

### VOWEL PATTERNS IN LANGUAGE

Linguists researching the sounds of languages do not just study lists of sounds but seek to discover generalizations about sound patterns by grouping them into categories. They study the common properties of each category and identify what distinguishes one category from another. Vowel patterns, for instance, are analyzed and compared across languages to identify phonological similarities and differences. This original account of vowel patterns in language brings a wealth of cross-linguistic material to the study of vowel systems and offers new theoretical insights. Informed by research in speech perception and production, it addresses the fundamental question of how the relative prominence of word position influences vowel processes and distributions. The book combines a cross-linguistic focus with detailed case studies. Descriptions and analyses are provided for vowel patterns in over twenty-five languages from around the world, with particular emphasis on minor Romance languages and on the diachronic development of the German umlaut.

RACHEL WALKER is an associate professor in the Department of Linguistics at the University of Southern California. She is the author of *Nasalization, Neutral Segments and Opacity Effects* (2000), and has contributed numerous articles to journals and books.



### In this series

- 85. JOHN COLEMAN: Phonological representations: their names, forms and powers
- 86. CHRISTINA Y. BETHIN: Slavic prosody: language change and phonological theory
- 87. BARBARA DANCYGIER: Conditionals and prediction
- 88. CLAIRE LEFEBVRE: Creole genesis and the acquisition of grammar: the case of Haitian creole
- 89. HEINZ GIEGERICH: Lexical strata in English
- 90. KEREN RICE: Morpheme order and semantic scope
- 91. APRIL MCMAHON: Lexical phonology and the history of English
- 92. MATTHEW Y. CHEN: Tone Sandhi: patterns across Chinese dialects
- GREGORY T. STUMP: Inflectional morphology: a theory of paradigm structure
- 94. JOAN BYBEE: Phonology and language use
- 95. LAURIE BAUER: Morphological productivity
- 96. THOMAS ERNST: The syntax of adjuncts
- 97. ELIZABETH CLOSS TRAUGOTT AND RICHARD B. DASHER: Regularity in semantic change
- 98. MAYA HICKMANN: Children's discourse: person, space and time across languages
- 99. DIANE BLAKEMORE: Relevance and linguistic meaning: the semantics and pragmatics of discourse markers
- 100. IAN ROBERTS AND ANNA ROUSSOU: Syntactic change: a minimalist approach to grammaticalization
- 101. DONKA MINKOVA: Alliteration and sound change in early English
- 102. MARK C. BAKER: Lexical categories: verbs, nouns and adjectives
- 103. CARLOTA S. SMITH: Modes of discourse: the local structure of texts
- 104. ROCHELLE LIEBER: Morphology and lexical semantics
- 105. HOLGER DIESSEL: The acquisition of complex sentences
- 106. SHARON INKELAS AND CHERYL ZOLL: Reduplication: doubling in morphology
- 107. SUSAN EDWARDS: Fluent aphasia
- 108. BARBARA DANCYGIER AND EVE SWEETSER: Mental spaces in grammar: conditional constructions
- 109. HEW BAERMAN, DUNSTAN BROWN AND GREVILLE G. CORBETT: The syntax-morphology interface: a study of syncretism
- MARCUS TOMALIN: Linguistics and the formal sciences: the origins of generative grammar
- III. SAMUEL D. EPSTEIN AND T. DANIEL SEELY: Derivations in minimalism
- II2. PAUL DE LACY: Markedness: reduction and preservation in phonology
- 113. YEHUDA N. FALK: Subjects and their properties
- 114. P. H. MATTHEWS: Syntactic relations: a critical survey
- 115. MARK C. BAKER: The syntax of agreement and concord
- 116. GILLIAN CATRIONA RAMCHAND: Verb meaning and the lexicon: a first phase syntax
- 117. PIETER MUYSKEN: Functional categories
- 118. JUAN URIAGEREKA: Syntactic anchors: on semantic structuring
- 119. D. ROBERT LADD: Intonational phonology, second edition



- 120. LEONARD H. BABBY: The syntax of argument structure
- 121. B. ELAN DRESHER: The contrastive hierarchy in phonology
- 122. DAVID ADGER, DANIEL HARBOUR AND LAUREL J. WATKINS: Mirrors and microparameters: phrase structure beyond free word order
- 123. NIINA NING ZHANG: Coordination in syntax
- 124. NEIL SMITH: Acquiring phonology
- 125. NINA TOPINTZI: Onsets: suprasegmental and prosodic behaviour
- 126. CEDRIC BOECKX, NORBERT HORNSTEIN AND JAIRO NUNES: Control as movement
- 127. MICHAEL ISRAEL: The grammar of polarity: pragmatics, sensitivity, and the logic of scales
- 128. M. RITA MANZINI AND LEONARDO M. SAVOIA: Grammatical categories: variation in Romance languages
- 129. BARBARA CITKO: Symmetry in syntax: merge, move and labels
- 130. RACHEL WALKER: Vowel patterns in language

Earlier issues not listed are also available



### CAMBRIDGE STUDIES IN LINGUISTICS

General Editors: P. Austin, J. Bresnan, B. Comrie, S. Crain, W. Dressler, C. J. Ewen, R. Lass, D. Lightfoot, K. Rice, I. Roberts, S. Romaine, N. V. Smith

Vowel Patterns in Language



# VOWEL PATTERNS IN LANGUAGE

RACHEL WALKER

University of Southern California





> CAMBRIDGE UNIVERSITY PRESS Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi, Tokyo, Mexico City

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
Information on this title: www.cambridge.org/9780521513975

