

PSYCHOPATHOLOGY: LEARNING THEORY, RESEARCH, AND APPLICATIONS

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Psychopathology: Learning Theory, Research, and Applications

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Preface

Interest in pathological behavior, however this is defined, is as old as the first written records. Many early formulations, such as the focus on evil spirits (demonology), seem to us, today, to be complete anachronisms. However, this change from a primitive point of view to the "modern" approach did not come about overnight. As psychology began to take on the raiment of her sister sciences, the influence of environmental events upon human behavior came to the fore, thus enabling a more productive analysis of all forms of behavior, including pathological ones. As an example of this change, the current interest in learning processes has made available large advances in methodology, which have opened the door to a proliferating body of data relevant to an experimental analysis of behavior pathology. This book is an attempt to plot a course through some of the landmarks, historical and contemporary, along the behavior modification path of progress.

In many respects this book had its origins in our graduate training careers. Both authors are products of a behaviorally oriented clinical program, in which the experimental analysis of clinical phenomena was emphasized. "Abnormal" events were interpreted as special instances of the laws governing all forms of human behavior.

In carrying this orientation into our practicum experiences, we became increasingly disillusioned with the nonexperimentally derived rules and practices governing most clinical endeavors. As a result, we subsequently became largely involved with the experimental analysis of the causes of psychopathology, and later we gradually applied this knowledge to the treatment of clinical problems. We were fortunate, during this time, to be associated with colleagues who favored and stimulated this interaction between laboratory and clinic.

In the course of these efforts, and in the burgeoning body of literature related to the experimental analysis of psychopathology, it became increasingly clear that an adequate scientific foundation for

the study and modification of abnormal behavior has been advanced to the point where it could be seriously considered as a substitute for conventional approaches. This has already been shown by the inroads on tradition made by the behavior modification movement, and it also seems possible to consider a similar change with regard to theory dealing with the causes of pathological conditions. From our point of view, psychologists stand at the threshold of a revolution in clinical psychology, which is just now beginning to make available to the research-oriented clinician a theoretical system and applied armamentarium far superior to those currently in vogue.

Such an analysis would present an approach that differs in several important ways from the standard abnormal psychology textbook. There would be few case studies, anecdotal reports, and narrative accounts. Instead, there would be an emphasis upon experimental models, scientific methodology, basic principles, and applications of these sources to the world of clinical events. Though there have been similar attempts in the past, it has been our conviction that these previous endeavors have been limited by the lack of relevant knowledge available. Thus, their impact on clinical theory and practice has been negligible.

With these views serving as a basic premise, we were then faced with the task of purveying these arguments into written form. Each author was initially assigned primary responsibility for different sections. These efforts were then reviewed and revised by the alternate author. The outcome thus represents an integrated product in every sense of the word. In addition, we have attempted to hew closely to the design described above.

In reviewing the final effort, we find that the level and orientation is directed toward the advanced undergraduate and beginning graduate student. Some prior knowledge of research methodology, learning theory, and clinical psychology will be of considerable benefit to the student.

There are many individuals who have made varying contributions all along the way. Where possible, we have made explicit recognition of this. In addition, we have learned from a variety of sources: teachers, patients, colleagues, and so on. It is an impossible task to delineate these varying influences, but clearly this book could not have been written without them. A number of individuals have read portions of drafts, and we should like to acknowledge the assistance of Richard LaBarba, Neil Schneiderman, Norman Spector, and a host of undergraduate and graduate students in this connection.

For the training that led to our current orientation, we owe thanks to Florida State University and the experimentally oriented Clinical Psychology graduate program, designed largely by Joel Green-spoon. Much of our own research reported here was supported by the Veterans Administration and NIMH grants. For the basic philosophy and technology, we are grateful to B. F. Skinner. For stimulation, love, and inspiration, we express thanks and dedicate this book to Bobbie and Joy.

