern linguistics today this volume reveals the beauty and elegance of the mathematical study of meaning.
This book introduces core natural language processing (NLP) technologies to non-experts in an easily accessible way, as a series of building blocks that lead the user to understand key technologies, why they are required, and how to integrate them into Semantic Web applications. Natural language processing and Semantic Web technologies have different, but complementary roles in data management. Combining these two technologies enables structured and unstructured data to merge seamlessly. Semantic Web technologies aim to convert unstructured data to meaningful representations, which benefit enormously from the use of NLP technologies, thereby enabling applications such as connecting text to Linked Open Data, connecting texts to each other, semantic searching, information visualization, and modeling of user behavior in online networks. The first half of this book describes the basic NLP processing tools: tokenization, part-of-speech tagging, and morphological analysis, in addition to the main tools required for an information extraction system (named entity recognition and relation extraction) which build on these components. The second half of the book explains how Semantic Web and NLP technologies can enhance each other, for example via semantic annotation, ontology linking, and population. These chapters also discuss sentiment analysis, a key component in making sense of textual data, and the difficulties of performing NLP on social media, as well as some proposed solutions. The book finishes by investigating some applications of these tools, focusing on semantic search and visualization, modeling user behavior, and an outlook on the future. This book introduces the semantic aspects of natural language processing and its applications. Topics covered include: measuring word meaning similarity, multi-lingual querying, and parametric theory, named entity recognition, semantics, query language, and the nature of language. The
This book is about semantics and logic. More specifically, it is about the semantics and logic of natural language; and, even more specifically than that, it is about a particular way of dealing with those subjects, known as Discourse Representation Theory, or DRT. DRT is an approach towards natural language semantics which, some thirteen years ago, arose out of attempts to deal with two distinct problems. The first of those was the semantic puzzle that had been brought to contemporary attention by Geach's notorious "donkey sentences" - sentences like If Pedro owns some donkey, he beats it, in which the anaphoric connection we perceive between the indefinite noun phrase some donkey and the pronoun it may seem to conflict with the existential meaning of the word some. The second problem had to do with tense and aspect. Some languages, for instance French and the other Romance languages, have two morphologically distinct past tenses, a simple past (the French Passe Simple) and a continuous past (the French Imparfait). To articulate precisely what the difference between these tenses is has turned out to be surprisingly difficult.

An introduction to natural language semantics that offers an overview of the empirical domain and an explanation of the mathematical concepts that underpin the discipline. This textbook offers a comprehensive introduction to the fundamentals of those approaches to natural language semantics that use the insights of logic. Many other texts on the subject focus on presenting a particular theory of natural language semantics. This text instead offers an overview of the empirical domain (drawn largely from standard descriptive grammars of English) as well as the mathematical tools that are applied to it. Readers are shown where the concepts of logic apply, where they fail to apply, and where they might apply, if suitably adjusted. The presentation of logic is completely self-contained, with concepts of logic used in the book presented in all the necessary detail. This includes propositional logic, first order predicate logic, generalized quantifier theory, and the Lambek and Lambda calculi. The chapters on logic are paired with chapters on English grammar. For example, the chapter on propositional logic is paired with a chapter on the grammar of coordination and subordination of English clauses; the chapter on predicate logic is paired with a chapter on the grammar of simple, independent English clauses; and so on. The book includes more than five hundred exercises, not only for the mathematical concepts introduced, but also for their application to the analysis of natural language. The latter exercises include some aimed at helping the reader to understand how to formulate and test hypotheses.

