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TRANSFORMING EMOTIONALLY EXPRESSIVE TOUCH TO SIMILARLY EXPRESSIVE SOUND

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If a person expresses a particular emotion through the form of an act of touch, such as the expressive pressure of a finger on a finger rest, in a standardized sitting position, characteristic transient forms are obtained constituting biologic dynamic signatures of emotional expression. These forms of 1-8 seconds duration are obtained as vectors of pressure having vertical and horizontal components. A pressure transducer capable of measuring vertical and horizontal components of pressure independently (sentograph) is used for this measurement (see Emotions - Their Parameters and Measurement ed. L. Levi, pp. 561-602, Raven Press, N.Y., 1975).

In order to determine to what extent the specific dynamic expressive forms found for touch expression are also involved by the central nervous system in the generation of expressive sound, to see whether touch and sound have expressive forms sharing common origins in brain function, we may ask the question of how the touch forms need to be transformed dynamically in order to produce sounds of similar expression.

Sinusoidal tones were frequency and amplitude modulated according to the touch expressive forms (essentic forms) and the transfer functions were determined by means of an analog computer for the emotions of Anger, Hate, Grief, Love, Sex, Joy and Reverence. It was found that for the slower expressions only the sign and depth of frequency modulation needed to be specifically chosen for each emotion. Faster expressions also required a dynamic correction for the inertia of the arm. When appropriately scaled, the dynamic touch forms were also correct ones for producing like emotional expressive sounds: only when the dynamic forms were thus preserved could the quality of the expression be realized. The parameters for the transformation will be presented and the frequency and amplitude modulation envelopes given for each emotion.

Although the tones were single sinusoids modulated in this way, it seems that much of the emotional range of expression can be encompassed. The sounds will be demonstrated.