

Book Reviews

FLORA, S.R. (2004)

The Power of Reinforcement: A Review

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This review describes Stephen Ray Flora's (2004) *The Power of Reinforcement*, including its content, strengths, limitations, and possible extensions. The utility of *The Power of Reinforcement* as a supplemental tool in an introductory learning course also will be described. Across the duration of such a course taught by the first author of this review, *The Power of Reinforcement*, together with other course materials (e.g., Chance, 2003), provided the inspiration and resources necessary to compel the second author of this review to apply reinforcement principles in her own life. This review also was motivated by the fact that *The Power of Reinforcement* does not seem to have garnered its deserved attention. Anecdotal evidence can be reported indicating that no one contacted through a "teaching behavior analysis" listserv, or personal inquiries, reported the use of *The Power of Reinforcement* in a course. In addition, although two (rather favorable) reviews of *The Power of Reinforcement* were located, one (Lamal, 2004) was brief and might not be located easily because it was not published in an academic journal, and the other (Genovese, 2005) was relatively narrow in scope.

The *Power of Reinforcement* is "meant to respond to the myths, misrepresentations, and criticisms of the purposeful use of reinforcement in human institutions and human relations and to accurately present the use and potential uses of reinforcement in society" (p. xvii). The first part of *The Power of Reinforcement* is meant to respond to these myths and misrepresentations. Chapter 1 addresses the myth that reinforcement is simply "rat psychology." After briefly describing the role of animal models in medicine, Flora introduces several socially significant reinforcement applications, which are discussed at length in later chapters (e.g., educational practices, parenting practices, reading interventions, token economies). Flora describes how the reinforcement principles underlying these applications initially were analyzed in the animal laboratory. This connection between animal research and application also is highlighted in terms of behavioral economics, behavioral pharmacology (e.g., animal self-administration models of common drugs of abuse), and work involving special populations (e.g., children from lower income families).

Chapters 2 and 3 address claims that purposefully reinforcing human behavior is demeaning, equivalent to bribery, and potentially dangerous (e.g., Kohn, 1993). Argued against is the claim that conditioned reinforcement, in the form of token economies, is useful only in controlling simple behavior

exhibited by individuals with intellectual disabilities. Research is described showing the utility of token economies in modifying complex behavior in individuals with such disabilities (e.g., cooperation) and the behavior of individuals without disabilities (e.g., safer employee behavior). The weaknesses in the attacks on reinforcement are noted in part by describing what reinforcement actually is and how it actually is used. An accurate portrayal of reinforcement applications is illustrated by describing the success of the Teaching-Family model (e.g., Kirigan, Braukmann, Atwater, & Wolf, 1982) in reducing criminal behavior and increasing academic achievement in adolescents.

Chapters 4 and 5 respond to claims that reinforcement reduces intrinsic interest and/or intrinsic motivation. Discussed are the methodological details of studies that report limitations in a reinforcement-based approach, which is important because these studies often do not resemble actual reinforcement applications. A conceptual argument is advanced that reinforcement underlies the acquisition of behaviors said to reflect competence, autonomy, and relatedness. The power of reinforcement in two areas of immense societal concern is described: educational gains by children (Hart & Risley, 1995) and the determinants of marital success (Gottman, 1994).

The claim that reinforcement diminishes creativity is disputed in chapters 6 and 7. The methodological limitations of studies supporting that claim are discussed, as is why reinforcement sometimes might reduce creativity (i.e., if efforts are not made to reinforce creative actions). Considerable empirical evidence is offered demonstrating the power of reinforcement in generating creative acts. Several engaging passages are presented regarding the plausible role of reinforcement in the lives of certain famous individuals, including Michael Jordan, Mozart, the Beatles, Theodore Roosevelt, and Charles Darwin. An extended reinforcement analysis of Stephen King's career is especially interesting.

Chapter 8 concludes Part 1 with a brief discussion involving the claim that imitation and instruction-following undermine the operation of reinforcement principles. The treatment of this claim is a relatively standard discussion of reinforcement in the areas of observational learning and rule governance. Flora then elaborates on aversive control, a topic that garners attention in several discussions throughout *The Power of Reinforcement*. Tactics emphasizing negative reinforcement and punishment are contrasted with a positive-reinforcement approach, and Flora concludes that the latter holds considerably more value. Several familiar, supporting points are presented (e.g., Baum, 1994; Sidman, 1989; Skinner, 1971). For example, people operating under positive-reinforcement contingencies are more likely to report acting freely, resulting in a variety of beneficial effects, such as increased self-esteem (e.g., Rakos, Laurene, Skala, & Slane, 2008).

