English Phonetics and Phonology
A practical course

Fourth edition
English Phonetics and Phonology
A practical course

Fourth edition

PETER ROACH
Emeritus Professor of Phonetics
University of Reading
# Contents

 Preface to the fourth edition  ix  
 List of symbols  x  
 Chart of the International Phonetic Alphabet  xii  

1 Introduction  1  
1.1 How the course is organised  1  
1.2 The *English Phonetics and Phonology* website  2  
1.3 Phonemes and other aspects of pronunciation  2  
1.4 Accents and dialects  3  

2 The production of speech sounds  8  
2.1 Articulators above the larynx  8  
2.2 Vowel and consonant  10  
2.3 English short vowels  13  

3 Long vowels, diphthongs and triphthongs  16  
3.1 English long vowels  16  
3.2 Diphthongs  17  
3.3 Triphthongs  18  

4 Voicing and consonants  22  
4.1 The larynx  22  
4.2 Respiration and voicing  24  
4.3 Plosives  26  
4.4 English plosives  26  
4.5 Fortis and lenis  28  

5 Phonemes and symbols  31  
5.1 The phoneme  31  
5.2 Symbols and transcription  33  
5.3 Phonology  35
6 Fricatives and affricates 39
  6.1 Production of fricatives and affricates 39
  6.2 The fricatives of English 40
  6.3 The affricates of English 43
  6.4 Fortis consonants 44

7 Nasals and other consonants 46
  7.1 Nasals 46
  7.2 The consonant l 48
  7.3 The consonant r 49
  7.4 The consonants j and w 50

8 The syllable 56
  8.1 The nature of the syllable 56
  8.2 The structure of the English syllable 57
  8.3 Syllable division 60

9 Strong and weak syllables 64
  9.1 Strong and weak 64
  9.2 The a vowel (“schwa”) 65
  9.3 Close front and close back vowels 66
  9.4 Syllabic consonants 68

10 Stress in simple words 73
  10.1 The nature of stress 73
  10.2 Levels of stress 74
  10.3 Placement of stress within the word 75

11 Complex word stress 82
  11.1 Complex words 82
  11.2 Suffixes 83
  11.3 Prefixes 85
  11.4 Compound words 85
  11.5 Variable stress 86
  11.6 Word-class pairs 87

12 Weak forms 89
13 Problems in phonemic analysis
  13.1 Affricates 97
  13.2 The English vowel system 99
  13.3 Syllabic consonants 100
  13.4 Clusters of s plus plosives 101
  13.5 Schwa (ə) 101
  13.6 Distinctive features 102
  13.7 Conclusion 103

14 Aspects of connected speech 107
  14.1 Rhythm 107
  14.2 Assimilation 110
  14.3 Elision 113
  14.4 Linking 115

15 Intonation 1 119
  15.1 Form and function in intonation 120
  15.2 Tone and tone languages 121
  15.3 Complex tones and pitch height 122
  15.4 Some functions of English tones 123
  15.5 Tones on other words 126

16 Intonation 2 129
  16.1 The tone-unit 129
  16.2 The structure of the tone-unit 130
  16.3 Pitch possibilities in the simple tone-unit 133

17 Intonation 3 136
  17.1 Fall–rise and rise–fall tones followed by a tail 136
  17.2 High and low heads 138
  17.3 Problems in analysing the form of intonation 140
  17.4 Autosegmental treatment of intonation 143

18 Functions of intonation 1 146
  18.1 The attitudinal function of intonation 147
  18.2 Expressing attitudes 150
Chapter 19: Functions of intonation

19.1 The accentual function of intonation
19.2 The grammatical function of intonation
19.3 The discourse function of intonation
19.4 Conclusions

