REVIEWS

Review by **David M. Howard**
Department of Electronics
University of York, UK
dh@ohm.york.ac.uk

On the back cover of this book, it is claimed that the book is an 'accessible new textbook' which provides 'a clear and practical introduction to phonetics, the study of speech'. Having read the book itself, I fully agree with this statement.

The book sets out to present basic phonetic skills including recognising, describing and transcribing speech sounds, supported with a description of well-established quantitative analysis techniques. In addition, it gives an introduction to associated areas, including linguistic universals, speech perception and phonology. It is organised into eleven chapters, each supported with a chapter summary, exercises and further reading. The sub-headings in the contents listing give a clear indication of what is covered in each chapter, and the authors have taken care to include the acoustic and instrumental material into the appropriate chapter, thereby offering this material in an integrated form rather than as an 'extra'. This integration gives the book a major strength, fully justifying the inclusion of 'science' in its title.

Chapters are organised into topics after the introduction as follows: 'voice', 'place', 'manner', 'vowels', 'voice II', 'airstream mechanisms', 'speech sounds and speech movements', 'basic phonological concepts', 'suprasegmentals', and 'speaker and hearer'. The chapter summary provides a very useful guide to the topics included in each chapter, serving perhaps to guide the reader as to whether they need to read a particular chapter or as a summary to help students with revision planning.

There are but a few matters to take issue with, and these are so minor as to be hardly worth mentioning. One might be forgiven for wanting to know why 330 metres per second rather than the more usual 340 metres per second has been chosen for the velocity of sound (p. 9), but perhaps this reflects a lower temperature at which phoneticians work. The spectra on pages 71 and 72 have no axis labels and the Y axis on page 74 has no units or labels. Other figures are lacking labels on one or more axes. Whilst these are often given in the text, it is my experience that good habits such as axis labelling are hard to establish in students unless this is rigorously offered and encouraged, and good examples set in a text book is a basic starting point. These are but minor quibbles.

Ashby & Maidment write in a style that is highly literate, authoritative and informative. They find opportunities to provide useful and highly relevant historical insights that do not get in the way of the flow, and the text is supported throughout with helpful and clear diagrams (especially the spectrograms) as well as exercises. The authors also provide a solid introduction to measurement techniques that are commonly employed in the study of phonetics and linguistics.

Introducing Phonetic Science is a well-crafted, engaging and clearly presented introductory textbook which brings together phonetics and its underlying science in a seamless manner. Its aim to provide 'a solid foundation in phonetics' is well-founded, and it certainly will, I believe, be 'invaluable to all students beginning courses in linguistics, speech sciences, language pathology and language therapy'. I wholeheartedly recommend it.

Review by **Thomas Purnell**
University of Wisconsin-Madison
tcpurnell@wisc.edu

This work by Donka Minkova continues a tradition of examining versification in order to more accurately appraise principles of sound change and sociohistorical phonetic variation. Readers familiar with variationist studies on Modern English and theoretical treatments of historical English verse should find Minkova's book both informative and challenging. The author's stated goal is two-fold: identification of the linguistic structures involved in alliterative English verse, and analysis of those structures (pp. 1, 21). This volume is fairly traditional in leaning towards description and diachronic analysis, but is progressive in employing a sizeable amount of support from all aspects of modern phonetics. In spite of the broadly stated goals, this work is not so much about early English alliteration as it is about onsets, their status, change, simplification and relation to stress. Moreover, since versification is a product in part of stress, and stress in English is in a relation with syllable structure and the segments filling syllabic positions (particularly consonants), Minkova's study promises to complement other diachronic works dealing with alliteration in English that strongly inform our understanding of historical phonetics (e.g., Classen 1913).

Minkova sketches the landscape of early English verse in her introduction, 'Social and linguistic setting of alliterative verse in Anglo-Saxon and Medieval England'. In this brief chapter, the author distinguishes cultural influences on Germanic verse, or works in England from the period before the Norman Conquest, from those on Romance verse, or verse after 1066. The relevant distinction primarily involves prosody. Minkova assumes discourse stability where authors and audience share a linguistic competence in order for the cultural artifact to enjoy some degree of longevity. The source data for this work includes Middle English works as well as earlier Anglo Saxon ones. In spite of the flux of religious change brought about in the year 597 by the Christian baptism of King Aethelberht I and in spite of political change in 1066, prosodic aspects of alliterative verse before and after periods of change remained fairly stable. Minkova uses this extended period of pre-Norman style verse to argue in subsequent chapters for late consonant changes.

