


**Reinforcement**

In either classical or operant conditioning, a stimulus that increases the probability that a particular behavior will occur.

In classical (Pavlovian) conditioning, where the response has no effect on whether the stimulus will occur, reinforcement produces an immediate response without any training or conditioning. When meat is offered to a hungry dog, it does not learn to salivate, the behavior occurs spontaneously. Similarly, a negative reinforcer, such as an electric shock, produces an immediate, unconditioned escape response. To produce a classically-conditioned response, the positive or negative reinforcer is paired with a neutral stimulus until the two become associated with each other. Thus, if the sound of a bell accompanies a negative stimulus such as an electric shock, the experimental subject will eventually be conditioned to produce an escape or avoidance response to the sound of the bell alone. Once conditioning has created an association between a certain behavior and a neutral stimulus, such as the bell, this stimulus itself may serve as a reinforcer to condition future behavior. When this happens, the formerly neutral stimulus is called a conditioned reinforcer, as opposed to a naturally positive or negative reinforcer, such as food or an electric shock.

In operant conditioning (as developed by B. F. Skinner), positive reinforcers are rewards that strengthen a conditioned response after it has occurred, such as feeding a hungry pigeon after it has pecked a key. Negative reinforcers are unpleasant stimuli that are removed when the desired response has been obtained. The application of negative reinforcement may be divided into two types: escape and avoidance conditioning. In escape conditioning, the subject learns to escape an unpleasant or aversive stimulus (a dog jumps over a barrier to escape electric shock). In avoidance conditioning, the subject is presented with a warning stimulus, such as a

Margaret Alic

Further Reading


relationship with Elsa Lindenberg, a dancer and fellow communist. In 1934 Reich began moving across Europe, first to Denmark, then Sweden, and finally settling in Oslo, Norway. During this period, he developed his theory of “muscular armor,” the outward bodily attributes that represent character traits; for example, a stubborn person might develop a stiff neck. Reich used physical methods in his therapy to break these patterns, methods that were adopted by other therapies, including bioenergetics and Gestalt psychology. He published The Sexual Revolution (1936), an indictment of conventional sexual morality, and undertook experiments on energetic particles that he called “bions.” Reich believed that he had discovered and could measure a new form of energy, the “orgone,” which controlled sexual drive and love.

In Norway, Reich came under attack by both the medical establishment and the press. In 1939, as a Jew living under the growing Nazi threat, he emigrated to the United States. Reich moved his laboratory from Oslo to Long Island and lectured at the New School for Social Research in New York City for the next two years. In 1940, he built his first “orgone energy accumulator,” or “orgone box.” Reich claimed that this telephone booth-sized machine trapped orgone energy, which could be used to prevent and treat mental and physical illnesses, particularly cancer. He described his research in The Cancer Biopathy, published in 1948. In 1944, Reich had a son with the German-born socialist, Ilse Ollendorff, and the following year the family moved to Rangeley, Maine, where Reich founded the Orgone Institute, with research laboratories and a publishing house.

Reich and Ollendorff were divorced in 1954, the same year that the FDA obtained an injunction against his energy accumulator. The injunction made it a crime not only to build or use the orgone box, but to even mention the term “orgone” in print. Reich defied the order. He was found in contempt and, in March, 1957, sentenced to two years in the Lewisburg Federal Penitentiary in Pennsylvania. The following November, he died of a heart attack in the psychiatric wing of the prison. The FDA destroyed his remaining accumulators, as well as many of his books on a variety of subjects. However in recent years, Reich’s contributions to psychoanalysis have been re-examined and many of his books have been translated and reprinted.
buzzer, just before the aversive stimulus occurs and learns to act on it in order to avoid the unpleasant stimulus altogether.

Reinforcement may be administered according to various schedules. A particular behavior may be reinforced every time it occurs, which is referred to as continuous reinforcement. In many cases, however, behaviors are reinforced only some of the time, which is termed partial or intermittent reinforcement. Reinforcement may also be based on the number of responses or scheduled at particular time intervals. In addition, it may be delivered in regularly or irregularly. These variables combine to produce four basic types of partial reinforcement. In fixed-ratio (FR) schedules, reinforcement is provided following a set number of responses (a factory worker is paid for every garment he assembles). With variable-ratio (VR) schedules, reinforcement is provided after a variable number of responses (a slot machine pays off after varying numbers of attempts). Fixed-interval (FI) schedules provide for reinforcement of the first response made within a given interval since the previous one (contest entrants are not eligible for a prize if they have won one within the past 30 days). Finally, with variable-interval (VI) schedules, first responses are rewarded at varying intervals from the previous one.

See also Avoidance learning; Behavior modification; Classical conditioning; Pavlov, Ivan

Further Reading


---

**Religion and psychology**

Psychologists have long studied religion and religious practices. Using principles of traditional psychology, researchers try to understand religious experience, including prayer, cults, and mystical experiences. The study of religion and psychology began in the early twentieth century, but faded before it was revived in the 1980s, when the American Psychological Association began to formally investigate aspects of religion in psychology. The only classic text relating to the psychological study of religion, *Varieties of Religious Experience*, was written by William James in 1902.

Sigmund Freud, who called religion an “illusion,” nonetheless studied religion with great interest, and wrote three books and some papers on his studies of how religion impacted human lives. Later psychoanalysts have studied the psychological value of religion. However, only a few psychologists, including Paul Meehl, Erich Fromm, Abraham Maslow, and Solomon Asch, deemed belief systems, moral and ethical conduct, and the reasons people abide by a certain religion as significant factors in human behavior.

Psychologist William James studied the intricate influences of religious conversions, mystical experience, saintliness, and prayer on a person’s belief system. Twenty-first century psychologists investigate such topics as cults, confession (particularly as it is practiced among Roman Catholics), ritual, faith healing, and explanations for miracles. Modern psychologists actively pursue the interrelationship between religion and psychology and note that just as religion influences human existence, human perceptions also influence the practice of religion.

Psychologists use various methods to study religion. They have used personal revelations, observation through clinical means, participant observation, surveys and interviews, and examinations of religious documents, treatises, and journals. All these methods must be used to help psychologists understand such a complex topic. A concept such as faith is not easily categorized or discussed, despite scientific analysis. Understanding the psychological origins of religion is difficult as well. Modern psychologists tend to focus their study on individual practices rather than the historical nature of religion as a whole. They look for psychological underpinnings of religion on modern people. This also means that an individual’s religion and belief system changes as that person ages. As their mental and emotional development progresses, so their image of God and religion does also.

There are many areas of interest to psychologists. Psychologists hold special interest in the social dynamics of religions and their organized structures. They study the influence that these bodies have on the lives of their members and the communities in which they exist. Some psychologists analyze the workings of cults and how these social groups differ from more traditional religions. Many psychologists and religious leaders are attempting to integrate theology and psychology through these pursuits.

The ever-growing group of psychologists attempting to define the psychology of religion include the religiously devout as well as atheists and agnostics. In a study published in the June 2000 issue of *Health Psychology* by the American Psychological Association, Michael E. McCullough, of the National Institute of Healthcare Research noted that “the odds of survival for people who scored higher on measures of public and