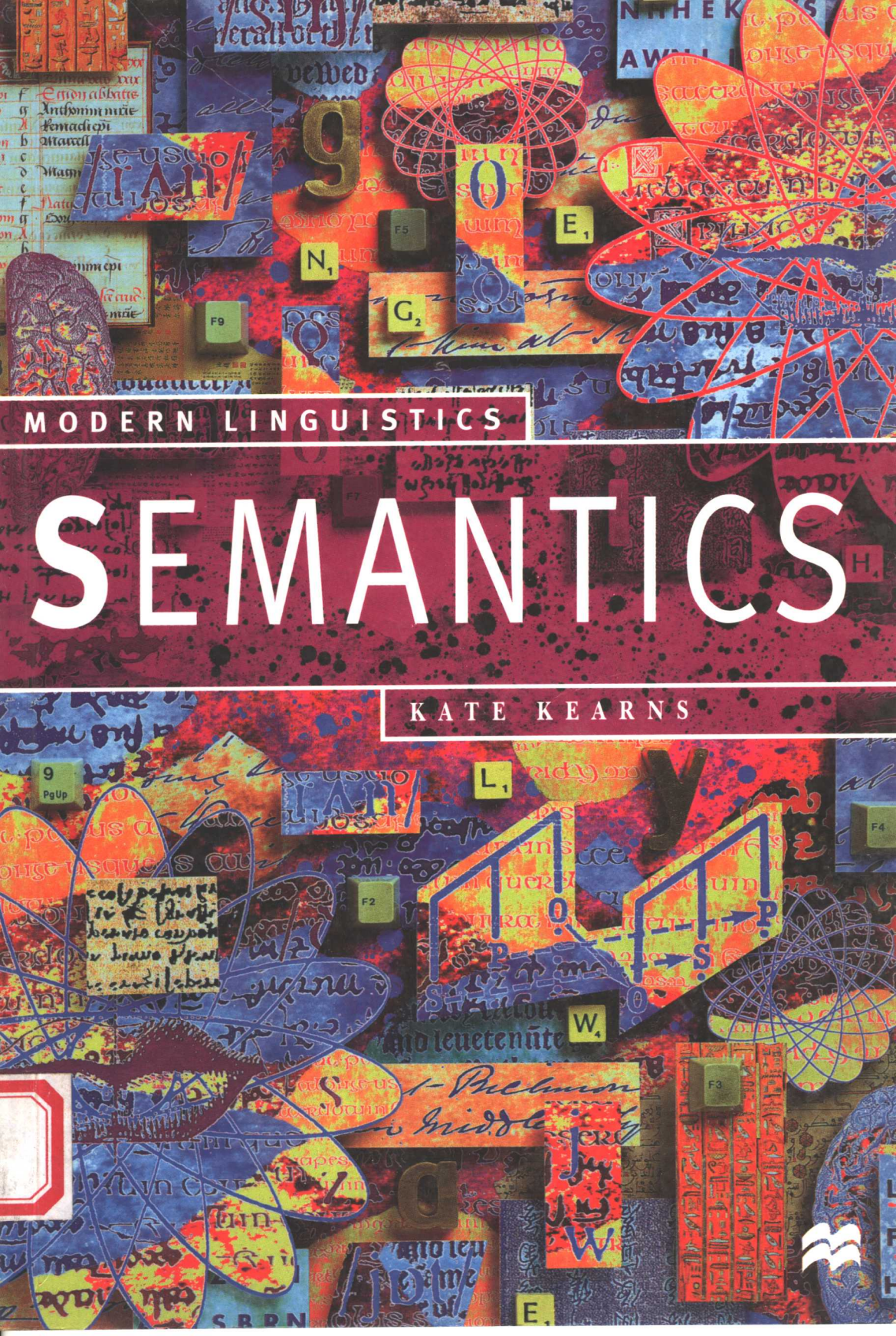
MODERN LINGUISTICS

SEMANTICS

KATE KEARNS



Semantics

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SEMANTICS

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Preface

This book grew out of a semantics course taught at the second-year level in the general Arts or Sciences bachelor's degree at the University of Canterbury. Most of the students are studying linguistics or philosophy as a major subject, but they also come from a number of other fields in the humanities, physical sciences or professional studies. They generally have taken an introductory course in either linguistics or philosophy.

