

The Power of Reinforcement:
The Role of Reinforcement in Chronic Pain and Illness
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The Role of Reinforcement in Chronic Pain and Illness

Stephen Ray Flora, the author of *The Power of Reinforcement*, believes that reinforcement, though widely critiqued, is one of the most powerful tools for building upon human behavior. In his book, Flora offers extensive support for the fundamental practice of behavioral psychology, focusing namely on positive and negative reinforcement principles. The book offers valuable insights into the strengths of using reinforcement techniques and offers laboratory as well as real life applications exemplary of reinforcement's clout.

Flora discusses a wide range of valuable topics including the role reinforcement plays in creative processes through the selection of variations by the differential consequences resulting from them, as well as the operant selection of creativity. He details the benefits reinforcement can offer when it comes to improving on education, as well as the methods reinforcement can influence achievement and underachievement. Flora also discusses the theoretical framework behind the reinforcement principles that influence drug using behavior from its early stages and the behavioral treatment methodology that has been proven to help addicts recover.

In addition, Flora addresses some of the common myths that surround reinforcement; including the views of reinforcement as 'rat psychology,' or bribery, both misrepresentations of the elements involved in reinforcement. Though reinforcement techniques can be and have been misconstrued, the failure to acknowledge the effects of such procedures "does not mean that reinforcement processes are not operating on behavior" (p. 26). Ultimately Flora's book addresses the negative views of reinforcement, while defending the importance of the concept that human behavior is a function of its consequences. Until we can better understand that as a society, we will continue to miss out on reinforcement's benefits.

One of my personal favorite topics Flora addressed was the role of reinforcement in chronic pain and illness. Flora argued that chronic pain especially is actually more of a psychological phenomenon than a physical occurrence. While there are, of course, justifiable reasons for some pain behaviors after say, an injury, Flora explains, “But unquestionably pain behaviors and to a large extent the subjective experience of pain is a function of psychological, reinforcement processes” (p. 205). To further explain, look no farther than war veterans wounded in combat, or athletes who sustain injuries during competitions and keep on playing. Some, in fact, don’t even notice their injuries! However, when minor injuries that most people would hardly notice affect certain individuals, they can become debilitated for long periods of time.

Chronic pain is a pervasive force in our world, affecting sixty-five million Americans alone. For the most part, researchers have formed a consensus that these chronic pain and illnesses that exhaust our health care resources are largely the result of psychological and social processes; more specifically they are often the consequence of the reinforcement of pain behavior. Pain has been correlated with family dynamics, social positive reinforcement, and the avoidance of difficult situations. As Flora describes, these are exemplary of the concept of ‘secondary gain’ associated with illness behaviors. Both pain *and* healthy behaviors are closely related to the rates in which they are reinforced, respectively. In addition to the role of the family, one of the even more prominent influences on these behaviors is the role of the patient’s spouse.

To actively prevent ‘sick-roles’ and pain behavior, there are some very basic reinforcement methods Flora presents. Firstly, often parents and loved ones tend to (appropriately) show caring behavior and sympathy to the injured or sick. But the key Flora

describes to prevent the manifestation of these behaviors is to offer definitively more attention and affection to behaviors that indicate a strengthening well being. For example, if my child were to claim he or she felt ill and it seemed to drag on for quite a while, the next time the child wanted something, say, to play with his or her friends, I would respond by telling my child that they can go out and play with their friends (on the new swing set I bought!) when he or she is all better. “Patterns of interaction like this show concern and sympathy for the child but also teach the child that wellness is the expected and reinforced state of health” (p. 211).

To further examine the role of reinforcement in chronic pain and illness, I will be looking into some of the other research done on the subject. In an analysis of the behavioral concepts in chronic pain syndromes, researchers examined the role of the operant conditioning principles that are commonly used to evaluate and alter maladaptive overt behavior patterns (Keefe, 1986). In the study, the researchers defined the construct of pain behaviors as the particular behavior that individuals use to communicate that they are experiencing pain. These include describing pain, reducing activity, avoiding home and work responsibilities, and relying on pain medications as well as adapting body postures and facial expressions that indicate pain. Pain behaviors tend to come about in response to an acute pain issue. At the time it is likely that they offer some utility in curtailing pain as well as in eliciting needed help from other people. “As acute pain resolves, pain behaviors extinguish and most individuals return to a normal repertoire of well behaviors. However, because pain behaviors are overt, they are susceptible to conditioning and learning influences” (Keefe, 1986). After long periods of time in which pain persists, patients have numerous opportunities to learn the consequences of pain behavior. Complaints are often followed by reinforcing consequences, like consideration from a newly

attentive spouse, the delivery of a drug, or avoidance of undesirable social, family, or occupational responsibilities.