© Rachel Walker 2011

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 2011

Printed in the United Kingdom at the University Press, Cambridge

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

ISBN 978-0-521-51397-5 Hardback

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**

	Acknowledgments	page ix
1	Introduction	1
2	Preliminaries: functional grounding	12
2.1	Introduction	12
2.2	Stressed and unstressed syllables	14
2.3	Initial syllables	18
2.4	Final syllables	22
2.5	Morphological roots and stems	24
2.6	Specific vowel qualities	26
2.7	Summary and predictions	32
3	Generalized licensing	36
3.1	Introduction	36
3.2	The concept of licensing	36
3.3	Prominence-based licensing configurations	40
3.4	Formalism	44
3.5	Achieving the licensing configurations	53
3.6	Morpheme-specific licensing	59
3.7	Summary	63
4	Typological predictions	64
4.1	Introduction	64
4.2	Disyllables	66
4.3	Trisyllables	70
4.4	Non-local effects	75
4.5	Interactions with other faithfulness constraints	77
4.6	Summary	80
4.7	Appendix	80
5	Indirect licensing	89
5.1	Introduction	89
		vii



viii	Contents	
5.2	Control by the licensing position	91
5.3	Assimilation within the licensing position	110
5.4	Sources of trigger control	135
5.5	Alternatives	140
5.6	Conclusion	143
6	Identity licensing	145
6.1	Introduction	145
6.2	Preservation of vowel properties in the licensing position	147
6.3	Preservation of vowel properties in the licensing position	
	and non-licensing position	158
6.4	Assimilation at a distance in the licensing position	166
6.5	Non-local effects in review	182
6.6	Alternatives	185
6.7	Conclusion	191
7	Direct licensing	193
7.1	Introduction	193
7.2	Effacement or deficiency of vowel properties	
	in a non-licensing position	194
7.3	Preservation of vowel properties originating in	
	licensing and non-licensing positions	212
7.4	Alternating vowel properties in the licensing position	216
7.5	Direct licensing phenomena in review	230
7.6	Alternatives	234
7.7	Conclusion	235
8	Maximal licensing	238
8.1	Introduction	238
8.2	Maximal licensing harmony from a strong position	240
8.3	Case study: Servigliano	256
8.4	Conclusion	293
9	Conclusion and final issues	297
9.1	Licensing and vowel patterns	297
9.2	Vowel patterns and prominence in the future	300
9.3	Final remarks	313
	Notes	314
	References	329
	Language Index	351
	Subject Index	353
	Sue jeer index	333



## Acknowledgments

The material in this book has taken shape over the course of several years, and many colleagues and students have provided valuable input and assistance during that time.

First, I am grateful to Keren Rice for the many useful comments she provided in a review of this work.

I wish to acknowledge the students who made contributions to this research. I am grateful to Erika Varis for her extensive research assistance and comments on the manuscript, Ben Parrell for his research assistance with Servigliano, and Michal Temkin Martinez for her assistance with OTSoft. I would also like to thank those students for feedback during presentations at USC while this work was being developed, as well as Rebeka Campos-Astorkiza, Alvaro Cerrón-Palomino López, Fang-Ying Hsieh, Cristian Iscrulescu, Henry Nandelenga, Magdalena Pire-Schmidt, Daylen Riggs, Sergio Robles-Puente, Meghan Sensenbach, Laura Tejada, and Sasa Tomomasa. Several colleagues at USC have influenced my thinking about aspects of this research: Dani Byrd, Louis Goldstein, Abigail Kaun, and Ania Łubowicz; Mario Saltarelli offered valuable help with Romance data and patterns, and Elena Guerzoni provided generous assistance with translations and suggestions about the formalism.

I would like to thank a number of other people for their help with data and questions about languages studied in this work: Michele Brunelli (central Veneto), Daniel Büring (Modern German, and for suggestions about formalism), Stefano Canalis (dialects of Italy), Rodolfo Cerrón-Palomino (Jaqaru), Brad Koenig (Esimbi), and Joe Salmons (Germanic umlaut, and for suggestions about its relation to the theoretical approach). I had the opportunity to present some of this work at PhonologyFest at Indiana University. I would like to thank the host, Stuart Davis, and the course and workshop participants for useful comments. Other venues at which parts of this research were presented include the UC Santa Cruz Linguistics Ph.D. Alumni Conference, the Southern California Workshop on Phonetics/Phonology at Pomona College, the 45th meeting of the Chicago Linguistic Society, and the annual meeting



### x Acknowledgments

of the Linguistic Society of America in Baltimore. I am grateful to the organizers of those events and to audience members for valuable questions and feedback. I have also benefitted from discussions on topics related to this research with Jill Beckman, Bruce Hayes, Jaye Padgett, Joe Pater, Cathie Ringen, and Sharon Rose. Of course, any errors in this work are my own.

I am grateful to my editor at Cambridge University Press, Andrew Winnard, for his guidance and his support for this project.

The seeds of my interest in this area were planted when I was a student at the University of Toronto. I owe special thanks to Keren Rice for many stimulating discussions over the years and for her mentorship. Elan Dresher, Carrie Dyck, and Tom Wilson provided important early sources of inspiration for me on the topic of vowel patterns.

For financial support of this research I wish to express thanks to the USC College of Letters, Arts and Sciences, and to the USC Provost's Office for an award from the Advancing Scholarship in the Humanities and Social Sciences Initiative.

Finally, thanks to my family, especially my husband Geoff Duke, for their unflagging support. It is to my family that I dedicate this book.