REINFORCING CAPABILITIES OF TELEVISION DISTORTION¹

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The effectiveness of television distortion as a negative reinforcer was analyzed. Contingency arrangements involving television distortion were found to be capable of (a) accelerating the work rate of a naive, mildly retarded subject on a simulated production-line task involving card-sorting, and (b) reducing gross hyperactivity of a mildly retarded subject. An escape-avoidance contingency was arranged for the production-line behavior of the first subject and a punishment contingency for the hyperactive behavior of the second subject. Television distortion appears to be an effective and practical negative reinforcer for use in behavior modification.

The punishment effect of withdrawal of cartoons has been demonstrated by Baer (1962). A comparable result with closed-circuit TV has been reported by Lindsley (1962), who employed attenuation of both picture and sound, rather than abrupt withdrawal. Informal observation of TV viewers attempting to cope with a malfunctioning set or interference of normal reception suggests another application of TV in the modification of behavior, *i.e.*, the use of distorted TV reception as a negative reinforcer. The present study describes a technique designed to produce a type of distortion that could readily be initiated and terminated, and which obviously interfered with both audio and video reception.

TECHNIQUE

The particular distortion consisted of a flickering and rolling of the TV picture with concomitant reduction of volume and clarity of sound, produced by repeated interruption of the input signal. This is accomplished by pulsing a relay with each antenna lead connected through its normally closed contacts at a 10-Hz rate. This rate was judged by several observers to be moderately annoying while still permitting the viewer to follow the content of the TV program.

The apparatus consisted of an interface device triggered by the subject's behavior, which

in turn activated: (a) a square-wave signal generator to deliver 10-Hz pulses to a DPST relay to produce the distortion; (b) a timer to terminate the distortion after a pre-determined interval; and, finally, (c) a counter to record responses.

SUBJECT I: ESCAPE-AVOIDANCE

The first subject was a mildly retarded young adult male confined in a correctional unit for behavior problems. He was not informed that the distortion could be controlled by the experimenter nor that it was related to his behavior, but was told merely that there was frequent TV interference which could not be eliminated.

The subject was instructed to carry out a simulated production-line task which required him to (a) discriminate between two types of data processing cards and (b) subsequently pull one of two response levers, (c) partially insert the card into one of two slots, and (d) discard it into one of two bins, all in accordance with the initial discrimination. Supposedly to relieve the monotony of this repetitive task, the subject was permitted to watch TV as he worked during each daily 1-hr session. He was paid at the rate of six cigarettes per hour, which was considered generous by institutional standards. After determining the subject's operant work rate, which was based upon three pre-conditioning sessions with uninterrupted TV, an escape-avoidance procedure was initiated. In this procedure, the subject could avoid the TV distortion so long as

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he completed each task cycle within a pre-determined time interval. (The time interval was reduced from 15 to 4 sec as the subject's work rate increased.) If the subject failed to complete a task within the time interval, the TV distortion automatically occurred. It was then possible for the subject to escape from the TV distortion by completing the task cycle. A new time interval began each time a task cycle was completed.

Under this procedure the subject's weekly mean work rate increased from an operant level of 5.7 responses per minute to a peak of 8.8, followed by a slight decline during the seventh and final week of the initial conditioning (Fig. 1). Upon removal of this contingency, his rate declined rapidly in the course of one week to 2.3 responses per minute. The following week the escape-avoidance contingency was again employed and within two weeks his rate had increased to 6.1 responses per minute.

SUBJECT II: PUNISHMENT

The applicability of the technique to a problem of gross hyperactivity was also explored with a mildly retarded 18-yr-old girl. Her behavior problem appeared to involve an excessive amount of squirming, rocking, scratching, thrashing of her head and an almost continual adjusting of her hair and clothing. She also would report discomfort when she remained seated for more than a few minutes. She was initially instructed about the purpose and nature of the procedure, and expressed a

willingness to report each day for a 30-min session "to try to learn to sit still".

The subject's instructions were to remain still while she watched TV in a 5-ft by 6-ft room equipped to record, automatically, her activity rate. The latter was accomplished by means of an Alton Ultra-Sonic Motion Detector and auxiliary recording apparatus. To establish her operant rate, the subject was asked to watch TV in the room for a number of sessions "to get used to the room and see how well she could sit still by herself", before the conditioning procedure would be initiated.

An operant activity level was determined on the basis of eight preconditioning sessions which, it should be noted, varied widely from each other ($M = 21.7$, $SD = 18.7$ resp./min.). During the subsequent conditioning procedure, each gross movement made by the subject was immediately followed by a brief interval of TV distortion. For the first three weeks the distortion interval was 3 sec, but was subsequently lengthened to 5 sec.

Figure 2 shows the rapid effect of the contingent TV distortion. In contrast to her weekly mean activity rates of 12.6 and 27.2 resp./min. for the operant period, her rate for the third week was only 1.5 resp./min. This rate remained stable over the five succeeding weeks ($M = 2.7$, $SD = 2.1$ resp./min. for the entire conditioning period). The impression from observing the subject's behavior by means of a periscope device was that the activity that remained consisted primarily of normal changes in position and occasional adjustments of clothing and hair.

Fig. 1. Acceleration of work rate by television distortion.

CONCLUSION

These findings indicate that TV distortion can function as a negative reinforcer in escape-

Fig. 2. Reduction of gross hyperactivity by television distortion.

avoidance and punishment contingencies. Since television viewing is a generally popular activity and TV distortion is an innocuous event, behavior modification procedures involving TV distortion would seem to be practical.

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