

An Advanced Introduction to Semantics

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 book 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.

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A Meaning-Text Approach

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Contents

<i>List of Figures</i>	page xii
<i>List of Tables</i>	xvi
<i>Preface</i>	xvii
<i>Acknowledgments</i>	xx
<i>List of Symbols, Abbreviations and Writing Conventions</i>	xxi
<i>List of Phonemic/Phonetic Symbols</i>	xxvi

PART I FUNDAMENTALS

1 Semantics in Language and Linguistics	3
1 Semantics and Its Place in Language and Linguistics	3
2 Doing Semantics with Meaning-Text Linguistic Theory	7
2.1 Language as Meaning-Text Correspondence	8
2.2 Modeling Meaning-Text Correspondence	10
2.2.1 Functional Models of Language	10
2.2.2 The Stratificational Character of Language Models	12
2.2.3 Language Modeling from Meaning to Text: Primacy of the Speaker	16
2.3 Tasks of the Semantic Module of a Meaning-Text Linguistic Model	18
2.4 The Meaning-Text Model within a General Model of Linguistic Behavior	27
Further Reading	29
2 Some Basic Linguistic Notions	30
1 General Linguistic Notions	31
1.1 Linguistic Sign and Related Notions	31
1.1.1 The Notion of Linguistic Sign	31
1.1.2 Reference and Denotation of a Linguistic Sign	35
1.1.3 Compositionality of Complex Linguistic Signs	37
1.2 Paradigmatic vs. Syntagmatic Relations between Linguistic Signs	38
1.3 Linguistic Dependency	40
1.3.1 Types of Linguistic Dependency	40
1.3.2 Major Dependency Roles	43
1.3.3 Valence, Diathesis and Government Pattern	44
1.4 Major Types of Linguistic Significations	46
1.5 Linguistic Expressive Means	49
1.6 Basic Formalisms for Representing Linguistic Phenomena	50

1.6.1	Linguistic Representations	50
1.6.2	Linguistic Rules	52
2	Syntactic Notions	55
2.1	Basic Syntactic Units	55
2.1.1	Utterance	55
2.1.2	Wordform	56
2.1.3	Phrase	57
2.1.4	Clause	57
2.1.5	Sentence	58
2.2	Major Syntactic Classes of Lexical Units, alias Parts of Speech	59
3	Morphological Notions	61
3.1	Morphological Signs	61
3.1.1	Elementary Sign	61
3.1.2	Segmental Sign	61
3.1.3	Morph	61
3.2	Inflectional and Derivational Significations	62
3.2.1	Inflectional Significations and Inflectional Categories	62
3.2.2	Derivational Significations	63
3.3	Two Basic Morphological Mechanisms: Inflection and Word Formation	63
	Further Reading	65

PART II MEANING IN LANGUAGE AND ITS DESCRIPTION

3	Linguistic Meaning	69
1	The Nature of Linguistic Meaning	70
1.1	Linguistic Meaning as the Invariant of Paraphrases	70
1.2	Linguistic (= "Shallow") Meaning vs. Real (= "Deep") Meaning	72
1.3	Three Aspects of Linguistic Meaning: Propositional, Communicative and Rhetorical Meaning	76
2	Meaning Representation	77
3	Semantic Units and Semantic Relations	79
3.1	Semantemes	79
3.1.1	The Language-Specific Character of Semantemes	80
3.1.2	Two Major Classes of Semantemes: Semantic Predicates and Semantic Names	83
3.2	Semantic Dependency Relations	86
3.2.1	Properties of Semantic Dependency	86
3.2.2	Semantic Actants	87
4	Semantic Decomposition	89
4.1	How Is Semantic Decomposition Done?	89
4.1.1	Basic Rules of Semantic Decomposition	90
4.1.2	Recursive Character of Semantic Decomposition	91
4.1.3	Semantic Primitives	92

Contents	vii
4.2 What Is Semantic Decomposition Necessary For?	93
4.2.1 Determining the Semantic Identity of a Linguistic Expression	93
4.2.2 Establishing Semantic Equivalence between Linguistic Expressions	94
4.2.3 Determining the Hierarchy of Actants of a Semanteme	94
Further Reading	97
4 Lexical Meaning, Lexical Items and Lexical Units	98
1 Lexical Semantics, Lexicology and Lexicography	99
2 Lexical Items and Lexical Units	100
2.1 Lexemes	101
2.2 Phrasemes	102
2.2.1 The Notion of Phraseme	102
2.2.2 Types of Phrasemes	105
2.2.3 Degree of Frozenness of a Phraseme	113
2.3 Lexicographic Status of Different Types of Lexical Items	114
Further Reading	116
5 Lexicographic Definition	117
1 General Presentation of a Lexicographic Definition	118
2 Rules for Formulating Lexicographic Definitions	121
3 Structuring of a Lexicographic Definition: Different Types of Semantic Components	126
3.1 The Central Component vs. Peripheral Components	126
3.2 Simple Components vs. Conjunctive/Disjunctive Components	127
3.3 Regular Components vs. Weak Components	129
3.4 Presupposition Components vs. Assertion Components	129
3.5 The Metaphoric Component	130
3.6 An Illustration: A Structured Lexicographic Definition	130
4 Criteria for Elaborating Lexicographic Definitions	131
5 Lexicographic Definition vs. Lexicographic Connotation	135
6 Lexicographic Definition Checklist	137
Further Reading	140
6 Lexical Relations	141
1 Paradigmatic Lexical Relations	142
1.1 The Core Paradigmatic Lexical Relations: Synonymy, Antonymy, Conversion	142
1.1.1 Synonymy	142
1.1.2 Antonymy	144
1.1.3 Conversion	146
1.2 Derivational Relations	150
1.3 Polysemy vs. Homonymy	152
1.3.1 Polysemy	152