The second chapter, 'Linguistic structures in English alliterative verse', describes Old and Middle English stress and versification patterns. Minkova's definitions along the way help clarify her analytical orientation. Most notable is the distinction between PROSODY/PROSODIC and METER/METRICAL that distinguishes 'rhythmic organization' from 'organization of verse', respectively (p. 22, fn. 1). Minkova's familiarity with both historical data and the issues in interpretation is clear in her restraint in dealing with such outstanding issues as Old English secondary stress.

The third chapter, 'Segmental histories: velar palatalization', describes consonant changes and the relation between alliterative verse and non-anterior consonants (palatoalveolars, palatals, and velars). Minkova begins the chapter with Hogg's (1992) Old English consonant chart (p. 72), and ends the chapter with a revised inventory (p. 134). In the course of the chapter, it is argued that the voiceless affricate is noncontrastive and the status of its voiced counterpart is questioned. Moreover, the palatal sibilant /ʃ/ is removed from the inventory while the voiced velar fricative /ɣ/ is added. Minkova claims that the changes that would have occurred in order to arrive at her Old English inventory are founded in the volatile velar place of articulation. Minkova recognizes how provocative the positing a late [k]~[tʃ] split is. Yet, here is the actual import of alliterative verse analysis assumed in this volume

(as opposed to analysis of another type of verse or analysis, such as epistolary analysis): alliteration emphasizes sound over symbol. The reasons supporting her position are the cognitive frequency of alliteration based on sound even in Modern English psycholinguistic studies, the typological appropriateness for alliteration in a stress-initial language, the oral conveyance of verse, and the rigid structure of alliteration which avoids modified rhymes and even triple alliterations. Minkova rejects the pull of consonantal space as a legitimate argument for the [k]~[tʃ] split in favor of a neutralization avoidance explanation, where the affricate preserves the difference between the early allophonically palatalizied [kʲ] (later becoming [tʃ], *ceorl* 'churl') and the late palatalized [k'] (*cyrnel* 'kernel'). This separation is argued to involve features (using CORONAL as a secondary place feature) and analogy. Up to this point there are only a few 'covert' or minor references to Optimality Theory (henceforth OT), usually terminological parallels (e.g., 'paradigm uniformity' for 'analogy'). However, in section 3.8 (pp. 121–129), Minkova casts her description of the late phonemic splits in terms of IDENTITY constraints, i.e., a set of theoretical statements regarding the relative adherence to preserving underlying structure.

In the fourth chapter, 'Syllable structure', Minkova provides a diachronic description of the English stressed syllable and attempts to resolve the outstanding issue of the status of the glottal stop. This chapter sets up the issue with a discussion of vowels, and then moves into a summary of arguments for and against positing a glottal stop in position of vowel hiatus. Minkova brings into the debate the usual alliteration evidence, but is careful to support her position with non-alliterative evidence, thereby avoiding the circularity complaint leveled against any argument based solely on alliteration. In short, Minkova's claim is that 'glottal stop insertion optimizes the syllable structure without compromising syllable and morpheme boundaries' (p. 170). This conclusion feeds into a brief OT analysis (pp. 182–188), using IDENTITY to preserve boundaries and ONSET to guarantee a syllable onset. It is not clear how much of the OT actually contributes to the epenthesis conclusion since the OT explanation is equivalent to a simple rule-based explanation that Minkova provides at the beginning of the chapter (see (3) on p. 143). Arguably, the more important outcome of this chapter is not the solidification of the glottal stop insertion hypothesis, but the presence of evidence that the content of the syllable onset is not always a trivial aspect of the stress-syllable-segment relation as traditionally thought.

Having argued for a stronger role of the syllable onset in prosody, Minkova turns to an analysis of cluster alliteration in the fifth chapter, 'ONSET and cluster alliteration in Old English: The case of *sp-*, *st-*, *sk-*'. The focus of this section is the diachronic well-formedness of English phonotactics. Minkova provides a fairly lengthy discussion on the range of claims regarding [ʃ] in light of its potential source from /sk/. A comparison is made with the s-clusters and other onsets. Although Minkova works through several well-formedness constraints in English, two constraints appear to account for most of the data. *LOW SONORITY rules out disallowed onsets (*pt-, *tk-, *fk-, *ht-). *PERCEPTUAL BREAK leads to non-s-cluster clusters to alliterate with the first member (e.g., fr-, gn-, hw-, etc.) because of the perceptual similarity of each cluster member. Lastly, Minkova discusses the [sl-] ↔ [skl-] change and the effect of s-clusters in the Norman-influenced vocabulary.

