

Cambridge University Press  
978-0-521-89690-0 - An Introduction to Word Grammar  
Richard Hudson  
Frontmatter  
[More information](#)

---

## An Introduction to Word Grammar

Word Grammar is a theory of language structure based on the assumption that language, and indeed the whole of knowledge, is a network, and that virtually all of knowledge is learned. It combines the psychological insights of cognitive linguistics with the rigour of more formal theories. This textbook spans a broad range of topics from prototypes, activation and default inheritance to the details of syntactic, morphological and semantic structure. It introduces elementary ideas from cognitive science and uses them to explain the structure of language including a survey of English grammar.

RICHARD HUDSON is Emeritus Professor of Linguistics at University College London. His recent publications include *Language Networks: the New Word Grammar* (2007).

Cambridge University Press  
978-0-521-89690-0 - An Introduction to Word Grammar  
Richard Hudson  
Frontmatter  
[More information](#)

---

CAMBRIDGE TEXTBOOKS IN LINGUISTICS

*General editors:* P. AUSTIN, J. BRESNAN, B. COMRIE, S. CRAIN, W. DRESSLER,  
C. EWEN, R. LASS, D. LIGHTFOOT, K. RICE, I. ROBERTS, S. ROMAINE,  
N. V. SMITH

AN INTRODUCTION TO WORD GRAMMAR

Cambridge University Press  
 978-0-521-89690-0 - An Introduction to Word Grammar  
 Richard Hudson  
 Frontmatter  
[More information](#)

*In this series:*

- P. H. MATTHEWS *Syntax*  
 A. RADFORD *Transformational Syntax*  
 L. BAUER *English Word-Formation*  
 S. C. LEVINSON *Pragmatics*  
 G. BROWN and G. YULE *Discourse Analysis*  
 R. HUDDLESTON *Introduction to the Grammar of English*  
 R. LASS *Phonology*  
 B. COMRIE *Tense*  
 W. KLEIN *Second Language Acquisition*  
 A. J. WOODS, P. FLETCHER and A. HUGHES *Statistics in Language Studies*  
 D. A. CRUSE *Lexical Semantics*  
 A. RADFORD *Transformational Grammar*  
 M. GARMAN *Psycholinguistics*  
 G. G. CORBETT *Gender*  
 H. J. GIEGERICH *English Phonology*  
 R. CANN *Formal Semantics*  
 J. LAVER *Principles of Phonetics*  
 F. R. PALMER *Grammatical Roles and Relations*  
 M. A. JONES *Foundations of French Syntax*  
 A. RADFORD *Syntactic Theory and the Structure of English: A Minimalist Approach*  
 R. D. VAN VALIN, JR, and R. J. LAPOLLA *Syntax: Structure, Meaning and Function*  
 A. DURANTI *Linguistic Anthropology*  
 A. CRUTTENDEN *Intonation* Second edition  
 J. K. CHAMBERS and P. TRUDGILL *Dialectology* Second edition  
 C. LYONS *Definiteness*  
 R. KAGER *Optimality Theory*  
 J. A. HOLM *An Introduction to Pidgins and Creoles*  
 G. G. CORBETT *Number*  
 C. J. EWEN and H. VAN DER HULST *The Phonological Structure of Words*  
 F. R. PALMER *Mood and Modality* Second edition  
 B. J. BLAKE *Case* Second edition  
 E. GUSSMAN *Phonology: Analysis and Theory*  
 M. YIP *Tone*  
 W. CROFT *Typology and Universals* Second edition  
 F. COULMAS *Writing Systems: An Introduction to their Linguistic Analysis*  
 P. J. HOPPER and E. C. TRAUGOTT *Grammaticalization* Second edition  
 L. WHITE *Second Language Acquisition and Universal Grammar*  
 I. PLAG *Word-Formation in English*  
 W. CROFT and A. CRUSE *Cognitive Linguistics*  
 A. SIEWIERSKA *Person*  
 A. RADFORD *Minimalist Syntax: Exploring the Structure of English*  
 D. BÜRING *Binding Theory*  
 M. BUTT *Theories of Case*  
 N. HORNSTEIN, J. NUÑES and K. GROHMANN *Understanding Minimalism*  
 B. C. LUST *Child Language: Acquisition and Growth*  
 G. G. CORBETT *Agreement*  
 J. C. L. INGRAM *Neurolinguistics: An Introduction to Spoken Language Processing and its Disorders*  
 J. CLACKSON *Indo-European Linguistics: An Introduction*  
 M. ARIEL *Pragmatics and Grammar*  
 R. CANN, R. KEMPSON and E. GREGOROMICHELAKI *Semantics: An Introduction to Meaning in Language*  
 Y. MATRAS *Language Contact*  
 D. BIBER and S. CONRAD *Register, Genre and Style*  
 L. JEFFRIES and D. MCINTYRE *Stylistics*  
 R. HUDSON *An Introduction to Word Grammar*

