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Information-enhancement and goal setting techniques for increasing adaptive motivation and decreasing urges to drink alcohol☆

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HIGHLIGHTS

- In a sample of university students, high or low sense of control was successfully induced in a laboratory task.
- The components of the task were the presence or the absence of choice, knowledge, feedback, and goal setting.
- Induction of high sense of control led to an increase in adaptive motivation and decreases in implicit and explicit measures of the urge to drink alcohol.
- Induction of low sense of control had converse effects on participants' motivation and implicit and explicit measures of their urge to drink alcohol.

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ABSTRACT

Objective: The aim of the study was to determine whether experimental manipulation of sense of control would change moderate drinkers' ($N = 106$) task-specific motivational structure and explicit and implicit determinants of their urge to drink alcohol.
Method: The effects of various levels of information-enhancement and goal-setting on participants' performance on experimental tasks were assessed. Participants were randomly assigned to a high-sense-of-control, low-sense-of-control, or no-intervention group. Dependent measures were indices derived from a task-specific version of the Personal Concerns Inventory and the Shapiro Control Inventory, Alcohol Urge Questionnaire, and alcohol Stroop test.
Results: At baseline, there were no differences among the groups on any of the measures; however, post-experimentally, induced sense of control had led to increases in adaptive motivation and decreases in explicit and implicit measures of the urge to drink.
Conclusions: The results show that sense of control can be experimentally induced. This finding has important clinical implications.

1. Introduction

Human beings are goal strivers. They try to achieve things that they want and to get rid of things that they do not want. They decide how and when to pursue particular goals or to give up doing so. People's chances of success in achieving their goals depend on the pattern of their goal strivings; this pattern is called *motivational structure*. Motivational structure varies from one person to another; it is the more-or-less stable way in which each person pursues his or her goals. However, motivational structure is not entirely rigid because people's current concerns and their success with or failure at goal pursuits can modify the way in which they strive for goals in the future. To measure motivational structure, Cox and Klinger (2011a) and Klinger and Cox (2011b) developed the Motivational Structure Questionnaire (MSQ) and the Personal Concerns Inventory (PCI).

A person's motivational structure can be adaptive or maladaptive. Research using the MSQ and PCI (e.g., Cox & Klinger, 2002; Cox et al., 2002; Fadardi & Cox, 2008; Klinger & Cox, 2011b) has indicated that compared to people with an adaptive motivational structure, people with a maladaptive motivational structure have (a) fewer positive goals, (b) less hope for achieving their goals, (c) less anticipated happiness from achieving their goals and less anticipated sorrow from not achieving them, (d) longer expected distances from reaching goals, (e) less feeling of commitment to their goals, and (f) less perceived personal control over achieving their goals.

As Klinger and Cox (2011a) suggest, people's sense of control should be an important component of their motivational structure. Having a sense of control is essential for a human's functioning. People need to

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have a sense of control over their lives because it provides them with opportunities to better recognize and organize their resources for achieving their goals (Mirowsky, 1995, 1997). Perceived control refers to people's perceptions that events in their lives are controlled by their own choices and actions rather than external factors, such as chance, luck, or fate, or by the authority and actions of other people. Some people feel little control over difficult situations or over preventing bad things from happening; they might also believe that good things that happen to them are due only to luck (Mirowsky & Ross, 1990). People's perceptions of choice, chance, and authority (i.e., the factors that determine their sense of control) vary from individual to individual, and from situation to situation. Perceptions of control are related to beliefs, emotions, and behaviors, and how people respond to both aversive and positive events.

A sense of control is acquired by having actual control over desirable and undesirable outcomes (Shapiro, 1994). Feeling a lack of control reduces individuals' efforts and impairs their ability to succeed in achieving their goals. Part of the problem might arise because these people do not have a plan, or cannot think of one, about how to achieve their goals or complete their tasks (Shapiro, 1994). Perceived lack of control could then adversely affect the quality of their lives and have health-damaging consequences (Seligman, 1990). When people frequently confront uncontrollable events or experience failure repeatedly, they might develop feelings of helplessness and depression (Abramson, Seligman, & Teasdale, 1978; Seligman, 1994). In fact, there is a general consensus (e.g., Bandura, 1990; Shapiro & Bates, 1990; Taylor & Brown, 1988) that perceived control can often be as important as having actual control. If individuals believe that they have some degree of control, they are more likely to take action, even if there is no guarantee they will succeed (Lachman & Weaver, 1998). To summarize, sense of control is an important psychological construct. Perceived sense of control not only influences individuals' inner worlds and their relationship with themselves; it also determines the quality of their social relationships and their physical and mental health.