Bill Fordyce offered one of the first operant conceptualizations of chronic pain and the overall influence of psychological factors on pain in his book, *Behavioral Methods for Chronic Pain and Illness* (Patterson, 2005). Fordyce's theory provided that rewards and environmental contingencies contribute to the maintenance of pain, and described how the external variables that sustain pain behaviors can be manipulated to alleviate patient's suffering. Fordyce's findings stem from neurophysiology, social psychology and practical clinical research and application, all of which allowed him to construct a learning-based model of pain behavior and disability. "Fordyce's great contribution lay in providing a framework that explained how the same learning processes governing the acquisition of other forms of behavior could contribute to the profound levels of suffering and disability often observed in patients with pain" (Patterson, 313).

Fordyce's analyses not only introduced the influence of psychology integrated with biological paradigms, but he also conceptualized the role of psychology in a manner that eventually led to effective treatment. Fordyce described the distinction between respondent factors in pain, or those reflexive behaviors under the control of antecedent stimuli, and operant-based pain behaviors, those behaviors that are controlled by consequences. In addition, he explained that pain behaviors are likely to be robustly influenced by the patient's environment.

One of the more blatant contributions Fordyce offered in his book was a system for increasing exercise based on operant principles, as he noted that patients with chronic pain and illness had problems with pacing activity. His system was based on regulating the uneven periods of activity patients experienced; after undergoing periods of restricted activity in an

effort to diminish pain, patients may feel rejuvenated and go through a period where they overdo activity. These episodes of increased activity would lead to increased pain, followed by more inactivity, causing a cycle to develop. Over time, the patients learn from this pattern to avoid activity, and not use the parts of their body that hurt. In response to this cycle, Fordyce developed the quota system, “an operant program in which activity, prescribed in systematically and gradually increasing amounts, is rewarded with rest” (Paterson, 313). Thus, rather than permitting the patient’s level of pain to determine their level of activity, they are taught to employ a predetermined endurable level of activity.

In a comprehensive review of the correlations between solicitousness behavior and chronic pain, twenty-seven studies that were examined revealed broad support of the operant behavioral paradigm that has developed in regards to chronic pain. The research examined how a patient’s level of disability, pain behavior or intensity may be impacted by interactions that occur in the patient’s social environment, particularly with their spouse. “Solicitous behaviors encompass three domains of response: the positive reinforcement of pain behavior, the negative reinforcement of pain behavior, and the insufficient reinforcement or active discouragement of well behaviors” (Newton-John, 17).

What the researchers found in analyzing the research, was that solicitous behavior was loosely associated with greater levels of pain intensity, and even more so with pain behavior and disability. However, the correlations between spousal responses and patient coping mechanisms that are predicted by the operant theory of pain, were found to be more potent in martially satisfied couples. “Both marital satisfaction and the level of depressive symptom severity reported by patients have been shown to influence the extent to which spouse responses are associated with patient functioning” (Newton-John, 19).

From Flora's *The Power of Reinforcement* book, as well as the various other research examined, it can be concluded that the operant behavioral model of chronic pain and illness is, for the most part, an accurate mechanism for evaluating and treating chronic pain and illness. It appears as though sick-role and pain behaviors are a direct function of the amount of reinforcing consequences that one receives from them. On the other hand, health and wellness behaviors function in accordance to an operant pattern as well, in that if reinforced correctly, health and wellness behaviors will persist. Because we are able to infer this, we are also able to infer that Flora was accurate in his summation of preventative and treatment procedures.

However in some of the research I examined, mild concerns regarding the limitations of the operant model suggests that more research ought to be done in the cognitive-behavioral realm of illness behavior. The behavioral model alone "is insufficient when accounting for the complexity of pain couple's interactions" (Newton-John, 7), as claimed by the head researcher in the twenty-seven study analysis. Further insinuated in the article is the need for more research to examine the bearing of the spousal response that appears to be mediated by numerous cognitive and affective variables.

I would imagine that further research in the cognitive realm in combination with the operant behavioral model would reveal slightly more treatment options for those with chronic illnesses, and could possibly supply researchers with a more comprehensive model for chronic pain and illness behavior. I would hypothesize that research into this area may better help more patients with minor tendencies toward sick-role and pain behaviors, as the solely behavioral model seemed to work best for those with severe tendencies. An integration of some cognitive principles may account for some of the more variable cases of chronic pain and illness.

References

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