surprising or unexpected. They become more meaningful when interpreted in the light of studies of the relationship between social class and psychiatric treatment and hospitalization.

It was not possible within the scope of this study to gather systematic evidence on the factors that may influence the process of decision making by the hospital preadmission staff. But discussions with various staff members suggest that an understanding of this process is crucial when accounting for the differential speed of hospitalization.

A DIFFERENTIAL ASSOCIATION-REINFORCEMENT THEORY OF CRIMINAL BEHAVIOR

ROBERT L. BURGESS AND RONALD L. AKERS
University of Washington

INTRODUCTION

In spite of the body of literature that has accumulated around the differential association theory of criminal behavior,[1] it has yet to receive crucial empirical test or thorough restatement beyond Sutherland's own revision in 1947. Recognizing that the theory is essentially a learning theory, Sutherland rephrased it to state explicitly that criminal behavior is learned as any behavior is learned. In Cressey's two revisions of the textbook, the theory has been deliberately left unchanged from Sutherland's revision. Thus, the theory as it stands now is postulated upon the knowledge of the learning process extant 20-25 years ago.[2]

Sutherland, himself, never was able to test directly or find specific empirical support for his theory, but he was convinced that the two-edged theory —(1) genetic, differential association and (2) structural, differential social

[1] By 1960, Cressey had collected a 70-item bibliography on the theory; see Edwin H. Sutherland and Donald R. Cressey, *Principles of Criminology,* 6th ed., Chicago: J. B. Lippincott Co., 1960, p. vi. He has presented an exhaustive review of the mistaken notions, criticisms, attempted reformulations, and empirical tests of the theory contained in a sizable body of literature. Donald R. Cressey, "Epidemiology and Individual Conduct: A Case from Criminology," *Pacific Sociological Review,* 3 (Fall, 1960), pp. 47-58. For more recent literature see Donald R. Cressey, "The Theory of Differential Association: An Introduction," *Social Problems,* 8 (Summer, 1960), pp. 2-5. James F. Short, Jr., "Differential Association as a Hypothesis: Problems of Empirical Testing," *Social Problems,* 8 (Summer, 1960), pp. 14-25. Henry D. McKay, "Differential Association and Crime Prevention: Problems of Utilization," *Social Problems,* 8 (Summer, 1960), pp. 25-37. Albert J. Reiss, Jr., and A. Lewis Rhodes, "An Empirical Test of Differential Association Theory," *The Journal of Research in Crime and Delinquency,* 1 (January, 1964), pp. 5-18. Harwin L. Voss, "Differential Association and Reported Delinquent Behavior: A Replication," *Social Problems,* 12 (Summer, 1964), pp. 78-85. Siri Naess, "Comparing Theories of Criminogenesis," *The Journal of Research in Crime and Delinquency,* 1 (July, 1964), pp. 171-180. C. R. Jeffery, "Criminal Behavior and Learning Theory," *The Journal of Criminal Law, Criminology and Police Science,* 56 (September, 1965), pp. 294-300.

[2] The original formal statement appeared in Edwin H. Sutherland, *Principles of Criminology,* 3rd ed., Philadelphia: J. B. Lippincott Co., 1939, pp. 4-8. The terms, "systematic" and "consistency" along with some statements referring to social disorganization and culture conflict were deleted in the revised theory. Two sentences stating that criminal behavior is learned were added and the terms "learned" and "learning" were included in other sentences. The modalities of duration, priority, and intensity were added. The revised theory is in Sutherland and Cressey, *op. cit.,* pp. 77-79. For Cressey's discussion of why he left the theory in its 1947 form see *ibid.,* p. vi.

organization—accounted for the known data on the full range of crimes, including conventional violations and white-collar crimes.[3] The theory has received some other empirical support,[4] but negative cases have also been found.[5] The attempts to subject the theory to empirical test are marked by inconsistent findings both within the same study and between studies, as well as by highly circumscribed and qualified findings and conclusions. Whether the particular researcher concludes that his findings do or do not seem to support the theory, nearly all have indicated difficulty in operationalizing the concepts and recommend that the theory be modified in such a way that it becomes more amenable to empirical testing.

Suggested theoretical modifications have not been lacking, but the difficulty with these restatements is that they are no more readily operationalized than Sutherland's.[6] One recent paper, however, by DeFleur and Quinney,[7] offers new promise that the theory can be adequately operationalized. They have presented a detailed strategy for making specific deductions for empirical testing. But while they have clarified the problems in the derivation and generation of testable hypotheses from differential association, they still see its empirical validation as a very difficult, though not impossible task.

Regardless of the particular criticisms, the exceptions taken, and the difficulties involved in testing and reformulating the theory that have been offered, few take exception to the central learning assumptions in differential association. If we accept the basic assumption that criminal behavior is learned by the same processes and involves the same mechanisms as conforming behavior, then we need to recognize and make use of the current knowledge about these processes and mechanisms. Neither the extant statement of the theory nor the reformulations of it make explicit the nature of the underlying learning process involved in differential association. In short, no major revisions have been made utilizing established learning principles.

That this type of revision of the theory is needed has been recognized and some criticism of differential asso-

[3] *Ibid.*, pp. 77-80. Edwin H. Sutherland, *White Collar Crime,* New York: Holt, Rinehart and Winston, 1961, pp. 234-256 (originally published 1949). See also Cressey's "Foreword," *ibid.*, p. x.

[4] John C. Ball, "Delinquent and Non-Delinquent Attitudes Toward the Prevalence of Stealing," *The Journal of Criminal Law, Crimonology and Police Science,* 48 (September-October, 1957), pp. 259-274. James F. Short, "Differential Association and Delinquency," *Social Problems,* 4, (January, 1957), pp. 233-239. Short, "Differential Association with Delinquent Friends and Delinquent Behavior," *Pacific Sociological Review,* 1 (Spring, 1958), pp. 20-25. Short, "Differential Association as a Hypothesis," *op. cit.* Voss, *op. cit.* Donald R. Cressey, "Application and Verification of the Differential Association Theory," *The Journal of Criminal Law, Criminology and Police Science,* 43 (May-June, 1952), pp. 47-50. Cressey, *Other People's Money,* Glencoe, Ill.: The Free Press, 1953, pp. 147-149. Glaser, *op. cit.,* pp. 7-10.

[5] Marshall Clinard, *The Black Market,* New York: Rinehart Co., 1952, pp. 285-329. Marshall Clinard, "Rural Criminal Offenders," *American Journal of Sociology,* 50 (July, 1944), pp. 38-45. Edwin M. Lemert, "An Isolation and Closure Theory of Naive Check Forgery," *The Journal of Criminal Law, Criminology and Police Science,* 44, (September-October, 1953), pp. 293-307. Reiss and Rhodes, *op. cit.* Cressey, "Application and Verification of the Differential Association Theory," *op. cit.,* pp. 51-52. Cressey, *Other People's Money, op. cit.,* pp. 149-151. Glaser, *op. cit.,* pp. 12-13.

[6] See Daniel Glaser, "Criminality Theories and Behavioral Images," *American Journal of Sociology,* 61 (March, 1956), pp. 433-444. Glaser, "Differential Association and Criminological Prediction," *op. cit.,* pp. 10-13. Naess, *op. cit.,* pp. 174-179.

