

Deci E L. Effects of externally mediated rewards on intrinsic motivation.
J. Personal. Soc. Psychol. 18:105-15, 1971.
[University of Rochester, Rochester, NY]

Monetary rewards were found to decrease intrinsic motivation for the rewarded activity—puzzle solving in a laboratory experiment and headline writing in a field experiment. By contrast, positive performance feedback enhanced intrinsic motivation for the target activity in a laboratory experiment. [The *Social Sciences Citation Index*[®] (SSCI)[®] indicates that this paper has been cited over 170 times since 1971.]

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"In a graduate seminar at Carnegie-Mellon University, Vic Vroom was discussing 'insufficient justification' research¹ when I realized how interesting it might be to consider the effects of different levels of justification on tasks of varying levels of initial interest. I remember being terribly excited by the question, though I did nothing with it for a year. Somewhat later Vic and I were writing the introduction for a book of readings that we were preparing for Penguin.² In it we were considering the motivational assumptions that underlie different theories of management. Scientific management, for example, is very extrinsic, whereas participative management is primarily intrinsic, and we raised the possibility of combining the better elements of each approach. That led to the question of whether the two types of motivation are additive; the question interested me very much.

"A few weeks later I was startled by the realization that the two questions were real-

ly the same question. With that realization came a rush of excitement and a flood of ideas. I was nearing the end of my second year of graduate school and was ready to start my dissertation; I knew then that I had found the idea and the basic structure for studying it. I did three studies that explored the question, and they were published together as the article cited above.

"I think there are several reasons why the paper has been widely cited. For one thing, it explored an idea whose time had come. Quite independently, two other groups of researchers headed by Arie Kruglanski at Tel Aviv University and Mark Lepper at Stanford University were exploring the same question. The fact that we were all working on the same question at that time was an important factor in helping to generate interest in the area. I also think the concept of intrinsic motivation is a very compelling one that has a lot of relevance to people's lives. Rich Ryan and I are finishing a book³ in which we discuss the relevance of this area of research for education, psychotherapy, child rearing, and management. In addition, the findings from the research appeared to be contradictory to some basic tenets of the conditioning theories that were so central to psychology at that time, so a considerable controversy began. Finally, I think psychology is ready for a new field of human motivation, and the concept of intrinsic motivation holds promise. The area of research which arose following the publication of this article can be related to expectancy theory and attribution theory, which are of wide interest, but it also provides the basis for going beyond cognition to a level of analysis that is deeper in the individual and encompasses a wider range of human functions.

"Three years ago Ryan and I reviewed 50 studies on intrinsic motivation⁴ that had been done since this article was published. The book we are now finishing reviews twice that number."

1. Festinger L & Carlsmith J M. Cognitive consequences of forced compliance. *J. Abnormal Soc. Psychol.* 58:203-10, 1959.
2. Vroom V H & Deci E L, eds. *Management and motivation*. Baltimore, MD: Penguin, 1970. 399 p.
3. Deci E L & Ryan R M. *Intrinsic motivation and human behavior*. New York: Plenum. To be published.
4. -----, The empirical exploration of intrinsic motivational processes. (Berkowitz L, ed.) *Advances in experimental social psychology*. New York: Academic Press, 1980. Vol. 13. p. 39-80.