Approaches to Health Behavior Change:
An Analysis of Social Cognitive Theory and Operant Conditioning
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Abstract
Albert Bandura’s social cognitive theory and B.F. Skinner’s theory of operant conditioning are two of the most widely recognized frameworks for understanding human behavior. The vast amount of contemporary research dedicated to applying the principles of these theories has helped psychologists to gain a greater understanding of the factors associated with eliciting change in health behavior. For example, Bandura’s distinction between intrinsic and extrinsic motivation has led to the subsequent development of modern theories of motivation, such as the self-determination theory. In addition, Skinner’s theory of operant conditioning appears to be an effective approach to modifying behavior as demonstrated by the application of token economies and the Premack principle. Clearly, the influence of each theory is undeniable. However, the inclusion of internal and external processes in the social cognitive theory makes this a more suitable framework for understanding, predicting, and changing health behavior.
Albert Bandura and B.F. Skinner are two of the most widely recognized individuals in the realm of personality psychology. The influence of Bandura’s social cognitive theory and Skinner’s theory of operant conditioning is evidenced by the vast amount of current research that relies on the conclusions of these theories as central premises. For example, Bandura’s distinction between intrinsic and extrinsic motivation within the social cognitive theory has contributed to the subsequent development of modern theories of motivation, such as the self-determination theory. In addition, Skinner’s theory of operant conditioning appears to be an effective approach to behavior modification as demonstrated by token economies and the application of the Premack principle.

The following essay aims to discuss how the social cognitive theory and principles of operant conditioning may be applied to a multitude of domains. In particular, these theories will be examined in relation to health and wellness. Although each theory has been highly influential in predicting and explaining health behaviors, Skinner’s theory of operant conditioning focuses primarily on observable behavior and thus disregards the importance of cognitive processes. Bandura’s inclusion of both internal and external processes within the social cognitive theory makes this a more solid framework for understanding, predicting, and changing health behavior.

*Albert Bandura*

Albert Bandura’s social cognitive theory has become one of the most influential and admired frameworks within psychology. The social cognitive theory encompasses personal factors including cognition, biological variables, and other internal events, in addition to behavior and the external environment (Allen, 2006, p. 302). The fundamental concept of the social cognitive theory posits that each of these components have reciprocal influences on one another (Allen, 2006, p. 302). That is, an individual’s behavior is shaped by the interaction of
personal factors, behavior, and the external environment. Reciprocal determinism presents a positive outlook on human nature which suggests that there is a possibility of change within the individual. Taking this into consideration, Bandura’s social cognitive theory has been applied extensively to diverse areas of human functioning.

*Self-Efficacy*

One of the most widely researched topics associated with Bandura’s social cognitive theory is the concept of self-efficacy. According to Bandura (1982), perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations (p. 122). Self-perceptions of efficacy influence thought patterns, actions, and emotional arousal (Bandura, 1982, p. 122). Self-efficacy is related to the concept of outcome expectancies, which refers to our expectation of positive or negative outcomes resulting from our performance (Ragin, 2011, p. 107). The concept of self-efficacy is of particular importance when applied to health behaviors. Bandura’s conceptualization of self-efficacy has contributed to the formation of subsequent theories and models of health behaviors and appears to be central to behavioral outcomes (Ragin, 2011, p. 108).

*Self-Efficacy Applied to Health Behavior Change*

Lorig, Lubeck, Kraines, Seleznick, and Homan (1985) examined the behavioral and health status outcomes of individuals with chronic arthritis who participated in an Arthritis Self-Management Course (ASMC). Subjects who partook in the ASMC were found to have less pain and to be more active than controls (Lorig et al., 1985). Researchers interviewed 54 subjects and asked why they found the course helpful or not helpful. For half of these individuals, pain and/or disability had decreased. For the other half, pain and/or disability had not changed or had increased. The former group attributed their benefits to an increased sense of influence over the
consequences of arthritis, while the latter group believed that they could do little to improve their situation (Lorig et al., 1985). These findings indicate that a sense of one’s ability to influence the consequences of disease was strong in some participants and weak in others (Lorig et al., 1985). This sense of ability to affect change is similar to Bandura’s concept of self-efficacy.