1.3.2	Homonymy	157
2	Syntagmatic Lexical Relations	158
	Further Reading	160
7	Lexical Functions	161
1	What Is a Lexical Function?	162
2	Standard Lexical Functions	167
2.1	Paradigmatic Lexical Functions	167
2.1.1	LFs Describing Core Lexical Relations: <i>Syn</i> , <i>Anti</i> and <i>Conv</i>	167
2.1.2	LFs Describing Derivational Relations	170
2.2	Syntagmatic Lexical Functions	173
2.2.1	Adjectival and Adverbial Lexical Functions: <i>Magn</i> , <i>Ver</i> , <i>Bon</i>	173
2.2.2	Support Verbs: <i>Oper_i</i> , <i>Func_{0/i}</i> , <i>Labor_{ij}</i>	174
2.2.3	Realization Verbs: <i>Real_i</i> , <i>Fact_{0/i}</i> , <i>Labreal_{ij}</i>	178
2.2.4	Phasal Verbs: <i>Incep</i> , <i>Fin</i> , <i>Cont</i>	179
2.2.5	Causative Verbs: <i>Caus</i> , <i>Liqu</i> , <i>Perm</i>	180
3	Non-Standard Lexical Functions	181
3.1	Non-Standard LFs Describing Non-Systematic Word Formation	181
3.2	Non-Standard LFs Describing Non-Systematic Collocations	182
3.3	Non-Standard LFs Describing Clichés	182
4	Applications of Lexical Functions in Natural Language Processing: An Illustration	183
	Further Reading	185
8	The Lexical Stock of a Language and the Dictionary	186
1	Lexical Stock and Its Structure	187
1.1	Vocables	188
1.2	Semantic Classes of Lexical Units	190
1.2.1	Vendler's Aspectual Classes	190
1.2.2	Semantic Labels and Taxonomic Semantic Classes of Lexical Units	192
1.2.3	Semantic Labels in Lexical Descriptions	196
1.3	Semantic Fields	199
1.4	Lexical Fields	200
1.5	Vocables, Semantic Classes, Semantic Fields and Lexical Fields Compared	200
2	A Model of the Lexical Stock: The <i>Explanatory Combinatorial Dictionary</i> (ECD)	202
2.1	General Characterization of the ECD	203
2.1.1	Main Features of the ECD	203
2.1.2	Principles for Compiling an ECD	204
2.2	The ECD Lexical Entry	209
2.2.1	The Structure of an ECD Entry	209
2.2.2	The Semantic Zone	210

Contents	ix
2.2.3 The Syntactic Cooccurrence Zone	211
2.2.4 The Lexical Relations Zone	214
2.3 The ECD Lexical Superentry	216
2.3.1 Distinguishing Entries within a Superentry	216
2.3.2 Ordering and Numbering Lexical Entries within a Superentry	218
2.3.3 Three Superentries from an English ECD	220
Further Reading	227
9 Sentential Meaning and Meaning Relations between Sentences	228
1 Sentential Meaning Properties	229
1.1 Semantic Normalcy/Anomaly of a Sentence	230
1.1.1 Extralinguistically Well-/Ill-Formed Sentences	230
1.1.2 Linguistically Well-/Ill-Formed Sentences	231
1.2 Semantic Truth/Falsehood of a Sentence	232
1.3 Treatment of Anomalous Sentences in a Formal Linguistic Model	234
2 Meaning Relations between Sentences	235
2.1 Synonymy of Sentences = Paraphrase	235
2.1.1 The Notion of Paraphrase	235
2.1.2 Types of Paraphrase	239
2.1.3 Testing Paraphrastic Equivalence: Substitution Test	241
2.1.4 Semantic Representations of Paraphrases	242
2.2 Implication	245
2.3 Presupposition	246
2.4 Equinomy	249
Further Reading	252
PART III MEANING-TEXT MODEL OF SEMANTICS	
10 Semantic Representation	255
1 General Characterization of the Semantic Representation	256
2 Semantic Structure	259
2.1 Elements of the Semantic Structure	260
2.1.1 The Graph: A Semantic Network	260
2.1.2 Node Labels: Semantemes	261
2.1.3 Arc Labels: Semantic Actantial Numbers	262
2.2 Formal Requirements on Semantic Structures	264
2.3 Substantive Requirements on Semantic Structures	268
3 Semantic-Communicative Structure	270
3.1 Elements of the Semantic-Communicative Structure	271
3.1.1 Communicatively Dominant Node	271
3.1.2 Semantic-Communicative Oppositions	271
3.2 Formal Requirements on Semantic-Communicative Structures	279
4 Interaction of Semantic and Semantic-Communicative Structures in Linguistic Synthesis	280
4.1 SemS ~ Sem-CommS Pairings and the Well-Formedness of the SemR	280

