

# Proceedings of the Iowa Academy of Science

---

Volume 27 | Annual Issue

Article 43

---

1920

## What Constitutes Voice?

C. I. Erickson

Copyright ©1920 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

---

### Recommended Citation

Erickson, C. I. (1920) "What Constitutes Voice?," *Proceedings of the Iowa Academy of Science*, 27(1), 232-233.

Available at: <https://scholarworks.uni.edu/pias/vol27/iss1/43>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

## WHAT CONSTITUTES VOICE?

C. I. ERICKSON

- I. General mechanism of voice production —
  - A. Physiological
    1. Lungs
    2. Larynx
    3. Resonating Cavities
      - a. Ventricles of the Larynx
      - b. Lower pharynx
      - c. Upper pharynx
      - d. Oral cavity
      - e. Nasal cavity
      - f. Sinuses
    4. Muscles
      - a. Ten expiratory muscles
      - b. Laryngeal muscles
        - (1) Five intrinsic
        - (2) Four extrinsic or infrahyoid
      - c. Supra-laryngeal muscles
        - (1) Five pharyngeal
        - (2) Four suprahyoid
        - (3) Four maxillary
        - (4) Eight lingual
        - (5) Ten labial
        - (6) Five palatal
        - (7) Five nasal
  - B. Psycho-physical
    1. Auditory imagery and sensations
    2. Kinaesthetic imagery and sensations
    3. Tonal memory
- II. Basic factors —
  - A. Pitch — its primary mechanism of control
    1. Physiological
      - a. Vocal cords — variable as to weight, length, shape, tension, and condition
      - b. Intrinsic laryngeal muscles
      - c. Supra-laryngeal muscles
    2. Psycho-physical
      - a. Pitch discrimination
  - B. Intensity — its primary mechanism of control
    1. Physiological
      - a. Lungs variable as to capacity and condition
      - b. Resonating cavities — variable as to number used, size, shape, condition
      - c. Expiratory muscles
      - d. Supra-laryngeal muscles
    2. Psycho-physical
      - a. Intensity discrimination

- C. Timbre — its primary mechanism of control
  - 1. Physiological
    - a. Resonating cavities
    - b. Vocal cords
    - c. Supra-laryngeal muscles
    - d. Laryngeal muscles
  - 2. Psycho-physical
    - a. Pitch discrimination
    - b. Intensity discrimination
    - c. Timbre discrimination
- D. Volume — its mechanism of control
  - 1. Physiological
    - a. The general mechanism of voice production
  - 2. Psycho-physical
    - a. Intensity discrimination
    - b. Timbre discrimination
    - c. Extensity discrimination
- E. Time — its mechanism of control
  - 1. Physiological
    - a. The muscular mechanism of voice production
  - 2. Psycho-physical
    - a. Time discrimination

---

## THE PERSONAL EQUATION IN MOTOR ABILITY

MARTIN L. REYMERT

In order to try out experimentally the common notion, that an individual will show a constant behaviour as to speed and accuracy in all kinds of motor performance — within his group — a series of reaction and motor tests were given to sophomores. The tests were: (1) Tapping in group (with pencil). (2) Individual tapping (on telegraph key). (3) Counting numbers orally. (4) Writing numbers. (5) Counting and writing as one combined activity. Simple bodily reactions of (6) the lips, (7) the jaws, (8) the index finger, (9) the head, (10) the elbow, (11) the thumb, (12) the foot. (13) Ergograph test.

Throughout this test series the individual behaviour was judged in terms of speed (time) and variability (mean variation). The raw-correlations (Spearman) have been pooled.

The main results:

1. There is a distinct personal equation as to speed throughout all tests — the intercorrelations here being positive, very high and very reliable (as judged by P. E.).

This result may have the bearing on motor tests for vocational selection, that one or two representative motor tests will suffice