

PSYCHOPHYSICS AND PHYSIOLOGY OF HEARING

Edited by E. F. EVANS and J. P. WILSON

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1977, 526 pp. / ISBN: 0-12-244050-1

A series of symposia on auditory research, of which this is the fourth, are playing an important role in encouraging cross-fertilization between the physiological and the psychophysical investigations of the auditory system. In this volume, key workers in the field present the most recent advances and introduce much new information in the area of research into hearing.

Here physiologists, psychophysicists, and related workers concentrate on those aspects of hearing where informative comparisons can be made between studies of perception in human subjects and single cell and other physiological and behavioral measurements in laboratory animals. The first two sections explore the progress and interdisciplinary interaction which have been achieved in the areas of frequency selectivity and the closely related question of cochlear mechanisms. The focal points of inquiry and interest in this context are the search for a second frequency filtering mechanism beyond that provided mechanically by the basilar membrane of the cochlea, and the developing interest in hearing disorders and in the loss of frequency analyzing ability in hearing loss of cochlear origin. For the first time in these symposia, data from clinical studies are included. Recent spectral pattern recognition theories are emphasized in the section on pitch perception. Finally, the contributors discuss temporal factors in hearing and binaural and central processing.

CONTENTS:

Cochlear Mechanisms. Frequency Selectivity. Pitch Perception. Temporal Factors in Hearing. Binaural and Central Processing. Author Index. Subject Index.

ASPECTS OF TONE SENSATION

A Psychophysical Study

By REINIER PLOMP

A Volume in the

ACADEMIC PRESS Series in COGNITION AND PERCEPTION

1977, 168 pp. / ISBN: 0-12-558350-8

Great progress has been made in the field of tone perception over the last two decades. This book reflects these advances and presents an up-to-date review of the psychophysical data and concepts in the field of steady-state tone sensation. Information about the interaction of tones and about the three main attributes of complex sounds — loudness, timbre, and pitch — are among the exciting discoveries that have resulted from new experimental evidence and which are featured in this work. Other phenomena on which much light has been shed in recent years, such as the ear's nonlinearity and frequency analysis, the lateral suppression of one tone by another, and the low pitch of complex sounds, are also extensively discussed.

The selection of topics and the way in which they are treated will ensure the monograph's appeal not only to experimental psychologists and to those working on auditory research and involved with occupational or industrial medicine, but also to musicians and musicologists who would like to know more about the perceptual aspects of their art.

CONTENTS:

The Ear as a Frequency Analyzer. Combination Tones. Beats of Mistuned Consonances. Roughness and Tonal Dissonance. Loudness of Tone Complexes. Timbre of Complex Tones. Pitch of Complex Tones. General Conclusions. References. Author Index. Subject Index.