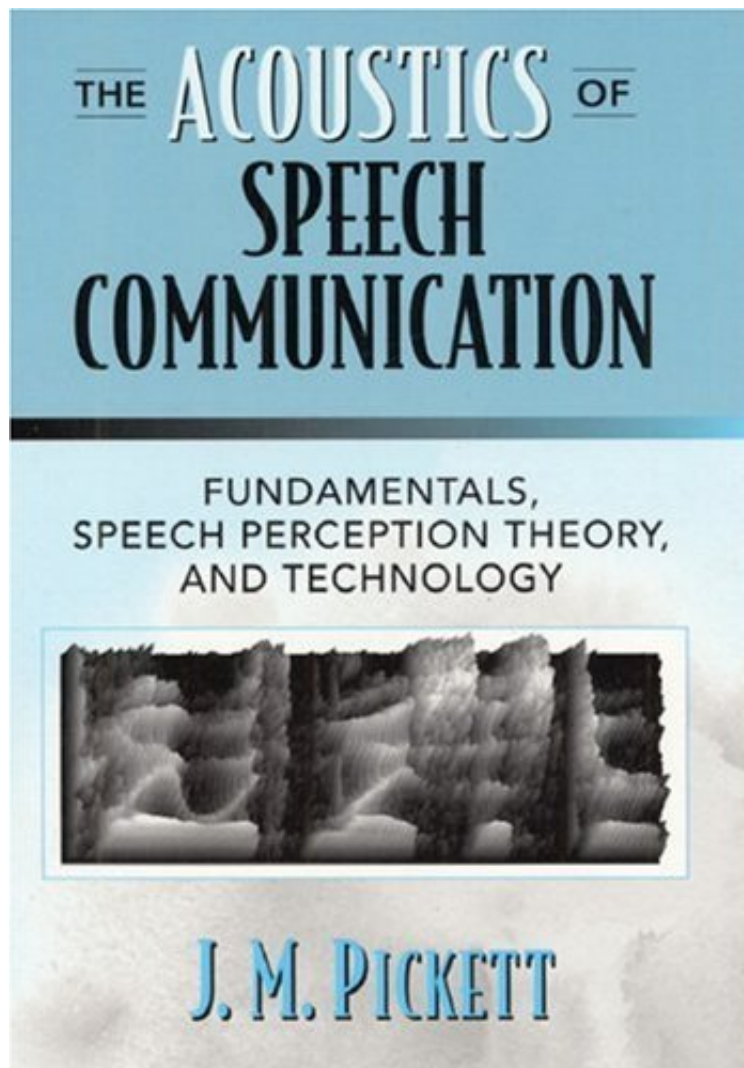


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## The Acoustics of Speech Communication: Fundamentals, Speech Perception Theory, and Technology

*J. M. Pickett*

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**J. M. Pickett : The Acoustics of Speech Communication: Fundamentals, Speech Perception Theory, and Technology** before purchasing it in order to gage whether or not it would be worth my time, and all praised The Acoustics of Speech Communication: Fundamentals, Speech Perception Theory, and Technology:

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following review helpful. a good introduction to the nature of speechBy A CustomerA great deal of well-organized, well-presented information regarding the nature of speech, including many spectrograms with formant tracks. The review of speech perception theory is also well done. The technology is treated in only the final chapter, and definitely qualifies as an overview. The only glaring omission is no description whatsoever of the human auditory mechanism. Nevertheless, the book suited my purposes well.3 of 3 people found the following review helpful. Excellent introduction to Speech CommunicationBy JBThis is a fine book for approaching the field of speech communication. It includes lucid presentations of key concepts such as phoneme, phone, allophone, units, formants and the Bernoulli's effect. Every chapter closes with a summary, a great tool for reinforcing what you have learned through the chapters. Chapters 1-10 are introductory material, and following chapters discuss more advanced topics, such as models of perception. Application developers will also benefit from a summary of potential acoustic cues from articulatory features (p. 152). Finally, the appendices constitute great teaching and researching resources.If you are completely new to the field, I would suggest to read first "The Speech Chain" by Denes Pinson, then Chapters 1-10 of this book. Later on, you may follow with "Acoustic Phonetics" by Stevens, "Acoustic Theory of Speech Production" by Fant, "Speech Processing" by Deng and O'Shaughnessy, and "Spoken Language Processing" by Huang et al.

This is the only book to relate all three of the currently interactive areas of speech science-acoustic phonetics, speech perception, and speech technology. The book presents a gradual course, starting with a clear tutorial approach to basic speech then leading to speech perception research, the various theories of speech perception, and the modern speech technologies of computer synthesis and recognition of speech messages. The aim is to bring the reader through basic acoustics, spectrum analysis, vowel and consonant acoustics, and into the research literature of speech perception technology. The basic acoustic theory of speech production, the Source-Filter Theory, is clarified via text and diagrams. This knowledge is then applied to interpreting spectrograms of speech examples that sample all the phonetic distinctions among vowels and consonants. Distinctive acoustical patterns for vowel and consonant perception by listeners are summarized in detail based on the research literature. Critical discussions provide theories of motor, auditory, and computer recognition of speech. Consonant and vowel recognition by the hearing-impaired is described in relation to acoustic phonetic distinctions. Techniques of speech synthesis, recognition analysis by machines, and speech technologies are thoroughly explained. Anyone interested in speech acoustics, acoustic phonetics, speech and hearing science, psychoacoustics, and speech perception at any level.

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