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MARTIN SELIGMAN: LEARNED HELPLESSNESS

One of the most exciting things that can happen in science is that a discovery made in one research area can turn out to have implications for another, seemingly very different research area. Ideas that come from one set of findings can reach out across the arbitrary boundaries that separate one research area from another, to illuminate and be illuminated by both. The extension of Pavlov's work to the treatment of phobia is one example (chapter 26). The concept of *learned helplessness*, investigated and extended by Martin Seligman, is another.

Martin E. P. Seligman (1942–) was born in Albany, New York. He earned his A.B. at Princeton in philosophy in 1964 and his Ph.D. in psychology at the University of Pennsylvania in 1967. He taught at Cornell University 1967–70, then returned to the University of Pennsylvania, where he is now Leadership Professor of Psychology.

Seligman now teaches a course on what he calls *Positive Psychology*—the study of positive emotions, character traits, and institutions—and directs a research group devoted to its scientific exploration. He is now turning his attention to training Positive Psychologists, professional individuals whose practice, he believes, could make the world a happier place, as those who treat disorders can make the world a less unhappy place. Just as McClelland suggests that people can be trained to think like achievers, and that actual achievement will follow (chapter 12), so Seligman believes that positive habits of thought can be trained, to everyone's benefit (see Mook, 1996, for discussion).

And yet all this developed, in an unbroken series of steps, from—of all things—the study of learning in animals! As a graduate student, Seligman worked with Richard L. Solomon, a prominent experimenter and learning theorist at Penn. Learning was Seligman's initial interest, and he made important contributions to its literature. It was he, in response to findings such as Garcia's on conditioned taste aversion, who advanced the notion of *preparedness*—that animals of a given species

are "prepared" to learn certain things, but not others that would seem just as easy (Seligman, 1970; see chapter 24).

The present story begins with the accidental discovery of learned helplessness in Solomon's laboratory, where a series of studies on negative reinforcement was in progress (Maier, Seligman, & Solomon, 1969; Overmeir & Seligman, 1967).

Negative reinforcement does not mean punishment. It means that a response is reinforced by the termination of some unpleasant event, like painful shock. If a shock comes on, and the animal must make some "correct" response to turn it off, then the shock is the negative reinforcer.

These studies in Solomon's laboratory were conducted in dogs, which were placed in an enclosed box divided in half by a chest-high barrier. The shock would come on, and the dog's task was to jump over the barrier, from whichever side of the box it was in to the other side; then the shock would end. After a timed interval, the shock would come on again, and again the dog had to jump over the barrier back to the original side. Thus, over a series of learning trials, the dog "shuttles" back and forth between the two sides of the box.

This is an easy task. Most dogs learn with no difficulty to jump over the barrier to safety when the shock comes on. But the experimenters included in their study a group of dogs that had *first* been exposed, in another experiment in a different apparatus, to brief shocks that they *could not control*. The shock came on, then quickly went off again, irrespective of anything the animal did.

When these dogs were moved to the shuttle-box task, they never did learn it. If they had been helpless in the first experiment, they were likely to act helplessly in the second one as well; they would stand there or lie there until the experimenters turned the shock off. All they had to do was jump to the other compartment! But they discovered this very slowly or not at all.

Seligman and his colleagues went on to show that the important thing about uncontrollable shock was not the shocks themselves; it was their uncontrollability. This is the classic experiment we shall focus on here (Maier et al., 1969).

There were three groups, and two phases to the experiment. The different conditions were imposed during the first phase. In that first phase, one group of dogs (Group 1) received shocks that they *could* turn off.

Another group of dogs (Group 2) received shocks that they *could not* turn off, but the shocks were delivered at the same intensity and pattern in time as for the first group. This was accomplished by matching each dog in the first group with a dog in the second group; recording how long each dog in the first group left the shock on, on each trial; and leaving it on for just that long, on each trial, for its pair-mate in the second group.

Group 3 was a control. It received no shocks at all during Phase I.

After this, Phase II was conducted. This was the same for all groups: a series of trials in the shuttle-box, in which the shock, when it came on, could be turned off by the dog. The animal had only to learn to jump the barrier. (The design of the experiment, and its outcome, are summarized in table 27.1).

The animals in Groups 1 and 3, which had had controllable shocks or no shocks at all, quickly learned the task in Phase II. But the Group 2 animals never did. Each time the shock came on, they waited passively until the experimenter turned it off.

The experimenters concluded that the uncontrollable shocks had produced *learned helplessness* in the dogs that received it. It is a cognitive interpretation: the dogs came

Table 27.1
Design and results of the learned-helplessness experiment

Group	Phase I	Phase II	Results
1	Controllable shock	Shuttlebox task	Rapid learning
2	Uncontrollable shock	Shuttlebox task	No learning
3	No shock	Shuttlebox task	Rapid learning

to believe that nothing they did had any effect on what happened to them, so why do anything? A dog that believes that may simply give up and lie passive in the new situation. It *could* control the shocks now, but it may never discover that.

