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The Human Reflex: Behavioral Psychology in Biblical Perspective

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Preface to Harper/CAPS Series

Throughout much of this past century, Christianity and psychology have been viewed as enemies. Religion has been a taboo topic for most psychologists, with a few notable exceptions such as William James and Gordon Allport. Psychology has been viewed with suspicion and fear by many in the Christian community. Within recent years, however, increasing numbers of individuals with personal commitment to the historic Judaeo-Christian faith have entered the counseling and behavioral science fields. Increasing numbers of ministers have received psychological training.

Several associations involving Christians in psychologically related fields have emerged, including the national Christian Association for Psychological Studies (CAPS). At the same time the American Psychological Association has recognized the legitimate study of psychology and religion with creation of Division 36, Psychologists Interested in Religious Issues. The Society for the Scientific Study of Religion has also blossomed into an international association with nearly 2000 members. Although Division 36 and S.S.S.R. are composed of members with a wide variety of Christian and non-Christian commitments, the trend is clearly toward the legitimizing of the study of psychology/religion relationships. In addition to these associations, several journals have been developed to provide outlets for those wishing to publish theory and research. Within conservative Christian circles are the Journal of Psychology and Theology, and the CAPS Bulletin. Other prestigious journals include the Journal for the Scientific Study of Religion and Zygon. There is a new willingness and perceived need to consider the ethical implications of research and practice as a result of the new knowledge that has been gained in the behavioral and biomedical sciences. Few behavioral scientists are willing to accept the notion that their research is totally objective, and many clinicians are questioning the validity of the detached, completely objective therapist model.
All of this is not to say that most psychologists are interested in
religion, or most Christians are comfortable with psychology. Nei­
ther is probably true. However, for a growing number of Chris­
tians and non-Christians, the rigorous study of relationships be­
tween psychology and religion in general (and Christianity in
particular) is an important and legitimate activity.
To date, there has been no systematic publishing outlet for those
committed to the Christian belief system wishing to write on a
professional level on Christianity/psychology relationships. Among
most religious publishers the tendency has been to popularize the
writing due to market considerations. Secular publishers have
tended to severely downplay or omit any explicit religious dimen­
sion. Christian Perspectives on Counseling and the Behavioral Sci­
ences is the first series to appear that is both explicitly Christian in
orientation, written on a professional level, and yet readable by
psychologically educated lay persons. Professionals in counseling
and the behavioral sciences will benefit, as will pastors. The books
in the Series will be valuable as supplementary texts in upper divi­
sion undergraduate courses, seminary and graduate programs.
The purpose of the Series is to describe and analyze relation­
ships between psychology and the orthodox Christian belief system.
At the same time, the Series will be investigational and exploratory.
For example, individual authors will undoubtedly take differ­
ett views on the basic issue of whether it is even possible to “inte­
grate” Christianity and psychology. The Series will encourage
examination of behavioral science findings and their implications
for understanding the Christian faith, as well as look at the impli­
cations of Christianity for the behavioral sciences. The topics ex­
plored will range from more general theoretical concerns to specific
phenomena and issues.
Books in the Series do not represent the views of Christian Asso­
ciation for Psychological Studies in any formal way. They reflect
the individual authors.
CAPS is a national organization of Christians working in psy­
chologically related fields, including psychology, psychiatry, sociol­
ogy, counseling and social work. It also encourages participation
and membership by members of the ministry. It was begun formal­ly in 1955 in Western Michigan as a predominantly regional
group. CAPS holds an annual convention, publishes a quarterly
Bulletin, sponsors regional meetings throughout the United States several times each year, and publishes a membership and referral directory. Members are asked to indicate agreement with the basic purposes and statement of faith of the association. Further information can be obtained from the Executive Secretary, 26711 Farmington Road, Farmington Hills, Michigan 48018.

We are pleased to publish *The Human Reflex* as the second book in the series, following the well-received initial volume, *The Human Puzzle*, by David G. Myers. *The Human Reflex* represents the first thorough analysis in book form of the methodology, concepts, and implications of behavioral psychology by an evangelical scholar who is specifically trained in psychology. Dr. Bufford has carefully presented the system of behavioral psychology and evaluated it from an orthodox Christian philosophical and theological framework. He has successfully pointed out both the weaknesses and strengths of behavioral psychology. Further, he has helpfully shown how behavior modification techniques can be applied within the Christian community in ways that complement the work of God and promote his purposes, while preserving the dignity and worth of each person. On a topic that all-too-often evokes intense and even irrational emotion from both the religious and the professional communities, Dr. Bufford's evenhanded treatment is much needed.

*Craig W. Ellison, Ph.D.*  
*Series Editor*
Acknowledgments

Many persons contributed at one time or another to the completion of this work. Some offered ideas and suggestions that are incorporated here (although neither the contributor nor I was always aware of it); others contributed more directly. Over the past several years, my students and colleagues have offered encouragement and suggestions, raised troublesome questions, suggested useful articles and resources, and in other ways facilitated the development of the viewpoint presented here.

It was Craig Ellison, editor of the Harper/CAPS Series, whose encouragement initiated this project and kept it progressing when my perseverance flagged or other activities threatened to prevent its conclusion. Both Craig Ellison and James Fitterling read the entire manuscript in an earlier form. Their comments and suggestions resulted in improvement in a number of areas. The ideas presented, however, are of course uniquely my own.

To Wesley C. Becker, Robert F. Peterson, Warren M. Steinman, and especially Sidney W. Bijou and C. B. Ferster, I express appreciation for their role in instructing me in the many technical details and practical applications of behavioral approaches.

To my wife, Kathleen, I express special appreciation for the suggestion—almost ten years ago now—that initiated my writing in the area of the relationship between behavioral psychology and biblical perspectives, and for her continued encouragement and support of my efforts.

Finally, I wish to thank Beverly Barnes, Janet Hughes, Deanna Poff, and Lanny Shaw, who typed the seemingly endless pages of manuscript that ultimately resulted in this volume.
Introduction

The purpose of this book is not to convince the reader of the value of behavior theory. Rather, it is to explore the relationship between behavior theory and a Christian perspective. Thus our examination of the characteristics of behavioral psychology will focus on those features that are relevant to exploring and clarifying this relationship.

As a psychological theory, behavior theory is unique. Psychological theories have generally been developed within the deductive tradition, with its emphasis on preliminary assumptions and hypotheses derived from theory. By contrast, behaviorists have adopted an inductive approach based on observation. Behavioral psychologists are also unique in having made the choice to restrict their science to observable behaviors and events. While adherents of other theoretical approaches also collect systematic observations of behavior and events, their interpretations are not restricted to the behavioral level. Rather, they make statements about unobservable reactions, such as stress and judgment.

Because of their exclusive emphasis on observable events, early behaviorists tended to ignore events that occurred within the organism, such as thoughts and feelings. Thus the organism came to be referred to by some as the "black box," implying that anything that occurred inside the box was not suitable for scientific inquiry. Recently, however, behaviorists have begun to approach such phenomena as thoughts and feelings through the study of what is known as "verbal behavior."1

Most critics—and many behaviorists—would agree that behavioral psychology tends to be both mechanistic and reductionistic. The restriction of the scope of psychological inquiry to observable processes is certainly consistent with mechanistic reductionism, and behaviorists also generally assume that evolutionary theory is true. If humans are "merely" animals, descended by means of evolution
from other animals, it follows that there should be fundamental similarities in the behavioral processes of animals and humans, and that the study of nonhuman animals should reveal some of the basic processes of human behavior.

This assumption was basic to the work of behavioral pioneer B. F. Skinner. It was his hope that a systematic study of the behavior of an arbitrarily chosen organism placed in an arbitrary environment might reveal basic principles of behavior that would have widespread applicability across organisms and environments. The fact that behaviorists followed through on this philosophy, and for many years did most of their research in the animal laboratory, has led some to dismiss the entire approach as “rat psychology.” While there is some justification for these charges, in recent years behaviorists have begun to concentrate on complex human behaviors. Further, it should be understood from the outset that the primary interest of early behavioral psychologists was not in animal behavior as such, but in the prospect that study of these organisms would shed light on human behavior, which is both more complex and less amenable to direct study for ethical reasons.

Having read this brief outline of behavioral theory, readers may wonder how it could have any application to a Christian life. As we shall see, however, many biblical teachings are based on what we now call behavioral principles. In fact, the concepts of the early pioneers of psychology and other sciences were rooted in Christian beliefs.

In the early days of psychological research, behaviorism and the more traditional introspective branches of psychology were polarized along the lines described above. In the past two decades, however, the distinctions between the two have blurred as behaviorists have moved away from strict adherence to behavioral guidelines, and other psychologists have begun to incorporate behavioral principles. Behavioral concepts have grown to be as complex and interesting as the human beings and social systems to which they are now applied.

Behavioral psychology still remains a separate field, however, and preference for this approach reflects a choice. The question of comparing theories has been a topic of some debate among philosophers of science. Some have argued that even the observational terms used by a particular theory are so influenced by that theory
that their meaning depends intimately on that theoretical context. Thus proponents of different theories may use the same terms, but their meanings inevitably differ. Even observations tend to be colored by the observer’s theoretical system: theory can influence what we observe, as well as the observational methods we employ. Thus there are no simple rules for evaluating the possible contributions of various psychological approaches.

Psychologist Sidney W. Bijou, in commenting on the problems of comparing alternative psychological systems, has suggested an analogy to the comparison of conventional and atomic submarines. He suggests that, in deciding which type of submarine is best, it is not particularly helpful to focus on individual components of the system such as engine type, fuel, costs of repair, and so on. Instead, we must look at the overall operation of the completed product and ask what it can do, at what cost, and with what results. Only then can we determine which machine best serves our purposes. The same is true with theories: we must examine them in their totality before we choose the one that best suits our purpose.

To this end, Part I of *The Human Reflex* introduces some basic concepts of behavioral psychology. Part II concentrates on several theoretical issues: comparison and contrast of behavioral and biblical worldviews, an examination of applications of behavioral principles to the social system, and a discussion of punishment. Part III focuses on a theoretical introduction to behavior modification and practical applications of behavior theory, and Part IV discusses ways in which behavioral principles can be applied to child rearing, Christian education, and pastoral and evangelistic activities.

NOTES


4. Sidney W. Bijou, personal communication.
PART I

The Nature of Behavioral Psychology
1. Basic Behavioral Concepts

This chapter examines the basic concepts and terminology used in behavioral psychology. Readers who have a working knowledge of the field may find much of the material familiar, but for those who have not had prior exposure to behaviorism, this is a very important chapter.

The field of behavioral psychology has expanded greatly from its early beginnings at the turn of the century. Today, behavioral psychology can be viewed (1) as a body of knowledge; (2) as a method and philosophy of science; (3) as a systematic approach to the study of the psychological functioning of organisms; (4) as a set of principles useful for the analysis and understanding of observed behavior; (5) as a technology for application to practical human problems; and (6) as a philosophy of the underlying nature of our world and its significance.

Broadly speaking, behavioral psychology takes a natural science approach to psychology. That is, it involves the study of natural phenomena through the systematic study of observable events. In studying these events, behaviorists are interested in the response of the total organism rather than in the functioning of its various parts (as in biology), or the interactions between organisms (as in sociology).

Another important feature of behavioral psychology is its functional or causal approach to the study of behavior. This approach emphasizes "the relationship between stimuli, behavior and the consequences of this behavior in the environment." Behaviorists use the term environment to denote a whole range of events that precede and follow behavior. Specifically, these events fall into four categories: physical, chemical, social, and organismic. Thus behavioral psychology explicitly recognizes that events within the organism may be thought of as comprising a part of its environment, and may exert controlling influence over its behavior.
For our purposes, then, we may define behavioral psychology as *the systematic study of the functional relationships between the observable behavior of organisms (both human and animal) and other observable behaviors and events, as these organisms interact with themselves, with each other, and with the world around them.*

**The Origins of Behavioral Psychology**

The revolt against introspective analysis, which dominated the relatively new field of psychology at the turn of the century, was begun by John B. Watson. Watson noted from his observations of animal research that introspection precluded contributions from the animal laboratory and he strongly rejected introspection as a suitable technique. Instead, he adopted a straightforward experimental objective: “Given the stimulus to be able to predict the response and given the response to be able to predict the antecedent stimulus.” He proposed the following research methods: (1) observation, with and without instrumental control; (2) conditioned reflex method; (3) verbal report method; and (4) testing methods. Although the last two methods later fell into disrepute among behaviorists, Watson played a major role in the subsequent widespread adoption of the first two methods in psychological research in the United States.

By 1919, the *conditioned reflex* method had become one of Watson’s chief research tools. He adapted this method from the work of Russian physiologist Ivan Pavlov. While studying the salivary gland of dogs, Pavlov discovered that the dogs would begin to salivate in anticipation of food when their trainer simply entered the room in which they were kept. Intrigued, he followed up on this discovery with a series of experiments in which a bell was rung before presentation of the dogs’ food. After a while, the dogs would salivate whenever the bell was rung. If food was no longer presented after the bell was rung, the salivation response would gradually become weaker and would eventually cease. This process came to be called *classical conditioning.*

Further work was done by E. L. Thorndike, a contemporary of Watson’s, who developed the *law of effect* from his study of animal behavior in puzzle boxes. Thorndike observed that when first placed in the box, an animal would exhibit trial-and-error behav-
ior in its attempts to escape. Once it had successfully escaped from
the box and been rewarded with food, the animal gradually be­
came more effective in its escape attempts. From these observa­
tions, Thorndike postulated that effective behavior is learned,
while behavior that is not effective is not learned. In his words,
“[Acts] accompanied or closely followed by satisfaction . . . will be
more likely to recur; those which are accompanied or closely fol­
lowed by discomfort . . . will be less likely to occur.”

B. F. Skinner is generally credited with shaping the development
of modern behavioral psychology. Although the roots of his ap­
proach can be seen in the conditioned reflex methodology of Pavlov
and Watson, and especially in the problem-solving behavior ob­
served by Thorndike, he departed from their thinking in a number
of ways. First, Skinner adamantly objected to theorizing. He advo­
cated a strictly empirical approach, in which there was no theory
around which to organize the data. In this method, the relationship
between behavior and events is described, but it is not interpreted
in subjective terms such as pain, pleasure, and so on. In his early
writings, Skinner’s objections seem to be directed toward theory in
general; in his later writings, however, his objections are against
deductive theory in particular.

A second departure from the work of his predecessors was Skin­
nér’s contention that the Pavlovian method of classical conditioning
adopted by Watson was limited to a narrow range of behaviors,
and that a special type of conditioning that he termed operant con­
ditioning was more characteristic of everyday behavior. Skinner
also developed the Skinner Box, an experimental chamber for ani­
mal research; and the cumulative record and cumulative recorder, a
technique and an instrument for recording behavior in the Skinner
Box. These refinements of technique enabled Skinner to collect
new types of data and to replace the number of trials or percentage
of errors with a new primary measure, the rate of behavior. Much
of Skinner’s experimental work focused on the relationship be­
tween various reinforcement schedules and rates of performance of
a bar press response in the Skinner Box.

Although Skinner’s early work was conducted in the 1920s and
1930s, behavioral psychology remained an obscure academic disci­
pline until the late 1950s and early 1960s, when it began to move
from animal research to human application. One of the first steps
in this direction was the publication of *Personality and Psychotherapy* by J. Dollard and N. E. Miller in 1950.\textsuperscript{14} Dollard and Miller reformulated Freud's psychoanalytic theory in learning theory (behavioral) terms, thus bringing together behavior theory and clinical practice. Skinner's book *Science and Human Behavior*, published in 1953,\textsuperscript{15} further stimulated exploration of the application of behavior theory to human problems. In 1958, Joseph Wolpe published a book that argued that neuroses were learned and could be treated with behavioral learning techniques.\textsuperscript{16} Further impetus was provided by Arnold Lazarus, who developed the technique of *systematic desensitization* as a method of eliminating phobias.\textsuperscript{17} The mid-60s saw the publication of texts that discussed the use of behavioral techniques in the treatment of retardation, as well as in general education. At the same time, several journals devoted to the publication of behavioral research and theory appeared, and a professional society was founded to support continued research. Behavioral psychology was thus firmly established as an alternative to traditional introspective techniques.

**Experimental Design**

Behavioral research differs from that of the mainstream psychological theories in several ways: (1) search for "powerful effects"; (2) goal of experimental control; (3) eschewing statistics; (4) emphasis on basic research; and (5) use of individual-subject research designs.

Skinner and other behaviorists believed that they should begin their research by seeking behavioral effects that were so powerful as to be obvious in the absence of statistical analysis. Such powerful phenomena would be assumed to be basic and important. They believed that it was through such approaches that chemistry, physics, and other "hard" sciences had made their most important breakthroughs, and that psychology should follow a similar path.

Paralleling the emphasis on powerful effects was a search for experimental control, as opposed to mere prediction or statistical significance. Behaviorists believed that the objective of psychology should be to develop such a complete understanding that a given behavior could be produced whenever desired. With such a goal, mere statistical significance was not enough. What was needed was
the systematic study of individual organisms, in order to discover
the conditions under which a particular behavior could be produced. Ideally, for example, it should be possible to produce a
given pecking behavior in each pigeon tested.

To carry out such objectives, it was important not to obscure the
effects of individual behavior by averaging groups; hence single-
subject approaches were adopted. Simple descriptive statements
took the place of standard descriptive and inferential statistics.
Data were presented in the form of graphs and cumulative records,
from which it was believed that strong effects should be apparent.

Another distinctive feature of the behavioral approach, at least in
its early years, was a tendency to focus almost exclusively on basic
rather than applied research. While much of Skinner's recent writ­
ing has emphasized practical application, his research has been
largely in the animal laboratory. It was not until the 1960s that
behavioral psychology began to have a widespread applied research
emphasis.

THE NATURE OF THEORY

Before we explore the specific characteristics of behavior theory,
it will be helpful to understand the general nature of theory. Es­
sentially, any theory consists of three elements: assumptions, obser­
vations, and interpretations.

Assumptions are those ideas that are believed to be true from the
outset, and for which no formal justification is required. Three
assumptions that are basic to scientific research are (1) that the
world exists; (2) that the world can be apprehended by human
intellect; and (3) that the world operates in an orderly, predictable,
or lawful fashion. Observations are the data used to support a the­
ory. Data may be collected in a number of ways: questionnaires,
surveys, self-report inventories, direct observation of behavior, use
of measuring instruments, and so on. Interpretations are the expla­
nations of the results of the observation process; that is, interpreta­
tion is the process of relating observations to assumptions.

Interpretations of scientific data are necessarily influenced by the
assumptions with which the scientist began. Behavior theorists and
other theorists differ primarily in terms of these assumptions, and
hence in their interpretations of data. Because they make different
assumptions about the nature of reality and about the most productive methods to employ in seeking to understand the world, they also interpret data in different ways. The following account should help to clarify this point.

A certain psychologist (not a behaviorist) who was interested in measuring the effect of stress on judgment and psychological comfort decided to perform the following experiment. Three groups of thirty students each were tested in a judgment task, in which they were to report whether a test figure was the same as or different from a sample. Each student was given one hundred trials. To vary the amount of stress involved, the psychologist decided to use an electric shock. One group was told that the apparatus was defective and that they might experience an occasional minor shock, but that they should simply ignore it. This group experienced minor shocks following randomly selected responses and received shocks an average of once in each ten trials, for a total of ten shocks. The second group was given the same instructions as the first group, but no shocks were actually given. The third group received no shocks, nor were they told of the possibility.

At the end of the experiment, the experimenter told each student that he wanted to find out whether the mechanical failure that sometimes resulted in electric shock might have affected their performance on the judgment task. He asked each student to rate the degree to which electric shocks had affected performance on a 10-point scale, from “1—no effect on performance,” to “10—completely disrupted performance.” Judgment was measured by computing the percentage of correct responses on the comparison task.

After collecting and analyzing his data, the experimenter found that the group that had actually received the shocks made the most errors; the second group, which was warned of the shocks but did not receive any, made less errors; and the group that neither received shocks nor was warned of shocks made the fewest errors. Reports of the effect of shock were similar, and the differences between groups was significant. In summarizing these results, the experimenter concluded: “As stress increased, judgment deteriorated and psychological distress increased.”

A behaviorist would have evaluated these results quite differently. Indeed, a behaviorist probably would not have undertaken such an experiment in the first place, since neither its methods nor its
purpose are consistent with the behavioral approach.* Since behaviorists prefer to focus on behavior and events without reference to hypothetical constructs or intervening variables, a behavioral psychologist would object to references to judgment and psychological distress. Thus a behaviorist might state the interpretation in this way: “As threat of shock increased, errors increased and participants reported greater discomfort.”

Notice the differences between these two interpretations. The first psychologist uses the term “judgment” to refer to internal process that are not directly observable. The behaviorist uses the objective term “errors,” which recognizes only the overt behavior of the students. Similarly, the first psychologist’s report of “psychological distress” is a subjective judgment of an unobservable condition, while the behaviorist’s preference for the term “greater discomfort” merely reports the students’ specific responses to the questionnaires.

DEDUCTION AND INDUCTION

The two basic approaches to scientific investigation are deduction and induction. Deduction proceeds from a formally developed theory to the collection of data. Induction proceeds from the collection of data to the development of theory.

DEDUCTION

The deductive approach begins by making assumptions about how the world operates. These assumptions are stated as clearly as possible, and the practical implications are spelled out as hypotheses. Data is then collected and interpreted. If the data is consistent with the hypotheses, new data may be collected and interpreted.

For example, in the stress experiment described above, the psychologist began with the hypothesis that stress impairs judgment, and with a second hypothesis that stress increases subjective dis-

* It should be acknowledged that behaviorists have conducted similar research, using what is called the “match-to-sample” paradigm. However, both the procedures and the goals of the research are quite different. The behavioral emphasis is on learning how certain conditions or events affect behavior, rather than on developing support for a formal theoretical system. In addition, the behavioral psychologist would probably study neutral conditions and various levels of shock in the same students rather than in different groups of students.
tress. He varied both the shock and the warning about shock in the belief that these procedures would produce stress.

With respect to the effects of electric shock, the experimenter further hypothesized that threat of shock or actual shock would increase reported disruption of the judgment task. He observed that reported disruption was greater under threat of shock than in the neutral condition, and was still greater when shock was actually experienced. He interpreted his observations as confirming the hypothesis that threat of shock or actual shock would produce stress. Having demonstrated to his satisfaction that stress varied as a result of shock or threat of shock, the experimenter then evaluated the data on errors. He had hypothesized that stress would impair judgment. He observed that errors increased with shock threat and were greater still with actual shock. Thus his interpretation of this finding was that, "As stress increased, judgment deteriorated."

In the deductive method, the cycle of hypothesis, observation, and interpretation goes on indefinitely. Support for a theory is cumulative; the more data supporting a theory, the stronger the theory. A theory generally falls into disrepute only when a new theory is better able to explain the existing data, or when a new theory generates a body of data that is consistent with itself but inconsistent with the first theory.

**INDUCTION**

The inductive approach begins by making as few assumptions as possible. The inductive experimenter may begin with the question, "I wonder what would happen if...?" The experiment is then tried, and the observations recorded. The inductive method can be said to consist of the following elements: assumptions, observations, inductive generalizations, and interpretations. While assumptions and interpretations are an inevitable part of the process, they are clearly deemphasized.

In this method, information is gradually accumulated through a series of experiments. When a particular relationship is repeatedly observed, the experimenter becomes more convinced of the importance of the relationship. Systematic exploration of variations in a given experiment (systematic replication) helps to establish the generality and limits of a given relationship.  

The inductive method can be illustrated by the following series of experiments. It is observed that a hungry pigeon, when placed in
a Skinner Box, will learn to peck a lighted disk if food is sometimes provided immediately after and contingent upon pecking. Subsequent experiments use a variety of organisms (e.g., dogs, children) and a variety of behaviors (e.g., stepping on a treadle, playing ping-pong). Similarities in the observations of the results of the series leads to the inductive generalization that food deprived (hungry) organisms will engage in a variety of behaviors if food is made contingent on these responses. When this method is applied to the stress experiment described above, the behaviorist would observe that the students reported that shock and threat of shock interfered with their performances, and would make the inductive generalization that “As threat of shock increased, errors increased and participants reported greater discomfort.” Statements concerning nonobservable events such as “stress” and “judgment” do not enter into inductive reasoning.

**Respondent and Operant Behavior**

Behavioral psychologists divide all behavior into two broad classes: respondent and operant. Respondent behavior is primarily controlled by events that precede it, while operant behavior is primarily controlled by events that follow it.

Because respondent behavior was discovered first, early theorists assigned it a central role in accounting for behavior. Thus Watson, in his early twentieth-century writings, conceptualized respondent learning as the mode of acquiring all behavior. With the emerging prominence of Skinner in the late 1950s, operant behavior has come to be accorded a more central role. Respondent behavior is now thought to be less influential, especially in the behavior of such complex organisms as human beings. As we shall see, the range of possible respondent behavior is very narrowly determined by biological factors, while the range of possible operant behavior is less dependent on biological factors and hence wider.

**Respondent Behavior**

Respondent behavior is essentially involuntary: an event occurs, and a response follows. This happens automatically, in response to either an unconditioned stimulus or to a conditioned stimulus, so long as the organism is capable of responding. For example, when a light is flashed in a person’s eyes, blinking occurs automatically.
This is an *unconditioned response* to an *unconditioned stimulus*, and is biologically determined. If a tone that does not normally elicit a blinking response is repeatedly presented and immediately followed by a flashing light, the tone itself will eventually come to elicit eyeblinking. Eyeblinking has thus become a *conditioned response* to a *conditioned stimulus*. This process of pairing a neutral stimulus (the tone) with an unconditioned stimulus (the light) is called *respondent conditioning*. In respondent conditioning, a new stimulus acquires the capacity to elicit an existing response.

The ability of a conditioned stimulus to produce a given respondent may be weakened or eliminated by repeatedly presenting the conditioned stimulus in the absence of the unconditioned stimulus. For example, if the tone is sounded many times without being followed by the light flash, the tone will eventually stop eliciting the eyeblink response. This process is called *respondent extinction*.

The range of respondent behavior is limited for several reasons. First, because respondents are narrowly determined by biological factors, learning does not alter the response; learning simply brings respondents under control of new stimuli. Second, some respondents seem to be unconditionable. Third, conditioned stimuli lose their eliciting capacity very quickly. Fourth, most socially significant behaviors are not respondent in nature.

Although the scope of respondent behavior is limited, respondents interact with operant behavior in a number of important and complex ways. The stimuli that control operant behavior generally have simultaneous eliciting functions for respondent behavior as well. In addition, emotions, which are respondent behaviors, affect operant interactions in several important ways.

**OPERANT BEHAVIOR**

Respondent behavior is passive: the environment acts on the organism to produce a response. In operant behavior, however, the organism acts on the environment to produce a change, and this change is followed by a reinforcing stimulus. Thus, whereas the sequence of events in respondent behavior is stimulus-response, the sequence of events in operant behavior is response-reinforcing stimulus.*

* This definition is simplified to highlight the basic feature of operant behavior: the controlling role of stimulus consequences. It is possible for stimulus events that occur before an operant to acquire a controlling influence over operant performance.
Let us take the act of eating a piece of pie as an example. In this interaction, lifting fork to mouth is the response, and the pleasurable taste of the pie is the reinforcing stimulus. If the taste of the pie is unpleasant, the action of lifting it to the mouth will not be reinforced, and the person will be unlikely to continue eating pie.

**Measuring Operants**

To measure the base rate of a given response, we must choose a unit of measurement. For operants, several measures of response strength have been developed: (1) rate or frequency; (2) latency; (3) duration; and (4) intensity or amplitude. The particular measure of response strength used depends on which aspect of behavior is of most concern. Frequency has been found to be an extremely useful measure of response strength over a wide range of behaviors and situations, and is the most commonly used of the four.

To illustrate, we will take the example of a crying infant. Rate or frequency specifies how many times a given response occurs in a specified unit of time. We might measure frequency of crying by counting the number of crying episodes per hour. Latency refers to the amount of time between presentation of a given stimulus and the onset of a specific response. We could measure the latency for crying in terms of the number of seconds between the time we place the infant in bed and the onset of crying. Duration is the amount of time in which a given performance, in this case one crying episode, occurs. Intensity or amplitude is a measure of the strength or forcefulness of behavior. We could measure the amplitude of the infant’s crying in terms of the number of decibels registered on a decibel meter.

Another concept related to measuring operants is base rate, the ongoing frequency of an operant before any specific contingencies have been introduced. Thus the base rate is the natural frequency of an operant. For example, the base rate of crying for a given child is the frequency with which it spontaneously cries when no special contingencies (such as punishment) are in effect.

**Strengthening and Weakening Operants**

The principal processes in operant conditioning involve the stimulus events that follow the response. These are the consequences or effects of the response. In general, any operant may result in the presentation or the removal of a stimulus; similarly,
stimuli may be classified into three groups: positive, negative, and neutral. The effect of a stimulus event on an operant will depend on the function of the stimulus for that organism, and on whether the stimulus is presented or removed.

Operants may be strengthened by two procedures: positive or negative reinforcement. When an operant is followed by the presentation of a stimulus, and an increase in the frequency of the operant is observed, the process is called positive reinforcement. For example, giving Mary a cookie after she runs an errand would be called positive reinforcement if her willingness to run errands were strengthened. When an operant is followed by the removal of a stimulus and an increase in the frequency of the response is observed, the process is called negative reinforcement. For example, putting on dark glasses in the bright sunlight results in reduced glare. If wearing dark glasses is thus encouraged, the reduced brightness would be negatively reinforcing. Thus both positive reinforcement and negative reinforcement result in the increase in frequency of an operant.

Weakening operants may also be accomplished in two ways. If a response decreases in frequency when it is followed by a particular stimulus, the process is called punishment. If slapping Peter’s hand each time he touches a particular vase results in a decrease in the frequency of touching, this would be an example of punishment. A second procedure for weakening responses involves removing a stimulus following the response; the most common term for this process is response cost. Receiving a fine for speeding would be an example of response cost, provided it resulted in a reduced rate of speed for the driver. Note that both punishment and response cost result in a decrease in the frequency of a performance.

Reinforcement has been defined in terms of the effect of a stimulus on a response: in order to be termed a reinforcer, a stimulus must be shown to increase a response. Some question has been raised as to whether this is a circular definition. Such concerns can be minimized if it is remembered that a reinforcer, in principle, should be capable of strengthening a wide range of performances. However, in order to assess whether a particular stimulus event is a reinforcer for a given individual, it must be tested on some performance. For example, before we can conclude that a cookie is a reinforcer for Mary, we must check to see that it will strengthen a performance, such as her willingness to run errands.
**Stimulus Function**

Positive reinforcement, negative reinforcement, punishment, and response cost are examples of *stimulus functions*; other examples are discussed below. The concept of a stimulus function is important because it distinguishes between stimuli that affect behavior and stimuli that do not. Neutral stimuli, those which have no stimulus function, are more abundant than might at first be supposed. Most operants produce a variety of changes in the environment that have little or no effect on the ongoing operant. For example, speaking produces movement of the air near the body. Since such movement generally has no effect on behavior, it would be termed a neutral stimulus.

**Operant Reinforcement**

Reinforcers may be broadly grouped into two classes: primary reinforcers and conditioned (secondary) reinforcers. Primary reinforcers include those stimulus events that have reinforcing capacity without any specific learning experiences. In general, *primary reinforcers* are biologically based (e.g., food, water, air temperature, physical comfort, sex, avoidance of pain, and so on). *Conditioned reinforcers* are stimuli that have acquired their reinforcing capabilities by means of specific learning experiences. Basically, this involves their being associated with primary reinforcers. When a previously neutral stimulus is used to signal the availability of positive reinforcement following a given response, the stimulus will acquire a conditioned reinforcing function. For example, when a child receives stars for completed school assignments and is then permitted to trade stars for candy, stars acquire a conditioned reinforcing function.

**Operant Extinction**

Termination of reinforcement is referred to as *operant extinction*. When reinforcement is presented following a performance, the response rate increases to a level that is above the base rate. When reinforcement is terminated, the operant returns to the original base rate. Although no comparable technical term has been developed, it should be noted that there is a parallel for responses that have been punished. When a response is followed by
an effective punishment or response cost, the rate of the response is reduced; terminating punishment will result in a recovery of the base rate.

In operant interactions, reinforcement need not follow each operant. Mother may give Mary a cookie after she has run an errand on Monday, and not give her a cookie following Tuesday’s errand. When the stimulus event follows each response, it is called continuous reinforcement; a situation in which the stimulus does not always follow the response is called intermittent reinforcement. There are a number of ways by which intermittent reinforcement may be scheduled to occur; these are called schedules of reinforcement.

Many factors enter into defining schedules of reinforcement. Schedules that are determined mainly by the passage of time are interval schedules. Reinforcement schedules that are influenced by the number of responses are called ratio schedules. When the unit or number of responses is consistent, they are termed fixed interval or fixed ratio schedules. When the time interval varies, or when the number of responses changes from time to time, the schedules are called variable interval or variable ratio schedules.*

Operant Stimulus Control

Given controlling consequences, it is possible for stimulus events that occur before an operant to acquire a controlling influence over an operant performance. An operant performance that has come under control of an antecedent stimulus is called a discriminated operant.

A discriminated operant occurs at a higher (or lower) frequency in the presence of a particular stimulus event. For example, when a child learns to say “Daddy” when told, “Say Daddy,” or in the presence of the male parent, the child’s use of the word “Daddy” is a discriminated operant. The tendency for operants to come under

*While the basic types of schedules are simple and straightforward, the potential complexities are enormous. The units of time or ratio may be varied over wide ranges; two or more schedules may be used in sequence or simultaneously; and so on. Psychologists G. B. Ferster and B. F. Skinner have compiled an entire book cataloguing some of the characteristic response patterns generated by a number of different schedules of reinforcement,22 and numerous articles have been published on this topic.
control of events that precede them, and thus to become discriminated operants, is a natural and common occurrence. It would be unusual for any given performance to be followed by a reinforcing consequence whenever and wherever it occurs. The child’s use of the word “Daddy” quickly becomes discriminated, since the parental response to this expression is different in the presence of another person, such as the child’s mother. When no one is present, saying “Daddy” also goes unreinforced.

The stimulus that comes to control a discriminated operant (e.g., the presence of the male parent) is called a *discriminative stimulus*; and the process of coming under control of a discriminative stimulus (e.g., being reinforced for saying “Daddy” in his presence and not reinforced in his absence) is called *operant stimulus discrimination*. It is important to remember that the basic controlling influence in an operant performance is the consequence of the performance, the stimulus event that follows. In our example, the social consequence of the parent saying “good boy” and giving the child a hug is the major controlling event; however, when a hug and the words “good boy” occur only in the presence of Daddy, Daddy’s presence comes to exert discriminative stimulus control over the performance.

When a performance is consistently reinforced in the presence of a particular discriminative stimulus, other stimuli—to the degree that they are similar to the discriminative stimulus—will come to have a similar controlling function over the performance. This phenomenon is called *stimulus generalization*. The more similar a stimulus is to the training stimulus, the greater is its capacity to produce the response whose probability is increased in the presence of the training stimulus. A child who learns to say “dog” in the presence of the family pet will generally say “dog” in the presence of similar animals (e.g., cats). This same effect may be observed with cows and horses, but their differences in size would account for a lower probability that the child would call them “dog.” Eventually, of course, the child learns to say “dog” only when a dog is present, and to name other animals accurately. The process involved requires repeated reinforcement of saying “dog” in the presence of dogs, and extinction (or punishment) for saying “dog” in the presence of other animals.
Developing New Operants

To this point, operants have been referred to as responses. Henceforth the term *performances* will be used, in order to make an important distinction. We noted earlier that respondents are biologically determined. The basic operant response units are also inherited, as psychologists Sidney W. Bijou and Donald M. Baer note. Pigs don’t fly; biological factors preclude this response. Unlike respondents, however, operants may be linked together into complex sequences. Because of this important distinction between the innate response units and the complex response sequences developed through operant conditioning, operants will now be referred to as performances. A performance is a sequence of relatively discrete operant responses linked together into a precisely coordinated sequence that is carried out as a functional unit.

The distinction between operant responses and operant performances is basic. Operant responses are biologically given. By contrast, operant performances involve coordinated sequences of operant responses that are developed through learning. For example, movement of the fingers, hands, and arms are innate biological capabilities; playing the piano is a complex operant performance that links together these foundational response units into an integrated functional performance. A performance is a functional unit because there are no explicit stimulus consequences that control the individual components. Rather, the reinforcement maintains the overall performance.

Before a response can be strengthened by reinforcement, it must first occur. For example, until a child begins to vocalize, there is little the parent can do to influence the process of learning to speak. Once vocalization begins, however, operant procedures may play an important role in the further development of speech. Some specialized techniques are needed to develop new operants: these techniques are called *shaping* and *successive approximation of a performance*.

The basic problem in developing new performances is that of linking together the right sequence of existing response units for the first time. Teaching a one-year-old child to say “Daddy” involves getting him to link together the syllables “da” and “dee” in the proper sequence. Typically, the child will spontaneously say
“da da da” and “dee dee dee,” but not “da dee.” To shape the child to say “Daddy,” the parent would begin by reinforcing any occurrences of the sequence “da dee,” even if it were part of a longer sequence such as “da da da da dee . . . .” Typically, the parent would hug the child and exclaim, “Good boy, you said ‘Daddy.’” Assuming this parental response is a reinforcer, the “da dee” sequence will be strengthened and will become more frequent. Over a period of time, the child will gradually come to say “da dee” more often; it will be easier to reinforce it, and if the parent is careful not to reinforce the child’s other babblings, it will become more clear and precise. Eventually, the child will also learn to say “Daddy” when prompted or when his father is present.

A basic principle, and one that is central to the process of shaping new performances, is response induction (sometimes called response generalization). This is the tendency for similar performances to increase in frequency if a given performance is reinforced. Since each performance is to some extent unique, this tendency is extremely important. In addition, it plays a role in developing new performances. In the shaping process, performances that are moderately low in frequency (such as the “da da da dee” sequence) are initially strengthened. The result is that similar performances—ones that are more like the desired performance—also become more probable. We can then gradually shift the criterion for reinforcement in the direction of performances that are more and more like the desired performance; when the desired performance begins to occur with some frequency, it can be strengthened and undesired performances can be progressively weakened. In our example, the parent would now reinforce only clear expressions of “Daddy” that are not immediately preceded or followed by other vocalizations.