Presents, in simple and clear terms, the way in which humans express their ideas by talking. Natural Language is not only the most important means of communication between human beings, it is also used over historical periods for the preservation of cultural achievements and their transmission from one generation to the other. During the last few decades, the flood of digitalized information has been growing tremendously. This tendency will continue with the globalization of information societies and with the growing importance of national and international computer networks. This is one reason why the theoretical understanding and the automated treatment of communication processes based on natural language have such a decisive social and economic impact. In this context, the semantic representation of knowledge originally formulated in natural language plays a central part, because it connects all components of natural language processing systems, be they the automatic understanding of natural language (analysis), the rational reasoning over knowledge bases, or the generation of natural language expressions from formal representations. This book presents a method for the semantic representation of natural language expressions (texts, sentences, phrases, etc.) which can be used as a universal knowledge representation paradigm in the human sciences, like linguistics, cognitive psychology, or philosophy of language, as well as in computational linguistics and in artificial intelligence. It is also an attempt to close the gap between these disciplines, which to a large extent are still working separately. This self-contained introduction to natural language semantics addresses the major
theoretical questions in the field. This self-contained introduction to natural language semantics addresses the major theoretical questions in the field. The authors introduce the systematic study of linguistic meaning through a sequence of formal tools and their linguistic applications. Starting with propositional connectives and truth conditions, the book moves to quantification and binding, intensionality and tense, and so on. To set their approach in a broader perspective, the authors also explore the interaction of meaning with context and use (the semantics-pragmatics interface) and address some of the foundational questions, especially in connection with cognition in general. They also introduce a few of the most accessible and interesting ideas from recent research to give the reader a bit of the flavor of current work in semantics. The organization of this new edition is modular; after the introductory chapters, the remaining material can be covered in flexible order. The book presupposes no background in formal logic (an appendix introduces the basic notions of set theory) and only a minimal acquaintance with linguistics. This edition includes a substantial amount of completely new material and has been not only updated but redesigned throughout to enhance its user-friendliness. This open access book provides an overview of the recent advances in representation learning theory, algorithms and applications for natural language processing (NLP). It is divided into three parts. Part I presents the representation learning techniques for multiple language entries, including words, phrases, sentences and documents. Part II then introduces the representation techniques for those objects that are closely related to NLP, including entity-based world knowledge, sememe-based linguistic knowledge, networks, and cross-modal entries. Lastly, Part III provides open resource tools for representation learning techniques, and discusses the remaining challenges and future research directions. The theories and algorithms of representation learning presented can also benefit other related domains such as machine learning, social network analysis, semantic Web, information retrieval, data mining and computational biology. This book is intended for advanced undergraduate and graduate students, post-doctoral fellows, researchers, lecturers, and industrial engineers, as well as anyone interested in representation learning and natural language processing. Preface This book is about semantics and logic. More specifically, it is about the semantics and logic of natural language; and, even more specifically than that, it is about a particular way of dealing with those subjects, known as Discourse Representation Theory, or DRT. DRT is an approach towards natural language semantics which, some thirteen years ago, arose out of attempts to deal with two distinct problems. The first of those was the semantic puzzle that had been brought to contemporary attention by Geach's notorious "donkey sentences" - sentences like If Pedro owns some donkey, he beats it, in which the anaphoric connection we perceive between the indefinite noun phrase some donkey and the pronoun it may seem to conflict with the existential meaning of the word some. The second problem had to do with tense and aspect. Some languages, for instance French and the other Romance languages, have two morphologically distinct past tenses, a simple past (the French Passe Simple) and a continuous past (the French Imparfait). To articulate precisely what the difference between these tenses is has turned out to be surprisingly difficult. This book develops a theory of enriched meanings for natural language interpretation that uses the concept of monads and related ideas from category theory. The volume is interdisciplinary in nature, and will appeal to graduate students and researchers from a range of disciplines interested in natural language understanding and representation. This introduction examines the semantics of natural languages. Embeddings have undoubtedly been one of the most influential research areas in Natural Language Processing (NLP). Encoding information into a low-dimensional vector representation, which is easily integrable in modern machine learning models, has played a central role in the development of NLP. Embedding techniques initially focused on words, but the attention soon started to shift to other forms: from graph structures, such as knowledge bases, to other types of textual content, such as sentences and
