

manuscript after manuscript to the publishers only to have them all rejected may report that "he can't write another word." He may be partially paralyzed with what is called "writer's cramp." He may still insist that he "wants to write," and we may agree with him in paraphrase: his extremely low probability of response is mainly due to extinction. Other variables are still operative which, if extinction had not taken place, would yield a high probability.

The condition of low operant strength resulting from extinction often requires treatment. Some forms of psychotherapy are systems of reinforcement designed to reinstate behavior which has been lost through extinction. The therapist may himself supply the reinforcement, or he may arrange living conditions in which behavior is likely to be reinforced. In occupational therapy, for example, the patient is encouraged to engage in simple forms of behavior which receive immediate and fairly consistent reinforcement. It is of no advantage to say that such therapy helps the patient by giving him a "sense of achievement" or improves his "morale," builds up his "interest," or removes or prevents "discouragement." Such terms as these merely add to the growing population of explanatory fictions. One who readily engages in a given activity is not showing an interest, he is showing the effect of reinforcement. We do not give a man a sense of achievement, we reinforce a particular action. To become discouraged is simply to fail to respond because reinforcement has not been forthcoming. Our problem is simply to account for probability of response in terms of a history of reinforcement and extinction.

#### WHAT EVENTS ARE REINFORCING?

In dealing with our fellow men in everyday life and in the clinic and laboratory, we may need to know just how reinforcing *a* specific event is. We often begin by noting the extent to which our own behavior is reinforced by the same event. This practice frequently miscarries; yet it is still commonly believed that reinforcers can be identified apart from their effects upon a particular organism. As the term is used here, however, the only defining characteristic of a reinforcing stimulus is that it reinforces.

The only way to tell whether or not a given event is

reinforcing to a given organism under given conditions is to make a direct test. We observe the frequency of a selected response, then make an event contingent upon it and observe any change in frequency. If there is a change, we classify the event as reinforcing to the organism under the existing conditions. There is nothing circular about classifying events in terms of their effects; the criterion is both empirical and objective. It would be circular, however, if we then went on to assert that a given event strengthens an operant *because* it is reinforcing. We achieve a certain success in guessing at reinforcing powers only because we have in a sense made a crude survey; we have gauged the reinforcing effect of a stimulus upon ourselves and assume the same effect upon others. We are successful only when we resemble the organism under study and when we have correctly surveyed our own behavior.

Events which are found to be reinforcing are of two sorts. Some reinforcements consist of *presenting* stimuli, of adding something—for example, food, water, or sexual contact—to the situation. These we call *positive* reinforcers. Others consist of *removing* something—for example, a loud noise, a very bright light, extreme cold or heat, or electric shock—from the situation. These we call *negative* reinforcers. In both cases the effect of reinforcement is the same—the probability of response is increased. We cannot avoid this distinction by arguing that what is reinforcing in the negative case is the *absence* of the bright light, loud noise, and so on; for it is absence after presence which is effective, and this is only another way of saying that the stimulus is removed. The difference between the two cases will be clearer when we consider the *presentation* of a *negative* reinforcer or the *removal* of a *positive*. These are the consequences which we call punishment (Chapter XII).

A survey of the events which reinforce a given individual is often required in the practical application of operant conditioning. In every field in which human behavior figures prominently—education, government, the family, the clinic, industry, art, literature, and so on—we are constantly changing probabilities of response by arranging reinforcing consequences. The industrialist who wants employees to work consistently and without absenteeism must make

certain that their behavior is suitably reinforced—not only with wages but with suitable working conditions. The girl who wants another date must be sure that her friend's behavior in inviting her and in keeping the appointment is suitably reinforced. To teach a child to read or sing or play a game effectively, we must work out a program of educational reinforcement in which appropriate responses "pay off" frequently. If the patient is to return for further counsel, the psychotherapist must make sure that the behavior of coming to him is in some measure reinforced.

We evaluate the strength of reinforcing events when we attempt to discover what someone is "getting out of life." What consequences are responsible for his present repertoire and for the relative frequencies of the responses in it? His responses to various topics of conversation tell us something, but his everyday behavior is a better guide. We infer important reinforcers from nothing more unusual than his "interest" in a writer who deals with certain subjects, in stores or museums which exhibit certain objects, in friends who participate in certain kinds of behavior, in restaurants which serve certain kinds of food, and so on. The "interest" refers to the probability which results, at least in part, from the consequences of the behavior of "taking an interest." We may be more nearly sure of the importance of a reinforcer if we watch the behavior come and go as the reinforcer is alternately supplied and withheld, for the change in probability is then less likely to be due to an incidental change of some other sort. The behavior of associating with a particular friend varies as the friend varies in supplying reinforcement. If we observe this covariation, we may then be fairly sure of "what this friendship means" or "what our subject sees in his friend."

This technique of evaluation may be improved for use in clinical and laboratory investigation. A direct inventory may be made by allowing a subject to look at an assortment of pictures and recording the time he spends on each. The behavior of looking at a picture is reinforced by what is seen in it. Looking at one picture may be more strongly reinforced than looking at another, and the times will vary accordingly. The information may be valuable if it is necessary for any reason to reinforce or extinguish our subject's behavior.

Literature, art, and entertainment, are contrived reinforcers. Whether the public buys books, tickets to performances, and works of art depends upon whether those books, plays, concerts, or pictures are reinforcing. Frequently the artist confines himself to an exploration of what is reinforcing to himself. When he does so his work "reflects his own individuality," and it is then an accident (or a measure of his universality) if his book or play or piece of music or picture is reinforcing to others. Insofar as commercial success is important, he may make a direct study of the behavior of others. (The interpretation of the activity of the writer and artist as an exploration of the reinforcing powers of certain media will be discussed in Chapter XVI.)

We cannot dispense with this survey simply by asking a man what reinforces him. His reply may be of some value, but it is by no means necessarily reliable. A reinforcing connection need not be obvious to the individual reinforced. It is often only in retrospect that one's tendencies to behave in particular ways are seen to be the result of certain consequences, and, as we shall see in Chapter XVIII, the relation may never be seen at all even though it is obvious to others.

There are, of course, extensive differences between individuals in the events which prove to be reinforcing. The differences between species are so great as scarcely to arouse interest; obviously what is reinforcing to a horse need not be reinforcing to a dog or man. Among the members of a species, the extensive differences are less likely to be due to hereditary endowment, and to that extent may be traced to circumstances in the history of the individual. The fact that organisms evidently inherit the capacity to be reinforced by certain kinds of events does not help us in predicting the reinforcing effect of an untried stimulus. Nor does the relation between the reinforcing event and deprivation or any other condition of the organism endow the reinforcing event with any particular physical property. It is especially unlikely that events which have *acquired* their power to reinforce will be marked in any special way. Yet such events are an important species of reinforcer.