

collaboration between these two disciplines, with a hope of eventually enriching our collective understanding of the origins and ramification of linguistic variation.

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This book is designed as a textbook for students of communication disorders at all levels and as a sourcebook for clinicians working with communication disorders. It includes three major sections. The first gives an introduction to phonetics in general, the second concentrates on English phonetics and the third deals specifically with the phonetics of communication disorders. There are two appendices: one provides phonetic and voice symbols, and the other deals with phonology. In addition, two audio CDs are included, which provide transcription exercises.

In contrast with some introductory phonetics books (e.g. Ladefoged 1993, 2005), this book does not treat articulatory and acoustic phonetics as two separate areas. Rather, its introductory section presents sound classifications, describing articulatory and acoustic characteristics of each class as one unit. Thus, the relationship between the articulatory gestures and the resultant acoustic signal is made both clear and relevant. This integrative approach necessitates the presentation of basic principles of both areas; the anatomy and basic functions of the articulatory apparatus on one hand, and the basic principles of acoustic physics on the other. This background is provided in the initial chapters. The topics covered in the text are divided according to traditional sound classifications (vowel, consonant manner, consonant place types, etc). The use of IPA symbols and practical hints for referring to these symbols are emphasized throughout.

The book is designed for those interested in CLINICAL phonetics. This is emphasized in the regular references made to the application of the knowledge presented in a particular chapter to the speech clinic. Although this may help motivate the potential or actual clinician to view the presented material as relevant, it may deter non-clinicians from making use of this text, which covers a wide range of topics relevant to students of phonetics, whether clinically or non-clinically oriented.

At the end of each chapter suggestions for further reading are given. Every chapter includes review questions and topics for further study or experimentation. In addition, the CDs provide transcription exercises, preceded by explanation of the speech sound characteristics being transcribed. These exercises gradually train the reader in phonetic transcription. The answers are provided at the end of the book.

Section I, 'General Phonetics', includes nine chapters. The first is a general introduction to the domain and specialized vocabulary of phonetics. Appropriately, it starts with a model of speech communication and places the study of phonetics within this model. The very first concepts of acoustic physics are presented. The second chapter describes the articulatory apparatus. Simplified illustrations support this 'crash course' in the anatomy and physiology of articulation. Chapter 3 describes the air stream mechanism. The treatment of this aspect of phonetics is far more comprehensive than in other phonetics textbooks I have seen. Considering the view that 'phonetics is the history of the air stream' (Tobin 1997, 2005), this is a welcome deviation from the standard. Chapter 4 deals with voice production and quality, building on the information already provided in the previous chapters.

In chapter 5, the reader begins a systematic study of the first sound class, the vowels. The approach to vowels is not a vowel-by-vowel description according to a set of parameters previously introduced. Rather, articulatory and acoustic features which can be useful in distinguishing vowels from each other are presented as the parameters of vowels. Specific vowels from a variety of languages are brought to exemplify the various features.

In chapter 6, consonant manners of articulation are described. Specific consonants (and their IPA symbols) are brought to illustrate each consonant manner feature described. In this section no spectrographic or other acoustic representations of the sound features described is provided. Inclusion of such information would have encouraged the reader to relate the articulatory pattern to the acoustic pattern. Emphasizing the complexity of the acoustic patterns characteristic of consonants would encourage the reader to consider their communicative contribution relative to vowels. For example, it would have emphasized for the reader the aspects of the acoustic image which result from manner of articulation as opposed to place of articulation.

Chapter 7 further explores consonant features by presenting the articulatory options for place of articulation and the variations in the acoustic representation resulting from each of these options. Articulators are described as active or passive (as in e.g. Abercrombie 1967, Tobin 1997). A list of classifying (articulatory) features of speech sounds is provided, and the reduction of the full feature list to the 'three term label' (p. 84) is explained. Again, specific sounds from a variety of languages are brought to exemplify the use of the various articulator combinations and the reduced labels. This chapter concludes with a description

of the prominent acoustic features of the various consonant manner types, with details of the variations resulting from the use of the different articulators. In my view, this acoustic description would have been better divided, with a discussion of the features resulting from specific manners included in chapter 6, leaving only the formant transition characteristics related to various articulators to be presented in this chapter. Chapter 8 concludes the discussion of consonants.

