

## NEW METHODS

### METHOD OF GRAPHIC RECORDING OF CONDITIONED MOTOR REFLEXES

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For the purpose of graphically recording conditioned motor reflexes produced by the method of A. G. Ivanov-Smolensky, we constructed a device, a diagram of which is presented in Figure 1.

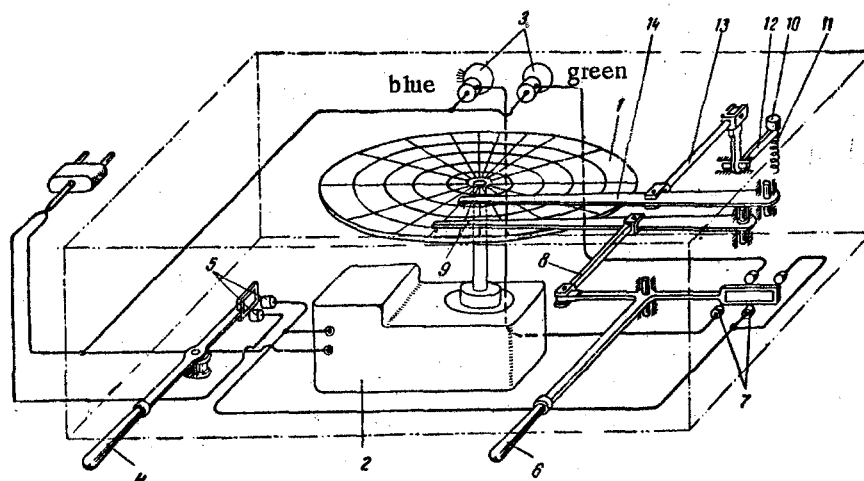


Fig. 1. Diagram of apparatus for recording conditioned motor reflexes.  
(See explanation in text).

The synchronized electro-motor 2, across a mounted reducer, turns a disc 1 bearing the graph paper at the speed of one revolution per minute. Levers 4 switch in the contact 5 to start the electro-motor. In order to produce the stimulation the instrument is fitted with two signal lamps 3, blue and green in color. On turning lever 6 to the left, contacts 7 are closed and the blue lamp lights up. At the same time by weight 8, lever 9 is deflected from the center and the pen-point of the lever records the curve of signal transmission. By turning lever 6 to the right, the green lamp lights up and the lever with the pen-point moves towards the center. Push-button 10 serves for the response reaction. Corresponding to the force applied to the push-button the calibrated spring 11 is compressed and lever 12, by means of weight 13, shifts lever 14 with the recording pen.

The graph paper is graduated, the distance between two concentric circumferences on the paper corresponding to the magnitude of displacement of the marking upon application of a force of one kilogram. According to the depth of deviation of the curve, the value of the response reaction (conditioned reflex) is easily determined.

The application of a conditioned stimulus, replacement of the stimulus, and the motor reaction of the subject are shown in the displacement of the curves (Fig. 2).

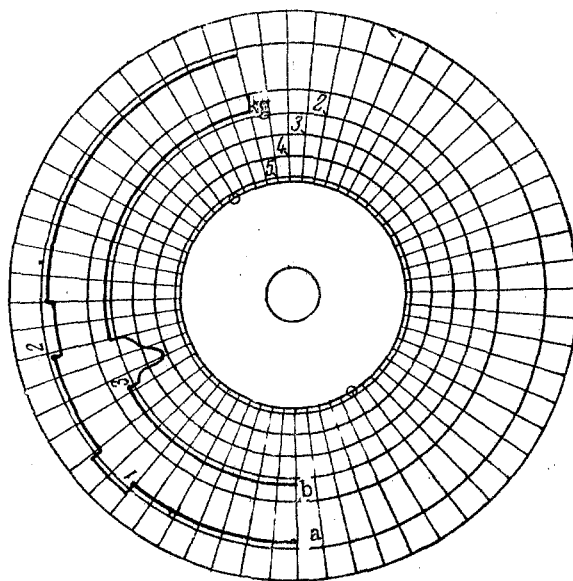


Fig. 2. Recording of motor reaction according to method proposed.  
(See explanation in text).

The moment of application of the signal is noted on curve a by a displacement in it, points 1 and 2, from the original position. The displacement of point 1 from the center of the lattice and from the original position corresponds to the application of a conditioned signal of blue color, displacement of point 2 to the center corresponding to a green color.

The appearance of a response reaction in the subject is shown in pressure on the push-button and is noted on curve b by the displacement of point 3 from the original position. The magnitude of radial displacement indicates the strength of the reaction in kilograms. Thus, with the aid of such an instrument, upon application of a luminous stimulus, a loud speaker and a response motor reaction in the form of pressure on the push-button, the experimenter obtains a number of diagrams (circles), in which the latent period of the conditioned reflex, its magnitude etc., are recorded.

Before commencement of the experiment the instrument is mounted on a table with a screen so that on one side of the screen stands the experimenter, the recording part of the apparatus and the lever for switching on the signals being on his side of the screen; on the other side of the screen there is the subject, and the signal lamps and the push-button which is to be pressed by the subject.

On the instrument disc 2-3 circles are stacked and are easily removed after use.

The construction of the apparatus allows one to increase the number of stimuli and appliances for recording them.

The proposed instrument differs from many others used for investigating motor conditioned reflexes, according to the method of A. G. Ivanov-Smolensky, in that it makes possible graphic representation of the moment of stimulation and the response reaction of the subject.