

his influence on ‘the empirical methods that shape phonological inquiry’ (xi). Since Ohala has been consistently involved in big ideas, his influence ranges widely and there are many types of experimental inquiries that have been influenced by him. This book is a thoughtfully planned and organized collection of papers on a diverse set of topics.

The papers are divided into five parts, under loosely organizing titles that strain at times to capture the diverse character of the papers they represent. Due to practical space limits the book cannot present a comprehensive view of the wide range of fields it touches on, leaving coverage feeling a bit uneven at times. However, it is a rich and stimulating collection of papers worth reading.

Part 1, ‘Theory and background’, begins with the conceptual introduction to the book, given in ‘Methods in phonology’ by JOHN J. OHALA, a very short sketch of critical questions and principles that should guide experimental investigations of these questions. Ohala remains neutral on these matters, resisting any urge to nudge the field toward one or the other direction (or method) of inquiry. ‘Elicitation as experimental phonology’, by LARRY HYMAN, is an elegant demonstration of a complex set of tonal patterns in Thlantlang Lai, which can be found through systematic investigation of noun paradigms. The chapter demonstrates what is possible with one-to-one linguist/consultant ‘field’ (or office) work, at least when the linguist is a particularly talented practitioner of this analysis method. ‘Decisions and mechanisms in exemplar-based phonology’, by KEITH JOHNSON, discusses the grounding of exemplar-based theories in cognitive psychology and presents varied illustrations of how such representations could account for systematic and/or abstract generalizations about language. ‘Beyond laboratory phonology’ by KLAUS KOHLER uses examples of F0 alignment with articulation to argue that if (communicative) function, time, and the listener are given a central place in the study of speech, a more rational set of descriptive and theoretical constructs will emerge. ‘Area functions and articulatory modeling as a tool for investigating the articulatory, acoustic and perceptual properties of sounds across languages’, by JACQUELINE VAISSIÈRE, illustrates application of Shinji Maeda’s articulatory model to fine acoustic and articulatory details of French. The discussion relies on a new phonetic notation system, a proposed alternative to the IPA, which, though provocative, is likely to be unfamiliar to many readers and as such slows one’s ability to assimilate the material. The paper is a solid reminder of the vast extent of language-specific differences even in sounds that we might comfortably transcribe with the same symbol.

Part 2, ‘Phonological universals’, consists of a varied collection of papers exploring phonetic evidence for phonological universals. ‘Phonological universals and the control and regulation of speech production’, by DIDIER DEMOLIN, reports on a detailed analysis of physiological data—measurements of both intraoral and subglottal pressure—arguing for the independence of control mechanisms for the two. This independence suggests new explanations for common patterns in tonal declination and segment lenition. ‘Issues of phonological complexity’, by IAN MADDISON, is a brief illustration of how a language database like UPSID can be applied to questions about patterns within language inventories, specifically questions of compensation in phonological complexity. ‘Linking dispersion-focalization theory and the maximum utilization of the available distinctive features principle in a perception-for-action-control theory’, by JEAN-LUC SCHWARTZ, LOUIS-JEAN BOË, and CHRISTIAN ABRY, adds a notion of local salience to a computational approach to perceptual conditioning of the crosslinguistic distribution of vowels and consonants in phonetic space.

Part 3, ‘Phonetic variation and phonological change’, is in some ways the conceptual heart of the book and is the best single collection of phonetically sophisticated works on sound change put together for quite some time. ‘Applying perceptual methods to the study of phonetic variation and sound change’, by PATRICE SPEETER BEDDOR, ANTHONY BRASHER, and CHANDAN NARAYAN, identifies patterns in perception of nasalization in VNC sequences and offers a clearer understanding of why and when such sequences may evolve into structures with contrastive nasalization on the vowel. ‘Interpreting misperception: Beauty is in the ear of the beholder’, by JULIETTE BLEVINS, critiques a variety of arguments that have been put forth against the idea that misperception by the listener is a major source of sound change, and that sound change is nonteleological.

68 ‘Coarticulatory nasalization and phonological developments: Data from Italian and English nasal-
 69 fricative sequences’, by M. GRAZIA BUSÀ, is a detailed description of language-specific differ-
 70 ences in phonetic detail, specifically, in timing of oral and velic articulatory movements as
 71 inferred from aerodynamic and acoustic data. Though phonological change is not addressed in
 72 depth in this paper, the implication is that such phonetic differences could lead to different types
 73 of (mis)perception by listeners, thus spawning divergent historical changes. ‘A perceptual bridge
 74 between coronal and dorsal /r/’, by OLLE ENGSTRAND, JOHAN FRID, and BJÖRN LINDBLOM, uses
 75 articulatory modeling and perception tests to argue that cues to the front versus back articulation
 76 of /r/s are ambiguous and behave noncategorically. This increases the likelihood that changes
 77 in the frontness of /r/s have occurred spontaneously multiple times, rather than being a rare or
 78 one-time innovation that then spreads through a geographic region over time. ‘Danish Stød:
 79 Phonological and cognitive issues’, by NINA GRØNNUM and HANS BASBØLL, uses acoustic and
 80 auditory analyses to assess the temporal properties of stød. They claim that stød results from a
 81 ballistic laryngeal gesture of varying strength, the time course of which is not under speakers’
 82 direct control. They also make the case that conditioning of its occurrence is shifting from
 83 morphological to phonological control through the influence of analogy, which constitutes another
 84 important concept in understanding sound change.

