Notes

A SYSTEM FOR CONVERTING A CAROUSEL PROJECTOR INTO A STIMULUS PROJECTOR

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Several investigators have altered the Carousel projector for experimental purposes (e.g., Biederman, 1969; Campbell & Gollin, 1967; Lubow & Stevens, 1964; Siegel, 1964). The Carousel projector system described here was designed for research which required both operation of the shutter independently of slide advance and coding of each slide (i.e., either S+ or S-) without matching stepper programming.¹

The shutter modification for external control of the projection period, without slide advance, was accomplished by the following procedure (cf. Fig. 1): (1) An 8-mm-diam hole was drilled 7.5 cm from the front and 1 cm from the side

on the bottom of the projector; (2) an L-brace, 8 cm long, 2 cm wide, top bend 2 cm, with a 24-V dc solenoid (Guardian Solenoid, continuous duty, No. 11) attached to it, was mounted on the bottom of the projector next to the 8-mm hole; (3) a piece of 24-ga stainless steel wire (obtained from Delta Surgical, 22 North Pauline, Memphis, Tennessee 38105) was strung from the shutter arm to the solenoid and adjusted for maximum shutter closure.

After the shutter was modified, a number of experimental conditions were programmable without advancing the slide-change mechanism, e.g., time-out (TO), intertrial interval (ITI) for discrete operant research, flashing of the stimulus, and response correction (i.e., reshooting a stimulus after an incorrect response is made by the S).

Modification of the Kodak Carousel projector for a slide code-sensing system was accomplished by the following procedures (see Fig. 2): (1) A 2-mm-diam hole, located 9.5 cm from the front and 1 cm from the top, was drilled on the right side of the projector for insertion of a fiber optic light guide; (2) a 4-mm-diam hole, located 12.5 cm from the front and

A Simple Tailshock Electrode for Restrained Rats

The most common method of applying electric shock to rats has been by means of a grid floor. However, certain experimental situations require that shock be given a restrained S via the tail. Accordingly, a very simple and inexpensive tailshock electrode costing less than 25 cents has been devised.

The electrode consists of a Buss No. 4405 fuse holder (two fuse clips separated by, and imbedded in, plastic) that is easily and snugly clipped to the rat's tail. The fuse clips are contoured and can be adjusted to accommodate individual differences in tail diameter. The large surface ensures good electrical contact so that electrolytic solutions are not required. In addition, the solder terminals permit easy soldering of wires from the shock generator. A notable feature of this device is that it is ideal for yoked control group designs. Several fuse holders wired in parallel may be used to provide uniform administration of tailshock to all Ss, although differences in resistances must be considered.

In pilot work, we found that the electrode, if taped to the tail, worked reasonably well with unrestrained rats. A tail electrode for unrestrained rats is cited by J. M. Weiss in *Journal of the Experimental Analysis of Behavior*, 1967, 10, 85-86.

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Fig. 1. A three-sided view of the modifications made on a Kodak Carousel projector for external control of the shutter mechanism.

Fig. 2. A three-sided view of the modifications made on a Kodak Carousel projector for external sensing of positive or negative stimulus conditions.

1 cm from the top, was drilled on the right side of the projector for an L-brace light-guide holder; (3) a black L-brace, 4 cm long, 3.5 mm wide, bend 4 cm long with a 2-mm hole to hold the light guide, was fitted into place and screwed to the side of the projector with metal screws; (4) the fiber optic (0.87-in. diam, obtained from Edmund Scientific Co., Barrington, New Jersey) was inserted into the side of the projector, then fitted and glued (clear Epoxy cement

obtained from Edmund Scientific Co.) into the L-brace holder. Once this was complete, a photocell (Clairex CL703L) and photosensing system (see Scott, 1963) was attached to the opposite end of the fiber optic light guide. With the photocell system attached to the light guide, a hole can be punched at the top of the 35-mm slides parallel with the fiber optic, allowing light from the projector's lamp to pass to the fiber optic and from the light guide to the photocell

which activates the sensing system. A punched slide activates the photocell system (S+); a nonpunched slide allows it to remain nonoperative (S-). This system allows the E to randomize slides and to sense positive or negative trials without having an electromechanical stepper ordered in the same series as the Carousel tray.²

Refer to Petre (1966) and Bushell (1968) for rapid methods for making inexpensive slide projector transparencies.

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NOTES

1. The projector system to be described here is the Kodak Carousel 900, which has been used by the author for over 3 years.
2. The system described here has only two states, on and off, but by attaching other sensing systems more states could be sensed.