DOI: 10.1159/000078664

Federico Albano Leoni, Pietro Maturi Manuale di Fonetica; nuova edizione Carocci Editore, Roma 2002 169 pp.; EUR 19.50 ISBN 88–430–2127–3

This new (third) edition of a book first published already in 1995 (with a second edition dating from 1998) aims at giving basic knowledge for the description and analysis of speech sounds. The textbook adresses not only students of (foreign) languages and linguistics, but also students of logopaedics and speech therapy as well as those with a more technical background interested in automatic speech processing. Written at an introductory level, with a comfortable and easy style, the book comprises speech production, speech signal analysis and speech perception without attempting to deal with every single topic or to cover each topic in great detail. Thus the logic of the book's structure seems to be self-evident. Preceded by an introductory chapter there are three chapters each dealing with one aspect of phonetics as derived from the communication process: articulatory phonetics (including phonetic transcription; chapter 2), acoustic phonetics (chapter 3), and auditory and perceptive phonetics (chapter 4). This is followed by a (rather scarce) bibliography containing some 60 titles and an index.

So far the publication under review does not greatly differ from the first two editions (except for minor corrections and amendments of the text and a few newer items in the bibliography, published after 1998). What is really new is the addition of a CD-ROM with interactive explanations and exercises, regrettably restricted to articulatory phonetics and phonetic transcription for the time being. Before dealing with the benefits and shortcomings of this CD-ROM in more detail we will have a short glance at the four chapters of the textbook.

Chapter 1 introduces the field of phonetics within the framework of linguistics, defining phonetics in a more restricted sense as beginning from the movements of the speaker's articulatory organs and ending at the transformation of the mechanical input to nervous impulses in the listener's ear. In a broader sense, however, the field of phonetics is said to include all the cognitive and neuropsychological activities of speaking and hearing, thus - rightly - qualifying phonetics not just as the science of anatomy and physiology of speaking and hearing, and of the physics of speech sounds, but as a part of the science of language (p. 20). Nevertheless, the textbook concentrates on phonetics in the above-mentioned narrower sense, supposedly as a matter of space and because the authors intended the book only to impart adequate knowledge of the phonic substance, on which the grid of phonology can be applied (p. 12). Even within these constraints the authors are aware of and draw the reader's attention to the fact that observation and phonetic description of speech sounds must not be restricted to the analysis of idealized (hyperarticulated) utterances of isolated syllables or words under laboratory conditions, but rather have to be based on manifestations of spontaneous speech despite all technical and practical problems of collection, registration, and analysis of naturally spoken material (p. 26). Chapter 1 closes with a brief outlook to applications of phonetics beyond the domain of linguistics proper, as there are the assessment and therapy of language and speech disorders, forensic phonetics, text-to-speech systems, as well as speech and speaker recognition.

Chapter 2 deals with articulatory phonetics and phonetic transcription. The first section of this chapter demonstrates the inadequacy of traditional spelling systems for phonetic purposes and the need for a phonetic alphabet to graphically represent speech sounds in a bi-unique manner. Consequently the full IPA chart (in the version of 1993) is reproduced

(p. 34). The next section offers a brief description of the anatomy and physiology of articulation, introducing the main terms needed for the classification of vocalic and consonantal segments in the following section. The oversimplified presentation of terms sometimes results in at least misleading formulations as e.g. the mentioning of ejectives and injectives, without referring the latter term to the class of implosives found in the IPA chart. Articulatory descriptions and symbols of vowels and consonants are demonstrated mainly by examples taken from languages spoken in western Europe, namely English, French, Spanish, German, and whenever possible Italian (sometimes even dialects of the Apennine peninsula). However, the presentation of the vowel system is somewhat puzzling (particularly for student beginners) as e.g. [æ] is defined as front low vowel taking the place of cardinal vowel 4 in the vowel chart whereas [a] is moved to the central low position (p. 47). Although this arrangement cannot simply be coined as 'wrong' it seems - from a didactic point of view - imprudent to confront the learner with the uncommented difference between the IPA chart and the authors' adaptations. The same holds for the central vowels [ə]/[e] designed at the same tongue height as $[e]/[\epsilon]$, and for the symbol of a low central rounded vowel (an a-o ligature, lacking in the IPA chart) as a counterpart to nonrounded [a], obviously inserted to maintain the symmetry between unrounded and rounded vowels (p. 51). The remaining sections of chapter 2 deal with coarticulation, with articulatory patterns of the realization of suprasegmentals, and finally with some instrumental techniques for the registration of the speech organs' activities during phonation and articulation.