Introduction

This book represents an attempt to synthesize contemporary behavior theory and the experiments that it has generated with the world of clinical events. Our view of behavior theory, simply stated, emphasizes the manner in which environmental events change human behavior, or influence learning. Our objective is to review some of the recent developments in behavior theory and to present a general analysis of the acquisition, maintenance, and modification processes influencing pathological conditions. Thus, we are primarily concerned with presenting a survey and analysis of the experimental literature that enables the isolation of those environmental conditions (variables) associated with the occurrence (causes) and cures (treatment, modification) of pathological states, however they are defined. Our focus will be restricted to learning systems, with particular emphasis upon operant conditioning principles.

Certainly it is true that a number of disciplines and methodologies have contributed to the study of psychopathology. All of these, however, have had their spokesmen and, for the most part, are based upon response-response methods—that is, attempts to correlate pathological conditions with other covarying phenomena (such as the biochemical basis of schizophrenia). The disadvantages of correlational analyses as compared with manipulative experimental procedures have been frequently enumerated (Spence, 1956; Kimmel, 1971), and this topic will be subsequently analyzed at some length. Suffice it to say for the present that the concept of research, as ap-

plied in this book, is more restricted than is true in the standard psychopathology text.

This book, then, is not intended to be an eclectic approach to the study and treatment of abnormal behavior. On the contrary, the data have been collected, reviewed, and analyzed within the orientation described. The overall approach emphasizes laboratory experiments with well-designed methodologies and the analysis of the data for clinical implications. Frequently, we will refer to research that we consider to be relevant in the above context, even though the investigator has not explicated this relationship and the study has not been incorporated into the standard clinical literature.

Structurally, the book opens with a general orientation toward a philosophy of science and the place of behavioral science within this context, with a special emphasis upon the functional analysis of relationships between independent variables and dependent variables. This paradigm involves the experimental manipulation of variables responsible for the initial acquisition or appearance of a particular problem condition as well as a determination of how such variables may contribute to its later modification. It is this group of formative variables that perhaps is most relevant to the causative base of psychopathology. Analysis of the historical trends in this area will bring the reader into contact with work initiated by investigators operating within a variety of behavioral systems, as well as with contemporary developments.

Maintenance and modification of pathological behavior, which may involve manipulation of the same or entirely different variables from those that contributed to the genesis of the problem condition, are discussed in a later section on behavior modification. Those modification practices and techniques that are designed to suppress or eliminate pathological behavior are discussed in one subsection. Another subsection is devoted to a discussion of attempts to increase the frequency of normal, constructive behavior with less emphasis on direct treatment of pathological conditions.

One final introductory note would seem to be in order. In some quarters the juxtaposition of the terms "research" and "psychopathology" is regarded as a terminological contradiction. A few hardy individuals have characterized themselves as experimental psychopathologists, but, in so doing, have run the risk of being excommunicated from the several mainstreams of psychology. Since their efforts most often employ lower organisms, and because of the abiding reluctance to accept such research as having much, if any, relevance to clinical events, clinicians generally dismiss these efforts as, at best, interesting tours de force. Occasionally, an investigator has roiled the waters, but the stir was soon replaced by a sea of Philistine tranquility.

Many experimentalists also minimize the importance of such endeavors. After all, scientists are interested in general principles and not in minor perturbations or deviations, which are the psychopathologists' stock-in-trade. Thus, castigated from the "pure" and

the "applied," the psychopathologist himself, as the stepchild of the behavioral sciences, is an interesting study in the delay of gratification. This book, in a very real sense, owes its inception and whatever value it may have to these investigators, and is also an attempt to offer some long overdue reinforcement for those individuals who have made and will continue to make contributions to the field.

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PART ONE / INTRODUCTION

The two chapters in Part One are addressed to a number of basic issues in the field of psychopathology. A brief review of the problems encountered in applying scientific procedures in psychology, in general, and psychopathology, in particular, is provided in Chapter 1.

Chapter 2 is largely concerned with a description of the problems attendant to traditional definition and classification practices. Alternative behavioral formulations are provided as substitutes for contemporary classification schemes.