The second part of *The Power of Reinforcement* illustrates the ubiquity of reinforcement principles with an even greater emphasis on contexts outside the laboratory setting. Chapters 9 and 10 describe how reinforcement principles can explain academic underachievement in some cases but in other cases offer a means of fostering academic achievement. A noteworthy analysis describes the transition from positive reinforcement of effortful responding to learned persistence and industriousness to academic achievement (e.g., Eisenberger, 1992). Chapter 10 is diverse, including discussions of infant learning, and

of the relation between learned helplessness and learned optimism, an elaboration of Hart and Risley's (1995) work involving the determinants of children's educational gains, and several empirical findings related to the classroom (e.g., individualized instruction, direct instruction, computer-assisted instruction, classroom management). Some concluding extensions involve teacher pay (e.g., making it dependent on student performance), teacher training, and standardized-testing issues (i.e., discussion relevant to No Child Left Behind).

The roles of positive and negative reinforcement in drug use, abuse, and treatment are considered in chapter 11. Described are the positive- and negative-reinforcement factors that likely contribute to drug use (i.e., recreational drug use), and a conceptualization is offered of drug abuse as being due primarily to negative-reinforcement factors. Drug treatments then are described at length in the context of the societal costs of drug abuse. In this engaging section, not only are empirically supported, reinforcement-based treatments discussed (e.g., contingency management), but also how adults might discuss drug use with children openly and honestly is emphasized. Recommended are discussions about both the immediate pleasurable effects of drugs and their delayed, and less pleasurable, effects (see *contingency traps* below). A thoughtful section notes some of the obstacles confronting the acceptance of reinforcement-based drug treatments.

The *Power of Reinforcement* concludes with material about the behavioral determinants of child misconduct, adolescent antisocial behavior, and adult criminal actions (chapter 12), as well as depression, chronic pain, and illness (chapter 13). Contingency traps are used in chapter 12 to interpret this problematic behavior (discussion of these traps appears throughout *The Power of Reinforcement*, e.g., in relation to drug use and harmful parental practices). In contingency traps, undesirable behavior is maintained by more immediate pleasurable consequences at the expense of desirable behavior that produces only delayed pleasurable consequences (e.g., Baum, 1994). Also described is why the escalation of problematic behavior from childhood to early adulthood may differ across individuals. This presentation leads well into a discussion of Parent-Behavioral Training, Home Point Systems, and, again, the Teaching-Family model. The role of positive reinforcement in these approaches is described, and the role of conditioned punishment (e.g., point loss) is highlighted. A thoughtful presentation involving the reinforcement of dependency in the elderly follows a discussion about the acquisition and maintenance of depressed and sick-role actions (e.g., learned helplessness, learned hopelessness, social reinforcement). The book ends with a description of empirically supported treatments for depression and dependency.

Strengths

The Power of Reinforcement accomplishes its goals in numerous ways. In the engaging introduction are several situations in which reinforcement significantly affected Flora's life: the treatment of his poor reading skills through reinforcement contingencies arranged by his parents, and his heartening work in treating individuals with dangerous self-injurious behavior. This material foreshadows the strengths of *The Power of Reinforcement* in several ways. First, the range of topics in *The Power of Reinforcement* is impressive. Second, empirical evidence supporting Flora's analyses is presented extensively and

clearly. These empirically supported analyses stand in stark contrast to the myths and misrepresentations surrounding reinforcement (e.g., Kohn, 1993). Third, the anecdotes provided by Flora as additional support are more than reasonable (e.g., the role parental encouragement had on Stephen King's career), and they illustrate well the function of *interpretation* in behavior analysis (e.g., Donahoe, 2004). Fourth, although personal anecdotes are not offered extensively throughout *The Power of Reinforcement*, they are engaging when they appear (e.g., his student's work enhancing her daughter's reading skills). A fifth strength of *The Power of Reinforcement* is the adeptness with which Flora relates reinforcement to topics not discussed extensively by behavior analysts (e.g., autonomy, competence, optimism, self-esteem).

The strengths of *The Power of Reinforcement* converge onto a single issue: Reinforcement contingencies exert powerful influence over a wide range of actions, regardless of whether such contingencies are enacted accidentally or purposefully. When they are enacted purposefully, the transformation from undesirable to desirable behavior can be life changing. From the perspective of a student, for example, being provided the inspiration necessary to *change* behavior also can be life changing (e.g., Sidman, 1991, 2007). By describing, clearly and simply, such a considerable number of diverse socially significant demonstrations involving the power of reinforcement, Flora challenges his readers to change some currently flawed aspect of their environment.