x	Contents	
	4.2 SemS ~ Sem-CommS Pairings and the Paraphrastic Potential of the SemS	281
	Further Reading	283
11	Deep-Syntactic Representation	284
1	General Characterization of the Deep-Syntactic Representation	285
2	Deep-Syntactic Structure	287
2.1	Dependency Tree	287
2.2	Deep Lexical Units	288
2.2.1	Semantically Full Lexical Units	289
2.2.2	Lexical Functions	289
2.2.3	Fictitious Lexemes	290
2.3	Deep Grammemes	291
2.4	Deep-Syntactic Dependency Relations	293
2.4.1	General Characterization of Syntactic Relations	293
2.4.2	Inventory of Deep-Syntactic Relations	297
3	Deep-Syntactic-Communicative Structure	305
4	Role of the Deep-Syntactic Structure in Sentence Synthesis	307
	Further Reading	309
12	Semantic Rules	310
1	Semantic Transition (= Expression) Rules	312
1.1	Lexicalization Rules	313
1.1.1	Lexemic Rules	313
1.1.2	Phrasemic Rules	317
1.1.3	Lexical-Functional Rules	317
1.1.4	Lexical-Constructional Rules	319
1.2	Morphologization Rules	320
1.3	Arborization Rules	321
1.3.1	Rules Establishing the Top Node of the DSynt-Tree	321
1.3.2	Rules Constructing Branches and Subtrees of the DSynt-Tree	323
2	Semantic Equivalence (= Paraphrasing) Rules	327
2.1	Semantic Equivalences Proper	327
2.1.1	Semantic Substitution Rules	327
2.1.2	Semantic Restructuring Rules	331
2.2	Lexical-Syntactic Equivalences	334
2.2.1	(Quasi-)Equivalent Substitutions	336
2.2.2	Implicative Substitutions	341
	Further Reading	342
	Concluding Remarks	343

Contents	xi
Appendix: Some Mathematical and Logical Notions Useful to Linguistics	345
1 Sets	346
2 Operations	346
3 Relations	347
3.1 Set-Theoretical Relations (Relations between Two Sets)	347
3.2 Properties of Binary Relations	348
3.3 A Very Special Relation: Isomorphism	350
4 Formal Languages	350
5 Propositions and Predicates	352
5.1 Propositional Calculus	352
5.2 Predicate Calculus	353
Further Reading	354
<i>Exercises</i>	355
<i>References</i>	370
<i>Notion and Term Index cum Glossary</i>	382
<i>Definition Index</i>	411
<i>Language Index</i>	421
<i>Lexical Unit and Semanteme Index</i>	422

Figures

1.1	A stratificational linguistic model of the Meaning-Text type (abridged view)	page 13
1.2	Basic formalisms used to write linguistic representations	14
1.3	Linguistic representations serving as the input and the output of the semantic module of an MTM	19
1.4	Semantic module of an MTM	19
1.5	The initial SemS of the underlying sentences in (3) and some of its possible lexicalizations	20
1.6	Partial representations of sentence (3a) manipulated by the semantic module of an MTM	22
1.7	Representations of sentence (3b) manipulated by the semantic module of an MTM	24
1.8	Decomposition of the semanteme 'prevent' and its matching with the initial SemR of (3b)	24
1.9	DSyntS of sentence (3b) and an equivalent DSyntS	25
1.10	Representations of sentence (3c) manipulated by the semantic module of an MTM	25
1.11	DSyntS of sentence (3c) and an equivalent DSyntS	26
2.1	Three types of linguistic dependency between the lexemes of the sentence <i>This cute kitten runs</i>	43
2.2	The representations of the phrase <i>[a] woman faithful to her principles</i> at the semantic and deep-syntactic levels	46
2.3	Structures of the sentence <i>I like swimming a lot</i> at different representation levels	52
3.1	Decomposition of the semanteme 'west'	90
4.1	A typology of phrasemes	113
5.1	Textual definition of the lexeme $LIE_{(v)}^2\mathbf{1}$	118
5.2	Definition of the lexeme $LIE_{(v)}^2\mathbf{1}$ in terms of a semantic network	119
5.3	The structure of the definition of the lexeme $LIE_{(v)}^2\mathbf{1}$	131
6.1	Two major types of lexical polysemy	155
7.1	Support verb constructions with the noun ANALYSIS	177
7.2	Deep-syntactic trees of sentences (10a) and (10b)	184
8.1	Hierarchy of semantic labels for English (fragment)	195
8.2	Government Pattern of the verb BAKE1.1a	211
8.3	Government Patterns of four English lexemes	213
9.1	(Partial) SemR of the exact paraphrases in (20)	243