Establishing Complex Performances

In general, pure shaping procedures are used mostly with simple performances and in persons or other organisms that have rather limited ranges of existing behavior. For example, once the child has developed a moderate vocabulary and a number of other discriminated performances, more sophisticated methods may be used to establish new performances or to bring existing performances under stimulus control. These methods include instructions, modeling and imitation, and chaining.
Instructions. From a behavioral perspective, we may think of instructions as a class of discriminative stimuli. Functionally, instructions specify the response that will be reinforced in their presence in much the same way that discriminative stimuli identify the circumstances under which a particular performance will be followed by particular stimulus consequences. In the example presented earlier, no amount of instructions to the infant to “say Daddy” would have been effective. For instructions to be effective, the required responses must already be available in the repertory of the individual, and they must be under stimulus control of the instructional stimuli.

In developing complex performances, instructions may be used initially, then gradually eliminated as the performance begins to come under the control of other stimulus events that are more intrinsic to the performance. For example, in learning to kick a soccer ball, the child is instructed to watch the ball, step next to it with his left foot, swing the right foot back, and then kick “through” the ball. As the child’s soccer skills improve, the sight of the approaching ball controls his stepping into position, drawing back his foot, kicking, and watching the ball fly away. A younger child might learn to kick the ball effectively over a longer period of time through a pure shaping process, in which the movement of the ball (and any social responses) are the reinforcers for successively approximating effective kicking style.

Technically, instructions and the use of other supportive discriminative stimuli in developing a given performance are called prompts. Once the behavior is developed, the prompts may be gradually removed so that the performance comes under control of the natural stimulus events; this process is called fading. In the soccer example, the instructions were prompts, and eliminating them over time would be fading.

Modeling and Imitation. From a behavioral perspective, the performance of the model may be viewed as a complex discriminative stimulus in which each element of the model’s performance controls a corresponding element in the performance of the person who imitates it. The behavior of a model thus may be viewed as similar to instructions. This implies that if the individual response elements are lacking, or they are not under control of the corre-
sponding behavior of the model, imitation will either fail to occur or will be imperfect. A typical third grade child can readily imitate the phrase “ten times ten equals one hundred,” since each of these words is already in the child’s repertory and under stimulus control. But the same child would probably have trouble saying “monoamine oxidase,” even though it has fewer syllables, because this particular sequence is not in the child’s repertory and under stimulus control.

**Chaining.** Performances are complex sequences of response that are linked together as a functional whole. Many performances could be fractionated into two or more elements, and each element brought under stimulus and reinforcement control. A more common practice, however, is to link two or more performances into a more complex sequence. For convenience and clarity these sequences have come to be called response chains. *Response chains,* then, are sequences of two or more performances that have been linked together into a new functional unit. Saying “ten times ten equals one hundred” might be termed an operant response chain, since we normally think of individual words as a functional response unit.

**Setting Events**

A *setting event* is a stimulus-response interaction that, by its very occurrence, will affect a wide variety of subsequent stimulus-response interactions. The most commonly described setting event in the behavioral literature is food deprivation. When an organism has gone without food for an extended period of time, a number of changes in ongoing stimulus-response interactions result. A wide range of responses that have previously been successful in obtaining food will be increased in frequency (e.g., saying “I’m hungry”). Conversely, a host of other responses will be reduced in frequency (e.g., play, work, sleep). Food deprivation will also affect emotional behavior, resulting in an increased tendency to become angry or impatient, and a reduced tendency to show pleasant emotional reactions.

A second major class of setting events is emotional behavior. Other examples of setting events include being ill, going without sleep for a long period, and experiencing the death of a loved one.
All the consequences of operant behavior affect both emotional behavior and other setting events. There is an intimate interplay between setting events, which affect dispositions to respond in a given situation, and the consequences of responding, which in turn affect the setting conditions of the organism and thus interact with dispositions to respond on subsequent occasions. For example, when Mother gives Mary a cookie for running an errand, Mary has a pleasant emotional response; this may affect all of her interactions with Mother for a time. Eating the cookie will also temporarily reduce the effectiveness of food as a reinforcer.

**Internal Events**

Physical events within the body (e.g., temperature and pain sensations, kinesthetic sensations, gastric secretions, pulsing of the heart muscle) are termed *internal events*. These are conceptualized as response or stimulus events, and may come to have the same interrelationships as overt behavior and external events. Internal events may interact with each other as well as with external events.

One example of the role played by internal events is illustrated by the responses set in motion by a headache. In the presence of this event, which functions as a discriminative stimulus, taking an aspirin is reinforced by the termination of the pain. In this interaction, we observe the process of negative reinforcement; that is, the response of taking an aspirin is strengthened by the removal of a stimulus, the headache. This is also an example of a discriminated operant performance, since the headache marked an occasion when taking medication would be reinforced.

**Operant and Respondent Interactions**

Before examining interactions between operant and respondent behavior, it may be helpful to briefly review the basic characteristics of each type of behavior. Respondents are controlled by events that precede them, and they generally occur whenever a functional eliciting stimulus is presented. By contrast, operants are controlled primarily by stimulus events that follow them. Because reinforcement need not follow each operant response, it is said that reinforcement follows with some probability. Further, operants may come under control of discriminative stimuli that mark the occasion...
It is widely believed that behavioral psychology is concerned only with the most basic forms of behavior, and is interested only in simple stimulus-response/response-stimulus terms. With the rapid advances in behavioral research over the past two decades, however, such a view has become increasingly misrepresentative. In reality, the behavioral spectrum is quite complex.

For example, in the life of Michael, a college student, a broad class of responses may be treated together as "academic responses." These responses may be followed by a number of consequences; for simplicity, these will be classed as reinforcing and punishing consequences. Reinforcing consequences (e.g., good grades, praise from his teachers) will tend to strengthen Michael's academic responses. Conversely, punishing consequences (e.g., his father's remark that Michael should "forget about college and go into the family business," a low mark on a math test) will tend to weaken Michael's academic responses.

In addition to affecting academic responses, which are operant in nature, reinforcement and punishment for academic responses will also have an affect on Michael's respondent behaviors. The reinforcing stimuli of good grades, for example, will also elicit emotional responses such as pleasure, confidence and self-satisfaction. The punishment of his father's remarks will elicit anxiety and self-doubt. To state this relationship in general terms, stimulus events that follow operant responses generally have two functions: (1) a reinforcing or punishing function for the operant that precedes them; and (2) an eliciting function for emotional respondents that follow them.

Another class of events is also produced by these interactions: setting event functions. Although the emotional effects of the reinforcing or punishing consequences for academic responses are a part of the overall interaction that affects Michael's probability of engaging in future academic responses, their effects are not limited to this area. The emotions generated—self-confidence, fear, anxiety, and so on—will also affect virtually all other ongoing interactions between Michael and his environment. Stated more generally, the emotional effects of the reinforcing and punishing consequences that follow an operant will affect the ongoing operant on which a particular operant is likely to be followed by a particular consequence.
interaction and virtually all other ongoing organism-environment interactions at that time.*

To add further complexity to the situation, any number of other stimulus events may exert an influence on Michael simultaneously with the negative and positive academic responses. For example, while he is trying to study, he may be distracted by a phone call from a friend, nagging hunger sensations, or the appeal of a nap. The prevailing consequences for each of these responses enters into the picture in determining which response will actually occur at any given moment. Thus it can be seen that, though conceptually simple, operant and respondent behaviors interact in intricate and complex ways.

NOTES


4. Ferster, Culbertson, and Boren, Behavior Principles, p. 3.

5. Bijou and Baer, Child Development I, p. 17.


8. Ibid.

* The effects of the emotional behaviors elicited may extend over a substantial period of time. For example, an Olympic gymnast who falls in the middle of a balance beam routine may be depressed for weeks or even months as a result of the emotional responses elicited by his inept behavior.
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10. Ibid., p. 187.
23. For another example of a complex set of behavioral interactions, see Bijou and Baer, Child Development I, pp. 65–70.
PART II

Major Issues:
A Biblical Perspective
2. Behavior Theory and Biblical Worldview

This chapter considers the question of whether there are fundamental inconsistencies between behavior theory and the biblical worldview. *

A Historical Perspective

To properly understand some of the issues involved in discussions of the relationship of science to Christian faith in the 1980s, it will be helpful to consider some of the historical developments that have led to our present viewpoints and perspectives. Although the fact is not now widely recognized, the Christian Church was at the forefront of the development of modern science. Fundamental to the development of science was the view that God created a world that had intrinsic order, that God commanded human beings to have "dominion" over the world, and that our ability to effectively exercise this control over our world required an understanding of its operation.1

Beyond the role of the Christian worldview in the rise of modern science, the Church also played a major role in the emergence of institutions of higher education. Harvard, Yale, Princeton, Columbia, Stanford, and virtually all of the major universities in the United States (prior to the establishment of the "land grant" universities in the late nineteenth century) were founded by various religious organizations.2 Historically, then, the widespread notion

* In so doing, it will be necessary to examine some rather abstract and philosophical issues. At the same time, however, an effort will be made to preview some of the practical implications of these issues that will be examined in greater detail in later chapters. Although the material is intrinsically complex, for the purposes of this chapter, the issues have necessarily been simplified.
that a religious worldview is inconsistent with a scientific worldview must be seen as a recent phenomenon. A number of factors have contributed to this development.

A major emphasis of enlightenment philosophy was to seek to reject and discredit supernatural worldviews. This philosophical perspective developed in the context of an era that was widely influenced by Platonic thought. In the Platonic worldview, which is essentially dualistic, reality is considered to include two spheres: the material realm and the spiritual realm. The material realm, which includes the real world, is held to be imperfect, transitory, a shadow of the world of ideas, spirit, and “forms.” This world of forms is seen as the real world—permanent and perfect.

Ironically, Platonic dualism also played an important role in influencing the development of modern materialistic naturalism. Once mind and matter were viewed as separate and distinct entities, it became possible to pose the question as to which was more real. Modern scientific naturalism essentially resolves this question by affirming the existence of the material world and denying the existence of the spiritual. Although Plato clearly saw the spiritual realm as more real and more important, his separation of material and spiritual contributed to the development of scientific naturalism.

A second response to Platonic dualism is spiritualism, the view that all that exists is spiritual in nature, and that the physical is illusory. This view is fundamentally incompatible with science, though it seems to lie at the heart of the humanistic-existential movements in modern psychology.

The enlightenment philosophers generally rejected supernatural worldviews and affirmed naturalistic views. In this context, the notion of the “God-of-the-gaps” emerged, in which supernatural and naturalistic explanations were viewed as competing explanatory principles. Thus, as scientific knowledge grew, the realm of phenomena left to be explained by supernatural and spiritual concepts shrunk: “Every advance of knowledge meant necessarily that Christianity was deprived of some of its truth and that step by step God was removed from the scheme of things.” Eventually, God was proclaimed to be dead; that is, God as an explanatory cause was no longer needed once naturalistic explanations could be given for virtually all major phenomena.
Behavioral psychology is rooted firmly in the tradition of naturalistic explanation. Technically, this viewpoint is referred to as materialism. Materialism affirms the existence of matter but denies the reality or existence of mind and spirit. Such a view, then, inevitably denies the existence of God. It views all of reality as material, the result of mindless, meaningless, random processes: the summation of nothing + time + chance is the ultimate explanation. Human beings are viewed as either complex animals or as machines. With such a view, as we shall see, there is no room for notions such as human dignity, and moral values are ultimately meaningless.

In contrast to the materialistic emphasis common to modern science and behavioral psychology, the biblical view affirms the reality of the supernatural and of reason, as well as pronouncing the physical creation to be “very good.” While the Bible affirms both physical and spiritual reality, they are not viewed in a dualistic manner. The biblical perspective affirms a fundamental unity of spirit and matter, mind and body. Before we explore this thesis, two areas of concern must be examined: (1) biblical teachings that seem to be consistent with behavioral findings; and (2) teachings that appear to pose problems in reconciling biblical and behavioral perspectives.

Scriptures Compatible with a Behavioral Viewpoint

John Carter and Richard Mohline suggest that there should be consistency between God’s Word and God’s world:

(a) All truth is God’s truth, therefore, the truths of psychology (general revelation) are neither contradictory nor contrary to revealed truth (special revelation) but are integrative in a harmonious whole. (b) Theology represents the distillation of God’s revelation of Himself to man in a linguistic, conceptual, and cultural media man can understand and which focuses primarily on man’s nature and destiny in God’s program. (c) Psychology as a science is primarily concerned with the mechanisms by which man functions and the methods to assess that functioning. Nevertheless, the content of psychology as a science (including theory) provides a statement on the nature and functioning of man.  

This section will consider a number of parallels between biblical teachings and principles that have been discovered through behavioral research.
THE REINFORCEMENT PRINCIPLE

The principle that a person must work to eat is woven throughout the Bible, from the story of Adam and Eve, who were cast out of the Garden of Eden and sentenced to earn their food by the sweat of their brows, to the New Testament Epistles, which emphasize that those who refuse to work should not expect to be fed. In this basic notion that both man and beast are to be rewarded for their efforts, something akin to the reinforcement principle is revealed as a fundamental teaching in Scripture.

The concept of reinforcement in biblical teachings, can also be seen in the examples of encouragement and in the instruction to encourage others. These parallel the behavioral emphasis on the importance of social reinforcement in human behavior, and as such are not only an examples of reinforcement, but also of social influence.

PUNISHMENT

Punishment as an important principle in human behavior is repeatedly revealed in the Bible. In casting Adam and Eve out of the Garden, God punished them; moreover, as a result of their action, they experienced natural punishment in coming to know of their nakedness and in their alienation from each other and from God. In giving the Law under Moses, explicit punishments were provided for various offenses. Before entering the land of Caanan, the Israelites were reminded of the Law and the covenant they had made with God. They were further promised that if they kept the Law, God would bless them, while God would curse them if they transgressed against the Law and broke their covenant with him. The biblical teaching of punishment is further elaborated in the many proverbs that teach the use of punishment, including the explicit use of a rod and beating to discipline children.

SOCIAL INFLUENCE

Psychologist Albert Bandura and his colleagues have amply demonstrated the important role of social influence processes in human behavior. Biblical parallels to Bandura's findings may be seen in the biblical instruction to make a practice of associating with fellow believers, and in avoiding association with those who
do not share this viewpoint. In Proverbs, there is the explicit suggestion that we will learn the way of those with whom we associate. There is also an indication that children come to be like their parents, a possible outworking of the principles of social influence.

TEACHING AND PRACTICING GODLINESS

Another biblical principle which is consistent with some of the principles of behavioral psychology is the indication that learning about God requires teaching. Children are to be brought up with discipline and instruction; learning about God requires that one be taught. Further, this teaching is ideally to go on in the context of normal daily experiences, not in isolation from them.

In addition to the indications that biblical principles must be taught, there is also a suggestion that for them to become a way of life, they must be practiced. This parallels the behavioral notion that learning involves doing.

EVALUATION OF BEHAVIOR

In contrast to other theoretical systems, behavioral psychologists tend to minimize the role of thinking and language, especially as a cause of behavior. One of the implications of the behavioral approach (which views both language and nonlanguage behaviors as under the control of explicit environmental events) is that language and nonlanguage behavior may be independently controlled and thus inconsistent. It is interesting that the biblical criteria for evaluating Christian maturity emphasize people's actions and overt behavior more than their words; “You will know them by their fruits” (i.e., actions). The biblical criteria for selecting spiritual leaders also emphasize their actions. Similarly, we see clear teachings in the Bible that evidence of a relationship with God will be clearly manifested in a person’s actions.

SELF-CONTROL

Self-control, a common theme in the behavioral literature, is presented in the Bible as a basic principle of spiritual development. Self-control is also presented as evidence of the Holy Spirit’s working. The Scripture clearly teaches that some of the consequences of a response do not follow it immediately in time; interestingly,
this same notion lies at the root of the concern for self-control in behavioral psychology.

**Substituting Positive Behavior**

The view that one of the most effective ways of eliminating a problem response is to replace it with a constructive alternative is advocated by behaviorists, and is clearly present in a number of biblical teachings which suggest the need to replace sinful behaviors with new, God-honoring ones. Biblical teachings which suggest that simply punishing or seeking to eliminate problem behaviors in some other way is not likely to be effective correspond well with behavioral principles.

**Problem Areas from a Biblical Perspective**

Various critics have raised a number of objections about the implications of a behavioral perspective for Christian faith. These include (1) the behavioral emphasis on determinism versus, the biblical notions of freedom, responsibility, and personal choice; (2) the distinction between being and doing; (3) the nature of humanity; (4) the ethics of reinforcement; and (5) the argument that behavioral psychology offers an alternative worldview that is materialistic, atheistic, and thus essentially anti-Christian. We will examine each of these objections in turn.

**Freedom**

The issue of freedom and control has been a dominant—if controversial—theme in the behavioral literature. Although behaviorists are generally united in arguing that all behavior is the product of natural causes, some behaviorists teach self-control procedures and profess to help people become free. As we shall see, the problem stems from a subtle but pervasive equivocation in which the word “free” is used in different ways on different occasions.

Skinner has argued repeatedly that freedom is an illusion and that all behavior is determined by natural causes: “Personal exemption from a complete determinism is revoked as scientific analysis progresses, particularly in accounting for the behavior of the individual.”

Critics of Skinner’s views of freedom have not been lacking. Psy-
chologist Carl Rogers, for example, in a published debate, criticized Skinner for his failure to leave room for responsible personal choice. From an explicitly Christian perspective, psychologist J. H. Brink faults behavioral psychologists for their use of efficient cause or mechanistic determinism, arguing that such a view leaves no room for freedom. He suggests, "It is extremely questionable whether conscious beings who conceptualize and employ deterministic principles for the sake of valued goals can themselves be understood solely within the framework of these same deterministic principles."

Francis A. Schaeffer, theologian and Christian apologist, objects: "By autonomous man Skinner means the notion that man is not a part of the cosmic machine, that something in man stands in contrast to the cosmic machine and allows man to make real choices. This is just the sort of man which Christians must affirm... To Schaeffer, man may undergo conditioning, but "he is not only the product of conditioning. Man has a mind; he exists as an ego, an entity standing over against the machine-like part of his being."

Psychologist Mary Stewart Van Leeuwen joins in criticizing Skinner and behaviorists from a Christian perspective. She points out that Skinner holds to a materialistic determinism as an assumption. Such an assumption is not without empirical support; indeed, Skinner at times admits that this view is a "worthwhile scientific assumption." Van Leeuwen goes on to point out that since Skinner's determinism is not a fixed scientific conclusion, it follows that faith plays an important role in his adoption of this viewpoint.

Thus freedom, in the sense of behavior that is not completely under the control of efficient mechanistic natural causes, is repeatedly denied by Skinner, and by many of his colleagues as well. However, freedom is affirmed in a second sense in the behavioral literature. Skinner describes freedom as the absence of control by other individuals. He argues that children become free of their mothers when they learn to tell time and acquire their own clocks to tell them when it is time to go to school.

Skinner also uses the word freedom to imply the absence of aversive stimulation. This type of freedom may be furthered through education (which Skinner describes as control) in two ways: (1) by reducing the aversive features of the natural environment, such as...
developing more efficient heating and cooling systems; and (2) by teaching effective techniques of self-management, so that we are able to effectively deal with the remaining aversive features of the natural environment. A related aspect of freedom is the avoidance of delayed aversive effects, which follow behaviors that are initially followed by reinforcement.

When we are able to experience positive events and avoid unpleasant events, we may "feel free." But, Skinner notes, control by positive and pleasurable events is nonetheless control. He goes on to suggest that this experience of feeling free is itself a product of the person's history of conditioning.²⁷

Skinner addresses two criticisms about his views of control and rejection of freedom. First, some critics argue that Skinner's view means that we have no control over our own destiny. "The fact is, however, that men control both their genetic and environmental histories, and in that sense they do, indeed control themselves . . . . We have reached the stage . . . in which man can determine his future with an entirely new order of effectiveness."²⁸ The second criticism is that such a view as Skinner's entails a loss of individuality. Skinner counters that, due to individual uniqueness in genetic makeup and environmental experience, individuality will continue, and could be enhanced systematically if we chose to do so.²⁹

For Skinner, then, all human behavior is under the control of efficient causes. But we are "free" to the extent that we are able to escape the control of others and to escape from the experience of aversive stimulation. Further, we are free to shape our own destinies, through the application of behavioral techniques to the social order.

**BEING VS DOING**

Behavioral approaches tend to focus exclusively on behavior, or doing, while biblical teachings tend to emphasize qualities of being. It can be argued that a central thesis in biblical teachings and Christian theology is that Godly behavior is a response of gratitude for what God has done in providing salvation freely through Jesus Christ.³⁰ Central to the doctrine of Grace is the view that outward behavior, or works, are peripheral rather than central to a relationship with God.³¹
THE NATURE OF HUMANITY

Critics such as Francis Schaeffer focus on the evolutionary presuppositions and the deterministic and reductionistic qualities of behavioral approaches, which imply that people may be understood as stimulus-response machines, without the need to postulate such higher process as mind and thought. Their principle objection to the behavioral viewpoint is that it leaves no room for freedom, responsible choice, the moral concept of right and wrong, and the image of God in man. Central to this objection is the view that we are beings created by God in his image, with the capability of freely choosing our actions, and with the responsibility of accounting to God for what we do. According to philosopher Arvin Vos, “Behavioral psychology cannot disown its commitment to the thesis that the environment alone is a cause in human affairs. This thesis contradicts what is both implied in and asserted by biblical principles, namely, that man is an agent, free and responsible, also influenced by the environment.”

BEHAVIORISM AS WORLDVIEW

Materialism, reductionism, and determinism, when advanced as a behavioral philosophy or worldview rather than simply as useful scientific assumptions—are seen by critics as antithetical to the Christian worldview.

Scientism is the view that the scientific model is the only acceptable approach to knowledge. It implies that knowledge can only come from a systematic study of the world around us by means of the methods of science, specifically observation and experimentation. Such a view is naturally objectionable to those who believe in divine revelation as a source of knowledge. Although scientism is not specifically mentioned by critics from a Christian perspective, this is surely a basic issue in the frequent negative response.

BEHAVIOR THEORY: A CHRISTIAN PERSPECTIVE

In Chapter 1, it was suggested that three basic assumptions were required before scientific discovery could be carried out; (1) that the world exists; (2) that it can be apprehended by the human intellect; and (3) that it operates in an orderly, predictable, or law-
ful fashion. To these we will now add one other: that the tech­
niques of natural science (i.e., observation) are suited to discovery
of the fundamental orderliness of the world. In addition to these
assumptions, adherents of a biblical worldview also assume that
God exists, that he is creator and sustainer of the natural order,
and that the qualities of the natural order assumed above are a
fundamental facet of God's creation.*

In a discussion of the issues involved in understanding the rela­
tionship between psychology and Christianity, psychologist Robert
E. Larzelere compares behaviorist assumptions with the presuppo­
sitions of Christian psychology, as delineated by Gary Collins, a
psychologist who has written extensively on psychology and Chris­
tianity.6 These presuppositions include expanded empiricism,
modified reductionism, Christian supernaturalism, determinism
and free will, and biblical absolutism. Table 2–1 summarizes the
two sets of assumptions.

Table 2–1. Basic Presuppositions of Behaviorism and
Christian Psychology

<table>
<thead>
<tr>
<th>Behaviorism</th>
<th>Christian Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>empiricism</td>
<td>expanded empiricism</td>
</tr>
<tr>
<td>reductionism</td>
<td>modified reductionism</td>
</tr>
<tr>
<td>naturalism</td>
<td>Christian supernaturalism</td>
</tr>
<tr>
<td>determinism</td>
<td>determinism and free will</td>
</tr>
<tr>
<td>relativism</td>
<td>biblical absolutism</td>
</tr>
</tbody>
</table>

SOURCE: Adapted from Collins, 1977

EXPANDED EMPIRICISM

According to Collins, the first assumption of Christian psycholo­
gy is expanded empiricism, which involves recognition of two basic
limitations to a strict empiricism. First, empiricism assumes that
accurate observation is possible; expanded empiricism recognizes
the role of subjectivity in empirical observations. The scientist in­
troduces a subjective element into the process of discovery in the
form of personal commitment, and in the perspective from which

* Some scholars who have studied the emergence of modern science are convinced
that a biblical worldview was fundamental to adoption of the four basic assump­
tions listed above, and formed the philosophical backdrop which was crucial to
the emergence of a scientific approach to understanding and controlling our
world.46
the scientist approaches the collection of data, including choice of problem area, methodology, types of observations, and the interpretive process. Second, expanded empiricism acknowledges the legitimacy of other forms of knowing, including rational deduction and divine revelation. Expanded empiricism thus recognizes the scientific process as a legitimate source of knowledge, but affirms that other ways of acquiring knowledge are equally legitimate. It stands in opposition to what we earlier called scientism.

MODIFIED REDUCTIONISM

Broadly stated, reductionism is an approach to science that seeks to develop explanations for phenomena at the simplest possible level. In practice, many scientists approach their disciplines with the assumption that if the phenomena of the discipline can be fully explained at a given level, then explanations at more complex levels are not required. The following list illustrates a progression from more complex to simpler levels of explanation: philosophical, psychological, biological, chemical, physical. Pressed to the limit, the implication of reductionism is that all of science becomes physics at some future time when physical explanations can be given for all of the phenomena in which we are interested. Were this to happen, of course, there would no longer be any need for psychology; for this reason, most psychologists are limited reductionists who object primarily to explanations at supernatural levels.

An alternative view to reductionism is modified reductionism, the view that explanations at different levels are complementary. It has been suggested by engineer/physicist Richard H. Bube and neuropsychologist Donald M. MacKay that explanations at any given level may be exhaustive without detracting from or invalidating explanations at other levels. For example, in explaining the events involved when a child reaches for a banana, eats it, and digests it, we may focus on the behavioral level and talk about how banana in the mouth reinforces reaching and grasping. Alternatively, we may discuss the biological processes of hunger, salivation, chewing, swallowing, and digesting. We may also discuss the physical properties of the banana, in terms of the parts of the light spectrum that it reflects, its weight and mass, its molecular and atomic composition, and so on. The point that Bube and MacKay emphasize is that we may take any or all of these perspectives; no
single perspective encompasses all aspects of the phenomenon. Bube goes on to suggest that in terms of ultimate importance, the most abstract or general level is actually the most significant.

CHRISTIAN SUPERNATURALISM

Christian supernaturalism acknowledges the possibility of something outside of the natural order. For the Christian, this "something" is God, who is believed to be the creator and sustainer of the universe. We turn now to a discussion of some of the implications of this thesis for a Christian perspective on behavioral psychology.

Both/And: God Works Through Means

It has been noted that many of the leaders of the scientific revolution were Christian, and that their religious convictions probably played an important role in shaping the attitudes and assumptions necessary for scientific research. In our time, however, Christianity is often assumed to be vaguely or even specifically antiscientific, possibly because of the frequent objections to evolution and scientific naturalism.

One of the major factors behind this dramatic reversal is the God-of-the-gaps notion, which holds that any phenomenon in human experience may be explained by either natural or supernatural accounts, but not by both. This view probably developed from the thesis, advanced by proponents of the Christian perspective, that events that could not be explained in naturalistic terms must be explained supernaturally. Conversely, opponents of the Christian perspective contended that for events that could be explained naturally, supernatural explanation was superfluous. Naturalistic and supernaturalistic explanations were thus perceived as competing theories.

As scientific explanations were developed for an increasing range of phenomena, supernatural explanations decreased. Thus as the influence of science grew, the role of God in explaining natural events diminished, until God was ultimately pronounced "dead." Faith in the naturalistic explanation was such that, for many, it was no longer necessary to appeal to God; some, like philosopher Anthony Flew, seemed willing to rule out the idea of God altogether.

However, this either/or mind set is a mistake: it is possible to
have both naturalistic and supernaturalistic explanations for the same events, and neither diminishes the other. The results of a recent study by psychologist Robert J. Ritzema will be helpful in explaining this thesis.

Ritzema investigated the kinds of explanations students offered for events that had no readily apparent cause. In analyzing the results of his study, Ritzema notes that explanations may be classed into two intersecting sets of categories: (1) explanations in terms of the presence or absence of natural causes; and (2) explanations in terms of the presence or absence of divine causes. These categories are summarized in Figure 2-1.

<table>
<thead>
<tr>
<th>DIVINE CAUSE</th>
<th>NATURAL CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The first quadrant of Figure 2-1, "chaos," represents situations in which neither natural causes nor divine causes are present. Unless some third source of causation is predicated, choice of this viewpoint implies that events are unpredictable and chaotic. Science would not be possible under such circumstances. The second quadrant, "naturalistic explanation," represents the attribution of causation solely to natural events and processes. The third quadrant, "supernatural explanation," represents attribution of causation solely to divine causes, or miracle. The fourth quadrant, "providential explanation," represents situations in which causa-
tion is attributed simultaneously to natural causes and divine causes. For both supernatural events and chaotic events, no prediction is possible. Thus scientific explanation is necessarily limited to natural explanation and providential explanation.

**Providence** The theological word “providence” is used here to refer to explanation of events that are the result of both divine and natural causes. According to the *New Bible Dictionary*, Providence is normally defined in Christian theology as the unceasing activity of the Creator whereby, in overflowing bounty and goodwill, He upholds His creatures in ordered existence, guides and governs all events, circumstances, and free acts of angels and men, and directs everything to its appointed goal, for His own glory. This view of God’s relation to the world must be distinguished from: (a) pantheism, which absorbs the world into God; (b) deism, which cuts it off from Him; (c) dualism, which divides control of it between God and another power; (d) indeterminism, which holds that it is under no control at all; (e) determinism, which posits a control of a kind that destroys man’s moral responsibility; (f) the doctrine of chance, which denies the controlling power to be rational; and (g) the doctrine of fate, which denies it to be benevolent.

The concept of providence implies that pure chance is ruled out as an explanation, because all natural events are controlled through God’s providential action. Even the outcome of casting lots is under the disposition of God. Such a view also implies that God normally acts through means of the natural processes of the created order, but it does not limit God to this mode; secondary causes or natural laws are simply the operating principles of the world that God created.

[He] endowed matter with these forces and ordained that they should be uniform. . . . He is independent of them. He can change, annihilate, or suspend them at pleasure. He can operate with or without them. The “Reign of Law” must not be made to extend over Him who made the law.

**Miracle** The question of miracle is largely outside the scope of our present discussion; however, several comments should be made regarding its nature. First, since miracles (at least by some definitions) involve events that occur apart from natural process (e.g., creation *ex nihilo*), they are events that cannot be investigated by scientific methods.
Second, the whole question of the defining properties of a miracle is subject to debate. Some would consider events in which God acted through the natural order (providential events), but which are of great significance in terms of nature and timing, to be miraculous. For example, the use of a strong wind to roll back the Red Sea so the Israelites could cross over on dry ground, then allowing the water to roll back and drown the Egyptians, is considered by many to be miraculous, even though natural processes were involved.59

Third, the definition of miracles as events that occur apart from natural processes is itself significant. At one time, it was common to define miracles as a violation of natural law by God. Since natural laws have come to be understood as descriptive, probabilistic statements rather than prescriptive laws, there has been a shift toward defining miracles in terms of events that are “inexplicable” in terms of natural laws.60 It is important to realize that supernatural events need not be viewed as violations of natural law any more than converting the gasoline engine to accept natural gas as fuel is a violation of the laws of automobile operation.

Finally, the concept of miracle is essential to the Christian worldview; our conceptual schema provides a means by which miracles may be readily conceptualized, either in terms of supernatural explanation (e.g., creation ex nihilo) or providential explanation (e.g., using the wind to blow back the Red Sea).

God and Nature The viewpoint of radical behaviorists, such as Skinner and his colleagues, is that all phenomena involving behavior have exclusively natural explanations, or what we have here called “naturalistic” explanations. By contrast, the biblical view is that all events have a divine explanation, and must be either supernatural or providential in character. Thus science, since it is inherently limited to the study of recurring phenomena, is in the realm of providential explanation.

The Christian perspective on behaviorism, then, must reject both exclusive naturalism and exclusive supernaturalism as equally unbiblical, and equally incorrect as explanations of events. If it is acknowledged that God generally works through means involving the natural order, then most events can be classed as providential. This implies (1) that God is ultimately responsible, but that he works through natural processes in causing events to happen; and
(2) because natural processes are involved, such events may be the subject matter of scientific investigation. Discovering natural causes for events does not rule out God’s active involvement in their occurrence; rather, these natural processes are viewed as processes both ordained and sustained by God.

FREEDOM AND DETERMINISM

Science as Probabilistic

At the philosophical level, science is founded on a logical fallacy, namely, affirming the consequent. Thus, from a logical standpoint, we can never prove that a scientific hypothesis about causal relationships is correct; we can only gather evidence that is consistent with the hypothesis. The more data that is gathered to support the hypothesis, the more consistent the data, and the more “relevant” the data, the more probable the hypothesis becomes. But it can never be proved in a logical sense.61

The example in Table 2–2 illustrates the problem. If we begin with hypothesis that all of the eleven men in the room are wearing green socks, we can test it by checking the socks of one man; John. Since he is wearing green socks, we become more confident that our hypothesis is correct. If a second man is found to be wearing green socks, our confidence in our hypothesis increases. As we continue to check the men in the room, each time we find green socks we become more confident. Then we discover that the ninth man is wearing red socks. With this single negative instance our whole hypothesis is found to be incorrect. All is not lost, however. We may formulate a new hypothesis that reflects our new information: all men in this room are wearing green or red socks. We may then proceed to test this alternate hypothesis.

When developing scientific laws, however, it is not possible to check each occurrence of a given event to see if the predicted relationship holds in every instance. In examining the relationship between a pigeon’s keypecking behavior and a contingent electric shock, for example, it is always possible to try one more time; it is in principle impossible to examine every peck. Thus we can never be certain that the proposed causal relationship between keypecking and contingent electric shock is necessarily (or logically) “true.” The more times we have demonstrated that contingent
shock reduces keypecking, the more confident we become, the more probable it is, that the same relationship will be demonstrated when next we try. It is important to remember that all scientific laws are probabilistic in this sense.

Table 2-2. Logical Fallacy: Affirming the Consequent

| Hypothesis | 1. All men in this room are wearing green socks. |
| Observations | 2. John is in this room. |
| | 3. John is a man. |
| | 4. John is wearing green socks (I checked). |
| Conclusion | 5. All men in this room are wearing green socks. |

In actual practice, however, a scientific hypothesis is rarely discarded simply on the basis of one anomalous finding. The unexpected finding is first scrutinized to determine whether there is any plausible way of accounting for it without rejecting the initial hypothesis. Additional data, which might shed more light on the unexpected outcome, may then be sought. If further observations provide new instances of the same outcome, the hypothesis may be altered in some way to take it into account, much as we altered our hypothesis to include green and red socks. In general, the hypothesis is only discarded when: (1) a large body of anomalous data has accumulated and no modification of the theory seems readily able to explain the findings; or (2) an alternative theory exists, which is able to account for the data in a relatively simple and "elegant" fashion.

Determinism and Causality

Determinism is the philosophy that all events, including acts of the will, are solely the product of preceding physical events. Determinism is associated with naturalistic explanation as a sole source of causation. Such a view implicitly denies divine causation in either supernatural or providential forms. As an alternative to determinism, then, Collins proposes "determinism and free will."

Skinner uses the word "functional" to describe the relationships between stimulus and response events, in part to avoid some of the issues involved in the concept of determinism. As we have noted,
however, Skinner’s critics charge him with being deterministic in his perspective. While it is difficult to find where Skinner has stated a deterministic position in so many words, the following quotes certainly suggest a deterministic viewpoint, as does the overall content of Skinner’s writings:

Until recently it was customary to deny the possibility of a rigorous science of human behavior by arguing either that a lawful science was impossible because man was a free agent, or that merely statistical predictions would always leave room for personal freedom. But those who used to take this line have become most vociferous in expressing their alarm at the way these obstacles are being surmounted.  

Similarly, “Man, we once believed, was free... but science insists that action is initiated by forces impinging upon the individual, and that caprice is only another name for behavior for which we have not yet found a cause.” In Beyond Freedom and Dignity, Skinner says:

Autonomous man is a device used to explain what we cannot explain in any other way... To man qua man we readily say good riddance. Only by dispossessing him can we turn to the real causes of human behavior... 

Although in another context Skinner acknowledges that “Human behavior is controlled, not by physical manipulation but by changing the environmental conditions of which it is a function. The Control is probabilistic [emphasis added].” it seems that his view is deterministic. Stated more generally, Skinner seems to believe that all events can be accounted for in terms of a deterministic and naturalistic explanation; it is precisely this that his critics find most objectionable. As Harvey Wheeler notes, “Most of Skinner’s critics are really critics of the philosophy of behaviorism rather than of operant conditioning.”  

From a Christian perspective, certainly, this is the fundamental issue.

Causality as a General Principle

Causality is an assumption that is made before beginning the scientific endeavor.* A causal relationship cannot be established

* I prefer to use the word “causality” rather than determinism, since causality does not have the same implications of exclusive naturalism and the suggestion of necessitarianism.
between two events through scientific means, except in a probabilistic sense. Further, even the establishment of a causal relationship (whether in the probabilistic or necessary sense) between any number of individual events does not establish causality as a general principle. Even if it could be established that A causes B, and that F causes G as a logically necessary relationship, it would not follow that all events must have causes. In order to scientifically establish causality as a necessary condition, it would be necessary to examine every event and to show that each and every event was the result of a cause. Of course, this is in principle an impossible task.

Just as predictability is a necessary assumption for science causality is also an assumption, but with broader implications. Causality cannot be established as a general principle even if any number of specific instances of causal relationships could be established. This has tremendous practical significance. First, it is in principle impossible for freedom to be ruled out on the basis of scientific evidence. Second, the unexpected and even the miraculous likewise cannot be ruled out.

**Freedom, Responsibility, and Choice**

The issues of freedom, responsibility, and choice are central to the criticism of behavioral psychology from a Christian perspective. In their discussion of determinism, psychologists John D. Carter and Bruce Narramore discuss three types of determinism based on the distinction drawn by psychologist Paul Meehl: methodological determinism, empirical determinism, and metaphysical determinism.