85 Part 4, ‘Maintaining, enhancing and modeling phonological contrasts’, includes several papers
 86 addressing differences in segmental and prosodic representations, and/or how they interact. This
 87 section also includes a discussion of vowel normalization—critical to an understanding of contrast
 88 perception—as well as a discussion of the difference between language-specific and mechanical
 89 contributions to the phonetic content of speech. ‘Articulatory movements and phrase boundaries’,
 90 by PATRIZIA BONAVENTURA and OSAMU FUJIMURA, interprets articulatory data in terms of the
 91 converter/distributor model, a syllable-based model of phonetic organization that retains a modi-
 92 fied form of Fujimura’s earlier ‘iceberg’ concept. Their results support separate control mecha-
 93 nisms for segmental and suprasegmental aspects of speech. ‘Physiological and physical bases
 94 of the command-response model for generating fundamental frequency contours in tone language:
 95 Implications for the phonology of tones’, by HIROYA FUJISAKI, WENTAO GU, and SUMIO OHNO,
 96 describes an model of F0 contours that can be used to examine possible representations used in
 97 tonal implementation, including prosodically conditioned variants of tones. ‘Probabilistic “slid-
 98 ing template” models for indirect vowel normalization’, by TERRANCE NEARY and PETER
 99 ASSMANN, uses modeling of human response to unlikely/unnatural stimuli as a test of a model of
 100 vowel normalization. They emphasize the role of listener adaptation of normalization strategies,
 101 depending on task and/or interlocutor characteristics. ‘The variations, quantification and generali-
 102 zations of standard Thai tones’, by RUNGPAT ROENGPITYA, is a detailed description of how Thai
 103 tones vary, in time course and F0 extent, when the tone-bearing unit varies in duration. She finds
 104 that truncation and F0 rate adjustment are the most broadly occurring adjustments. ‘Controlled
 105 and mechanical properties in speech: A review of the literature’, by MARIA-JOSEP SOLÉ, reviews
 106 methods of distinguishing linguistically specified versus predictable mechanical properties of
 107 phonetic substance. The paper emphasizes the diversity of the former, and the danger in assuming
 108 that seemingly mechanically derived effects observed in a single language do not involve lan-
 109 guage-specific phonetic knowledge.

110 Part 5, ‘Phonotactic and phonological knowledge’, showcases a variety of methods that may
 111 be used to gain insight into the mental representation of knowledge of sounds. ‘What’s in CVC-
 112 like things? Ways and means to look at phonological units across languages’, by BRUCE DERWING,
 113 is a provocative piece that suggests that subsyllabic organization of consonants and vowels
 114 may vary across languages, rather than the onset-rime distinction being universal. The strongest
 115 evidence comes from Korean, in which the orthography may play a contributing role. The paper
 116 indirectly highlights the need for further research into whether and how orthography influences
 117 representations of language. Derwing also aims to illustrate the variety of techniques that may
 118 be used to gain insight into knowledge of language, urging linguists to adopt a wider range of
 119 methods. ‘The SLIP technique as a window on the mental preparation of speech: Some methodo-
 120 logical considerations’, by SIEB NOOTEBOOM and HUGO QUENÉ, reviews practice and challenges

in use of elicited spoonerism speech errors to assess the process of speech production planning. They argue for a finer-grained analysis of errors and propose a view of error production that does not include lexical feedback. 'Experimental methods in the study of Hindi geminate consonants', by MANJARI OHALA, explores a number of questions about the phonetic status of geminates in Hindi. One particularly striking result is that the presence of a geminate affects the duration of a preceding transvocalic consonant, which suggests that the adjustment of variables affecting the consonant closure gesture is not (or perhaps cannot be?) restricted in domain to a single segment. 'Morphophonemics and the lexicon: A case study from Turkish', by ANNE PYCHA, SHARON INKELAS, and RONALD SPROUSE, tests a variety of measures of lexical structure (e.g. neighborhood frequency, neighborhood density) as a means of explaining irregular alternations of certain noun root-final consonants in Turkish. They conclude that the synchronic pattern cannot be accounted for in terms of the word's relationship to other items in the lexicon. 'How do listeners compensate for phonology', by EURIE SHIN, investigates Korean speakers' interpretation of heterosyllabic clusters of identical consonants, in order to determine whether they use knowledge of Korean consonant assimilation patterns (termed phonological inference) when interpreting nonwords. Phonological inference is compared, but not fully opposed, to feature parsing, which assumes that listeners use a perceptual grouping strategy when adjacent sounds display characteristics of more than one feature (such as overlapping place cues). In the Korean data, while listeners generally assume an identical voiceless stop cluster is derived from assimilation in voice or manner between homorganic consonants, the more word-like the stimulus is, the more likely the listener is to attribute to it a heterorganic source cluster along the lines of those occurring in the language. The conclusion is an appropriately conciliatory one, which closes the volume on a decidedly inclusive note: listeners do use phonological inference in interpreting assimilated sequences, but it is also possible that in addition, they employ a feature-parsing approach when the data warrant it.

This book will serve the needs of both students and more senior scholars with interests in many fields related to spoken language. A few chapters focus very narrowly on a particular method, model, or theoretical vision, but even these are generally well written, and overall the chapters are very accessible to the general reader. This book does not offer an in-depth understanding of any specific part of the diverse field of experimental approaches to phonology. But that is not the role the book intends to play. Rather, its contribution is in raising questions and stimulating discussion, and that it does very well. The collection provides a number of fascinating, specific snapshots that, taken together, paint a picture of a vibrant broader research agenda built on many of the innovative and provocative ideas put forward by John J. Ohala.

Department of Linguistics
SBS S 201
Stony Brook University
Stony Brook, NY 11794-4376
[mhuffman@notes.cc.sunysb.edu]