Cambridge University Press  
978-0-521-89690-0 - An Introduction to Word Grammar  
Richard Hudson  
Frontmatter  
[More information](#)

---

# An Introduction to Word Grammar

---

RICHARD HUDSON



Cambridge University Press  
978-0-521-89690-0 - An Introduction to Word Grammar  
Richard Hudson  
Frontmatter  
[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,  
São Paulo, Delhi, Dubai, Tokyo

Cambridge University Press  
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9780521721646](http://www.cambridge.org/9780521721646)

© Richard Hudson 2010

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

First published 2010

Printed in the United Kingdom at the University Press, Cambridge

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

*Library of Congress Cataloguing in Publication data*

Hudson, Richard A.

An introduction to word grammar / Richard Hudson.

p. cm. – (Cambridge textbooks in linguistics)

Includes bibliographical references and index.

ISBN 978-0-521-89690-0 (hardback) – ISBN 978-0-521-72164-6 (pbk.)

1. English language—Grammar. I. Title. II. Series.

PE1112.H823 2010

428.2—dc22

2010022104

ISBN 978-0-521-89690-0 Hardback

ISBN 978-0-521-72164-6 Paperback

Additional resources for this publication at [www.cambridge.org/hudson](http://www.cambridge.org/hudson)

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

# Contents

<i>List of figures</i>	<i>page</i> x
<i>List of tables</i>	xiii
<i>Acknowledgements</i>	xv
<b>Introduction</b>	1
<b>Part I How the mind works</b>	
<b>1 Introduction to cognitive science</b>	7
<b>2 Categorization</b>	9
2.1 Concepts, categories and exemplars	9
2.2 Taxonomies and the isA relation	12
2.3 Generalizations and inheritance	16
2.4 Multiple inheritance and choices	22
2.5 Default inheritance and prototype effects	24
2.6 Social categories and stereotypes	30
<b>3 Network structure</b>	34
3.1 Concepts, percepts, feelings and actions	34
3.2 Relational concepts, arguments and values	37
3.3 Choices, features and cross-classification	44
3.4 Examples of relational taxonomies	47
3.5 The network notion, properties and default inheritance	57
3.6 Do networks need modularity?	63
<b>4 Network activity</b>	70
4.1 Activation and long-term memory	70
4.2 Activation and working memory	73
4.3 Building and learning exemplar nodes	80
4.4 Building induced nodes	83
4.5 Building inherited nodes	87
4.6 Binding nodes together	91
<b>Part II How language works</b>	
<b>5 Introduction to linguistics</b>	103
5.1 Description	103
5.2 Detail	104

