



CONTROL HAMMER APPARATUS

Maker, Source: Baird & Tatlock,
London, England

Year made, acquired: c. 1900

Base: 50 x 15 cm

The Control Hammer Apparatus consists of a bent lever whose arm is heavily weighted and turns about a horizontal axis. As the hammer-head descends, a cross bar on the shank makes or breaks the contacts. The control time is varied by shifting the counterweight on the short arm of the lever.

Every psychological laboratory had some form of control instrument for calibrating the Hipp Chronoscope. There were three varieties of control instruments: the Gravity Chronometer, the Pendulum Chronometer and the Hammer Apparatus. Researchers used control instruments to generate a known and constant period of time; a mass fell through a measured distance, making and breaking currents at the beginning and end of the course.

The control instrument was the fundamental timing device of the laboratory upon which all timing calibrations relied. According to Titchener (1905; 1915), proper use of control apparatus depended on a good amount of precision, constant oversight, and mastery of operation. Experienced researchers tended to use complex control apparatus, while less experienced undergraduates used primitive, simpler instruments. Wundt's famous Hammer Control Apparatus, for example, could only be used by a select group of people.

Operation of various Control Instruments depended much on the tacit knowledge, experience, personal choice, and idiosyncrasies of a given researcher. Experimenters became partial to using one of the three variations of the control instruments - hammer, pendulum or gravity chronometers. Each kind of control instrument had a family of variations - some complex, some simple.

While studying under Wundt, Kirschmann and Külpe performed an exhaustively thorough study regarding the accuracy of control instruments.

In the Literature:

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Titchener, (1905). *Students Manual*, p. 151.

Witmer, L. (1894). "The Pendulum as a Control-Instrument for the Hipp Chronoscope," *Psychological Review*. 1: 506.