[7] Melvin DeFleur and Richard Quinney, "A Reformulation of Sutherland's Differential Association Theory and a Strategy for Empirical Verification," *Journal of Research in Crime and Delinquency,* 3 (January, 1966), p. 13.

ciation has revolved around the fact that it does not adequately portray the process by which criminal behavior is learned. But as Cressey explains:

> It is one thing to criticise the theory for failure to specify the learning process accurately and another to specify which aspects of the learning process should be included and in what way.[8]

Sutherland, of course, was as interested in explaining the "epidemiology" of crime as in explaining how the individual comes to engage in behavior in violation of the law and insisted that the two explanations must be consistent.[9] Differential social organization (normative conflict) has been successful in "making sense" of variations in crime rates. But differential association has been less successful in explicating the process by which this differential organization produces individual criminality. This seems to be due not to the lack of importance of associations for criminal behavior but:

> . . . rather to the fact that the theory outran the capacity of either psychology or social psychology to give adequate, scientific answers to the question of why there are such qualitative (selective) differences in human association.[10]

It now appears, however, that there is a body of verified theory which is adequate to the task of accurately specifying this process. Modern learning theory seems capable of providing insights into the problem of uniting structural and genetic formulations. While sociologists know a great deal about the structure of the environment from which deviants come, we know very little about the determining variables operating within this environment. The burden of criminological theory today is to combine knowledge of structural pressures with explanations of "why only *some* of the persons on whom this pressure is exerted become non-conformists."[11]

It is for this reason that the recent effort by C. R. Jeffery to re-examine differential association in light of modern learning theory marks a new departure in the abundance of thinking and writing that has characterized the intellectual history of this theory.[12] In spite of their intricate axiomatization of the theory, DeFleur and Quinney, for example, recognize that even they have left the learning process in differential association unspecified. But, they note, "modern reinforcement learning theory would handle this problem. . . ."[13] This is precisely what Jeffery proposed to do and to the extent that this objective is served by discussing learning theory and criminal behavior together, he is at least partially successful. However, Jeffery does not in fact make it clear just how Sutherland's differential association theory may be revised. His explanation incorporates differential reinforcement:

> . . . [A] criminal act occurs in an environment in which in the past the actor has been reinforced for behaving in this manner, and the aversive consequences attached to the behavior have been of such a nature that they do not control or prevent the response.[14]

This statement, as it stands, bears no obvious or direct relation to Sutherland's differential association, and nowhere else does Jeffery make it clear

---

[8] Cressey, "Epidemiology and Individual Conduct," *op. cit.*, p. 54.

[9] Sutherland and Cressey, *op. cit.*, p. 80. Albert K. Cohen, Alfred R. Lindesmith, and Karl F. Schuessler (eds.), *The Sutherland Papers*, Bloomington: Indiana University Publications, Social Science Series, No. 15, 1956, pp. 5-42. That Sutherland intended an explanation of the two-fold problem of rates of crime and individual criminal behavior is, of course, the basic point of Cressey's paper, "Epidemiology and Individual Conduct," *op. cit.*

[10] George B. Vold, *Theoretical Criminology*, New York: Oxford University Press, 1958, p. 198.

[11] Cressey, "The Theory of Differential Association," *op. cit.*, p. 5.

[12] Jeffery, *op. cit.*

[13] DeFleur and Quinney, *op. cit.*, p. 3.

[14] *Ibid.*, p. 295.

how differential reinforcement is a reformulation of differential association. Jeffery does discuss modern learning principles, but he does not show how these principles may be incorporated within the framework of Sutherland's theory, nor how these principles may lead to explanations of past empirical findings.

Jeffery's theory and his discussion of criminal behavior and learning theory remains not so much incorrect as unconvincing. His presentation of learning principles is supported wholly by reference to experiments with lower organisms and his extension to criminal behavior is mainly through anecdotal and illustrative material. The potential value and impact of Jeffery's article is diminished by not calling attention to the already large and growing body of literature in experimental behavioral science, especially evidence using human subjects, that has direct implications for differential association theory. We are basically in agreement with Jeffery that learning theory has progressed to the point where it seems likely that differential association can be restated in a more sophisticated and testable form in the language of modern learning theory. But that restatement must be attempted in a thorough fashion before we can expect others to accept it. Jeffery begins to do this and his thoughts are significant, but they do not take into account the theory as a whole.

The amount of empirical research in the social psychology of learning clearly has shown that the concepts in learning theory are susceptible to operationalization. Therefore, applying an integrated set of learning principles to differential association theory should adequately provide the revision needed for empirical testing. These learning principles are based on literally thousands of experimental hours covering a wide range of the phylogenetic scale and more nearly constitute empirically derived *laws* of behavior than any other set of principles. They enable the handling of a great variety of observational as well as experimental evidence about human behavior.

It is the purpose of this paper to take the first step in the direction to which Jeffery points. A restatement of the theory, not an alternative theory, will be presented, although, of necessity, certain ideas not intrinsic to differential association will have to be introduced and additions will be made to the original propositions. It should be pointed out that DeFleur and Quinney have been able to demonstrate that Sutherland's propositions, when stated in the form of set theory, appear to be internally consistent. By arranging the propositions in axiomatic form, stating them in logical rather than verbal symbols, they have brought the theoretical grammar up to date.[15] Such is not our intention in this paper, at all. We recognize and appreciate the importance of stating the propositions in a formal, deductive fashion. We do feel, however, that this task is, at the present time, subsidiary to the more urgent task of: (1) making explicit the learning process, as it is now understood by modern behavioral science, from which the propositions of differential association can be derived; (2) fully reformulating the theory, statement by statement, in light of the current knowledge of this learning process; and (3) helping criminologists become aware of the advances in learning theory and research that are directly relevant to an explanation of criminal behavior.[16] No claim is made that this constitutes a final statement. If it has any seminal value at all, that is, if it provokes a serious new look at

[15] DeFleur and Quinney, *op. cit.*

[16] Our main concern here, of course, is with the nine statements of the theory as a genetic explanation of the process by which the individual comes to engage in illegal behavior. We do not lose sight of the fact, however, that this must be integrated with explanations of the variation and location of crime.

the theory and encourages further effort in this direction, our objective will have been served.

Differential Association and Modern Behavior Theory

In this section the nine formal propositions in which Sutherland expressed his theory will be analyzed in terms of behavior theory and research and will be reformulated as seven new propositions. (See Table 1.)

I. "Criminal behavior is learned." VIII. "The process of learning criminal behavior by association with criminal and anti-criminal patterns involves all of the mechanisms that are involved in any other learning."

Since both the first and eighth sentences in the theory obviously form a unitary idea, it seems best to state them together. Sutherland was aware that these statements did not sufficiently describe the learning process,[17] but these two items leave no doubt that differential association theory was meant to fit into a general explanation of human behavior and, as much is unambiguously stated in the prefatory remarks of the theory: an "explanation of criminal behavior should be a specific part of a general theory of behavior."[18] Modern behavior theory as a general theory provides us with a good idea of what the mechanisms are that are involved in the process of acquiring behavior.[19]

According to this theory, there are two major categories of behavior. On the one hand, there is reflexive or *respondent* behavior which is behavior that is governed by the stimuli that elicit it. Such behaviors are largely associated with the autonomic system. The work of Pavlov is of special significance here. On the other hand, there is *operant* behavior: behavior which involves the central nervous system. Examples of operant behavior include verbal behavior, playing ball, driving a car, and buying a new suit. It has been found that this class of behavior is a function of its past and present environmental consequences. Thus, when a particular operant is followed by certain kinds of stimuli, that behavior's frequency of occurrence will increase in the future. These stimuli are called reinforcing stimuli or reinforcers[20] and include food, money,

[17] Cressey, 1960, *op. cit.*, p. 54.

[18] Sutherland and Cressey, *op. cit.*, p. 75.