The final chapter of this general section is on suprasegmental phonetics. The articulatory mechanisms used to vary suprasegmentals, as well as the perceptual effects and the acoustic representations are presented. Consistent with the previous chapters, the features discussed are presented with their IPA symbols, including diacritics, and are exemplified by utterances from a variety of languages.

The avoidance of emphasis on English in this first section makes this textbook applicable to clinicians in training and in practice, regardless of the language in which they work.

In section II, the general phonetic principles and methods of classification and analysis are applied to English sounds. The first chapter of this section, chapter 10, begins with a general discussion of the difference between phonetics and phonology. In addition, each phoneme is presented with a list of its allophones and coarticulatory effects are noted. Finally, the variability of sound production within and between speakers, and the relative nature of phonetics, is stressed throughout. Received Pronunciation (RP) as the British paradigm and General American English (GAE) are contrasted, with other English accents referred to occasionally. This section of the book applies the ideas presented previously to specific sounds of English. Therefore, it is less explanatory and reads more like a series of detailed descriptions. Possible orthographic representations of each vowel sound are given, emphasizing the need for an alternative system to represent the spoken sound.

In chapter 13, the discussion of English consonants begins. Following the features and sequence presented in section I, the consonants are described: first stops and affricates, followed by fricatives in chapter 14 and sonorants in chapter 15.

The idea of a sound class is reintroduced, with the defining features of such a class reiterated. Then within the class, the distinguishing features are reviewed. (There is a direct reference to the chapter where this information is first provided.) At this stage, consonants within each category are grouped by their articulators and then discussed in detail. The same format as has been used to discuss vowels is followed: articulatory and acoustic description, and a list of allophones and orthographic representations. There is a more detailed explanation here as to why certain allophones may appear in certain contexts. These articulatory descriptions of the sounds serve as a review of the initial overview of the articulatory mechanism. The degree of detail is sufficient to allow the reader to produce the sound from the description. Acoustic characteristics of each consonant class and defining features for each member of the class are described and exemplified by clear broadband spectrograms.

The discussion of sonorants in chapter 15 is extensive and emphasizes the variability of articulation patterns between and within speakers. Dialectal differences in sonorant production are also noted.

In the discussion of the central approximant on page 243, there are two references to the 'lateral' approximant, which appear to be simply typos but may be confusing to readers who are reading this book independently and are not familiar with the subject from other texts.

Chapters 16 and 17 progress from the sound level to the word and sentence levels. The interface between phonetic characteristics and other areas of language, such as syntax, becomes relevant here. In chapter 16, the generative treatment of intonation (without being named as such) and tools for analysis (e.g. trees) are presented as one possible approach to intonation.

Chapter 17 deals further with intonation. The grammatical use of intonation is exemplified. The notion of intonation units and how these may be noted are presented. A clear distinction

between STRESS and ACCENT is made, and notations for these are suggested. Nuclear tones and their symbols are shown. Ten nuclear tones are introduced and explained in the context of the meaning they convey. This chapter accentuates the text's aim to train clinicians to accurately record the speech they hear.

Chapter 18 discusses dialects of English, especially social dialects.

The third and final section consists of two chapters which are the ultimate aim of this text. Throughout the first two sections the reader is trained to identify and accurately analyze and record the sounds and sound patterns of human language, specifically, English. In chapter 19, the clinical applications of phonetic skills are discussed in greater detail with examples of phonetic and phonological disorders, and how to distinguish between them. In chapter 20, the importance of accurate recording of atypical/pathological productions is re-emphasized and practical solutions to recording problems are presented.

The book includes two appendices. Appendix 1 includes the standard IPA symbols chart as well as clinically useful extensions. Appendix 2 lists phonological features and processes according to three different paradigms.