A mixed undergraduate class in semantics presents the dilemma of deciding what to do about the conceptual and notational complexity of formal theories. A detailed formalization procedure is not of the greatest interest to many of the students, and if the full formal apparatus is used, it isn't possible to introduce more than a limited range of data. If a very limited range of data is covered, this leaves a gap in the linguistics programme, particularly for the teaching of syntax, where some acquaintance with semantic issues is increasingly useful and important. The aim of this book is to introduce a wider range of topics in formal semantics with a limited formal apparatus.

Chapters 1–4 are introductory to the rest of the book, but a selection can be made from the remaining chapters. There are several themes that could be followed: Chapters 4–6 cover NP interpretation and Chapters 8–10 cover events and thematic roles. Verbal and nominal aspect is covered in sections of Chapters 6 and 7 and Chapter 9.

The text is intended to be used as a coursebook, accompanied by lectures on the topics covered and by discussion of the exercises. This book is not a 'teach yourself' text for private, unassisted study. The exercises included are of varying difficulty – some are for basic review and are suitable for private revision, but the more demanding exercises may best be used as the basis of class discussion sessions.

As always, students are urged to also read other introductions to semantics which take a different approach.

Contents

Acknowledgements x
Preface xi

Chapter 1 Introduction 1
1.1 Kinds of Meaning 2
1.1.1 Denotation and Sense 2
1.1.2 Lexical and Structural Meaning 3
1.1.3 Categorematic and Syncategorematic Expressions 5
1.2 Studies Based on Sense 6
1.2.1 Lexical Sense 7
1.2.2 Semantic Features 10
1.2.3 Basic Category Words 10
1.2.4 Family Resemblances 13
1.2.5 Review of Lexical Sense 15
1.3 Denotational Theories 16
1.3.1 Denotations 16
1.3.2 Possible Worlds, Extension and Intension 17
1.3.3 Truth Conditions 18
1.3.4 A Simple Illustration of a Compositional Formal Theory 21
1.4 Review 23

Further Reading 24

Chapter 2 First Order Logic 25
2.1 Representations for Meanings 25
2.2 The Logical Connectives 25
2.2.1 Conjunction 25
2.2.2 Negation 28
2.2.3 Disjunction 29
2.2.4 The Material Implication Connective 30
2.2.5 Equivalence and the Biconditional Connective 33
2.3 Predicates and Arguments 35
2.3.1 Predicates, Verbs and the Number of Arguments 38
2.3.2 Sentences as Arguments 40
2.4 The Logical Quantifiers 41
2.4.1 The Universal Quantifier 41
2.4.2 The Existential Quantifier 44

2.4.3 Scopal Ambiguity 45

Exercises 47
Further Reading 51

Chapter 3 Modality and Possible Worlds 52
3.1 Kinds of Modality 52
3.1.1 Logical Modality 52
3.1.2 Epistemic Modality 53
3.1.3 Deontic Modality 55
3.2 Modality and Possible Worlds 55
3.2.1 Interdefinability with Negation 58
3.3 Counterfactuals 61

Exercises 65
Further Reading 66

Chapter 4 Natural Language Quantifiers 67
4.1 Natural Language Quantifiers and First Order Logic 67
4.2 Restricted Quantifiers 70
4.2.1 Scopal Ambiguity 72
4.3 Quantificational Determiners in Generalized Quantifier Theory 73
4.3.1 Set Theoretic Definitions 73
4.3.2 Different Types of Quantifiers 75
4.3.3 *Few* and *Many* 77
4.3.4 *Few* and *A few* 79
4.3.5 *Some* and *Several* 79
4.4 Proportional Determiners and Discourse Familiarity 80
4.5 Quantifiers and *There BE* Sentences 81
4.5.1 Basic Existential *There BE* 82
4.5.2 Presentational *There BE* 83
4.5.3 Task *There BE* 84
4.5.4 List *There BE* 85
4.6 Quantifiers and Negative Polarity Items 85

