

BRIEF REPORT

THE ROLE OF DRINKING RESTRAINT SUCCESS IN SUBSEQUENT ALCOHOL CONSUMPTION

LILLIAN SOUTHWICK BENSLEY and PHYLLIS H. KUNA

University of Washington

CLAUDE M. STEELE

University of Michigan

Abstract — Intentional self-restraint may play an important role in the control of potentially addictive behavior. Unfortunately, for some individuals, efforts to reduce substance use may prove not only temporary but to increase the likelihood of a later "binge." An experimental study examined the relationship between prior self-restraint efforts and drinking. Results indicated that successfully restrained drinkers (i.e., those individuals who reported exerting considerable effort toward drinking self-control, and who were normatively successful, that is, light drinkers) responded to the sudden availability of alcohol with increased levels of consumption, relative to unrestrained drinkers at a similar level of habitual drinking. There was no such effect among unsuccessfully restraining (i.e., heavy) drinkers. These results suggest that a period of successful drinking restraint which is initiated by the individual, may lead to heightened subsequent alcohol consumption.

Drinking restraint — a style of social drinking control characterized by considerable effortful self-restraint, alternating with overconsumption — may represent a risk factor for the development of more serious drinking problems. The present study was intended to examine the possible relationship between a period of self-restraint success and subsequent increased drinking.

Herman and Polivy (1980) described a style of eating control, termed restrained eating, which involves "a balance of forces, including pressures to eat and a countervailing (self-imposed) resistance to these pressures" (pp. 213-214). Importantly, in laboratory situations, restrained eaters (dieters) actually increased their ice cream consumption following a milkshake preload, whereas unrestrained eaters (non-dieters) reduced their ice cream intake under these conditions (Herman & Mack, 1975). This result was interpreted as the result of a perceived violation of self-restraint (cf. Marlatt & Gordon, 1985).

Recently, a style of drinking control analogous in many ways to a restrained style of eating control has been identified, and several important questions concerning consummatory restraint have been addressed. Restrained drinkers tended to be low on generalized self-control (Southwick, 1984; Southwick and Steele, 1987), and to report more extreme patterns of alcohol consumption and more alcohol-related negative effects than others (Curry, Southwick, & Steele, 1987), indicating that restrained drinking may represent a risk factor for the development of more serious drinking problems. Two laboratory studies (Bensley, 1989; Bensley, Kuna, & Steele, 1988) suggested that restrained drinkers are more influenceable by situational factors, such as taste cues compared to unrestrained

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Requests for reprints should be sent to Lillian Southwick Bensley, Department of Parent and Child Nursing SC-74, University of Washington, Seattle, WA 98195.

drinkers. Arguably, individuals who are particularly externally responsive may feel it is necessary to practice effortful restraint in order to avoid (at least temporarily) being influenced by "tempting" stimuli.

In a related study, Ruderman and McKirnan (1984) tested whether a wine preload would initiate increased drinking in restrained drinkers, analogously to dieters who received a high-calorie preload. These authors observed heavier wine-drinking in restrained compared to unrestrained drinkers, regardless of their preload (alcoholic or no preload) condition. However, the measure of restraint used in this study (the Restrained Drinking Scale) is confounded with habitual drinking levels (Collins, George, & Lapp, 1989), and results may have been due to preexisting differences in drinking levels. Further, to continue the analogy with eating restraint, obese restrained eaters do not binge after a preload in the way that normal-weight dieters do (Ruderman & Wilson, 1979). Only successfully restrained (i.e., light) drinkers might be expected to respond to a preload with increased consumption (logically, a restraint violation requires prior restraint success). Relevant to this, Bensley (1989a) found that only light restrained drinkers reported significant reduction of their actual alcohol consumption below their preferred levels.

It might additionally be hypothesized that the sudden availability of alcohol in a situation conducive to drinking, may be sufficient to interfere with previously successful efforts toward self-restraint. According to this reasoning, regardless of the preload condition, successfully restrained (but not unsuccessfully restrained) drinkers would be expected to show heightened levels of alcohol consumption.

This study was intended to address these hypotheses. Subjects classified on the basis of a pretest as successfully (light) restrained and unsuccessfully (heavy) restrained drinkers, and unrestrained drinkers at both drinking levels, received alcohol in the guise of a taste-rating task, and their consumption levels were unobtrusively measured. Prior to participating in the taste-rating task, each subject knowingly received either a wine or dealcoholized wine preload. It was predicted that successfully restrained drinkers would show increased consumption compared to unrestrained drinkers at a similar level of habitual drinking, whereas unsuccessfully restrained drinkers were not expected to show this effect. It was further predicted that successfully restrained drinkers would respond to the presence of a wine preload with heightened alcohol consumption, whereas unsuccessfully restrained drinkers were not expected to show this effect.