[19] It should be mentioned at the outset that there is more than one learning theory. The one we will employ is called Behavior Theory. More specifically, it is that variety of behavior theory largely associated with the name of B. F. Skinner. (*Science and Human Behavior,* New York: Macmillan, 1953.) It differs from other learning theories in that it restricts itself to the relations between observable, measurable behavior and observable, measurable conditions. There is nothing in this theory that denies the existence, or importance, or even the inherent interest of the nervous system or brain. However, most behavioral scientists in this area are extremely careful in hypothesizing intervening variables or constructs, whether they are egos, personalities, response sets, or some sort of internal computers. Generally they adopt the position that the only real value of a construct is its ability to improve one's predictions. If it does not, then it must be excluded in accordance with the rule of parsimony.

[20] It has been said by some that a tautology is involved here. But there is nothing tautological about classifying events in terms of their effects. As Skinner, *op. cit.*, pp. 72-73, has noted, this criterion is both empirical and objective. There is only one sure way of telling whether or not a given stimulus event is reinforcing to a given individual under given conditions and that is to make a direct test: observe the frequency of a selected behavior, then make a stimulus event contingent upon it and observe any change in frequency. If there is a change in frequency then we may classify the stimulus as reinforcing to the individual under the stated conditions. Our reasoning would become circular, however, if we went on to assert that a given stimulus strengthens the behavior *because* it is reinforcing. Furthermore, not all stimuli, when presented, will increase the frequency of the behavior which *produced* them. Some stimuli will increase the frequency of the behavior which *removes* them, still others will neither strengthen nor weaken the

clothes, objects of various sorts, social attention, approval, affection and social status. This entire process is called positive reinforcement. One distinguishing characteristic of operant behavior as opposed to respondent behavior, then, is that the latter is a function of its antecedent stimuli, whereas the former is a function of its antecedent environmental consequences.

Typically, operant and respondent behaviors occur together in an individual's everyday behavior, and they interact in extremely intricate ways. Consequently, to fully understand any set of patterned responses, the investigator should observe the effects of the operants on the respondents as well as the effects of the respondents on the operants. The connections between operant and respondent behaviors are especially crucial to an analysis of attitudes, emotional and conflict behaviors.

In everyday life, different consequences are usually contingent upon different classes of behavior. This relationship between behavior and its consequences functions to alter the rate and form of behavior as well as its relationship to many features of the environment. The process of operant reinforcement is the most important process by which behavior is generated and maintained. There are, in fact, six possible environmental consequences relative to the Law of Operant Behavior. (1) A behavior may produce certain stimulus events and thereby increase in frequency. As we have indicated above, such stimuli are called positive reinforcers and the process is called positive reinforcement. (2) A behavior may remove, avoid, or terminate certain stimulus events and thereby increase in frequency. Such stimuli are termed negative reinforcers and the process, negative reinforcement. (3) A behavior may produce certain stimulus events and thereby decrease in frequency. Such stimuli are called aversive stimuli or, more recently, punishers.[21] The entire behavioral process is called positive punishment. (4) A behavior may remove or terminate certain stimulus events and thereby decrease in frequency. Such stimuli are positive reinforcers and the process is termed negative punishment. (5) A behavior may produce or remove certain stimulus events which do not change the behavior's frequency at all. Such stimuli are called neutral stimuli. (6) A behavior may no longer produce customary stimulus events and thereby decrease in frequency. The stimuli which are produced are neutral stimuli, and the process, extinction. When a reinforcing stimulus no longer functions to increase the future probability of the behavior which produced it, we say the individual is satiated. To restore the reinforcing property of the stimulus we need only deprive the individual of it for a time.[22]

The increase in the frequency of occurrence of a behavior that is reinforced is the very property of reinforcement that permits the fascinating variety and subtlety that occur in operant as opposed to respondent behavior. Another process producing the variety we see in behavior is that of *conditioning.* When a primary or unconditioned reinforcing stimulus such as food is repeatedly paired with a neutral stimulus, the latter will eventually function as a reinforcing stimulus as well. An illustration of this would be as follows. The milk a mother feeds to her infant is an unconditioned reinforcer. If the food is

behavior which produced them. See Robert L. Burgess, Ronald L. Akers, "Are Operant Principles Tautological?" *The Psychological Record,* 16 (July, 1966), pp. 305-312.

[21] N. H. Azrin and D. F. Hake, "Conditioned Punishment," *Journal of the Experimental Analysis of Behavior,* 8 (September, 1965), pp. 279-293.

[22] See Jacob L. Gewirtz and Donald M. Baer, "Deprivation and Satiation of Social Reinforcers as Drive Conditions," *Journal of Abnormal and Social Psychology,* 57, 1958, pp. 165-172.

repeatedly paired with social attention, affection, and approval, these latter will eventually become reinforcing as will the mother herself as a stimulus object. Later these *conditioned reinforcers* can be used to strengthen other behaviors by making these reinforcers contingent upon those new behaviors.

Differential reinforcement may also alter the form of a response. This process is called *shaping* or *response differentiation.* It can be exemplified by a child learning to speak. At first, the parent will reinforce any vocalization, but as time wears on, and as the child grows older, the parent will differentially reinforce only those responses which successfully approximate certain criteria. The child will be seen to proceed from mere grunts to "baby-talk" to articulate speech.[23]

Of course, organisms, whether pigeons, monkeys or people, do not usually go around behaving in all possible ways at all possible times. In short, behavior does not occur in a vacuum; a given behavior is appropriate to a given situation. By appropriate we mean that reinforcement has been forthcoming only under certain conditions and it is under these conditions that the behavior will occur. In other words, differential reinforcement not only increases the probability of a response, it also makes that response more probable upon the recurrence of conditions the same as or similar to those that were present during previous reinforcements. Such a process is called *stimulus control* or *stimulus discrimination.* For example, a child when he is first taught to say "daddy" may repeat it when any male is present, or even, in the very beginning, when any adult is present. But through differential reinforcement, the child will eventually only speak the word "daddy" when his father is present or in other "appropriate" conditions. We may say that the father, as a stimulus object, functions as a discriminative stimulus (S^D) setting the occasion for the operant verbal response "daddy" because in the past such behavior has been reinforced under such conditions.

It has also been discovered that the pattern or schedule of reinforcement is as important as the amount of reinforcement. For example, a *fixed-interval* schedule of reinforcement, where a response is reinforced only after a certain amount of time has passed, produces a lower rate of response than that obtained with reinforcement based on a *fixed-ratio* schedule where a response is reinforced only after a certain number of responses have already been emitted. Similarly a response rate obtained with a fixed-ratio schedule is lower than that obtained with a *variable-ratio* schedule, where reinforcement occurs for a certain proportion of responses randomly varied about some central value. A schedule of reinforcement, then, refers to the response *contingencies* upon which reinforcement depends. All of the various schedules of reinforcement, besides producing lawful response characteristics, produce lawful extinction rates, once reinforcement is discontinued. Briefly, behavior reinforced on an intermittent schedule takes longer to extinguish than behavior reinforced on a continuous schedule.