Exercises 89
Further Reading 92

Chapter 5 Definite Descriptions 93
5.1 Russell's Theory of Descriptions 93
5.2 *The* as a Generalized Quantifier 94
5.3 Definite Descriptions as Strong NPs 96
5.3.1 Familiarity Effects 99

5.3.2 *There BE* Contexts 99
5.4 Scopal Ambiguity 99
5.5 Opacity: Descriptions, Modality and Propositional Attitudes 100
5.5.1 Referential Opacity 101
5.5.2 Modality, Descriptions and Names 105
5.5.3 Propositional Attitudes and Descriptions 108
5.5.4 Summary: Descriptions and Scope 111
5.5.5 Propositional Attitudes and Names 112

Exercises 116
Further Reading 119

Chapter 6 Indefinite Descriptions, Plurals, Generics and Mass NPs 120
6.1 Indefinite Descriptions and Specificity 120
6.2 Plural NPs and Groups 123
6.2.1 Collective Predication 124
6.2.2 Cumulative Predication 128
6.3 Mass NPs 128
6.3.1 Mass NPs and their Predicates 129
6.3.2 The Homogeneity of Mass Terms 129
6.3.3 Definitions for Mass Terms 130
6.4 Bare Plural NPs 133
6.4.1 Generic and Existential Readings 133
6.4.2 Bare Plurals and Quantificational Adverbs 136
6.5 Generic NPs and Reference to Kinds 137

Exercises 143
Further Reading 147

Chapter 7 Tense and Aspect 148
7.1 The English Verb Group 148
7.2 Interpretations of Present and Past Tense Forms 150
7.2.1 The Present Tense 150
7.2.2 The Past Tense 152
7.2.3 Finiteness 153
7.3 The Formal Representation of Simple Tenses 154
7.4 Aspect 156
7.5 The Progressive 156
7.6 Perfective *Have* 158
7.7 The Aspectual Perfect 158
7.7.1 The Present Perfect: Reference to Past and Present 158
7.7.2 Universal and Existential Readings 162
7.7.3 Definite and Indefinite Reference to Times 163
7.8 The Tense Perfect 167

7.9 Reichenbach's Analysis 168
7.9.1 The Present Perfect 169
7.9.2 Past and Future Perfect 169

Exercises 172
Further Reading 175

Chapter 8 Events **176**
8.1 Davidson's Analysis of Action Sentences 176
8.2 Neodavidsonian Developments 181
8.2.1 Separation of Direct Arguments 181
8.2.2 The Adicity of Verbal Predicates 183
8.2.3 Relations to Events 187
8.3 Thematic Roles 188
8.3.1 Traditional Thematic Roles 189
8.3.2 Thematic Roles, Arguments and Adverbials 191
8.3.3 The Generality of Thematic Roles 191
8.4 Events and Perception Verbs 193
8.5 Adding Tense and NP Quantifiers 195

Exercises 197
Further Reading 199

Chapter 9 Aspectual Classes of Events **200**
9.1 The Four Aspectual Classes 201
9.2 Linguistic Signs of Aspectual Classes 204
9.2.1 Bounding and Duration 204
9.2.2 Tense and Verb Aspect 210
9.2.3 Agentivity 211
9.2.4 Internal Complexity 214
9.2.5 Interactions with the Progressive 216
9.3 Aspectual Similarities between Event Predicates and NPs 218
9.3.1 Countability and Boundedness 218
9.3.2 Mass and Indefinite Plurality 221
9.4 Homogeneity and Heterogeneity 222
9.5 Closing Comment 224

Exercises 225
Further Reading 227

Chapter 10 Thematic Roles Reviewed **228**
10.1 Thematic Roles, Arguments and Adverbials 228
10.2 Thematic Roles are not Primitives 230
10.2.1 An Alternative Subatomic Analysis 230

10.2.2 Defining Thematic Roles 231
10.2.3 Defining Verb Classes 232
10.2.4 Signs of Aspectual Event Classes 234
10.2.5 Aspect and Types of Thematic Role 235
10.3 Agentivity 237
10.3.1 Volition and Control 237
10.3.2 Inanimate Forces 240
10.3.3 Inherent Causal Properties 241
10.4 The Actor/Patient Division 244
10.5 Aspect and Themes 246