documents. This book provides a high-level synthesis of the main embedding techniques in NLP, in the broad sense. The book starts by explaining conventional word vector space models and word embeddings (e.g., Word2Vec and GloVe) and then moves to other types of embeddings, such as word sense, sentence and document, and graph embeddings. The book also provides an overview of recent developments in contextualized representations (e.g., ELMo and BERT) and explains their potential in NLP. Throughout the book, the reader can find both essential information for understanding a certain topic from scratch and a broad overview of the most successful techniques developed in the literature. Create your own natural language training corpus for machine learning. Whether you're working with English, Chinese, or any other natural language, this hands-on book guides you through a proven annotation development cycle—the process of adding metadata to your training corpus to help ML algorithms work more efficiently. You don’t need any programming or linguistics experience to get started. Using detailed examples at every step, you’ll learn how the MATTER Annotation Development Process helps you Model, Annotate, Train, Test, Evaluate, and Revise your training corpus. You also get a complete walkthrough of a real-world annotation project. Define a clear annotation goal before collecting your dataset (corpus). Learn tools for analyzing the linguistic content of your corpus. Build a model and specification for your annotation project. Examine the different annotation formats, from basic XML to the Linguistic Annotation Framework. Create a gold standard corpus that can be used to train and test ML algorithms. Select the ML algorithms that will process your annotated data. Evaluate the test results and revise your annotation task. Learn how to use lightweight software for annotating texts and adjudicating the annotations. This book is a perfect companion to O’Reilly’s Natural Language Processing with Python. This book is an advanced introduction to semantics that presents this crucial component of human language through the lens of the 'Meaning-Text' theory - an approach that treats linguistic knowledge as a huge inventory of correspondences between thought and speech. Formally, semantics is viewed as an organized set of rules that connect a representation of meaning (Semantic Representation) to a representation of the sentence (Deep-Syntactic Representation). The approach is particularly interesting for computer assisted language learning, natural language processing and computational lexicography, as our linguistic rules easily lend themselves to formalization and computer applications. The model combines abstract theoretical constructions with numerous linguistic descriptions, as well as multiple practice exercises that provide a solid hands-on approach to learning how to describe natural language semantics. Many NLP tasks have at their core a subtask of extracting the dependencies who did what to whom from natural language sentences. This task can be understood as the inverse of the problem solved in different ways by diverse human languages, namely, how to indicate the relationship between different parts of a sentence. Understanding how languages solve the problem can be extremely useful in both feature design and error analysis in the application of machine learning to NLP. Likewise, understanding cross-linguistic variation can be important for the design of MT systems and other multilingual applications. The purpose of this book is to present in a succinct and accessible fashion information about the morphological and syntactic structure of human languages that can be useful in creating more linguistically sophisticated, more language-independent, and thus more successful NLP systems. Table of Contents: Acknowledgments / Introduction/motivation / Morphology: Introduction / Morphophonology / Morphosyntax / Syntax: Introduction / Parts of speech / Heads, arguments, and adjuncts / Argument types and grammatical functions / Mismatches between syntactic position and semantic roles / Resources / Bibliography / Author's Biography / General Index / Index of Languages"
or write, and that can produce linguistic strings that successfully express to people the intended content. In order for NLP to scale beyond partial, task-specific solutions, researchers in these fields must be informed by what is known about how humans use language to express and understand communicative intents. The purpose of this book is to present a selection of useful information about semantics and pragmatics, as understood in linguistics, in a way that's accessible to and useful for NLP practitioners with minimal (or even no) prior training in linguistics. From a leading authority in artificial intelligence, this book delivers a synthesis of the major modern techniques and the most current research in natural language processing. The approach is unique in its coverage of semantic interpretation and discourse alongside the foundational material in syntactic processing. This undergraduate textbook introduces essential machine learning concepts in NLP in a unified and gentle mathematical framework. Many NLP tasks have at their core a subtask of extracting the dependencies—who did what to whom—from natural language sentences. This task can be understood as the inverse of the problem solved in