

# Disagreement-induced drive in conversation: A social analog of intermittent shock in escape conditioning\*

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Participation in conversation in which S encounters disagreeing opinions is aversively motivated by the disagreement and reinforced by the opportunity for S to speak in reply. In an experimental conversation modeled on discrete-trials instrumental conditioning, instrumental response speeds were faster when conversation began with disagreement on every trial rather than on half the trials, as in escape conditioning studies of intermittent shock ( $N = 80$ ,  $p < .025$ ).

Ss will learn an instrumental response the reinforcement for which is the opportunity to speak in reply to a person of differing opinion. Latency data from seven experiments show a fundamental similarity to a discrete-trials instrumental escape conditioning model in demonstrating replicable analogs of (1) acquisition, (2) extinction, (3) partial reinforcement effects, (4) drive effects, (5) a delay of reinforcement gradient, (6) correlated reinforcement effects, and (7) correlated delay of reinforcement effects (Weiss, Beck, & Stich, 1972; Weiss, Boyer, Colwick, & Moran, 1971; Weiss, Lombardo, Warren, & Kelley, 1971). The importance of studying one person's reply to another is generally acknowledged by researchers in interpersonal communication, but the reinforcing effect of speaking in reply has not previously been recognized. Is replying a positive reinforcement like food in instrumental reward conditioning, or is it rather a negative reinforcement like the reduction of shock in escape conditioning? Positive or negative reinforcement, appetitive or aversive motivation: For a basic form of interpersonal communication, the question is not a trivial one. The Ss reply to statements that disagree with their own opinions. Theory and research indicate that (1) disagreement induces aversive drive and (2) replying reduces it, as in escape conditioning. With regard to drive induction, Dollard & Miller (1950, pp. 116-124) have described learned fear drives based on social punishment of behavior which is insufficiently logical, lacks explanation, or fails to make a logical report of the environment. Byrne and his associates (e.g., Byrne, 1969; Byrne

& Clore, 1967) have further developed these concepts under the name of effectance drive and have brilliantly exploited their implications for attraction and related social processes. Their work, and that of others, indicates that the aversive drive of effectance can be aroused by opinions that are dissimilar to S's own (e.g., Byrne & Clore, 1967) or by disagreement with S by other persons (e.g., Lombardo, Weiss, & Buchanan, 1972; Stapert & Clore, 1969) and that the presentation of such opinion statements following a response is punishing in discrimination learning (e.g., Byrne, Griffitt, & Clore, 1968) and conditioning (Lombardo, Weiss, & Buchanan, 1972). Moreover, effectance induced by prior disagreement with other persons exhibits the characteristic differential energizing effect of drive on dominant and competing responses in paired-associates learning (Lombardo, Libkuman, & Weiss, in press), and this energizing drive capacity can be conditioned to a disagreeer (Lombardo, Steigleder, & Weiss, 1972). The conversation studies of Weiss and his associates indicate that replying reduces this drive: replying increases attraction toward the disagreeer (Lombardo, Weiss, & Stich, in press), and, most directly, the results of the conditioning studies include partial reinforcement acquisition effects and drive-reinforcement interaction effects that are specifically characteristic of escape rather than of reward conditioning (Weiss, Lombardo, Warren, & Kelley, 1971).

Another escape conditioning variable which does not parallel reward conditioning research is intermittent shock (e.g., Franchina, 1969). The S is shocked on only some of the trials and still performs the response, but more slowly than Ss who receive shock on all trials. A conversational analog of intermittent shock (initial

disagreement on only some trials) offers the opportunity not only to distinguish between escape and reward, but to pinpoint the locus of the aversive drive in the disagreeing opinion. It therefore follows that Ss disagreed with at the outset of only half the trials should still perform the instrumental response, but more slowly than Ss disagreed with at the beginning of all trials.

## SHOCK MANIPULATION

Nonshock (nondisagreement) cannot appropriately be manipulated by the substitution of agreeing opinions for disagreeing ones, particularly because of the role of agreeing opinions as positive reinforcers in Byrne's theories. The following simple procedure suggested itself as a close analog of shock vs nonshock trials. The "other person" in the conversation was represented to S as having been provided with a list of topics. On each trial the other person read the topic and, on shock trials only, offered an opinion known to disagree with S's. The S then had the opportunity to comment on the other person's statement if he wished. Nonshock trials followed the identical procedure, except that the disagreeing opinion was omitted, and S commented on the topic if he wished. The continuous shock group received the topic and disagreeing opinion on all trials, while the intermittent shock group received the topic and disagreeing opinion on only half the trials and the topic alone on the other half. Four different orders of intermittent shock were employed.

## CONDITIONING

The Ss performed an instrumental response of switch pressing, the reinforcement for which was the opportunity to speak in reply.

The S was seated at a table facing the control room wall, which included four one-way vision windows. Instructional signals appeared in each window upon illumination. The signals were the large printed words (1) "listen," (2) "throw switch if you wish to comment," (3) "talk," and (4) "move dial to final opinion." A panel mounted on the table top contained S's "comment" switch (a telephone toggle switch with a spring return), his intercom, and a dial used in the masking task.

