MARKEDNESS

'Markedness' refers to the tendency of languages to show a preference for particular structures or sounds. This bias towards 'unmarked' elements is consistent within and across languages, and tells us a great deal about what languages can and cannot do. This pioneering study presents a groundbreaking theory of markedness in phonology. De Lacy argues that markedness is part of our linguistic Competence, and is determined by three conflicting mechanisms in the brain: (a) pressure to preserve marked sounds ('preservation'), (b) pressure to turn marked sounds into unmarked sounds ('reduction'), and (c) a mechanism allowing the distinction between marked and unmarked sounds to be collapsed ('conflation'). He shows that, due to these mechanisms, markedness occurs only when preservation is irrelevant. Drawing on examples of phenomena such as epenthesis, neutralization, assimilation, vowel reduction, and sonority-driven stress, *Markedness* offers an important new insight into this essential concept in the understanding of human language.

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Markedness
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MARKEDNESS

REDUCTION AND PRESERVATION IN PHONOLOGY

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In memory of my father, Reg
(1928–2004)

and

my brother, Grant
(1973–1993)

Contents

Preface

This book presents a new theory of markedness, a concept that is central to understanding human language. The domain of discussion is phonology (the mental representation and computation of speech sounds), but the theory applies to syntax and morphology as well.

Many linguistic phenomena show a bias towards certain segments or structures. For example, consonants are often inserted to meet prosodic requirements. Such epenthetic consonants always have coronal or glottal place of articulation (e.g. [t ʔ h] and so on); they are never dorsal (e.g. [k ɡ x ŋ]) or labial (e.g. [p b m]). Other phenomena like neutralization also produce glottals and coronals, but never labials and dorsals. To explain this consistent bias there is often an appeal to a concept of 'markedness': dorsals and labials are designated as 'marked', glottals and coronals are 'unmarked', and phonological processes can only ever turn marked segments and structures into unmarked ones.

Three leading ideas about markedness are presented in this book. One is that the term 'markedness' has often been used to refer to very different phenomena. This book is about the human Language Faculty, so a major aim is to distinguish markedness as it relates to grammatical Competence from other uses of the term.

Another central proposal is that there is pressure to preserve marked elements. This principle of 'Preservation of the Marked' (PoM) can prevent highly marked elements from being eliminated in phonological phenomena like neutralization and assimilation. PoM has a significant effect: it allows markedness to only be apparent when preservation is irrelevant. For example, epenthetic consonants have no corresponding input form so preservation is irrelevant; markedness will therefore be evident in consonant epenthesis. The practical effect of PoM is that many phenomena thought to show markedness effects actually do not, including segmental inventories and undergoers of processes like neutralization and assimilation.

The third central proposal is 'conflation': that is, distinctions between markedness categories can be collapsed. For example, dorsals are more marked than coronals, so some languages may favour coronals over dorsals, while others

may treat them as equally marked. However, hierarchical markedness relations can never be reversed, so no language will favour dorsals over coronals. Conflation is crucial to understanding markedness. It explains why markedness is apparently ignored in a variety of situations.

One final point that recurs throughout the book is that there is no such thing as the 'least-marked segment'. Neither [t], [ʔ], or [b] is the least marked consonant, and neither [a] nor [ə] is the least-marked vowel. Markedness does not impose relations at the segmental level, but rather among feature values. In addition, there is no meta-restriction that all markedness hierarchies be consistent at the segmental level. So, while glottal is the least-marked place of articulation, other markedness hierarchies favour non-glottals over glottals. Whether glottals or coronals are treated as least marked in a language depends on which markedness hierarchy dominates. In addition, some markedness hierarchies vary with prosodic context. The result is that there is variation in terms of what may be the least-marked segment in a particular language, even though that variation is limited.

The leading ideas in this book are implemented within Optimality Theory (Prince & Smolensky 1993; McCarthy & Prince 1995). The theory of markedness presented here consists of proposals about the form of feature values and restrictions on the constraint component CON. In essence, a markedness hierarchy is realized as two different sets of constraints. One set places restrictions on output structures: for every element in the hierarchy, there is an output constraint that bans that element and every more marked element. The other set restricts the input → output mapping: specific constraints preserve marked elements, and there is no constraint that preserves a relatively unmarked element without also preserving all more marked elements. All the constraints can be ranked freely.