Exercises 248
Further Reading 253

Chapter 11 Implicature and Explicature **254**
11.1 Grice's Conversational Implicature 255
11.1.1 Clarity 256
11.1.2 Truthfulness 257
11.1.3 Informativeness 258
11.1.4 Relevance 260
11.2 Later Developments 261
11.3 Horn's Q Principle and R Principle 262
11.3.1 Q-Implicatures 263
11.3.2 R-Implicatures 264
11.4 Relevance Theory 267
11.4.1 Cognitive Effect and Processing Effort 267
11.5 Levels of Inference: Implicature and Explicature 271
11.5.1 Disambiguation, Reference Assignment and Indexicality 271
11.5.2 Further Pragmatic Contributions to Explicature 275
11.5.3 Differentiating Explicature and Implicature 279
11.6 Closing Comment 280

Exercises 282
Further Reading 285

Bibliography 286
Index 295

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1 Introduction

The study of linguistic meaning is generally divided in practice into two main fields, semantics and pragmatics. **Semantics** deals with the literal meaning of words and the meaning of the way they are combined, which taken together form the core of meaning, or the starting point from which the whole meaning of a particular utterance is constructed. **Pragmatics** deals with all the ways in which literal meaning must be refined, enriched or extended to arrive at an understanding of what a speaker meant in uttering a particular expression.

This division can be roughly illustrated with (1) below.

(1) I forgot the paper.

Semantics provides the literal meaning of the elements *I*, *forget*, past tense, *the* and *paper*, and the meaning drawn from the order of the words, giving very approximately 'The person who is speaking at some time before the time of speaking forgot a particular item which is a paper'. Pragmatic considerations flesh this out to a more complete communication.

Suppose that it is Sunday morning. Anna, the speaker, has just returned to her flat from the local shops where she went to buy croissants and the Sunday newspaper. In this context her flatmate Frances understands Anna to say that she forgot to buy a copy of the Sunday newspaper for that morning, and the time of her forgetting was while she was at the shops – she presumably remembered her intention to buy a paper when she set out and has obviously remembered it on returning. If the shops are nearby, Anna might also intend Frances to infer that Anna will go back for the paper.

Suppose, alternatively, that a man has been found murdered in the fields near a farmhouse. Two nights before the body was found the farmhouse was broken into, although nothing was reported missing. The owners of the house are renovating a small upstairs room, and the floor of this room is currently littered with sticky scraps of stripped wallpaper. The dead man was found with a scrap of the wallpaper on the sole of his shoe. Two detectives are discussing the case. One has just finished speculating that the murder is connected to another set of recent events in the nearby town, and is not related to the break-in at the farmhouse. She then stops and says 'I forgot the paper'.

In this context her colleague understands her to mean that while she was working through her alternative scenario she forgot the wallpaper scrap on the dead man's shoe. Given the background assumption that the scrap of paper proves the man's presence upstairs in the farmhouse at some stage, her

utterance is also understood to mean that she withdraws her speculative alternative scenario, which is probably not correct.

Examples like these demonstrate the enormous contribution of pragmatic information to communication. On the other hand, the starting point from which we arrive at both fleshed-out meanings is the constant contribution of the literal meaning of *I forgot the paper*.

This book will mainly concentrate on literal meaning, the content of words and expressions which is fairly constant from one occasion of use to another. The kind of semantic/pragmatic division illustrated above is discussed in detail in Chapter 11.

1.1 KINDS OF MEANING

1.1.1 Denotation and Sense

There are two most basic ways of giving the meaning of words or longer expressions. The first and most simple way is to present examples of what the word **denotes**. For example, the word *cow* can be defined by pointing to a cow and saying 'That is a cow', or the word *blue* can be defined by pointing to a blue object and saying 'That colour is blue.' Definition by pointing to an object of the kind in question, called **ostensive definition**, appeals directly to the **denotations** of the words defined. The word *blue* denotes the colour blue, or blue objects in the world, and the word *cow* denotes cows. The general point is that linguistic expressions are linked in virtue of their meaning to parts of the world around us, which is the basis of our use of language to convey information about reality. The denotation of an expression is the part of reality the expression is linked to.