Chapter six, 'ONSET and cluster alliteration in Middle English', continues the discussion of cluster alliteration. This longish chapter (pp. 238–310) introduces evidence up through the fourteenth-century that argues for cluster cohesion, i.e., the use of contiguous consonants as units of alliteration. The finding is that sC- clusters alliterate more frequently than stop-sonorant clusters, which in turn alliterate more frequently than nonsibilant-sonorant clusters. These asymmetrical Middle English data set up a theoretical test of cohesion. Minkova's use of sonority is not necessarily perceptual, although Minkova sees cohesion as a perceptual effect and thinks that sonority has a perceptual analogue. The analogue, one could argue, may only be an artifact of perception, rather than a motivation for a particular analysis. Minkova characterizes the distinction between her surface-oriented view and Vennemann's (1988) Head Law as a difference between acoustic and phonological levels, respectively.

Minkova's position raises questions, not only because of the presence of *sm-* clusters, but also because of other suggestive research on language processing. Studies investigating event related potentials (ERP) of pre-literate children, literate children and adults (Bonte & Blomert 2004a; Čeponiené et al. 2005), and of typical and dyslexic readers (Bonte & Blomert 2004b) suggests an alternative possibility to both Minkova and Vennemann, namely that alliteration processing occurs at intermediate and interface levels of cognition. However, ERP studies to date have not provided an answer to Minkova's call for empirical testing of complex onset alliteration (pp. 249f.).

The concluding chapter, 'Verse evidence for cluster simplification in Middle English', is an analysis of complex onset clusters that reduced to a simple onset during the Middle English period. Minkova extends her cohesion analysis from the previous chapter, again claiming that simplification is more likely when the cluster members are perceptually distinct (which can be interpreted as 'of different major classes'). Again, Minkova states that her approach is distinctive from an argument for reduction based on consonantal strength (e.g., Vennemann). It is unfortunate that the volume ends without a summary chapter adequately tying together the numerous results.

Phonetic findings contribute much to the arguments in this volume. By way of just a few examples, there are discussions on consonant change involving palatalization and assibilation, on the cross-linguistic status of /s/-clusters, and on the slow-moving formants of velars. What can phoneticians take away from the work? By joining historical data with phonetic data, the volume makes at least three contributions of note. First, Minkowa shows that alliteration data provides a robust source of sociohistorical phonetic data. Second, her evidence provides some credence to her somewhat unconventional claims. Finally, her research makes a strong case for a non-trival role of syllable onsets in stress. Phoneticians interested in variation should be challenged by the consonant change described in this volume. Phonetic work on sound change in English is, in general, biased towards vowels and away from consonants (especially obstruents), perhaps due to a certain degree of acoustic stability. In spite of this, the suggestion made by this stimulating volume that consonant variation – particularly in the traditionally overlooked syllable onset position – displays more complexity agrees with other works calling for more phonetic work on consonants (e.g., Docherty & Foulkes 1999). At the same time, in cases where Minkova is provocative, phoneticians are free to test her claims, particularly her position on cluster cohesion.

In short, both the data and positions proposed by the author warrant careful phonetic examination. Regardless of whether or not such research vindicates Minkova's claims, this clearly written work will be of special interest for phoneticians exploring sound change and variation.

References

BONTE, M. & BLOMERT, L. (2004a). Developmental changes in ERP correlates of spoken word recognition during early school years: A phonological priming study. *Clinical Neurophysiology* **115**, 409–423.

BONTE, M. & BLOMERT, L. (2004b). Developmental dyslexia: ERP correlates of anomalous phonological processing during spoken word recognition. *Cognitive Brain Research* **21**, 360–376.

ČEPONIENÉ, R., ALKU, P., WESTERFIELD, M., TORKI, M. & TOWNSEND, J. (2005). ERPs differentiate syllable and nonphonetic sound processing in children and adults. *Psychophysiology* **42**, 391–406.

CLASSEN, A. (1913). *On Vowel Alliteration in the Old Germanic Languages*. Manchester: Manchester University Press.

DOCHERTY, G. & FOULKES, P. (1999). Derby and Newcastle: Instrumental phonetics and variationist studies. In Foulkes, P. & Docherty, G. (eds.), *Urban Voices*, 47–71. London: Arnold.

HOGG, R. (1992). Phonology and morphology. In Hogg, R. (ed.), *The Cambridge History of the English Language, vol. I: The Beginnings to 1066*, 67–164. Cambridge: Cambridge University Press.

VENNEMANN, T. (1988). *Preference Laws for Syllable Structure and the Explanation of Sound Change*. Berlin: Mouton de Gruyter.