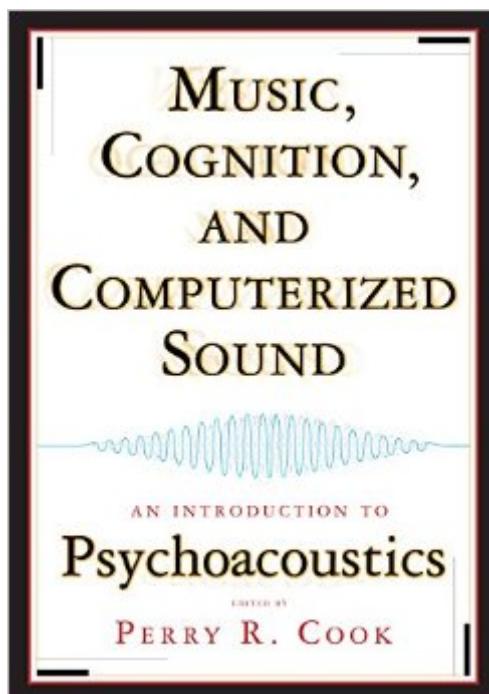


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# Music, Cognition, And Computerized Sound: An Introduction To Psychoacoustics (MIT Press)



## **Synopsis**

How hearing works and how the brain processes sounds entering the ear to provide the listener with useful information are of great interest to psychologists, cognitive scientists, and musicians. However, while a number of books have concentrated on individual aspects of this field, known as psychoacoustics, there has been no comprehensive introductory coverage of the multiple topics encompassed under the term. *Music, Cognition, and Computerized Sound* is the first book to provide that coverage, and it does so via a unique and useful approach. The book begins with introductory chapters on the basic physiology and functions of the ear and auditory sections of the brain, then proceeds to discuss numerous topics associated with the study of psychoacoustics, including cognitive psychology and the physics of sound. The book has a particular emphasis on music and computerized sound. An accompanying download includes many sound examples to help explicate the text and is available with the code included in the book at <http://mitpress.mit.edu/mccs>. The contributing authors include John Chowning, Perry R. Cook, Brent Gillespie, Daniel J. Levitin, Max Mathews, John Pierce, and Roger Shepard.

## **Book Information**

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## Customer Reviews

Developed from a series of lectures at the Stanford Center for Computer Research in Music and Acoustics (CCRMA), this book offers a coherent panorama of the field of psychoacoustics as it pertains to music and computerized sound. The authors-among them Max Mathews, Roger Shepard, John Chowning, and John Pierce-are recognized authorities in the field of computer synthesized sound and the nature of acoustical and musical perception. The CD-ROM contains audio samples for each chapter, plus source code for all the samples. Although it is specifically intended as a course book for psychoacoustics, with a closing chapter on the effective design of experiments and an appendix of exercises, this book should prove valuable to a wide audience. Computers provide what seems the ultimate level of control over sound synthesis, but it is often hard to know where to begin. Anyone who has ever confronted the problem of determining which parameters of a synthesized sound are acoustically perceptible or meaningful will appreciate the clarity with which the introductory chapters distinguish the physical parameters of sound from the perception of sound. Building on established research into the fundamentals of acoustic perception, the book proceeds to more complex issues of voice articulation and synthesis, perceptual streaming, musical memory, and the haptics of sound production. Computer musicians will find material to suggest diverse directions for experimentation. Multimedia artists working with sound will discover new methods for generating sounds, with the potential for weaning themselves from straight playback of sampled sound and working with real time synthesis.

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