Chapter 3 gives a well-structured account of the main topics of acoustic phonetics. Starting with basic acoustic notions such as sound wave, simple and complex signal, Fourier analysis, filters and resonators, spectrogram and sonagram the authors proceed to the acoustic properties of vocalic and consonantal segments. This part of the textbook is abundantly illustrated by appropriate narrow- and broad-band sonagrams, which appear in – compared to similar publications – surprisingly good printing quality. The description

of segmental properties is followed by some brief remarks and illustrations on segmentation problems caused by coarticulation phenomena as well as by spontaneous utterances in allegro speech, and ends up with an equally well-illustrated section on suprasegmental features. The chapter is concluded by a short summary of instrumental facilities for visualization and measurements of the acoustic signal.

Chapter 4 is dedicated to the 'phonetics of the hearer' and consequently starts with a concise description of the anatomy of the ear and the physiology of sound perception and transformation. The following section on psychoacoustics deals with the audible field and the discrimination of sounds, as well as with different perceptual scales such as the phon, the mel, and the bark scale. Interestingly enough the sone scale is not even mentioned. Three further sections of chapter 4 are concerned with perceptive phonetics proper: the section on perception and discrimination of speech sounds is accompanied by examples of identification and discrimination tests, the section on theories of speech perception is restricted to Fant's (passive) acoustic theory and to the active theories by Liberman (motor theory) and Stevens and Halle (analysis-bysynthesis), the last section on the perception of continuous speech points out the influence of higher linguistic levels and of extralinguistic factors on the hearer's capability to identify (parts of) spontaneous utterances as meaningful sequences.

All this information is presented in a rather condensed but nevertheless clear style. As already mentioned the authors did not intend to go into every detail and a book of this size cannot be expected to cover the broad field of phonetics in an exhaustive manner. Thus, student readers would probably have appreciated a certain amount of references for further specific reading (at least at the end of each chapter), which a bibliography cannot compensate for – the less if it does not even differentiate basic titles from more advanced readings, like in the book under review.

Despite the few critical remarks (particularly on chapter 2) the didactic value of the textbook is greatly enhanced by the accompa-

nying CD-ROM. This contains visual as well as auditory effects on almost all topics of chapter 2, except for intonation. It is organized in eleven sections each of which consists of several pages, which in turn are subdivided into smaller units. Navigation within and across pages and sections is comfortable and supported by a search button, which opens an index corresponding to the CD references given in chapter 2 of the textbook. Each section consists of a short explanatory comment and – where appropriate – of both diagrams and animated drawings of the articulatory system. Students will enjoy the interactive exercises on defining the articulatory features of randomly presented sound symbols as well as on transcribing spoken samples of single words and short phrases in the languages mentioned above by clicking on the appropriate phonetic symbols of a displayed

keyboard. The glossary, also offered by the CD-ROM, however, does not really deserve its name, as it contains only a few entries, thus compelling the learner to return to the index of the textbook. This was perhaps intended by the authors, as they wanted their textbook to be supported but not replaced by the CD-ROM.

All in all, aside from the above-mentioned inconsistencies, the book under review is a compact and easily accessible introduction to phonetics, particularly but not exclusively for Italian-speaking students, preparing them for more advanced readings in this field. Subsequent editions will undoubtedly gain by supplementing the accompanying CD-ROM with equally well-designed multimedia material on acoustic and auditory phonetics.

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