Rewards and Motivation

Also central to the social cognitive theory are the concepts of rewards and motivation. Bandura suggests that while behavior is often acquired by vicarious learning, it is primarily maintained by rewards (Allen, 2006, p. 311). Bandura introduced the concepts of intrinsic and extrinsic rewards which he later applied to human motivation. Intrinsic rewards originate from within the individual, whereas extrinsic rewards originate outside the individual. (Allen, 2006, p. 311). Similarly, intrinsic motivation refers to the desire for intrinsic rewards, while extrinsic motivation is driven by external rewards (Allen, 2006, p. 311). Bandura’s distinction between intrinsic and extrinsic rewards and motivation has led to the development of contemporary theories of motivation, specifically, the self-determination theory.

Current Motivation Literature

Contemporary motivation literature has received a great deal of attention due to its application to various domains of human functioning. Self-determination theory (SDT) is a theory of motivation initially developed by Edward Deci and Richard Ryan (1985). SDT distinguishes between different types of motivation based on the reasons or goals that give rise to an action (Deci & Ryan, 2000). SDT is comprised of several sub-theories, one of which is known as the organismic integration theory (OIT). OIT expands on Bandura’s distinction between intrinsic and extrinsic motivation by introducing subtypes of motivation that primarily fall under the umbrella term of extrinsically motivated behaviors. Specifically, the OIT taxonomy
illustrates subtypes of motivational states, arranged from left to right in terms of the extent to which the motivation for one’s behavior is self-originating. From left (external) to right (internal), types of motivation include amotivation, external regulation, introjection, identification, integration, and intrinsic motivation (Deci & Ryan, 2000).

SDT has been applied to several life domains, including health care, psychopathology, and health and well-being. In particular, SDT has increasingly become a basis for interventions in the areas of health promotion and physical activity (Ryan, Williams, Patrick, & Deci, 2009). In regards to treatment and intervention programs, studies suggest that more autonomous forms of motivation are predictive of a lower likelihood of dropout and greater persistence over time (Ryan et al., 2009). Williams, Grow, Freedman, Ryan, and Deci (1996) examined the motivation for engaging in treatment in a sample of morbidly obese individuals. This study found that those with more autonomous forms of motivation showed higher attendance and completion rates, and were able to better maintain their weight-loss attainments over a two-year follow-up period (Williams et al., 1996). This long-term weight loss maintenance demonstrates that modern theories of motivation provide a framework for understanding positive behavior change over time. Undoubtedly, Bandura’s early research on motivation has inspired contemporary theories of motivation such as the SDT. Further, modern research confirms that social cognitive theory provides a basis for understanding, predicting, and changing health behavior.

_B.F. Skinner_

B.F. Skinner is regarded as one of the leading proponents of behaviorism. The behaviorist camp of psychology is primarily concerned with observable behaviors as opposed to internal, cognitive events (Allen, 2006, p. 302). Although Skinner and Bandura are similar in the sense that each of their theories suggest the importance of the environment in predicting behavior,
behaviorism disregards cognitive processes such as private thoughts, feelings, expectations, or motivations (Allen, 2006, p. 302). Skinner is best-known for developing the theory of operant conditioning. In operant conditioning, the organism operates on its environment with consequences that increase the likelihood of the behavior (Allen, 2006, p. 306). In particular, three kinds of consequences can be involved in operant conditioning: positive reinforcement, negative reinforcement, and punishment.

*Token Economy*

Skinner’s theory of operant conditioning has been highly influential in current research focusing on the use of reinforcements for desired change in health behavior. For example, Skinner advocated the implantation of a token economy; that is, a system of behavior modification relying on the principles of operant conditioning. Specifically, a token economy is a system in which an individual is rewarded for positive behavior with a reinforcer (i.e., tokens) that can be collected and redeemed for a desired object or privilege.