The empirical phenomena discussed and analysed in this book include epenthesis, neutralization, assimilation, vowel reduction, and sonority-driven stress. Diachronic processes, loanword adaptation, language acquisition, and disordered phonology are not discussed as they fall outside the bounds of a Competence theory of markedness, as explained in chapter 1.

Audience

Even a cursory examination of linguistic phenomena reveals numerous asymmetries; the theory presented in this book provides a way to explain them. This book will therefore be relevant to any scholar interested in human

language, from the perspective of theoretical or descriptive linguistics, or in allied fields such as anthropology, computer science, neurology, psychology, and philosophy.

While this book is accessible to anyone with a general background in linguistics and for adherents of any phonological theory, a full understanding of the approach requires knowledge of current linguistic theory, especially Optimality Theory (for introductions, see Kager 1999 and McCarthy 2001b). Those who are interested in syntax will also find this book useful; the proposals in their most general form apply to syntactic mechanisms as well as phonological ones. It is important to point out that this book is not a history of markedness (cf. Battistella 1990, Rice in prep.); the aim here is to present a theory.

Use

As it discusses a central idea in phonological theory, this book can be used in advanced courses in phonology and Optimality Theory. Parts of it can also be used in courses on general linguistics.

History of this book

This book comes at a particularly contentious time for markedness theory. There are several competing theories of markedness set in Optimality Theory (e.g. Prince & Smolensky 1993; Rice 1999a,b, 2004a,b, 2006) and many set in other frameworks (e.g. underspecification theory). In addition, recent work has also questioned whether markedness even exists, or at least whether it is relevant for a theory of linguistic Competence (Hume 2003, 2004; Blevins 2004).

A good deal of my work over the past five years has focused on markedness. For my previous work on markedness hierarchies, see de Lacy 2000a, 2000b. For conflation and stringent constraint form, see de Lacy 2000a, 2002a, 2004. Some of the central theoretical proposals in this book were developed at the University of Massachusetts, Amherst, and formed part of my doctoral dissertation (de Lacy 2002a). However, a great deal of this book reports new research I undertook at the University of Cambridge and Rutgers University. Unlike my previous work, this book focuses on the Competence-Performance distinction, determining markedness diagnostics, vowel markedness in neutralization and epenthesis, conflation in place of articulation, and comparison with other theories of markedness. For the phenomena discussed in previous work (e.g. consonant epenthesis), much of the empirical base has been extended. A great

deal of new and important work for markedness has emerged very recently, and I have attempted to discuss and refer to as much of it as possible, including Blevins 2004, Howe & Pulleyblank 2004, Hume 2003, 2004, Kiparsky 2004, and Rice 1999a,b, 2004a,b, 2006, in prep.

Acknowledgments

This book represents the culmination of work over the last eight years in three different places: the University of Massachusetts, Amherst, the University of Cambridge, and Rutgers University. Consequently, there are many people I need to thank.

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My mother, Mary, continues to inspire me; she is incredibly hard-working and intelligent, the most capable person I know, and always encouraged me wherever my interests turned. My father, Reg, was one of the most brilliant people I have ever known. I regret that he died before I could thank him in print for being such an inspiration. I also must thank my brother, Grant. From him I learnt how to persevere.

I also thank many colleagues.

John McCarthy has commented extensively on everything I have ever written about markedness leading up to this book. John taught me to think critically and concisely. His influence can be seen in the good parts of this book; the rough parts can be ascribed to my baser nature.

Alan Prince's theoretical proposals inform many aspects of the theory presented here. He also commented on a great deal of the work that led up to this book. I am also deeply grateful for the kindness he and Jane Grimshaw have shown to Catherine and myself.

I also owe Lisa Selkirk and John Kingston thanks for detailed comments on previous related work and providing the inspiration for many of the proposals found here.

