

Contents

1	Introduction	1
1.1	Characterization of Whistled Languages	1
1.2	Research Based on Fieldwork Inquiries	5
1.2.1	The Linguistic Communities Visited by Meyer and Busnel	5
1.2.2	Methodological Concerns	6
1.3	The Structure of This Monograph	8
	References	9
2	Historical Sketch	11
2.1	Whistled Languages and Ancient Texts	11
2.2	First Linguistic Analyses.	14
2.3	New Sources of Whistled Languages	23
	References	25
3	The Diversity and Landscape Ecology of Whistled Languages	29
3.1	Geographic Locations, Language Families.	29
3.2	Landscape Ecology of Whistled Languages.	30
3.2.1	A Special Relationship Between Landscapes and Whistled Speech	30
3.2.2	Mountainous Landscapes	32
3.2.3	Mountains Covered with Forest.	42
3.2.4	The Dense Amazon Forest	46
3.3	Conclusion	48
	References	49
4	Whistled Speech and Language Ecology	51
4.1	Principal Contexts of Use	51
4.2	Vitality Around the World and the Dynamics of Attrition.	53
4.2.1	The Same Dynamic of Attrition Everywhere.	53
4.2.2	Language Shift and Whistled Languages	54

4.2.3	Typology of Whistlers	56
4.2.4	Two Examples of Strong Decline: Greek and Béarnais. . .	60
4.3	Documentation, Revitalization and Revival	62
4.3.1	Sketch of the Initiatives for Maintenance	62
4.3.2	Teaching for Revitalization or Revival	63
4.4	Conclusion	66
	References	67
5	Whistle Production and Physics of the Signal	69
5.1	Whistling Techniques	69
5.2	Physiology and the Physics of Whistling Production	73
5.3	Acoustic Characteristics of Human Whistled Languages	80
5.3.1	Typical Frequency Bands of Human Whistled Speech . . .	80
5.3.2	Typical Amplitude Variations	81
5.3.3	Duration of Vowels	82
5.4	Comparison with Shouted and Sung Speech	82
5.4.1	Strategies to Reach a Distant Listener/Audience	82
5.4.2	Influence of Language Phonology in Singing	85
5.4.3	The Sung Mode of Whistled Speech	86
	References	88
6	Acoustic Adaptation to Natural Environments	91
6.1	Background Noise	91
6.2	Distance and Sound Propagation	94
6.3	Observation of Whistled Speech in Natural Conditions.	95
6.3.1	The Amazonian Forest Soundscape and Filter	95
6.3.2	Propagation of Whistled Turkish Consonants in a Large, Deep Valley of La Gomera Island.	97
6.3.3	Interference of the Forest with Akha Whistled Leaf Signals	98
6.4	Assets for Long-Distance Communication.	101
	References	102
7	Phonetics, Phonology and Typology of Whistled Languages	105
7.1	General Aspects of the Typology of Whistled Languages	106
7.2	The Case of Most Non-tonal Languages, Formant-Based Whistling	108
7.2.1	Vowels.	109
7.2.2	Consonants.	114
7.2.3	Recently Documented Languages Belonging to This Category	118
7.3	The Case of Tonal Languages, Pitch-Based Whistling	122

7.4	Some Rare Languages with Intermediate Strategies	123
7.4.1	Two Non-Tonal Languages Where Intonation Strongly Influences Whistles	123
7.4.2	Additional Details on Whistled Vowels and Consonants	126
7.5	Conclusions	128
	References	130
8	Perception and Neurocognitive Aspects	133
8.1	Preliminary Remarks About Whistled Speech Acquisition	134
8.2	A Spectacular Adaptation to Hearing and Speech Streaming	134
8.2.1	Human Audition and the Whistled Signal	134
8.2.2	Speech Streaming	135
8.3	Behavioral Experiments on Whistled Languages	137
8.3.1	Perception of Whistled Vowels by Non-whistlers (And by a Reference Whistler)	137
8.3.2	Nonsense Utterance Perception by Whistlers	139
8.3.3	Intelligibility of Whistled Words	143
8.3.4	Intelligibility of Whistled Sentences	144
8.3.5	Conclusions on the Intelligibility and Behavioral Tests	147
8.4	Neural Processing of a Whistled Language	148
8.5	Conclusions and Perspectives	150
	References	151
9	Evolutionary Perspectives	155
9.1	The Ecological Niche of Human Whistlers	156
9.2	What Animal Whistles May Tell Us About Human Whistled Speech	158
9.2.1	Birdsongs and Whistled Languages	158
9.2.2	Cetacean Whistles and Testing Referential Communication	160
9.2.3	Whistling Primates, an Evolutionary Path Towards Human Whistled Languages?	162
9.2.4	Conclusion on the Comparison of Animal-Human Whistles	166
9.3	Conclusion: Questions Raised by Whistled Speech Origin and Evolution	167
9.3.1	Whistled Speech and the Environment	167
9.3.2	Possible Scenarios of Origin and the Music-Language Relation	168
	References	173
	Erratum to: Chapters 1, 7 and 8 in <i>Whistled Languages</i>	E1
	Index	179



<http://www.springer.com/978-3-662-45836-5>

Whistled Languages

A Worldwide Inquiry on Human Whistled Speech

Meyer, J.

2015, IX, 182 p. 63 illus., 24 illus. in color., Hardcover

ISBN: 978-3-662-45836-5