List of Figures	xiii
9.2 (Partial) SemR of the exact paraphrases in (21)	244
9.3 (Partial) SemR of sentence (22)	244
10.1 Semantic representation of sentence (1a) and all sentences synonymous with it	258
10.2 Schema of a semantic network	260
10.3 Semantic representations of three English grammemes	261
10.4 Semantic representations of four English (quasi-)predicative semantemes	262
10.5 Three ill-formed semantic networks	264
10.6 (Incomplete) SemSs of sentences (5a) and (5b)	265
10.7 SemSs of phrase (7a) and of sentence (7b), with referential pointers	267
10.8 SemS of synonymous sentences (2a) and (2b), p. 257	269
10.9 Two SemSs corresponding to the ambiguous expression <i>giant poster sale</i>	270
10.10 Two semantic subnetworks with communicatively dominant nodes specified	271
10.11 SemS ~ Sem-CommS pairings (two ill-formed and one well-formed)	280
10.12 SemS ~ Sem-CommS pairing underlying sentences in (18)	281
10.13 SemS ~ Sem-CommS pairing underlying sentences in (19)	282
10.14 SemS ~ Sem-CommS pairing underlying sentences in (20)	282
10.15 SemS ~ Sem-CommS pairing underlying sentences in (21)	283
11.1 DSyntR of sentence (1)	286
11.2 Schema of a dependency tree	288
11.3 Modification vs. actancy	296
11.4 Two DSyntSs featuring some actantial DSyntRels	302
11.5 Four DSyntSs featuring the DSyntRel ATTR	303
11.6 Two DSyntSs featuring the DSyntRel APPEND and ADDRESS	304
11.7 Four DSyntSs featuring the DSyntRel COORD	305
11.8 SemR and DSyntR of sentence (4)	306
11.9 SSyntSs and DSyntSs of two sentences which are mutual translational equivalents	308
11.10 SSyntSs of the three synonymous sentences in (7), featuring different voices	309
11.11 DSyntSs of the three synonymous sentences in (7)	309
12.1 Semantic transition and semantic equivalence rules	311
12.2 Major types and subtypes of semantic rules	311
12.3 Simple lexemic rule $R^{\text{LEX}} 1$ (English)	314
12.4 Simple lexemic rule $R^{\text{LEX}} 1$ (developed view)	314
12.5 The schema of a simple lexemic rule	314
12.6 Simple lexemic rule $R^{\text{LEX}} 2$ (English)	315
12.7 Derivational lexemic rule $R^{\text{LEX}} 3$ (English)	315

xiv List of Figures

12.8	Derivational lexemic rule R^{LEX} 4 (Spanish)	316
12.9	Compounding lexemic rule R^{LEX} 5 (German)	316
12.10	Phrasemic rule R^{LEX} 6 (English)	317
12.11	Phrasemic rule R^{LEX} 7 (French)	317
12.12	Derivational lexical-functional rule R^{LEX} 8 (English)	318
12.13	Collocational lexical-functional rule R^{LEX} 9 (English)	318
12.14	Collocational lexical-functional rules R^{LEX} 10 – 11 (English)	318
12.15	Lexical-constructional rule R^{LEX} 12 (English)	319
12.16	Lexical-constructional rule R^{LEX} 13 (Russian)	319
12.17	Inflectional rule R^{INFLECT} 1 (English)	320
12.18	Inflectional rule R^{INFLECT} 2 (English)	321
12.19	Choice of potential entry nodes (arborization rule R^{ARBOR} 1)	321
12.20	Ranking of potential entry nodes (arborization rule R^{ARBOR} 2)	322
12.21	“Verbalization” of a non-verbal entry node (arborization rule R^{ARBOR} 3)	323
12.22	Construction of the DSyntRel I of an active verb (arborization rule R^{ARBOR} 4)	323
12.23	Construction of the DSyntRel I with a passive verb as the governor (arborization rule R^{ARBOR} 5)	324
12.24	Construction of the DSyntRel II with a passive verb as the governor (arborization rule R^{ARBOR} 6)	325
12.25	Possessor Raising (arborization rule R^{ARBOR} 7)	325
12.26	Construction of a relative clause (arborization rule R^{ARBOR} 8)	326
12.27	Example of the application of arborization rule R^{ARBOR} 8	326
12.28	Semantic reduction/expansion rule $R^{\text{EXP-RED}}$ 1	328
12.29	Five equivalent SemSs with different degrees of decomposition	329
12.30	Cause ~ consequence (semantic rule $R^{\text{GLOBAL-SUBST}}$ 1)	330
12.31	Cause ~ temporal succession (semantic rule $R^{\text{GLOBAL-SUBST}}$ 2)	330
12.32	Cause ~ condition (semantic rule $R^{\text{GLOBAL-SUBST}}$ 3)	330
12.33	Condition ~ means (semantic rule $R^{\text{GLOBAL-SUBST}}$ 4)	331
12.34	SemSs of sentences (17a) and (17b)	331
12.35	Omission of a specific difference (semantic rule R^{RESTRUCT} 1)	332
12.36	Addition of ‘can _(v) ’ in a habitual context (semantic rule R^{RESTRUCT} 2)	332
12.37	SemSs of Sentences (19a) and (19b)	333
12.38	Reconnection of a communicatively dominant semanteme (semantic rule R^{RESTRUCT} 3)	333
12.39	Reconnection of a communicatively subordinated semanteme (semantic rule R^{RESTRUCT} 4)	334
12.40	Types of restructuring possible at the deep-syntactic level	335
12.41	Synonymic substitution ($R^{\text{EQ.LEX/SYNT}}$ 1)	336
12.42	Synonymic substitution with light verb fission ($R^{\text{EQ.LEX/SYNT}}$ 2)	336
12.43	DSyntSs of paraphrases (22)	337