For this book, I am especially grateful to Kate Ketner, Michael O'Keefe, and Sarah Murray for all the time they spent carefully critiquing and correcting the manuscript. Their comments made this book significantly better in both theory and presentation.

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Finally, I wish to thank my editor at Cambridge University Press – Helen Barton. Her kindness and understanding helped make writing this book a tolerable burden.

Symbols and abbreviations

/ /	= underlying form
[ ]	= surface form
| |	= encloses a markedness hierarchy
|| ||	= encloses a constraint ranking
⟩	= 'is more marked than'
»	= 'outranks'
»»	= 'universally outranks' (i.e. outranks in every grammar)
DTE	= Designated Terminal Element
MoA	= manner of articulation
OT	= Optimality Theory
PoM	= Preservation of the Marked
PoA	= place of articulation
CoMP	= an abbreviation for the theory proposed in this book (i.e. Competence, Conflation, Hierarchy Conflict, Markedness, and Preservation of the Marked)
☞	= the winner in a tableau
💣	= a winner that is not the attested form in a particular language
☠	= a winner that is never the attested form in any language

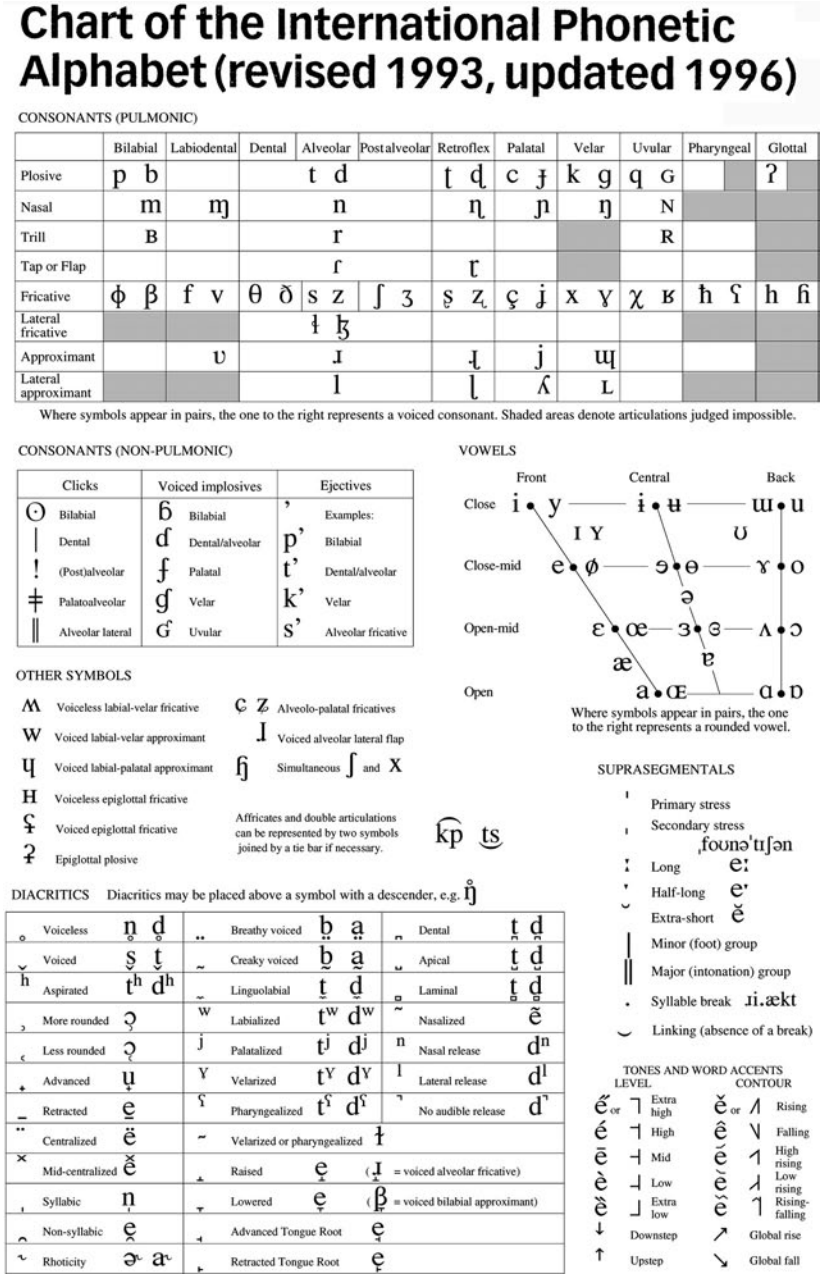

Chart of the International Phonetic Alphabet (revised 1993, updated 1996)