different ways by diverse human languages, namely, how to indicate the relationship between different parts of a sentence. Understanding how languages solve the problem can be extremely useful in both feature design and error analysis in the application of machine learning to NLP. Likewise, understanding cross-linguistic variation can be important for the design of MT systems and other multilingual applications. The purpose of this book is to present in a succinct and accessible fashion information about the morphological and syntactic structure of human languages that can be useful in creating more linguistically sophisticated, more language-independent, and thus more successful NLP systems. Table of Contents: Acknowledgments / Introduction/motivation / Morphology: Introduction / Morphophonology / Morphosyntax / Syntax: Introduction / Parts of speech / Heads, arguments, and adjuncts / Argument types and grammatical functions / Mismatches between syntactic position and semantic roles / Resources / Bibliography / Author's Biography / General Index / Index of Languages This book provides system developers and researchers in natural language processing and computational linguistics with the necessary background information about the Arabic language. The goal is to introduce Arabic linguistic phenomena and review the state-of-the-art in Arabic processing. The book discusses Arabic script, phonology, orthography, morphology, syntax and semantics, with a final chapter on machine translation issues. The chapter sizes correspond more or less to what is linguistically distinctive about Arabic, with morphology getting the lion's share, followed by Arabic script. No previous knowledge of Arabic is needed. This book is designed for computer scientists and linguists alike. The focus of the book is on Modern Standard Arabic; however, notes on practical issues related to Arabic dialects and languages written in the Arabic script are presented in different chapters. Table of Contents: What is "Arabic"? / Arabic Script / Arabic Phonology and Orthography / Arabic Morphology / Computational Morphology Tasks / Arabic Syntax / A Note on Arabic Semantics / A Note on Arabic and Machine Translation Natural Language Semantics discusses fundamental concepts for linguistic semantics. This book combines theoretical explanations of several methods of inquiry with detailed semantic analysis and emphasises the philosophy that semantics is about meaning in human languages and that linguistic meaning is cognitively and functionally motivated. This book introduces a theory, Naive Semantics (NS), a theory of the knowledge underlying natural language understanding. The basic assumption of NS is that knowing what a word means is not very different from knowing anything else, so that there is no difference in form of cognitive representation between lexical semantics and encyclopedic knowledge. NS represents word meanings as commonsense knowledge, and builds no special representation language (other than elements of first-order logic). The idea of teaching computers common sense knowledge originated with McCarthy and Hayes (1969), and has been extended by a number of researchers (Hobbs and Moore, 1985, Lenat et al, 1986). Commonsense knowledge is a set of naive beliefs, at times vague and inaccurate,
about the way the world is structured. Traditionally, word meanings have been viewed as
criterial, as giving truth conditions for membership in the classes words name. The theory of
NS, in identifying word meanings with commonsense knowledge, sees word meanings as
typical descriptions of classes of objects, rather than as criterial descriptions. Therefore,
reasoning with NS representations is probabilistic rather than monotonic. This book is divided
into two parts. Part I elaborates the theory of Naive Semantics. Chapter 1 illustrates and
justifies the theory. Chapter 2 details the representation of nouns in the theory, and Chapter 4
the verbs, originally published as "Commonsense Reasoning with Verbs" (McDowell and
Dahlgren, 1987). Chapter 3 describes kind types, which are naive constraints on noun
representations. Real-world Natural Language Processing shows you how to build the practical
NLP applications that are transforming the way humans and computers work together. In Real-
world Natural Language Processing you will learn how to: Design, develop, and deploy useful
NLP applications Create named entity taggers Build machine translation systems Construct
language generation systems and chatbots Use advanced NLP concepts such as attention and
transfer learning Real-world Natural Language Processing teaches you how to create practical
NLP applications without getting bogged down in complex language theory and the
mathematics of deep learning. In this engaging book, you’ll explore the core tools and
techniques required to build a huge range of powerful NLP apps, including chatbots, language
detectors, and text classifiers. Purchase of the print book includes a free eBook in PDF, Kindle,
and ePUB formats from Manning Publications. About the technology Training computers to
interpret and generate speech and text is a monumental challenge, and the payoff for reducing
labor and improving human/computer interaction is huge! The field of Natural Language
Processing (NLP) is advancing rapidly, with countless new tools and practices. This unique
book offers an innovative collection of NLP techniques with applications in machine translation,
voice assistants, text generation, and more. About the book Real-world Natural Language
Processing shows you how to build the practical NLP applications that are transforming the
way humans and computers work together. Guided by clear explanations of each core NLP
topic, you’ll create many interesting applications including a sentiment analyzer and a chatbot.