Chapter 20: Varieties of English pronunciation

20.1 The study of variety
20.2 Geographical variation
20.3 Other sources of variation

Recorded exercises

Audio Unit 1: Introduction
Audio Unit 2: English short vowels
Audio Unit 3: Long vowels, diphthongs and triphthongs
Audio Unit 4: Plosives
Audio Unit 5: Revision
Audio Unit 6: Fricatives and affricates
Audio Unit 7: Further consonants
Audio Unit 8: Consonant clusters
Audio Unit 9: Weak syllables
Audio Unit 10: Word stress
Audio Unit 11: Complex word stress
Audio Unit 12: Weak forms
Audio Unit 13: Revision
Audio Unit 14: Elisions and rhythm
Audio Unit 15: Tones
Audio Unit 16: The tone-unit
Audio Unit 17: Intonation
Audio Unit 18: Intonation: extracts from conversation
Audio Unit 19: Further practice on connected speech
Audio Unit 20: Transcription of connected speech

Answers to written exercises
Answers to recorded exercises
Recommendations for general reading
Bibliography
Index
Preface

In previous editions I have used the Preface as a place to thank all the people who have helped me with the book. My debt to them, which in some cases dates back more than twenty-five years, remains, and I have put copies of the Prefaces to the first three editions on the new website of the book so that those acknowledgements are not lost and forgotten. In this new edition, I would like firstly to thank Professor Nobuo Yuzawa of the Takasaki City University of Economics for his wise suggestions and his meticulous and expert scrutiny of the text, which have been invaluable to me. Any errors that remain are entirely my fault.

At Cambridge University Press, I would like to thank Jane Walsh, Jeanette Alfoldi, Liz Driscoll, Anna Linthe, Clive Rumble and Brendan Wightman.

As in all previous editions, I want to thank my wife Helen for all her help and support.
## List of symbols

### 1 Symbols for phonemes

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Sound</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>as in ‘pit’</td>
<td>‘pit’</td>
</tr>
<tr>
<td>e</td>
<td>as in ‘pet’</td>
<td>‘pet’</td>
</tr>
<tr>
<td>æ</td>
<td>as in ‘pat’</td>
<td>‘pat’</td>
</tr>
<tr>
<td>ø</td>
<td>as in ‘pot’</td>
<td>‘pot’</td>
</tr>
<tr>
<td>o</td>
<td>as in ‘about’, upper</td>
<td>‘about’</td>
</tr>
<tr>
<td>eɪ</td>
<td>as in ‘bay’</td>
<td>‘bei’</td>
</tr>
<tr>
<td>aɪ</td>
<td>as in ‘buy’</td>
<td>‘bai’</td>
</tr>
<tr>
<td>ɛɪ</td>
<td>as in ‘peer’</td>
<td>‘piɛ’</td>
</tr>
<tr>
<td>eʊ</td>
<td>as in ‘pear’</td>
<td>‘peɛ’</td>
</tr>
<tr>
<td>oʊ</td>
<td>as in ‘poor’</td>
<td>‘pʊɔ’</td>
</tr>
<tr>
<td>p</td>
<td>as in ‘pea’</td>
<td>‘pi’</td>
</tr>
<tr>
<td>t</td>
<td>as in ‘toe’</td>
<td>‘tɔ’</td>
</tr>
<tr>
<td>k</td>
<td>as in ‘cap’</td>
<td>‘kæp’</td>
</tr>
<tr>
<td>f</td>
<td>as in ‘fat’</td>
<td>‘fæt’</td>
</tr>
<tr>
<td>θ</td>
<td>as in ‘thing’</td>
<td>‘θiŋ’</td>
</tr>
<tr>
<td>s</td>
<td>as in ‘sip’</td>
<td>‘sip’</td>
</tr>
<tr>
<td>ʃ</td>
<td>as in ‘ship’</td>
<td>‘ʃip’</td>
</tr>
<tr>
<td>h</td>
<td>as in ‘hat’</td>
<td>‘hæt’</td>
</tr>
<tr>
<td>m</td>
<td>as in ‘map’</td>
<td>‘mæp’</td>
</tr>
<tr>
<td>n</td>
<td>as in ‘nap’</td>
<td>‘næp’</td>
</tr>
<tr>
<td>η</td>
<td>as in ‘hang’</td>
<td>‘hæŋ’</td>
</tr>
<tr>
<td>tʃ</td>
<td>as in ‘chin’</td>
<td>‘tʃin’</td>
</tr>
</tbody>
</table>