This concept, schedules of reinforcement, is one the implications of which are little understood by many behavioral scientists, so a few additional words are in order. First of all, social reinforcements are for the most part intermittent. One obvious result of this fact is the resistance to extinction and satiation of much social behavior, desirable as well as undesirable. This is not peculiar to human social

[23] This seems to be the process involved in learning to become a marihuana user. By successive approximations, the user learns (from others) to close on the appropriate techniques and effects of using marihuana. See Howard S. Becker, *Outsiders,* Glencoe, Ill.: The Free Press, 1963, pp. 41-58.

behavior, for even lower organisms seldom are faced with a continuous reinforcement schedule. Nevertheless, reinforcements mediated by another organism are probably much less reliable than those produced by the physical environment. This is the case because social reinforcement depends upon behavioral processes in the reinforcer which are not under good control by the reinforcee. A more subtle, though essentially methodological, implication of this is that because most social behaviors are maintained by complex intermittent schedules which have been shaped over a long period of time, a social observer, newly entering a situation may have extreme difficulty in immediately determining exactly what is maintaining a particular behavior or set of behaviors. Nor can the individual himself be expected to be able to identify his own contingencies of reinforcement.[24]

An important aspect of this theory is the presentation of the general ways that stimuli and responses can be formed into complex constellations of stimulus-response events. Although the basic principles are simple and must be separated to distinguish and study them, in actual life the principles function in concert, and consist of complex arrays and constellations.[25] Such complexity can be seen in the fact that single S-R events may be combined into sequences on the basis of conditioning principles. That is, responses can be thought to have stimulus properties. In addition, more than one response may come under the control of a particular stimulus. Thus, when the stimulus occurs, it will tend to set the occasion for the various responses that have been conditioned to it. These responses may be competitive, that is, only one or the other can occur. When this is so, the particular response which does occur may also depend upon other discriminative stimuli present in the situation that control only one or the other response. Finally, while some of the stimuli to which an individual responds emanate from the external environment, social and otherwise, some come from his own behavior. An individual is, then, not only a source of responses, he is also a source of some stimuli—stimuli that can effect his own behavior.

The most general behavioral principle is the Law of Operant Behavior which says that behavior is a function of its past and current environmental consequences. There have been numerous studies with children[26] as well as adults[27] which indicate that individual behavior conforms to this law. Of much more interest to sociologists is an experiment designed by Azrin and Lindsley in 1956[28] to investigate cooperative social behavior. Their study demonstrated that cooperative behavior could be developed, maintained, eliminated and reinstated solely through the manipulation of the contingency between reinforcing stimuli and the cooperative response. This basic finding has received much subsequent support. It has also been demonstrated that not only cooperative behavior, but also competitive behavior and leading and

[24] Cressey encountered this problem in trying to get trust violators to reconstruct past associations. Cressey, *Other People's Money, op. cit.,* p. 149.

[25] Arthur Staats, "An Integrated-Functional Learning Approach to Complex Human Behavior," *Technical Report 28,* Contract ONR and Arizona State University, 1965.

[26] See, for example, S. W. Bijou and P. T. Sturges, "Positive Reinforcers for Experimental Studies with Children—Consumables and Manipulatables," *Child Development,* 30, 1959, pp. 151-170.

[27] J. G. Holland, "Human Vigilance," *Science,* 128, 1959, pp. 61-67; Harold Weiner, "Conditioning History and Human Fixed-Interval Performance," *Journal of the Experimental Analysis of Behavior,* 7 (September, 1964), pp. 383-385.

[28] N. H. Azrin and O. R. Lindsley, "The Reinforcement of Cooperation Between Children," *The Journal of Abnormal and Social Psychology,* 52 (January, 1956).

following behavior are a function of their past and present consequences.

Another of the behavioral principles we mentioned was that of stimulus discrimination. A discriminative stimulus is a stimulus in the presence of which a particular operant response is reinforced. Much of our behavior has come under the control of certain environmental, including social stimuli because in the past it has been reinforced in the presence of those stimuli. In an experiment by Donald Cohen,[29] a normal 13-year-old boy named Justin, when placed under identical experimental conditions emitted different behaviors depending upon whether his partner was his mother, brother, sister, friend, or a stranger. The results of this investigation demonstrated that Justin's social behavior was differentially controlled by reinforcement; but it also demonstrated that his behavior was different depending upon the social stimuli present, thus reaffirming the principle of stimulus discrimination. In other words, the dynamic properties of his social behavior, whether cooperative, competitive, leading or following, were controlled by his previous extra-experimental history with his teammates, although the experimenter could change those behaviors by experimentally altering the contingencies of reinforcement. It is, of course, almost a truism to say that an individual behaves differently in the presence of different people. The significance of this experiment, however, is that the investigator was able to isolate the determining variables and the principles by which they operated to produce this common phenomenon.

While this is by no means a complete survey of the relevant experimental tests of the behavioral principles outlined above, it may serve to point out that many forms of "normal" social behavior function according to the Law of Operant Behavior. But what about "deviant" behavior? Can we be sure these same principles are operating here? Unfortunately there have been no studies which attempt to test directly the relevance of these behavioral principles to criminal behavior. But there have been several experimental investigations of deviant behaviors emitted by mental patients. For example, in a study by Ayllon and Michael,[30] it was shown that the bizarre behaviors of psychotics functioned according to these learning principles. In this particular study various behavioral problems of psychotic patients were "cured" through the manipulation of reinforcement contingencies. Such principles as extinction, negative and positive reinforcement, and satiation were effectively utilized to eliminate the unwanted behaviors.[31] This study was one of the first experimental tests of the contention that not only conforming but also many unusual, inappropriate, or undesirable behaviors are shaped and maintained through social reinforcement. In another experiment Isaacs, Thomas, and Goldiamond[32] demonstrate that complex adjustive behaviors can be operantly conditioned in long-term psychotics by manipulating available reinforcers.

In yet another investigation,[33] the

[29] Donald J. Cohen, "Justin and His Peers: an Experimental Analysis of a Child's Social World," *Child Development,* 33, 1962.

[30] T. Ayllon and J. Michael, "The Psychiatric Nurse as a Behavioral Engineer," *Journal of the Experimental Analysis of Behavior,* 2, 1959, pp. 323-334.

[31] There is, of course, no intention on our part to equate "mental" illness or similarly severe behavior problems with criminal behavior. The only connection that we are making is that both may be seen to function according to the same basic behavioral principles and both may be in opposition to established norms.

[32] W. Isaacs, J. Thomas, and I. Goldiamond, "Application of Operant Conditioning to Reinstate Verbal Behavior in Psychotics," *Journal of Speech and Disorders,* 25, 1960, pp. 8-12.

[33] T. Ayllon and N. Azrin, "The Measurement and Reinforcement of Behavior of

personnel of a mental hospital ward for schizophrenics recorded the behavior of the patients and provided consequences to it according to certain preestablished procedures. Without going into the many important details of this long investigation, we may note that in each of the six experiments that were carried out, the results demonstrate that reinforcement was effective in maintaining desired performances, even though these were "back-ward" psychotics who had resisted all previous therapy, including psychoanalysis, electroshock therapy, lobotomies and so forth.

> In each experiment, the performance fell to a near zero level when the established response-reinforcement relation was discontinued. . . . The standard procedure for reinforcement had been to provide tokens . . . [exchanged] for a variety of reinforcers. Performance decreased when this response-reinforcement relation was disrupted (1) by delivering tokens independently of the response while still allowing exchange of tokens for the reinforcers (Exp II and III), (2) by discontinuing the token system entirely but providing continuing access to the reinforcers (Exp IV), or (3) by discontinuing the delivery of tokens for a previously reinforced response while simultaneously providing tokens for a different, alternative response (Exp I and VI). Further, the effectiveness of the reinforcement procedure did not appear to be limited to an all-or-none basis. Patients selected and performed the assignment that provided the larger number of tokens when reinforcement was available for more than one assignment (Exp V).[34]

Again, we cannot review all of the relevant literature, yet perhaps the three investigations cited will serve to emphasize that many forms of deviant behavior are shaped and maintained by various contingencies of reinforcement.[35] Given this experimental evidence we would amend Sutherland's first and eighth propositions to read:

I. *Criminal behavior is learned according to the principles of operant conditioning.*

II. "Criminal behavior is learned in interaction with other persons in the process of communication."

As DeFleur and Quinney have noted, the major implication of this proposition is that symbolic interaction is a necessary condition for the learning of criminal behavior.[36] Of direct relevance to this is an experiment designed to test the relative significance of verbal instructions and reinforcement contingencies in generating and maintaining a certain class of behaviors.[37] In brief, the results indicated that behavior could not be maintained solely through verbal instructions. However, it was also discovered that it was an extremely arduous task to shape a set of complex behaviors without using verbal instructions as discriminative stimuli. Behavior was quickly and effectively developed and maintained by a combination of verbal instructions *and* reinforcement consequences. Symbolic interaction is, then, not enough, contingencies of reinforcement must also be present.