It seems that no Christian need quarrel with "methodological determinism." ... Christianity's problems with determinism begin with empirical determinism and become especially strong with metaphysical determinism ... if a human being does have any measure of personal freedom ... an alternative to metaphysical determinism will be essential if we are to come to a right understanding of the nature of reality.\(^69\)

**Freedom** In everyday usage, freedom is sometimes defined as the opposite of control. More common is the usage of freedom as the ability to do as one pleases. Technically, freedom is defined as: "(1) exemption from necessity, in choice and action; as, the freedom of the will; (2) philosophically, the status of the will as an un-
caused cause of human actions; also, sometimes, as with Hegelians, self-determination; spiritual self-fulfillment. In this second sense, freedom is, by definition, the opposite of determinism.

A third definition of freedom—freedom as choice—is more consistent with the use of freedom in the behavioral literature. This describes a situation in which two or more response alternatives are available, whether or not we are able to reliably predict which one will occur.

A fourth definition of freedom involves the conscious self-awareness that one has made up one's own mind and entered into a course of action without coercion. Freedom in this sense neither affirms nor negates the possibility that other processes or events influence or cause the choice; this type of freedom, so far as we know, is limited to human actions.

When pressed to its limits, the philosophical definition of freedom that views will as an uncaused cause of human behavior suggests that a science of human behavior is not possible. Advocates of the free will position are generally willing to accept a methodological determinism that implies that human behavior may be studied as if it were determined; it also implies, however, that at least some human behavior is in principle unpredictable. Such a view is objectionable to most behavioral psychologists.

The issue of freedom is central to a Christian perspective on behavioral psychology. Many Christian critics argue that any view that advocates a deterministic position is antithetical to biblical teaching. Thus Carter and Narramore accept methodological determinism, but not empirical or metaphysical determinism. Such a viewpoint is not universal, however. MacKay, for example, argues for a "logical indeterminancy," in which he contends that even if human behavior were completely predictable from the perspective of an observer, we would not be obligated to act in the predicted fashion, and thus we are morally free. The question we must confront, then, is whether determinism is contrary to biblical teachings.

**Freedom and the Bible** In the English Bible, the word "freedom" is one of the translations of the Greek *eleutheria* and its cognates. In classical Greek, the word "freedom" was primarily used in a political sense. Under stoicism, the idea of freedom was transformed to mean a withdrawal from the apparent reality of
this world, and thus implied a freedom from ties to the material world, including feelings, emotions and the fear of death, and harmony with the cosmos or the gods. In the mystery religions, freedom involved initiation into the secret knowledge and rites of the order and freedom from the hopeless world through unity with the deity.

Biblical usage of the Greek roots for freedom transforms their meaning. In the Old Testament, freedom is used in the context of slavery and prisoners of war, and once with regard to exemption from obligations. Political use of the word freedom is foreign to the Old Testament, as translated into Greek in the Septuagint version; rather, freedom is identical with redemption and is connected with the acts of God. In later Judaism, especially the Maccabean period, freedom came to be understood primarily in the political sense.

Freedom in the New Testament refers to a vital relationship to God in Christ. Political freedom, and freedom as a sense of power to do as one wishes, are not used in the New Testament. The New Testament idea of freedom is thus linked to the Old Testament idea, which sees freedom as connected to God as giver; this freedom is a freedom from the bondage of sin and its inescapable compulsion. “Liberation from the compulsion to sin ... opens up the hitherto impossible possibility of serving God.”

Thus the Bible uses freedom in a theological sense that is inextricably bound up with a person’s relationship with God. This is an entirely different concept from the philosophical concept of freedom; freedom in the sense of human will as an uncaused cause of human actions is not a biblical concept. “[The notion of freedom] implying that men’s future actions are indeterminate and therefore in principle unpredictable, the Bible seems neither to assert nor to deny ... but it does seem to imply that no future event is indeterminate relative to God, for He foreknows and in some sense foreordains all things.”

Scripture presents an interesting use of the terms freedom and slavery. Essentially, we are presented with two options: slavery to sin, or slavery to God through Christ. In this context, freedom is slavery to righteousness. Put differently, freedom involves being under the causal influence of the right controlling variables. In this context, “The historic debate as to whether fallen men have ‘free
will' has only an indirect connection with the biblical concept of freedom.”

To elaborate, the biblical use of freedom is identical with redemption and connected with the acts of God. In the New Testament, freedom is neither political freedom nor unfettered ability to direct one's own life; throughout the Bible, freedom is connected with God as giver. Biblical freedom is freedom from the bondage to sin and its inescapable compulsion; it is also freedom from the "wages of sin." Paradoxically, to be free is to be a slave to Christ.

**Freedom and Providence** The notion of providence implies that God is active in all natural events, directing them in a way that will accomplish his purposes. The expression "both/and" implies that providence includes the simultaneous action of God and the unfolding of natural events. In medicine, this is metaphorically represented by the picture of God guiding the hands of the physician. Such a view can be contrasted with the dualistic metaphor of the physician praying to God, and God acting only when the patient is finally beyond all human skill.

As applied to human behavior, the concept of providence implies that God so directs events that we freely choose; yet those choices, which God in his foreknowledge is able to anticipate, are nonetheless the individual person's doing and responsibility. God will call us to account for our actions. "God's control is absolute in the sense that men do only that which He has ordained that they should do; yet they are truly free agents, in the sense that their decisions are their own, and they are morally responsible for them."

In relationship to God, one may take either of two courses of action: (1) sin and death; or (2) salvation and life. While God does not coerce anyone, he does provide—providentially—the events that bear on peoples lives. These events predispose some to one course of action, some to another, both freely chosen. God then provides the consequences that he chooses for each course of action: condemnation and the second death; blessing and eternal life. Implied in the biblical principle that the sins of the fathers are visited even on the children of the third and fourth generations is the idea that the very circumstances of our birth and family—events that are not of our choosing but of God's—predispose us to certain courses and outcomes in terms of our relationship with God.
Because scientific laws are descriptive and probabilistic, they cannot rule out freedom. Indeed, they do not really bear on the question of freedom-determinism as it has been posed in philosophy. Thus the whole question of freedom and determinism becomes moot from a scientific perspective.

If freedom is defined as above, it seems to follow that if we make "free and responsible" choices, our behavior is—at some level—unpredictable. Yet this is inconsistent with a biblical perspective; we have argued that from God's perspective, at least, it is possible to "foreknow" and hence to predict all behavior. What then do we mean by freedom, responsibility, and choice?

The Paradox of Freedom Behavioral psychologists suggest that freedom involves possessing a varied repertory of behavior. Freedom is having the social skills to ask a girl for a date; freedom is being controlled by the discriminative stimuli of heat, redness, and flame and thus avoiding being burned; and freedom is being controlled by written words so that you can read the menu at a restaurant and thus get your favorite food. Freedom is also conceptualized as receiving adequate environmental support for preferred behaviors; in this last sense, freedom is more a characteristic of the environment than of the internal characteristics or experiences of the organism.

Freedom, then, is the ability to choose; it is the ability to choose which acts we will perform, and the ability to choose which consequences we wish to approach or avoid. However, we can only choose to perform acts that we have learned, and what we have learned is determined by our biogenetic characteristics and our experiences; similarly, we can only choose to avoid or approach consequences with which we are familiar. Thus both our choices of consequences and of actions are controlled by our prior experience.

Operant behavior is controlled in such a fashion that it produces cumulative effects over time. Initially, operant behaviors are relatively random and uncontrolled. As they meet with consequences, they come under control of consequent (and eventually antecedent) stimulus events. Subsequently, these behaviors become more and more controlled. Conversely, other behaviors become controlled by negation: as behavior $Y$ becomes stronger, behavior $Y^1$ becomes less and less likely if it is not compatible with $Y$. For example, an infant is free to stick his hand into the fire without hesitation. An
adult has learned through experience to avoid contact with flame, and has repeated this action many times; the adult is no longer free to stick a hand into the fire, but is free to avoid the burn that would result.

One cautionary note is needed. Some behaviorists have suggested that having the ability to exert counter control can prevent being controlled by others, and hence is freedom. This is quite misleading. If someone approaches me and attempts to get me to do X, doing Y instead does not demonstrate lack of control. Quite the contrary; my response is clearly a function of their action, and hence controlled by them. Only if their behavior has no effect on me can it be said that I am not controlled by them. Technically, we would describe their behavior as having neutral stimulus value in such a circumstance.

The implication of the behavioral view of freedom is that one is most free when one’s behavioral repertory is most varied and when it is most effectively under the influence of the environmental antecedents and consequences that bear on it. One is most free when one most effectively avoids unpleasant consequences and most effectively obtains positive consequences. If we take this view seriously, then freedom is not the absence of control; rather, freedom is the presence of effective control over behavior.

Psychologist Arthur W. Staats illustrates this point nicely. He argues that our language influences our other actions, and that the greater the consistency between language and the real world, the better the individual is able to predict and control events in the world. In short, a person whose language and nonlanguage behaviors reflect misperceptions about the world is not able to reason or respond most effectively. 78

According to the Bible, Jesus claimed, “I am . . . the truth”; 79 in another context, he said, “You shall know the truth and the truth shall make you free.” 80 Staats’s argument seems closely to parallel these words.

There are surprising similarities between the biblical and behavioral views of freedom and determinism. A study of Scripture suggests that it views human action as influenced by the experiences we undergo. Biblical examples of causal influence include (1) the teaching that response to God first requires hearing his Word proclaimed; 81 (2) the proverbs that suggest that association with evil
and angry men will result in our becoming like them, and that
association with wise and godly persons will result in developing
these qualities; (3) the instruction to the Jewish people that they
are to make meditation and discussion of God’s law an intimate
part of their daily lives so that they and their children will remem­
ber and obey God; (4) the suggestion that God “visits the sins of
the fathers on the children” even to the third and fourth generation
(as we come to understand this in light of other Scriptures, God
seems to be saying that fathers profoundly influence the kinds of
people which their children become); and (5) the history and
prophecy of the Old Testament, which pictures God repeatedly
sending judgment in the form of famine, drought, sickness, and
defeat at the hands of their enemies when his people disobeyed; he
also sent the prophets, with their warnings of judgment and doom,
and rewarded with health, peace, and prosperity the intermittent
response to these ministrations of God as his people return, to some
degree, to obedient service to him.

It is also suggested that human will and choice is influenced by
events in God’s dealings with specific individuals. David’s repen­
tance and return to God resulted from a confrontation by the
prophet Nathan. Jonah decided to obey God after experiencing
the storm, being cast into the sea, and being swallowed up by the
great fish. Pharaoh hardened his heart as God repeatedly con­
fronted him with the opportunity to let Israel go; he finally let
them go as a result of the plagues which God sent, then changed
his mind once more. God’s use of means is also apparent in the
story of Saul (later Paul), leading up to his conversion on the Road
to Damascus.

The thrust of these Scriptures is to suggest that our response to
God is influenced by our experiences—that is, by causes. As we
saw earlier, Scripture is not consistent with the philosophical view
of freedom as uncaused actions, though it is consistent with the
view that human choice is not controlled by physical or divinely
imposed necessity.

It should be remembered that freedom, in the sense in which we
have used it here, is not the opposite of determinism. The behavioral
view of freedom includes the experience of choice and the effective
avoidance of punishing events and experience of reinforcing
events. In the biblical sense, freedom involves one significant addi­
tional element: freedom involves becoming a slave to righteousness. This implies that we are under control of God's commandments as antecedents, and experience God's blessings and the absence of God's judgment and punishment as consequences for our responses.

There is one other aspect of freedom to consider: the sovereignty of God. *Free will in the sense of unhampered or uncaused choice is a characteristic of God.* The freedom that we experience as humans is a limited freedom. It involves choosing in response to influencing events in our lives; such choices are in turn influenced by our past experiences of specific reinforcing and punishing events. By the sovereignty and providence of God, we mean that God is always free to act, unhampered by these causal influences. Indeed, the only factor that limits God's freedom of action is his own character. The notion of God's sovereignty implies not only that God is free to act, but that God is ultimately in control of the very events that influence our actions; he shapes them and directs them to accomplish his own purposes.

Thus there are laws of behavior just as there are physical laws. In each case, these laws are descriptions of orderly relations between events; in that sense, they are causal. However, we can respond as if those laws were not true, either out of ignorance or irresponsibility; in this sense we are free. Having acted in such an ignorant or irresponsible manner, however, we are not free of the lawful consequences that follow such action, and such effects are cumulative. If we walk out of a second story window without taking suitable precautions, we will lawfully meet the consequences attendant on a long fall and sudden stop. Of course, our "decision" to act is controlled by our prior experience (e.g., taking drugs that might warp our perceptions). Responsibility, from a biblical perspective, involves this aspect of facing the consequences of our actions, and applies both to the immediate physical consequences and to the consequences in our relationship to God.

**Causality and Choice: The Convergence of Biblical and Behavioral Views**

So far, two areas have been examined: the logical implications of the scientific concept of causality, and the behavioral and biblical
Behavior Theory and Biblical Worldview

notions of freedom. One additional line of reasoning must be presented: the existential reality that people do make choices, and that they perceive themselves as active agents in the decision-making process. The question that must now be addressed is whether these two aspects of our experience, influence by external events and active decision-making, are incompatible or complementary explanations.* This text proposes the thesis that while human behavior is caused by external events, people actively make choices in their interactions with the environment. Although this statement may seem logically difficult, it is fundamentally a question of perspective.

The data points overwhelmingly toward the conclusion that there is a reliable relationship between external events and behavior. Thus we can scientifically assert that events cause behavior. However, this does not say anything about the fundamental underlying relationships between those events at a metaphysical level.

This confusion arises for two reasons. First, in our everyday speech we use the word “cause” in a subtly but significantly different sense, which implies a physical or mechanical relationship between events rather than just an observed relationship. Our assumptions about the ultimate nature of the world enter into our understanding of the significance of the observed relationships in a fundamental and pervasive, albeit largely unconscious, way. For example, when we say “lightning causes thunder,” we are not saying that we have observed that we can reliably predict the occurrence of thunder when we see lightning. Rather, we are saying (1) that, we have noticed frequently that thunder follows lightning; and (2) that there is some fundamental connection between these events that goes far beyond the simple observed coincidence of lightning and thunder, and implies a metaphysical assumption regarding the nature of the universe.

Thus it is clear that there is a subtle and pervasive equivocation involved in the tendency to move beyond the scientifically observed

* Christians are not agreed among themselves on the issue of freedom. Christian perspectives on this issue may be viewed as falling along a continuum from the Calvinistic, which views people as incapable of action in relationship to God and views God as the initiator of faith, to the Armenian, which views faith as a human response that we freely choose to make or refuse. In such a context, any position on the problems we have been considering is likely to incur some disapproval.
relationship to a metaphysical explanation of the observations. This feature is common to behavioral and everyday explanations; it is one of the reasons we have difficulty with scientific explanations and tend to see the concepts of causality and freedom as contradictory notions.

The second reason why scientific discussions of causality tend to pose problems is that scientists, like many people, are in practice lay philosophers. Many scientists hold very specific and explicit worldviews or metaphysics, which they cherish dearly. Others are less conscious of their worldviews, but are no less influenced by them. It is natural for us to explain scientifically observed relationships in terms of our worldviews. When worldviews are strongly held, this tendency becomes very pronounced. This is probably the reason that Skinner and other radical behaviorists take such strong positions with regard to mechanical explanations and deny so vehemently the reality of the “inner life.”

The biblical and behavioral views of freedom show some striking parallels. The behavioral view of freedom leads to a paradox: One is most free when one’s behavior is most controlled by environmental stimuli, such that one is able to maximize contact with positive reinforcement and minimize contact with aversive stimuli. The biblical view of freedom also leads to a paradox: the path to freedom is through becoming slaves to righteousness. In the biblical context, there are two additional nuances to the notion of freedom: (1) freedom involves a sense of choice; and (2) freedom is being guided by God’s commandments, and as a consequence receiving God’s blessings and escaping God’s judgments. If we accept the view that God made our world and established the principles of its operation, and if we agree that the Bible is God’s handbook and is designed to assist us in maximizing our access to reinforcement and minimizing our exposure to punishment (both in this world and in the New World that is to come), then the behavioral view of freedom and the biblical view of freedom turn out to be remarkably similar.

This leads to the conclusion that freedom and determinism are perspectives. Although it is sometimes impossible to specify clearly what the necessary and sufficient antecedent events are, this does not invalidate the claim that the particular choice was caused by events that preceded it. Nor does it imply that a different choice
would be made if we could reconstruct precisely the same conditions again. From the perspective of an agent, since one does not know in advance how one will act, one is free to choose. From the perspective of the observer, when one is able to predict the behavior of the agent (this is always true of God), the behavior is caused. These two perspectives need not be viewed as antithetical any more than the wave and corpuscular theories of light are viewed as antithetical when united in quantum physics. Rather, each perspective helps to shed some light on aspects of behavior, and both must be taken into account if we are to have an adequate understanding of human behavior.

The perspectival view advanced here is not new. Such a view seems to underlie the writing of psychologist Ronald Koteskey, who argues that we have both animal-like qualities and God-like qualities, and that a complete human psychology requires understanding both aspects. 89 Similarly, MacKay’s main thesis seems to be that accounts of behavior must be given on several different levels, that each level of analysis is significant in its own right, and that the principles need not be the same from one level to another.90 Bube holds essentially the same view. 91

The view advanced here also captures some of the nuances and tension present in the biblical accounts, which teach that we are influenced by processes and events, and that we are to be held accountable before God. That different theologians have arrived at very different conclusions on this matter suggests some of the difficulty involved in seeking to apprehend the truth embodied in the biblical texts. The balance of this book, however, will assume the viewpoint described above, a position that closely approximates that of the Westminster confession of faith:

I. God, the great Creator of all things, doth uphold, direct, dispose, and govern all creatures, actions, and things, from the greatest even to the least, by his most wise and holy providence, according to his infallible foreknowledge, and the free and immutable counsel of his own will, to the praise of the glory of his wisdom, power, justice, goodness, and mercy.

II. Although, in relation to the foreknowledge and decree of God, the first cause, all things come to pass immutably and infallibly; yet, by the same providence, he ordereth them to fall out according to the nature of second causes, either necessarily, freely or contingently.
III. God in his ordinary providence maketh use of means, yet is free to work without, above and against them, at his pleasure.

IV. The almighty power, unsearchable wisdom, and infinite goodness of God, so far manifest themselves in his providence, that it extendeth itself even to the first fall, and all other sins of angels and men, and that not by a bare permission, but such as hath joined with it a most wise and powerful bounding, and otherwise ordering and governing of them, in a manifold dispensation, to his own holy ends yet so as the sinfulness thereof proceedeth only from the creature, and not from God, who being most holy and righteous, neither is nor can be the author or approver of sin.92

OTHER ISSUES

Several philosophical issues remain to be addressed: the ethics of reinforcement, the problem of discrepancies between psychology and Christian faith, the role of faith, the significance of the biblical teaching that God looks at the heart, and some final issues regarding the nature of man.

ETHICS OF REINFORCEMENT

One of the objections raised to behavioral approaches is that the use of reinforcement is essentially bribery. This objection is especially likely to be raised when the behavior in question involves ethical or moral values. The argument is that, since the person ought to do X, he certainly shouldn’t be rewarded for doing X; such a reward would be bribery.93

Bribery involves one of two conditions: (1) payment, gift, or reward for perverting judgment or corrupt behavior; or (2) increasing payment or reward in the face of cessation of performance of some expected response. Thus reinforcing or rewarding immoral behavior is bribery, but rewarding moral behavior is not; for example, reinforcing a person for failing to stop at red lights might be considered bribery, but rewarding the person for consistently stopping would not be bribery. In the second sense, if a child normally makes his bed for a nickel, increasing payment to a dime when he ceases would be an example of bribery. This latter form of bribery actually tends to strengthen the undesired response of ceasing to perform a customary response. If we understand the concept of bribery, it should be clear that reinforcement and bribery are discrete concepts.
THE PROBLEM OF DISCREPANCIES

While it has been argued that the truth of revelation and the truth of science as an understanding of God's creation are in principle a unified whole, it is possible that apparent or indeed real contradictions may emerge between our understanding of Scripture and our understanding of our world. The perspectival view that was just discussed has important implications in confronting these discrepancies.

In seeking to compare and contrast science and theology, we must have a clear grasp of their nature and data bases. There are some important parallels between science and theology. Bube, who holds a both/and view much like that presented here, summarizes the relationships between science and theology in tabular form (see Table 2-3). The real comparison is not between science and the Bible, but between nature and the Bible and between science and theology. Discrepancies between science and theology are real; but they are fundamentally a problem of limited human understanding rather than a problem of any inherent conflict at the level of the data sources involving God's manifestation of himself in the world and his Word. When conflict emerges between science and theology, we are challenged to recheck our interpretations: interpretations of the scientific data, and interpretations of the biblical data. Either could potentially be in error.

THE ROLE OF FAITH

A commonly held view among contemporary men and women is that faith is a peculiar and inexplicable attitude unique to religious people. Nothing could be further from the truth. One of the definitions of faith is, "Belief in something for which there is no proof." In this sense, faith is essential to our daily lives, and is at the very root of science. Everyday faith is as mundane as setting the alarm before bed at night in the expectation that it will waken us at the appointed hour in the morning. Faith is proceeding through an intersection with the green light, confident that the car approaching on the cross street will stop.

It was noted that the process of scientific discovery requires several key assumptions. To act as if these assumptions were true involves faith. We also noted that final proof is not possible in science because of the very nature of the scientific verification pro-
Table 2-3. Relationship of Psychology to Biblical Revelation

<table>
<thead>
<tr>
<th>Givens:</th>
<th>( \text{GOD} ) creates natural world, speaks the Bible</th>
</tr>
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<tbody>
<tr>
<td>via human interpretation</td>
<td>via human interpretation</td>
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<tr>
<td>Specific Methodology:</td>
<td>scientific method</td>
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<td></td>
<td>theological description</td>
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<td>concerned with objects</td>
<td>concerned with persons</td>
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<td>mechanism</td>
<td>meaning</td>
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<td>probability</td>
<td>purpose</td>
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<tr>
<td>what?</td>
<td>why?</td>
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<tr>
<td>I-It</td>
<td>I-Thou</td>
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<tr>
<td>evolution</td>
<td>creation</td>
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<td>chance</td>
<td>providence</td>
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<td>body</td>
<td>soul</td>
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<td>brain</td>
<td>mind</td>
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<tr>
<td>animal</td>
<td>human being</td>
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<tr>
<td>machine</td>
<td>creation of God</td>
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<td>temporal</td>
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<td>physical</td>
<td>spiritual</td>
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<tr>
<td>secular</td>
<td>sacred</td>
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**BUT ONLY ONE REALITY**

The development and product of scientific and theological descriptions of the one given reality, emphasizing the need for "both/and" rather than only "either/or" approaches.

**SOURCE:** Bube, 1976.

cess; thus faith is the conviction that a relationship that was discovered last year still holds today: faith is the belief that reinforcement will strengthen a performance—that food made contingent on pecking will increase the rate of pecking in *this* hungry pigeon *today*. With this in mind, it is clear that Christianity should not be dismissed because it involves an element of faith.
GOD LOOKS AT THE HEART

A number of biblical teachings suggest that God’s standard for evaluating humans involves an examination of what we are rather than of how we act. We noticed earlier that this seems to be a fundamental distinction between a biblical perspective and a behavioral approach to human behavior. In addressing the issues involved here, we must return to the concept of human nature that was then introduced in Chapter 2.

Biblical teachings present persons as psychophysical wholes. While a person may be conceptualized at an abstract level as consisting of a body, spirit, mind, and so on, these concepts tend to distort the fundamental unity of the human person that has been presented in Scripture and discovered through scientific research. Many teachings are addressed to this unity of human functioning: as a man thinks in his heart, so he is; out of the abundance of the heart the mouth speaks; faith is manifested through works; and so on. The sum of these teachings is that there is a fundamental unity between inner nature and behavior, between one’s position in relationship to God and one’s overt behavioral activities.

Perhaps the key linkage between the biblical concept of the heart and overt behavior is that of motivation. The Bible presents the notion that one of the key effects of a saving relationship with God is a fundamental motivational change; although this change is internal, it will be manifested in a wide range of overt behaviors. The “new birth” can be thought of as a setting event that interacts in complex ways with a wide range of ongoing performances.

THE NATURE OF HUMANITY

In Chapter 2, it was noted that most behaviorists assume that humans developed from lower organisms through an evolutionary process, and are essentially stimulus-response machines that may be understood through naturalistic observation of overt behavioral processes without the need to postulate such higher processes as mind and thought. Actually, it is more accurate to distinguish among behavioral psychologists as radical, cognitive, ontological, or methodological.

Radical behaviorists contend that human beings can be fully understood through study of overt behavior, and that there is no need...
for psychology to talk about unobservable internal processes such as thought and feelings; Van Leeuwen has termed this view “mental processlessness.” By contrast, cognitive behaviorists see no difficulty in acknowledging the occurrence of cognitive processes; their behavioral leanings are reflected in a preference to conceptualize cognitive processes in behavioral terms; thus, in a sequence of cognitive responses, one cognitive event serves as a stimulus, the second as a response to it, the third reinforces the second, and so on. Cognitive processes, in turn, interact with external events much like any other class of responses.

Ontological behaviorists have adopted what we called earlier the philosophy of behaviorism. The worldview and scientific approach of ontological behaviorists are essentially synonymous. Methodological behaviorists, by contrast, approach the study of behavior with the same general methodology as do ontological behaviorists, but they have not adopted their scientific assumptions as a worldview. Methodological behaviorists may thus hold to a variety of worldviews, including that of Christianity.

Most radical behaviorists are also ontological behaviorists. Skinner is the most prominent example of a radical ontological behaviorist in the sense we have used it here. Skinner’s view of people as stimulus-response machines seems to be not only his approach to science, but his basic philosophical credo. While cognitive behaviorists are less consistent in their adoption of ontological behaviorism, most of them are also ontological behaviorists. However, it is possible to be a behaviorist, whether cognitive or radical, without adopting the philosophy of behaviorism.

One additional issue that must be considered is evolution. A basic assumption in comparative psychology is that there should be similarity in the behavior of organisms as a function of their proximity on the phylogenetic scale. Thus study of rats, pigeons, or monkeys should help us to understand human behavior.

Most behavioral psychologists assume that evolution is the means by which humans developed. A biblical perspective affirms that God created people in his own image; many interpret biblical creation as contradictory to evolution. However, a biblical worldview need not be antithetical to the study of comparative psychology, regardless of the position taken on creation. If God created both humans and animals, and created them to live in a common envi-
ronment, then it seems likely that there would be similarities in the behavioral processes of organisms as a function of similarity in their biological structure and environmental conditions. Thus, whatever one's position on the creation-evolution controversy, comparative psychology remains a meaningful and potentially fruitful enterprise.

NOTES

2. Christopher Jencks and David Reisman, The Academic Revolution (Garden City, N.Y.: Doubleday, 1968); see pp. 312 ff.
4. Ibid., p. 138.
8. 2 Thess. 3:6-12.
9. Cf. 1 Cor. 9:1-11.
10. Examples of encouragement include Phil. 1:3-7; 2 Thess. 1:2-7; 2 Tim. 1:3-5; an example of instructions to encourage others is Heb. 3:12-13.
15. E.g., Heb. 10:25.
17. Prov. 22:24-25.
22. Phil. 4:9 instructs us to "practice" the things we are taught by spiritual leaders.
23. Matt. 7:20; see also James 2:14-26.
24. E.g., 1 John 2:3-6; 3:2-10.


31. Francis A. Schaeffer, Back to Freedom and Dignity (Downers Grove, Ill.: InterVarsity Press, 1972), p. 34.

32. Ibid., p. 36.


34. Van Leeuwen, “The Behaviorist Bandwagon.”


36. Ibid., p. 172.


38. Ibid., p. 56; Skinner, Beyond Freedom and Dignity, pp. 127 ff.


40. See 1 John 3:1-3 ff.


47. This view is especially developed in Michael Polanyi, Personal Knowledge (Chicago: University of Chicago Press, 1959); a brief summary of Polanyi’s views is presented in W. Jim Neidhardt, “Personal Knowledge: An Epistemology of Discovery,” Journal of the American Scientific Affiliation 29 (1977): 118-123.

50. See Gen. 1:1 ff.; John 1:1-3; Heb. 1:3.
51. Robinson, *God is Dead*.
56. Prov. 16:33.
57. This view is presented by the Westminster Confession of Faith, Chapter V, parts 2 and 3.
60. Ibid.
62. Ibid., pp. 342 ff.; see especially p. 401.
64. B. F. Skinner in Ulrich, Stachnik, and Mabry, *Control of Human Behavior*, p. 301.
65. Ibid.
70. *Webster's Seventh New Collegiate Dictionary*, s.v. "freedom."
73. Ibid., p. 718.
75. Ibid., p. 734.
76. Rom. 6:19-23.
80. John 8:32.
81. Rom. 10:8-17.
82. Prov. 22:24-25.
84. Exod. 20:4-6.
85. 2 Sam., chapters 11-12.
86. Jon. 2:1-3:5.
87. Exod., chapters 7-14.
91. Bube, *The Human Quest*.
92. Westminster Confession of Faith, Chapter V, Sections I-IV.
95. Webster's Seventh New Collegiate Dictionary, s.v. "faith."
97. Van Leeuwen, "The Behaviorist Bandwagon."
98. Ibid.
In the past few years, behavioral approaches have increasingly been extended to societal applications. Some of these extensions have been largely theoretical, while others have been experimental and applied.

This chapter will concentrate on a few selected areas: (1) ethical and moral behavior; (2) issues in the control of human behavior; (3) implications of behavioral principles for the welfare system, socialized medicine, public education, and the penal system; and (4) social influence and other social applications of behavior theory. In each case, related biblical teachings will be presented.

Ethical and Moral Behavior

Skinner proposes that we make ethical and moral issues a matter of scientific study. He clearly implies that empirical study of values and morality will enable us to arrive at clear value statements.\(^1\) Skinner’s argument is elusive, but there is a subtle begging of the question in his approach. In order to understand this, we must examine the role that empirical study can play in the area of values.

Scientific study of ethical and value issues may produce several outcomes. First, it can help with a description of what actually exists in the way of ethical and moral behavior in two forms: (1) what people say is moral, including their attitudes and values regarding moral behavior; and (2) the way people actually behave, including indications about the degree of consistency or discrepancy
between expressed values and actual behavior. Research may also contribute to a knowledge of the reinforcing or punishing consequences for specific behaviors.

The types of conclusions that emerge from empirical study of moral behavior include statements of what kind of behavior is typical for a given person or group, what behavior is valued by the person or group, and what consequences follow valued and de-valued behavior. For example, we may study cheating as a moral issue. We can collect data on the frequency of cheating, the proportion of the population that engages in cheating, and the probability or frequency of cheating for a given individual. We may collect data on attitudes toward cheating in individuals and groups, and we may relate attitudes to actual behavior. Finally, we may collect data on the social consequences, positive and negative, that follow cheating for an individual or a group.

The limitation of the empirical approach is that it cannot resolve the question of whether any given behavior is good or bad. We can conclude that 70 percent of the individuals in a given social group disapprove of cheating, and that 82 percent actually engage in cheating. We can conclude that there is a discrepancy between attitude and behavior. But, based on our data, we cannot say cheating is either right or wrong. That is, on the basis of science, we cannot make conclusions about right or wrong unless we are willing to define right and wrong in terms of what the majority approves/disapproves. This is social-cultural moral relativism.

Moral relativism leads to a number of problems. As attitudes and opinions change, values change; thus what is moral today may become immoral tomorrow. Further, what is moral will depend on where you are, and with what group; moving to a new area, becoming part of a new group of friends or coworkers, or having others enter your present group all may result in changes in what is considered moral. For example, cheating may be considered moral among classmates, but immoral to the teachers. In such a world, moral confusion must surely prevail.

The alternative to moral relativism is moral absolutism. A number of bases may be given for arriving at moral absolutes. For persons within a Christian tradition, the Bible is pointed to as a source for moral absolutes. Briefly summarized, the biblical absolutes are: "You shall love the Lord your God with all your heart, and with all your soul, and with all your strength, and with all
your mind; and your neighbor as yourself. The Ten Commandments elaborate on what it means to love your neighbor, including not stealing, not killing, not bearing false witness, not coveting, and so on. In a sense, the whole Bible is a detailed explanation of what it means to love one's neighbor.

Behavioral psychologists who have addressed the issue of values fall into two groups. The majority advocate using the standards of the community as the basis for values. Psychologists Leonard Ullmann and Leonard Krasner take this approach. A few, like B. F. Skinner and Perry London, argue for some absolute standard. Skinner views preservation of the species as the highest value, though he does not offer any justification for this view. Skinner then argues that value decisions can be made on whether the behavior in question contributes toward meeting the goal of species preservation. London's value "... is one of maximizing choice, i.e., in the sense of personal freedom and of self-control in people's lives." Like Skinner, London gives no justification for such values.

The implications of biblical absolutes for application of behavioral approaches to the control of human behavior have been presented in some detail elsewhere. Briefly, the basic issues involve the means and the goals of behavior change. Both means and goals must be scrutinized in terms of their value implications. For example, eliminating George's stealing may be a worthy goal, but if we do so by amputating both arms at the shoulder, questions may legitimately be raised about the morality of the means. Similarly, we may agree that use of positive reinforcement techniques to teach a new behavior are a legitimate means; but when the new behavior is safecracking, we may have objections to the goal toward which the means have been applied. Both means and goals for the application of behavioral technology, then, must be evaluated against some system of values. We have proposed absolute values based on biblical teachings. The alternatives are another system of absolute values or relativism of either social-cultural or individual-subjective varieties.

**Issues in the Control of Human Behavior**

One of the basic issues raised by behavioral psychology is that of the control of behavior. With the promise of increasingly effective techniques of behavior control, concern about the ethics of behavior...
control has become more prominent. In this section we will examine the universality of control, the biblical teachings regarding control, the role of education in control, and the relationship of control to personal freedom and choice.

THE UNIVERSALITY OF CONTROL

With the development of behavioral techniques, critics began to raise objections to behavioral approaches on the grounds that control of human behavior was not desirable, and was by implication immoral. The first line of response by behaviorists was to point out that control already exists, that it is universal, and that it is accepted and even valued. 9 That it exists is exemplified by the fact that I wear a coat when it is ten degrees out, but not when it is ninety; by the promptness with which I withdraw my hand when it contacts a hot object; and by the blinking of my eyes when a blast of air contacts them—all are examples of control over my behavior. While behavioral control is an important part of the social environment, it is also an aspect of the physical world that we cannot escape. Control already exists, and it is ubiquitous. Even when I am asleep, a sharp jab in the side will result in my rolling over, a response that is negatively reinforced by termination of the painful stimulus.

Our social approval of control is embodied in a legal system that tells us which behaviors will not be tolerated and specifies aversive consequences for engaging in those behaviors. Approval of social control is exemplified by an educational system that is created by law, and in which all children are required by law to participate. Not only attendance is controlled; the goal of education is to foster the development of other behaviors: reading, computational skills, recreation, diet and health practices, and so on. This, too, necessarily implies control. Behaviorists are quick to point out that the fact that control is not perfect does not mean that control is lacking; they go on to suggest that if these goals are really desired, then it seems consistent to seek the most effective means by which they may be accomplished. If behavioral techniques are indeed effective, they should be embraced rather than feared.

CONTROL AND THE BIBLE

Broadly speaking, the Bible seems to support the conscious use of human control at all social levels, as well as to acknowledge its
presence. At the individual level, the Bible teaches us to encourage, admonish, exhort, and reprove each other. At the family level, parents (especially fathers) are taught to raise their children in the discipline and instruction of the Lord. At the societal level, we see the Law given to the nation of Israel, along with a penal system that included judicial procedures and a set of prescribed sentences for various types of offenses, and we see individuals taught to obey civil authority. Finally, control within the social system of the church is also a biblical teaching.

CONTROL AND MANIPULATION

Manipulation is defined as “treating, operating, or managing with skill or intellect.” In a psychological context manipulation, which may serve either good or bad purposes, involves controlling the action or behavior of others. The concern frequently expressed with respect to manipulation as a behavioral technique, however, is directed toward exploitive uses of control to serve the ends of the manipulator.

Earlier it was suggested that the basic concerns surrounding the ethics of behavior control focus on means and ends. Abusive manipulation involves the use of undesirable means of control (e.g., cutting off the arms to discourage stealing), controlling behavior toward undesirable goals (e.g., teaching an exconvict to be a more effective safecracker), and combinations of illegitimate means and goals (e.g., blackmailing a person to sell defense secrets to an enemy agent).

To the extent that behavioral technology provides greater ability to control behavior, it also increases the potential for abusive manipulation. Precautions against such abuses take several forms: (1) individual countercontrol measures, such as escape, and behavioral countercontrol to alter the behavior of the would-be controller; (2) legal prohibitions of certain forms of control, such as laws and regulations prohibiting “excessive use of force” by police officers; (3) the more widespread and fundamental countercontrol provided by social, ethical, and moral constraints of the society in which the person lives, such as the widely accepted prohibition of sexual relationships between psychologists and clients in a therapy relationship.

Adopting biblical standards for determining the means and ends toward which behavior control may be directed seems to provide
the best safeguard against manipulative exploitation. Individual-subjective or cultural relativism places an individual or group of individuals in the position of deciding when behavior control becomes exploitive. In such circumstances, there is always the risk that the individual or group may make decisions that are self-serving and exploitive; this could happen even with the best intentions. By contrast, biblical standards provide independent criteria by which we can assess whether control is beneficial or exploitive, a standard that all can use as a safeguard against exploiting or being exploited.

**Implications of Behavioral Control for Social Systems**

Social control of behavior at all levels seems to be endorsed by biblical teachings. Thus adoption of a biblical basis for determining absolutes in the area of values implies acceptance of social control as a legitimate phenomenon. The following sections examine some of our present social control institutions in behavioral and biblical perspectives.

**The Welfare System**

Our contemporary American welfare system is based on an “enlightened” humanistic philosophy that advocates the view that each person, by virtue of human existence, has certain rights. Among these are the rights to food, shelter, and medical care. Society has the obligation to provide these things to those who do not have them.

It's generally recognized that the present welfare system does not work very well. Abuses are numerous. Some draw multiple welfare checks through fraudulent means; some draw checks even though they do not qualify; some find ways to qualify primarily to avoid the necessity of working. Once having begun on welfare, it is unlikely that these persons will return to the work force.