The second way of giving the meaning of a word, commonly used in dictionaries, is to paraphrase it, as illustrated in (2).

(2) *forensic* 'pertaining to courts of law and court procedures'

export 'to send out from one country to another, usually of commodities'.

This kind of definition attempts to match the expression to be defined with another expression having the same **sense**, or content. The clearest kind of sense-for-sense matching is translation from one language to another. To say that *le train bleu* means 'the blue train' is to say that the French expression and the English expression have the same sense.

The most widely discussed form of the sense/denotation distinction is the **sense/reference** distinction. An expression which denotes just one individual is said to **refer** to that individual. Titles and proper names are common referring expressions.

Suppose, for example, that some of the winners of the Mr Muscle Beach Contest are Wade Rodriguez (1992), Denzel Lucas (1993), Josh Minamoto (1994) and Rob Cabot (1995). The expression *Mr Muscle Beach* has a constant sense which one might paraphrase as '(title of) the winner of an annual body-building competition called the Mr Muscle Beach Contest', but depending on the year in which, or about which, the expression is used it refers to Rodriguez, Lucas, Minamoto or Cabot. This general pattern of a constant sense allied with changeable reference is discussed in more detail in Section 5.5.

Sense and denotation do not have parallel status. In the context of the anecdote above the expression refers at different times to Wade Rodriguez, Denzel Lucas, Josh Minamoto and Rob Cabot. The fact that the expression refers to one of these men at a given time depends on, and follows from, the sense of the expression. It is only because the expression has the sense '(title of) the winner of an annual body-building competition called the Mr Muscle Beach Contest' and Lucas won the competition in 1993 that the expression refers to Lucas in 1993. And given the sense of the expression, it cannot denote anyone who has not won the competition in question. So sense is more basic than denotation, and denotation is dependent on sense.

Sense and denotation are the fundamental aspects of meaning in general. The next two sections review different ways of partitioning complex meanings in terms of their components.

1.1.2 Lexical and Structural Meaning

The meaning of a complex expression such as a sentence is composed of **lexical meaning**, which is the meaning of the individual words, and **structural meaning**, which is the meaning of the way the words are combined.

Structural meaning mainly comprises the meaning derived from the syntactic structure of an expression, for example:

(3)a The rat that bit the dog chased the cat
b The cat that chased the dog bit the rat
c The rat that chased the cat bit the dog
d The dog that chased the rat bit the cat
e The dog that bit the rat chased the cat
f The dog that chased the cat bit the rat
g The dog that bit the cat chased the rat
h The dog that chased the cat chased the rat
i The dog that chased the rat chased the cat . . . and so on . . .

From a vocabulary of seven words (*the, that, rat, dog, cat, chased, bit*) we can construct a large number of different sentences with different meanings, all based on a single syntactic structure with a common 'meaning template':

(4) [The A [that B-ed the C]] D-ed the E

x is an A
x performed the D action
y is an E
y undergoes the D action
x performed the B action
z is a C
z is the undergoer of the B action

The meaning components outlined in (4) are examples of syntactic meaning.

Any theory of human language has to be compatible with the fact that human languages are instantiated in human minds, which have a finite capacity. Although the language known by any one person at a given point in time contains a fixed number of words, it can in principle produce, or generate, infinitely many sentences, because the syntax is recursive. **Recursiveness** is the property of embedding a phrase inside another phrase of the same kind, which allows for sentences to be extended in length indefinitely. The examples below illustrate two kinds of recursion many times repeated.

(5)a The car broke down because Tom forgot to fill the tank because he was running late because Bill rang him just when he was leaving because Bill wanted to sell John a home gym because he doesn't use the home gym anymore and he needs the money because he spent too much money last month because he went for a quick holiday because he needed a break...

b This is the maiden all forlorn that milked the cow with the crumpled horn that tossed the dog that chased the cat that killed the rat that ate the malt that lay in the house that Jack built.

The examples in (5) show that recursion can be used to lengthen a sentence by adding to it. For example, the sentence *The car broke down* can be lengthened by adding *because Tom forgot to fill the tank*, giving two sentences, the original one and the longer one. In principle, any sentence can be used to form a new sentence by using a recursive addition, and so the number of sentences is infinite.