List of Figures	xv
12.44 Synonymic substitution with light verb fission ($R^{EQ.LEX/SYNT}$ 3)	337
12.45 Antonymic substitution with negation fission ($R^{EQ.LEX/SYNT}$ 4)	338
12.46 Partial DSyntSs of paraphrases (26a–b)	338
12.47 Antonymic substitution ($R^{EQ.LEX/SYNT}$ 5)	338
12.48 Conversive substitution ($R^{EQ.LEX/SYNT}$ 6)	339
12.49 DSyntSs of sentences (30a) and (30b)	339
12.50 Conversive substitution with light verb fission ($R^{EQ.LEX/SYNT}$ 7)	340
12.51 Derivative substitution ($R^{EQ.LEX/SYNT}$ 8)	340
12.52 Derivative substitution ($R^{EQ.LEX/SYNT}$ 9)	340
12.53 Derivative substitution with inversion of subordination ($R^{EQ.LEX/SYNT}$ 10)	341
12.54 Attempted causation ~ effective causation ($R^{IMPLIC.SUBST}$ 1)	342
12.55 Causation of the end of process ~ end of process ($R^{IMPLIC.SUBST}$ 2)	342
12.56 End of process ~ nonexistence of process ($R^{IMPLIC.SUBST}$ 3)	342
App.1 Venn diagrams	348
Ex.1 A SemS with unlabeled nodes	363
Ex.2 A SemR to verbalize	364
Ex.3 A SemS to be paired with different Sem-CommSs	365
Ex.4 A graph	366
Ex.5 Arborization rule 1	367
Ex.6 Arborization rule 2	368

Tables

2.1	Grammatical significations: an illustration	<i>page</i> 47
2.2	Linguistic significations studied by semantics	49
2.3	Linguistic expressive means	50
2.4	Language = lexicon + grammar	54
3.1	Recursive decomposition of the semanteme '[to] heat2'	91
3.2	Sixty-five semantic primes proposed by A. Wierzbicka (Goddard & Wierzbicka 2014: 12)	93
4.1	Major phrase types	104
4.2	Lexical items and lexical units	115
6.1	Two families of collocations in seven languages	159
7.1	Types of LFs illustrated from LFs applicable to the lexeme LOVE _(N) 1	166
7.2	The syntax of support verbs	176
8.1	Vendler's aspectual classes	191
8.2	Generic component of an LU's definition vs. its semantic label	192
8.3	Semantic labels for English and some instances of the corresponding semantic classes	193
8.4	Some lexical functions of the semantic label process _(N) 1	197
8.5	Vocables vs. semantic classes vs. semantic fields vs. lexical fields	201
8.6	Units of lexical stock and corresponding dictionary units	202
8.7	Superentry of the vocable ARM _(N)	219
8.8	Semantic bridges between the lexemes of the vocable ARM _(N)	220
9.1	Types of paraphrase	239
9.2	Substitutability of paraphrases (18) in context	242
9.3	Substitutability of paraphrases (19) in context	242
10.1	The interplay of Thematicity and Givenness	275
11.1	Some deep grammemes of English and their sentence-level realizations	292
11.2	Inventory of deep-syntactic relations	298
App.1	Truth table for five logical operations	352

Preface

First things first: What kind of book is this? Well, this is a textbook, an introduction to linguistic semantics; but it is an **advanced** introduction to the field, and it requires a certain degree of application on the part of the reader. (However, as we shall see, it is structured in a way that makes it easier to navigate than it might seem at first.) Apart from this, the book has the following two main “distinctive features”:

- It adopts a view of semantics as a component, or module, of the linguistic system, whose functioning is simulated by a corresponding linguistic model. Language is considered to be a set of rules that establish correspondences between meanings and their possible expressions, and the lion's share of this correspondence is taken care of by the semantic module. This is the approach put forward by the Meaning-Text linguistic theory and its language models, called, predictably, Meaning-Text models.
- It is organized around a system of rigorous notions, specified by about eighty mathematical-like definitions. (Some of the notions that will be introduced are *semaneme*, semantic actant, communicative dominance, lexical function.) This system is deductive, consistent and formal; therefore, our exposition is also deductive and (strives to be) logically consistent.

Four salient characteristics of the Meaning-Text approach, reflected in the way the present textbook is organized, need to be mentioned.

1. Its emphasis on **formal modeling** of languages and their fragments implies, among other things, the elaboration and use of formal languages for the representation/description of semantic facts. (This makes the proposed linguistic descriptions suitable for applications in natural language processing and language teaching.) Accordingly, several kinds of formalism will be used in the book: semantic networks for representing meanings of sentences and lexical units; dependency trees for representing the syntactic structure of sentences; lexical functions for representing lexical relations; and rules of various types for representing semantic operations (such as lexicalization of an initial semantic structure or synonymous paraphrasing).
2. It prioritizes **synthesis** over analysis. That is to say, it models speech **production**, as opposed to speech understanding; the latter has been the focus of most mainstream approaches to semantics. It takes the viewpoint of the Speaker (rather than the Addressee); in this way, synonymy, in

particular paraphrase, is placed at the center of semantic research. All linguistic phenomena discussed are consistently presented from the Speaker's perspective.