From the perspective of modern behavior theory, two aspects of socialization are usually considered to distinguish it from other processes of behavioral change: (1) Only those behavioral changes occurring through learning are considered relevant; (2) only the changes in behavior having their origins in interaction with other

Psychotics," *Journal of the Experimental Analysis of Behavior,* 8 (November, 1965), pp. 357-383.

[34] *Ibid.,* p. 381.

[35] See also J. J. Eysenck (ed.), *Experiments in Behaviour Therapy,* New York: Pergamon Press, The Macmillan Company, 1964. L. Krasner and L. Ullman, *Research in Behavior Modification,* New York: Holt, Rinehart and Winston, 1965. L. Ullman and L. Krasner, *Case Studies in Behavior Modification,* New York: Holt, Rinehart and Winston, 1964.

[36] DeFleur and Quinney, *op. cit.,* p. 3.

[37] T. Ayllon and N. Azrin, "Reinforcement and Instructions with Mental Patients," *Journal of the Experimental Analysis of Behavior,* 7, 1964, pp. 327-331.

persons are considered products of socialization.[38] Sutherland's theory may, then, be seen to be a theory of differential socialization since he, too, restricted himself to learning having its origin in interaction with other persons. While social learning is, indeed, important and even predominant, it certainly does not exhaust the learning process. In short, we may learn (and, thus, our behavior would be modified) without any direct contact with another person. As such, Sutherland's theory may be seen to suffer from a significant lacuna in that it neglected the possibility of deviant behavior being learned in nonsocial situations. Consequently, to be an adequate theory of deviant behavior, the theory must be amended further to include those forms of deviant behavior that are learned in the absence of social reinforcement. Other people are not the only source of reinforcement although they are the most important. As Jeffery[39] has aptly noted, stealing is reinforcing in and by itself whether other people know about it and reinforce it socially or not. The same may be said to apply to many forms of aggressive behaviors.[40]

There are many studies which are relevant to social interaction and socialization on the one hand, and Sutherland's second proposition on the other. For example, in a study by Lott and Lott[41] it was found that when child A was reinforced in the presence of child B, child A would later select child B as a companion. The behavior of selecting child B was not the behavior that was reinforced. The experimental conditions simply paired child B with positive reinforcement. In accordance with the principle of conditioning, child B had become a conditioned positive reinforcer. As such any behavior which produced the presence of child B would be strengthened, such behaviors, for example, as verbal responses requesting child B's company. Thus, as Staats[42] has noted, the results of this study indicate that the concepts of reinforcing stimuli and group cohesion are related when analyzed in terms of an integrated set of learning principles.

Glaser[43] has attempted to reformulate Sutherland's differential association theory in terms of social identification. It should be recognized, however, that identification as well as modeling and imitative behavior (which are usually associated with identification) comprise just one feature of the socialization process. Furthermore, such behavior may be analyzed quite parsimoniously with the principles of modern behavior theory. For example, in a study by Bandura and Ross,[44] a child experienced the pairing of one adult with positive reinforcers. Presumably this adult would become a conditioned reinforcer. And indeed, later it was found that the child imitated this adult more than he did an adult who was not paired with positive reinforcers. That is, the one adult, as he became a stronger reinforcer, had also become a stronger S^D for imitating or following behavior.

---

[38] Paul E. Secord and Carl W. Backman, *Social Psychology,* New York: McGraw-Hill, 1964.

[39] Jeffery, *op. cit.*

[40] For some evidence that aggressive behavior may be of a respondent as well as an operant nature, see N. Azrin, R. Hutchinson, and R. McLaughlin, "The Opportunity for Aggression as an Operant Reinforcer during Aversive Stimulation," *Journal of the Experimental Analysis of Behavior,* 8 (May, 1965), pp. 171-180.

[41] B. E. Lott and A. J. Lott, "The Formation of Positive Attitudes Toward Group Members," *The Journal of Abnormal and Social Psychology,* 61, 1960, pp. 297-300.

[42] Arthur Staats, *Human Learning,* New York: Holt, Rinehart and Winston, 1964, p. 333.

[43] Glaser, "Criminality Theories and Behavioral Images," *op. cit.*

[44] A. Bandura, D. Ross, and S. Ross, "A Comparative Test of the Status Envy, Social Power and the Secondary Reinforcement Theories of Identification Learning," *Journal of Abnormal and Social Psychology,* 67, 1963, pp. 527-534.

Thus, Bandura's and Ross's results demonstrate that imitating or following behavior is at least in part a function of the reinforcing value of people as social stimuli.

> On the basis of these results it is suggested that a change in the reinforcing value of an individual will change his power as a stimulus controlling other people's behavior in various ways. An increase in the reinforcing value of an individual will increase verbal and motor approach, or companionable responses, respectful responses, affectionate behavior, following behavior, smiling, pleasant conversation, sympathetic responses and the like.[45]

The relevance of these studies is that they have isolated some of the determining variables whereby the behavior of one person is influenced or changed by the behavior of another as well as the principles by which these variables operate. We have, of course, only scratched the surface. Many other variables are involved. For instance, not all people are equally effective in controlling or influencing the behavior of others. The person who can mediate the most reinforcers will exercise the most power. Thus, the parent, who controls more of his child's reinforcers, will exercise more power than an older sibling or the temporary "baby sitter." As the child becomes older and less dependent upon the parent for many of his reinforcers, other individuals or groups such as his peers may exercise more power. Carrying the analysis one step further, the person who has access to a large range of aversive stimuli will exert more power than one who has not. Thus a peer group may come to exercise more power over a child's behavior than the parent even though the parent may still control a large share of the child's positive reinforcers.

In addition to the reinforcing function of an individual or group, there is, as seen in the Cohen and the Bandura and Ross studies, the discriminative stimulus function of a group. For example, specific individuals as physical stimuli may acquire discriminative control over an individual's behavior. The child in our example above is reinforced for certain kinds of behaviors in the presence of his parent, thus the parent's presence may come to control this type of behavior. He is reinforced for different behaviors in the presence of his peers, who then come to set the occasion for this type of behavior. Consequently this proposition must be amended to read: II. *Criminal behavior is learned both in nonsocial situations that are reinforcing or discriminative, and through that social interaction in which the behavior of other persons is reinforcing or discriminative for criminal behavior.*

III. "The principal part of the learning of criminal behavior occurs within intimate personal groups."

In terms of our analysis, the primary group would be seen to be the major source of an individual's social reinforcements. The bulk of behavioral training which the child receives occurs at a time when the trainers, usually the parents, possess a very powerful system of reinforcers. In fact, we might characterize a primary group as a generalized reinforcer (one associated with many reinforcers, conditioned as well as unconditioned). And, as we suggested above, as the child grows older, groups other than the family may come to control a majority of an individual's reinforcers, e.g., the adolescent peer group.

