

**Skinner B F.** *Science and human behavior.* New York: Macmillan. 1953. 461 p.  
[Harvard University, Cambridge, MA]

This book is a review of the learning processes, including Pavlovian and operant conditioning, schedules of reinforcement, and motivation, and of the role they play in social behavior, self-control, government, religion, economics, education, and psychotherapy. A concluding section deals with the evolution of cultural practices and values. [The *Science Citation Index*® (SCI) and the *Social Sciences Citation Index*® (SSCI) indicate that this book has been cited in over 1,620 publications since 1955.]

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Stimulus-response psychology tried to explain behavior with the push-pull causality of physical science. At an earlier date, Edward L. Thorndike had formulated the law of effect, arguing that behavior was selected by its consequences.<sup>1</sup> My work on operant behavior clarified the role played by selection. By carefully controlling experimental conditions, I eliminated the collateral behavior that slowly dropped out to produce Thorndike's learning curves. A single reinforcement changed the probability of responding.

During World War II, when my colleagues and I were conditioning pigeons to guide missiles, we discovered even more powerful ways of shaping and maintaining behavior. I was fascinated by the implications for human behavior in the world at large and discussed them with my colleagues on Project Pigeon<sup>2</sup> and with a group of philosophers

and critics with whom I occasionally met. Much of that discussion forms the heart of *Walden Two*,<sup>3</sup> a novel set in a social environment or community so designed that its members just naturally do the things needed to maintain it and live an enjoyable life without coercion. When I came to Harvard in 1948, I offered a course in which I interpreted well-known facts of human behavior in the light of an experimental analysis of behavior, and I wrote *Science and Human Behavior* for that course.

The book begins with a discussion of the possibility of a science of human behavior and surveys relevant processes: reflexes and conditioned reflexes; the shaping and maintaining of operant behavior; the role of the controlling environment; the importance of deprivation, satiation, and emotion; punishment; and problems in the analysis of complex behavior.

Another section deals with the individual as a whole. It begins with a chapter called "Self-control" (with quotation marks), which I am told is the first chapter on that subject to appear in a psychological text. The section also discusses self-knowledge, the problem of private events in a natural science, thinking or self-management, and the concept of self. In another section, social behavior is analyzed in terms drawn from the analysis of the behavior of the individual. Still another section surveys the behavioral processes to be found in government and law, religion, psychotherapy, economic control, and education. A final section anticipates the argument of my book *Beyond Freedom and Dignity*,<sup>4</sup> especially the importance of the evolution of cultural practices in an understanding of questions about values.

The book was written for an entirely different introductory course in psychology. It broke completely from the egocentric philosophy of human behavior that then prevailed. It has proved increasingly useful as all the behavioral sciences have moved toward a behavioristic position.

1. Thorndike E L. *Animal intelligence: an experimental study of the associative processes in animals.* New York: Macmillan. 1898. 109 p. (Cited 150 times since 1955.)
2. Skinner B F. Pigeons in a pelican. *Amer. Psychol.* 5:28-37. 1960. (Cited 20 times.)
3. ...., *Walden two.* New York: Macmillan, 1948. 266 p. (Cited 315 times since 1955.)
4. ...., *Beyond freedom and dignity.* New York: Knopf. 1971. 225 p. (Cited 1,010 times.)