The construct *motivational structure* is important for understanding goal-directed behavior. Previous studies (e.g., Cox & Klinger, 2002; Fadardi & Cox, 2008) have shown that an adaptive motivational structure is associated with greater expected chances of achieving one's goals than a maladaptive motivational structure. It has also been shown that people's adaptive motivational structure is inversely related to their alcohol consumption (Cox & Klinger, 2002; Shamloo & Cox, 2010). In addition, Shamloo and Cox (2010) found that (a) sense of control was an important component of motivational structure, and (b) having more sense of control was associated with having stronger adaptive motivation and habitually consuming less alcohol. Their results also indicated that motivational structure mediated the effects of sense of control on participants' alcohol consumption. However, Shamloo and Cox's (2010) study did not provide definitive evidence that these relationships were causal, although causality is an important question to address empirically. Demonstrating cause-and-effect relationships would have both theoretical and practical significance. It might, for instance, pave the way for developing interventions for improving people's motivational structure and sense of control.

The current study used novel techniques to experimentally manipulate the effects of sense of control on participants' motivational structure and, in turn, on implicit and explicit indicants of their desire to drink alcohol. It was hypothesized that (a) experimental induction of a high sense of control would increase participants' perceptions of control; (b) experimental induction of a low sense of control would reduce participants' perceptions of control; (c) the increase in sense of control would be associated with an increase in adaptive motivation and a reduction in the urge to drink alcohol and alcohol-related attentional bias; (d) post-experimentally, on adaptive motivation the groups would be ordered: High-Sense-of-Control Group > No-Intervention Group > Low-Sense-of-Control Group; and (d) post-experimentally participants' urge to drink alcohol and their alcohol attentional bias would be ordered: Low-Sense-of-Control Group > No-Intervention Group > High-Sense-of-Control Group.

2. Method

2.1. Participants

On the basis of a power analysis, a sample size of 106 was deemed adequate. Accordingly, 106 participants (male = 48.1%, males' mean age = 21.48, *SD* = 2.21; females' mean age = 21.65, *SD* = 2.03) were recruited through the Student Participant Panel of the School of Psychology, Bangor University, United Kingdom. The recruitment announcement indicated that in order to be in the study male participants must drink less that 21 units of alcohol per week, and female participants must drink less than 14 units a week. These are the UK Department of Health's limits for safe drinking. We believed that recruiting heavy drinkers into this study would have led participants to show augmented reactions to the manipulation of sense of control, especially in the low sense of control condition. Heavy drinkers feel a low sense of control over their drinking, and this feeling may not be limited just to their drinking. It would seem risky to recruit heavy drinkers into a study that planned to manipulate sense of control. Participants received course and print credits for their participation. Five nondrinkers were tested, but they were excluded from the analyses related to alcohol attentional bias and the urge to drink (see King, Bernardy, & Hauner, 2003).

2.2. Instruments

2.2.1. Task-Specific Personal Concerns Inventory

A task-specific version of Cox and Klinger's (2011a) PCI, which we dubbed the *Task-Specific Personal Concerns Inventory* (TSPCI), was developed for the current study. The pretest version asked participants to anticipate their performance on tasks involving anagrams and concept-identification cards and to rate their goal for solving each task along 11 dimensions: (a) Appetitive Action (to get, obtain, or accomplish); (b) Aversive Action (to get rid of, prevent, or avoid); (c) Perceived Control; (d) Knowledge (about how to achieve the goal); (e) Chances of Success (if I do my best); (f) Chances of Success if Not Try (if I do nothing); (g) Joy (expected from achieving the goal); (h) Conflict (expected unhappiness from achieving the goal); (i) Sorrow (from failure to achieve the goal); (j) Commitment (to achieving the goal); and (k) Goal Distance (i.e., how long it would take to reach the goal). Each scale ranged from 0 to 10. On the posttest, participants were asked to complete the TSPCI again, this time based on their actual experience with the tasks. The PCI is both valid and reliable (see Klinger & Cox, 2011b).

2.2.2. Task-specific Shapiro Control Inventory

The Shapiro Control Inventory (SCI; Shapiro, 1994) measures perceived sense of control. A task-specific version of the SCI (TSSCI) was also developed for use in the current study. The TSSCI comprises three scales: Overall, Positive, and Negative Sense of Control. *Positive* sense of control is a person's belief in his or her ability to attain control in the future. *Negative* sense of control is a loss of sense of loss of control in areas previously experienced as being under control. *Overall* sense of control is a person's experienced control in various areas—body, mind, relationships, self, career, environment, and impulse control. At the pre-test, participants completed the questionnaire based on their prediction of how much control they would have over completing the tasks (anagrams and concept identification). On the post-test, participants completed the questionnaire based on their actual experience in completing the two tasks. Prior studies provide psychometric evidence to support the reliability and validity of the SCI (Shapiro, 1994).