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IN VIVO EFFECTS OF PEER MODELING ON DRINKING RATE

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One female subject drank beer with four female confederate models and two participant observers in a small town tavern. A single subject repeated measures reversal design was used. Condition 1 indicated subject baseline drinking rate. For the first intervention one confederate modeled at a rate 50% less than the subject's baseline rate. Interventions II and III were identical to Intervention I except that two confederates modeled at a rate 50% less than the subject's baseline rate for Intervention II and four confederates modeled at a rate 50% less than the subject's baseline rate for Intervention III. Interventions were separated by returns to baseline. The study was concluded with a final return to baseline. There was no change in subject drinking rate as a function of either one or two confederates modeling the 50% rate. However, when four models drank at the lower rate, subject drinking rate matched that of the four confederate models. Implications and suggestions for further research on modeling are presented.

DESCRIPTORS: multiple models, drinking rate, in vivo effects, female beer drinker

Although the number of studies dealing with the direct effects of modeling on drinking rate are few, the results of these studies are consistent across experimental designs and across experimental settings. Using a group design, in a laboratory setting, Caudill and Marlatt (1975) demonstrated the potency of peer modeling on drinking rate. Using single subject reversal designs, in a simulated tavern environment, DeRicco and Garlington (1977), DeRicco (1978), and Garlington and DeRicco (1977) found that subjects actually matched confederate models' drinking rates. Similarly, Reid (1977) found that male models significantly affected the consumption rates of male subjects observed in a small-town tavern.

The present study attempts to evaluate an in vivo effect to reduce a subject's drinking rate as a function of peer modeling.

METHOD

Subject

A 35-year-old real estate saleswoman and part-time student who regularly drank beer with six other women at a small local tavern on Friday afternoons participated in the study. She was classified as a moderate drinker based on her responses to a quantity-frequency questionnaire which indicated that she drank 6.75 ounces of the equivalent of pure alcohol per week.

The woman agreed in writing, along with other members of a behavior modification class, to serve in a study of normal drinking patterns that would involve beer drinking. The actual objectives of the study were explained to her at the completion of the study at which point she stated that she was totally unaware that an experiment was being conducted.

Confederate Models

Four of the women in the drinking group were recruited for participation as confederate models. Prior to the beginning of the study, confederates received training in matching their drinking rate to that of another drinker and in drinking at a prearranged rate. Training was carried out in practice sessions, in a simulated tavern, in which the confederates practiced

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drinking the same amounts of beer in each 5-min time interval as the practice subject drank. Confederates also practiced drinking at specified rates, in ounces per 5-min time blocks. Glasses used for training were glasses from the tavern in which the study was conducted. These glasses were calibrated at 1-ounce intervals with a glass cutter. Glasses used in the actual study were calibrated the same way. Training sessions continued until the performance of the confederates was within .5 ounce per 5-min block both in terms of confederates matching their drinking to that of another drinker and in drinking at specified rates.

Additionally, the bartender was trained to fill beer glasses with exactly 10 ounces of draft beer. The bartender was paid $3 per hour for time spent during training. He was also instructed to provide one 10-ounce glass of beer for the subject and confederates in addition to the glass of beer being consumed. To ensure that the bartender followed these instructions, he was paid $3 per hour throughout the duration of the study.

Participant Observers

The two remaining women in the group were experimental psychologists. These women recorded the subject's and confederates' drinking rates, in 5-min intervals, on prepared data cards. A check mark was all that was required to record ounces consumed. To avoid consistently checking the data card every 5 min, a column was included on the card for bogus check marks which were made at random. Participant observers were both heavy smokers and were ostensibly recording their own number of cigarette puffs. Participant observers drank entirely independently of the subject and confederates.

Environmental Setting

Sessions were conducted in a small local tavern. The tavern contained a 16-foot-long bar, 12 bar stools, 5 pullman type booths, a pool table and a foos-ball table. Only one booth was large enough to accommodate all seven participants. Therefore, this booth was always used for the experimental sessions.

Design

An ABACADA reversal design was employed. Sessions were held once a week and were held constant at one hour. Each condition was continued until a stability at $\pm.10$ ounce of beer per minute for three consecutive sessions was achieved. Rate was calculated by dividing the number of ounces consumed by 60 min, the total session time.

During the baseline conditions, confederates matched the subject's beer drinking rate, always picking up their glasses after the subject. For the first intervention, Confederate 1 picked up her glass before the subject and drank at a rate 50% less than the subject's baseline rate. Interventions II and III were identical to Intervention I except that two confederates drank at a rate 50% less than the subject's baseline for Intervention II and four confederates drank at a rate 50% less than the subject's baseline or Intervention III. The order at which the confederates appeared as models was chosen by drawing the names of the confederates from a hat prior to the start of the study. Interventions were separated by returns to baseline. The study concluded with a final return to the baseline condition.

