

Session I. Psychological Acoustics II: Pitch, Loudness, and Intensity Discrimination

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*Contributed Papers*

3:30

17. Generation of emotionally expressive sounds from the dynamic forms of expressive finger pressure: How is expressive touch transformed to expressive sound? Manfred Clynes and Mark Dobkin (Music Research Center, Sentic Laboratories, N.S.W. State Conservatorium of Music, Sydney, 2000 Australia)

Transduced finger pressure expressions of Anger, Hate, Grief, Love, Sex, Joy, and Reverence [Ann. N.Y. Acad. Sci. 220(3) (1973)] were used as frequency and amplitude modulation envelopes (beginning and ending in silence) of a sinusoidal sound. Experiments were designed to determine what transformation the dynamic forms (essentic forms) produced by finger pressure require, to express like emotional qualities sonically. Sign and depth modulation were found to be specific for each emotion. *The dynamic form itself required no modification for frequency modulation*, only modulation depth scaling. Optimal ratio of frequency to amplitude modulation varied for different emotions, being least for love and greatest for joy. Both original and sonic forms were correctly recognized by a large majority of 200 subjects. Males and females did equally well. Thus, emotional expression using finger pressure produces a similar emotional expression in sound, when its frequency and amplitude modulates a sinusoidal carrier tone in the manner determined, arguing for a common origin in brain function of both touch and sound expressive forms.