M E T H O D S

Subjects

Subjects were identified on the basis of their responses to a pretest questionnaire as either restrained drinkers (scores of 12–28 on the Drinking Restraint Scale; e.g., Southwick, 1984) or unrestrained drinkers (scores of 7–11), and as either light drinkers ("drink at least once a month, but no more than 3–4 drinks each time"), or heavy drinkers ("drink nearly everyday or weekly, often 5 or more drinks each time"; cf. Cahalan, Cisin, & Crossley, 1969). The screening questionnaire additionally included separate measures of frequency (9-point scale) and quantity (5-point scale) of drinking and the Test of Value Activities, a measure of the relative importances of various values. Potential subjects who met the experimental requirements (21 years of age or older, University of Washington students, and experienced with alcohol but without a history of substance abuse, negative reactions to alcohol, or legal complications involving alcohol use), and who indicated that they were willing to be contacted for possible experimental participation were contacted by telephone, and offered \$7.50 for 1½ hour of participation in a study of the effect of alcohol on taste perception. Those people agreeing to participate were scheduled for experimental sessions

and asked to refrain from eating for at least 4 hours prior to their scheduled session. This selection procedure resulted in a sample of 40 females and 58 males, including 32 unrestrained light drinkers, 22 restrained light drinkers, 14 unrestrained heavy drinkers and 30 restrained heavy drinkers.

Procedure

Upon arrival at the laboratory, each subject was seated at a small table, had his or her ID checked, and completed an informed consent form detailing the procedures of the experiment. The subject was told that the purpose of the study was to examine the effect of alcohol on taste perception, and that he or she would be randomly assigned to receive either wine or dealcoholized wine prior to participating in a taste rating task, which involved rating three different varieties of wine on a number of taste dimensions. Prior to beginning the task, subjects were asked to complete a mood scale (Russell & Mehrabian, 1975).

Preload

Subjects randomly received either 250 ml of wine or 250 ml of wine substitute (wine from which the alcohol was removed following fermentation), and were asked to drink it within 10 mins. Pilot testing revealed that almost all subjects indicated that this amount, approximately two drinks, in the afternoon represented a violation of self-restraint. This design was chosen because it provided the strongest possible test of the ability of drinking (including both cognitive and physiological processes) to disinhibit subsequent drinking (although, in the event of a positive result, further research would be necessary to identify the specific mediator.)

Self-Affirmation

After the preload was administered, subjects were administered a mood scale, identical to the pretest measure, and a Value Scale intended to test whether affirming self-important values following the preload might interfere with the otherwise expected effect of an alcoholic preload on consumption. A third mood measure followed the self-affirmation procedures.

Taste-rating task

The taste-rating task (Higgins & Marlatt, 1975), an unobtrusive measure of quantity of alcoholic beverage consumption, required subjects to rate three wines (a white, rose, and red wine) on a number of adjectives which were typed on index cards (e.g., "fragrant," "sweet," etc.). Subjects were presented with three carafes containing 750 ml of each of the three wines. Subjects were instructed to "taste the wine often enough to make your best judgments; otherwise you may drink as much or as little as you wish." They were also informed that they need not finish rating all of the adjectives, and that they would have 15 minutes for the task.

Postexperimental questionnaire

After completion of the taste-rating task, the subject completed a final mood scale and a postexperimental questionnaire which included measures of intentions to drink, perceived self-control, attributions of responsibility for drinking, and suspicions.

Debriefing

After completion of the postexperimental questionnaire, subjects were fully debriefed as to the purpose of the experiment. A breathalyzer test was taken and a taxi ride home was arranged for subjects who reached a .05 blood alcohol level.

R E S U L T S

Alcohol consumption

The major analysis was a 2 (restrained/unrestrained drinkers) \times 2 (light/heavy drinkers) \times 2 (wine/dealcoholized wine preload) ANOVA in which the dependent measure was ml of wine consumed (square-root transformed) during the taste-rating task. (Initial analyses revealed no significant main effect or interactions of gender or of the self-affirmation procedures. Therefore, all analyses were conducted across levels of gender and the self-affirmation procedures.) Results revealed a significant effect of drinking habits, $F(1,90) = 9.99$, $p = .002$. More importantly, results revealed the predicted restraint \times drinking habits interaction, $F(1,90) = 5.41$, $p = .022$. Posttests to locate the source of this interaction indicated that, as predicted, only among light drinkers was restraint positively associated with ml consumed during the taste-rating task, $F(1,52) = 8.09$, $p = .006$ (untransformed $M = 282.6$, $SD = 281.7$, $n = 22$ for restrained and $M = 134.3$, $SD = 112.8$, $n = 32$ for unrestrained drinkers). For heavy drinkers, restraint was not significantly associated with ml consumed, $F < 1$ ($M = 320.9$, $SD = 309.7$, $n = 30$ for restrained and $M = 373.0$, $SD = 287.2$, $n = 14$ for unrestrained drinkers). Neither the main effect of the preload (wine/dealcoholized wine) conditions, nor any interaction involving the preload achieved significance, all $F_s < 1$. This result suggests that the taste-rating task in itself was able to provoke heightened levels of alcohol consumption in previously successfully restrained drinkers, regardless of the preload condition.