Social Security is a relatively unique aspect of the welfare system, because some participate in benefits from the system by virtue of having “earned” them through contributions from their own salary. In a sense, however, these individuals are the victims of a second-class membership in the system. Others receive benefits without participation: those who were of retirement age when the
system was initiated, those who were dependent children of a deceased participant, and those who never entered into the work force by virtue of being "disabled," all qualify for social security benefits.

Several aspects of the welfare system make it particularly problematic. First, it punishes going back to work; if the individual takes a job, welfare benefits and related benefits such as medicare are lost, taxes and social security contributions are required, and the person may actually suffer reduced financial status in addition to having to work. Malingering and laziness may be rewarded with benefits, particularly if the individual is able to present them in the guise of some form of disability. Nagging back pain and a variety of mental disorders are common complaints. Bureaucratization of the system results in economic inefficiency; great sums are consumed in administration and in a tyranny of regulation, in which human need is treated as less important than the rules for administering aid. Often the regulations both limit flexibility and increase costs.

**Behavioral Principles and Welfare**

A behavioral critique of the welfare system focuses on the tendency to reinforce undesirable behaviors. Money is a very important reinforcer for most individuals in our society. If money is made contingently available for enacting a sick role, people will become sick. If money is contingently available for being "unable" to hold a job, people become unable. Essentially, the welfare system reinforces "helpless" and dependent behaviors rather than initiative and personal responsibility.

**Welfare and the Bible**

The Mosaic Law given in the Old Testament includes a set of principles and mechanisms that were designed to provide for those in the nation of Israel who had needs. We will call this the Ancient Jewish Welfare System. Before discussing this system, it is important to emphasize a basic biblical principle on which it was predicated; the "work to eat" principle. According to the Genesis account, meaningful activity was carried out even in the Garden of Eden; Adam was responsible for naming the animals, for example, though apparently this was not an onerous task. When put out of
the Garden, a part of Adam’s condemnation was the necessity of earning food by means of effortful work for the rest of his life: “By the sweat of your face you shall eat bread, till you return to the ground....” Adam’s condemnation to work in order to earn his food was in turn passed on to all of his descendants. The principle of working to eat is repeated throughout Scripture, and is both presumed and implied by the Ancient Jewish Welfare System (described primarily in the Old Testament book of Leviticus).

Seven basic elements are included in this system: (1) the incomplete harvest; (2) lending without interest and selling without profit; (3) land remained in the family; (4) Jews could become hired servants but went free on the seventh year; (5) servants who wished could become servants for life by choice; (6) the tithe of the harvest; and (7) the giving of portions. We shall examine each of these briefly.

At harvest time, the Jewish law indicated that the farmer was to leave the “gleanings” of his fruit trees and his fields. Whatever unripe produce which was not gathered from the trees or vines on the first picking was to be left; the corners of the fields were not to be harvested. If bits of food or grain fell off the wagon on the way to the barn, these were to be left. The poor and needy of the land, those who were without property or unable to farm on their own, were free to come and help themselves to this remnant from the harvest. A touching example of this practice is recounted in the story of Boaz and Ruth.

The principles of lending without interest and selling without profit implied that none of the Jewish people were to become wealthy as a result of the misfortune of their neighbors (although profiting from foreigners was permitted). If a man experienced misfortune due to drought, insect damage, disaster, or poor management, his neighbors were to help him without personal gain. It is important to remember that at this time Israel was an agricultural state in which virtually all but the priests worked the soil.

The principle of land remaining in the family involved the notion that the land of Israel actually belonged to God, who had apportioned it to the various families of the tribes of Israel as a perpetual inheritance. Land could neither be bought nor sold; rather, the use of the land and the crops it would bear was bought and sold. The land was to revert to its original owners on the sabbath
(seventh) year. The price for its use was to depend on the number of years until that occasion. In our day, we were very much aware that land is wealth; by forbidding the sale of land, two outcomes were insured. First, no one was able to become fabulously wealthy. Second, no family was permanently disenfranchised. The possibility of meaningful work and productivity was thus insured to all.

A Jewish person was free to become a servant to another in the event that he was unable to provide for himself. In this way, those who experienced misfortune or failure could continue to earn a living for themselves. However, the master was obliged to let the servant go free at the end of a period of seven years (the Sabbath year). Moreover, the master was to send the freed servant out with provisions to see him through to the next crop. If, for some reason, a person found himself unable to cope successfully on his own, or if he found it more appealing to work for another, he could volunteer to become a servant for life.

The tithe of the harvest provided for the needs of those who were unable to meet their needs in any of the ways we have described so far. Each person was to bring a certain portion of his harvest to the temple, where it was set aside to meet the needs of “the Levite [who owned no property], the alien, the orphan and the widow.” Remember that, in a culture like that of Israel, it was extremely difficult for women to find work. The priests spent their time in worship and also had no property of their own, thus were not able to raise their own food. By means of the tithe of the harvest, provision was made for these individuals.

Giving of portions was a part of the social festivities associated with the periodic religious feasts and celebrations. These occasions combined worship of God with rest from work, socialization, feasting, and celebration. On such occasions, those who were relatively wealthy shared from their abundance with those who were impoverished, by preparing an abundance of food, which was then shared. In this fashion, all entered into the joy and enjoyment of the occasion.

There is some question regarding whether this system ever functioned fully in the way in which it has been described here. We did see in the story of Ruth and Boaz one instance of its effective functioning. Other biblical passages, however, reveal the breakdown in
the system as advantage was taken of widows and orphans or servants were not permitted to go free at the appointed time. But the principles of the system are relatively simple and straightforward, involving reward for effort while at the same time minimizing the risk of exploitation.

The basic principle of the Ancient Jewish Welfare System was that of positive reinforcement. If a man worked, he obtained food. No one did it for him. An exception was made for persons who, through no fault of their own, were unable to work. The similarity between approaches suggested by behavioral principles and the Ancient Jewish Welfare System suggest that a common truth about human nature underlies both.

**SOCIALIZED MEDICINE**

One of the issues that regularly comes up before the legislative branch of our federal government is that of socialized medicine. Initial steps toward implementation of socialized medicine have already been taken in the enactment of Medicare/Medicaid, and in the provision of dialysis for persons suffering from kidney disease.

One of the issues inherent in socialized medicine is the question of whether society should bear the cost of medical treatment for individual members. This issue is especially cogent amidst the growing realization that personal lifestyle is a major factor in heavy use of medical care by a small portion of the population. In part, the issue involved here is the same one involved in welfare: a choice between a rights and obligations model of providing for those who have needs, as opposed to a sharing of personal resources with others out of a sense of loving service to God and fellow humans.

While behavioral psychology has thus far dealt with this area only to a limited degree, certain tentative conclusions regarding socialized medicine can be drawn. First, when medical service is made available noncontingently, there is no incentive to avoid unnecessary use of medical resources. Second, there is little incentive for taking positive steps toward health. A social context in which medical services are more costly to the individual than are preventive measures is more likely to foster constructive use of lifestyle approaches to preventive medicine than one in which medical treatments are provided freely to all comers. Interestingly, the
common practice of private health insurers to provide co-insurance, in which the individual bears some proportion of the cost of medical treatment, is designed to discourage wasteful and wanton use of medical resources while making treatment available to those who genuinely need it.

While the Bible has little to say directly about medical care, the general thrust of many biblical teachings is in the direction of individuals providing for their own needs, insofar as they are able. When the individual has needs he or she is unable to meet, family and neighbors are called upon to meet those needs out of loving concern.

At a basic level, then, behavioral and biblical approaches agree insofar as they require the individual to take responsibility for his or her own needs. The major difference is that biblical teachings include a provision for those needs for which the individual’s capacity is inadequate. In short, both behavioral and biblical principles point toward individual responsibility and away from socialized medicine (which grows out of a humanistic philosophical tradition).

**PUBLIC EDUCATION**

One of the major struggles in our present educational system centers around the values inherent in various educational approaches. While specific issues such as creation/evolution and instruction about sexual physiology and functioning are focal, the underlying issues in each case seem to involve disagreements about what is good, right, true, or moral.

Behavioral psychologists have accurately pointed out that education is one of the areas in which our society is most clearly involved in deliberate, self-conscious behavior control. Implicitly, then, our values in terms of the means and goals of behavior control become issues in education.

Historically, religious orders were leaders in the development of education, in the founding of educational institutions, and in the fostering of widespread learning. In the last few generations, we have seen the state and federal governments take over primary responsibility for education. Initially, this posed little problem, as there was consistent agreement on the basic values inherent in approaches to education. In our present pluralistic society, however,
disagreement over basic values has become an increasingly focal issue in education.

Conceptually, behavioral psychologists view values as essentially identical with reinforcers. When we say that members of our culture value education, we also imply that they will work to obtain or provide education. Further, when we disagree about educational goals, it implies that different educational accomplishments are reinforcing for different individuals. Some parents are reinforced when they hear their children offer creationist explanations for human origins, while others are likewise reinforced on hearing evolutionist explanations.

One of the central points emphasized by behavioral psychologists is the significance of individual differences. In the area of education we have developed a social system that tends to minimize such differences. While critics of behavioral approaches have suggested that systematic application of behavioral technology to education will produce carbon-copy people, Skinner and others have clearly pointed out the potential of behavioral approaches to foster diversity and develop unique skill.29

While education is not a central theme of biblical teaching, the Bible does suggest that educating the child is primarily the parents' responsibility, with special emphasis on the father.30 Since the focus of the biblical teachings is on religious education, religious education specifically becomes a parental responsibility. This necessarily implies a diversity in approaches and a recognition of differences in values. It also implies a high degree of individualized instruction.

THE PENAL SYSTEM

Critics of behaviorism often suggest that behavioral approaches to punishment as applied in the penal system are ineffective, and imply that the failure of the penal system means that the behavioral conceptualization is faulty. For those who understand the basic principles of punishment as revealed by behavioral research, it should be clear that the penal system currently in use in the United States is doomed to failure because it fails to incorporate good behavioral techniques.

The issues involved in the effectiveness of punishment are discussed in more detail in Chapter 4. Briefly, punishment is most effective if it is immediate, certain to follow the target response,
and severe enough to outweigh any reinforcement that may also follow the response. In our penal system, as it presently operates, punishment is neither swift nor sure. Trials may be delayed weeks or even months; cases are dismissed on procedural grounds; charges are reduced through plea bargaining, and so on. Even when conviction is finally accomplished, execution of the sentence does not necessarily follow quickly, and the appeal process may begin the whole cycle over again. The primary rationale for these processes is the protection of the innocent accused. Further, the equity of the sentencing process is seriously breached when one person gets probation for fraud involving hundreds of thousands of dollars, while another gets a long jail term for simple robbery of an inexpensive item.

From a behavioral perspective, the ideal would be for the criminal to be apprehended, found guilty, and punished immediately. The immediacy and certainty of punishment maximize its effectiveness. In addition, imposing consequences that are aversive enough to reduce future probability of the same response would be a further application of behavioral principles.

From a biblical perspective, the primary teachings regarding government, and especially regarding penal systems, come from the Old Testament Jewish law as it is presented in the Pentateuch. In our discussion of the Jewish law, it is important to remember that it is given in the context of the relationship between God and Israel. Thus the *New Bible Dictionary* notes, with regard to the Ten Commandments, that “the common designation of the contents of the two tablets as ‘the Decalogue,’ though it enjoys biblical precedent, has tended to restrict unduly the Church’s conception of that revelation . . . it is not adequately classified as law; it belongs to the broader category of covenant. The terminology ‘covenant’ and ‘the words of the covenant’ is applied to it. It is also identified as the ‘testimony.’”

The *Dictionary* goes on to suggest that, “covenant” not only implies an agreement between God and his people, but in its structure the Jewish law parallels the widespread Semitic practice of covenants to formalize relationships between lord and vassal. Thus the whole notion of law here is somewhat different from that with which we are familiar in our current practice, which tends to view law more as a social contract among peers.

Briefly, then, the Jewish law or covenant specified a number of
offenses, and a number of specific punishments that were to follow certain types of offenses. The principal method of capital punishment was by means of stoning; the specific method of execution by the "avenger of blood" in murder cases is not specified, but probably was often also stoning. Other punishments included beating, with a maximum limit of forty stripes; fines and restoration fourfold of stolen or damaged property; payment in kind for personal injury—"eye for eye, tooth for tooth"; confinement to a city of refuge in cases of involuntary manslaughter; and total destruction of people and property in cases of corporate wrongdoing, such as false worship.  

Specific offenses that were to be punished with execution by means of stoning included idolatry, and enticing or encouraging idolatry in others; blasphemy; apostasy; Sabbath-breaking; divination; sacrificing of children; adultery; and rebellion toward parents. Murder and kidnapping and disregarding judicial decisions of judge or priest were also punished by death, probably most often by stoning, though the method is not specifically mentioned. In stoning, the procedure was for the prosecution witnesses to cast the first stones. If the convicted person was not yet dead, the other bystanders joined in stoning the person to death.  

A variety of specific punishments are provided for various types of specific offenses. For example, theft of sheep or cattle is to be paid back four or fivefold, or the person may be sold to pay for the theft if he has nothing; if the person leaves an open pit and another's animal strays into it, the one who dug the pit must pay for damages; in personal injuries that do not result in death, a fine is to be paid, or "if there is serious injury, you are to take life for life, eye for eye, tooth for tooth, hand for hand, foot for foot..." These punishments seem, by our standards, quite harsh. This is recognized in the biblical teachings with the warnings: "Show her no pity," and "Show him no pity. Do not spare him or shield him. Then all Israel will hear and be afraid...and no one among you will do such an evil thing again."  

Although difficult cases were to be passed on to authorities at a higher level, who were presumed to have greater wisdom in judging, no appeals process per se existed. The principal safeguard against being wrongly condemned seems to be the requirement that no one could be convicted on the testimony of a single witness.
False witness or perjury was strongly discouraged by providing the same penalty for the false witness as that specified for the offense of which he had falsely accused another.

Several features of these judicial practices stand out. First, they are relatively simple compared to our elaborate legal system. Second, the penalties seem, to our sensibilities, remarkably harsh in most instances; yet they avoid the "cruelty" of incarceration, which is so common in our culture, and the related social cost of prisons, guards, and provision of food, clothing, and so on for the offender. One is also struck by the rapidity this system employed in completing the judicial process and resuming daily routines.

**Social Influence and Other Social Applications**

Behavioral approaches have recently been applied to a wide range of other social issues. A number of studies have shown that behavioral approaches may be successfully employed in business and industry to improve industrial safety, and to increase the usage of containerized packing of goods for shipping, thus increasing efficiency and reducing costs. Another area of application is in reducing litter; preliminary studies suggest that behavioral techniques can reduce littering and increase the proportion of waste materials deposited in trash receptacles at minimal cost. A few studies suggest that behavioral approaches may make a favorable contribution to conservation practices in the use of our dwindling energy resources.

Another area of recent interest among behavioral psychologists is that of behavioral coaching. Recent studies suggest that a behavioral coaching approach can enhance skill acquisition in such diverse areas as football blocking, tennis strokes, and ballet performance.

Taken together, these recent developments in behavioral applications to social situations suggest that there is a potential for promising development of behavioral approaches toward dealing with a number of social system problems.

**NOTES**

3. Exod. 20:1-17; Deut. 5:6-22.
10. 2 Tim. 4:1-2.
15. Prov. 14:12; see also Bufford in Ellison, Modifying Man, pp. 209-214.
17. For example, see 2 Thess. 3:6-15.
26. Deut. 16:9-17; 26:12-13; Neh. 8:10-12.
27. For example, see Jer. 34:8-22.
30. E.g., Deut. 6:4-8 ff.; Eph. 6:1-4.
32. See Exod., chapters 20-23.
4. Behavior Theory and Punishment

One of the most controversial areas in behavioral psychology is the question of what role, if any, punishment should play. The issue also raises significant concerns for those who hold a Christian perspective and believe that the Bible advocates the use of punishment. This chapter examines what behaviorists mean by the word punishment, considers the supporting data and arguments for and against the use of punishment from a behavioral perspective, discusses alternatives to punishment in dealing with problem behaviors, and explores how these compare and contrast with a biblical perspective on punishment.

Definition and Forms of Punishment

According to Webster’s dictionary, “to punish” means:

1. to afflict with pain, loss, or suffering for a crime or fault; to chasten,
2. to inflict a penalty for (an offense) upon the offender; to visit (a fault, crime, etc.) with pain or loss; as to punish treason with death,
3. to deal with harshly, roughly or the like, so as to deplete in numbers, quantity, strength, etc., as, a punishing assault.

In everyday speech, we use the word punishment to refer to the presentation of some painful stimulus, or to the loss or removal of some positive or rewarding stimulus. Such punishments include jail (loss of freedom to come and go at will), a fine (loss of money), spanking (presenting a painful stimulus), and so on. These definitions of punishment focus on what is done to the person.

Behavioral psychologists use the word punishment somewhat differently. A behavioral definition of punishment focuses on how the person responds to the stimulus event in question; that is, be-
behavioral definitions of punishment focus on the function of the stimulus in affecting the behavior of the person who receives it. Two broad classes of stimulus events are functional in affecting behavior: (1) removal of a stimulus; and (2) presentation of a stimulus. These two classes each affect the frequency of the behavior that they follow.* When stimulus events in either of these two classes reduce the frequency of the behavior they follow, behaviorists call the process "punishment." Thus punishment is functionally defined by a decrease in the frequency of a target response when a stimulus is either removed or presented following that response.

PRESENTING AN AVERSIVE STIMULUS: PUNISHMENT

An aversive stimulus may be defined as: a stimulus that will result in (1) the weakening or reduction in the frequency of a response if it is presented following that response, and (2) the strengthening or increase in frequency of a response if it is weakened or removed following that response. A wide spectrum of events may function as aversive stimuli: spanking, being yelled at, scolding, the word "no," being slapped, electric shock, and so on. Aversive stimuli are the most commonly used forms of punishment in our society.

A second important principle to remember is that the same stimulus event may function in different ways for different people or organisms. Thus a stimulus that is aversive for most people may function as a reinforcer for a given person. In one study it was shown that rats would press a bar to receive electric shock, normally an aversive stimulus, after they had received food following the shock on a number of occasions. In another study, it was found that the number of disruptive behaviors in an elementary school classroom increased when the teacher made critical remarks and verbal reprimands following such behaviors, and decreased when

* Two aspects of the relationship between punishment and reinforcement should be noted: (1) for both, presentation or removal of a stimulus following the response affects the frequency of the behavior; and (2) in general, a stimulus that will strengthen a response when it is presented following that response will also weaken the response if it is removed following it. Thus, depending on how they are used, the same stimulus events can function either to weaken or strengthen responses.
they were ignored. The authors concluded that teacher criticism functioned as a reinforcer in this particular situation. Thus, when a particular stimulus event is described as a punishment, it must clearly function as a punishing stimulus for a particular organism or group of organisms.

**REMOVING A POSITIVE STIMULUS: RESPONSE COST**

The removal of a stimulus following a response may also result in a decrease in frequency of that response. When a response is decreased in frequency by the removal of a stimulus, this is called *response cost*. In our society, giving traffic tickets and fines for legal offenses are the most commonly used response cost procedures. As with aversive stimuli, a particular response cost must be shown to have a punishing effect for a particular person or group of persons before it can be considered response cost.

**TIME OUT**

Aversive stimulation and response cost both reduce responding through changing events that follow a response, by respectively presenting or removing a stimulus. Time out procedures have similar effects on responding, but the events preceding responding are altered.

Time out involves either of two forms of changes in antecedent events that result in a decrease in the frequency of a response. First, the person may be removed from the immediate environment. For example, if a child throws a tantrum, a typical time out procedure would be to remove her immediately and isolate her in her room. If the tantrums are found to decrease in frequency, then time out would be shown to be an effective procedure for this child.

The second form of time out involves the contingent removal of a discriminative stimulus in the presence of which responses are reinforced. For example, if a frown on the boss's face signals that one or more responses in his presence (e.g., asking for a raise, request-

* An alternative explanation is that criticizing the behavior of one child had emotional effects on other children, which increased their frequency of disruptive behaviors; this would be a setting event rather than a reinforcement effect. To clearly document a reinforcement effect, it would be necessary to show that the disruptive behavior of the criticized children increased in frequency, rather than to show a general increase in disruptive behavior in the classroom as a whole.
ing to go home early) will not be followed by reinforcement, and that frown then results in a decrease in the frequency of such responses, it would function effectively as a time out procedure.

The common feature of these two forms of time out is a temporary suspension of the opportunity to obtain reinforcement for certain responses. In this sense, they are somewhat similar to response cost. Time out, however, involves the loss of opportunity rather than the removal of reinforcing stimuli that the person has already obtained.⁴

For technical reasons, behavioral psychologists do not generally think of time out as a punishment. Because of the similarity in its effects on responding, however, we will ignore this distinction in the discussion that follows.

**Behavioral Views of Punishment**

Among behavioral psychologists, there are two prevailing views of punishment: (1) the majority view, that punishment is both ineffective and undesirable; and (2) the minority view, that punishment is necessary and (under a limited range of conditions) effective, if properly employed.

B. F. Skinner is a leading advocate of the position that punishment is undesirable and ineffective. He believes that punishment is the most commonly used form of behavior control in our society, and posits that the reason for this is because it produces immediate, desirable effects. However, he claims that “in the long run, punishment, unlike reinforcement, works to the disadvantage of both the punished organism and the punishing agency.”⁵ Skinner cites experimental evidence to support his view that, when punishment is terminated, the frequency of the punished response increases in frequency. Thus he concludes that punishment results in a “temporary suppression” of the response. He also states that punishment is not the opposite of reward, since punishment does not subtract responses, while reinforcement adds them.

Skinner describes four effects of punishment, all of which he considers undesirable: (1) it stops the ongoing response by eliciting powerful alternative responses; (2) it contributes to the development of conditioned emotional responses to stimuli associated with
the punishment experience (this accounts for the sense of guilt, shame, sin, and so on); (3) any behavior that avoids the punishing stimulus is reinforced, thus the conditioned emotional response may be weakened; and (4) punishment produces a variety of negative byproducts, including frustration, rage, development of internal blocking responses, and so on. In place of punishment, Skinner suggests a number of alternatives, several of which will be explored in this chapter.

Behavioral psychologist Arthur W. Staats represents the minority view that punishment works, and may be necessary. He acknowledges the potential adverse effects of punishment, but concludes that, “Actually, in our present state of social advancement, it is impossible to raise a socially controlled child without the use of some form of aversive stimulation. It is thus important to . . . minimize its adverse effects and maximize its productive effects.” Staats goes on to suggest that, “When punishment is employed, it is suggested that it be as infrequent as possible, as slight as is necessary to be definitely aversive, applied immediately but of short duration, and be paired with words so the words will later on be capable of substituting for the direct punishment.” These words, which will come to produce negative emotional responses much like the unconditioned aversive stimuli, will later be enough to prevent the occurrence of undesirable responses. Staats also advocates the use of time out.

In an extensive review of research on the effects of punishment, psychologists Nathan H. Azrin and W. C. Holz criticize Skinner’s interpretation of the data regarding the effectiveness of punishment. They see some potentially adverse effects of punishment, but suggest that many of the effects associated with punishment that Skinner deplores may actually be desirable. They argue that the relationship between punishment and behavior is complex, because it interacts with other ongoing behavioral processes; they also note many parallels in the effects of reinforcement and punishment. Azrin and Holz conclude that punishment is at least as effective as alternative procedures, and that in some circumstances punishment is the only viable alternative for eliminating an undesirable response.

The remainder of this chapter explores the Skinnerian objections
to punishment, and counters them with the views of Staats, Azrin and Holz, and their colleagues. These positions will then be compared with the biblical perspective on punishment.

"PUNISHMENT IS INEFFECTIVE"

Probably the most significant and fundamental objection to the use of punishment is the claim that it doesn't work. The basis of the claim that punishment does not work is linked closely with the results and interpretation of two widely cited studies, conducted respectively by Skinner and W. K. Estes, in which it was found that the same number of responses were produced in extinction of a bar press response in rats under two conditions: (1) simple extinction; and (2) extinction plus punishment. In the second procedure, the rats were punished for bar pressing by receiving either an electric shock or a bar slap; subsequently, the punishment procedure was eliminated and extinction was continued until responding ceased. It was observed that the rate of bar pressing was dramatically lowered while the punishment procedure was in effect; after its termination, however, about the same number of responses occurred before responding ceased as occurred in the simple extinction procedure. They concluded that punishment temporarily suppressed responding, but had no lasting effect.

In reviewing these studies, Azrin and Holz concluded that the introduction of punishment along with extinction could have served as a discriminative stimulus that indicated that reinforcement would no longer occur; termination of the punishment reinstated the original conditions and extinction proceeded in the normal fashion. Azrin and Holz support this interpretation with data from their own study, which suggested that the discriminative rather than punishing effects of shock and bar slaps had produced the effects found by Skinner and Estes. Azrin and Holz concluded that shock and bar slaps served notice that food was no longer forthcoming, rather than having a punishing effect. Consequently, the data from the Skinner and Estes studies do not bear on the question of the effectiveness of punishment.

Azrin and Holz go on to present ample data to support their conclusion that punishment is a highly effective method for reducing the frequency of responses. With mild punishment, characteristic recovery of the base rate of the behavior occurs when punish-
ment is discontinued. However, they note that with severe punishment, it has been shown that the results are almost irreversible. In addition to severity, the nature of the punishing stimulus may be a factor that influences recovery of the response rate.\textsuperscript{13}

Azrin and Holz conclude that punishment can be a highly effective method for reducing the frequency of a response. Alternative methods such as extinction and satiation (e.g., eliminating candy stealing by making an unlimited supply of candy available) are also effective, but for practical reasons may not be applicable in a given situation. For example, speeding gets us places more quickly. Because this savings in time is intrinsic to the response, it is not possible to extinguish speeding. Thus other procedures, such as punishment, become necessary.

The disadvantages of punishment, according to Azrin and Holz, include disruption of social relationships that may be vital to learning, operant aggression (aggression reinforced by terminating punishment), and elicited aggression (respondent behaviors which are aggressive in nature, and which automatically occur in the presence of the punishing stimulus).

"PUNISHMENT LEADS TO AVOIDANCE OF THE PUNISHING AGENT"

Behavioral psychologists who object to punishment as well as those who advocate it seem to agree that one of the potential adverse effects of punishment is that it will result in avoidance of the punishing person(s). Social avoidance may have a number of adverse effects. For example, a child whose father is generally punitive may be observed to leave the house when Father arrives home, or may simply avoid home altogether. When this happens, not only does the child avoid punishment from his father, he also loses any opportunity for positive learning experiences to occur. Likewise, a child who is often punished by his teachers may soon begin to stay away from school; the result is failure to receive an education. At an extreme, this avoidance process may result in complete social isolation, thus preventing the person from being personally productive or making a useful contribution to the community.

The importance of social avoidance as an adverse effect of punishment should not be minimized. However, Staats accurately points out that the tendency for punishment to produce avoidance can be counteracted if reinforcement is also provided. The effects of
reinforcement and punishment may be thought of as "competing." Overall, the sum of reinforcing and punishing experiences we have with a given person will determine our attraction toward them or avoidance of them. Because of this, it is absolutely essential that reinforcement be the predominant consequence used by parents, teachers, and other social agents. When reinforcement is frequent and punishment rare, social attraction will occur. Though punishment is effective, it must be used sparingly. 14

The fact that punishment produces social avoidance of the punishing agent is not necessarily bad. Learning to consistently avoid people who are highly punitive, or to avoid for the moment people who are temporarily disposed to be punitive is a highly adaptive behavior. If this process enables us to avoid the adverse impact of the bully down the block, it can be quite useful. It is only when it disrupts productive social interactions that social avoidance becomes a problem.

"PUNISHMENT ENCOURAGES IMITATIVE AGGRESSION"

One of the ways in which behavior is learned is by observing others model it, then imitating their performance. Psychologist Albert Bandura and his colleagues have extensively studied these phenomena, and have shown that observing another person demonstrate or model novel forms of aggressive behavior may result in the observer later exhibiting those same behaviors. From these studies, it appears that receiving punishment from others may increase the probability of exhibiting it. Indeed, in one study it was found that being victimized by the aggression of others seemed to contribute to increased aggression. This has led a number of behavioral psychologists to be concerned that the use of punishment may tend to increase the occurrence of aggressive and punitive behaviors on the part of those who receive the punishment. 16 (e.g., the tendency for battered children to become abusive parents).

The relationships between modeling and imitation are complex. A number of factors are known to interact with the experience of observing a model in determining whether imitation will occur. These include sex and social status of the model, consequences to the model, and consequences to the observer. Clearly, observing others punish or show aggression is one factor that may contribute to aggressive and punishing behavior; however, modeling is not the
only important factor to consider. While it is appropriate to be concerned about the potential adverse effects of using punishment, this factor alone should not preclude its use.

"PUNISHMENT PRODUCES NEGATIVE EMOTIONAL EFFECTS"

One of the effects of punishment—indeed, of any contact with aversive stimuli—is the production of a variety of emotional effects. These are basically respondent behaviors; that is, they occur any time that certain stimulus events occur, whether or not the stimulus events are presented contingently following an operant response in the manner we have described as punishment. Thus the effects occur whenever punishment occurs, but are not limited to the punishment situation.

Negative emotional effects of punishment come to be associated not only with the punishing stimulus, but with all stimulus events that occur at the time of the punishing event. Thus negative emotional effects will be associated with the punishing agent, the situation in which punishment occurs, and so on. These negative emotional effects play a major role in the development of avoidance responses. Behavioral psychologists generally seem to view this tendency for negative emotional effects to generalize to all aspects of the punishment context as undesirable. Certainly the tendency to develop negative emotional responses to key social agents, such as parents and teachers, is undesirable. But, as Staats accurately notes, in some ways this generalization of negative emotional effects may be beneficial.

"PUNISHMENT WEAKENS OTHER RESPONSES"

In addition to affecting the response actually followed by punishment, punishment tends to affect other behaviors as well. A child who is busily doing an assignment while talking out loud to herself may cease talking out loud if this response is punished. The presentation of punishment, however, may also affect her work on the assignment. Similarly, an employee who presents an innovative proposal to the boss, and is reprimanded for not wearing a suit and tie to work, will be less likely to come to work improperly dressed (providing such reprimands function as punishment for him), but he may also be less likely to present such innovations in the future.

The adverse effects of punishment on other ongoing responses
may be limited in three ways: (1) the consequences of a response are most effective if they follow immediately after the response; (2) punishment is more effective if it occurs consistently after a response; and (3) ongoing reinforcement for a response will interact with any accidental effects of punishment occurring after the response. For all of these reasons, punishment tends to act selectively to primarily influence the response that it consistently and contingently follows.

In one way, the tendency for punishment to affect other responses is clearly desirable. Because other responses similar to the punished response are generally also undesirable, the tendency for punishment to reduce the frequency of similar responses is actually an advantage.

**Alternatives to Punishment**

A review of the behavioral literature suggests six strategies that may be used to eliminate undesirable behaviors in situations that do not call for punishment: (1) changing the setting conditions; (2) removing the discriminative stimuli for the response; (3) terminating reinforcement for the response; (4) developing another response that prevents the problem behavior; (5) reinforcing any other behavior that occurs;* and (6) eliminating the opportunity to respond.

**Changing Setting Conditions**

This strategy essentially involves changing the conditions of the person and the person’s environment. The following examples illustrate how changing the setting conditions can alter behavior.

An overweight man who is extremely hungry is more likely to eat cookies than he would be if he had just eaten a full meal. A woman who becomes irritable and argumentative when tired may have a more pleasant disposition when she is well rested. A child who is fearful and cries when put to bed in a dark room may be more disposed to go to sleep peacefully if a small night light is left on in the room. A wife who wishes to minimize the frequency of

*This is also called DRO, or differential reinforcement of other behavior; in this procedure, the organism is positively reinforced when any response except the target response occurs.
angry responses by her husband when she asks him to help with a job around the home may make the request after a good dinner and some time for relaxation, rather than when the husband first comes in the door from work.

In each of the situations just described, an undesirable behavior has been reduced in probability by simply making changes in the person's setting conditions. In each example, the undesired behavior is reduced without the use of punishment.

**REMOVAL OF STIMULI**

Some undesirable behavior may be much more probable in the presence of certain environmental stimuli. For example, Johnny may eat his dinner in a matter-of-fact way under normal conditions. But if the dessert is in sight on the kitchen counter, he refuses to eat and cries for the dessert. Putting the dessert inside the refrigerator before calling Johnny to dinner may eliminate the problem of his crying and refusal to eat. Similarly, adults with a weight problem may find that they eat less if all food is placed out of sight in the cupboards rather than being left out on the table.

**TERMINATING REINFORCEMENT FOR A RESPONSE**

The process of extinction involves weakening a behavior by eliminating the occurrence of whatever rewarding events follow the behavior and maintain it. A man who is accustomed to going to a particular store to buy the paper every day will soon cease going to that store if he repeatedly finds it closed. In this interaction, obtaining the paper reinforces going to that store; failure to obtain the paper, which is the reward or reinforcer, weakens and eventually extinguishes the response.

In another example, Bobby throws tantrums each time his mother says no to his requests. She hates tantrums, and is embarrassed by them, especially when other adults are present or they are in public places. Thus she generally gives Bobby what he wants to prevent the embarrassing tantrum. She has tried to ignore his tantrums, but they just seem to get worse. Lately Bobby has become completely unmanageable.

One way of dealing with Bobby's tantrum problem is to stop reinforcing tantrums. In this case, getting what he wants is what maintains Johnny's tantrums. If his mother were to consistently
decline to give him what he wanted when he had a tantrum, tan­
trums would eventually cease. A problem with this approach, how­
ever, is the one his mother has already encountered: Bobby's first
reaction to this will likely be to try harder—to have a more violent
tantrum—which is just what the mother most wants to avoid.
Thus, in some situations, there is a serious problem with the pro­
cedure of terminating reinforcement. 19

DEVELOPING A SPECIFIC RESPONSE THAT PREVENTS
THE PROBLEM BEHAVIOR

One way to eliminate problem behavior is to develop an incom­
patible response—that is, another response in the same stimulus
situation that, by its very nature, prevents the occurrence of the
problem behavior. For example, Mary is constantly out of her seat
at school. Since it is physically impossible for Mary to be in her
seat and out of it at the same time, these two actions are incompati­
able. One way to reduce the problem of being out of her seat is
simply to reinforce her for being in her seat. Research has shown
that this is a highly effective way to deal with this problem and
similar disruptive classroom behaviors. The same techniques can
be used at home. 20

In another example, Tom has been eating a lot of snack foods
between 5:30 P.M., when he gets home from work, and 7:30 P.M.,
when he normally eats dinner. Because of this, his appetite for
dinner is poor. He usually jogs in the mornings, and does not eat
for about an hour afterward. Since jogging is a response that keeps
Tom from eating, he might change his routine so that he jogs im­
mEDIATELY after work rather than in the morning. In that way, he
will not be ready to eat until supper is ready.

STRENGTHENING AN ALTERNATIVE BEHAVIOR

The technique of strengthening an alternative behavior in order
to weaken the undesirable behavior is graphically illustrated by the
story of Billy, a very disturbed little boy with a persistent habit of
mutilating his own body. He would beat his head against the wall
or floor, pound his fists against his face, or scratch himself until he
was bleeding profusely. For several months, Billy had been pro­
tected from his own mutilation attempts by means of a variety of
restraints: a football helmet over his head, a straitjacket to prevent
movement of his arms, and being tied into bed so that he could not
bang any part of this body against the hard floor or walls of his room. Whenever the restraints were removed, Billy began to mutilate himself again.

In an effort to eliminate Billy's self-mutilation on a more permanent basis, a new procedure was tried. It was known that Billy very much enjoyed hamburgers. Thus, at mealtime, hamburgers were made available, and a bite at a time given to Billy whenever he was not mutilating himself (it was not considered important what other activities he engaged in, so long as he did not harm himself). It was soon discovered that Billy would run to get a bite of hamburger when it was anywhere in the room. Thus, initially, two attendants stood on opposite sides of the room and took turns giving Billy a bite. He ran back and forth between them, too busy to harm himself. As Billy became tired he would walk back and forth, and eventually sit down to rest. The attendants continued to give him bites of hamburger every minute or so, provided he did not begin to harm himself. Eventually, Billy could be free for longer and longer periods of time without engaging in self-injuring behavior.21

This procedure differs from developing a specific response to prevent the problem behavior primarily in that the behavior to be strengthened is not specified. Rather, reinforcement is given whenever the target response (e.g., Billy's mutilative behavior) is absent. (Technically we call this DRO, differential reinforcement of other behavior.)

ELIMINATING THE OPPORTUNITY TO RESPOND

Another way to eliminate a response is to remove features of the environment that are necessary for the response to occur. If unauthorized use of the swimming pool in the off-season is a problem, one way to eliminate the behavior is to drain the pool. A common practice among teachers who want to eliminate play behaviors during school hours is to collect toys, balls, and other play objects and place them in the teacher's desk. The response can no longer occur because the necessary environmental conditions to support it no longer are present.

LIMITATIONS

In reviewing the procedures that may be used as alternatives to punishment, it should be clear that there are limitations to each of
these approaches. Sometimes we are not able to control whether another person becomes tired, hungry, or sick, yet we may wish them to be patient, tolerant, and so on, even when undergoing these unpleasant physical and emotional states. Not all stimulus events are readily controlled, thus it may not be possible to remove them. For some responses, the reinforcement is intrinsic (e.g., running is reinforced by the physical sensations, and by the fact of getting somewhere more quickly), and thus they are not amenable to extinction. Similarly, it may prove difficult to devise a suitable incompatible response for some problem behaviors. Thus each specific problem response presents a challenge in identifying the technique for reducing the frequency of that response most effectively. Punishment should be viewed as one of a group of techniques for reducing the frequency of responses. Our thesis is that punishment is effective, and that in specific behavioral contexts it is the preferred method for reducing the frequency of specific problem behaviors.

So far, this discussion has dealt individually with each alternative to punishment. In practice, however, it is not uncommon to find two or more of these techniques used together. For example, Bobby's tantrum problem might be dealt with by using a combination of approaches. First, his mother might arrange a specific punishment for any tantrums that occur. Second, she should eliminating any reinforcement for tantrums. Third, she might arrange to reinforce either a particular incompatible alternative, some other specific alternative response, or any activity other than tantrums. The ideal reinforcement would be the very things that Bobby has previously gotten by means of tantrums. Thus, on a shopping trip, Mother might do the following: (1) when a tantrum occurs, she would put Bobby in the car until she finishes (a punishment), and give him no candy or gum on that trip; or (2) in the absence of tantrums, she would allow Bobby to select a pack of gum or a candy bar as they leave the store and then permit him to eat it. This combination of procedures is likely to be more effective than any single procedure alone.