Given that the language has infinitely many sentences, our knowing a language cannot possibly amount to memorizing its expressions. Rather, we know the vocabulary and the syntactic rules for generating sentences. The syntactic rules themselves are a finite number, probably a fairly small number.

We can also match meanings to these infinitely many sentences, and again, we can't possibly do this by memorizing sentence/meaning pairs. Most of the

sentences we hear and understand are heard for the first time, and could not have been learned ahead. It must be that along with the syntactic rules for forming phrases and sentences, we also know interpretation rules which combine meanings just as syntactic rules combine forms. Accordingly, linguistic meaning is **compositional**. Compositionality is the property of being composed from parts. Syntactic and semantic rules work in parallel.

Structural meaning also overlaps with the meaning of syncategorematic expressions, introduced in the next section.

1.1.3 Categorematic and Syncategorematic Expressions

The distinction between categorematic and syncategorematic expressions applies to individual words, rather than phrases. Meaningful inflections can also be included here, as they are syncategorematic.

Categorematic expressions, which include the vast majority of words, are the descriptive words such as nouns, adjectives and verbs. These words are termed categorematic because their descriptive content, or sense, provides a basis for categorization. For example, the descriptive content of the word *chimney* provides the basis for forming the category of chimneys, the sense of *blue* provides the basis for the category of blue things, the senses of the words *domestic, professional, commercial,* and so on provide the basis for categories of things and activities, and so on.

Syncategorematic words are all the rest, including the examples here.

(6) *as, some, because, for, to, although, if, since, and, most, all,...*

What syncategorematic words have in common is that they do not have independent, easily paraphrasable meanings on their own, and we can only describe their meaning by placing them in a context. Unlike the categorematic words, they are not themselves descriptive of reality, do not denote parts of reality. Rather, they serve to modify categorematic expressions or to combine them in certain patterns.

Examples of modifying expressions are tense, illustrated in (7a–c), and modality, illustrated in (7d–e). (Tense and modality are discussed further in Chapters 3 and 7.)

(7)a He believed us.
b He believes us.
c He will believe us.
d He might believe us.
e He must believe us.

In (7a–c) the tense endings *-ed* and *-s* and the future auxiliary *will* are combined with the same base sentence form *He BELIEVE us*. The basic

sentence form describes a state of affairs, and semantic tense locates this state of affairs in the past, present or future. The past, present or future content of the tense expressions (*-ed, -s, will*) doesn't stand alone, but must combine with a sentence to be given a particular interpretation. These expressions do not in themselves denote the past, present and future – that is, they do not have the same senses as the expressions *past/the past, present/the present, future/the future.*

The same base sentence *He BELIEVE us* appears in (7d–e), but here the state of affairs of his believing us is not located in the past, present or future. Rather, the modal (*might, must*) expresses a qualification on whether or not there is such a state of affairs. There is room for doubt in (7d) but not in (7e).

An example of a syncategorematic expression combining descriptive expressions is *all* in the examples below.

(8)a All diamonds are hard.
b All dogs like icecream.
c All zinks neb.
d *All* A B. (*All As are B* or *All As B*)

The general form of the framework for *all,* given in (8d), is just as clear when filled with nonsense words as in (8c). *All* sets up a relationship between A and B. Thinking in terms of categories, we can say that 'All A B' places the A category inside the B category – the Bs include the As. For example, the category of hard things includes the category of diamonds (8a), the category of icecream-likers includes the category of dogs (8b), and the category of nebbers, whatever they are, includes the category of zinks, whatever they are (8c). The meaning of *all* is defined in terms of the way it relates the meaning of the A predicate to the meaning of the B predicate, rather than being defined apart from a context, and this gives *all* a syncategorematic character. (The quantificational determiners, including *all,* are discussed in Chapter 4.)

In summary, lexical meanings may be either categorematic or syncategorematic. Syncategorematic expressions, both words and inflections, group naturally with structural meaning, because they must be defined in terms of the constructions they appear in.

(9) lexical meaning — categorematic expressions
lexical meaning — syncategorematic expressions

1.2 STUDIES BASED ON SENSE

In the anatomy of a complex expression such as a sentence the categorematic words make the clearest contribution to sense. These are the words which

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