3. It is based on **relational** representations – it considers relations, in the first place, dependency relations, among linguistic units as the main organizing factor in language, and, therefore, in semantics. (Most current linguistic approaches are focused on classes and constituency.) This is why we will have a lot to say about semantic and deep-syntactic dependencies in this book.
4. It is **lexicon-centered** – it attaches paramount importance to the lexicon and its modeling, and has developed for this purpose a special kind of dictionary, the *Explanatory Combinatorial Dictionary*, which is a pivotal element of the semantic module. Therefore, the description of lexical units – their meaning, cooccurrence and groupings within the lexicon – takes center stage in this textbook.

Let it be emphasized that we deal exclusively with synchronic semantics; historical (= diachronic) semantics is not even touched on. Within synchronic semantics we cover both propositional semantics – the representation and description of the meanings of sentences and the semantic relations between them – and lexical semantics – i.e., the representation and description of lexical meanings and semantic-lexical relations, the emphasis being squarely on the latter. It goes beyond propositional semantics in that it considers information structure (topic–comment distribution, focus assignment, etc.), usually treated as belonging to pragmatics, as an integral part of semantic description. However, the following important domains of synchronic semantics are left outside our scope:

- Morphological semantics is not considered; the representation of semantic inflectional meanings, for instance, verbal voice, mood, tense and aspect in English, etc. is discussed sporadically, to the extent that these meanings appear in the linguistic representations under discussion.
- Semantic phenomena are considered up to the level of sentences, to the exclusion of text/discourse semantics.
- No systematic review of other approaches to semantics is offered; where appropriate, pointers to the work done in frameworks close to ours – such as *Natural Semantic Metalanguage* and *Frame Semantics* – are provided.

A few words about the organization of the textbook are in order. The main text consists of twelve chapters, divided into three parts: Part I – Fundamentals (Chapters 1–2), Part II – Meaning in Language and Its Description (Chapters 3–9), and Part III – Meaning-Text Model of Semantics (Chapters 10–12).

Chapter 1 characterizes semantics as part of language viz. a branch of linguistics and broadly presents our frame of reference, Meaning-Text linguistic

theory and its language models. Chapter 2 introduces some basic linguistic notions necessary for the discussion of semantics to follow. Chapter 3 is dedicated to the main *persona dramatis* of this book – linguistic meaning. Chapter 4 considers lexical meanings, expressed as lexical items of various types, and Chapter 5, the main tool for describing them – the lexicographic definition. Chapters 6 and 7 are reserved, respectively, for semantic-lexical relations (such as synonymy, antonymy, intensification, nominalization, etc.) and their formal modeling by means of lexical functions. Chapter 8 describes the overall organization of the lexical stock and a particular type of dictionary used within Meaning-Text theory to model it, the *Explanatory Combinatorial Dictionary*. Chapter 9 is about sentential meaning and semantic relations between sentences (paraphrase, implication, and so on). Chapter 10 is dedicated to the linguistic representation that serves as the input for the application of semantic rules: the semantic representation. Chapter 11 deals with the deep-syntactic representation, the output of semantic rules. Finally, Chapter 12 presents semantic rules, responsible for the mapping between semantic and deep-syntactic representations of linguistic expressions.

Each chapter contains a “Further Reading” section, with pointers to the essential titles related to the topic of the chapter.

The textbook also features:

- An appendix presenting some mathematical and logical notions (sets, operations, relations, formal languages, etc.) widely used in linguistics.
- Exercises with a detailed key (available at www.cambridge.org/meaning-text).
- Bibliographic references
- Indexes:
 - Index cum glossary of notions and terms, containing succinct characterizations of the most salient elements of the notional and terminological system used in the book.
 - Index of definitions. The book introduces scores of new terms, or old terms used in novel ways, that are defined when they first occur. They are presented here in order of appearance.
 - Index of languages from which linguistic examples are drawn.
 - Index of lexical units and semantemes (= lexical meanings) exemplified or otherwise treated in the book.

Before we place the reader in a *tête-à-tête* with the book, a word of caution is in order. As we said at the outset, this is not an easy introduction; it cannot be read linearly. But language itself is not linear! In language, everything is interconnected, so you will need to navigate back and forth. To give just one example, before studying lexical functions, in Chapter 7, it would be useful to read about the linguistic representation in which they are used, that is, the deep-syntactic structure, which is dealt with in Chapter 11. We have provided lots of cross-references to help you with the task.

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And we say a cordial “Thank you” to two anonymous readers of the Cambridge University Press.