To say that the primary group is the principal molder of an individual's behavioral repertoire is not to ignore social learning which may occur in other contexts. As we noted above, learning from social models can be adequately explained in terms of these behavioral principles. The analysis we employed there can also be extended to learning from the mass media and

[45] Staats, 1964, *op. cit.*, p. 333.

from "reference" groups. In any case, we may alter this proposition to read:
III. *The principal part of the learning of criminal behavior occurs in those groups which comprise the individual's major source of reinforcements.*

IV. "When criminal behavior is learned, the learning includes (a) techniques of committing the crime, which are sometimes very complicated, sometimes very simple; (b) the specific direction of motives, drives, rationalizations, and attitudes."

A study by Klaus and Glaser[46] as well as many other studies[47] indicate that reinforcement contingencies are of prime importance in learning various behavioral techniques. And, of course, many techniques, both simple and complicated, are specific to a particular deviant act such as jimmying, picking locks of buildings and cars, picking pockets, short- and big-con techniques, counterfeiting and safe-cracking. Other techniques in criminal behavior may be learned in conforming or neutral contexts, e.g., driving a car, signing checks, shooting a gun, etc. In any event, we need not alter the first part of this proposition.

The second part of this proposition does, however, deserve some additional comments. Sutherland's major focus here seems to be motivation. Much of what we have already discussed in this paper often goes under the general heading of motivation. The topic of motivation is as important as it is complex. This complexity is related to the fact that the same stimulus may have two functions: it may be both a reinforcing stimulus and a discriminative stimulus controlling the behavior which is followed by reinforcement.[48] Thus, motivation may be seen to be a function of the processes by which stimuli acquire conditioned reinforcing value and become discriminative stimuli. Reinforcers and discriminative stimuli here would become the dependent variables; the independent variables would be the conditioning procedures previously mentioned and the level of deprivation. For example, when a prisoner is deprived of contact with members of the opposite sex, such sex reinforcers will become much more powerful. Thus, those sexual reinforcers that are available, such as homosexual contact, would come to exert a great deal of influence and would shape behaviors that would be unlikely to occur without such deprivation. And, without going any further into this topic, some stimuli may be more reinforcing, under similar conditions of deprivation, for certain individuals or groups than for others. Furthermore, the satiation of one or more of these reinforcers would allow for an increase in the relative strength of others.

Much, therefore, can be learned about the distinctive characteristics of a group by knowing what the available and effective reinforcers are and the

[46] D. J. Klaus and R. Glaser, "Increasing Team Proficiency Through Training," Pittsburg: American Institute of Research, 1960.

[47] See Robert L. Burgess, "Communication Networks and Behavioral Consequences," forthcoming.

[48] A central principle underlying this analysis is that reinforcing stimuli, both positive and negative, elicit certain respondents. Unconditioned reinforcers elicit these responses without training, conditioned reinforcers elicit such responses through respondent conditioning. Staats and Staats (*Complex Human Behavior,* New York: Holt, Rinehart and Winston, 1964) have characterized such respondents as "attitude" responses. Thus, a positive reinforcer elicits a positive attitude. Furthermore, these respondents have stimulus characteristics which may become discriminative stimuli setting the occasion for a certain class of operants called "striving" responses for positive reinforcers and escape and/or avoidance behaviors for negative reinforcers. These respondents and their attendant stimuli may be generalized to other reinforcing stimuli. Thus, striving responses can be seen to generalize to new positive reinforcers since these also will elicit the respondent responses and their characteristic stimuli which have become S^D's for such behavior.

behaviors upon which they are contingent. Basically, we are contending that the nature of the reinforcer system and the reinforcement contingencies are crucial determinants of individual and group behavior. Consequently, a description of an individual's or group's reinforcers, and an understanding of the principles by which reinforcers affect behavior, would be expected to yield a great deal of knowledge about individual and group deviant behavior.

Finally, the rationalizations which Cressey identifies with regard to trust violators and the peculiar extensions of "defenses to crimes" or "techniques of neutralization" by which deviant behavior is justified, as identified by Sykes and Matza,[49] may be analyzed as operant behaviors of the escape or avoidance type which are maintained because they have the effect of avoiding or reducing the punishment that comes from social disapproval by oneself as well as by others. We may, therefore, rewrite this proposition to read: IV. *The learning of criminal behavior, including specific techniques, attitudes, and avoidance procedures, is a function of the effective and available reinforcers, and the existing reinforcement contingencies.*

V. "The specific direction of motives and drives is learned from definitions of the legal codes as favorable or unfavorable."

In this proposition, Sutherland appears to be referring, at least in part, to the concept "norm" which may be defined as a statement made by a number of the members of a group, not necessarily all of them, prescribing or proscribing certain behaviors at certain times.[50] We often infer what the norms of a group are by observing reaction to behavior, i.e., the sanctions applied to, or reinforcement and punishment consequences of, such behavior. We may also learn what a group's norms are through verbal or written statements. The individual group member also learns what is and is not acceptable behavior on the basis of verbal statements made by others, as well as through the sanctions (i.e., the reinforcing or aversive stimuli) applied to his behavior (and other norm violators) by others.

Behavior theory specifies the place of normative statements and sanctions in the dynamics of acquiring "conforming" or "normative" behavior. Just as the behavior and even the physical characteristics of the individual may serve discriminative functions, verbal behavior, and this includes normative statements, can be analyzed as S^D's. A normative statement can be analyzed as an S^D indicating that the members of a group ought to behave in a certain way in certain circumstances. Such "normative" behavior would be developed and maintained by social reinforcement. As we observed in the Ayllon-Azrin study[51] of instructions and reinforcement contingencies, such verbal behavior would not maintain any particular class of behaviors if it were not at least occasionally backed by reinforcement consequences. Extending their analysis, an individual would not "conform" to a norm if he did not have a past history of reinforcement for such conforming behavior. This is important, for earlier we stated that we can learn a great deal about a group by knowing what the effective reinforcers are and the behaviors upon which they are contingent. We may now say that we can learn a great deal about an individual's or a group's behavior when we are able to specify, not only what the effective reinforcers are, but

---

[49] Cressey, *Other People's Money, op. cit.*, pp. 93-138. G. M. Sykes and David Matza, "Techniques of Neutralization: A Theory of Delinquency," *American Sociological Review,* 22 (December, 1957), pp. 664-670.

[50] George C. Homans, *Social Behavior: Its Elementary Forms,* New York: Harcourt, Brace and World, 1961.

[51] Ayllon-Azrin, 1964, *op. cit.*

also what the rules or norms are by which these reinforcers are applied.[52] For these two types of knowledge will tell us much about the types of behavior that the individual will develop or the types of behaviors that are dominant in a group.

For example, it has often been noted that most official criminal acts are committed by members of minority groups who live in slums. One distinguishing characteristic of a slum is the high level of deprivation of many important social reinforcers. Exacerbating this situation is the fact that these people, in contrast to other groups, lack the behavioral repertoires necessary to produce reinforcement in the prescribed ways. They have not been and are not now adequately reinforced for lawful or normative behavior. And as we know from the Law of Operant Reinforcement, a reinforcer will increase the rate of occurrence of any operant which produces it. Furthermore, we would predict that given a large number of individuals under similar conditions, they are likely to behave in similar ways. Within such groups, many forms of social reinforcement may become contingent upon classes of behaviors which are outside the larger society's normative requirements. Norms and legal codes, as discriminative stimuli, will only control the behavior of those who have experienced the appropriate learning history. If an individual has been, and is, reinforced for such "normative" behavior, that behavior will be maintained in strength. If he has not been, and is not now reinforced for such behaviors they would be weak, if they existed in his repertoire at all. And, importantly, the reinforcement system may shape and maintain another class of behaviors which do result in reinforcement and such behaviors may be considered deviant or criminal by other members of the group. Thus we may formulate this proposition to read: V. *The specific class of behaviors which are learned and their frequency of occurrence are a function of the reinforcers which are effective and available, and the rules or norms by which these reinforcers are applied.*

VI. "A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law."

This proposition is generally considered the heart of Sutherland's theory; it is the principle of differential association. It follows directly from proposition V, and we must now refer back to that proposition. In proposition V, the use of the preposition "from" in the phrase, "learned from definitions of the legal codes as favorable or unfavorable," is somewhat misleading. The meaning here is not so much that learning results *from* these definitions as it is that they form part of the *content* of one's learning, determining which direction one's behavior will go in relation to the law, i.e., lawabiding or lawbreaking.