Two CD audio disks accompany the text. These CDs provide a chapter-by-chapter audio review of the written text. In general, for each chapter, there is a review of the sounds (or features of sounds) discussed in the chapter, including audio examples which the listener is urged to listen to until she is able to discriminate the relevant feature and attempt to produce (evaluating accuracy of production by comparison to the CD). This is followed by transcription exercises which relate to the features presented in the chapter. The second CD practices transcription of English (RP and GAE).

On the whole, I found this text readable and comprehensible. The choice of topics and their detail, the sequence of presentation of the materials, and the integration of articulatory, auditory and acoustic phonetics in the first section seem to me a logical and practical plan for the presentation of phonetic concepts to the clinician in training. This section of the text is also appropriate for students of non-clinical phonetics, and it is also suitable for students whose object language is not English. The second section is more geared to the clinician-in-training who will work primarily with English speakers. The style of some parts of this section is reference-like rather than explanatory; detailed information is presented in a repetitive format, providing easy reference for the reader who wishes to refresh her memory or clarify details on a specific sound or sound feature. Some minor inconsistencies were found (noted above) which should have been corrected during editing. The final section is the section which most distinguishes this text from other phonetics textbooks in that it relates the theoretical information and practical skills presented in previous chapters to clinical training. As a teaching text, the review exercises following each chapter and the suggestions for further investigation provide useful pedagogical tools.

A technical difficulty that I found was that the reader is not referred to the CD while reading the text so that in most cases, the reader will read the chapter without the audio input and only after finishing the written text, turn to the audio CD. In addition, there is no mention on the CD (in most cases) of the place in the text (table or page number) that is being exemplified. This makes using the CDs cumbersome.

This difficulty is not present in the exercises for each chapter. Although the exercises given cover an extensive range and depth of phonetic transcription examples, it is unlikely that students will reach transcription proficiency if they do not supplement these exercises with further practice at each level.

As far as the content of the CDs is concerned, the transcription exercises and the audio reviews relate to auditory-perceptual and articulatory descriptions of sounds but do not consider the acoustic features of sounds. I find this inconsistent with the integration of all three classifications found in the first section of the text.

The question arises what level of phonetic transcription skill is needed for accurate clinical diagnosis and treatment. From the point of view of length, the longest utterances transcribed in the exercises are simple sentences. The passages exemplifying different English accents are

not given in transcription. Is sentence level good enough? If a clinician is transcribing longer utterances should each sentence be considered separately? These questions may arise when, for example, considering patients with voice abnormalities whose voice quality deteriorates with increased length of speech turn.

I consider this text to be a preferred option as a textbook for teaching phonetics to clinicians. This is independent of the country (and languages) in which the clinician will practice. The criticisms made are minor and are mainly concerned with coordinating the CDs with the text, something I hope will be rectified in the next edition. Although the text is written specifically for students of communication disorders, there are many parts of it, including the practical transcription exercises, which may be beneficial to students of non-clinical phonetics.

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Connected Speech (hereafter *CS*) is a pedagogical tool, most suited to self-study either individually or in a language laboratory setting, rather than class teaching. The initial screen presents the user with portraits of eight native speaker models, three levels of difficulty for each speaker, an information key and a function that enables the printing of tests and answer sheets. In all, then, there are twenty-four spoken texts to work with, as well as a multitude of practice quizzes embedded in various places within the modules. Each text can be used to exemplify a wealth of phonetic details of different kinds and levels of complexity corresponding to each of the texts.

Once a speaker and a level have been selected, the selected text is available with video as well as audio, and with its orthographic transcript. In all the examples that I reviewed, the transcripts were accurate and, even at the lowest level of difficulty, included natural speech phenomena such as false starts and hesitations. As an introduction to the nature of spoken language, the transcripts are thus very useful and revealing to students.

The first task for some learners will be to ensure understanding of the text, and a comprehension quiz is provided for all twenty-four text exemplars. Each text also serves as a basis for investigating a range of phonetic topics. The phonetic modules at all three levels cover: the division of speech into pause groups, stress placement, pitch change and its location, the concept of 'linking' through sandhi phenomena and assimilations of various