Further work showed that learned helplessness could be produced in rats, monkeys, cats—and humans. Moreover, Seligman was struck by some parallels between the helplessness in dogs and some characteristics of severe depression in humans: the failure to solve problems that are solvable and, related to this, a lack of initiation of action. And, like chronic depression, helplessness, once established, can be difficult to break up. Seligman writes,

My colleagues and I worked for a long time without success on this problem: first, we took the barrier out of the shuttle box . . . but [the dog] just lay there. Then I got into the other side of the shuttle box and called to the dog, but he just lay there. We made the dogs hungry and dropped Hebrew National Salami onto the safe side, but still the dog just lay there. (1975, p. 56)

Finally, and again as in depression, dogs may lose interest in sex, food, and play:

When an experimenter goes to the home cage and attempts to remove a nonhelpless dog, it does not comply eagerly; it barks, runs to the back of the cage, and resists handling. In contrast, helpless dogs seem to wilt; they passively sink to the bottom of the cage, occasionally even rolling over and adopting a submissive posture; they do not resist. (Seligman, 1975, p. 25)

Compare the self-description of a clinically depressed human being:

I was seized with an unspeakable physical weariness. There was a tired feeling in the muscles unlike anything I had ever experienced . . . My nights were sleepless. I lay with dry, staring eyes gazing into space. I had a feeling that some terrible calamity was about to happen. I grew afraid to be left alone. The most trivial duty became a formidable task. Finally mental and physical exercises became impossible; the tired muscles refused to respond, my "thinking apparatus" refused to work, ambition was gone. My general feeling might be summed up in the familiar saying "What's the use" . . . Life seemed utterly futile. (Reid, 1910, pp. 612–613)

This sad description shows the characteristic symptoms of depression. First, there is *emotional disturbance*. The state of depression is characterized by sadness, lassitude, and a hopeless outlook on life. Second, a *reluctance to initiate action* is char-

acteristic of severe depression: Third, there is a *cognitive* deficit, difficulty in solving solvable problems or learning learnable things. One study found that even mildly depressed college students did very badly at solving anagram problems, much worse than nondepressed college students. And the more depressed they were, the worse they did.

Seligman (1975), in an influential and controversial analysis, proposed (a) that at least some characteristics of depression are expressions of learned helplessness, and (b) that in depressed persons, as in helpless dogs, it is the *belief* in one's own helplessness that is the problem.

He and his colleagues went on to explore what they call the depressive *explanatory style*. If something bad happens, how do people explain this to themselves? Here his thinking makes contact with a whole literature, much of it from social psychologists, on *causal attribution* (for discussion, see Aronson, 1999; Mook, 1996). Once again, the critical issue is not so much what happens to a person as how he or she interprets it.

Seligman suggests that certain persons have adopted a set of beliefs—a depressive *explanatory style*—about the causes of misfortunes. It consists of cheerful beliefs like “It’s my incompetence that caused the problem; I’ll never be competent; I’m not competent at anything.” These add up to a *belief* in one’s own helplessness, and make a depressive reaction likely.

There is evidence to support these ideas (Peterson & Seligman, 1984). For example:

1. Hospitalized patients were asked what sorts of explanations they would give for hypothetical events (e.g., a broken romance). In depressed patients, a depressive explanatory style was more frequent than in schizophrenics or medical-student controls.
2. In college students, depressive explanatory style, as measured earlier by a questionnaire, was related to depressive reactions to grades that were lower than the students wanted them to be. This was just as true for a student who wanted an A and got a B as for a student who wanted a C and got a D. Students who did not show a depressive explanatory style were not depressed, but only disappointed, in such cases.

As a theory of depression, learned helplessness is unlikely to tell the whole story, but it may pinpoint a set of cognitive habits of thought that play a role in at least some cases. Perhaps this is one reason that *cognitive-behavioral therapy* is one of the more effective ways of treating depression. It will attempt to break up the habits of thought—the *beliefs* in one’s own global and permanent incompetence—that can so easily become self-fulfilling prophecies (for discussion and references see Wade & Tavris, 2000).

Moreover, all this leads us to wonder, If habits of thought can lead to depression and giving up, can other habits of thought be substituted? If there is *learned helplessness*, can there be *learned optimism*? Seligman has written a book with that title (1990), and that insight has led to his present work in Positive Psychology.

We cannot follow this line of thought here. However, we should note once again that it all began with a “simple” conditioning experiment, and progressed step by step from there. As someone has said: a journey of a thousand miles begins with a

single step. And taking one step after another can lead us to places where there are whole new vistas to explore.

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