

DAVID ROSENBOOM

Ecology of the Skin

December 3 and 4

Children often play at what perplexes or threatens them--at features of their environment which they need to understand, master, or otherwise bring themselves into balance with. Art for the adult serves a similar function. It is man's make-believe way of practicing to engage himself with what is salient yet unfamiliar, unexplained, or uncontrolled in his grown-up world. For example, if one wonders and complains that youth should like its rock music so loud, it may be that they are only trying to make artistically meaningful the deafening screeches stoically tolerated daily on the subways by their elders.

Since much that is unfamiliar, unexplained, or uncontrolled today is the result of the rapid and complex changes wrought by science and technology, it is understandable why the concerns of art should now often be with science and technology itself. The concerns of the composer David Rosenboom's art are with that particular branch of science and technology presently opening up to us the astounding ability to consciously experience and bring under self-control many of the hitherto unconscious neural process on which mental life is founded.

Neurophysiologists and physiological psychologists discovered many years ago that the brain in the course of carrying out its functions generates currents over its surface that pulsate from a few to many times a second. The frequency and amplitude of these pulsations can be detected via sensitive recording electrodes attached to the scalp. Recently, it has become possible to signal to a human when his brain is producing a certain frequency of pulses by letting this frequency electronically turn on a tone or some other stimulus that can be perceived externally. This technique by which a person can listen to his own internal processes is termed bio-feedback. It has been used to allow an individual not only to keep track of what frequencies his brain is emitting but also to follow the levels and changes in such things as heart rate, blood pressure, and gastric motility.

By use of bio-feedback it is now possible to test whether a person can learn consciously to control these ordinarily unconscious internal processes. The experiments of Kamiya, Fehmi, Miller and others are showing that such control can indeed be achieved. In addition, as one learns to sustain the frequencies of his brain for long intervals in the 8-14 pulses-per-second range (termed "Alpha"), mood changes and altered states of consciousness are experienced that resemble those attained by Yogis and Zen Masters and other experts of the contemplative state.

David Rosenboom's Ecology of the Skin represents a play at bringing man into some adjustment with this vast new inner realm of experience being pioneered within the skin. The play proceeds: a) as a game with oneself to learn a control whose rules must be discovered in the subjectivity of one's mind; b) as an exercise in manipulating lights, pitches, rhythms, etc. in the giddy spirit of "Look Ma! No hands!"; and c) as a seeking out for what altered states and rewards that self-control may bring. It is a play open to those that wish to join; it is music to those who wish to muse.

The Composer: David Rosenboom was born in Iowa in 1947, and grew up in Quincy, Illinois. He attended the University of Illinois where he worked with Lejaren Hiller and Salvatore Martirano. He is a composer, performer (violin, viola, piano, percussion, and trumpet), conductor and physics-researcher. During the past year, he founded Neurona Company, which developed the portable computer synthesis systems for various media, now incorporated into the ARP Synthesizer manufactured by Tonus, Inc. Rosenboom was Artistic Co-Ordinator of the ELECTRIC EAR series at the Electric Circus, and was a Creative Associate at the Center for Creative Arts in Buffalo. He was an advisor for the New York State Council on the Arts, a performer on several record labels, and is presently visiting professor of electronic music at York University, Toronto.

The Performers: Stewart Smith and Gary Wolf are student members of the York University Intermedia Group from the Program in Music.

Sources of Inspiration: Edgar Coons majored in music at Colorado College and Yale but obtained his Ph.D. in psychology under Neal E. Miller at Yale. Now an Associate Professor of Physiological Psychology at New York University, he does research in electrical stimulation of the brain and behaviorally studies how messages are transmitted through the nervous system. As an avocation, he enjoys acting as a catalyst in uniting art and science. He introduced David Rosenboom to the musical possibilities of bio-feedback although he conducts no research in that area himself. He is on the board of New York Pro Musica and has functioned as consulting psychologist to the Electric Circus.

Lester Fehmi is a professor physiological psychology at the State University of New York at Stonybrook. He studied with Donald Lindzey and Theodore Bullock at UCLA. There he became interested in recording the electrical activity of the brain and using it in combination with bio-feedback to study the neural correlates of altered states of consciousness. David Rosenboom got his initial training in brain bio-feedback in Fehmi's laboratory. Some of the equipment demonstrated will be Lester Fehmi's.

Demonstrations and Show Equipment: Equipment demonstrating bio-feedback from heartrate is provided and manned by David VanDercaar, a postdoctoral researcher in the laboratory of Neal E. Miller at Rockefeller University. The film, "Involuntary Control" has been by courtesy of Philip Mendlow and Jerry Murphy, producer-directors. Collaborating in the production of the film was Professor Richard Koppelaar of New York University. Thanks is expressed to Mrs. Manning of Scarborough General Hospital, Toronto, for use of test apparatus. The ARP Synthesizer is supplied by Tonus and the speakers are provided by Temple Sound.