Chapter 1 / Orientation: Philosophy, Science, and Methodology

Man has always had a deep and abiding interest in pathological behavior, not only because the unusual is intrinsically fascinating, but also because deviant acts make it necessary for society to attempt to control such behavior. By inference, it would appear that our present practices are the result of a long history of such endeavors. Thus, if an individual's behavior was regarded as undesirable by the group, various methods were introduced in an attempt to reduce the probability of any such future occurrence. In the process a series of conventions, rules, and finally laws were established, which more or less defined deviant behavior and established more permanent forms of control. Ultimately, these cultural practices were organized into institutional frameworks, thereby further increasing the probability that the prevailing systems would be maintained.

The definition of psychopathology, and the specific manner in which controls were implemented, differed from place to place and from time to time. Various cultures tolerated (and even promoted) certain forms of behavior (cannibalism, for example) that were prohibited by others. In Europe during the Middle Ages the number of pathological conditions was extensive, and they were harshly treated, since they were often equated with sin and regarded as the work of the devil. In our own times standards have been changing, both with regard to what is conventionally considered to be pathological (the sexual revolution, for example) and with regard to the forms of control (elimination of the death sentence for capital

crimes, misdemeanor charges for possession of marijuana). For the most part, however, practical expedience, rather than systematic study and planning, characterize conventional efforts to deal with pathological behavior.

Simultaneously, during the course of history a philosophy of human nature evolved that stressed a fundamental disparity between man and the world of inanimate events.

The notion that man is, in his barest essence a free agent propelled by self-initiated forces that defy, by their very nature, prediction or scientifically ordered description customarily applied to inanimate events is deeply engraved not only in the thoughts and values of Western civilization but, to some extent, at least in man's self-conceptualizations throughout the history of human societies. (Immergluck, 1964, p. 270)

As part and parcel of this process, certain values have evolved that represent the traditional view of man's nature, and this evolution has influenced the study of pathological behavior. So it is claimed, for example, that man is free to choose a course of conduct, or that an individual can initiate action and make spontaneous and capricious changes. Many of these notions appear to be compellingly conclusive on the basis of our observations of our own and our neighbor's behavior. However, these views occur as a function of tradition and private experience rather than objective analysis.

Independent of social practices, a science of human behavior has emerged with its own emphasis upon systematic analysis and controlled observation, rather than tradition, practical expedience, and private experience. In the process a considerable amount of information has been obtained, which also has relevance to an understanding of pathological behavior. Unfortunately, however, the knowledge derived from the scientific approach is not always compatible with our conventional views. Such disagreements between science and tradition have frequently occurred in the past. At one time, for example, church dogma was in direct conflict with the increasing evidence in support of a heliocentric theory of the solar system. Similarly, the theory of evolution was denounced when first proposed, because it conflicted with certain cherished notions about man's origins. Perhaps the present conflict will be resolved, as were these earlier disagreements. In the meantime, however, a number of problems, which are important to an experimental analysis of psychopathology, have resulted from these differences. Before some of these problems are considered, a brief discussion of the scientific enterprise might be helpful.

THE SCIENTIFIC ENTERPRISE

Science is often characterized as the search for order in nature. The scientist, of necessity, assumes that the events in which he is interested, whether the movement of heavenly bodies, muscle reflexes,

the structure of cells, or group cooperation, can ultimately be described within a lawful context: general principles that state the relationships between these events and their causal determinants. His ultimate goal is the positing of a probability statement—that is, given a particular set of circumstances, we can predict certain consequences. Even so-called disorderly phenomena, for example, hurricanes, cancerous processes, suicide, can ultimately be analyzed, despite their *apparent* unlawfulness. The basic assumption of lawfulness in nature is related to the concept of determinism, which asserts that all events occur as a function of antecedent conditions, or are “caused” by these conditions. The search for general relationships is almost always tied to controlled observations (for example, the experiment) that provide a specific example of the relationship between the events in which the scientist is interested. If there is an irreducible core of the scientific method, which may include hypotheses, theory construction, further tests, laws, models, etc., it is the controlled observation, or the experiment.