5.3	Data	105
5.4	Differences	105
5.5	Divisions	106
5.6	Developments	108
<b>6</b>	<b>Words as concepts</b>	<b>109</b>
6.1	Types and tokens	109
6.2	Word properties	114
6.3	Word-classes	117
6.4	Grammaticality	118
6.5	Lexemes and inflections	121
6.6	Definitions and efficiency	127
6.7	Morphology and lexical relations	131
6.8	Social properties of words	136
6.9	Levels of analysis	138
<b>7</b>	<b>Syntax</b>	<b>145</b>
7.1	Dependencies and phrases	145
7.2	Valency	154
7.3	Morpho-syntactic features, agreement and unrealized words	162
7.4	Default word order	168
7.5	Coordination	175
7.6	Special word orders	181
7.7	Syntax without modules	189
<b>8</b>	<b>Using and learning language</b>	<b>193</b>
8.1	Accessibility and frequency	193
8.2	Retrieving words	197
8.3	Tokens and types in listening and speaking	202
8.4	Learning generalizations	205
8.5	Using generalizations	209
8.6	Binding in word-recognition, parsing and pragmatics	212
8.7	Meaning	220
8.8	Social meaning	241
<b>Part III How English works</b>		
<b>9</b>	<b>Introduction to English linguistics</b>	<b>249</b>
<b>10</b>	<b>English words</b>	<b>251</b>
10.1	Word-classes	251
10.2	Inflections	255
10.3	Word-class properties	260
10.4	Morphology and lexical relations	270
10.5	Social properties	276

---

<b>11 English syntax</b>	279
11.1 Dependencies	279
11.2 Valency	285
11.3 Features, agreement and unrealized lexemes	296
11.4 Default word order	301
11.5 Coordination	304
11.6 Special word orders	307
<i>References</i>	327
<i>Index</i>	322



## Figures

2.1	A menu taxonomy in traditional notation	<i>page</i> 15
2.2	A menu taxonomy in Word Grammar notation	15
2.3	The sea-thrush inherits from ‘bird’ and ‘creature’	17
2.4	The searcher climbs step by step but the copier sends copies directly	20
2.5	Only exemplars inherit properties	21
2.6	Multiple inheritance	23
2.7	The Nixon diamond	24
2.8	An exception creates an inheritance conflict	29
2.9	‘Me’ as goal-keeper	31
3.1	The Necker cube (A) with its two interpretations (B, C)	35
3.2	A concept such as ‘cat’ may be linked to percepts, emotions and motor skills	37
3.3	Properties shown as links	39
3.4	Properties shown as labelled links	40
3.5	Social relations shown as labelled links	41
3.6	Relations shown as a taxonomy	42
3.7	New relations are defined in terms of existing ones	43
3.8	Sex as a choice between ‘male’ and ‘female’	45
3.9	Man, boy, woman and girl defined	47
3.10	A taxonomy of family relations	49
3.11	How three of the Simpsons are related	49
3.12	Four interactive relations and their default behaviours	51
3.13	Figure or ground?	53
3.14	Landmarks tend to be local	54
3.15	‘Before’ and ‘after’ is a ‘landmark’	56
3.16	Typical cars are fuelled by petrol and have their motor in front	60
3.17	Grandparents are parents’ parents and great-grandparents are grandparents’ parents	60
3.18	Petrol is the default car fuel, and diesel is an exception	62
3.19	A car’s motor is in front by default, and only exceptionally in the rear	63
3.20	From meaning to sound in the brain	66

4.1	Activation spreads indiscriminately from a node to all its neighbours	75
4.2	How to retrieve Jack's birthday	78
4.3	Three bird exemplars have wings and a beak	85
4.4	A schema for 'bird' has been induced from a number of exemplars	86
4.5	How to inherit a mother	88
4.6	What you know about a bird exemplar	93
4.7	What you know about 'bird'	96
4.8	What you know about bird E	96
4.9	You decide that E is a 'bird'	97
6.1	Types and tokens distinguished	112
6.2	Traditional word-classes as a taxonomy	118
6.3	Inheritance in a taxonomy of word-classes	119
6.4	How the lexeme BOOK is related to the inflection 'plural'	123
6.5	Forms realize words, and word-forms are variants of other forms	133
6.6	Two kinds of morphological exception	134
6.7	Inflections and lexical relations are different	136
6.8	The architecture of language	142
7.1	Two syntactic analyses of <i>Cows eat grass</i> .	148
7.2	Two syntactic analyses of <i>Hungry cows eat grass</i> .	150
7.3	The difference between subjects and adjuncts in a simple example	153
7.4	A general taxonomy of dependencies	155
7.5	Typical words need a parent, but finite verbs don't	157
7.6	A triangle in syntax and in kinship	161
7.7	Plural nouns have exceptional plural number	165
7.8	Three alternative analyses of the imperative <i>Hurry!</i>	166
7.9	Landmarks shadow dependencies	170
7.10	How tangled dependencies show bad word order	171
7.11	The triangular dependencies of <i>He keeps talking</i> .	174
7.12	Syntactic triangles can be multiplied freely	174
7.13	Coordinated words share the same dependency	177
7.14	Any dependency can be shared by multiple parents or dependents	177
7.15	Coordinated items depend on the conjunction	178
7.16	Coordinating conjunctions have dependents but no parent	178
7.17	Word strings accommodate non-constituent coordination	180
7.18	One coordination may contain another	180
7.19	An extracted object	184
7.20	A grammar for simple extraction	185
7.21	Long-distance dependency	186
7.22	Subordinate questions with and without extraction	188
8.1	GOOD is more frequent than BAD	196
8.2	When speaking, thinking of 'cat' evokes /kat/	198
8.3	Stages in the learning of the lexeme CAT	208
8.4	How to recognize {cat} and CAT	214
8.5	The Stroop effect	215