The most obvious alternative to punishment, when the goal is to develop a response rather than to eliminate a response, is the use of reinforcement procedures. It should be kept clearly in mind that punishment is one of several effective procedures when the goal is
to decrease the frequency of a specific response. When the goal is to increase the frequency of a response, or to develop a new response, punishment is not an effective procedure; indeed, the other procedures that we have discussed here as alternatives to punishment are also not particularly effective. Punishment is not an effective means of establishing a response, though many in our culture attempt to use it in this way. In addition to using reinforcement to establish a response, reinforcement may also be used to strengthen a response that is already present, but that is so weak that it does not readily occur.

**Punishment: A Biblical Perspective**

In attempting to develop a biblical perspective on punishment, a number of biblical teachings must be considered. First, in the Mosaic Law, there is the explicit provision for a set of procedures that roughly correspond to our current civil and criminal codes. Punishment was specified for a variety of offenses, and included a range of punishment procedures. Second, in Proverbs there are a number of references to the use of a rod for discipline of a punitive sort in the process of child-rearing. It is clear that punishment is endorsed by the Scriptures, and there seems to be a general principle that the nature and severity of the prescribed punishment is related to the nature of the offense. Further, it is suggested that milder forms of punishment are a social norm: "... Reproofs for discipline are the way of life." It is interesting to note possible parallels between the use of a rod for discipline and some of the principles for punishment that we have discussed. Application of a rod is definitely painful, can be brief, and lends itself to pairing punishment with words; the frequent references to reproof suggest that the use of words is an integral part of the discipline process advocated by the Bible. Another principle that the Bible seems to reflect is the suggestion that punishment be used as infrequently as possible. Finally, the suggestion that punishment be brief parallels the biblical principle that God's forgiveness is immediate and sure. Many examples of the use of punishment occur throughout the Bible. Sometimes God is the mediator of punishment, sometimes punishment is carried out by social agents. When Adam and Eve
ate of the fruit of the tree of the knowledge of good and evil, they were put out of the Garden of Eden and their relationship with God suffered an immediate disruption. Cain was punished for his failure to bring an acceptable sacrifice to God. Achan was stoned for taking forbidden plunder. David was punished for his adultery with Bathsheba. Ananias and Sapphira were slain for lying before God. Sodom and Gomorrah were destroyed. Israel and Judah were defeated in battle and carried away into captivity. In each of these circumstances, God had provided verbal warning beforehand (either in person, or by means of the Law and the prophets) that these behaviors were not acceptable. Indeed, the whole history of Israel and Judah is a cycle of disobedience, warning by the prophets, punishment in the form of oppression by their enemies and failure of crops, repentance and blessing, then renewal of the sinful patterns and practices.

While it is clear that the use of punishment is endorsed and recorded in the Bible, there is also an abundance of teaching that emphasizes the use of more positive methods of behavior influence. Parents are instructed to teach their children God's principles throughout the day as a part of normal daily activities: "When you sit at home, when you walk along the road, when you lie down and when you get up." There are also many things in the Bible that indicate the use of positive reinforcement is desirable; there are frequent references to the use of encouragement and to the focus on positive behavioral attributes.

In summary, the Bible clearly advocates and records examples of the use of punishment. There are a number of parallels between the biblical examples and principles of punishment we find in behavioral psychology. At the same time, it is clear that punishment is not the sole method of behavioral influence advocated in the Bible. Thus, in broad terms, it appears that biblical teachings are compatible with the behavioral data regarding the use and effectiveness of punishment.

**Practical Implications**

Before a decision can be made about whether or not to use punishment in a given situation, the practical implications of punishment must be understood. To this end, the relationship between
punishment and reinforcement will first be defined, and the idea that views of punishment as either “good” or “bad” are essentially value judgments will be explored.

REINFORCEMENT AND PUNISHMENT: PARALLELS AND CONTRASTS

Table 4-1 summarizes parallels and contrasts between reinforcement and punishment. The first line indicates that reinforcement increases response rate, while punishment decreases response rate. The second line indicates that both punishment and reinforcement have temporary effects. Since this relationship, and the remaining ones presented in Table 4-1 seem to be little recognized, they need careful examination.

Temporary Effects

As noted earlier, one of Skinner’s criticisms of punishment is that it has temporary effects. To understand the significance of this criticism, the effects of reinforcement and punishment must be compared. In general, reinforcement is used in order to strengthen the frequency or rate of a given response. Initially, the

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response occurs at a low base rate; following the introduction of reinforcement, the base rate of the response increases. If reinforcement is then discontinued, the response decreases in frequency. Introducing reinforcement again will quickly reinstate the higher base rate found when the response is reinforced. These results are summarized in the top half of Figure 4-1. In the lower half of Figure 4-1, the effects of punishment are similarly portrayed. Punishment is used in order to decrease the rate of a response; the baseline for the response to be punished is usually fairly high. When punishment is introduced, the frequency of the response decreases. Stopping the punishment will result in a recovery of the base rate of the response. Reinstating punishment will quickly recover the lowered base rate found in the original punishment period.

The effects of punishment can be seen to be a mirror image of the effects of reinforcement. Normally, both reinforcement and punishment produce results that occur only during the period
when they are in effect; that is, both reinforcement and punishment have temporary effects.*

**Emotional Effects**

Skinner's criticism that punishment has adverse emotional effects must be considered carefully. Although it is generally overlooked in the behavioral literature, reinforcement affects emotional behavior much as does punishment. For example, Johnny is sent on an errand by his father; when he returns, his father rewards him with a candy bar. This consequence affects Johnny in two ways: (1) Johnny's disposition to run errands for his father is increased; and (2) Johnny is pleased with his accomplishment and his liking for his father is increased. Thus reinforcing completion of the errand affected both running errands and Johnny's emotional condition. As punishment produces displeasure, anger, disliking and hate, so reinforcement produces emotional responses such as pleasure and liking.

Research on interpersonal relationships suggests that reinforcement is an important factor in attraction, liking, affection and love. Both reinforcement and punishment, then, produce emotional effects. The difference is in their qualities: the emotional effects of punishment are unpleasant, and thus avoided.

**Social Effects**

Punishment may also affect a wide range of other social behaviors. For example, the child who is often punished by parents and teachers may soon learn to avoid contact with them. Technically, these are avoidance and escape responses; they are negatively reinforced by preventing or terminating the presence of these social agents. Unfortunately, by avoiding parents and teachers, the child misses important learning experiences in socialization and education; in this way, both social relationships and education may be affected by the use of punishment.

**Generalization Effects**

Punishment will influence not only the specific response that it follows, but any other responses ongoing at the same time and any

* Under limiting conditions, however, the effects of punishment and reinforcement may be virtually permanent.
responses that are similar in form. Skinner views these generalization effects as unfortunate, while Staats views them as desirable.37

To the extent that generalization effects of punishment reduce the probability of other undesirable responses, this can actually be a beneficial effect. When the punished response is desirable in other circumstances, or when other desirable responses are weakened along with the punished response, problems may be presented. Consequently, the generalization of the effects of punishment may be either good or bad. Further, the degree and probability of generalization effects will be influenced in important ways by other ongoing events, such as the strength of behaviors that occur at about the same time as the punished response, the ongoing reinforcement support for those behaviors, the past experiences of the person with reinforcement and punishment, and so on.

Finally, while punishment clearly does affect responses other than those specifically followed by the punishing stimulus, this phenomenon is not limited to punishment. Reinforcement also has generalization effects. Careful management of contingencies can enhance or limit generalization effects for both punishment and reinforcement.38

"Unauthorized" Effects

The final problem is that of "unauthorized" escape. For example, a rat is placed in an experimental chamber in which an electric shock is presented at periodic intervals by means of a metal floor grid. The rat can avoid shock by pressing a bar before the shock begins, or escape by pressing the bar after the onset of shock. Rather than press the bar, some rats learn to lie down on their backs with feet, nose, and tail in the air; in this manner they effectively escape the shock although the floor is continuously electrified.39 The desired response of bar pressing does not occur, yet the animal is able to avoid the unpleasant experience of electric shock. The same principle may be seen with human behavior. A child who is punished by his teacher for failure to turn in his homework may avoid punishment by doing his homework; he may also avoid punishment by becoming truant.

Another form of "unauthorized" escape is the use of counter-aggressive measures. When the neighborhood bully tells Billy that he will beat him up if he comes to the playground again, Billy can
avoid the punishing event by staying away. He can also avoid it by beating up the bully, provided he is strong enough to do so. Or he may bring his older brother along for protection; in this instance, we might consider Billy’s response to be socially acceptable.

Conceptually, we may think of “unauthorized” escape responses as negatively reinforced behaviors that are socially undesirable. Almost totally neglected by the behavioral literature, but of equal social significance in my opinion, is the problem of “unauthorized” reinforcement. Behaviors that produce unauthorized reinforcement include theft, extortion, bribery, “conning,” and the like. Stealing money from a bank instead of going to work and earning money is one familiar example.

Another example of unauthorized reinforcement is illustrated in the following episode:

Mom: “Mary, before you can go to the movies with us tonight you must clean up your room.”
Mary: “Oh, I don’t want to go to that old movie anyway.”
Mom: “Well, you’re going to go whether you like it or not.”
Outcome: Mary goes to the movie with her room still messy.

In this interchange, Mary’s statement about “that old movie” probably tells us more about her reluctance to clean up her room than about her interest in the movie. In this particular episode, Mary managed to receive unauthorized reinforcement.

Clearly, a person may obtain positive reinforcement or escape punishment in many ways other than those intended. Although the directionality of the behaviors is different, in many ways similar problems are posed with unauthorized effects of both reinforcement and punishment.

“GOOD” AND “BAD” EFFECTS OF PUNISHMENT: A VALUE JUDGMENT

Punishment not only reduces the probability of a response, it also has unpleasant emotional effects, affects other ongoing responses, contributes to animosity toward other people, and may foster social avoidance and aggression. The question of whether these effects are good or bad must now be addressed.

This is essentially a question of values. One way to resolve it is to adopt the view that pleasant effects are good, unpleasant effects are bad. This could be studied scientifically, by examining which
events strengthen behaviors they follow, and which weaken behaviors they follow. A second approach is to measure people's reactions about whether these outcomes are good or bad, then adopt the majority opinion. A third approach is to appeal to some a priori set of values (e.g., those given in the Bible). Central to all three of these approaches is that they make a value commitment that lies outside the scope of science. Science can tell us whether people find certain outcomes pleasant or unpleasant, or view them as good or bad. But it cannot tell us that the majority view is correct; that is an extrascientific issue. Deciding that the use of punishment is good, bad, or neutral is an ethical-philosophical, moral, and religious issue, not a scientific issue.46

Scientifically, then, it can be said that punishment produces unpleasant emotional effects. But Skinner is making a value judgment when he says that punishment is, therefore, bad or undesirable. Moreover, this is a value about which there is considerable disagreement. Staats suggests that the unpleasant emotional effects of punishment contribute in a positive way to the development of a controlling vocabulary of words such as “no,” “stop,” and so on, which actually reduce a child’s exposure to unpleasant or punishing events. When a child reaches for the flame on a candle, for example, a loud “no” prevents a burned hand. A second way in which Staats views the emotional effects of punishment as desirable is through generalization of the effects of punishment to similar responses and similar stimulus conditions. A child who is punished for throwing a baseball through the neighbor’s window will be less likely to throw footballs, basketballs, rocks, or other objects through that window in the future, and will also be less likely to throw objects through the windows of buildings down the street or across town.

The emotional effects of punishment are particularly important when those emotional effects influence human social relationships. To put these effects in proper perspective, it is important to remember that most persons have both reinforcing and punishing relationships with others around them. Thus one's emotional response to a given person reflects a combination of both positive emotional effects associated with reinforcing experiences and negative emotional effects due to punishing experience. The overall quality of the relationship will depend on the relative frequency
and impact of reinforcing and punishing events in the relationship. Thus an employer who is mostly reinforcing, but occasionally punishes, will be well liked, but an employer who often punishes and rarely reinforces will be disliked or hated.

These same principles apply to the avoidance and aggressive behaviors that are sometimes produced by the use of punishment. Avoidance and aggressive responses can be minimized if punishment occurs in a context that involves a high frequency of positive reinforcement, thus maintaining approach and attraction at high strength (these responses are incompatible with avoidance and aggression). Furthermore, if aggressive behavior is maintained at low strength through punishment, it will be very unlikely to occur.

Earlier, punishment was defined in terms of the effect of a stimulus event on behavior. With this in view, then, we can conclude several things: (1) punishment works; (2) punishment may produce a number of effects in addition to reducing the frequency of the target response; (3) reinforcement has side effects similar in nature to those associated with punishment, but opposite in direction; (4) the potential adverse effects of punishment may be minimized by careful application of punishment; (5) biblical teachings clearly support the use of punishment; and (6) the issue of whether punishment is good or bad is a value issue that must be decided on extrascientific bases.

**Using Punishment Effectively**

Under appropriate conditions then, punishment can be highly effective. The question remains as to how and when it should be used.

**When to Punish**

Punishment should be used only when the aim is to weaken a response that is currently ongoing and which, on the basis of some value system, has been judged undesirable. That the behavior is ongoing further implies that it is maintained by some form of reinforcement. Thus punishment, to be effective, must be more powerful than the current reinforcement. One other precaution should be observed before choosing to use punishment: alternative procedures for weakening the undesirable behavior should first be ruled out as
either impractical or impossible. To summarize, *punishment should only be used when it is desirable to weaken some ongoing response, and when alternative procedures are not available.*

**WHEN TO AVOID PUNISHMENT**

There are times when it is not wise to use punishment. Punishment is not a procedure of choice in conditions in which the desired response is absent or infrequent, either because of deficiencies in the person's behavioral repertoire or low strength of established responses (sometimes these two conditions are not readily discriminable). In these conditions, reinforcement procedures are preferable.

A carefully managed reinforcement procedure selects for a specific response. Reinforcement is available if and only if a specified response occurs. The difficulty encountered with using punishment procedures to develop or strengthen a desired response is that escape or avoidance procedures do not have this selective feature. *Any* response that is effective in weakening or terminating the aversive stimulus will be strengthened, whether or not it is the desired response.*

As an example of the problem of attempting to establish behavior with punishment, let us return to the child who fails to do his homework. Punishment for the absence of the homework can be avoided by the desirable response of doing homework. Unfortunately, a number of other responses will also avoid the punishing stimulus: (1) playing hooky from school; (2) assaulting the teacher; (3) getting another child to do the homework; or (4) submitting a sheet on which some crude work has been done, which creates the illusion of doing homework without going through the effort required to do it satisfactorily. *Punishment is not the method of choice when the goal is to develop or strengthen a response.*

Another condition under which punishment should be avoided is one in which alternative procedures such as DRO, strengthening an incompatible response, and the like are available. As we have

*Technically, this is analogous to a DRO procedure. In this case, negative reinforcement occurs (i.e., the aversive stimulus is removed) when any response except the punished response occurs. The most common strategy used in coping with this problem is to extend punishment to these alternative responses; thus large parts of the behavioral repertoire come under punishment control.*
suggested, punishment is necessary and effective, but it should be used infrequently to avoid its potentially adverse effects. Thus punishment should be avoided when the behavioral goal can be accomplished by other procedures. Other conditions under which punishment should not be administered include (1) punishing as a function of personal anger; (2) punishing when uncertain what is the best contingency to use; (3) punishing in a provoking way; and (4) punishing on first offenses. We will briefly deal with each of these.

**Anger**

The problem with punishing when angry is primarily related to the common failure to administer punishment when not angry. It is important that punishment occur consistently, whether one is upset at the moment by the behavior or not. The second problem is that, too often, punishment becomes excessive when the person is angry.

**Uncertainty**

When one is uncertain what punishment contingency to employ, it is generally best to indicate disapproval of the behavior and that some specific punishment will be designated later, when careful consideration can be given to how best to handle the situation. The first occurrence of a problem behavior is actually a special case of this problem. A problem behavior that has occurred before may be anticipated, and the method for dealing with it planned in advance. The first "offense," unless it involves a response that has clearly been prohibited in advance, is generally best handled with an expression of disapproval and an indication of what punishment will occur following that behavior in the future.

**Provocation**

Behaviorally, when a person frequently exhibits undesirable responses that person’s mere presence often provokes an unpleasant emotional effect. Being upset for any of a variety of reasons may also affect the way one responds to others. Both of these conditions may be thought of as setting conditions which predispose one to punish at the slightest occasion. Two problems may result: (1) a tendency to punish "gray" responses—ones that have not clearly been included within the "rules" set up for punishment; and (2)
excessive response strength, in which extremes of punishment may occur.

HOW TO PUNISH EFFECTIVELY

To maximize effectiveness, punishment should (1) immediately follow the response; (2) be brief in duration; (3) be consistently applied following the response to be eliminated; (4) be carried out in such a way that no unauthorized escape occurs; (5) be adequately aversive; (6) be paired with verbal instructions that identify the relationship between behavior and punishment and suggest more appropriate responses; (7) be administered in a matter of fact manner; and (8) occur in a context in which the reinforcers for the undesirable behavior are available following an alternative response which is socially acceptable.\textsuperscript{2} It is desirable that a return to normal social relationships follow quickly after the completion of the punishment.\textsuperscript{3}

Other factors that can enhance the effectiveness of punishment include increasing the intensity of the punishment, combining punishment with extinction, reducing motivation for the reinforcers that maintain the response when they cannot be eliminated, and providing the opportunity to escape the stimuli that control the undesired response.\textsuperscript{4}

NOTES

6. Ibid., pp. 184 ff.
7. Ibid., pp. 191 ff.
9. Ibid., p. 236.
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11. Ibid., pp. 409 ff.
16. For a discussion of the nature of emotional behavior from a behavioral perspective, in which the thesis is presented that emotions are respondent behavior, and that all consequences of behavior—both reinforcing and punishing—also elicit emotional responses, see Sidney W. Bijou and Donald M. Baer, Child Development I: A Systematic and Empirical Theory (New York: Appleton-Century-Crofts, 1961).
22. Many of the basic commandments regarding specific kinds of offenses and the associated punishments may be found in: Deut. 19:1-21; Exod. 20:1-22:31; Lev. 24:10-23.
23. For example, see Prov. 13:24; 22:15; 23:13-14; 29:15, 17.
25. See Eph. 6:4, which admonishes fathers not to provoke their children. One of the surest ways to provoke is to be constantly punishing or nagging.
29. Deut. 6:4-9, NIV.
30. For example, see Phil. 1:3-6; Col. 1:3-8; 1 Cor. 1:4-7; 1 Thess. 1:2-3. Instruction to practice giving thanks and praise is given in: Eph. 5:4; Phil. 4:8. The emphasis of Scripture in this area, however, is more on the prohibition of being critical and destructive. For example, see Eph. 4:29-31; Phil. 4:2-3; Gal. 5:13-15.
32. Ibid., pp. 123-128.
34. For a discussion of the relationships between emotional responses and reinforcement and punishment contingencies, see Bijou and Baer, Child Development 1, pp. 73-76.
36. Staats, Child Learning, pp. 239 ff.
37. Ibid., pp. 233 ff.
39. Ibid., pp. 383 ff., on Sidman avoidance.
43. A number of Bible sections suggest that God both punishes and soothes the hurt as a part of the process; for example, see Job 5:17-18; Psalm 51, especially 51:8.
PART III

Changing Human Behavior
5. Principles of
Behavior Therapy and
Behavior Modification

The emergence of behavior theory represents a striking shift from the previous history of ideas in the western world. Since the zenith of Greek civilization, it has been customary to explain behavior in terms of such internal factors as will, desire, purpose, intention, belief, expectation, memory, and character. The experimental analysis of behavior, however, shifts the locus of causal explanations for behavior from internal processes and events to external causes. In Skinner’s words, “[This shift] quite naturally led to a flood of practical applications. An early stimulus-response formula was too simple and seriously misleading, but once the role of the causal environment was properly understood, a flourishing technology was inevitable.”

This chapter examines the theoretical aspects of the application of behavioral psychology (technically, the experimental analysis of behavior) to the process of behavior therapy. Beginning with a brief history, we will then discuss the definition of behavior therapy and behavior modification, survey a conception of problem behavior that grows out of the behavioral approach, examine basic approaches to behavior therapy, look at specific behavior change techniques, discuss biblical parallels, and consider several areas of controversy.

Historical Introduction to Behavior Therapy

The early work in experimental psychology that laid the foundation for the technology of behavior therapy extends back to the turn of the century. Until the mid-50s, however, development was slow.
The first journal devoted to publication of research on "operant conditioning" was begun in 1958; the first journal to focus explicitly on the application of behavioral theory was the *Journal of Applied Behavior Analysis*, founded in 1968, ten years later. Since then, at least a dozen other journals have arisen to deal with aspects of behavior therapy ranging from *Behavioral Medicine* to *Law and Behavior.*

Because of the rapid growth and development of behavior therapy during the past two decades, it has undergone many changes. A few years ago, behavior therapy was the specialization of a close-knit handful of individual professionals; now there are enough practitioners to support three major professional societies in the United States alone, along with untold numbers of paraprofessionals and laypersons who practice some form of behavior modification.

Another result of this proliferation of behavioral approaches is that developments in behavioral technology have occurred much more rapidly than most people recognize. Even professionals in the forefront of the developing behavioral technology find it difficult to keep abreast of new developments. People on the fringes, and non-professional observers, tend to have a view of behavior modification which reflects a state of development several years out of date. Consequently, critics tend to focus on features of behavior modification that do not reflect current thinking in the field. Political scientist Bruce McKeown, for example, accuses Skinner (and, by implication, behaviorists in general) of holding the view that all behavior is the product of reinforcement. While such a view was once held by some behaviorists (e.g., Watson), most behaviorists now attribute important controlling roles not only to reinforcement, but to such variables as genetics, biological factors (e.g., physical health, disease, and trauma), punishment, and other setting events.

The behavioral movement is now characterized by great diversity. A behavioral psychologist may choose from among respondent conditioning models, operant conditioning models, multimodal approaches, cognitive behavioral approaches, and social learning approaches. In the context of such diversity, disagreement among practitioners is natural, and it is difficult to identify the boundaries within which behavior therapy is delimited.
DEFINITION OF BEHAVIOR MODIFICATION AND BEHAVIOR THERAPY

One of the problems in attempting to define behavior modification and behavior therapy is that the terms are used in different ways by different authors. Lazarus suggests that behavior therapy is generally used to refer to the treatment of anxiety by counterconditioning (respondent) procedures, while behavior modification refers more to operant procedures. Ullmann and Krasner, by contrast, use behavior modification to refer to virtually any approach to changing behaviors that have been labeled socially deviant. Because of these complexities, and for the sake of simplicity, the term behavior therapy will be used here to refer in general to all approaches to behavior change that derive from a behavioral perspective.

Social influence may be defined as any condition in which one is effective in programming the environment, including one’s own behavior, in such a way as to alter the behavior of another individual. Because other people are a major source of reinforcement, seeking to influence the behavior of others is probably one of the most common activities in which humans engage. Social influence would include diverse approaches such as education, persuasion, coercion, use of propaganda, brainwashing, and a host of other techniques. All of these activities are maintained by the fact that they alter the behavior of others in ways that reinforce the influencing person, whether or not the resulting responses are socially desirable.

Behavior therapy implicitly involves two issues: a standard for deviancy, and social sanctioning of the process of behavior change. Ethical controversy is rare in a setting in which there is general agreement on a particular value system. In our pluralistic society, however, there is a diversity of opinion as to what constitutes moral behavior; hence there is broad disagreement on what behaviors should be considered socially deviant, and the types of remedies that should be embraced. This problem is illustrated by the practice of medicine in the United States, which—until recently—was guided by generally agreed upon principles. In the past few years, however, such questions as abortion, heart transplant surgery, and the use or disconnection of life support systems for the terminally ill have raised highly controversial moral/ethical questions.

This problem is even more prevalent in the area of behavior
therapy. For example, when a young man seeks therapy for a problem with homosexuality, the possible treatment approaches and goals are widely varied. A few years ago, the accepted practice was to seek to convert such a person to practicing heterosexuality. More recently, the prevailing opinion among psychologists and psychiatrists has shifted toward assisting the individual to become a comfortable homosexual practitioner. A biblical worldview suggests that sexual practice outside of marriage, whether with members of the same or the opposite sex, is equally undesirable. Thus the goal of therapy might be either one of chastity outside of marriage, or fidelity within a marriage relationship.

**Traditional, Behavioral, and Biblical Views of Mental Disorders**

The use of behavioral methods to correct deviant behavior implies a concept of the nature of deviant behavior that is radically different from the traditional model. Some of these conceptual differences must be addressed before we can begin to discuss behavioral approaches to treatment.*

**Traditional Views**

Although there is considerable diversity among the various “traditional” approaches to behavior modification—enough diversity that entire books have been written to describe them—they all have central features that clearly distinguish them from behavioral approaches.

Broadly speaking, traditional approaches have emphasized medical or psychoanalytic conceptualizations of mental disorders. Disordered behavior is viewed as the result of disturbances in internal psychic functioning. Unresolved conflicts, blockages of impulses through the development of maladaptive defensive systems, and the resulting buildup of energy and tension result in overt behavioral

*While our discussion here must necessarily oversimplify and generalize, some of the central themes and focal perspectives of traditional approaches will be summarized so that we can compare traditional with behavioral approaches. One other note of caution is required. Over the past twenty years, there has been a considerable degree of mutual influence. Thus the distinction between behavioral and traditional approaches have become somewhat blurred.
manifestations that are called “symptoms.” In the words of one traditional psychoanalyst, “Thus we have in psychoneuroses, first a defense of the ego against an instinct, then a state of damming up, and finally the neurotic symptoms which are distorted discharge as a consequence of the state of damming up—a compromise between the opposing forces. The symptom is the only step in this development which becomes manifest; the conflict, its history, and the significance of the symptom are unconscious.” Although a neurotic conflict underlies the overt manifestations, only the symptom itself is available to immediate observation.

Consistent with an approach in which the overt manifestation is viewed as merely symptomatic of some underlying problem, diagnosis and classification become a central aspect of the treatment process in traditional approaches. Classification is based on the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders. Implicit in this diagnostic system is the notion of underlying cause. According to psychiatrist Morton Levine, “One precept has stood the test above all others. It can be phrased in this way: treatment which is based on adequate diagnosis is superior to treatment which is focused simply on the relief of symptoms.”

Because intrapsychic conflict is central to disturbed functioning, symptom removal without dealing with the underlying conflict is presumed to be dangerous; while removal of the symptoms may be accomplished, it is anticipated that sooner or later new symptoms will appear. Treatment thus focuses on helping the individual to resolve the conflicting drives and to achieve a more adequate personality adjustment. The process includes (1) establishing a therapeutic relationship; (2) encouraging the person to express his or her feelings; (3) pointing out the feelings by means of suitably timed recognition and interpretations; (4) transference of inappropriate childhood attitudes to the therapist; and (5) development of new behavior.

This sort of therapy tends to be both open-ended and lengthy. Although the symptoms may eventually be removed, the individual is not cured until the underlying cause has been eliminated. Conversely, in some cases the patient may be “cured” although the symptoms remain. Insight is viewed as a crucial outcome of the treatment process. Many theorists suggest that insight into the
sources of one's behavior is a necessary prerequisite to behavior change.

Significantly, there seems to be a strong presumption that the underlying problem in mental disorders is neither cured nor curable within the traditional approach. In any event, since the underlying problem is not apparent to the individual, the therapist must judge when treatment is completed.

The traditional model has a number of implications. First, the whole field of treatment is viewed as a medical specialty. A concept of "mental health" is required as a standard for evaluation in diagnosis and as a goal for treatment. The criteria for cure and health become professional questions. Symptoms, as a manifestation of an underlying problem, are not the focus of treatment. Rather, treatment is focused on the underlying conflicts in an effort to eliminate the maladaptive psychic structures. Symptom substitution is presumed likely if this principle is not followed. Of course, diagnosis is required to identify the underlying psychic conflict from the manifest symptoms. Traditional treatment approaches are required, since they are directed at reconciling the underlying conflicts.

There are a number of implications for individuals who are considered thus psychologically disturbed. They are not responsible for their present conditions; as sick people they become passive recipients of treatment. They may be eligible for special treatment, such as freedom from legal responsibility for their behavior; but they may also lose their human rights, since they are held to be unable to control their behavior. Finally, the problem as experienced by such individuals is minimized; in fact, if they fail to see that they have any problems, this may be judged as evidence that the problem is even worse. 13

BEHAVIORAL VIEW

From a behavioral perspective, terms such as "malapropriate behavior" or "socially maladaptive behavior" are used in preference to "mental disorders" or "abnormal behavior." Instead of labeling the overt manifestations as symptoms, in the behavioral approach they are considered to be the problem. Malappropriate behavior may include a wide variety of classes of overt behavior, such as
behavioral excesses (e.g., tantrums), behavioral deficits (e.g., failure to go to work), and inappropriate stimulus control over behavior (e.g., defecating in public). Naturally, there are medical illnesses associated with various kinds of maladaptive behaviors, and the illnesses themselves are a medical problem; within the behavioral model, maladaptive behavior per se is simply behavior that bothers someone else. The behavior may be considered maladaptive for a variety of reasons, including its particular topography, latency, intensity, frequency (unusually high or low), setting events, consequences, or eliciting stimuli. A particularly important factor in determining whether certain classes of operant behavior will be judged maladaptive are the settings in which the behavior occurs and the discriminative stimuli controlling the behavior; similarly important are salient social characteristics of the individual, such as age, sex, race, and social status.

In general terms, maladaptive behavior reduces the frequency, range, or value of reinforcement to the individual, increases the frequency, range or value of punishment which he or she receives, or has similar effects on the reinforcement and punishment delivered to key individuals around the person. Implicit in the concept of maladaptive behavior is the notion of a value system that specifies some behaviors as desirable and others as undesirable. Ullmann and Krasner suggest that the prevailing sociocultural practices are the standard by which various behaviors may be evaluated. Behavioral theorists view all behavior as normal in the sense that it is lawfully related to the individual's biological and learning history and to the present controlling conditions. The goal of behavioral intervention, then, is to bring the person's behavior into closer approximation to the prevailing sociocultural standards rather than to promote health, as in the traditional model.

This does not mean, however, that genetic predispositions and medical or other biological factors are ruled out. Such factors may play an important role in several ways. First, the individual's stimulus properties for others may be altered (e.g., a person with dark skin may be treated differently by people with light skin). Second, biological factors may limit response capabilities and access to stimuli (e.g., a man who is born blind is unable to respond to visual stimuli in the normal fashion, and may find it more diffi-
cult to obtain an education, learn about his environment and so on). Third, biological factors may function as setting events that affect a host of behavioral interactions (e.g., a child who is chronically ill with respiratory infections may be more irritable and disposed to throwing tantrums, and less disposed to engage in normal play behaviors as a result).

Assessment plays an important role in behavioral approaches, but it is not directed at diagnosing the underlying psychic conflicts. Rather, its aim is to precisely identify the problem behavior in terms of its frequency, intensity, topography, and controlling stimuli, and to evaluate response to treatment and maintenance of new behaviors.  

While some have conceptualized treatment within the behavioral model as learning, it is more accurate to view the treatment process as involving all of the processes related to the alteration of the person's responses to stimuli, including the shaping, development, and strengthening of responses, the weakening and elimination of responses, and the establishment of stimulus control over responses. Thus behavioral approaches to treatment are more complex and diverse than is generally recognized.

The implications of the behavioral model are quite different from those of the traditional model. The behavioral model assumes that there is no radical discontinuity between socially appropriate and inappropriate or maladaptive behavior. The same principles account for the occurrence of both classes of behavior. Since there is presumed to be no underlying psychic conflict, the goal is to treat the overt behavioral manifestation. The methods used include all of the techniques that have been shown to be effective in developing and maintaining behavior, establishing stimulus control, and weakening and eliminating behavior. Broadly speaking, changes in behavior are accomplished by changes in the interactions between the behavior and the environment. In place of a concept of health, ethical and value considerations about what behaviors are acceptable and desirable determine the goals of treatment.

In the behavioral model, the individual's conceptualization of the problem is accepted at face value. Rather than becoming a passive recipient of treatment, the individual, or others around the individual, may play an active role. Neither special considerations nor loss
of legal rights is considered appropriate, and the individual is expected to face any legal consequences of his or her actions.

**BIBLICAL VIEW**

Attempts to relate biblical teachings to the current concepts of mental illness must overcome substantial difficulties. In a discussion of the biblical view of mental illness, philosopher William Hasker suggested that the Bible refers to moral transgression (i.e., sin), physical illness, and demonic influence; but there is no distinct biblical concept that corresponds to our current notion of mental illness.\(^{17}\) Minister Jay E. Adams essentially agrees with Hasker, and advocates that we divide mental disorders into two categories. Those with clear medical etiologies he proposes to call illness, and to treat along the lines of other physical illnesses. The remaining categories he lumps together and calls sin. Thus Adams implies that the biblical categories of sin, physical illness, and demonic influence are exhaustive.\(^{18}\)

Dissatisfaction with Adams’s view seems to be widespread, but no carefully articulated alternative that deals with the complexity of the issues involved has yet been offered. Several thoughts help to focus some of the issues. First, at some level, mental illness is clearly a result of sin in our world; the Genesis accounts of the Garden of Eden and the Fall clearly suggest that before the entry of sin into the world, it was a paradisiacal place in which suffering and distress were not present.\(^{19}\) Thus, at some level, *mental illness must necessarily be a result of sin’s presence in the world.* Second, while mental disorders may sometimes be the result of personal sin, *there are instances in which personal sin is clearly not involved*\(^{20}\) (e.g., in mental retardation and many organic brain syndromes). Third, *the sinfulness of others may be a major factor in some mental disorders* (e.g., a young woman who was sexually abused by her alcoholic father may experience difficulties in trust and interpersonal closeness, at least in part as a result of being the victim of her father’s sinfulness).

We see, then, that Adams’s conclusion that mental illness is just a euphemism for sin is too simplistic. But at the same time, sin is in some way involved. Perhaps one way to approach some of the issues raised here is to draw a distinction between sin and the ef-
fects of sin. The Bible has much to say about committing sin, but is not completely silent on its effects. Sin may have effects not only on the individual committing it, but also on others, especially those who are the victims of the sinful action.

The story of David and Bathsheba clearly indicates that unconfessed sin had adverse personal effects, including guilt, anxiety, physical ailments, and reduced ability to resist further sin on subsequent occasions. Social isolation, estrangement, and further transgression may follow in a continuing downward spiral. In addition to the effects of sin on the perpetrator, it also affects others adversely. Fears, anxieties, hurt, anger, distrust, feelings of personal inadequacy, and low self-esteem are often among the effects found in those who have been victimized by the sinfulness of others. Taken together, these effects of sin in the agent and the victim include many of the diverse elements included within mental disorders. Thus much of mental illness may prove to be a secondary effect of sin.

Further thought needs to be given to the question of how the concept of mental illness relates to biblical teachings. Reducing mental illness to sin, or concluding that the Bible has nothing relevant to say, are both untenable views. More effort needs to be given to serious exploration of the middle ground between these extremes. Perhaps the suggestion that mental illness is an effect of sin is a step in this direction.

**Basic Approaches to Behavior Change**

A central thesis of the behavioral approach is that simple removal of a response is not adequate. Rather, it must be replaced with a new and more adaptive response. According to Ullmann and Krasner, "...Behavior therapy can be summarized as involving systematic environmental contingencies to alter directly the subject’s reactions to situations." The two crucial elements in this definition are: (1) the systematic arrangement of the stimulus environment; and (2) concentration on the response–stimulus relationship as opposed to just the response.

This section will briefly examine respondent and operant behavioral approaches.
**RESPONDENT BEHAVIORAL APPROACHES**

Respondent behaviors are controlled by stimuli that precede them. Respondent approaches are essentially limited to the establishment of new stimuli that are able to elicit a given respondent, and to the weakening or elimination of stimuli that elicit a given respondent. Modification of respondent behavior is thus limited to development or elimination of eliciting stimuli for a given respondent.

For example, salivation is a respondent behavior. Through a process of respondent conditioning, certain sounds, smells, and visual stimuli will come to elicit salivation. Since the sight or smell of food elicits the salivation response and suggests eating, weakening the eliciting power of food stimuli for an obese person, (e.g., by repeated presentation without eating) could help the person abstain from overeating and thus facilitate weight loss.

Fears and anxieties, insofar as they are emotional responses, are respondent in character. According to psychologists Hans J. Eysenck and Stanley Rachman, phobias are learned responses to specific stimuli that have acquired the capability of eliciting the phobic response by means of pairing previously neutral stimuli with an anxiety-inducing situation. Once previously neutral stimuli have acquired fear-producing properties, any response that avoids or terminates contact with those stimuli will be negatively reinforced.

Phobic responses include a variety of disabling fears that range from fears of dogs, cats, rodents, and snakes to fears of crowds, bridges, high places, small spaces, driving, injections, dentists, and so on. While many people share these fearful responses to some extent, such responses become phobic when they interfere significantly with the person's normal daily functioning. In Ullmann and Krasner's terms, "To be considered phobic the fear must be evaluated as disproportionate to the situation and socially disturbing by some observer, including the person himself. That is, the response deviates from what is expected in the culture and is disruptive."

**Systematic Desensitization**

Phobias can be treated by systematic desensitization, one of the most thoroughly investigated behavior therapy techniques, and the
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first therapeutic technique for which clear-cut evidence of treatment effectiveness was established. Systematic desensitization involves a procedure in which individuals are taught to relax their muscles, then to imagine or visualize situations that gradually increase in the degree of discomfort that they originally produced. If the individuals become anxious or tense while visualizing a particular situation, they are instructed to stop the image and resume relaxing. The idea is that if the individuals are able to relax while visualizing themselves in the situation, their anxiety in the actual situation will gradually abate. As anxiety abates, they will in turn become able to visualize more and more difficult situations without becoming anxious, and should also become more able to actually enter such situations.

