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## General Bodily Tonus of Stutterers and Non-Stutterers

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## SOME VISUAL PUNS

CHRISTIAN A. RUCKMICK

Puns are usually thought of in connection with auditory stimuli in the form of words with a double meaning. It is possible to transfer this phenomenon of double meaning to the visual field. The process may be studied in various transitional forms (1) in the illusion of reversible perspective; (2) in the addition of objects not definitely outlined, and (3) in the alternation of figure and background.

These studies are of interest in the light of recent discussions of the psychology of meaning and because of investigations emanating from Gestalttheorie, or the psychology of form.

Various figures were devised and tested out with a view to making a comparative study of their effectiveness in eliciting this double meaning, and of the order in which these meanings came without verbal suggestion from the experimenter.

(Illustrated with stereopticon slides.)

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 GENERAL BODILY TONUS OF STUTTERERS AND  
NON-STUTTERERS

LEO B. FAGAN

I. Using an apparatus devised to measure muscular tonus as indicated by the resistance offered to an unexpected blow against the back of the free swinging hand, the muscular tone of stutterers and non-stutterers was studied under several conditions. For stutterers the conditions were (1) silence, (2) stuttering, (3) normal unobstructed speech; for non-stutterers (1) silence, (2) normal speech.

Fifty non-stutterers were studied under the conditions specified and in every instance of the 50 Os resistance to an unexpected blow on the back of the free swinging hand showed an increase during normal speech.

Ten stutterers were studied under the conditions specified and the resultant data reveal that during stuttering resistance to the unexpected blow on the back of the free swinging hand increased in each case; and secondly, that during normal unobstructed speech the resistance, in each individual case, dropped to a level below that of normal resistance during silence.

The increase and decrease of resistance to the unexpected blow on the back of the free swinging hand, as revealed by our data, seems to be explicable only on the physiological concept of muscular tonus, that the increase and decrease of resistance is indicative of increase and decrease of muscular tonus.

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## AN ELECTRICAL STIMULUS WHICH CAN BE ACCURATELY MEASURED

THOMAS H. HOWELLS

The difficulty encountered in the past with any technique involving the use of an electrical stimulus has been that of obtaining a stimulating current which could at once be easily varied and accurately measured. In order to make it possible to vary the necessarily high voltage involved, an induction coil or transformer was usually used as the source of electrical current. Since these instruments have an alternating current output it is therefore difficult to obtain a meter capable of measuring the very small current that can be used as a stimulant. The ordinary A. C. meters are not adapted for measurement of very weak currents. In lieu of current measurement it has been customary to measure the applied E.M.F. Voltage, however, is an unreliable indicator of the energy put into the stimulus. The uncontrolled factor of variable skin and body resistance effects a corresponding variation in current, which is independent of the applied voltage.

In the procedure of this report the source of electrical energy was the standard 60 cycle lighting current which was obtained from a bell transformer at a potential of 12 volts. This was passed through a rheostat having a range of from 0 to 600 ohms, and from thence through the primary of a step-up transformer. The normal output of this instrument was 50 milliamperes at 20,000 volts. This output could be diminished to any desirable value by means of the control resistance in series with the primary. The A. C. output of this transformer was now passed through from the plate to the filament of a radio vacuum tube of the five watt type which is used for transmitting. Thus the alternating current was converted into a pulsating direct current which could be varied gradually over a wide range by means of the control resistance in series with the primary of the transformer. This direct current