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FOUNDATIONS OF  
THEORETICAL  
PHONOLOGY

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*This book is dedicated to*  
**NANCY SMITH**

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## *Foreword*

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Theoretical phonology comprises a system of phonological elements, a set of universal rules relating these elements, and a set of principles governing the operation of the phonological rules.

The basic phonological elements are defined not by physical acoustic or articulatory parameters, but rather by their participation in rules. In recognition of the orientation of the system not towards sounds but to rules governing the interaction of abstract phonological elements, I consider in detail two universal rules: nasalization and assibilation, indicating how the phonological elements, coupled with the abstract principles, can provide explanations for many otherwise inexplicable phenomena.

To illustrate the role of abstract principles in phonological theory I consider in detail the inertial development principle, particularly its derivative universal inequality condition which allows the resolution of many rule-ordering problems.

As an introduction to the theory, and to place it in context, I begin the book with a criticism of transformational phonetics.

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## Notation

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$| |$  refers to the absolute value of a quantity independent of sign. It is used for measuring differences of phonological strength. Thus  $|5-3|$  is equal to 2, as is  $|3-5|$ .

The parentheses ( ) enclose members of an ordered set. Thus  $(a, b, c)$  refers to the set of elements of which  $a$  is the weakest,  $c$  the strongest. It is an indication of phonological strength which is also indicated by strength parameters, thus:  $a \ b \ c$ .

The brackets [ ] indicate a broad phonetic transcription. Thus for example *amici* [amiči] but *banchi* [banki] indicates that Italian orthographic  $c$  is pronounced  $\check{c}$  before  $i$ , and that orthographic  $ch$  is pronounced  $k$  before  $i$ . The  $n$  of *banki* is phonetically velar, but since this is unimportant for the discussion of Italian assibilation, it is not indicated in the phonetic transcription.

$\delta$  refers to a small difference, thus  $|a-b| \leq \delta$  means that the absolute value of the difference of  $a$  and  $b$  must be less than some small number  $\delta$  which is specified for each language and for each rule; for example  $\delta = 1$  means that the difference between two elements is one unit.

The diagraph  $sz$  indicates a generalized reflex of assibilation. It stands for any of the possible reflexes of the assibilation process, thus for example  $ts, t\check{s}, s, \check{s}, dz, d\check{z}, z, \check{z}$ .

# is word boundary, + is morpheme boundary, . is syllable boundary.

$\leq$  means less than or equal to, thus  $a \leq b$  means that the phonological strength of  $a$  is less than or equal to the phonological strength of  $b$ .  $1 \leq n \leq m$  means that the variable  $n$  varies from the constant 1 to the variable  $m$  where  $m$  is defined for each language. Thus if for some language  $m \leq 3$  then  $n$  must have the values 1, 2, and 3.

Subscript  $n$  refers to phonological strength (as in  $V_n$ ) while superscript  $n$  (as in  $C^n$ ) refers to number of elements.

xii *Notation*

Superscript + (as in  $V^+$ ) indicates a strengthened element while superscript - (as in  $V^-$ ) indicates a weakened element.

The tilde  $\sim$  indicates nasalization. The acute accent ' indicates stress. The macron  $\bar{\phantom{a}}$  indicates vowel length in Latin and most other languages, but in Old Norse and sometimes in Latin inscriptions vowel length is indicated by the acute accent '. Vowel shortness is indicated by the breve  $\breve{\phantom{a}}$ .

The three dots . . . when appearing in the environment of a rule refer to contiguity. Thus  $A \rightarrow B / \dots C$  means that A changes to B when contiguous to C, abbreviating  $A \rightarrow B / \_ C$  and  $A \rightarrow B / C \_$ .

*Idem* in the range of a rule means that no change has occurred, thus  $A \rightarrow idem$  means that A has not changed.

Throughout the book, for ease of exposition, orthographic signs, such as *b*, *d*, *g*, may represent either phonetic sounds or abstract phonological elements. These letters are neither phonological elements like  $\alpha\beta\gamma$  nor phonetic elements like [+voice, -continuant, -anterior, -coronal], but are orthographic conveniences.

## *Language abbreviations*

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Blg	Bulgarian	NHG	New High German
Dn	Danish	OCS	Old Church Slavonic
Drc	Doric	OE	Old English
Eng	English	OHG	Old High German
Fn	Finnish	OI	Old Irish
Fr	French	ON	Old Norse
Gk	Greek	OIC	Old Icelandic
Grm	German	OS	Old Saxon
Gth	Gothic	Pl	Polish
Ic	Icelandic	Ptg	Portuguese
IE	IndoEuropean	Rhaeto Rom	Rhaeto Romance
It	Italian	Rm	Roumanian
Lsb	Lesbian	Rsn	Russian
Lt	Latin	SC	SerboCroatian
Lth	Lithuanian	Skt	Sanskrit
Ltv	Latvian	Sp	Spanish
MHG	Middle High German	Swd	Swedish
Nrg	Norwegian	W	Welsh