When the relationship between events is analyzed in the classical experiment (in the simplest case), an attempt is made to control all possibly relevant conditions while manipulating one (the independent variable) and observing its effect on the event in question (the dependent variable). If a steady state has been achieved prior to the introduction of the independent variable and this manipulation results in a significant change in the dependent variable, then a very elegant and parsimonious experiment has been conducted with a successful outcome (Sidman, 1960b). For example, a person may want to test a switch in an electrical circuit. A power source may be connected to a light in order to conveniently make this simple test. With the switch in the off position, a steady state is achieved (light off). After the switch is turned on, the light is illuminated. Several switch manipulations convince us that “light on” is a function of “switch on.” A simplified functional analysis has thus been completed. This process can be repeated by others, who are now provided with an objective definition of the events investigated and the procedures employed. Subsequent to repeated demonstrations of a given cause-and-effect relationship, the experiment and its findings enter the public domain and contribute to the establishment of a *general* relationship between the events analyzed. Theories may be constructed after data collection within an area allows analysis and comparison of functionally related variables.

There are many variations to this basic experimental design, some of which will be reviewed later in this chapter, but several implications should already be apparent: Science proceeds slowly from the simple to the complex, threading its route through a subject matter as cautiously as a man jumping from stone to stone over a rushing river. The reservoir of scientific knowledge is not static, but subject to change with many self-corrective techniques as well as with each new well-done experiment. Equipped with the basic faith of a universal determinism and armed with an experimental method-

ology, the scientist sets out on a pilgrimage toward the pot of gold at the end of his rainbow—the prediction and control of natural events.

THE SCIENTIFIC STATUS OF PSYCHOLOGY

Where does the study of behavior, abnormal or otherwise, fit into this scheme of sciences? A definition of the proper subject matter of psychology would seem to be in order. Aside from its nonscientific pursuits, psychology is the experimental science of observable (or potentially observable) behavior. Since all the above rules and tenets of science apply equally to psychology, the variables that are to contribute grist to the mill of psychological science must be observable, measurable, and replicable.

Some writers (Stevens, 1939) have posited that a science of psychology involves special problems, since the behavior of the experimenter may be a part of the subject matter or may otherwise bias the conduct of research. These objections, however, may be raised in the areas of biology and physiology as well. Such problems appear to be pseudoproblems as long as the experimenter clearly focuses upon objective, observable variables, whether the variables form part of the behavior of other organisms or whether the experimenter chooses to focus only upon his own behavior (as did Ebbinghaus, 1885).

As in the case of the other sciences, many psychologists similarly assume that human behavior can be described within some lawful context, and that this lawfulness will be revealed as the variables influencing human behavior are isolated through experimentation. As we have seen, to function as a scientist, the psychologist must share the faith of any scientist in the universal determinism of his subject matter. If behavior *appears* to be capricious and uncontrolled, it may be only that the controlling variables are historical (and therefore not currently observable) or multifarious and subtle and, consequently, not obvious to the observer.

This extension of science into the world of human affairs, however, has not been accomplished without a great deal of furor and debate. The difficulty is that this view of human behavior is clearly at odds with the traditional concept of man, which regards behavior as the result of "self-initiated forces" rather than the product of specifiable antecedent conditions. Psychology has thus been faced with the problem of resolving two apparently incompatible notions. The difference between these two orientations is frequently cast in terms of the free will versus determinism controversy. Thus, one popular variation of the free-will doctrine argues that people engage in "good" or "bad" behavior because they choose to do so.

A. Grünbaum (1952) analyzes the antideterministic position in terms of the four major arguments that are advanced against the possibility of a scientific study of man. The antideterminist argues that (1) the uniqueness of individual behavior, (2) the complexity of human behavior, (3) the goal-seeking nature of human behavior,

and (4) the necessity for assuming responsibility for one's actions raise doubt about the possibility of a true science of psychology. Although Grünbaum considers these to be specious arguments, he recognizes that the validity of the deterministic position must be established on empirical grounds. In the meantime, however, antideterminism has created serious problems in the development of a science of human behavior.