These definitions of the law make lawbreaking seem either appropriate or inappropriate. Those definitions which place lawbreaking in a favorable light in a sense can be seen as essentially norms of evasion and/or norms directly conflicting with conventional norms. They are, as Sykes and Matza and Cressey note, "techniques of neutralization," "rationalizations," or "verbalizations" which make criminal behavior seem "all right" or justified, or which provide defenses against self-reproach and disapproval from others.[53] The principle of negative

[52] Staats and Staats, *op. cit.*

[53] Sykes and Matza, *op. cit.,* Cressey, *Other People's Money, op. cit.,* pp. 93-138; Donald R. Cressey, "The Differential Association Theory and Compulsive Crimes," *Journal of Criminal Law, Criminology and Police Science,* 45 (May-June, 1954), pp. 29-40; Donald R. Cressey, "Social Psychological Foundations for Using Criminals in the Rehabilitation of Criminals," *Journal*

reinforcement would be of major significance in the acquisition and maintenance of such behaviors.

This analysis suggests that it may not be an "excess" of one kind of definition over another in the sense of a cumulative ratio, but rather in the sense of the relative amount of discriminative stimulus value of one set of verbalizations or normative statements over another. As we suggested in the last section, normative statements are, themselves, behaviors that are a function of reinforcement consequences. They, in turn, may serve as discriminative stimuli for other operant behaviors (verbal and nonverbal). But recall that reinforcement must be forthcoming, at least occasionally, before a verbal statement can continue as a discriminative stimulus. Bear in mind, also, that behavior may produce reinforcing consequences even in the absence of any accompanying verbal statements.

In other terms, a person will become delinquent if the official norms or laws do not perform a discriminative function and thereby control "normative" or conforming behavior. We know from the Law of Differential Reinforcement that that operant which produces the most reinforcement will become dominant if it results in reinforcement. Thus, if lawful behavior did not result in reinforcement, the strength of the behavior would be weakened, and a state of deprivation would result, which would, in turn, increase the probability that other behaviors would be emitted which are reinforced, and such behaviors would be strengthened. And, of course, these behaviors, though common to one or more groups, may be labelled deviant by the larger society. And such behavior patterns, themselves, may acquire conditioned reinforcing value and, subsequently, be enforced by the members of a group by making various forms of social reinforcement, such as social approval, esteem, and status contingent upon that behavior.

The concept "excess" in the statement, "excess of definitions favorable to violation of law," has been particularly resistant to operationalization. A translation of this concept in terms of modern behavior theory would involve the "balance" of reinforcement consequences, positive and negative. The Law of Differential Reinforcement is crucial here. That is, a person would engage in those behaviors for which he had been reinforced most highly in the past. (The reader may recall that in the Ayllon-Azrin study with schizophrenics, it was found that the patients selected and performed those behaviors which provided the most reinforcers when reinforcement was available for more than one response.) Criminal behavior would, then, occur under those conditions where an individual has been most highly reinforced for such behavior, and the aversive consequences contingent upon the behavior have been of such a nature that they do not perform a "punishment function."[54] This leads us to a discussion of proposition VII. But, first, let us reformulate the sixth proposition to read: VI. *Criminal behavior is a function of norms which are discriminative for criminal behavior, the learning of which takes place when such behavior*

of Research in Crime and Delinquency, 2 (July, 1965), pp. 45-59. See revised proposition IV.

[54] This, then, is essentially differential reinforcement as Jeffery presents it. We have attempted to show how this is congruent with differential association. Further, while Jeffery ignores the key concepts of "definitions" and "excess" we have incorporated them into the reformulation. These definitions, viewed as verbalizations, become discriminative stimuli; and "excess" operates to produce criminal behavior in two related ways: (1) verbalizations conducive to law violation have greater discriminative stimulus value than other verbalizations, and (2) criminal behavior has been more highly reinforced and has produced fewer aversive outcomes than has law abiding behavior in the conditioning history of the individual.

is more highly reinforced than noncriminal behavior.

VII. "Differential associations may vary in frequency, duration, priority, and intensity."

In terms of our analysis, the concepts frequency, duration, and priority are straightforward enough. The concept *intensity* could be operationalized to designate the number of the individual's positive and negative reinforcers another individual or group controls, as well as the reinforcement value of that individual or group. As previously suggested the group which can mediate the most positive reinforcers and which has the most reinforcement value, as well as access to a larger range of aversive stimuli, will exert the most control over an individual's behavior.

There is a good reason to suspect, however, that Sutherland was not so much referring to differential associations with other persons, as differential associations with criminal *patterns*. If this supposition is correct, then this proposition can be clarified by relating it to differential contingencies of reinforcement rather than differential social associations. From this perspective, the experimental evidence with regard to the various schedules of reinforcement is of major importance. There are three aspects of the schedules of reinforcement which are of particular importance here: (1) the *amount* of reinforcement: the greater the amount of reinforcement, the higher the response rate; (2) the *frequency* of reinforcement which refers to the number of reinforcements per given time period: the shorter the time period between reinforcements, the higher the response rate; and (3) the *probability* of reinforcement which is the reciprocal of responses per reinforcement: the lower the ratio of responses per reinforcement, the higher the rate of response.[55]

Priority, frequency, duration, and intensity of association with criminal persons and groups are important to the extent that they insure that deviant behavior will receive greater amounts of reinforcement at more frequent intervals or with a higher probability than conforming behavior. But the frequency, probability, and amount of reinforcement are the crucial elements. This means that it is the coming under the control of contingencies of reinforcement that selectively produces the criminal definitions and behavior. Consequently, let us rewrite this proposition to read: VII. *The strength of criminal behavior is a direct function of the amount, frequency, and probability of its reinforcement.*

IX. "While criminal behavior is an expression of general needs and values, it is not explained by those general needs and values since noncriminal behavior is an expression of the same needs and values."

In this proposition, Sutherland may have been reacting, at least in part, to the controversy regarding the concept "need." This controversy is now essentially resolved. For, we have finally come to the realization that "needs" are unobservable, hypothetical, fictional inner-causal agents which were usually invented on the spot to provide spurious explanations of some observable behavior. Futhermore, they were inferred from precisely the same behavior they were supposed to explain.

While we can ignore the reference to needs, we must discuss values. Values may be seen as reinforcers which have salience for a number of the members of a group or society. We agree with Sutherland to the extent that he means that the nature of these gen-

[55] R. T. Kelleher and L. R. Gollub, "A Review of Positive Conditioned Reinforcement," *Journal of the Experimental Analysis of Behavior* (October, 1962), pp. 543-597. Because the emission of a fixed ratio or variable ratio of responses requires a period of time, the rate of responding will indirectly determine the frequency of reinforcement.

eral reinforcers do not necessarily determine which behavior they will strengthen. Money, or something else of general value in society, will reinforce any behavior that produces it. This reinforcement may depend upon noncriminal behavior, but it also may become contingent upon a set of behaviors that are labelled as criminal. Thus, if Sutherland can be interpreted as meaning that criminal and noncriminal behavior cannot be maintained by the same set of reinforcers, we must disagree. However, it may be that there are certain reinforcing consequences which only criminal behavior will produce, for the behavior finally shaped will depend upon the reinforcer that is effective for the individual. Nevertheless, it is the reinforcement, not the specific nature of the reinforcer, which explains the rate and form of behavior. But since this issue revolves around contingencies of reinforcement which are handled elsewhere, we will eliminate this last proposition.