An experimental trial began with the "listen" signal, followed by the other person's statement. When the statement ended, E operated the control which both (1) presented the CS, the signal "throw switch if you wish to comment," and (2) started the latency timer. When S threw the comment switch, the latency timer automatically stopped, measuring latency to .01 sec. The "talk" signal

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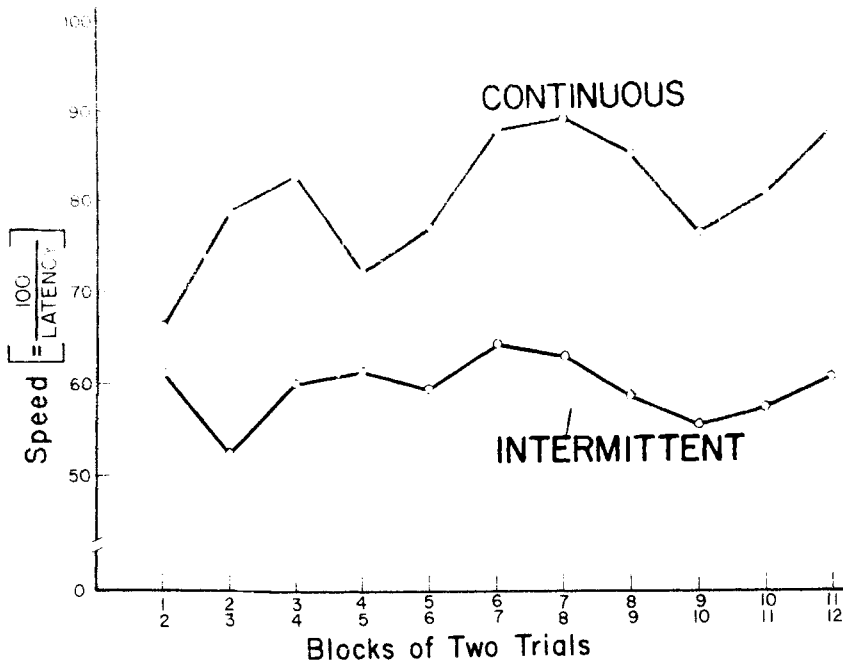


Fig. 1. Intermittent and continuous shock: effects of initial disagreement on half or all of the trials.

followed the switch-press response and S spoke in reply. The procedure described was closely modeled on traditional discrete-trials instrumental conditioning. The reinforcement (speaking in reply) was contingent on the instrumental response (switch pressing). The dependent variable was speed (100/latency) measured from the time of the presentation of the CS (the signal "press switch if you wish to comment") to the instrumental switch-pressing response.

#### DECEPTION AND MASKING TASK

The experiment was represented to Ss as a study of opinion change. "We are interested in how your opinion may be affected by what someone else says; how your opinion may be affected by what you yourself say; and how what you say may affect the opinions of someone else." As a masking task, after each trial S indicated whether he had changed his opinion by moving a dial. Questionnaire data (Weiss, Lombardo, Warren, & Kelley, 1971) showed that Ss believed this deception; the switch appeared to them as a mere incidental to the serious business of opinion change through conversation. The "other person," simulated by a tape recorder, was said to be in another room from S, and E was in fact in another room. The S addressed the "other person" and E over an intercom system, and could also hear E give instructions and occasional comments ("speak a little louder, Subject A") to the nonexistent other person.

#### SUBJECTS AND MATERIALS

The Ss were 80 students from the Psychology 1 pool. The opinions expressed by the "other person" were selected by means of a 25-item questionnaire administered to each S just before the experimental session. The Ss indicated their opinions on each item and ranked the 12 items of greatest interest from among those on which they had an opinion. There was never any difficulty in identifying enough items, because the 25 items of the questionnaire had themselves been selected for interest and opinionation from a longer questionnaire administered to a sample from the same population. A magazine of 100 individual tape cassettes had been prepared, 4 for each item, male-female by pro-con, so that each S was exposed to tapes contrary to their own opinions from another person of the same sex. The tapes were presented in randomized order. The tapes for the nonshock (topic without opinion) were the same tapes as the tapes for the shock trials with the sound cut off after the topic and before the opinion. These tapes were different from the ones used in all previous studies and were intended particularly for studies in which it was desirable to have complete uniformity of disagreement or agreement, together with a structure that made it possible (together with another 100 tapes) to specify closely the strength of the argument. Ironically, the structure of these meticulously prepared tapes made them intimidatingly logical,

resulting over several studies in a pattern of shallow or flat acquisition curves following rapid differentiation between the experimental groups. Before abandoning this set of tapes, comparison data involving other tapes or live confederates, including the people recorded on these tapes, underscored the importance of a folksy style of presentation maximizing viewpoint and minimizing logical argumentation. The clear differentiation between the experimental groups made the present set of data well worth reporting.

#### RESULTS

Figure 1 shows effects in conversation that are analogous to intermittent shock effects in escape conditioning: Ss disagreed with at the outset of only half the trials still performed the instrumental response, but more slowly than did Ss disagreed with at the outset of all trials. The effect is significant in the predicted direction, tested over a block of the last three trials ( $t = 2.07$ ,  $df = 78$ ,  $p < .025$ ) or, similarly, the last six trials ( $t = 2.03$ ,  $p < .025$ ). Figure 1 also shows that while performance is reliable and sustained, acquisition curves of both groups are typical only of those found with these tapes and not with our other tape or live-confederate data or escape conditioning. Of course, the difference between the groups is not simply sampling error. Expressed in units of speed (100/latency), the difference between the groups is greater than 10 for the last block of two trials, but less than 1 for the very first individual trial.

#### DISCUSSION

The intermittent shock experiment strengthens the evidence of previous research in indicating that a basic form of interpersonal communication resembles escape rather than reward conditioning: the motivation is aversive and speaking in reply functions as a negative reinforcement like shock termination rather than as a positive reinforcement like food. Moreover, this experiment pinpoints the locus of the aversive drive in the disagreeing opinion.

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