xii	FIGURES	
8.6	How to parse a simple sentence	217
8.7	Verbs as well as nouns have a sense and a referent	225
8.8	The semantics of plural and past inflections	227
8.9	How a dependent's referent most typically affects the sense of its parent	229
8.10	Coreference between a determiner and its complement	230
8.11	The syntax and semantics of a cleft sentence	231
8.12	<i>He is a linguist</i> means 'he is a linguist'	233
8.13	The meaning of <i>He can swim</i> .	233
8.14	The idiom KICK THE BUCKET	234
8.15	Four deictic words and their meanings	238
8.16	How the English kinship system is defined in terms of 'mother' and 'father'	242
8.17	Given names are used only for 'intimates' of the speaker	244
10.1	A more efficient taxonomy of word-classes for English	254
10.2	The inflections of the English verb	258
10.3	The morphology and semantics of the lexical relation 'opposite'	274
11.1	Four basic dependency categories for English	282
11.2	The syntactic structure of a sentence	283
11.3	Prepositions can have many different complement patterns	289
11.4	A typically simple dependency analysis of a complex noun phrase	289
11.5	The two 'apostrophe s's as clitics	290
11.6	Mutual dependency in a relative clause	291
11.7	A typical ditransitive verb, with direct and indirect object	293
11.8	Recursive dependencies in a chain of predicatives	294
11.9	Determiners agree in number with their complement noun	297
11.10	Subject-verb agreement in English	298
11.11	Verb-complement ellipsis as an unrealized lexeme	300
11.12	Coordination and subordination compared	305
11.13	The grammar for subject-auxiliary inversion	309
11.14	Extraction in a wh-question	310
11.15	Subordinate questions with and without extraction	311
11.16	A relative pronoun introducing a relative clause	312
11.17	A long subject with and without extraposition	313
11.18	Passivization	315

## Tables

6.1	Some English noun lexemes and their plurals	<i>page</i> 124
6.2	Two Latin nouns by number and case	124
6.3	The present-tense inflections of the French verb PORT, ‘carry’	125
6.4	Some regular and irregular verb–noun pairs	135
10.1	Inflections for English verbs	257
10.2	The English auxiliary verbs	264
10.3	The pronouns of English	266
10.4	Tests for the major word-classes of English	269
10.5	Word-classes as percentages of all the word-tokens in this book compared with a million-word corpus of written English	270
10.6	Tests for verb inflections	271
11.1	Pre-dependents and post-dependents of four word-classes	281
11.2	The main dependency types for English	295

## Acknowledgements

I should like to take this opportunity to thank Helen Barton of CUP for inviting me to write the book, and then bullying me into finishing it; her colleague Sarah Green for patiently supporting me through the production process; and Michael Turner for detailed comments on the style; if the book is readable, thank him! But above all, I'm indebted as always to my wife Gay for putting up with the book. As various people have commented, what a funny way to spend a retirement!