Symbols, Abbreviations and Writing Conventions

Symbols

C	condition part of a linguistic rule
L	a particular language
L	a particular lexical unit
«L»	a particular fictitious lexeme (in the deep-syntactic structure)
L('X')	a particular lexical unit L expressing the meaning 'X'
'L ₁ ... L _n '	a particular idiom L ₁ ... L _n
L ₁ — morph →L ₂	L ₂ depends on L ₁ morphologically
L ₁ — sem →L ₂	L ₂ depends on L ₁ semantically
L ₁ — synt →L ₂	L ₂ depends on L ₁ syntactically
L ₁ ↔ L ₂	L ₁ and L ₂ are co-referential (= L ₁ and L ₂ have the same referent)
NB	important but tangential (= logically not necessary) information
Q	underlying question (used to determine the Rheme and the Theme of a sentence)
r	a particular syntactic dependency relation
R	Rheme (communicative value)
R _{DSynt}	Deep-Syntactic Rheme (communicative value)
R _{Sem}	Semantic Rheme (communicative value)
s	a particular linguistic sign
's'	the meaning of s ; the signified of a linguistic sign s
' <u>s</u> '	the communicatively dominant component of a meaning
/s/	the segmental signifier of a linguistic sign s
'σ'	a particular semanteme
' <u>σ</u> '	a particular configuration of semantemes
Σ _s	the syntactics of a linguistic sign s
T	Theme (communicative value)
T _{DSynt}	Deep-Syntactic Theme (communicative value)
T _{Sem}	Semantic Theme (communicative value)
X	a linguistic expression
*X	an ungrammatical linguistic expression
?X	an incorrect or dubious linguistic expression
#X	a pragmatically deficient or semantically anomalous linguistic expression
X ⟨Y⟩	Y, a variant of X

xxii List of Symbols, Abbreviations & Writing Conventions

$X \mid Y$	Y , conditions of use of X
$X \supset Y$	set X includes Y as a subset
$X \cap Y \neq \Lambda$	sets X and Y have a non-empty intersection
$X \cap Y = \Lambda$	sets X and Y have an empty intersection (\neq X and Y are disjoint)
$X \Leftrightarrow Y$	correspondence between linguistic entities X and Y of two adjacent representation levels (\neq 'X corresponds to Y and vice versa')
$X \equiv Y$	X and Y are exactly equivalent
$X \cong Y$	X and Y are quasi-equivalent
$X \rightarrow Y$	X implies/entails Y (\neq Y is an implication/entailment of X)
$\{x_i\}$	a set of elements x_i
$\langle x, y, \dots, z \rangle$	an ordered set of elements x, y, \dots, z
$\llbracket 'X' \rrbracket$	a presupposed semantic component 'X'
$//x$	a fused element x of the value of a lexical function
x-	a radical or a prefix
-x	a suffix
1, 2, 3	pronominal/verbal person 1, 2, 3
I, II, ..., VI	DSynt-actants I, II, ..., VI
Ø	zero sign (= sign whose signifier is empty)
Λ	the empty set
⊕	operation of linguistic union
⚠	directly relevant important information
📖	explanations concerning conventions and notations

Abbreviations

-A	actant
A (\neq ADJ)	adjective (part of speech)
ACC	accusative (grammeme of nominal/adjectival case)
ACT	active (grammeme of verbal voice)
ADV	adverb (part of speech)
APPEND	the appenditive deep-syntactic relation
ART	article
ATTR	the attributive deep-syntactic relation
CDN	communicatively dominant node (of a semantic configuration)
CLAUS	clausative (part of speech)
colloq.	colloquial (stylistic label)
COMPAR	comparative (grammeme of adjectival/adverbial degree of comparison)
compar	comparative (conjunction; value of a syntactic feature)
COORD	the coordinative deep-syntactic relation
COND	conditional (grammeme of verbal mood)
CONJ	conjunction (part of speech)
D-	deep (sublevel of linguistic representation)

DAT	dative (grammeme of nominal/adjectival case)
DEF	definite (grammeme of nominal determination)
DET	determiner (syntactic class of lexemes)
DirO	Direct Object
dir-obj	the direct-objective surface-syntactic relation
DSyntA	deep-syntactic actant
DSyntS	deep-syntactic structure
DSynt-AnaphS	deep-syntactic anaphoric structure
DSynt-CommS	deep-syntactic communicative structure
DSynt-ProsS	deep-syntactic prosodic structure
DSyntR	deep-syntactic representation
ECD	<i>Explanatory Combinatorial Dictionary</i>
FEM	feminine (a grammeme of adjectival/verbal gender)
fem	feminine (gender; value of a syntactic feature of a noun)
FUT	future (grammeme of verbal tense)
GP	Government Pattern
iff	if and only if
impers	impersonal (value of a syntactic feature)
IND	indicative (grammeme of verbal mood)
IndirO	Indirect Object
indir-obj	the indirect-objective surface-syntactic relation
INDEF	indefinite (grammeme of nominal determination)
INF	infinitive (grammeme of verbal finiteness)
intrans	intransitive (value of a syntactic feature of a verb)
LDOCE	<i>Longman Dictionary of Contemporary English</i>
LF	lexical function
LU	lexical unit
lit.	literal
liter.	literary (stylistic label)
MASC	masculine (grammeme of adjectival/verbal gender)
masc	masculine (gender; value of a syntactic feature of a noun)
MTM	Meaning-Text model
MTT	Meaning-Text theory
MWLD	<i>Merriam-Webster's Learner's Dictionary</i>
N	noun (part of speech)
NEU	neuter (grammeme of adjectival/verbal gender)
neu	neuter (gender; value of a syntactic feature of a noun)
NOM	nominative (grammeme of nominal/adjectival case)
NUM	cardinal numeral (part of speech)
Oblo	Oblique (= Prepositional) Object
obl-obj	the oblique-objective surface-syntactic relation
OED	<i>Oxford English Dictionary</i>
PART	participle (grammeme of verbal finiteness)
PASS	passive (grammeme of verbal voice)