Along the way, you’ll use Python and open source libraries like AllenNLP and HuggingFace
Transformers to speed up your development process. What’s inside Design, develop, and
deploy useful NLP applications Create named entity taggers Build machine translation systems
Construct language generation systems and chatbots About the reader For Python
programmers. No prior machine learning knowledge assumed. About the author Masato
Hagiwara received his computer science PhD from Nagoya University in 2009. He has interned
at Google and Microsoft Research, and worked at Duolingo as a Senior Machine Learning
Engineer. He now runs his own research and consulting company. Table of Contents PART 1
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networks 8 Attention and Transformer 9 Transfer learning with pretrained language models
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Deploying and serving NLP applicationsComputational semantics is the art and science of
computing meaning in natural language. The meaning of a sentence is derived from the
meanings of the individual words in it, and this process can be made so precise that it can be
implemented on a computer. Designed for students of linguistics, computer science, logic and
philosophy, this comprehensive text shows how to compute meaning using the functional
programming language Haskell. It deals with both denotational meaning (where meaning
comes from knowing the conditions of truth in situations), and operational meaning (where
meaning is an instruction for performing cognitive action). Including a discussion of recent
developments in logic, it will be invaluable to linguistics students wanting to apply logic to their
studies, logic students wishing to learn how their subject can be applied to linguistics, and functional programmers interested in natural language processing as a new application area. Gluecklich, die wissen, dass hinter allen Sprachen das Unsaegliche steht. Those are happy who know that behind all languages there is something unsaid. Rainer Maria Rilke. This book shows in a new way that a solution to a fundamental problem from one scientific field can help to find the solutions to important problems emerged in several other fields of science and technology. In modern science, the term "Natural Language" denotes the collection of all such languages that every language is used as a primary means of communication by people belonging to any country or any region. So Natural Language (NL) includes, in particular, the English, Russian, and German languages. The applied computer systems processing natural language printed or written texts (NL-texts) or oral speech with respect to the fact that the words are associated with some meanings are called semantics-oriented natural language processing systems (NLPSs). On one hand, this book is a snapshot of the current stage of a research program started many years ago and called Integral Formal Semantics (IFS) of NL. The goal of this program has been to develop the formal models and methods ing to overcome the difficulties of logical character associated with the engineering of semantics-oriented NLPSs. The designers of such systems of arbitrary kinds will find in this book the formal means and algorithms being of great help in their work. By creating certain marks on paper, or by making certain sounds-breathing past a moving tongue-or by articulation of hands and bodies, language users can give expression to their mental lives. With language we command, assert, query, emote, insult, and inspire. Language has meaning. This fact can be quite mystifying, yet a science of linguistic meaning-semantics-has emerged at the intersection of a variety of disciplines: philosophy, linguistics, computer science, and psychology. Semantics is the study of meaning. But what exactly is "meaning"? What is the exact target of semantic theory? Much of the early work in natural language semantics was accompanied by extensive reflection on the aims of semantic theory, and the form a theory must take to meet those aims. But this meta-theoretical reflection has not kept pace with recent theoretical innovations. This volume re-addresses these questions concerning the foundations of natural language semantics in light of the current state-of-the-art in semantic theorising.