Concluding Remarks

The purpose of this paper has been the application of the principles of modern behavior theory to Sutherland's differential association theory. While Sutherland's theory has had an enduring effect upon the thinking of students of criminal behavior, it has, till now, undergone no major theoretical revision despite the fact that there has been a steady and cumulative growth in the experimental findings of the processes of learning.

There are three aspects of deviant behavior which we have attempted to deal with simultaneously, but which should be separated. First, how does an individual *become* delinquent, or how does he learn delinquent behavior? Second, what *sustains* this delinquent behavior? We have attempted to describe the ways in which the principles of modern behavior theory are relevant to the development and maintenance of criminal behavior. In the process, we have seen that the principle of differential reinforcement is of crucial importance. But we must also attend to a third question, namely, what sustains the pattern or *contingency* of reinforcement? We only have hinted at some of the possibly important variables. We have mentioned briefly, for example, structural factors such as the level of deprivation of a particular group with regard to important social reinforcers, and the lack of effective reinforcement of "lawful" behavior[56] and the concomitant failure to develop the appropriate behavioral repertoires to produce reinforcement legally.[57] We have also suggested that those behaviors which do result in reinforcement may, themselves, gain reinforcement value and be enforced by the members of the group through the manipulation of various forms of social reinforcement such as social approval and status, contingent upon such behaviors.[58] In short, new norms may develop and these may be termed delinquent by the larger society.

There are many other topics that are of direct relevance to the problem of deviant behavior which we have not been able to discuss given the requirements of space. For instance, no mention has been made of some outstanding research in the area of punishment. This topic is, of course, of prime importance in the area of crime prevention. To illustrate some of this research and its relevance, it has been found experimentally that the amount of behavior suppression produced by re-

[56] Robert K. Merton, *Social Theory and Social Structure,* Glencoe, Ill.: The Free Press, pp. 161-195. For a more complete discussion of social structure in terms relevant to this paper, see Robert L. Burgess and Don Bushell, Jr., *Behavioral Sociology,* Parts IV and V, forthcoming, 1967.

[57] *Ibid.,* and Richard A. Cloward, "Illegitimate Means, Anomie, and Deviant Behavior," *American Sociological Review,* 24 (April, 1959), pp. 164-177.

[58] Albert K. Cohen, *Delinquent Boys: The Culture of the Gang,* Glencoe, Ill.: The Free Press, 1955 .

TABLE 1
A DIFFERENTIAL ASSOCIATION-REINFORCEMENT THEORY OF CRIMINAL BEHAVIOR

Sutherland's Statements	*Reformulated Statements*
1. "Criminal behavior is learned." 8. "The process of learning criminal behavior by association with criminal and anti-criminal patterns involves all of the mechanisms that are involved in any other learning."	1. Criminal behavior is learned according to the principles of operant conditioning.
2. "Criminal behavior is learned in interaction with other persons in a process of communication."	2. Criminal behavior is learned both in nonsocial situations that are reinforcing or discriminative and through that social interaction in which the behavior of other persons is reinforcing or discriminative for criminal behavior.
3. "The principal part of the learning of criminal behavior occurs within intimate personal groups."	3. The principal part of the learning of criminal behavior occurs in those groups which comprise the individual's major source of reinforcements.
4. "When criminal behavior is learned, the learning includes (a) techniques of committing the crime, which are sometimes very complicated, sometimes very simple; (b) the specific direction of motives, drives, rationalizations, and attitudes."	4. The learning of criminal behavior, including specific techniques, attitudes, and avoidance procedures, is a function of the effective and available reinforcers, and the existing reinforcement contingencies.
5. "The specific direction of motives and drives is learned from definitions of the legal codes as favorable or unfavorable."	5. The specific class of behaviors which are learned and their frequency of occurrence are a function of the reinforcers which are effective and available, and the rules or norms by which these reinforcers are applied.
6. "A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law."	6. Criminal behavior is a function of norms which are discriminative for criminal behavior, the learning of which takes place when such behavior is more highly reinforced than noncriminal behavior.
7. "Differential associations may vary in frequency, duration, priority, and intensity."	7. The strength of criminal behavior is a direct function of the amount, frequency, and probability of its reinforcement.
9. "While criminal behavior is an expression of general needs and values, it is not explained by those general needs and values since noncriminal behavior is an expression of the same needs and values."	9. (Omit from theory.)

sponse-contingent aversive stimuli is a direct function of the intensity of the aversive stimulus, but that a mild aversive stimulus may produce a dramatic behavior-suppression if it is paired with reinforcement for an alternative and incompatible behavior. Furthermore, it has been discovered that if an aversive stimulus is repeatedly paired with positive reinforcement, and reinforcement is not available otherwise, the aversive stimulus may become a discriminative stimulus (S^D) for reinforcement and, consequently, not de-

crease the behavior's frequency of occurrence.

There are, in conclusion, numerous criteria that have been used to evaluate theories. One such set is as follows:

(1) The amount of empirical support for the theory's basic propositions.

(2) The "power" of the theory, i.e., the amount of data that can be derived from the theory's higher-order propositions.

(3) The controlling possibilities of the theory, including (a) whether the theory's propositions are, in fact, *causal* principles, and (b) whether the theory's propositions are stated in such a way that they suggest possible *practical* applications.

What dissatisfaction there has been with differential association can be attributed to its scoring low on these criteria, especially (1) and (3). We submit that the reformulated theory presented here answers some of these problems and better meets each of these criteria. It is our contention, moreover, that the reformulated theory not only specifies the conditions under which criminal behavior is learned, but also some of the conditions under which deviant behavior in general is acquired. Finally, while we have not stated our propositions in strictly axiomatic form, a close examination will reveal that each of the later propositions follow from, modify, or clarify earlier propositions.

SANCTIONS*

JACK P. GIBBS
Washington State University

Few concepts in sociology have wider application than sanction, if only because it enters into the notion of norms and related distinctions (e.g., laws versus customs). Given the conceptual link between sanctions and norms, it follows that the definition of crime or deviant behavior and the delimitation of related fields require reference to sanctions. The importance of sanctions is no less conspicuous in substantive theory, particularly on social order. As a case in point, very little remains if this element is deleted from Hobbesian theory; and, with reference to contemporary theoretical issues, the functionalist school is distinguished from the conflict school in terms of, *inter alia,* emphasis on sanctions.[1]

Despite its importance, the concept sanction remains ambiguous and its definition presents a formidable problem. There are few formal treatments of the concept, and many writers treat sanction as a primitive term. Leaving the concept undefined implies that its meaning is generally understood, and the assumption is by no means unjustified. Even without a formal definition, most observers would agree that the execution of a felon or setting a fine for a traffic offense represents a sanction. Nonetheless, the practice of leaving sanctions undefined has certain

* Some parts of this paper were written in connection with a Russell Sage fellowship for the study of law.

[1] On the whole, functionalists do not emphasize formal punitive sanctions as much as reciprocity and consensus as bases of social order. This is particularly true for Malinowski. For criticism of Malinowski on this point, see E. Adamson Hoebel, *The Law of Primitive Man,* Cambridge: Harvard University Press, 1954, pp. 190-210; and William Seagle, "Primitive Law and Professor Malinowski," *American Anthropologist,* 39 (April-June, 1937), pp. 275-290.