

Cambridge Textbooks in Linguistics

# Semantics

An Introduction to Meaning in Language

Ronnie Cann, Ruth Kempson and  
Eleni Gregoromichelaki



# Semantics

## An Introduction to Meaning in Language

RONNIE CANN

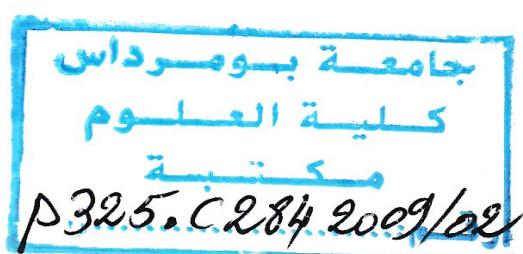
*University of Edinburgh*

RUTH KEMPSON

*King's College London*

ELENI GREGOROMICHELAKI

*King's College London*



CAMBRIDGE  
UNIVERSITY PRESS

جامعة بومرداس  
كلية الآداب و اللغات  
مكتبة الكلية  
رقم الجرد: 501.....  
.....501

جامعة بومرداس  
كلية الآداب و اللغات  
مكتبة الكلية  
الشفرة: 81371:37/CAN  
01EX

# Contents



List of figures page x

Preface xi

<b>1 Preliminaries for model building</b>	1
1.1 Introduction	1
1.2 Explaining semantics: starting from words?	4
1.2.1 Constructing a semantic theory	8
1.3 Breaking out of the language circle	9
1.3.1 The language-of-thought hypothesis	9
1.3.2 Language and the world	11
1.4 Truth-conditional semantics	12
1.5 Logic, meaning and context	17
1.6 Further reading	21
<b>2 The syntax of logical inference</b>	22
2.1 Language and logic	22
2.2 Proof theory and model theory: syntax vs. semantics?	24
2.3 Logic, inference and natural-language semantics	26
2.3.1 Natural deduction: a syntactic mode of inference	27
2.4 Natural deduction for propositional logic	28
2.4.1 Conditional Elimination: <i>Modus Ponens</i>	29
2.4.2 Conditional Introduction: Conditional Proof	33
2.4.3 Negation and extending the set of conditional rules	35
2.4.4 The Elimination and Introduction rules for $\wedge$	38
2.4.5 $\vee$ Introduction and $\vee$ Elimination	41
2.4.6 <i>Reductio ad Absurdum</i> : a constrained variant	44
2.4.7 Commentary: propositional logic for linguists	47
2.5 Predicate logic	49
2.5.1 Predicate logic syntax	50
2.5.2 Proof rules of predicate logic	52
2.6 Defining inference proof-theoretically	62
2.6.1 The proof-theoretic force of the logical conditional	62
2.6.2 The de Morgan equivalences	64
2.6.3 Commentary: theoretical implications	65
2.7 Further reading	66
<b>3 The semantics of logical inference: models and semantic types</b>	68
3.1 Model-theoretic evaluation	68

---

3.2	Models for propositional logic	69
3.3	Model theory for predicate logic	71
3.3.1	Defining a model	73
3.3.2	Set theory: an introduction	74
3.3.3	Model-theoretic semantics for predicate logic	75
3.3.4	Model-theoretic evaluation of quantified formulae	77
3.4	Inferential relations semantically defined	81
3.5	Evaluating syntactic and semantic characterisations of inference	83
3.6	Type theory	85
3.6.1	The lambda operator	87
3.6.2	Types reprised	92
3.7	Interpreting typed expressions	94
3.8	Summary	97
3.9	Further reading	98
<b>4</b>	<b>Quantification and plurality</b>	99
4.1	Generalised quantifiers	99
4.1.1	Quantifiers, compositionality and coverage	99
4.1.2	Towards compositional quantification	102
4.1.3	Interpreting quantifiers	105
4.1.4	Cardinality quantifiers	109
4.1.5	Contextual quantifiers	112
4.1.6	Conservativity and monotonicity	114
4.2	Plurals	119
4.2.1	Interpreting plural noun phrases	120
4.2.2	Extending the ontology	125
4.2.3	Collective and distributive predicates	129
4.2.4	Mass terms	133
4.3	Coda	134
4.4	Further reading	135
<b>5</b>	<b>Anaphora, discourse and context</b>	137
5.1	Noun phrases and discourse properties	137
5.2	Anaphora and quantification	140
5.2.1	Types of anaphora	140
5.2.2	E-type pronouns	143
5.3	Discourse Representation Theory (DRT)	147
5.3.1	Introduction	147
5.3.2	DRS construction	151
5.3.3	Embedding	155
5.3.4	Interpreting DRSs	159
5.3.5	Accessibility	163
5.4	Conclusion	166
5.5	Coda	166
5.6	Further reading	167
<b>6</b>	<b>Time, tense and events</b>	169
6.1	Time and tense	170

---

6.2	Simple tense logic	172
6.2.1	Some problems	176
6.3	Event theory	180
6.3.1	Types of eventualities	182
6.4	Tense in English	184
6.4.1	Reichenbach's analysis of tenses in English	184
6.4.2	Tense in DRT	185
6.5	Aspect and Aktionsart	190
6.5.1	Grammatical aspect	191
6.5.2	Lexical aspect	192
6.5.3	Representing aspect	196
6.6	Conclusion	205
6.7	Further reading	205
<b>7</b>	<b>Ellipsis as a window on context</b>	<b>207</b>
7.1	Puzzles at the syntax–semantics interface	207
7.2	Ellipsis: preliminaries	210
7.3	Ellipsis: linguistic debates	212
7.3.1	Ellipsis: syntactic puzzles	214
7.3.2	Ellipsis: semantic challenges	216
7.3.3	Ellipsis as pragmatic reconstruction	221
7.4	Ellipsis: towards a unitary account	223
7.5	Dynamic Syntax	225
7.5.1	The tree-logic and tree-growth processes	226
7.5.2	Quantification dynamics and the epsilon calculus	232
7.6	Ellipsis and context	235
7.6.1	Use of context-provided formulae	235
7.6.2	Context-provided structure	237
7.6.3	Context as a record of parsing actions	239
7.6.4	Context defined	241
7.7	Summary reflections	244
7.8	Further reading	244
<b>8</b>	<b>What a word can mean</b>	<b>246</b>
8.1	The Generative Lexicon	251
8.2	Semantic Minimalism	253
8.2.1	Ellipsis and criteria for identity of content	254
8.3	Variability in word meaning: new avenues of research	260
8.3.1	Word meaning as concept-clusters	260
8.3.2	Language as a tool-box	264
8.4	New directions in semantics	269
8.4.1	Semantics and pragmatics	270
8.5	Coda	272
8.6	Further reading	273
<i>Bibliography</i>	275	
<i>Index</i>	285	