For example, a woman who experienced a balcony collapsing under her and sustained a serious fall with bodily injury might subsequently develop a generalized fear of high places. In a process of systematic desensitization, this woman might first be trained to relax, then asked to visualize herself standing on the ground and looking up at a raised balcony from a safe distance. If fear to this stimulus is eliminated, she might then be asked to visualize herself looking at the balcony from closer ranges. She might next visualize herself looking out at the balcony from across the adjoining room. Next, she might visualize herself moving gradually closer to the window overlooking the balcony, then looking out the door at the balcony, and so on. Eventually, the woman would visualize herself stepping out onto the balcony, looking over the rail, relaxing, and allowing the balcony to support her.

While systematic desensitization clearly focuses on respondent behavior, operant behavior also plays a part. Once the emotional fear response to the stimulus is established, operant avoidance performances develop quickly, since escaping or avoiding the fear-producing stimuli is negatively reinforced. This complicates our picture of phobic responses, and suggests that both respondent and operant components are involved. It also illustrates the thesis that there is a constant and complex interaction between operant and respondent behaviors.

Because of the complex interaction of respondent and operant behaviors in phobias, it is common for treatment to involve a variety of additional elements beyond systematic desensitization, in-
eluding providing explicit social reinforcement for nonfearful behaviors, and modeling of such performances.

**OPERANT APPROACHES**

Because of the greater complexity of operant behavior, and because most important human social behavior is operant in character, operant behavior is a much more common concern for modification. The principles used in modifying operant behavior include all the the principles of shaping, developing, strengthening, establishing stimulus control and discrimination, and weakening and eliminating operant behavior. While the basic principles are relatively few and simple, their application involves a range of complexity that is often not recognized even by individuals who are somewhat acquainted with the behavioral literature. Because of these complexities, the number of techniques that have been developed by behavioral psychologists for modifying operant behavior is enormous.

In addition to individual application of a wide range of specific operant procedures, several specialized "packages" of techniques have been developed, involving fairly standardized procedures for the application of a number of behavioral techniques in a coordinated treatment approach. While it remains a matter of controversy in some cases, these approaches may be considered specialized applications of operant principles. Examples of such package approaches include (1) token systems; (2) cognitive behavior modification; and (3) social learning.

**Token Systems**

The techniques of the token system or token economy were developed especially for application to large-scale, long-term institutional settings, but have also been applied in more limited settings such as the public school classroom. The token economy approach involves the application of reinforcement procedures at the level of the social system.

There are three basic elements to any token system. First, there is the identification of certain behaviors as desirable, and the decision to reinforce those behaviors with the awarding of tokens. Second, there is a medium of exchange; initially, plastic chips like poker chips were used, but many systems have adopted use of a
“paper money” or credit card system, which minimizes stealing. Third, there is a way of using the tokens to “buy” a variety of reinforcers such as food, a private room, cigarettes, TV time, recreational activities, and so on. In practice, the token system works much like a money system, with all its advantages and problems.

Basically, *tokens function as generalized conditioned reinforcers*. A conditioned reinforcer is any reinforcing stimulus that has acquired its ability to function as a reinforcing stimulus by means of specific learning experiences. A generalized conditioned reinforcer is one that has been associated with a variety of other reinforcing stimuli so that its reinforcing function is not limited to any specific reinforcing stimulus and the deprivation, satiation, or other operations that might temporarily weaken its reinforcing function. For example, a token good only for a roast beef sandwich may not be very effective after one has just consumed three sandwiches. However, a token that can be exchanged for a sandwich or for a variety of other reinforcing events and objects may continue to be effective even after having eaten several sandwiches.28

A number of studies have been conducted using token systems in institutional settings. Results have consistently indicated that performances that are reinforced by tokens increase in strength, that stopping token reinforcement weakens the responses, and that reinstating tokens results in resumption of the desired performances. An additional benefit is the improvement in staff morale that occurs, when the staff finds that it is able to have an impact on the residents. Studies have shown both decreases in staff absenteeism and efforts by staffs in other units to adopt similar procedures.29

**Cognitive Behavior Modification**

In the past few years (predominantly through the work of a handful of psychologists including Donald Meichenbaum, Michael J. Mahoney, and Aaron Beck) cognitive behavior modification has gained widespread recognition. The basic thesis of this approach is that people have extensive ranges of cognitive (that is, thinking) behavior, and that their cognitive performances are a major factor that influences other human performances. For many, cognitive behavior modification is viewed as a potential successor to radical behavioral or Skinnerian methods, which do not concern themselves with events not accessible to observation.30 The distinction,
however, may be more conceptual than real. Skinner wrote an entire book on what he called “verbal behavior” over twenty years ago, in which he acknowledges that people are characterized by extensive speaking repertoires, and that speech is a significant social behavior. Skinner even spends a good deal of space discussing ways in which speech and nonlanguage behaviors interact within the same person. The majority of phenomena that are of current interest to those involved in cognitive behavior modification can be adequately conceptualized from a radical behavioral perspective as well. Thus it will not be discussed further here, although it is of substantial theoretical interest.

There is considerable diversity among individuals within the cognitive behavior modification movement. As Meichenbaum notes: “Stated simply, there is no clearly agreed upon or commonly accepted definition of [cognitive behavior modification].” However, certain common elements may be detected within the diversity of approaches: (1) emphasis on such cognitive processes as beliefs, attitudes, expectations, and problem-solving strategies; (2) emphasis on thought processes exclusively, at least in some approaches to changing problem behavior; (3) the tendency to attribute controlling significance to the cognitive factors mentioned above rather than to external events; (4) postulation of internal events that can only be discovered by inference (noncognitivist or radical behaviorists prefer to avoid making such inferences); (5) use of mediational theories, which argue that various events, often conceptualized as stimulus–response events, occur internally and mediate between stimulus and response rather than the external stimulus directly producing a response; (6) postulation of other models of learning in addition to the basic behavioral processes of reinforcement and punishment (we noted earlier, for example, that Bandura tends to view imitation and modeling or social learning as a special form of learning that is superior to shaping and reinforcement).

A number of treatment techniques may be thought of as falling within the scope of cognitive behavior modification. Among these are Ellis’ rational-emotive therapy, thought stopping, covert assertion, and attributional approaches. Bandura’s approach of modeling, imitation, and vicarious reinforcement is significant enough that we have discussed it separately, although it is included within the cognitive approaches by many theorists.
We suggested earlier that much of what the cognitivists actually do in practice may be conceptualized readily within a noncognitive or radical behavioral framework. It must be recognized that when a therapist does outpatient treatment with an intelligent adult, a major focus of the treatment process will be on talking, especially within therapy sessions. Even Skinner acknowledges verbal behavior and shows that it plays an important role in human social behavior. With these factors in mind, it seems reasonable to approach therapy with adults in a verbal manner, whether or not one accepts a cognitive behavioral position.

**SOCIAL LEARNING**

Albert Bandura and his colleagues have popularized an approach that is variously referred to as social learning, modeling, imitation and vicarious processes, and so on. Bandura explicitly suggests that the social learning approach is an alternative to operant approaches, and is more effective in generating and altering performances.34 Bandura tends to neglect the issue of how the process of imitation is initiated in children. A good case can be made that imitation or social learning is a class of operant performances that is unique only insofar as the response topographically resembles the controlling discriminative stimulus. Imitation seems to be learned much like other operant performances, then maintained by means of the reinforcing consequences that follow the performance. For our purposes, therefore, imitation and the related processes will be conceptualized as a complex operant performance rather than as a unique or distinctive type of behavior.

**BIBLICAL PARALLELS**

There are a number of parallels between biblical teachings and behavior therapy approaches. First is the emphasis on positive reinforcement and punishment as consequences that will influence behavior. We are told that “[God] rewards those who earnestly seek Him,”35 and that he will surely punish the wicked.36 A review of biblical teachings, especially the Old Testament history of the nation of Israel, shows a repeated pattern of obedience to God followed by His blessings, and of disobedience to God followed by his
punishment. There is thus some basis for the claim that "God was the first behaviorist with his 'thou shalt' and 'thou shalt nots.'" 37

A second area of parallel between biblical teachings and behavior therapy is in the emphasis given to the important role of various social influence processes, such as modeling and imitation. The Bible suggests that children learn to act and think like their parents,38 and that association with evil persons will result in learning their ways.39 We are even told to imitate Paul as he imitates Christ.40

Third, a clear biblical emphasis is that it is not enough to try to eliminate a problem behavior. Problem behaviors (sins) must be replaced with constructive alternatives.41

Fourth, although there is considerable theoretical controversy over whether control actually lies within the person or in the environment, self-control procedures are widely used by behavior therapists. Biblically, self-control is presented as a desirable goal. As a manifestation of the Holy Spirit, self-control is an important goal, but appears to be unattainable on strictly human abilities, according to Scripture.42

Finally, although this is an area of great controversy among behavioral psychologists, many nonetheless emphasize the use of punishment as a behavior therapy technique. As established in Chapter 4, the Bible clearly emphasizes the need for punishment under certain circumstances.

Areas of Controversy

While there are a number of parallels between behavioral approaches and biblical teachings, this in no way means that there are not a number of areas of potential or actual controversy. Controversy arises both from biblical and other perspectives. Ultimately, most of the controversial areas involve ethical and moral issues.

One area of practical difficulty is that of motivation. In the context of outpatient behavior therapy, it is usually plausible to assume that the client is genuinely motivated to make changes in behavior and circumstances because they are currently unsatisfactory in some way. But what can be done when motivation is lacking? Is it ethical to make food, clothing, shelter, or other reinforcers available only contingent upon some specific behavior (e.g.,
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As suggested earlier, the biblical teachings in this area provide guidelines concerning the ethical and moral obligations in dealing with a person who does not wish to work. At a second level, the Bible teaches that God influences our motivations. Perhaps one of the ways in which a relationship with God affects a person is in changing the person’s motivations. Conceptually, we might think of this as a setting event.

Other ethical issues involve the questions of manipulation, control, and behavioral goals and strategies. First, manipulation implies using or controlling another person to one’s own advantage. Clearly, the biblical teaching to love others as one loves oneself speaks against manipulation. To love others is to seek their advantage rather than to seek to take advantage of them. Thus manipulation is contrary to biblical teachings. Control, however, is another matter. The responsibility to exercise directing or restraining influence is clearly established by God and delegated to such persons as civil authorities, husbands, and parents. Further, mutual influence of a reciprocal sort is also clearly taught in Scripture; we are to “be subject to one another in the fear of Christ.” Thus accepting a biblical morality implies that control is legitimate, when exercised within the limits taught by Scripture.

Closely related to the issue of control are concerns about the specific methods of control and the goals toward which control is directed. From a biblical perspective, both the methods and the goals of control, of behavior therapy, or any other approach for that matter, must be examined in light of biblical teachings regarding which means and goals are acceptable.

Another area of some concern and controversy is that of generalization. Producing changes in a response in one environmental context is often not enough; if we can ensure that those changes generalize to other settings, significantly more has been accomplished. For example, eliminating tantrums at home is progress, but eliminating tantrums at school, church, and the supermarket as well is far superior. We cannot presume that generalization will occur; steps must be taken to foster it. Chapter 6 will consider some specific examples of procedures designed to foster generalization.

A final concern is the recurrence of problem behavior. From a traditional approach, this concern focused especially around the issue of symptom substitution. We have shown that the concept of
symptom substitution does not make sense from a behavioral perspective. However, it remains possible that old problem behaviors may recur, or that new problems may develop. Some approaches to these problems will be examined in the following chapter; here it will suffice to note that the environment that produced and supported the problem behavior in the first place may provide the conditions that reinstate it after change has occurred. For example, if Mary has learned to ask for what she wants and has stopped throwing tantrums, putting her in an environment that does not reinforce requests but does reinforce tantrums may result in recurrence of tantrums.

NOTES

3. Ibid

9. Ibid., p. 20.


20. This is explicitly stated for physical illnesses in John 9:1–5.

21. See 2 Sam., chapters 11–12:25; Ps. 32, 51.


23. Additional discussion of behavioral techniques may be found in Ullmann and Krasner, *A Psychological Approach*, and in Rimm and Masters, *Behavior Therapy*.


35. Heb. 11:6, NIV.
36. Rom. 2:1-11; see especially 2:5.
38. Deut. 5:1-10; 6:4-25.
39. Ps. 1; Prov. 22:24-25.
40. 1 Cor. 11:1; see also 2 Thess. 3:7-10; Phil. 3:17; 1 Cor. 4:14-17; Heb. 13:7.
44. Eph. 5:21.
THE DEFINITION of behavior modification is so broad—changing behaviors which are labelled as socially deviant in some social context—that the range of topics and behaviors that could be included in behavior modification is large. Possible topics include development of minimal social behavior in severely retarded individuals, developing academic skills in more mildly retarded and learning disabled persons, establishing speech and minimal social behaviors in psychotically disturbed persons, modification of drug and alcohol abuse, elimination of smoking, weight reduction, development of more effective social skills, elimination of disabling fears and anxieties, and management of sexual behaviors. This chapter, however, is limited to the discussion of four of the more common problem areas encountered in an outpatient context: (1) fear responses; (2) depression; (3) assertive behavior; and (4) sexual behavior.

FEAR RESPONSES

While the definition of emotional behavior as respondent in nature is adequate from a technical standpoint, much of what the average person understands as fearful behavior is actually operant. In order to understand behavior therapy approaches to the treatment of disabling fears, it will be helpful to understand some of these complexities.

Most fearful or phobic behavior involves a complex interaction between operant and respondent behavioral processes. In the presence of a fear stimulus (e.g., a snake), emotional respondents are automatically elicited. Since the emotional responses produced in the presence of the snake are unpleasant, any performance that terminates those respondents will be negatively reinforced. Performances such as closing the eyes, turning the head, running away, or screaming until someone else comes and removes the
snake, may thus be strengthened by the removal of the snake stimulus.\(^1\)

When the fear response is strong, as fear of snakes is for some people, any other stimulus that is associated with the presence of the snake may acquire the capacity to elicit the same emotional response, by the process of classical conditioning. Once this occurs, escape and avoidance responses will be reinforced not only in the presence of snakes, but also in the presence of any other stimuli associated with the presence of snakes. Thus people who have seen snakes in the park may avoid parks; if snakes have also been encountered in the back yard, they will stop going into the yard; and so on. In extreme cases, if such people are told that there is a snake in a cage in a room down a particular hall in a large building, they will refuse even to enter the hall. When avoidance responses like these are effective, such people may not experience much subjective fear, but may find their lives completely disrupted by the inability to go places or do things in a normal fashion. At an extreme, the person may become continuously fearful.

In approaching treatment to such fearful or phobic responses, several factors must be kept in mind. First, treatment must deal with both respondent and operant elements in order to be optimally effective. Second, it must be remembered that many fears are realistic, at least within limits (e.g., snakes are dangerous, and must be approached with due caution). But precautions such as those described above are generally recognized as excessive. Third, the conditions under which a particular response develops are not necessarily the same as those that subsequently maintain it. For example, a college student who experiences considerable anxiety about taking tests may initially miss a test because she had contracted the flu. Having once learned that exams may be deferred if she is ill, however, she may gradually come to voice complaints of physical illness whenever faced with a difficult test. Once reinforced for pleading illness, she may exhibit this response more and more frequently.

With a problem like snake phobia, several different approaches may be taken: systematic desensitization, modeling and imitation, and in vivo desensitization. Many common features may be found in these approaches. Each begins with activities or events in which the person experiences just enough anxiety to detect it, and pro-
gresses gradually to more difficult situations. Each involves the person making some other overt response to the feared stimulus in place of escaping from it: relaxation, observing another person interact without fear or harm, or actually approaching the feared stimulus. Based on the principles of respondent conditioning, we would expect any elicited fear response to gradually abate if the person is exposed to the conditioned fear stimulus without experiencing any actual unpleasant effects. To the extent that operant performances are a part of the fear response, developing a new performance in the presence of the fear stimulus that is incompatible with the escape/avoidance performance should eliminate it.

The specific goal of treatment may depend on the needs of the particular individual. For example, a Forest Service employee who fears snakes might need to learn to recognize different types of snakes and become able to kill poisonous snakes when located in camping areas. For most individuals, however, a more likely goal is to develop the capacity to enjoy outdoor activities, with a moderate degree of caution, in areas with high risk of exposure to harmful snakes.

Another example of a fearful behavior pattern is that of Madge, a young woman who became anxious whenever she went out of the house. When her husband was along to comfort and reassure her, she was able to go many places, but when alone it was a major ordeal even to go out and pick up the mail. The mere thought of leaving the house by herself was enough to produce an anxiety attack: sweaty palms, heart palpitations, tightening in the stomach, chest pains, dry mouth, and so on.

Examination of the history of Madge’s fear did not reveal any specific point at which the problem began; but it had been getting progressively worse over the last two or three years. When first married five years ago, Madge and her husband were very close, but after he graduated from college and began his present job as an engineering consultant, his work entailed frequent late nights at the office and periodic travel to distant cities. Madge felt neglected and unloved. As Madge’s problems became more severe, her husband found it necessary to curtail his travel and to spend more time at home; he was also unable to work evenings, because he had to accompany Madge on shopping trips and help with picking up the
children. As a result, Bill began to spend more time with Madge. He was sympathetic about Madge's fears, but resentful of the need to do so much for her.

Madge's treatment focused less on any possible fear responses than on the overt performances that pose problems: doing things outside the house. Since interaction with Bill was suspected to be the major reinforcement, treatment focused on making such interactions contingent on more adaptive responses. Since it was summer, and Bill liked to be able to spend time outdoors, it was agreed as a first step that Bill would try reading the paper in the back yard after dinner. If Madge decided to come out and join him, he would put down the paper so that they could talk together for a while. To make this time as pleasant as possible, it was agreed that Madge was not to mention her fears, and they were not to discuss any other unpleasant issues at this time. After a couple of weeks of intermittent success, this became a pleasant evening ritual.

The second step agreed upon was for Bill to meet Madge for lunch. A restaurant was chosen that was only a couple of blocks from home. The first time, Bill picked Madge up at the curb in front of the house. The next time, he arranged to meet her at the end of the block and the two walked together to the restaurant. After a few more "dates," it was agreed that Bill was to arrive at the restaurant at a given time; Madge was to meet him there a few minutes later (to ensure that he got there first). In each of these steps, seeing Bill was the reinforcing consequence for Madge leaving the house.

After similar procedures for going to the shopping plaza, Madge began to find that she was able to go out fairly readily without experiencing anxiety attacks. She and Bill also found that their relationship had improved significantly. Bill found that he was spending more time with Madge than he had done for a couple of years, but was enjoying it much more than when she was having her anxiety attacks.

DEPRESSION

One of the difficulties in dealing with depression is that it may arise for a wide range of reasons. Failure in the academic or work
setting, death of a loved one, physical fatigue, illness, and major changes in personal circumstances may all be contributing factors in a given instance of depression.

In terms of the conceptual framework that was presented in Chapter 1, depression may occur because of the onset of large amounts of punishment, the cessation of reinforcement for a wide range of behaviors, or because of major changes in setting events (e.g., loss of sleep, major illness, loss of a loved one, and so on).

We generally view depression essentially as an emotional condition. It is important to remember that ongoing reinforcement and punishment experiences continuously affect a person’s emotional state, which in turn has setting events effects. Thus reductions in reinforcement or increases in punishment have setting event effects. These setting events generally reduce the probability of engaging in various responses, and thus further reduce reinforcement and/or increase the frequency of punishment, contributing to a downward spiral of increasing depression.

Jim’s experiences are a good example of the process described. He had studied long and hard for the bar exam, and looked forward to the day when he would be able to enter law practice with his father. Then he received the disappointing news: he had failed. Jim was crestfallen and embarrassed. The fact that several of his close friends had passed made things worse. Because he was too embarrassed to see them, he began to refuse social activities and quit playing tennis.

As time passed, Jim began to lie around the house all day, watching the soap operas. He began to have trouble sleeping. His appetite decreased and he drank more and more. As a result of all these factors, Jim’s health began to deteriorate. He became more and more depressed throughout this period, gradually coming to consider suicide as the only solution.

Several setting events contributed simultaneously to Jim’s depression. First, there was the absence of reinforcement for his study for the bar exam. Second, fatigue was likely to have been a contributing factor. Third, there was the social embarrassment of not doing as well as his peers. Quitting tennis and social activities cut off further access to reinforcement. Changes in diet, increased alcohol consumption, and loss of sleep added physical complications to the problems he already faced. All of these factors contrib-
uted to the apathy, inactivity, negative self-statements, and expression of desire to end his life that characterized Jim's depressive condition.

Because of the complexity of factors entering into Jim's present condition, no single approach was likely to be completely effective, and immediate and dramatic changes were not expected. The basic goal was to reestablish a normal level of social and work behaviors over a period of time, while ensuring that initial efforts met with sufficient reinforcement to sustain the effort that Jim needed to make.

The first step involved identifying existing reinforcing interactions, and using these to reinforce successive approximations to normal (nondepressed) activities. Watching TV and drinking bourbon were observed to be two major reinforcers; since the therapist had reservations about encouraging alcohol consumption, TV was chosen. The first step, then, was to complete an agreed-upon activity before the TV could be turned on. Jim agreed to eat a good breakfast before watching TV.

After a few days, Jim began to report enjoying his breakfast, and indicated some satisfaction with his progress. The breakfast–TV contingency was left intact for the time, and it was agreed that Jim would engage in one of two activities before drinking: efforts to find a job, or social activities. Each of these activities was carefully defined. Seeking a job included (1) contacting a prospect and arranging an interview; and (2) participating in an interview, whether arranged for by Jim or by an agency with which he was willing to work. Social activities were defined to include playing at least nine holes of golf or one set of tennis; Jim was free to do more if he desired, but must complete the minimum amount before taking a drink. If he did none of these activities on a given day, he agreed he would abstain.

After a few days of intermittent success and failure, Jim was fairly regularly engaging in social activities, mostly tennis. Job interviews were slower to develop. Since Jim had begun to enjoy his tennis games again, it was agreed that he would play tennis on Tuesday and Thursday only if he had completed one job-related activity in the preceding two days. Within two weeks after this change in procedure, Jim had located a job and agreed to begin work on the following Monday.
Although the most difficult part of the work had now been accomplished, it took several additional weeks for Jim to complete dealing with his periodic episodes of depression. A major factor was working out a plan for reviewing the areas in which he was weakest, and planning to retake the bar exam about a year later.

**Assertive Behavior**

Perhaps the simplest way to conceptualize assertive behavior is to suggest that assertiveness is the midpoint on a continuum from passivity to aggressiveness. The passive person does not express opinions, wants, hurts, requests and so on. Through failure to take action, such a person fails to gain satisfaction from the social environment. The aggressive person tends to respond too hastily, to pursue courses of action without regard for the rights and privileges of others, or to actively seek to harm or exploit others.

*Assertiveness may be defined as: (1) giving value to oneself and one’s own desires and opinions; (2) freely initiating interactions with others; or (3) expressing an opinion, defending a position or action, or pursuing a goal in spite of obstacles or the opposition of others, so long as the rights of others are respected.* Assertiveness implies a positive attitude both toward the self and toward others. By contrast, passivity suggests a negative attitude toward self, while aggression suggests a negative attitude toward others.

Historically, assertion and aggression have been viewed as overlapping or even synonymous domains of behavior. Psychologist Joseph Wolpe originally defined assertion to include “not only more or less aggressive behavior, but also the outward expression of friendly, affectionate and other nonanxious feelings.” The first item on the Rathus Assertiveness Scale, one of the more widely used scales, reads: “Most people seem to be more aggressive and assertive than I am.” And in his 1973 American Psychological Association presidential address, Albert Ellis suggested that assertion is one form of aggression, perhaps the healthiest form.

More recently, a number of critics have pointed out some of the difficulties posed by this view that assertion is a form of aggression. Echoing these criticisms, Psychologist Paul A. Mauger and his colleagues have recently developed the Interpersonal Behavior Survey (IBS), with the explicit purpose of assessing assertive and aggressive behaviors in a single inventory. Results of research and scale
construction suggest that assertion and aggression, as measured by the IBS, are independent behavioral dimensions. This implies that assertion and aggression may be viewed as distinct forms of behaviors.

The IBS has high reliability, and has been shown to be sensitive to the effects of assertion training. One limitation is that it does not assess the roles of situations and persons in assertive performances. Thus, in assessing assertive performances, it is necessary to use self-report data and records of behavioral episodes to supplement data from the IBS. Such data may reveal that the person is generally assertive, but is passive in relationship to one or two key individuals, often his or her spouse or boss.

To put the assessment question differently, it is important to distinguish between deficits in the person’s skill repertory and deficits in the occurrence of available performances due to problems in stimulus control or to suppression of available responses by real or anticipated punishment.

Several steps are involved in training assertive behavior. The first step is assessment of the person’s current repertory of assertive performances. The IBS may be used in this process. Additional data may be gathered by means of behavioral interviews, which focus on collecting specific details of the person’s interactions with others, and through direct observation. For example, a woman who has difficulty refusing requests for personal favors from coworkers may be asked to keep a written record of these requests and her responses.

Once the preliminary assessment is completed, training progresses along several fronts. First, it is helpful to explore people’s expectations and fears about the reactions of others to assertive responses on their part, and any unpleasant experiences that they may have had in the past when attempting to be assertive. People who have been punished in the past for efforts to be assertive may need a great deal of encouragement to begin to explore the possibility that such punishment is presented only by one or two key individuals.

A second avenue of approach involves presenting a rationale for assertiveness. People often believe that expressing their own opinions, requesting things they want from others, and so on, are “wrong.” Here again, values enter; it is helpful for people with a biblical orientation to show examples of assertiveness in the Bible.
Changing Human Behavior

A third approach is to encourage people to observe how others handle similar situations and the resulting consequences. This serves to expose them to constructive models, and also may help to alter expectations about the consequences of assertive responses.

Fourth, they are encouraged to participate in behavioral rehearsal or role-playing of new responses to others. For example, the therapist may first play the client, while the client plays a coworker. The therapist models appropriate assertive performances. Roles are then reversed, and the client is asked to practice the same responses in the session. This stage often proves to be very difficult, but also to be highly productive.

Finally, the client is encouraged to practice with individuals in their living environments. Frequently, this is first initiated with people who are not very significant in the client's life; then, as skill and confidence develop, the client is encouraged to try the new performances with key persons.

For example, Mamie, an attractive wife and mother, was employed in a large business office. Her boss and coworkers frequently asked personal favors of her; she almost always said yes, but frequently resented the requests and found them to be an imposition on her time. She viewed herself as a helpful, loving person, who did things for others as her "Christian" duty. At the same time she resented it, and struggled with her feelings of resentment, which she viewed as sinful.

In therapy, Mamie was helped to see that she was already failing others frequently. Because of the overwhelming burden of requests at work, the needs of her family were often neglected. Once it was clear that the task she had set was impossible, she was helped to evaluate where her most important responsibilities to others lay; she concluded that her family had to be placed first. Next, she was confronted with the possibility that she did things for people in an effort to get them to like her. This was interpreted to her as selfish. Mamie was reminded that God called upon her to deal with others in love, and that they would like her more if she dealt with them in such a fashion.

Once Mamie had come to agree that she needed to learn when and how to say no to others, she was encouraged to observe others around her to see how they handled refusing requests, and to
evaluate the effectiveness and desirability of the approaches she observed. Role-played interactions with key persons were begun; in these, Mamie refused realistically presented requests. Initially, Mamie had a great deal of difficulty with these; her “no” sounded more like “yes.” She was praised for her effort and encouraged for progress. Many specific suggestions were given in helping her to improve her presentation of her “no” responses.

Once Mamie had begun expressing a convincing refusal statement in treatment sessions, she was encouraged to practice saying “no” at work. Again, her initial efforts were not well presented, and consequently not very effective. By now, however, she was able to evaluate her own performance and to see ways in which she needed to change to become more effective.

Before leaving our discussion of assertive behavior, some comments must be addressed to the ethical issues surrounding assertiveness. The danger exists that assertion may become blatantly self-serving. Joseph Wolpe, for example, suggests that the goal of assertion is for the individual to place the self first, but to take others into account. The biblical teachings in this area suggest that Wolpe, and apparently many others, have gotten the emphasis backward. Biblical teachings emphasize giving preeminence to others rather than to the self. Similarly, it is common for personal rights to be emphasized in presentations of assertiveness, most notably in the popular book, Your Perfect Right. In contrast, the Bible seems to say little, if anything, in support of personal rights, but a great deal in support of the right, with focus on righteousness, justice, and mercy in dealing with others. Assertiveness serving these values can be shown to be consistent with biblical teachings; self-serving assertiveness is contrary to them.

**SEXUAL BEHAVIOR**

Concerns with sexual problems have become sufficiently common in recent years that a new specialty area, sex therapy, has
developed. Because entire books have been written on various approaches to sex therapy, it will not be possible to present here anything approaching a comprehensive overview of behavioral approaches to treatment of sexual behavior. However, we will introduce some of the issues and basic strategies employed in approaching sex therapy from a behavioral perspective.

The first point to be emphasized is that both sexual attitudes and sexual performances are learned. As sex researcher Alfred Kinsey and his colleagues note, "An individual learns how to utilize particular techniques in petting, in coitus, or in homosexual or other relations...." Thus, from a behavioral perspective, sexual performances—whatever their form—are viewed as learned performances. One of the problems in the area of sexual behavior is that, while sexual performances are learned, they are rarely taught in any systematic way. Parents and teachers are involved in teaching reading, grammar, table manners, athletic skills, and so on. But, too frequently, little explicit sexual teaching goes on except at the level of communicating attitudes toward sexual performances of various types.

A second factor that must be recognized is that sexual behavior is quite complex, involving an intricate interplay of operant and respondent behaviors. Much of the physiological pattern involved in sexual arousal is respondent in nature; however, the particular stimuli that come to elicit the pattern of sexual arousal are learned in social contexts. In addition, the actual overt sexual performance is largely operant in nature. The particular sexual partners, forms of sexual interaction, and so on, are learned operant performances. Thus approaches to treatment of sexual behaviors must consider both respondent and operant components of sexual behavior.

A third factor to keep in view is that, while sexual responding is in many ways a natural physiological process similar to respiration, elimination and circulation, it is unique in one respect. As William H. Masters and Virginia E. Johnson, a noted sex research and therapy team, observe, "Sexual responsivity can be delayed indefinitely or functionally denied for a lifetime." This implies that there is no biological necessity for sexual expression; a person who has no sexual "outlet" will not experience any physical harm as a result. Because of this factor, it is possible to defer sexual activity until an appropriate social and physical context is
available, or indeed to forego sexual activity entirely, as is the practice in some religious communities.

Another factor to be emphasized is that concerns about sexual functioning and expression cannot be divorced from social contexts. A central concern of the Masters and Johnson approach to sex therapy is a focus on dealing with the relationship between couples who are experiencing sexual difficulties. "The basic means of treating the sexually distraught marital relationship is, of course, to reestablish communication. . . . Obviously, the more stable the marriage the better the climate for effective sexual function . . . the marital relationship per se is under treatment."12 Basically, a good interpersonal relationship is central to a satisfying sexual relationship. This reemphasizes the social characteristics of sexual behavior.

The varieties of sexual disorders are numerous, including such forms as homosexuality, sadism, masochism, fetishism, impotence, orgasmic dysfunction, vaginismus, dyspareunia, exhibitionism, voyeurism, and many others. Here we will limit our discussion to two forms of sexual disorders, impotence and homosexuality. *

**IMPOTENCE**

Impotence in males involves inability to attain intercourse through one of two difficulties: (1) premature ejaculation, which occurs either before or immediately upon penetration; or (2) failure to attain an erection. The behavioral approach to impotence proceeds along lines that largely parallel the procedures of systematic desensitization. Systematic desensitization for a hierarchy of visualized sexual acts may be used as an accompanying strategy. First, the man is encouraged to avoid further failure experiences. Second, the couple is encouraged to engage in progressively more intimate sexual activities when there is a strong desire to do so, but to stop at the first signal of anxiety or tension.

Psychologist Barry McCarthy describes a behavioral adaptation of the Masters and Johnson procedures for outpatient therapy treatment of couples with male impotence. In the treatment process, "[Sex] was defined as an area of their lives that they had to

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* A number of good sources may be consulted for more detailed discussions of behavioral approaches to these and other forms of sexual disorders.13
learn about and then learn as a couple to respond to each other. The pleasuring or sensate focus procedures were introduced as a primary means of beginning this process."14 The "sensate focus" procedures developed by Masters and Johnson involve a systematic exploration between the partners of the role of physical touching in providing pleasure.

Aided by specific direction from the recipient partner as to interest in specific body area and intensity of touch desired, the "giving" partner is to trace, massage, or fondle the "getting" partner with the intention of giving sensate pleasure and discovering the receiving partner's individual levels of sensate focus. If neither partner has any idea of physical preference, a gentle trial-and-error approach is suggested.15

In the McCarthy variation, the couple is instructed to practice three days, rest one, then practice the remaining three days before the subsequent weekly session. They are told to practice explicitly and in sequence: (1) sensate focus, eyes closed, no genital touch; (2) sensate focus, eyes closed, no genital touch, spouses guiding each other; (3) eyes open, no genital touch, guiding each other; (4) off day; (5) sensate focus with lotion, no genital touch; (6) genital touch with eyes closed; (7) guided sensate focus with genital touch, eyes open. "However, the couple is told they need not view this as a rigid program, but rather as a guideline. The first few exercises are carefully and fully programmed, but...the structure of programming gradually decreases and the couple are encouraged to be spontaneous and experiment."16

Through gradual engagement in more explicit forms of sexual activities such as sensate focus exercises (which involve systematic exploration of ways to experience physical pleasure short of coitus, while insuring avoidance of unpleasant experiences), the natural reinforcement for those behaviors will gradually strengthen them. At the same time, the stimuli that elicit anxiety will gradually lose their effectiveness as unpleasant outcomes are avoided.

A supportive relationship with the sexual partner is vital to the process of treatment described here. The partner must be willing to cooperate in engaging in a variety of sensate focus exercises with the person experiencing difficulty, and to cooperate in not forcing efforts to engage prematurely in coitus, thus again risking failure.

Emerging data on the effectiveness of behavioral sex therapy ap-
proaches suggest that impotence can be effectively treated when the marriage relationship is adequate, but severe marital conflict prevents effective treatment. For this reason, marital therapy is recommended as a standard preliminary procedure for couples who present significant levels of marital conflict.

HOMOSEXUALITY

Homosexuality, per se, is no longer recognized as a mental disorder by the American Psychiatric Association, though the decision to delete it involved considerable controversy. However, provision is made for classifying those persons who present themselves as homosexual, and who experience discomfort or dissatisfaction in their homosexual relationships. Although more controversial than treatment of impotence, and thus less carefully investigated, behavioral approaches to altering sexual orientation in practicing homosexuals who wish to change their sexual orientation have shown some promise.

Even more so than with impotence, homosexuality involves a diverse range of behaviors both in kind and in frequency. Further, the degree of homosexual involvement relative to heterosexual involvement is quite varied. Kinsey and his colleagues used a seven-point scale to rate the relative degree of homosexual experience in their study. Because of these complexities, it is necessary to assess the specific sexual practices of the person and relate these to decisions about treatment approaches and investigations of treatment outcomes in altering sexual preference.

Behavioral approaches to changing sexual preference are varied, and combinations of the various discrete techniques are often used in dealing with a particular person. In general, the basic goal of treatment has been to increase heterosexual activities and decrease homosexual activities. Techniques include (1) desensitization of aversion to members of the opposite sex; (2) training in social interaction and assertion especially with members of the opposite sex; (3) aversive conditioning for sexual stimuli associated with the same sex; (4) use of sexual imagery with members of the opposite sex; and (5) use of explicit heterosexual stimuli. In addition, work on development of better self-esteem to facilitate approaches to members of the opposite sex has also been employed.

Let us use Bill as an example of a client who sought treatment
with the indication that he was concerned about his homosexuality, and wished to become heterosexual. Bill was a dorm resident at a small college. He had been raised as the child of a missionary/minister, and most of his high school period was spent in Africa, where his peer contacts were limited largely to one girl, about five years older than himself, who was much like a sister to him. Bill’s sexual experience was limited to a couple of episodes of explicit homosexual interactions initiated by an older brother, and to masturbation accompanied by fantasies of sexual activities with members of the same sex.

The major elements of the presenting problem for Bill seemed to include (1) strong heterosexual taboos, affirmed when a brother impregnated a girlfriend; (2) an explicit homosexual experience; (3) the eliciting function of male stimuli for sexual arousal established by masturbation associated with same-sex imagery; and (4) general passivity in social relationships, especially with young women.

At the time therapy was initiated, Bill reported having a relationship with a young woman, but he was troubled by it in two ways. First, there were his fears about his sexual orientation. Second, he felt “trapped” in the relationship because it had developed with the daughter of a family with whom he had lived during the previous summer.

In working with Bill, treatment began with a behavioral rationale for his present attraction to males. The pairing of sexual gratification with male stimuli was pointed out, and the attraction to males was described as a natural result of this experience combined with the strong taboos Bill had experienced associated with heterosexual behavior. Treatment was then described in learning terms to involve learning to associate sexual arousal with members of the opposite sex and detach it from members of the same sex.

Treatment progressed along several lines, more or less simultaneously. Bill was encouraged to discuss his relationship with his current girlfriend, and ask that they each be open to dating others for the present time. A second task was to begin to identify those features about males that he found sexually attractive, and to look for similar features in females. Fortunately, Bill found that the qualities in males that appealed to him were largely “feminine” qualities; thus it was easy to locate pictures of women whom he
found attractive in various popular news magazines. Bill agreed to refrain from masturbating with male images. He reported that he saw nothing wrong with masturbation per se; thus it was agreed that, if he masturbated, he would use female or autoerotic images.

Although Bill did not become very actively involved in dating other women, he did develop some closer relationships with both female and male peers. As Bill’s relationships with peers improved and his concept of himself as a normal male began to develop, he experienced renewed interest in the relationship with the young woman he had come to know the previous summer; he no longer felt “trapped.”

Treatment was terminated at the end of the school year when Bill left town for the summer. At that time, he reported a growing interest in relationships with women, especially in a sexual sense (although he seemed committed to reserve expression of this interest for a marriage relationship) and no further concern with homosexual tendencies.

