

# ***This Week's Citation Classic***

CC/NUMBER 21  
MAY 25, 1981

Azrin N H, Hutchinson R R & Hake D F. Extinction-induced aggression. *J. Exp. Anal. Behav.* 9:191-204, 1966. [Anna State Hospital, Anna, IL]

**Extinction of conditioned responses had been shown to produce a variety of emotional effects. The present experiments revealed that extinction also produced physical aggression and showed its relationship to such factors as the number of food reinforcements, satiation, social history, history, and response requirements. [The Social Sciences Citation Index® (SSCI™) indicates that this paper has been cited over 145 times since 1966.]**

Nathan H. Azrin  
Department of Psychology  
Nova University  
Fort Lauderdale, FL 33314

April 30, 1981

"I had been studying shock avoidance behavior with animals in a series of studies since my doctoral dissertation at Harvard in 1956 and continued these studies at Anna State Hospital in Illinois. I was surprised when I discovered<sup>1</sup> that the pain-shock caused rats to attack each other and that other physically aversive events such as heat and a physical blow did the same. What about aversive events which were not physically painful? Would they also cause this violent attack? Much anecdotal and correlational evidence suggested that psychologically aversive events caused an emotional reaction such as frustration at not achieving a goal. These two lines of evidence suggested that the sudden discontinuation of food reinforcement of a conditioned response (extinction) might cause physical aggression. My principal research focus was on the effects of

reinforcement on the conditioned response, but these emotional nonspecific effects of reinforcers were so great and so fascinating that I was obliged to study them in their own right.

"The initial discovery in this experiment, that extinction did cause physical aggression, was so surprising and important that I delayed publication until I completed additional experiments to isolate possible artifacts and to determine its parameters.

"The results reported in this study showed that this physical aggression was caused by the sudden termination of a strong reinforcer and did not depend on a conditioned response, or a history of aggression over the reinforcer. Perhaps most important was the objective manner in which the aggression was measured without the need of subjective rating scales or interpretation, thereby permitting scientific study in quantitative terms of this phenomenon. The vague notion that frustration may produce aggression was now established with a laboratory animal model which allowed scientific study of its specific causes. The two coauthors of this study have continued to study the emotional states caused by extinction or by pain.

"More recently, my research has been primarily in the area of developing psychological treatments for behavioral problems, including aggression. Awareness of the extinction-induced aggression relation has led me to devise training and treatment procedures in which aversiveness is minimized.<sup>2</sup> I believe the study has been cited so often because other applied psychologists have been similarly influenced by these results in addition to the intrinsic value in understanding the causes of aggression and the effects of conditioning procedures."

- 
1. Ulrich R E & Azrin N H. Elimination of undesired escape from footshock. *J. Exp. Anal. Behav.* 5:72, 1962.
  2. Webster D R & Azrin N H. Required relaxation: a method of inhibiting agitative-disruptive behavior of retardates. *Behav. Res. Ther.* 11:67-78, 1973.