

This Week's Citation Classic

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Schachter S & Singer J. Cognitive, social and physiological determinants of emotional state. *Psychol. Rev.* 69:379-99, 1962.

These experiments independently manipulated physiological and situational determinants of emotional state. It was demonstrated that neither physiological nor psychological explanations alone could account for the experimental facts and an interactional view of emotion was proposed. [The *Science Citation Index*[®] (*SCI*[®]) and the *Social Sciences Citation Index*[™] (*SSCI*[™]) indicate that this paper was cited 432 times in the period 1962-1977.]

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"When W. B. Cannon (1929) wrote his devastating and brilliant critique of the James-Lange theory of emotion,¹ he would have been wise to follow the example of that great teacher of philosophy, Morris Raphael Cohen. At the end of a course in which he had demonstrated what was wrong with virtually every philosopher who had lived, Cohen was begged by his students to tell them what was right, what they should believe. 'When Hercules cleaned out Augeias' stables,' Cohen responded, 'they didn't ask him to fill them up again.'

"Unlike Cohen, Cannon chose to offer his own theory—the so-called thalamic theory of emotion—a view which in the long run proved no more useful than had James' theory. Where James had equated emotion with visceral, peripheral, physiological processes, Cannon equated emotion with processes and structures in the central nervous system. Though these theories

differed in the locus they assigned to emotional states, both theories agreed that emotion was to be understood in physiological terms.

Singer and I demonstrated that no purely physiological theory of emotion could possibly cope with all of the existing data. In our experiments, precisely the same physiological state—the state of sympathetic arousal induced by an injection of adrenalin—could be labeled by the subject as any of a variety of emotional states or indeed as no emotional state at all, depending largely on cognitive and situational manipulations. It was our conclusion that to be predictively useful, any physiologically based formulation of emotion must specify the fashion in which physiological processes interact with stimulus, cognitive and situational factors. Since such a message is likely to be popular with social scientists, the high citation rate of this study in psychological and sociological discussions of emotion, always a popular topic, is hardly surprising.

"Probably the other reason this article proved so popular was the realization that emotion is a special case and that the point of view of these studies could be generalized to bodily states other than those characteristic of intense emotions. This has proved particularly true of the physiological changes induced by the psychoactive drugs.

"More surprisingly, we were able to demonstrate that the set of naturally occurring physiological symptoms characteristic of food deprivation (e.g., gastric motility, hypoglycemia, etc.) are by no means invariably labeled as 'hunger' and that there are major individual differences in which physiological changes are associated with the desire to eat. This finding has proven useful in understanding obesity and other forms of pathological eating and drinking behavior."

REFERENCE

1. Cannon W B. *Bodily changes in pain, hunger, fear and rage*. Harper Torchbooks, 1963. 404 p.