**BIBLICAL PERSPECTIVE ON SEXUALITY**

During the mid-60s, the prevailing opinion among the clinical faculty I knew was that the treatment approach of choice with homosexuals was to convert them into practicing heterosexuals. One professor expressed the wish that a “stable” of cooperative females could be made available to provide the opportunity for explicit sexual experiences as a part of the treatment process for homosexual males. In the interim, professional opinion has shifted toward the view that the desired treatment goal is to help the homosexual become comfortable with his or her orientation.

The prevailing attitudes among therapists toward sexual behavior reflect a cultural-relativistic position on what behaviors are acceptable. Upon examining them, one soon comes to the conclusion that, from a biblical perspective, there is not much to choose between these two alternatives. The biblical standard for sexual relationships emphasizes that the place for sex is within marriage. Homosexual and heterosexual activities apart from marriage are equally denounced. Although there is room for controversy, the Bible seems to be largely silent about the question of masturbation, thus leaving it as a matter of conscience. Thus individual judgment is required in determining how to handle masturbation.
The biblical teachings about the context for appropriate sexual conduct focus largely on the area of goals. However, it seems reasonable to conclude that any treatment procedure that involves the use of explicitly forbidden sexual activities would be an unacceptable means of sex therapy. In this context, the approach to dealing with male impotence described above would be acceptable, since the goal of functional sexual relationships in marriage is biblically supported, and since the methods used seem to be consistent with biblical teachings as well. The treatment approach taken with Bill's homosexuality is a bit more controversial, chiefly in the sense that masturbation was not actively discouraged. Otherwise, the goals of developing positive social relationships and a sexual orientation toward females that is reserved for a future marriage relationship seems to be consistent with biblical teachings.

There is a growing awareness that good sexual adjustment is most likely to occur in the context of a constructive social relationship. Such a view is generally consistent with biblical teachings. One way of putting together biblical teachings with such findings is to conclude that the marriage relationship is the only relationship in which this is possible. Although the values of many behavior therapists are not consistent with the biblical position on sexual expression, evidence about the practical outcomes of therapy, nonetheless points toward a view of effective sexual functioning that is surprisingly close to the biblical standard.

NOTES


7. See Phil. 2:3-4.


12. Ibid., pp. 199-200.


18. Ibid.


PART IV

The Church and the Family:
Practical Applications
As we begin our discussion of the normal socialization and educational processes for children, it is important to recognize that there is a fundamental similarity in the approaches that will be presented in this chapter and those in the preceding chapters. In Chapter 5, social influence was defined as including any condition in which one person is effective in programming the environment in such a way as to alter the behavior of another individual. Thus child rearing may be viewed as a specific area for the application of social influence.

From a behavioral perspective, the principles and techniques employed in child rearing are the same as those applied in behavior modification and behavior therapy. Is there, then, any important distinction between normal and deviant behavior from a behavioral perspective? The answer is both yes and no. The central issue is that of social deviance. If the child's current behavior has been labelled socially deviant, then the procedures for changing it are called behavior modification or behavior therapy. However, changing behavior that has not earned the deviancy label would not be called behavior therapy. For example, toilet training a two-year-old is an example of social education or social influence; but toilet training a six-year-old is behavior therapy. It is important to recognize that the behavioral techniques employed are essentially the same in both situations. Here again, we see the behavioral emphasis on the underlying functional similarity of normal and deviant behaviors.
Keeping in mind that the basic approaches are the same, this chapter will present some examples of behavioral approaches to training with normal children. Because the range of issues far exceeds what can be addressed here, this chapter will address: (1) the problem of goals in child development; (2) social development; (3) intellectual development; (4) emotional development; and (5) moral and spiritual development.

Another basic distinction is that the behavioral approach emphasizes the role of learning in the development of the child. This is to be contrasted with what has been termed the “developmental” approach, which emphasizes the role of biological processes in behavioral changes as the child grows older. In toileting behavior, for example, the developmental approach emphasizes the role of biological development in enabling the child to control the sphincter muscles, and thus make it to the bathroom before eliminating. By contrast, a behavioral approach stresses the role of learning in toilet training, emphasizing that the child must learn to recognize the internal stimuli of bowel and bladder pressure, learn to tighten the sphincter muscles when away from the “potty,” and learn to relax them in the right location.\(^1\)

Of course, from a behavioral perspective, it is recognized that a certain amount of physical development is necessary before the child can learn bowel and bladder control, and developmental approaches acknowledge that training plays a role. But the two approaches fall at opposite ends of a continuum in terms of their relative emphasis on the roles of learning and biological maturation.

Another area in which developmental and behavioral approaches clearly have different implications is in learning to read. The developmental approach stresses “reading readiness” as an important factor that must be present before attempting to teach a child to read, whereas the behavioral approach emphasizes that certain skills are required in order to learn to read, then suggests specific training techniques for developing the prerequisite skills. Here the contrast is stark: the developmental approach suggests that, as time passes, the child will acquire the necessary readiness; the behavioral approach advocates teaching those prerequisite skills in a systematic fashion.\(^2\)
THE PROBLEM OF GOALS IN CHILD DEVELOPMENT

As with any other area of behavior influence, child rearing involves the conscious or unconscious selection of a number of specific goals toward which the behavior influence process is directed. Many of these goals are clear and explicit, while others are much more difficult to identify. We want our children to have an education, to be able to read, write, do arithmetic computations, to spell, and so on; thus, in the United States, we support both public and private education on a massive scale. We want them to learn social behaviors ranging from appropriate toileting to table manners, social interaction skills, and so on. We may also want them to develop certain standards for their behavior, including moral and religious commitments. We want them to learn to control their emotional outbursts. All of these are goals of the educational process.

As with deviant behavior, value or ethical issues arise about the goals of child rearing. These value issues lie at the heart of struggles over what textbooks should be used in public schools, what books may be placed in their libraries, whether evolutionary or creationist theories of origins may be taught, whether sexual education may be provided, the specific content that is to be presented, and so on. In our culture, there is considerable disagreement regarding the specific goals of education. The typical behavioral approach to the goals of child rearing is to discern the present community standards and practices in a certain area, then to adopt these as goals. From a biblical perspective, the first source of goals is that of biblical standards. However, in areas where the Bible is essentially silent, community standards may again become an important criterion; for example, since the Bible has little to say about formal education, a decision about how much education—elementary school, high school, college—a child should have must be made on other grounds.

In addition to the question of goals, it is important to keep in mind that the specific methods employed must also be considered as value-laden questions. For example, we may agree that education about sexual physiology is a desirable goal, but disagree about whether the use of sexually explicit films and video tapes is an acceptable method for teaching this content.
As we examine the application of behavioral techniques to child rearing, then, it will be important to remember that ethical issues are involved in each decision about the goals and methods of child rearing. Biblical principles bear directly on some of these issues, but only obliquely, if at all, on others.

Social Development

To some degree, there is an overlap between social and moral behaviors. Here, however, we will concentrate on behaviors that are more clearly social in their characteristics. A wide range of behaviors fall into this class: dress, toileting, table manners, bodily hygiene, and so on. Three examples of social behavior will be presented to demonstrate the application of behavioral techniques in facilitating their development: toileting, dressing, and eating with a spoon.

Toileting

It is generally agreed that some degree of biological development is needed before toileting behavior can be developed successfully. No amount of behavioral training is likely to produce bowel and bladder control in a six-week-old infant. By age two, however, most children have reached the necessary degree of biological development; from a behavioral perspective, once the child has reached this point, the major factor in determining when toileting behavior will be established is that of providing the necessary learning experiences.

Behavioral techniques for toilet training were initially developed for the treatment of nocturnal enuresis (bed wetting), encopresis (defecation in clothing), and for application in continence training with institutionalized psychotics and retardates. The techniques, once developed, have been shown to be equally effective in developing toileting behavior in young children.

Traditional approaches to toilet training, as Ullmann and Krasner note, place their emphasis on "not soiling, on holding back, on not performing an act, rather than the performance of the act at the socially appropriate time and place." A corollary of this is that such approaches tend to focus primarily on punishment as a
behavior management technique. Although punishment for soiling and wetting may be included in a behavioral approach, the principal factor in its success probably lies in the shift in focus from punishing these problem behaviors to establishing desired eliminative behavior by means of reinforcement. Actually, then, the behavioral approach combines elimination of wetting and soiling on wrong occasions with establishment of wetting and soiling on the right occasions—on the potty seat. Conceptually, we may think of it as an example of dealing with a problem behavior by establishing an incompatible and more acceptable alternative response.

The process of toilet training begins with teaching the child to sit on the potty seat. Some children learn this from observing older siblings or other children at the nursery, but—especially for first children—it may be necessary to systematically teach this performance. An easy way to begin is by making the training a social occasion. A parent and the child go together into the bathroom. The parent sits on the “big” potty and the child on the small potty; this step may be done fully clothed. One way to reinforce this is to read to the child for a few minutes, or to make it a kind of game. Thus the child is reinforced for sitting on the potty.

The second step is sitting on the potty with diaper removed. It helps to make certain that the potty seat is warm so that unnecessary discomfort is avoided.

The third step is to initiate elimination on the potty. Several factors can help with this. Perhaps the most important is to place the child on the potty seat at times when elimination is very likely (e.g., just after getting up from a nap). The parent tells the child he wants him to wet in the potty. The child can observe another child doing so, or the parent can model the performance by sitting on the toilet in much the way the child is expected to sit. The parent tells the child he will get a goodie when he wets in the potty. All of these things will help to produce the first success. The parent should make a big deal about the results: “You’re a good boy, I’m proud of you; you wet in the potty!” Then the parent should give the child the promised goodie.

After a few successes, the child may actually beg for the chance to go to the potty, or request goodies after tiny dribbles. Things are going well as this point. The parent should tell the child he will
get a goodie when he has a *big* wet—or a bowel movement. The parent should then give goodies and praise only following wets of more than three or four ounces.

The next step is to eliminate accidents, to teach the child to go to the potty every time he needs to eliminate. The parent should begin by saying, "Tell Daddy when you need to go to the potty"; and, "Wet in potty is good; wet in panties is no!" This should be continued following each episode, emphasizing good or bad performance, for several days, especially if the child is quite young. During this process, the child is learning to recognize the signals of pressure in the bladder, to tighten the sphincter muscles when he is not in the bathroom, and to relax and let the urine flow when on the potty.

The procedures we have just described are highly effective for most children, and on most occasions. However, it may at times be more fun for the child to continue playing then to go to the bathroom on a given occasion; thus occasional accidents may still occur even after several weeks or longer. Under these conditions, addition of a specific punishment procedure for wetting may be helpful. Interruption of play is generally a punishing event in itself. Thus the parent can take the child away from whatever activity is ongoing, tell him: "You wet your panties; wet in panties is no!" Then put the child on the potty seat for a few minutes. An additional step to further insure the aversive nature of this interaction is to give a "stand-up" bath. Take the child's soiled pants off, stand him up in the tub, and wash him with uncomfortably cool water. Then dress the child and permit him to resume play activities.

It is important that the aversive procedure just described be carried out as a routine procedure, each time, and in a matter-of-fact way. The child needs to know that the parent is displeased, and that these events happen when he wets. Once the procedure is over, however, it is important for normal social activities to resume. For older children, an alternative to the stand-up bath routine is to have the child strip, bathe, and wash out the soiled clothes.

These procedures emphasize bladder training. Bowel training is a bit more difficult and thus takes a bit longer, but follows the same basic principles.⁶
DRESSING

Learning to dress without assistance is a fairly complicated performance, which involves putting on several pieces of clothing. Thus learning to dress needs to be approached in a systematic fashion. Behavioral psychologists have learned that often the most effective way to teach a complicated performance is to begin by teaching the last step in a complex sequence, then working backwards to the initial step (a process called chaining). In dressing, the parent begins by dressing the child almost completely. The final step is placing the second arm through the sleeve of the shirt. The parent guides the arm into the opening, then allows the child to extend it on through. This can be made into a game: “Where’s your arm? Did you lose it? Oh! There it is,” the final comment coming as the child’s hand appears out the sleeve in the desired way.

The second step is to allow the child to do the same with both arms. Then the parent holds the sleeve opening in a convenient place, allowing the child to insert her arm and push it through. Gradually, the child is allowed to take more initiative in locating the sleeve opening. Then she is taught to pull the shirt down off her head after the parent has placed it halfway over. Eventually, the child is taught to gather the shirt, find the head opening, and put it on entirely. Throughout this process, the social interactions of making it a game generally should be enough reinforcement to establish the initial responses.

Once the child has learned to put on the shirt, the parent may use the Premack Principle to reinforce putting it on. For example, “Get your shirt on, then you can eat.” Here eating reinforces getting dressed.

The next step might be to teach putting on pants. First, the parent places the child’s legs in the pants and pulls the pants up most of the way. Then say, “Let’s see if you can pull your pants up,” or some similar statement. The parent allows the child to do it, then praises: “Good girl! You pulled up your own pants!”

* The Premack Principle involves requiring the child to complete some unpreferred activity before permitting a more desirable one.
the pants are left further down. The parent then puts only one leg in, holding the pants to help the child insert the second leg. Next, the child is allowed to insert the first leg, while the parent holds the pants so that they are right side front, and the leg opening is convenient. The next step is to allow the child to guide the pants onto her own legs. Finally, the child is taught to locate the front of the pants, place them properly, and insert her legs.

Throughout the process of learning to put on pants, social encouragement should provide the necessary reinforcement. Once the child has learned to put on her own pants, the Premack Principle may again be applied to encourage dressing herself before some desired activity.

The same procedures may be employed in teaching the child to put on other articles of clothing. The important point to remember is that the child must be taught each response in a systematic way, encouragement and reinforcement must be provided frequently and generously during the learning process, and reinforcement is still required to maintain the responses once the child has learned them.

Throughout the process of learning to dress herself, the child need not experience any punishment. It may be carried out as a positive and pleasant social interaction between the child and the parent. The child enjoys it as she learns, develops a sense of accomplishment, and comes to love and appreciate the parent even more because the parent comes to elicit positive emotional responses in the child through being associated with pleasant experiences.7

**EATING WITH A SPOON**

The procedure for teaching a child to eat with a spoon has similarities to the procedures for dressing. The first step is to give the child the spoon and allow him to hold it in his hand. Special spoons, which facilitate placing the bowl in the mouth and keeping the bowl horizontal when grasped by a child's hand, have been developed; these spoons simplify the process, though they are not necessary.

Once the child will hold the spoon in his hand, the next step is to teach him to place the spoon in his mouth. A small bit of food is placed on the spoon, and the child's hand is guided almost to the
A slight movement by the child easily gets the spoon into the mouth, and food in the mouth reinforces the movement. Once the child is able to get the spoon into the mouth, the parent gradually provides less and less guidance. Initially, the hand is guided until the spoon almost touches the lips; then it is left a mere inch away; gradually the distance is lengthened until the child is able to raise his hand successfully from dish to mouth and insert the food. Throughout this process, care must be taken not to move too slowly or too rapidly. Repeated failures suggest that progress has been too fast; impatience on the child’s part suggests going too slowly. The best strategy is to move fairly rapidly, backing off a bit if repeated errors begin to occur.

Three precautions must be taken. First, the child must be moderately hungry; this insures that food in the mouth will be reinforcing. Second, it is wise to use a food that the child clearly enjoys. Third, it helps to use a food that sticks to the spoon, thus reducing the risk of dropping.

Once the child has learned to carry food to his mouth, the next step is to teach the child to pick up food with the spoon. Again, start by guiding the child’s hand, then releasing the assistance at the last moment. If training has gone well to this point, little effort will be required for the child to learn to pick up such foods as apple sauce, mashed potatoes, pudding, and the like.

Learning to use a fork, picking up other foods, and so on, require the same procedures, but should go quite rapidly once the basic steps have been successfully completed.

**Intellectual Development**

Perhaps the central element in intellectual behavior is the development of speech and language. Intellectual development progresses from the first rudimentary concepts of mother and father as distinct persons to the learning of differential equations, abstract philosophical concepts, or composition of a symphony. Intermediate levels of intellectual behavior include learning to speak, to read and write, learning numerical concepts, and so on. Here we will focus on initial language development and color naming as examples of early intellectual performances.
LEARNING TO TALK.

Studies of the development of language have shown that all children with normal capabilities begin to vocalize at about the same age, and with the same sounds. The gradual development of the full range of speech sounds of which the human voice is capable unfolds in a predictable time sequence. These developments seem to be largely the result of biological processes. But learning takes over once the child begins to vocalize, influencing the particular sounds that the child continues to make, the frequency with which they are made, and the occasions on which they occur.

The child’s initial vocalizations begin around the middle of the first year. Such sounds as “aaa,” “baa,” and “maa” are among the first to emerge. At the outset, these responses are probably maintained by the natural pleasure or reinforcement gained from the production of a sound, including the feel of the resonance in the mouth and throat, proprioceptive stimuli due to movement of the vocal apparatus, hearing the sounds produced, and so on. As the parent begins to respond to the sounds, however, they gradually come under control of the parent’s social presence and the consequences that the parent provides.

Most of us have observed the social response of parents and others to a child’s first vocalizations. The enthusiastic responses of hugging the child, cooing to it, and so on generally strengthen the child’s vocal performances. As vocalization increases, the child gradually comes to make recognizable sounds such as “ma ma ma” and “da da da.” Because saying “da da da” in Father’s presence gets a more enthusiastic response than it does in his absence, it gradually becomes stronger when Father is present, and thus comes under discriminative control of his presence. The same happens with saying “ma ma ma” when Mother is present. Through selective reinforcement, these performances are gradually refined to the point where the child says “dada” and “mama” consistently in the presence of the appropriate parent.

As the child gradually comes to make a wider variety of vocal sounds, these in turn can be developed and brought under control of various objects and events in the environment by the same shaping and selective reinforcement processes that developed saying Dada and Mama. In this way the child begins to learn the words
for common objects and simple actions. “Baba” and eventually “bottle” come to replace crying as a means of getting a bottle because they are much more effective in getting the desired reaction from the parent. The child gradually learns to say “ball,” “book,” “read,” “go,” “out,” and so on, because these common daily objects and events are important to the child, and labeling them speeds getting what the child wants. In this sense, speech produces strong reinforcement for the child.

Further elaboration of the spoken vocabulary continues through this process. When the child prefers milk to juice, and Mom finally catches on, she says “Oh! You want milk. Can you say milk?” If she waits for the child to try, then gives the milk following a good effort, the process of learning to say “Milk” is expedited. And so it goes. As long as the child lives in a setting in which spoken requests produce faster and more consistent responses than cries or grunts, articulate speech is continually strengthened and elaborated.

COLOR NAMING

Most children experience a fair degree of difficulty in learning to “know” their colors. The basic reason for this is that most objects that the child normally deals with differ not only in color but in other ways such as shape, texture, weight, and other qualities. Because of this, the child may fail to attend to the correct aspect of the stimulus object, thus making mistakes about colors.

The process of learning to recognize colors may be conceptualized as concept learning.* The child must learn to ignore all properties but differences in color, and also learn the points on the color spectrum which divide various colors from each other. The most effective way to accomplish this is to teach colors using objects that are identical except for their color; these may be blocks, pieces of construction paper, and so on. The important point is that they be identical except for their colors.

In one family, a set of plastic bowls was used; learning colors was structured as a game. The parent sat down on the floor with the child, the plastic dishes, and a few raisins. The dishes were hidden behind the parent’s back. The game began. The red dish

* Concept learning is discussed in more detail in Chapter 8.
was placed in front of the child. "This is Red. What color is this?" If the child said, "Red," the parent said, "Good girl." A raisin was given. Then the blue dish was brought out. "This is blue. What color is this?" Again, correct color naming was followed by praise and a raisin. Red and blue were then alternated in a randomized sequence. If the child responded correctly, praise and a raisin were given. If an error was made, the child was told: "This is blue. What color is this?" A correct response was praised, but no raisin was given.

Once the child consistently got red and blue correct, the next step was to add another color, yellow. "This is yellow. What color is this?" When yellow was introduced, the errors on red and blue increased suddenly, but quickly disappeared again with the correction procedure described above.

Addition of further colors after red, blue, and yellow had less and less effect on correct responses for colors previously learned, and also were more quickly learned by the child. The reinforcement procedure was continued, but raisins were gradually given less often.

The procedure just described was used with a highly verbal two-year-old. The game was played for a few minutes immediately before supper, with the father doing the training. After the first couple of days, he was greeted at the door with requests to "play our game." In just a few days, the child was correctly labelling the color of cars passed on the street, items of clothing, and so on. 10

EMOTIONAL BEHAVIOR

Emotional behavior, as we have seen, is respondent. This section will discuss some of the processes by which emotional behavior develops, and will address some of the complex interrelationships between operant behavior and emotional respondent behavior.

The newborn infant displays two basic emotional response patterns: distress and delight. A distress pattern consists of crying, thrashing about, turning red, arching the back, and changes in breathing rhythm. A delight pattern includes smiling, gurgling and cooing, and relaxed bodily posture.

The process of emotional development from the initial two reaction patterns of distress and delight begins almost immediately;
within a few months, the child displays varied forms of emotional responses that are under control of an increasingly diverse range of stimulus events. As this process develops, new stimuli come to elicit emotional responses and the responses themselves become more elaborate and differentiated through the development of operant components of the emotional response complex.

CRYING

At birth, although it is difficult to be certain, crying is probably a purely respondent behavior. The overall complex appears to be elicited by a fairly limited range of stimuli, which include hunger and pain.

As the child develops, new stimuli develop the capacity to produce the crying respondent (through the process of classical conditioning). Objects or events associated with hunger, pain, or other discomfort come to produce the same emotional respondents that the actual experience of hunger and pain initially produced. For example, when a child normally experiences becoming unpleasantly cold during the bathing routine, taking off the clothes for a bath may come to elicit crying. Similarly, a child who has been stuck with the pin a few times during the diaper changing routine may soon begin to cry whenever placed on the changing table.

Although it is initially respondent, emotional behavior quickly comes to include a variety of operant components, primarily through accidental reinforcement of operant behaviors that tend to accompany unpleasant emotional respondents. These emotional respondents affect the condition of the child in such a way as to alter the probability of a wide range of subsequent behavior; such changes were earlier defined as setting events.

One of the effects of unpleasant emotional respondents is the triggering of chemical changes in the body, including the secretion of various hormones, which prepare the body for emergency actions such as fight and flight. In the presence of these physiological changes, the probability of a variety of high magnitude and high intensity operants is greatly increased. When such responses occur, they are often reinforced by various events in the environment. A child who rolls on a toy in the crib, experiences pain, and cries aloud, may be negatively reinforced for crying by mother coming and removing the toy, thus easing the pain. Alternatively, the child
may thrash about—rolling off the toy in the process—and thus be reinforced for thrashing about. In each case, the operant performance is strengthened through the elimination of a painful stimulus.

These principles have some very important practical implications. The mother who responds quickly to her child each time it cries, and more quickly to loud than to soft cries, may inadvertently strengthen crying in this fashion. She may soon discover that her child cries a great deal, and tends to cry in a loud and unpleasant fashion. The child is reinforced by the mother's response, while the mother is (negatively) reinforced by the cessation of crying. Such a pattern therefore tends to perpetuate itself.

Avoiding the pattern of crying just described is challenging, but possible. Briefly, the child's major means of communication initially is by means of cries. Further, it is important for the parent to respond quickly when the child is hurt or in immediate need. But the tendency to cry at other times can be minimized by avoiding reinforcement of such crying.

During the first few months, it is probably well to respond to all cries. However, by four to six months the parents can begin to distinguish different types of cries: pain, hunger, boredom, and so on. At this point, the parents should continue to respond promptly to indications of pain (when in doubt, they should respond as if pain were the problem); other types of cries may be responded to more selectively. The child who awakens and promptly begins to cry may have this pattern weakened through extinction if the parent goes to the child only when crying becomes soft, or when there is a pause in the cries. With crying weakened, the child may begin to coo, gurgle, or make other pleasant sounds. This is the ideal time to go to get the child; doing so will strengthen these pleasant vocalizations. A second approach that may facilitate this process is to provide crib toys so that the child may engage in crib play when it awakens. This should increase the probability of more desirable performances upon awakening, and is an example of setting the occasion for more desired performances.

PLEASURABLE EXCITEMENT

Like crying, the pleasure response pattern at birth is probably largely or entirely respondent. Pleasurable responses also become elaborated through the combined processes of respondent and oper-
ant conditioning. Initially, being warm, having the stomach comfort­ably filled, and being held and cuddled are probably the principal stimuli that produce the pleasurable response pattern. The presence of mother or father, the sight of the bottle, the feel of blankets and clothing, and other stimuli associated with these pleasant events come to produce some of the same emotional respondents through the process of classical conditioning.12

Operant components of the pleasurable response pattern develop in much the same way that operant crying develops. The general physical arousal associated with these emotional responses will again have the setting event effects of increasing the probability of a variety of operant performances: reaching and grasping, movements of the arms and legs, cooing, gurgling, and vocalizing. If food is given, a blanket wrapped around, or hugging and cuddling follow such performances, they will be strengthened. Eventually, the typical childhood pattern of jumping up and down, waving the arms, and rapid loud vocalization that characterizes excited anticipation may develop.

Initially, the excited pattern will occur only in the presence of very specific stimulus events, but—by classical conditioning—other stimuli will also come to produce the response pattern. Thus the child who has developed a pattern of spoken language may show the characteristic excitement response when told, “We’re going to the zoo tomorrow.”

As with crying, it is possible to influence the manner in which the child expresses pleasurable excitement through careful management of the reinforcement conditions that the child experiences. The parent who consistently has the child sit down and wait quietly before handing out the cookies will develop a child who shows excitement in more subdued ways than the parent who hands out the cookies while the child clamors for them, thus (inadvertently) reinforcing clamoring.

The principles inherent in these examples apply to the whole range of emotional responses. Although emotions are conceptualized as essentially respondent in nature, operant components quickly become intermingled in the behavioral complex. Consequently, emotional elaboration must be conceptualized as a two-part process, including the development of new eliciting stimuli that have the capacity to produce emotional respondents and the
parallel development of operant performances that are influenced partly by the setting event properties of the emotions and partly by the consequences that the operants encounter.

**Moral and Spiritual Development**

Moral behavior may be defined as behavior that conforms to a standard of right and wrong. For purposes of this discussion, we will conceptualize spiritual behavior as behavior that conforms to the standards for right and wrong that derive from some religious system. Such behaviors as prayer and worship conform to the standards of right and wrong of particular religious groups. Hence they may be conceptualized as moral within this definition. But standards of right and wrong are not limited to religious traditions. They may also be derived from prevailing social-cultural practices in a given place and time.

From a behavioral perspective, moral behavior is believed to develop in the same ways that other forms of behavior develop: through the principles of respondent and operant conditioning. Positive moral behaviors, then, are established through shaping, reinforcement, and establishment of stimulus control, while immoral behaviors are weakened or eliminated by means of punishment procedures and the various alternatives.

Toilet training may be conceptualized as moral behavior in this sense. The process of toilet training presented earlier essentially involves a systematic teaching approach for establishing control over eliminative behavior in such a way as to bring it into conformity with the prevailing standards of toileting behavior.

Because most of our standards of right and wrong deal with prohibitions, much of moral and spiritual development tends to be focused on the elimination of undesirable performances. The behavioral approach suggests that the establishment of an incompatible social response may be an important alternative to using punishment to weaken responses that violate moral standards. Also, this or other procedures may be a useful adjunct to punishment of an undesired response even where punishment is required. Sharing and cooperation are examples of positive social responses that are incompatible with the immoral responses of fighting and selfishness.
Sharing and cooperative performances are difficult to develop, partly because they involve reduction in immediate reinforcement. The procedure for establishing these performances may be approached through the simultaneous use of a punishment procedure for engaging in fighting and selfish behaviors, and the use of shaping and reinforcement techniques to establish sharing performances.

When Johnny and Billy both wanted the same toy, a squabble or fight used to be the typical result. After a few fights, Johnny learned that Billy usually won, thus Johnny began to give Billy whatever he demanded. As a result, Billy was becoming a bully. In an effort to halt this pattern, their mother decided to punish fighting, and to make an effort to teach cooperation. Fighting was defined as hitting, kicking, shoving, and scratching. If either Billy or Johnny engaged in these performances they were sent to their room for ten minutes; they had to remain quiet for a minimum of five minutes before being allowed out. Prior experience had shown that this procedure was effective as a punishment for these boys.

Establishing cooperation was a bit more difficult. Mother began by suggesting: “Boys, why don’t you share the truck? Johnny, you could drive it around the room two times, then Billy could have a turn to go two times.” She would then stand and observe while the boys attempted to carry out the suggestion, giving further suggestions as needed. If the boys refused to share, Mother picked up the truck and said: “If we can’t share, I guess I’ll have to put the truck away for a while.” Then she would do so.

A second aspect of the procedure was to provide some additional reinforcement for sharing and cooperation. When the boys were playing well together, mother would come in and comment: “Johnny and Billy, I am really proud of you. You are doing such a nice job of sharing.” Sometimes she would invite the boys to come and have a drink of juice or some cookies as well. In this fashion, the natural reinforcement of cooperative play was augmented by the reinforcement of Mother’s attention and the explicit use of food as a reinforcement.

Although the procedure just described seems to be quite simple, it will need to be expanded through applying the same approach to a variety of other situations: conflict about the basketball, squabbling over who plays first in a game of checkers, clearing the table
after dinner, and so on. As the basic procedures of suggesting cooperative modes of interaction, reinforcing cooperation, and punishing fighting are repeatedly applied, a pattern of cooperative responding will gradually develop. Eventually, cooperation should begin to generalize to new situations.

In this context, a few comments on the implications for a biblical perspective may be helpful. There is a tendency to view biblical teachings on moral behavior as essentially a list of restrictive prohibitions. To a certain degree, this view is legitimate. But if we are to take seriously the interpretation of the Old Testament Law that Jesus gave, we must recognize that the central emphasis of biblical teaching is on positive social behavior: love God, and love your neighbor as yourself. Given this emphasis, procedures for developing positive moral behaviors such as those just described for the development of cooperation and sharing should become the major focus of biblically oriented moral and spiritual training rather than the application of punishment for transgression of prohibitions. The behavioral approach, then, suggests a needed shift in the emphasis in the way many within the Christian community have approached the problem of developing biblical morality in their children.

Finally, a biblical perspective on moral development suggests that there are some innate tendencies God has placed in human beings through creation, which predispose us to be concerned about moral issues, and which may further interact with our experiences in significant ways. The biblical documents fail to shed much light on the precise extent or form these tendencies might take, however.

NOTES


5. Ibid., p. 500.


11. Bijou and Baer, *Child Development II*.

12. Ibid., pp. 122-141.


8. Behavior Principles in Christian Education

In a number of ways, behavioral principles have been utilized in Christian education for many years, although they may not have been conceptualized as such. Thus much of this chapter involves describing current practices in terms of a different theoretical formulation. The value of this is not to be underestimated, however, as a new conceptual framework may do much to enhance effective implementation of desired practices. The second focus of this chapter will be to suggest some innovative approaches to Christian education, which grow out of the systematic application of behavioral principles in ways that may not currently be practiced.

The idea of applying behavioral principles to Christian education and the ministry of the church is not entirely new. B. F. Skinner, in an article published in 1969, suggested the possibility of such applications (it is possible that Skinner's suggestion was made with a substantial degree of tongue-in-cheek). In any event, Skinner quotes Benjamin Franklin's account of how the chaplain aboard a Navy vessel improved the sailors' attendance at worship services by arranging that all who attended be served a round of rum following the service. Skinner implies that this might be a desirable approach to the problem of participation in church worship and other activities. While we might take exception to the ethics of using rum as a reinforcement, the idea of reinforcing attendance at religious services is not novel.

**Reinforcement and Biblical Teachings**

Many individuals within the religious community react negatively to any suggestion of using reinforcement to strengthen religious or moral behaviors. They suggest that people *ought* to do this...
or that; they should do it because they want to; virtue has its own reward; and so on. Such arguments are especially common when it comes to dealing with problems they experience with their children. Interestingly, these arguments do not extend to the degree of precluding the use of punishment when the children fail to measure up to parental expectations. Punishment for failure to exhibit the desired responses is quite common among persons with such views. In Chapter 4 it was noted that, for both theoretical and empirical reasons, punishment is not a desirable approach to establishing or strengthening responses. Yet establishing or strengthening such behaviors as attendance at Sunday School and church, Bible reading, and so on are the major goals in this context. This section will examine some of the biblical teachings that support the use of reinforcement in developing and maintaining religious activities and behaviors.

Harold Cohen, Director of the Institute for Behavioral Research, suggests that there is basically nothing new in the application of behavior principles. "They are just grandma's rules. It's like gravity. We are just trying to use them systematically.... God was the first behaviorist with his 'thou shalts and thou shalt nots' ... we are just trying to make it science." Cohen may have been more than a little flippant when he made these remarks, yet there is good biblical support for such a view.

The biblical account of the Fall reports that one of the consequences of this event was the establishment of a general principle that one must work to eat: "By the sweat of your brow you will eat your food until you return to the ground. . . ." This principle is repeated in the New Testament: "We gave you this rule: 'If a man will not work, he shall not eat.'" In this context, food and eating should not be taken too literally. A general principle is being advanced that we are expected to work to earn those things that meet our needs and provide for our livelihoods. Since food, shelter, and warmth are some of the basic reinforcers identified by behavior theorists, we can interpret this to mean that God has established a system in which reinforcement principles are an intrinsic part of the created order and of his plans for its operation.

One of the principles given as part of the Old Testament law was the instruction, "Do not muzzle an ox while it is treading out the grain." Elaborating on the significance of this teaching, in the
New Testament we learn of several additional implications: (1) the plowman plows and the reaper reaps in hope of sharing in the harvest; (2) the priest who works at the altar shares in the offerings as his food; (3) those who preach the gospel should receive their living for doing so; and (4) most generally, the laborer is worthy of (deserves) his hire. These teachings provide support for the thesis that biblical principles are compatible with reinforcement theory.

Along with the giving of the Law in the Old Testament, God promised that there would be consequences for obeying or failing to obey his Words. These consequences are most summarily presented as the blessings and cursings. Essentially, if the Israelites obeyed God, he would bless (or reinforce) them; conversely, if they disobeyed, he would curse (or punish) them. The blessings included abundance of rain and bountiful production of their crops, increase in cattle and flocks, many children, victory over their enemies, and health and long life in the land God was about to give them. The cursings included drought, crop failures, disease and death among the cattle and flocks, defeat at the hands of their enemies, disease, famine, plague, personal suffering, early death, and expulsion from the land God was about to give them. Thus the notion of God as a reinforcer may seem a bit strange to many of us; but it certainly is not inconsistent with the biblical picture to view God in this way.

In the Authorized Version, the words “reward,” “rewarded,” “rewarder,” and “rewardeth” occur eighty times—forty-two in the Old Testament and thirty-eight in the New Testament. In the Old Testament, “The concept of (reward and punishment), once expounded [is] the core and center of the view of history, as may be seen with particular clarity in Judges. The whole course of [Israel’s] history is schematically understood in terms of national sin and divine punishment, national conversion and divine aid.” This basic theme is presented in the book of Job, considered by many to be the oldest book of the Bible: God rewards the righteous and punishes the wicked. However, even in Job we see this thesis in tension with a second thesis, that of God’s sovereignty and freedom to accomplish his own purposes. Thus, while it was commonly believed (and indeed may be generally true) that God rewards righteousness and punishes sin, there are clear teachings in the Old Testament that this is not a universal principle.
The principal word that has been translated as “reward” in the New Testament derives from a Greek word \(\text{μισθός}\) that connotes pay for services, good or bad; it occurs thirty times in the New Testament and is variously translated “hire” (three times) “wages” (three times), and “reward” (twenty-four times). The bulk of the New Testament references to rewards deal with the blessings that God will provide to those who love and serve him, or with the judgment that he will pronounce on those who refuse his call and commands.

Another basic teaching of the New Testament Scripture is that it is God’s purpose to give “abundant life.” This does not necessarily mean two cars in every garage, or a chicken in every pot. Rather, God’s purpose is to provide those qualities that are uniquely associated with the presence of his Spirit abiding in a person: love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, and self-control. However, this need not be viewed as a negation of behavior theory. Many of these qualities may be seen as personal values (e.g., joy, peace) or social values (e.g., kindness, self-control), and thus as acquired reinforcers. Indeed, some of these reinforcers may be more important than primary reinforcers for persons whose basic needs may have been met. Further, God is concerned about and promises to provide for physical needs of food, clothing, and shelter.

In summarizing the biblical teachings on this issue of reward and punishment, several general principles emerge. First, in general, God rewards good and punishes evil here and now. Second, God is sovereign, and does everything according to his purpose and will. Because God is in control of all things, at times it may better suit his ultimate purpose to delay the consequences of good or evil; God may do this out of mercy, or for other specific objectives. Third, God will ultimately reward each person according to his or her deeds: those who accept God’s provision of salvation in Jesus Christ will be held blameless for sin and rewarded for service; those who refuse salvation will be judged according to their deeds and reap their just rewards of everlasting punishment. Fourth, the biblical teachings regarding reward and punishment have a dual significance, including both immediate rewards and punishment and ultimate rewards and punishment.

We see a clear convergence between scientific and biblical evidence at this point. Study of human and animal behavior reveals
that we are responsive to the reinforcing and punishing events which follow our behavior. Examination of Scripture reveals that God reinforces and punishes behavior in keeping with his own plans and purposes. According to the thesis stated earlier, God made a world in which obedience to his will is reinforced, and failure to obey is punished, in the normal course of events, through the unfolding of the natural processes of the created order.

THE ROLE OF THE HOLY SPIRIT

When the application of behavioral principles in a Christian context is suggested, one of the first questions that arises is that of how the Holy Spirit fits into the picture. Isn't Christian growth a result of the ministry of the Holy Spirit? When we use behavioral approaches, aren't we adopting human methods instead? The answer is yes . . . and no. In Chapter 3 we saw that most processes and events in the course of our daily experience involve God at work by means of natural processes. These same principles are fundamental in Christian education and in pastoring and evangelism.

Most of us recognize that God works through means when we advocate a consistent “quiet time” as a part of our daily relationship to God and as a means of Christian growth. We know that a basic task of the Holy Spirit is to teach us all things and to help us remember God's commandments, but we are also instructed to study, and to meditate on God's word day and night. Similarly, we know that God's word is quick and powerful, and accomplishes his purposes, that we are to cultivate our own salvation with fear and trembling, and that it is God's work in us (by the Holy Spirit) that gives us both the desire and the capacity to please him.