In order to assure that small within-cells differences in habitual drinking levels did not contribute to the obtained difference in ml consumed between restrained/light and unrestrained/light drinkers, an additional Analysis of Covariance (ANCOVA) was conducted, comparing the unrestrained/light versus restrained/light drinkers, in which the covariate was the 5-point measure of quantity consumed per occasion. As predicted, this analysis revealed a significant effect of drinking restraint, $F(1,51) = 5.63$, $p = .021$, even after controlling for prior quantity typically consumed. (The effect of the covariate was not significant, $p > .12$).

Mood

A 2 (restrained/unrestrained drinkers) \times 2 (light/heavy drinkers) ANOVA in which the repeated measure was levels of pleasure-dysphoria at baseline, predrinking, and postdrinking time points yielded no significant main effects or interactions F_s generally < 1 .

Postexperimental Questionnaire

A set of four 2 (restrained/unrestrained drinkers) \times 2 (light/heavy drinkers) ANOVAs was conducted on the four items on the Postexperimental Questionnaire. These analyses indicated that heavy drinkers further reported less overconsumption ($p < .004$) and more drinking intentions ($p < .051$) compared to light drinkers. Results further indicated that the wine preload was associated with increased overconsumption ($p < .011$). No significant effects of the experimental conditions on the measures of perceived self-control or attributions of responsibility for drinking were obtained. Interestingly, subjects took considerable responsibility for their drinking, despite the strong experimental demands to drink. The modal score ($n = 19$) was 1, or a complete attribution to the self, and only two subjects indicated a score of 7, or a complete attribution to the experiment/experimenter.

Suspicious

No subjects correctly guessed that we were interested in the amount they consumed during the taste-rating task.

DISCUSSION

Results of this study revealed that the effects of prior habitual restraint on drinking, in a circumstance involving the sudden availability of alcohol and considerable situational inducement to drink, differed depending on whether the restraint efforts were successful (as evidenced by normatively low levels of alcohol consumption) or unsuccessful (as evidenced by normatively high levels of alcohol consumption). Previously successfully restrained drinkers, but not unsuccessfully restrained drinkers, showed heightened alcohol consumption in this circumstance, compared to unrestrained drinkers at a similar level of habitual consumption. These results suggest that a prior period of self-initiated successful restraint may, under some circumstances, provoke subsequent increased alcohol consumption.

This study did not provide evidence for the hypothesis that an alcoholic preload might initiate heightened consumption in previously restrained drinkers. In combination with a similar study reported by Ruderman and McKirnan (1984), this research has provided a powerful test of these hypotheses, with consistently negative results. Several possible reasons for the failure to obtain an effect of a preload on subsequent consumption, similar to that common in research in the domain of eating, may be suggested. For example, this expected effect in the domain of alcohol may be more situationally dependent compared to the domain of eating, requiring the presence of other drinkers or drinking-related activities (cf. Cooney, Baker, & Pomerleau, 1983). Alternatively, because alcohol has a particularly strong reputation as a mood enhancer or tension reducer (Southwick, Steele, Marlatt, & Lindell, 1981), this expected effect may be more dependent on prior emotional states (such as negative affect, cf. Chaney, O'Leary, & Marlatt, 1978) compared to the domain of eating. In the absence of an effect of the preload conditions, the results of the present study do not provide clear evidence of a restraint-violation effect. Most importantly, the present results are the first to suggest that only actual drinking reduction (with its presumed correlates of positive self-esteem, perceived self-control, etc.) can lead to subsequent increased drinking.

The present experimental procedures are probably most similar to those real-life situations in which there is a strong external pressure to drink; for example, for male college students, a fraternity party involving alcohol. Pressure from others to drink is a frequent precursor of relapse (Chaney et al., 1978). The present results strongly suggest that even in the face of strong external pressures to drink, most individuals still take considerable responsibility for their levels of alcohol consumption.

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