xxiv	List of Symbols, Abbreviations & Writing Conventions
PAST	past (grammeme of verbal tense)
PERF	perfective (grammeme of verbal aspect)
pers	personal (value of a syntactic feature)
PL	plural (grammeme of nominal/adjectival/verbal number)
PREP	preposition (part of speech)
PRES	present (grammeme of verbal tense)
pron	pronominal (value of a syntactic feature)
-R	representation (linguistic)
RefS	referential structure
RhetS	rhetorical structure
S-	surface (sublevel of linguistic representation)
-S	structure
Sem-	semantic
Sema	semantic actant
Sem-CommS	semantic-communicative structure
SemS	semantic structure
SemR	semantic representation
SG	singular (grammeme of nominal/adjectival/verbal number)
SSyntA	surface-syntactic actant
SSyntR	surface-syntactic representation
SSyntS	surface-syntactic structure
SyntRel	syntactic relation
SyntR	syntactic representation
subj	the subjectival surface-syntactic relation
Synt-	syntactic
trans	transitive (value of a syntactic feature of a verb)
V	verb (part of speech)
vulg.	vulgar (stylistic label)

Fonts

- Linguistic examples are in *italics*
- Textual glosses are in roman and between ‘semantic quotes.’
- Interlinear glosses are in roman
- Lexical units are in UPPER CASE: APPLE, LEAVE, FOR, etc.
- Grammemes (= inflectional values) are in UPPER CASE: PAST, PL(URAL), etc.
- Derivatemes are in *HELVETICA ITALICS* UPPER CASE: ‘ONE WHO [does L]’ (*read+er* from *read_L*, *teach+er* from *teach_L*).
- The names of lexical functions are in Courier New: S₀, Magn, Oper₁, etc.
- Semantic labels are in Courier New: fact, event, manufactured object, etc.

- At their first mention (and sporadically where it is deemed useful), technical terms are in Helvetica: antonymy, dependency, *semanterne*, etc.

Lexicographic Numbers

When citing English lexical units, we use, when necessary, lexicographic, or sense-distinguishing, numbers: $BABY_{(N)}1$, $CHANGE_{(V)}1$, $FILE_{(N)}3$, $LIE_{(V)}^21$, 'MAKE SENSE'1, etc. For the most part, these numbers are taken from LDOCE Online (www.ldoceonline.com), but with an important modification. Unlike LDOCE, we do not use the numbers in superscript to indicate the part of speech of lexical units; thus, instead of writing LIE^2 for the verb (*to lie through one's teeth*) and LIE^3 for the noun (*to tell lies*), as LDOCE does, we write $LIE_{(V)}^21$ and $LIE_{(N)}$. We use numbers in superscript exclusively to distinguish homophonous vocables (= phonologically identical but semantically unrelated lexical items), such as $LIE_{(V)}^1$ (*I need to lie¹ down. | I know where the problem lies¹2.*) and $LIE_{(V)}^2$ (*Don't lie²1 to me. | Statistics can often lie²2.*). At times we also use our own lexicographic numbers (our lexicographic-numbering system will be introduced in Ch. 8, 2.3.2).

Phonemic/Phonetic Symbols

More or less obvious symbols are not listed.

C'	palatalized consonant C
Ṽ	long vowel V
Ṽ	nasal vowel V
æ	high-front open unrounded vowel [Eng. <i>cat</i>]
c	voiceless alveolar affricate [It. <i>grazie</i> 'thanks', Ger. <i>zwei</i> 'two']
č	voiceless palatoalveolar affricate [Eng. <i>church</i>]
ð	voiced interdental fricative [Eng. <i>the</i>]
e	mid-front closed unrounded vowel [Fr. <i>fée</i> 'fairy']
ɛ	mid-front open unrounded vowel [Fr. <i>fait</i> 'fact']
j	voiced palatal fricative [Eng. <i>year</i>]
l	voiced palatal lateral approximant [Sp. <i>lluvia</i> 'rain', It. <i>veglio</i> 'old']
ŋ	voiced velar nasal [Eng. <i>young</i>]
ɲ	voiced palatal nasal [Sp. <i>niña</i> 'girl', Fr. <i>peigne</i> '[a] comb']
o	mid-back closed rounded vowel [Fr. <i>peau</i> 'skin']
ɔ	mid-back open rounded vowel [Eng. <i>law</i>]
ø	mid-front closed rounded vowel [Fr. <i>queue</i> 'tail']
œ	mid-front open rounded vowel [Fr. <i>cœur</i> 'heart']
q	voiceless uvular stop
r	voiced alveolar flap [Am. Eng. <i>rider</i>]
š	voiceless dental sibilant fricative [Eng. <i>shy</i>]
u	high-back closed rounded vowel
ü	high-front rounded vowel [Fr. <i>lune</i> 'moon']
θ	voiceless interdental fricative [Eng. <i>think</i>]
w	voiced rounded labiovelar fricative [Eng. <i>we</i>]
x	voiceless velar fricative [Ger. <i>Bach</i> 'stream']
ž	voiced dental sibilant fricative [Eng. <i>treasure</i>]
ʒ	voiced palatoalveolar affricate [Eng. <i>jam</i>]
ʔ	glottal stop
ħ	voiceless pharyngeal stop [Arabic <i>'ain</i>]