It is beyond the scope of this book to analyze this controversy and the entire sphere of influence exercised by antideterminism, but several of its ramifications are relevant to our interests. L. Immergluck (1964) regards the antideterministic position as the last outpost of vitalism and animism; animism is the practice of attributing causes to fictitious inner agents as explanatory devices, and one variation of it may be termed mentalism. The end result of this antideterministic influence is that each of us has strong preconceived biases about the whys and wherefores of human behavior, which may interfere with a scientific analysis of the variables influencing behaviors. So we say, for example, that the alcoholic can stop drinking if he simply exercises self-control, the balky student would improve if he weren't stubborn, thus directing our attention away from the actual determinants. It is often difficult, even for the sophisticated behavioral scientist, to escape these biases, since he is as much a product of cultural conditioning as the layman.

Thus, psychology, like any other science, has had to coin new terms to use in place of the commonsense terms. The great advantage of this endeavor, despite its unpopularity, is that it decreases our preconceived biases regarding the degree to which we can exercise voluntary control over events and reduces surplus connotations. The reduction of such biases, however, appears to deprive man of his own cherished notions about "human nature." The more we attribute to deterministic principles, the less there is to explain on the basis of individual choice and inner determinants (Skinner, 1959).

Despite many such obstacles, progress during the past thirty years suggests that a true science of human behavior, cast in deterministic terms, with an effective methodology, and a refined language system, is beginning to emerge. Concurrently, and perhaps even more importantly, resistance to such an endeavor is gradually dissipating, although there is still considerable reluctance to accept this doctrine completely. Our increasing attempts at social planning implicitly support the belief that such changes in the environment will result in constructive changes in man's behavior.

PSYCHOPATHOLOGY AND SCIENCE

Before embarking on a journey into the maze of psychopathology, let us consider how science can be an improvement over conventional approaches to the study of abnormal behavior. The history of mankind's attempts to deal with deviancy is, after all, a long one.

In no one field has there been more resistance to scientific

analysis than in the study of psychopathology. Paradoxically, it is not so much an antideterministic position that has retarded progress, as it is the wrong kind of determinism. History is replete with a myriad of notions that state purported relationships between certain events, on the one hand, and deviancy, on the other. These notions can be differentiated in terms of folk wisdom, pseudoscientific views, and pseudodeterministic views.

Among the first, for example, one might include the statements that "poverty breeds crime" and "alcoholism runs in families." Even a brief consideration of these putative relationships reveals their inadequacy as predictive statements. Not all poor people are criminals, and not all criminals come from economically deprived circumstances. Similarly, many alcoholics had parents who were teetotalers, and the presence of alcoholic parents may result in abstinence in the offspring. These, then, are simply rules of thumb that state low-level correlations, which have, therefore, limited predictive power. The existence of an *element* of truth in a general statement does not provide the scientist with a satisfactory, predictable relationship between events. The scientist hopes to achieve better than chance predictive power; else why bother to invest time and effort in his pursuit of knowledge and refinement? When our predictions are wrong as often as they are right, the statement or relationship from which the prediction is derived must be rejected or revised. The popular literature is replete with defective generalizations about pathological conditions. Unfortunately, these generalizations are often accepted without critical appraisal and frequently dictate the manner in which society attempts to control deviancy. It is conceivable, for example, that we could eliminate poverty and still not eliminate crime.

Many people, of course, recognize that such statements do not actually posit one-to-one relationships. It sometimes appears, however, that once we have established such rules of thumb, we are satisfied that we have achieved an important insight, and this satisfaction discourages a more thorough analysis of the problem.

Similarly, with regard to pseudoscientific notions, we have been told that deviancy is the result of almost everything from the changing phases of the moon (hence the word lunacy) to bumps on the head. Unfortunately, despite the superabundance of such speculations, they have not been accompanied by a comparable degree of scientific documentation. On the contrary, perhaps because human behavior is so multifaceted, almost any statement expressing a relationship between alleged causes and pathological effects has found support in some quarters.

Finally, many clinical systems may be considered pseudodeterministic in the sense that they attribute causes to fictitious inner agents that operate in a metaphysical sense (Immergluck, 1964). Frequently, in clinical psychology this position is cast in mentalistic terms. Thus, the person who deviates from the acceptable pattern is "mentally ill." Many authorities have decried the use