*Implications of the Use of Rewards in Health Care Settings*

Skinner’s theory of operant conditioning has been widely applied in a variety of clinical settings. For example, Atthowe and Krasner (1968) pioneered a two-year study involving the application of a token economy on psychiatric inpatients labeled chronic schizophrenics or brain damaged (p. 37). The purpose of instituting a token economy in this setting was to change the patients’ deviant behavior, especially that behavior judged to be apathetic, overly dependent, detrimental, or annoying to others (Atthowe & Krasner, 1968, p. 37). The goal was to foster more responsible, active, and interested individuals who would be able to perform daily activities associated with self-care, to make responsible decisions, and to delay immediate reinforcement in order to plan for the future (Atthowe & Krasner, 1968, p. 37).
If a patient adequately cared for his or her physical needs, attended scheduled activities, helped on the ward, interacted with other patients, or showed increased responsibility in any way, he or she was rewarded (Atthowe & Krasner, 1968, p. 38). Results of this study show a significant increase in behaviors indicating responsibility and activity (Atthowe & Krasner, 1968, p. 39). In addition, a substantial increase was shown in measures of social interaction and communication (Atthowe & Krasner, 1968, p. 40). These results demonstrate that a systematic procedure of applying contingent reinforcement by way of a token economy appears to be effective in modifying specific patient behaviors (Atthowe & Krasner, 1968, p. 41). Further, this study supports the principles of Skinner’s operant conditioning by demonstrating that behaviors may be learned by the reinforcement of consequences over time.

Although there are clear benefits associated with a token economy, one significant criticism is that change in behavior may not necessarily carry-over to other situations (Atthowe & Krasner, 1968, p. 38). In addition, when the token economy is no longer reinforced, patients may revert back to displaying the original undesirable behaviors. This demonstrates the importance of considering internal cognitive processes as opposed to solely focusing on external influences. That is, in order to fully understand why a positive behavior change may revert back to an undesirable behavior, it is essential to also consider the role of cognition in behavior change. Skinner’s disregard of cognitive processes further reaffirms the notion that Bandura’s social cognitive theory provides a more solid framework for understanding, predicting, and changing health behavior.

Use of the Premack Principle to Elicit Positive Health Behavior Change

Skinner’s focus on rewards has led to the subsequent development of theories that rely on operant conditioning. In particular, David Premack (1959) conceptualized a principle of operant
conditioning known as the Premack principle. The Premack principle states that a more preferred activity can be used to reinforce a less-preferred activity (Premack, 1959). Researchers have focused their attention on applying the Premack principle to elicit a change in serious health problems such as anorexia nervosa. Blinder, Freeman, and Stunkard (1970) examined the effectiveness of physical activity as a reinforcer of weight gain in a sample of hospitalized patients with anorexia nervosa. Blinder and colleagues found that a striking feature of the behavior of these patients was their marked hyperactivity. This observation suggested that the opportunity for physical activity may be a suitable reinforcer (Blinder et al., 1970, p. 1094).

Utilizing the application of the Premack principle, access to physical activity (desired activity) was made contingent upon weight gain. Specifically, the patient was allowed a six-hour unrestricted period outside of the hospital on any day that their morning weight was at least half a pound higher than their previous morning’s weight (Blinder et al., 1970, p. 1094). Results indicate that in less than one week after access to physical activity was made contingent upon weight gain, the patients responded with a rapid and consistent increase in weight (Blinder et al., 1970, p. 1094). This research demonstrates how Skinner’s theory of operant behavior has been influential in the later development of theories that rely on operant conditioning. However, it is also important to consider that while rewards may elicit behavior change in the short-term, they are generally not as effective in the long-term.

Conclusion

Bandura’s social cognitive theory and Skinner’s theory of operant conditioning provide a framework for understanding, predicting, and changing health behavior. Bandura’s concept of self-efficacy has been extensively applied to health-related domains and is widely recognized as a predictor of health behavior change and maintenance. In addition, Bandura’s emphasis on the
importance of intrinsic and extrinsic rewards and motivation has contributed to contemporary theories of motivation, such as the self-determination theory. Skinner’s operant conditioning principles in health-related settings have demonstrated the power of contingent reinforcements in modifying maladaptive health behavior. However, the behaviorist camp of psychology largely eschews internal processes. As a result, there is overwhelming evidence to suggest that due to the inclusion of internal and external processes, Bandura’s social cognitive theory provides a more solid framework for understanding, predicting, and changing health behavior.
References


