

**Amsel A.** Frustrative nonreward in partial reinforcement and discrimination learning: some recent history and a theoretical extension. *Psychol. Rev.* 69:306-28, 1962. [Univ. Toronto, Ontario, Canada]

The first part of this paper examined the history and current status of the concept of frustrative nonreward in behavior theory. The second part was a frustration-theory account of the effect of prediscrimination treatments on subsequent discrimination learning. [The *Science Citation Index*® (SCI®) and the *Social Sciences Citation Index*® (SSCI®) indicate that this paper has been cited in over 450 publications since 1962.]

Abram Amsel  
Department of Psychology  
University of Texas  
Austin, TX 78712

October 14, 1983

"As I wrote originally, this paper was an extension of the application of frustration theory<sup>1,2</sup> to discrimination learning. It was designed to deal with variations in the rate at which discriminations between stimuli are formed as a function of the reinforcement history of these stimuli. For example, if response to the to-be-positive stimulus has been reinforced continuously and to the to-be-negative stimulus intermittently, discrimination will be retarded relative to a history of both stimuli being continuously reinforced. I had worked out a number of such predictions in some detail and based them on frustration-theory assumptions and some principles taken from N.E. Miller's analysis of conflict.

"As it was finally published, the paper included a kind of preface—the 'recent history' referred to in the title. This is how it happened. In 1961, Leon Festinger published a paper<sup>3</sup> in which he applied the concept of cognitive dissonance to the partial reinforcement extinction effect. The idea, taken from his theory of cognitive dissonance, is that rats, as well as humans, 'come to love that for which they have suffered.' To demonstrate this point, Festinger employed a runway with a start box, mid box, and end box arrangement so that the rats could be delayed in the mid box before being allowed to run and find food in the end box. Dissonance produced in the empty mid box was said to have induced 'some extra preference' for something about the empty mid box.

"Richard Solomon, then editor of the *Psychological Review*, found Festinger's idea about extra attractiveness (later extended in a monograph by Lawrence and Festinger<sup>4</sup>) very similar to some work his student, James Olds, had done for his doctoral degree at Harvard University.<sup>5</sup> (Olds later became famous for his work on electrical stimulation of the brain.) The finding was that delayed reward in children constitutes 'practice at wanting' and that such practice increases the value of the reward. Solomon was also struck by the similarity of Festinger's ideas, and particularly of his runway with its mid box, to earlier experimental and theoretical work of mine (e.g., see references 1 and 6) which had addressed the partial reinforcement extinction effect and in which a double-runway apparatus of essentially the same design as Festinger's was used to study the 'frustration effect.' During a visit to the University of Toronto, shortly after the appearance of Festinger's paper, Solomon invited me to write an article for the *Psychological Review* to 'set the record straight.'

"The paper extending the 1958 theory to prediscrimination experiences had by then been completed, but I agreed to add to it a brief historical introduction that would address the similarities and differences in approach among Festinger's, Olds's, and my work on the dynamic properties of nonreinforcement. My thinking was that 'setting the record straight,' by itself, did not really constitute the kind of theoretical paper that would normally appear in the *Psychological Review*.

"In retrospect, putting these two kinds of things into a single paper was not a good idea, even though this combination may be a reason it is frequently cited. But, despite this frequent citation, I still think that the part of it in which I was most interested, the theory of prediscrimination effects, had less of an impact than it would have had it been published separately. I once had a paper returned to me by an editor whose referee remarked that the paper had 'only two or three ideas in it.' My advice is to write papers with just one idea—provided it is a good one."

1. Amsel A. The role of frustrative nonreward in noncontinuous reward situations. *Psychol. Bull.* 55:102-19, 1958.

2. -----, Citation Classic. Commentary on *Psychol. Bull.* 55:102-19, 1958.

*Current Contents/Social & Behavioral Sciences* 11(3):14, 15 January 1979.

3. Festinger L. The psychological effects of insufficient rewards. *Amer. Psychol.* 16:1-11, 1961.

4. Lawrence D H & Festinger L. *Deterrents and reinforcement*. Stanford, CA: Stanford University Press, 1962. 180 p.

5. Olds J. *The growth and structure of motives: psychological studies in the theory of action*. Glencoe, IL: Free Press, 1956. 277 p.

6. Amsel A & Roussel J. Motivational properties of frustration: I. Effect on a running response in the addition of frustration to the motivational complex. *J. Exp. Psychol.* 43:363-8, 1952.