Contents

Preface		vii
know	rledgments	x
Recording the sounds of a language		1
1.1	Deciding what to record	1
1.2	Finding speakers	12
1.3	Recording systems	16
1.4	Making a recording	21
1.5	Digital recording	25
1.6	Listening to recordings	26
1.7	Making field notes	28
1.8	Instrumental phonetic techniques	30
Finding the places of articulation		
2.1	Still and video photography	32
2.2		36
2.3		42
2.4	Electropalatography	51
2.5	Further reading	53
Aerodynamic investigations		54
3.1	Recording air pressure and airflow	54
3.2		61
		64
3.4		69
3.5	Aerodynamic investigation of phonation types	71
	Rec 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 Find 2.1 2.2 2.3 2.4 2.5 Aer 3.1 3.2 3.3 3.4	Recording the sounds of a language 1.1 Deciding what to record 1.2 Finding speakers 1.3 Recording systems 1.4 Making a recording 1.5 Digital recording 1.6 Listening to recordings 1.7 Making field notes 1.8 Instrumental phonetic techniques Finding the places of articulation 2.1 Still and video photography 2.2 Basic palatography 2.3 More elaborate palatography 2.4 Electropalatography 2.5 Further reading Aerodynamic investigations 3.1 Recording air pressure and airflow 3.2 Measuring air pressure and airflow 3.3 Interpreting aerodynamic records 3.4 Quantifying nasalization

vi Contents

	3.6	Electroglottography	72
	3.7	Further reading	73
4	Pitch, loudness, and length		
	4.1	Pitch analysis	75
	4.2	Interpreting pitch curves	83
	4.3	Phonological considerations	86
	4.4	Loudness, intensity, and stress	90
	4.5	Waveforms and the measurement of duration	94
	4.6	Further reading	103
5	Cha	racterizing vowels	104
	5.1	Sound spectrograms	104
	5.2	Spectra	117
	5.3	Vowel charts	126
	5.4	Nasalized vowels	135
	5.5	Further reading	137
6	Acoustic analysis of consonants		
	6.1	Waveforms, spectrograms, and duration	
		measurements	138
	6.2	Spectral characteristics of nasals, laterals,	
		approximants, and trills	143
	6.3	Fricatives and stop bursts	152
	6.4	Spectrograms and place of articulation	159
	6.5	Spectrograms and articulatory movements	165
	6.6	Further reading	168
7	Acoustic analysis of phonation types		169
	7.1	Waveforms of different glottal states	169
	7.2	Spectral characteristics of phonation types	177
	7.3	Further reading	181
8	Coda		182
	8.1	A general-purpose phonetics laboratory	182
	8.2	More elaborate instrumental phonetic techniques	185
	8.3	Before and after fieldwork	189
	8.4	Further reading	193
Inc	lov		104