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	N		
Trill	ʙ			r					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

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

CONSONANTS (NON-PULMONIC)

Clicks		Voiced implosives		Ejectives	
ʘ	Bilabial	ɓ	Bilabial	’	Examples:
|	Dental	ɗ	Dental/alveolar	pʼ	Bilabial
!	(Post)alveolar	ʄ	Palatal	tʼ	Dental/alveolar
ǂ	Palatoalveolar	ɠ	Velar	kʼ	Velar
‖	Alveolar lateral	ʛ	Uvular	sʼ	Alveolar fricative

OTHER SYMBOLS

ʍ	Voiceless labial-velar fricative	ɕ ʑ	Alveolo-palatal fricatives
w	Voiced labial-velar approximant	ɺ	Voiced alveolar lateral flap
ɥ	Voiced labial-palatal approximant	ʃʒ	Simultaneous ʃ and x
ʜ	Voiceless epiglottal fricative		
ʢ	Voiced epiglottal fricative		
ʡ	Epiglottal plosive		

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary. k͡p t͡s

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. n̥

◌̥	Voiceless	n̥ d̥	◌̤	Breathy voiced	b̤ a̤	◌̪	Dental	t̪ d̪
◌̬	Voiced	s̬ t̬	◌̰	Creaky voiced	b̰ a̰	◌̺	Apical	t̺ d̺
◌ʰ	Aspirated	tʰ dʰ	◌̼	Linguolabial	t̼ d̼	◌̻	Laminal	t̻ d̻
◌̹	More rounded	ɔ̹	◌ʷ	Labialized	tʷ dʷ	◌̃	Nasalized	ẽ
◌̜	Less rounded	ɔ̜	◌ʲ	Palatalized	tʲ dʲ	◌ⁿ	Nasal release	dⁿ
◌̟	Advanced	u̟	◌ˠ	Velarized	tˠ dˠ	◌ˡ	Lateral release	dˡ
◌̠	Retracted	e̠	◌ˤ	Pharyngealized	tˤ dˤ	◌̚	No audible release	d̚
◌̈	Centralized	ë	◌̴	Velarized or pharyngealized	ɫ			
◌̽	Mid-centralized	e̽	◌̝	Raised	e̝	(ɹ̝ = voiced alveolar fricative)		
◌̩	Syllabic	n̩	◌̞	Lowered	e̞	(β̞ = voiced bilabial approximant)		
◌̯	Non-syllabic	e̯	◌̘	Advanced Tongue Root	e̘			
◌˞	Rhoticity	ə˞ a˞	◌̙	Retracted Tongue Root	e̙			

VOWELS

Where symbols appear in pairs, the one to the right represents a rounded vowel.

SUPRASEGMENTALS

ˈ	Primary stress	ˌfoʊnəˈtɪʃən	
ˌ	Secondary stress		
ː	Long	eː	
ˑ	Half-long	eˑ	
˘	Extra-short	ĕ	
|	Minor (foot) group		
‖	Major (intonation) group		
.	Syllable break	ɹi.ækt	
‿	Linking (absence of a break)		

TONES AND WORD ACCENTS

LEVEL			CONTOUR	
é͡ or	˥	Extra high	ě or	˩˥ Rising
é	˦	High	ê	˥˩ Falling
ē	˧	Mid	e᷄	˦˥ High rising
è	˨	Low	e᷅	˩˧ Low rising
ȅ	˩	Extra low	e᷈	˥˦˥ Rising-falling
↓		Downstep	↗	Global rise
↑		Upstep	↘	Global fall