Reliability between the two observers was 100%. Reliability was calculated by dividing the number of agreements per session by the number of agreements plus disagreements. There were no 5-min blocks in which no beer was consumed.

RESULTS AND DISCUSSION

There was essentially no effect on the subject's beer drinking rate when either one or two confederates modeled at half the subject's baseline rate. However, when four confederates, the majority of the group, modeled at the 50% rate, the subject dramatically reduced her rate to match that of the confederates. The subject's

matching response was dramatic in terms of the difference in subject overall beer consumption. Baselines were consistent throughout the study. The subject invariably drank 72 ounces of beer in an hour. A change in subject consumption as a function of majority modeling, to 36 ounces of beer in an hour, is impressive.

During the initial baseline condition, six sessions were required to achieve the stability criterion. For all other conditions only three sessions were required to reach stability with the exception of Intervention III, the condition in which four models effectively cut the subject's drinking rate in half. Intervention III required four sessions to achieve stability.

Importantly, the drinking rate of a high-rate consumer was effectively cut in half as a function of peer modeling. If, in fact, more modeling parameters can be isolated, modeling may prove to be a useful tool in alcohol education and prevention programs.

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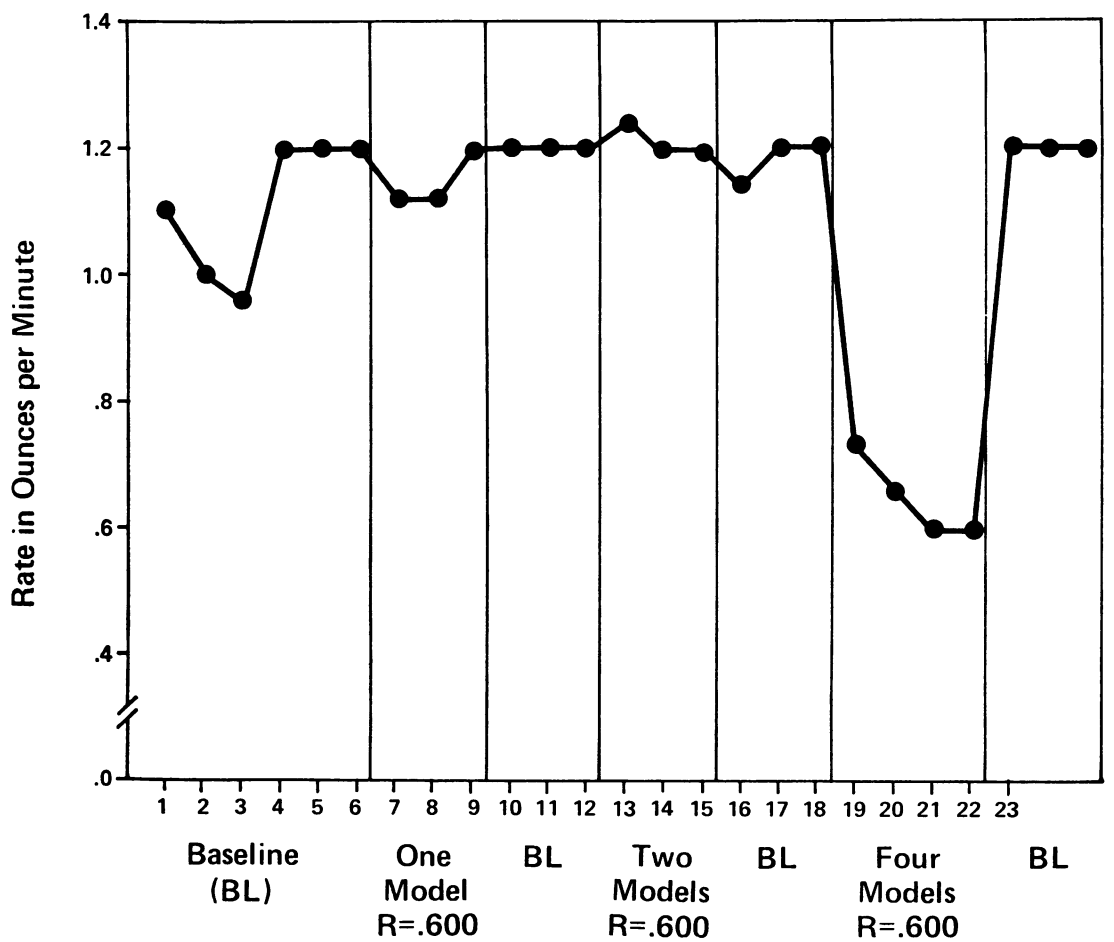

Fig. 1. Beer drinking rate, in ounces per minute, for one woman as a function of one, two, and four models with baseline intervening.

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