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Physical aggression as a function of alcohol and frustration

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Forty male undergraduates competed in a task involving reaction time to determine the effect of frustration on the aggressive responding of intoxicated and nonintoxicated subjects. The subjects who ingested alcohol were more aggressive than the subjects receiving a placebo cocktail. The frustration manipulation did not appear to influence the subjects' aggressive reactions. It was concluded that frustration is a weak determinant of physical aggression, relative to such antecedents as a physical attack, social pressure, or alcohol.

Considerable controversy exists concerning the potency of frustration as an elicitor of aggression. While some researchers are convinced that an F-A hypothesis is tenable, others maintain that it has outlived its usefulness. Kaufmann (1965) has noted, for example, that "with due recognition of its influential role in experimental research, it has outlived its usefulness." A large number of studies have been conducted to test this hypothesis. However, to date, the results of these studies have been equivocal (e.g., Buss, 1966; Taylor & Epstein, 1967; Taylor & Pisano, 1971).

There are a number of possible explanations for the apparent lack of empirical support for the F-A hypothesis. It is possible, for example, that there is no inherent relationship between frustration and aggression. It is also possible, however, that the hypothesized relationship has been obscured by learned social inhibitions. When confronted by a frustration operation, the typical subject may inhibit his aggressive impulses and utilize alternative coping mechanisms (e.g., withdrawal).

A number of studies have demonstrated that the expression of physical aggression is related to the ingestion of alcohol. Shupe (1954) reported that over 72% of 882 persons arrested after the commission of a felony were under the influence of alcohol at the time the crime was committed; 64% had urine alcohol concentrations above .10%. Wolfgang and Strohm (1956) noted that in only 36% of homicide cases during a 5-year period was alcohol judged to be "entirely absent" and not a factor in the crime. Shuntich and Taylor (1972) observed that subjects who had ingested a moderate dose of alcohol set significantly higher shock intensities in a competitive reaction time situation than did subjects in a placebo or no-drug control group. Taylor and Gammon (1975) reported that a high dose of alcohol instigated more aggressive responding than did a low dose.

The purpose of the present study was to determine the effect of frustration on the aggressive responding of intoxicated and nonintoxicated subjects. Given the apparent disinhibitory influence of alcohol, it was assumed that intoxicated subjects would regress to an earlier mode of adjustment (aggression) when exposed to a frustration operation. More specifically, it was hypothesized that frustration would lead to greater levels of aggression than would no frustration among intoxicated subjects. No difference in aggressive responding between the frustration conditions was expected among subjects who ingested the placebo cocktail.

METHOD

Subjects

The subjects were 40 male undergraduates over 18 years of age from Kent State University. Subjects were attracted by folders placed in various buildings around campus. On the cover of each folder was a request for paid volunteers to participate in a psychological experiment. The possible use of alcohol was not mentioned in the folder. Potential subjects were contacted by phone and informed that the experiment concerned the effects of alcohol on perceptual-motor skills. They were also told that they would be paid $4 for their participation and that the experiment would take place at the university health center.

Upon arriving at the health center, the subjects signed a statement acknowledging that they had some experience with alcohol and that they knew that they could terminate their services at any time without penalty. The subjects also authorized the director of the health center to examine their health records to rule out any medical contraindications to their participation in the experiment.

Procedure

Each subject was randomly assigned to one of four conditions: alcohol/frustration, alcohol/no frustration, no alcohol/frustration, and no alcohol/no frustration.

After placing a small smount of crushed ice in his mouth, each subject in the alcohol condition consumed 1.5 oz of 100-proof vodka per 40 lb of body weight. The beverage was

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administered in two equal doses, 15 min apart. The subject was instructed to drink each dose as quickly as possible. Each drink contained 40% alcoholic beverage, 60% ginger ale, and two drops of peppermint oil USP. The subject then waited 30 min for the experiment to begin.

Subjects in the no alcohol group received a placebo consisting of ginger ale (2 oz/40 lb body weight) and two drops of peppermint oil. In addition, .05 oz. of vodka was poured on the surface of the placebo. The placebo was administered in two equal doses, 15 min apart. These subjects also waited 30 min after the second dose for the experiment to begin.