© Cambridge University Press

978-0-521-71740-3 - English Phonetics and Phonology: A Practical Course, Fourth Edition
Peter Roach
Frontmatter
More information
2 Non-phonemic symbols
   i as in ‘react’, ‘happy’ rɪækt, hæpi
   u as in ‘to each’ tjuːtʃ
   ? (glottal stop)
   h aspiration, as in ‘pin’ pʰɪn
  ʃ syllabic consonant, as in ‘button’ bʌtʃ
   ʔ shortened vowel, as in ‘miss’ mɪs
   · syllable division, as in ‘differ’ dif.ə

3 Word stress
   † primary stress, as in ‘open’ ˈoʊpən
   ‡ secondary stress, as in ‘half time’ ˈhaːf taim

4 Intonation
   | tone-unit boundary
   || pause
   Tones:   \ fall
            / rise
            v fall–rise
            ^ rise–fall
            - level
   † stressed syllable in head, high pitch, as in ‘please ə do
   ‡ stressed syllable in head, low pitch, as in ˌplease ə do
   · stressed syllable in the tail, as in ˌmy · turn
   ↑ extra pitch height, as in ↑ˌmy · turn
### THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

#### CONSONANTS (PULMONIC)

<table>
<thead>
<tr>
<th>Bilabial</th>
<th>Labiodental</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Postalveolar</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>Uvular</th>
<th>Pharyngeal</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plosive</td>
<td>P b</td>
<td>t d</td>
<td>t̪ d</td>
<td>c j</td>
<td>k g</td>
<td>q g</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>m j</td>
<td>n n̪ j</td>
<td>n̪ n̪ j</td>
<td>n n̪ N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trill</td>
<td>B j</td>
<td>ð ð̪ j</td>
<td>R R̪ j</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tap or Flap</td>
<td>v v̪</td>
<td>ð̪ ð̪ j</td>
<td>t̠ d̠ j</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td>β β̪ / f f̪</td>
<td>θ ð j</td>
<td>s z j</td>
<td>ʃ z j</td>
<td>ç j</td>
<td>x y</td>
<td>h h̪</td>
<td>h h̪</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laterals</td>
<td>l l̪</td>
<td>l l̪ j</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td>ʋ ʋ̪</td>
<td>j j̪</td>
<td>y y̪ j</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral approximant</td>
<td>ʃ ʃ̪</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

#### CONSONANTS (NON-PULMONIC)

<table>
<thead>
<tr>
<th>Clicks</th>
<th>Voiced implosives</th>
<th>Ejectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilabial</td>
<td>B B̪</td>
<td>*</td>
</tr>
<tr>
<td>Dental</td>
<td>d d̪</td>
<td>p̪ p̪</td>
</tr>
<tr>
<td>Palatal</td>
<td>g g̪</td>
<td>k k̪</td>
</tr>
<tr>
<td>Alveolar lateral</td>
<td>ɬ ɬ̪</td>
<td>s s̪</td>
</tr>
</tbody>
</table>

**OTHER SYMBOLS**

<table>
<thead>
<tr>
<th>Voiced labio-velar fricative</th>
<th>Voiced labio-palatal fricatives</th>
<th>Voiced labial-palatal approximant</th>
<th>Voiced labial-palatal approximant</th>
<th>Voiced labial-palatal approximant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiced labial-palatal approximant</td>
<td>Voiced labial-palatal approximant</td>
<td>Voiced labial-palatal approximant</td>
<td>Voiced labial-palatal approximant</td>
<td>Voiced labial-palatal approximant</td>
</tr>
</tbody>
</table>

**SUPRASEGMENTALS**

- Primary stress
- Secondary stress
- Long
- Half-long
- Extra-short
- Minor (foot) group
- Major (intonation) group
- Syllable break
- Linking (absence of a break)

**TOPES AND WORD ACCENTS**

- Levels: High, Mid, Low
- Word accent: Rising, Falling
- Intonation accent: High rising, Low rising, Rising, Falling
- Stress accent: Extra high, Extra low
- Accent contour: Global rise, Global fall

Reproduced by kind permission of the International Phonetic Association, Department of Theoretical and Applied Linguistics, School of English, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece.