Contents

List of figures and tables	ix
To readers	xiii
Acknowledgements	XV
1 Introduction to phonetics	1
1.1 What is phonetics?	1
1.2 What this book covers	3
1.3 Ways to talk about sounds	3 5
1.4 An overview of the book	5
Further reading	6
2 Overview of the human speech mechanism	7
2.1 The complexity of speech sounds	7
2.2 Breathing	7
2.3 The larynx and voicing	9
2.4 Airflow	10
2.5 Place of articulation	12
2.6 Manner of articulation	16
Summary	18
Exercises	18
Further reading	19
3 Representing the sounds of speech	20
3.1 Introduction	20
3.2 Phonetic transcription	20
3.3 Acoustic representations	32
3.4 Acoustic representations and segments	38
3.5 Representation and units in phonetics	38
Summary	39
Exercises	39
Further reading	41

4	The larynx, voicing and voice quality	42
	4.1 Introduction	42
	4.2 How the vocal folds vibrate	44
	4.3 Fundamental frequency, pitch and intonation	45
	4.4 Phrasing and intonation	48
	4.5 Voice quality	52
	Summary	56
	Exercises	57
	Further reading	57
5	Vowels	58
	5.1 Introduction	58
	5.2 Reference points for vowels: cardinal vowels	58
	5.3 The acoustics of vowels	65
	5.4 Other vocalic features	66
	5.5 Vowels in English 'keywords'	67
	5.6 Reduced vowels	77
	5.7 Voiceless vowels	77
	Summary	78
	Exercises	78
	Further reading	79
6	Approximants	80
	6.1 Introduction	80
	6.2 The palatal approximant [j]	81
	6.3 A doubly articulated sound: the labiovelar	
	approximant [w]	83
	6.4 Laterals	85
	6.5 'Rhotics'	91
	Summary	96
	Exercises	96
	Further reading	97
7	Plosives	98
	7.1 Introduction	98
	7.2 Overview of the production of plosives	98
	7.3 Voicing and plosives in English	101
	7.4 Glottalisation	107
	7.5 Long closure	108
	7.6 Place of articulation	108
	7.7 Release features of plosives	111
	7.8 Taps	116

	CONTENTS	vii
	Summary Exercises Further reading	118 118 119
8	Fricatives 8.1 Introduction 8.2 The production of fricatives 8.3 Details of English fricatives 8.4 Non-lexical fricatives Summary Exercises Further reading	120 120 120 122 133 138 138
9	Nasals 9.1 The production of nasals 9.2 Details of English nasals 9.3 Nasalised vowels 9.4 Syllabic nasals Summary Exercises Further reading	140 140 142 148 150 154 154
10	Glottalic and velaric airstreams 10.1 Airstream mechanisms 10.2 The velaric airstream mechanism 10.3 The glottalic airstream mechanism Summary Exercises Further reading	156 156 156 164 170 171
11	Sounds and structures 11.1 Introduction 11.2 Data 11.3 Assimilation: place of articulation across word boundaries 11.4 Glottal stops 11.5 Silent pauses within an utterance 11.6 Silent pauses after syntactic completion 11.7 Syntactically complete phrases followed immediately by more talk Summary Note on the data Exercises	172 173 178 181 184 187 191 192 193
	Further reading	194

12 Conclusion	195
Glossary	198
Discussion of the exercises	206
Further reading	212
Index	217