The Power of Reinforcement compelled the second author of this review to practice reinforcement techniques herself. These applications included shaping, stimulus control, and differential reinforcement in the context of several relationships (e.g., her fiancé, her father), child care, training of her pet dog, and her own academic behavior. Two additional students from the same course also reported practicing reinforcement techniques. One student managed her elderly parent's behavior, and another student developed a class-wide token-reinforcement program while teaching children martial arts. These testimonials do not offer conclusive evidence that *The Power of Reinforcement* was responsible for the reported behavior change; however, if, as reported, the book helped provide students with the inspiration for such attempts, then instructors should consider using *The Power of Reinforcement* as a teaching tool.

Limitations

No book is without its limitations and/or its need for extensions. One limitation of *The Power of Reinforcement* is that, at times, it is unclear what audience is being targeted. Lamal (2004) stated that the book is "aimed at the general public," and, of course, several populations could be targeted concurrently. However, whereas some material (see p. xvi) suggests that the book is aimed at individuals enrolled in psychology courses, people who read parenting magazines, and psychologists who are skeptical of, or even hostile toward, reinforcement approaches, the book appears to vacillate with respect to its intended audience. Some parts demand an audience with some familiarity with scientific writing, while other parts are accessible to the general public. From our perspective, *The Power of Reinforcement* is appropriate primarily for relatively sophisticated audiences—several parts of *The Power of Reinforcement* may prove difficult to understand fully without previous, or concurrent, exposure to behavior analytic concepts (though an appendix describes basic concepts).

A second limitation of *The Power of Reinforcement* is its unbalanced emphasis on the purity of positive reinforcement relative to aversive control. Despite urging readers to accept the value of a positive-reinforcement approach over one based in aversive control, the author in several instances note the power of aversive control in achieving the desired behavior change (e.g., Parent-Behavioral Training). In addition, on empirical, conceptual, and practical grounds, some behavioral investigators have criticized arguments that positive reinforcement is without negative side effects (e.g., Perone 2003). Furthermore, some investigators have suggested that a distinction between positive and negative reinforcement is untenable (e.g., Baron & Galizio, 2005; Michael, 1975). A third limitation is that there are some instances in which a more complete understanding of particular topics (e.g., drug treatment) would be forthcoming if Pavlovian conditioning was discussed (for related concerns, see Genovese, 2005). This limitation is reasonable given the focus of *The Power of Reinforcement*, but a more detailed understanding of significant human behavior change grounded in animal-laboratory work would have its advantages.

Extensions

Not only would *The Power of Reinforcement* be strengthened by addressing the issues raised above, but also it could be extended by discussing other reinforcement applications, including animal training (e.g., Pryor, 1999), behavioral safety (e.g., Geller, 2001), and organizational behavior management (OBM; e.g., Krapfl, 2003). Although including animal training may seem to detract from the goals of *The Power of Reinforcement*, such inclusion would provide a useful, and interesting, middle ground between animal models and the primary content of *The Power of Reinforcement*. Additionally, a discussion of animal training necessarily would include the topic of modifying the trainer's behavior. And although some behavioral-safety research is cited in *The Power of Reinforcement* (e.g., Fox, Hopkins, & Anger, 1987), its elaboration would broaden the range of socially significant topics discussed (e.g., automobile accidents, childhood injuries). Finally, discussions of OBM might relate to the work environments of many individuals targeted by *The Power of Reinforcement*.

Conclusion

The Power of Reinforcement succeeds in its goal of countering attacks against the purposeful use of reinforcement in socially significant human affairs by providing critical analyses grounded in empirical evidence and consistent conceptual extensions. Not only should *The Power of Reinforcement* be read carefully by parents, educators, academic psychologists, and others, but it is especially appropriate for students in introductory learning courses. In such courses, it sometimes is difficult, because of time constraints, to explore the diverse topics found in *The Power of Reinforcement*, such that the inclusion of *The Power of Reinforcement* can help students discover the power reinforcement holds. If students can be compelled to discover firsthand this power of reinforcement, their appreciation of behavior analysis might be ensured. Inherent in this argument is the pragmatic nature of a behavior-analytic worldview (e.g., Lattal & Laipple, 2003), such that the practical value inherent in an understanding of reinforcement is undeniable.

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