Following the waiting period, the subject was led to a small cubicle and was seated at the task board. A concentric shock electrode was attached to his left wrist. Following a short delay, during which the experimenter was addressing himself to the opponent's needs, the subject's and confederate's unpleasantness thresholds for shock were determined.

Each subject was informed by means of a tape recorded message that he was competing in a reaction time task with the subject in the adjoining room. At the beginning of each trial, he was instructed to select (by pressing 1 of 10 buttons) any of the 10 intensities of shock he wished his opponent to receive. He was informed that the shock would be administered to his opponent at the end of each trial if he responded more quickly than his opponent, and that he would receive the shock his opponent had set for him if the opponent responded more quickly. Thus, the subject realized that either he or his opponent would receive a shock, depending on the outcome of the trial, and that each could select the intensity of shock that the other would receive. The frequency of wins and losses and the amount of shock received were actually programmed by the experimenter.

The frustration manipulation was initiated after the task instructions. There were two levels of task frustration: success and failure. Subjects in the failure condition were given 5 min to complete an "insoluble" puzzle which was said to be a test of intelligence. They were told, specifically, "I'd like you to work on this task involving intellectual problem solving abilities. Work as fast as you can; you will be timed." Previous research with this task has indicated that it produces an implicit "frustration" reaction (Taylor & Pisano, 1971). While performing the insoluble task, subjects appear to be totally engrossed in it, make frequent erasures and corrections, become overtly agitated, and, in many cases, plead for more time to complete it. The success group was given a similar but soluble puzzle.

All subjects then competed on the 21 reaction time trials. These consisted of three six-trial blocks of increasing provocation, two transition trials (one with a shock intensity setting of 4 between Blocks 1 and 2 and one with a setting of 7 between Blocks 2 and 3), and one final trial to measure the aggressive reaction to Trial 20. The purpose of the transition trials was to insure credibility by smoothing the transition between blocks. The first block consisted of shock intensity settings of 1 or 2, with an average setting of 1.5. The average setting in the second block was 5.5, and in the third block it was 8.5.

RESULTS AND DISCUSSION

Aggression was measured by the intensity of shock the subject set for his opponent to receive. A 2 by 2 by 3 analysis of variance was performed on the mean shock intensities set during the three blocks of trials. According to this analysis, the subjects who ingested alcohol were more aggressive than the subjects who received the placebo. The group main effect was significant at the .057 level ($F = 3.76$, $df = 1/36$). The mean shock intensities set by the subjects in the alcohol and no alcohol groups were 4.99 and 3.77, respectively. These results confirm the findings reported by Shuntich and Taylor (1972) and Taylor and Gammon (1975).

The frustration manipulation did not appear to influence the subjects' aggressive reactions. Neither the main effect of frustration nor the interaction of Frustration by Alcohol was significant at the .05 level. The mean shock settings of the intoxicated subjects in the failure and success conditions were 4.89 and 5.08, respectively, while the average shock intensities set by the nonintoxicated subjects in the failure and success conditions were 3.58 and 3.96.

According to the analysis, increasing attack significantly influenced shock-setting behavior ($F = 27.3$, $df = 2/72$). The average shock intensities set by the subjects on Blocks 1-3, respectively, were 2.84, 3.65, and 4.83.

The interaction of Frustration by Blocks was significant at less than the .10 level ($F = 2.40$, $df = 2/72$). This interaction suggests that the frustration operation may have inhibited shock-setting behavior during the first block of trials.

The intoxicated subjects in the study responded in a relatively disinhibited manner, setting fairly intense shocks, for example, during the first block. Yet they were no more influenced by the frustration operation than were the nonintoxicated subjects. In fact, during the first block, the subjects in both groups tended to set lower shocks in the failure condition than in the success condition. Thus, the results demonstrate, once again, that, relative to such antecedents as a physical attack, social pressure, or alcohol, frustration is a weak determinant of physical aggression.

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