We are coworkers together with God; our ability to work is God-given, as are the tools of the work, including the behavioral approaches we have been discussing. God expects us to use the various resources he has provided to accomplish the tasks he has given. As we do our part, God is active, sustaining the universe and all its natural processes; God is also active through the ministry of the Holy Spirit and the power of prayer. Thus Paul says, “I have planted, Apollos watered, but God gave the increase.” Thus the application of behavioral principles in Christian education is not
an alternative to God's working through the ministry of the Holy Spirit; rather, they may be two aspects of the same process.

For example, there are several elements involved in growing in the wisdom and knowledge of God, including, reading, studying, memorizing, and meditating on God's word. Behavioral principles may be used as we seek to do our part in these processes, but at the same time, God is at work. A problem develops whenever we seek to use behavioral principles apart from a saving relationship with God and a commitment to serve and obey him. The Bible is very clear that God's standard involves our inner commitment to him, not the outward behaviors we manifest. Two people may exhibit the same behavior, one out of an effort to earn God's favor by works righteousness, and one as an expression of love and gratitude to God for his free gift. The former is condemned already, while the latter is granted God's favor. In the application of behavioral principles in the Christian education context, we must not forget this reality.

**PRACTICAL APPLICATIONS IN CHRISTIAN EDUCATION**

**PERSONALIZED INSTRUCTION**

A basic principle of the behavioral approach is the notion that learning requires active participation: learning is doing. One example of the application of behavioral technology to education is the development of the “Keller Plan” or the “Personalized System of Instruction,” often referred to as PSI. This plan includes replacing the lecture with a more individualized approach that involves the following elements: (1) stress on presentation of material in written rather than lecture form; (2) permitting students to progress through the material at their own pace, rather than at a pace and time set by the instructor; (3) emphasis on mastery of the material rather than giving a grade based on degree of learning; (4) use of lectures and demonstrations as reinforcement for progress through the curriculum, with attendance optional; and (5) use of proctors to facilitate repeated testing and immediate reporting of test results. The PSI approach has enjoyed widespread adoption and application in a variety of disciplines, and experimental study shows it to be superior to more traditional methods in a number of
ways. A journal publishes experimental studies and new applications of PSI, and several national conferences on PSI have been held.

While I am not aware that they have been entirely adopted in any Christian education programs, some features of PSI have been incorporated in several programs.* For example, in the Reach Out program, class sessions are structured in such a fashion that attendance at the lecture session (whether live or by tape recording) is noncontingent, but participation in the discussion sessions that follow the lecture requires having completed a homework assignment. Essentially, participation in discussion is used as a reinforcer contingent on preparatory study.

Although adoption of PSI principles in Christian education is currently limited, further development along these lines holds a great potential for enhancing the effectiveness of the church's educational programs. It is interesting to note that the use of proctors in PSI parallels the biblical idea of teaching biblical principles to those who will in turn become teachers of others. There is some data to suggest that teaching others may enhance learning on the proctor's part as well.

A common problem in Christian education is dealing with students who come from different backgrounds and who have significantly different levels of biblical knowledge. Since most Sunday Schools are organized by age groups, this is especially a problem with older children, and to some degree with adults as well. When two twelve-year-olds—one of whom has been actively involved in Sunday School for several years and the other of whom has just begun to attend—are placed in the same class, a serious problem is presented for the teacher in providing material at a suitable level for both children. Some of the elements of PSI or similar individualized instruction procedures could profitably be employed in making the Sunday School curriculum most beneficial for children or adults with widely differing levels of biblical knowledge.

* The traditional Sunday School approach, in which most individuals come with no specific preparation to listen rather passively to a lecture, can be greatly enhanced in effectiveness if some of these principles are utilized.
SETTING OF THE OCCASION

One way in which the probability of responses may be altered is through the use of setting of the occasion. One example of the application of the principle is the inductive Bible studies that are conducted as Friendship Bible Coffees by such groups as the Christian Business Women. Typically, these are neighborhood home Bible studies. The invitation to attend is personal, thus there are implied social consequences for being present. Attendance is further ensured by making refreshments available. These events serve primarily to reinforce being present, not Bible study as such. However, once present, with several other persons also present for the explicit purpose of Bible study, actual study is much more likely to occur than without these elements. Personal involvement in Bible study is accomplished by structuring the study sessions in such a manner that a significant portion of the time is devoted to actual reading of Scripture by the attenders. This is followed by a structured, and sometimes open, discussion of the material that has been read.

REINFORCEMENT FOR STUDY

If study outside of the setting in which formal meetings are held is desired, some procedure other than setting the occasion is required. One approach that has been adopted by Reach Out ministries provides explicit reinforcement for study behavior that somewhat parallels the PSI procedure described above. In the Reach Out method, attendance at a lecture is open to all. Following the lecture, a discussion session is held; a completed homework assignment serves as a ticket to participate in the discussion. In this procedure, the discussion serves as a contingent reinforcement for completing the study assignment; of course, those individuals for whom participation in the discussion is not an effective reinforcer will not do homework.

SELF-CONTROL PROCEDURES IN BIBLE STUDY

One of the traditional problems with personal Bible study is that of motivation. Although one's intentions may be good, it is another matter to consistently apply oneself to reading and study of Scrip-
One person I know has found a way to improve his Bible study activity by using what has been termed a "self-control" procedure. This individual ensures consistent Bible study by taking duties as a Sunday School teacher. Here a differential reinforcement/punishment contingency applies. Coming to class unprepared on Sunday is punished by embarrassment, while being adequately prepared is reinforced by the social responses of those in the class. In this manner, he is encouraged to maintain a consistent practice of Bible reading and study.

A second approach, which is similar to this except in scope, involves two individuals agreeing together to do a specified amount of Bible study, then to meet together to discuss the content of the material. Here the commitment is mutual and individual, but the same principles apply. The social responses of the partner are the major consequence that maintains the study activity or differentially punishes failure to study.

**REINFORCING BIBLE MEMORY**

One method of using reinforcement procedures to promote Bible memory is that of the Bible Memory Association. In this procedure, the individual signs up to take a Bible memory course and pays a small fee. During a specified time period, the person memorizes a given number of Bible verses focused around a particular theme each week for twelve to fifteen weeks. Prizes are awarded to the person following completion of each three weeks of memorization. In addition, children who complete an entire book earn the privilege of attending summer camp at a reduced rate. Recital of verses accurately and completely is required before entry into camp, thus serving as an occasion for review and providing contingent reinforcement for the performance.

One family I know has adopted another variation of this approach. In this family, dessert with the evening meal has been

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*Although the notion of self-control is inconsistent with behavior theory (it is analogous to the concept of a perpetual-motion machine in physics), the widespread use of the term "self-control" makes it convenient to continue talking about it here. Theoretically, however, the responses involved are viewed as part of an operant response chain, which ultimately has explicit environmental consequences that play a vital role in maintaining the entire chain of behavior.*
made contingent on recital of Bible verses. A family dinner together provides the occasion, but dessert is given upon accurate recitation. The family works on this project together. In this example, several of the principles that we have been discussing are illustrated. The evening meal sets the occasion, dessert provides a contingent reinforcement, and other family members serve as models and social reinforcers for the behavior of learning and reciting Bible verses.

**USING NATURAL REINFORCEMENT**

Psychologist C. B. Ferster has distinguished between “arbitrary” and “natural” reinforcers. Natural reinforcers are those which normally occur in a given situation, while arbitrary reinforcers are specially arranged for the situation. For example, being warm outside on a cold day is a natural reinforcer for wearing a coat, hat, and gloves. Being given a candy bar by mother for putting on these garments before going out is an arbitrary reinforcer. One of the concerns that must be faced in establishing reinforcement procedures for Bible reading, study, and memorization is the degree to which the reinforcers that are used in maintaining these behaviors are natural rather than artificial. The danger to be avoided is the problem associated with the expression “rice Christians.”

In the examples we have just discussed, the response of a Sunday School class to the preparation of the teacher is a natural reinforcer. Similarly, permitting discussion of the material only if preparation is completed is a relatively natural reinforcer. To some extent, dessert for Bible memory is less natural, though it is still a regular feature of the home environment. In setting the occasion, food is used to reinforce attendance, while social contingencies maintain Bible study. Both of these are relatively natural contingencies since they are common features of the social environment. The Bible Memory Association procedure of providing books and rewards for memorization is less natural, since BMA is virtually the only organization that reinforces Bible memory in this way, and it is further limited to twelve to fifteen weeks per year. Perhaps the most useful way to approach this issue is to make it a goal to develop applications of behavioral methods to Christian education that more closely approximate natural reinforcers in prefer-
ence to more arbitrary reinforcers. A second helpful strategy is to use relatively arbitrary reinforcers to develop new responses, which can then be maintained by more natural reinforcers.

**PREFERRED ACTIVITIES AS REINFORCERS**

The Premack Principle, which was discussed in Chapter 7, can also be usefully employed in the Christian education context. An example of the application of this principle would be to tell the children in an elementary Sunday School class that, “When you have all finished in your workbook, we will play a game.” In applications with youth and adults, this principle suggests that refreshments be served following Bible study; this method would minimize the problem sometimes encountered with teenagers who come for the food and then vanish before Bible study begins.

Another application of this approach, which is employed by the Christian Service Brigade program, is to make special outings contingent upon completion of achievement. In Brigade, achievement involves physical fitness, learning about nature and camping, and Bible study. Thus Bible study and other elements of the achievement program are reinforced by the opportunity to participate in a highly enjoyable—and hence reinforcing—activity.

A third application of the principle of using preferred activities as reinforcers is demonstrated in a procedure for ending class sessions with a minimum of uproar. Most children are eager for classes to end and to be allowed to go to recess, lunch, or other forms of play activities. Being released to begin these activities, then, may be used as a reinforcer for desired behaviors in the classroom setting. The most common way in which this contingency operates is for permission to leave the classroom to be given contingent upon the entire class being seated quietly. In this way the tendency for the class to gradually become louder and more disorderly just before release is differentially weakened, and quiet, orderly behavior is reinforced.

A final observation about the use of preferred activities as reinforcers is that it generally involves relatively natural reinforcers rather than arbitrary reinforcers, since the activity used as a reinforcer is often a naturally occurring event in the educational setting.
LEARNING RELIGIOUS CONCEPTS

One of the basic difficulties in Christian education, especially for younger children, is related to the complexity of religious concepts. Is it possible for a two-year-old to grasp the concepts of God, salvation, sin, and so on? What about a child of five? If these concepts are beyond the child’s comprehension, what can be taught? In approaching the answers to these questions, some understanding of the nature of concepts and the processes by which they are learned may inform and guide us.

Definition of a Concept

Concepts are not just simple discriminative stimuli. With discriminative stimuli, the presence or absence of the stimulus is all that matters. With concepts, the controlling relationships are more complex. Conceptual behavior, or abstraction, is a more complex form of discrimination in which behavior comes under control of critical dimensions of a stimulus (e.g., hue, light intensity), complex relationships among various components of the stimulus complex (e.g., triangularity), or joint control of two or more stimulus elements (e.g., shape, orientation). Other classes of conceptual behavior involve a number of diverse stimuli coming to control a given response (e.g., saying “six” when exposed to 6, VI, and so on).

Example of a Concept

One example of a concept is “milk.” Acquisition of the concept “milk” is a gradual process that we undergo over a period of time during the developing years. As children, we learn to say “milk” when hungry or thirsty. Later, we learn that milk is one of several fluids that may be drunk, and learn to recognize and distinguish it by its taste and its white color. Still later, we learn that milk comes from the supermarket in a carton or bottle, that milk comes from cows, and so on. Still later, we learn that cheese, ice cream, butter, cottage cheese, and other dairy products come from milk. At this point, we could be said to have a fairly complete concept of milk. For persons who grow up on dairy farms, or who work in processing milk, however, the concept of milk is further developed through learning the specific butterfat content of various milk and dairy...
Figure 8-1. A Schematic Representation of the Concept “Milk”


... products, the techniques for processing and handling milk and so on.

**Application of Concept Learning in Christian Education**

It should be clear from what we have said so far that much of Christian education involves the learning of concepts: God, sin, love, Satan, salvation, miracle, and so on. **Concept development is a process** that takes place over time, and is enhanced by exposure to a wide range of experiences with examples and counterexamples of the concept. **Concept acquisition, or abstraction, is largely a verbal process**; however, it is important that connections be established between verbal and nonverbal experiences, especially with younger children.

The process of concept acquisition begins at a very early age,
probably before the child has much spoken language. Just as the concept of milk is gradually developed over a period of years, so spiritual concepts can be developed gradually over a period of time. This implies that we can, indeed should, begin religious training very early. In early aspects of the development of religious and spiritual concepts, effort should be made to focus on the most immediate and general concepts, the ones that are most meaningfully connected to the child's daily life. Moreover, the instruction should be a natural part of the child's daily activities, intimately tied to his or her ongoing experiences. One example of a place to begin is with the existence of God, and the idea that God loves us. We must recognize that development of concepts is a continuing process, and should expect errors in use of the concept for a fairly long period of time. Connections between words and daily experiences must be made in a number of ways. For example, in teaching about God's love:

Mommy loves you. That's why she gives you food
plays with you, etc.

Daddy loves you too. That's why he takes you for a walk
helps you get dressed, etc.

God loves you too. That's why he made Mommy and Daddy to take care of you
made the sunshine and rain, etc.

Who loves you? "Mommy loves me"
Who else loves you? "Daddy loves me"
Who else? "God loves me"

This is just the beginning, but in this process the child is beginning to learn about God and about love. Naturally, there is much more to be learned in each of the concepts; this must follow in later parts of the curriculum for Christian education. But the principles of relating what children are learning to what they know and experience must be followed throughout, and the view that learning a concept is a cumulative process must be kept in mind. There are several implications of the notion of concept acquisition in Christian education. First, it suggests that we begin the process of learning basic concepts at an early age. This includes the memorization of some basic Scripture passages. A second is that we must recognize that, while children may have memorized John 3:16, they may
not understand it; they may not know much about who God is, what it means for God to love the “world,” what a begotten son is, and so on. If they do not understand these concepts, they will need to learn them later on. But you must start somewhere. The challenge, then, is to start at points where it is possible to make connections most quickly and readily to experiences children have already had. Third, the process of concept development needs to go on continuously and may never be complete. Fourth, the Christian education curriculum must be designed in ways that systematically foster the elaboration and development of elementary concepts into more complete concepts as children develop intellectually and spiritually.

A problem is posed for Christian education by the fact that cognitive and spiritual maturity need not go on at the same pace; this is particularly true for persons who enter the Christian education program after intellectual development is well begun. This means that Christian education materials must be suited not only to the person’s level of intellectual development, but also to his or her level of spiritual development.

**PLANNING INSTRUCTIONAL GOALS**

A behavioral approach to instruction may also be helpful in developing clear educational objectives. Such objectives, from a behavioral perspective, focus on the behavior of the student rather than on what the teacher does. Thus, “The student is able to explain the nature of the relationship between God the Father, Jesus Christ, and the Holy Spirit” is an example of a behavioral objective, while “presenting the doctrine of the trinity” is a teacher behavior. This distinction becomes important when we realize that it is possible for the teacher to present the doctrine of the trinity without the student being able to explain the essential relationships. Different approaches to teaching may be required, depending on which of these goals is adopted. If our Christian education is to be effective, it seems, we must begin to focus on the students and what they are able to do, rather than on the teacher or the material that is presented.48

**SOCIAL INFLUENCE PROCESSES**

It is sometimes said that “as much is caught as taught.” This principle needs to be recognized clearly in the Christian education
process. The question of social influence has been studied most extensively by psychologist Albert Bandura, from whose work emerge several principles regarding the ways in which social influences operate. First, Bandura suggests that observing the behavior of a model can have three effects: (1) acquisition of new responses; (2) strengthening or weakening of inhibitory responses; and (3) facilitation of previously learned responses. A number of factors affect the degree to which the behavior of a particular model will affect the observer. These include reinforcing and punishing consequences to the model; reinforcing and punishing consequences to the observer; social power, ethnic background and intellectual and vocational status; and presence of more than one model.

One of the more interesting findings to emerge from the study of modeling and "vicarious processes," as Bandura terms them, is the discovery that fears can be eliminated if the fearful person is able to observe others deal with feared situations in a matter-of-fact way. One example of the practical application of this principle in the Christian education context lies in teaching the principle of putting trust in God rather than worrying. One of the best ways to teach this principle to others is for them to observe upsetting situations in the lives of fellow Christians, and see them deal with these situations in a biblical manner. This may be an example of the practical significance of the biblical teaching that believers are to make a practice of meeting together in fellowship.

Perhaps one of the most basic areas of application of the principles that Bandura has discovered is in the teaching of biblical principles in the home. The Bible clearly teaches that training children to serve God is a responsibility of parents, especially the fathers. We see a caricature of this teaching in the practices of the Jews of Jeremiah's day: "The children gather wood, the fathers kindle the fire, and the mothers knead dough to make cakes for the queen of heaven." Thus one of the most basic implications of research on modeling processes is to suggest that the way parents live has an immense impact on their children, even though they may try to teach their children to live differently. Parents must examine their own behavior to discover whether they, too, are involved in gathering sticks, building fires, and baking cakes to the idols of humanism, mammon, personal prestige, and so on. If they are doing so, they may be certain that their children are learning these practices,
whether they intend them to or not. On the other hand, if children observe their parents truly worshiping and serving God, they will be learning these attitudes and actions.

Bandura and his colleagues, along with Skinner and other behavioral psychologists, suggest that social reinforcement plays a major role in human behavior. Although there seems to be little in the Bible that speaks directly of social reinforcement, we do see instruction to focus our attention on what is good, true, excellent, and praiseworthy. We also see a number of examples of praise in the introductory parts of the Pauline Epistles.

The idea of social influence more generally is seen throughout the Bible. The Jewish people are warned not to intermarry with the inhabitants of Canaan, so that they will not adopt their corrupt religious and social practices. We are warned not to associate with the wicked, sinful, or scornful. We are cautioned that associating with those given to displays of anger is likely to result in learning their ways. On the other hand, we are encouraged to associate with other believers.

One other observation is that, during his earthly ministry, Jesus appointed the twelve disciples "that they might be with him" and be sent out to preach and minister. One way of viewing this action on Jesus’ part is as an application of the social influence principles that we have been discussing.

**DISCIPLINE**

There may, on occasion, be the need to use punishment or one of the alternative procedures in dealing with problem behaviors in the Christian education context. One approach to discipline problems merits emphasis. Earlier, it was noted that one way to avoid problem behaviors is to strengthen an incompatible alternative. In the educational setting, evidence suggests that one of the most effective ways of avoiding discipline problems is to make the interest and reinforcement for participation in the educational programs great enough so that learning activities are strong enough to prevent problem behaviors.
ETHICAL IMPLICATIONS

In evaluating the ethical implications of using behavioral procedures to strengthen attendance and participation in religious activities, it may be helpful to consider the picture of religious ceremony given in the Bible. A study of the Old Testament Jewish worship practices reveals that worship was often associated with feasting, celebration, festivity, and vacation. The Jews, apart from the priests, were virtually all farmers. As such, their regular duties must have included a daily routine of long and arduous work in caring for flocks and cattle, raising crops, and providing for personal and family needs in an agrarian economy. In this context, the worship of Jehovah was associated with rest from their daily labor, assembly with groups of friends and relatives (many perhaps not seen since the previous religious festival), and feasting and celebration. The focus of all this was to be the worship of God; yet a great good time was apparently had by all. Even the poor participated in this merriment through the sharing of the bounty of those whom God had prospered.

The early New Testament church shared some of these same features in the common breaking of bread and sharing of fellowship. Thus the picture that emerges from a study of the Bible is that the mingling of worship, celebration, feasting, and fellowship seems to be a normal part of the life of the church.

Taking these observations together with our previous discussion of reinforcement and Bible teachings, it would appear that the use of reinforcement procedures as a method of increasing involvement in Bible reading, Bible study, and Christian education is consistent with biblical teachings both in terms of the means as well as the goals of the process.

GOD AND BEHAVIOR PRINCIPLES: A WORD OF CAUTION

This chapter has discussed a variety of ways in which behavioral approaches can be used to enhance the effectiveness of approaches to Christian education. It should be understood that the examples presented are illustrative and not exhaustive. Moreover, this is an area in which much fruitful theorizing and research still needs to be conducted. Several precautionary comments should be made at...
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this point, however, in order to put the application of behavior principles into proper perspective.

First, merely exhibiting certain behaviors is not an adequate indication of a proper relationship with God. The Bible places emphasis on a “heart” that is right with God. At the same time, however, we need to remember that the holistic approach to human nature—which seems to be a biblical emphasis—suggests that there is an intimate connection between behavior and attitude. This is confirmed by teachings about the relationship between faith and works in James and 1 John. It should be kept in mind that the desire to behave in ways that please and honor God grows out of a personal commitment and relationship with God. Behavior principles may then be employed as a means toward “work[ing] out your salvation with fear and trembling.” The picture, then, is not of behavioral principles producing Godliness, but of a person with a commitment to God employing behavioral principles as a God-given tool that facilitates loving service.

Second, when ethical issues are involved in the application of behavioral principles, it is important to remember that we must be concerned with the ethics or morality of both means and ends. For the Christian, the Bible is the standard by which both must be scrutinized, and the court of appeal for evaluation.

Third, it should be remembered that God is not impressed with empty words of commitment and devotion to him. Jesus told a parable of two sons whose father asked them to work in his vineyard. One said “no” and stomped off; later he repented and went to work. The second said “yes,” but then disappeared and did no work. Jesus indicates clearly that the former approach is more pleasing to God than the latter.

A fourth issue is that manifestation of the fruit of the Holy Spirit necessarily requires the presence of God at work in a person. Otherwise, we have at best fraudulent (plastic) fruit. Again, it must be concluded that no amount of application of behavioral principles will produce true fruit in the absence of God’s spirit. We are told that love comes from God; that anyone who loves (agape) comes from God and is born of God.

In conclusion, then, the picture is one of both/and; both a heart relationship with God and a commitment to Godly behavior, deeds, and actions are to be expected as the outgrowth of a relationship
with God. "For it is God who is at work in you both to will and to work for his good pleasure." It is only in the context of this principle that we can meaningfully talk of the application of behavior principles in Christian education.

NOTES

4. Gen. 3:19, NIV.
5. 2 Thess. 3:10, NIV.
6. Deut. 25:4, NIV.
7. See 1 Cor. 9:7-14; 1 Tim. 5:18.
8. See Deut. 28:1-28 for a more complete account of the blessings and cursings.
12. Ibid., p. 105.
14. See, for example, Matt. 6:1-6, 16-18; Mark 9:41-43; Luke 6:23-25, 10:8-14, 23:40-41; 1 Cor. 3:7-9; Rev. 22:12.
15. See Gal. 5:22-23 and 2 Peter 1:5-8.
16. Matt. 6:24-34.
17. See Ephesians 1:11.
18. Contrast Gen. 15:16 with Exod. 34:11 ff.; see also Eccles. 8:11-13 and Job 1:6-12, 2:1-6 ff.
20. For a more complete discussion of the issues involved in God's rewards and punishments, see Kittel, *Theological Dictionary*, pp. 695-728.
22. 2 Tim. 2:15; Psalm 1:1; Deut. 6:4-9; Josh. 1:7-8.
25. 1 Cor. 3:9.
26. 1 Cor. 3:6, NIV.
27. 1 Sam. 16:7; Matt. 23:25-33.


32. 2 Tim 2:2.


34. See, for example, Lucille F. Sollenberger, *Christ in Genesis*, vol. 1 (Kansas City, Mo.: Stonecroft, 1974).


38. See Lloyd Homme, *How to use Contingency Contracting in the Classroom* (Champaign, Ill.: Research Press, 1969), especially see the introduction.


42. Deut. 6:1–9.


45. Ibid., pp. 175–192.

46. Eph. 4:7–8.

47. Heb. 10:25.

48. Eph. 6:4; Deut. 6:4–9.
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49. Jer. 7:18, NASV.
50. Phil. 4:8.
51. For example, see: Phil. 1:3-8; Col. 1:3-8; 1 Thess. 1:2-10.
52. See Exod. 32:10-16, Judg. 3:1-6.
53. Ps. 1:1-3.
55. Heb. 10:25.
57. Mark 3:14, NIV.
59. See Exod., chapters 12, 13 and 23; Lev., chapter 23; Deut., chapter 16.
63. Phil. 2:12.
67. 1 John 4:7-8.
68. Phil. 2:13.
9. Pastoral and Evangelistic Applications

Chapter 8 discussed the use of positive reinforcement in Christian education, and showed that biblical teachings both illustrate and encourage the use of techniques that may be technically described as positive reinforcement in fostering religious education and the development of biblically prescribed behavior. This chapter discusses ways in which the same behavioral principles may be used in pastoral and evangelistic applications.

The following words from Romans give expression to the biblical meaning of a pastor’s calling:

Whoever will call upon the name of the Lord will be saved. How then shall they call upon Him in whom they have not believed? And how shall they believe in Him whom they have not heard? And how shall they hear without a preacher? And how shall they preach unless they are sent? Just as it is written, “How beautiful are the feet of those who bring glad tidings of good things!” However, they did not all heed the glad tidings; for Isaiah says, “Lord, who has believed our report?” So faith comes from hearing, and hearing by the word of Christ.¹

For the purposes of this discussion, “pastoral” is defined as providing spiritual care and guidance to a congregation. Broadly, the duties of a minister or priest fall within the scope of this definition. Such ministerial duties as preaching, visitation, and counseling, as well as the more informal interactions between minister or priest and members of the congregation or parish, may thus be included within the scope of pastoral care.

This chapter will first examine some of the ways in which the Apostle Paul used behavioral techniques. Next, it will consider some ways in which behavioral principles can be applied in preaching and pulpit ministry. A third section will examine ways
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in which behavioral principles can be applied in evangelism. Finally, it will address pastoral applications of behavioral approaches in aspects of the ministry other than preaching and evangelism. It should be remembered that many of the approaches presented here are not new. But the examination of a behavioral approach may be of value in two ways. First, by drawing attention to relevant principles, existing practices may be better understood, carried out more consistently, and thus made more effective. Second, examination of existing practices may suggest ways in which they may be improved, or lead to the development of new and more effective approaches.

Behavioral Techniques and the Apostle Paul

A number of biblical examples from the life of Paul and his writings indicate that he employed several behavioral practices in his ministry. Paul's letters to the churches are filled with examples of praise for those aspects of their Christian life in which they are doing well, and reproof and exhortation directed toward areas of failure. Conceptually, these may be seen as examples of positive reinforcement and punishment from a behavioral perspective.

Numerous examples of praise are found throughout Paul's letters. To the Colossians, he writes: "We give thanks to God, the Father of our Lord Jesus Christ, praying always for you, since we heard of your faith in Christ Jesus and the love which you have for all the saints..." 2 Similarly, Paul writes to the Philippians: "I thank my God in all my remembrance of you... because I have you in my heart, since both in my imprisonment and in the defense and confirmation of the gospel, you all are partakers of grace with me." 3 Later, Paul says: "But I rejoiced in the Lord greatly... [that you] sent a gift more than once for my needs." 4

Corinthians includes several examples of Paul's critical or punishing remarks: "Now I exhort you, brethren... that you all agree, and there be no divisions among you... for I have been informed concerning you, my brethren, by Chloe's people, that there are quarrels among you." 5 Later, Paul says: "Now some have become arrogant, as though I were not coming to you. But I will come to you soon, if the Lord wills, and I shall find out, not the words of those who are arrogant, but their power. For the
The kingdom of God does not consist in words, but in power. What do you desire? Shall I come to you with a rod or with love and a spirit of gentleness?\textsuperscript{6}

The last quote suggests that Paul used corrective techniques that function as punishment not only in his writing, but also in his direct dealings with the people in his churches.

Another area in Paul’s ministry that illustrates behavioral practices is his emphasis on modeling and imitation. Paul repeatedly instructs those in the churches to “be imitators of me.”\textsuperscript{7} Similarly, Paul points to Jesus as a model who is to be imitated in various respects. Perhaps the centrality of these emphases is captured most clearly in the instruction to the church at Corinth: “Be imitators of me, just as I also am of Christ.”\textsuperscript{8}

**Preaching and Pulpit Ministry**

The behavioral view has a number of implications for preaching. One way in which the pulpit ministry may be made more effective is through emphasis on practical applications of biblical teachings about possible courses of everyday action and their consequences. Frequently, preaching tends to focus on the Bible as a kind of history book rather than as a guide to daily living in modern society. This takes the form of discussion of what Paul did, what Jesus said, and so on, while neglecting the practical implications of biblical teachings.

For example, in teaching about marriage, it is common to discuss what Jesus said about marriage, or what Paul said about the relationship of husband and wife, but to say little about how these teachings will be worked out in the daily lives of members of the congregation. One way in which such practical application could be made is through specifying behavioral alternatives and showing whether they are consistent or inconsistent with the teaching, “... Wives, be subject to your own husbands.”\textsuperscript{9} Similarly, one could develop behavioral alternatives that are consistent and inconsistent with the instruction, “Husbands, love your wives just as Christ also loved the church...”\textsuperscript{10}

In addition to identifying behavioral alternatives and relating them to biblical prescriptions and prohibitions, preaching can also address the question of the consequences that are likely to follow
engaging in each of the various behavioral alternatives. Perhaps an ideal way to do so would be to introduce various biblical teachings that focus directly on some of the problems (punishments) that follow failure to heed biblical teachings about the marital relationship, as well as the blessings (positive reinforcements) that will follow obedience. Some examples include: (1) “Can two walk together unless they agree?”; (2) open rebuke is better than hidden love; (3) it is better to live alone than with a quarrelsome wife; (4) hearing and heeding reproof prevents quarrels; (5) an unloving relationship with his wife will interfere with getting what a man seeks from God; and (6) a proud attitude and closed mind toward suggestions leads to ruin, but good counsel ensures success.

Many other biblical principles may be found to suggest clear behavioral consequences for acting in certain ways. By focusing the pulpit ministry on this kind of teaching, the pastor or priest may enhance the probability that it will have a behavioral impact on the audience.

A third manner in which the effectiveness of the pulpit ministry could be enhanced is by concentrating on the same issues in both pulpit ministry and other aspects of the pastoral ministry. For example, preaching about spiritual gifts could be conducted at the same time that practical teaching on the exercise of spiritual gifts is ongoing in other parts of the pastoral ministry.

A final emphasis, and one that is of great potential significance, is the behavioral suggestion of the importance of individualized instruction. The difficulties inherent in attempting to preach a sermon that speaks to the individual needs of each person in the audience are nearly insurmountable. Modern technology has provided a number of alternatives through the use of tape recordings; it is now possible for people to listen to tapes that speak to their immediate needs. Similarly, the easy availability of printed materials offers additional access to individualized instruction.

The preaching ministry has the potential for serving an important function in the life of the church, especially in the area of providing encouragement and motivation. Thus these remarks are intended to illustrate ways in which the pulpit ministry can be made more effective, and to suggest alternative modes of ministering.
Evangelistic Applications

In the area of evangelism, as in all areas of religious ministry, it is important to remember that the active ministry and work of the Holy Spirit is vital. Our comments here take this for granted. It should also be remembered that God normally works through natural means to accomplish his purposes in our world. Our discussion here presumes this view, and emphasizes the human means through which God works, since those are the arenas in which people play an active role in the ministry of evangelism. Thus we see that “God was well-pleased through ... the message preached to save those who believe,” and that “Faith comes from hearing, and hearing by the word of Christ.”

Evangelism is a social influence process in which various approaches are employed, with the objective of influencing an individual to make a commitment to the Christ of Scripture. In recent years, this commitment has come to be referred to popularly as being “born again.” Evangelism thus involves the use of social influence to get a person to explore and then adopt a new worldview. Clearly, the goal of commitment to God through Jesus Christ has extensive biblical support; with the Bible as our guideline for values, we can embrace the use of social influence to persuade people to make such a commitment. However, the means employed in seeking to achieve this goal also need to be scrutinized to see whether they measure up to biblical standards.

Broadly, the method of evangelism presented in the scripture is that of preaching the good news of salvation. While this is a basic in terms of content, there appears to be room for considerable latitude in the way in which the message is to be presented. For example, in one context it is suggested that others may be won to Christ, without a word, by the behavior of a Christian. Similarly, we are told that Jesus’ disciples will be recognized by their manifestation of love to each other. Evangelism, then, involves preaching the good news as a central element, but also involves such aspects of our lives as our behavior in relationship to others in general, and to the one to whom the preaching is directed in particular.

Although the evangelistic method of approaching a person selected in a random manner, or by going from house to house, is still practiced and is sometimes effective, alternative modes of evangel-
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isme have been developed that reflect relationship issues and make use of the processes of social influence discussed above. Examples of these latter types of evangelism include the “evangelism explosion” approach, “relationship evangelism,” and “worldview evangelism.”

In an interesting discussion of evangelism, psychologists Kenneth Mathiesen and Craig W. Ellison, in agreement with James Engel’s Spiritual Decision Process models, suggest that openness to making a Christian commitment may be thought of as a continuum. People at the far end of the continuum are not ready to make a profession of faith; evangelistic efforts must be directed at moving them to the adjacent point on the continuum rather than toward the ultimate decision. At the other end of the continuum are those who have already made a commitment to God and are progressing in their relationship to him. Many of the points to be made here can be related to Engel’s conceptualization.

The concept of shaping was briefly mentioned in Chapter 2. Basically, shaping involves reinforcing a given response that already exists at some strength, and is most like the goal response of any that the organism currently performs. Reinforcement is initially provided for this response, but the precise performance required for reinforcement is gradually changed along a continuum until eventually the desired response is the only one reinforced. For example, teaching a pigeon to stand on its left foot can be shaped by first reinforcing the pigeon each time the right foot is lifted; initially, this may occur only when walking. Gradually, we would require the right foot to be held up for longer and longer periods of time, until eventually the pigeon is standing on the left foot and holding up the right.

Evangelism may be approached in an analogous fashion. Since different people are at different points along the continuum at the first contact, the first challenge is to discover where the person is. Evangelism, then, may be conceived of as making efforts to influence people to shift viewpoints along the continuum until they are ready for, and actually make, a commitment to God. A brief look at three different evangelistic methods illustrates how behavioral techniques may be incorporated into achieving this goal.

The Evangelism explosion approach selects people who have attended a particular church. In general, such individuals will be
somewhere in the middle of the continuum, or possibly further toward the goal of commitment to God. The behavior of attending church, in itself, indicates at minimum some openness to a Christian worldview. Thus such persons are prime prospects for making the final step or two of moving into a commitment to God.

In relationship evangelism, the first step is to get acquainted with the person. Once a relationship develops, and the person becomes open to hearing the evangelist’s point of view, it becomes possible to present a viewpoint that may be a bit different from their own, to challenge them to consider it, and perhaps to influence change. From a behavioral viewpoint, this can be conceptualized as a process in which the evangelist comes to be an important social reinforcer for the prospective convert. The biblical concept of love for my neighbor, for example, may be shown to imply doing those things in relationship with them that are likely to establish me as a social reinforcer. Having accomplished this, I can then be much more effective in social influence, and hence more effective in evangelism.

Finally, worldview evangelism connotes the process of first raising doubts about the credibility of an alternative worldview, then encouraging the person to consider the biblical, theistic worldview. In terms of Ellison’s formulation, the person is moved from the extreme of strong commitment to a particular worldview, to a point where they can see flaws in the view they previously held, and thus become open to consider a biblical alternative.

One additional observation may be helpful. Although the Bible clearly teaches the need for an individual commitment in relationship to God, it also suggests that there is a tendency for this commitment to run in families. The social influence processes that we have described here—to the extent that they operate effectively in the family setting—are likely to result in the children of Christian parents being more open to a Christian commitment than children of non-Christian parents. In terms of Ellison’s continuum, children of Christian parents grow up with a worldview that is very similar to the Christian view; they are close to the point on the continuum of making a choice for Christ. By contrast, children who grow up in non-Christian homes are likely to be far from such a viewpoint, to be distant on Engel’s continuum.
PASTORAL APPLICATIONS

A typical pastor or priest has many duties and responsibilities associated with the office. These range from administration of the congregation and the pulpit preaching ministry to conducting funerals, visiting the sick and bereaved, making routine calls on members, teaching, counseling, and less formal types of interactions.

The notion of the full-time, salaried, professional minister is not inconsistent with biblical teaching, but certainly is not a biblical emphasis. Rather, the biblical perspective is that each individual believer is given the ability and responsibility to be actively involved in ministry. A major duty of the pastor often becomes that of finding ways to get members of his congregation involved in active ministry. The way a minister conducts his duties can have a profound influence on his congregation.

THE PASTOR AS MODEL

One of the most effective social influence processes is that of modeling and imitation. While there has been a tendency to view the principal pastoral duty as the pulpit ministry, behavioral findings that emphasize the central role of reinforced practice in learning suggest that preaching is likely to have limited influence on daily behavior. Thus one of the most basic implications of a behavioral approach for pastoral functioning is the suggestion that greater emphasis be placed on the pastor as model and less emphasis on the pastor as preacher.

There are a number of ways in which modeling may be used effectively in the pastoral ministry. The first involves the pastor himself as a model. For example, the pastor may invite another member to accompany him as he performs various duties. An elder might be invited to come along on hospital visits as an observer. Over time, the pastor can encourage the elder to take a greater role in the interactions with the person who is visited. Eventually, the pastor may request the elder to make a call alone at a time when it is inconvenient for the pastor to go. In this way, through observing the pastor, imitating some of the ways in which the pastor interacts with the sick, and through the pastor's encourage-
ment, another member of the church who has appropriate gifts may be trained to assist in this aspect of the ministry. The same approach may be taken in other areas of ministry in which the pastor is involved.

It is possible that there are a number of areas of ministry in the church in which the pastor is not directly involved. In these areas, the pastor may encourage members who minister effectively to train new members through the same approach we have just discussed for the pastor. For example, Mary was known in her church for her ability to help with all the practical problems of child care, meals, laundry, and so on, which are required when a family member is hospitalized. As her church grew, however, the task became too great for Mary to handle alone. Her pastor encouraged her to select one or two other women who could assist her. Mary knew that she could count on June, and thought that Evelyn might be able to help as well. Over a period of several months, Mary gradually began to call on these two to assist her more and more frequently. Eventually she was confident that June could do the task as well as Mary herself, and Evelyn had become a dependable assistant.

Other possibilities for application of modeling and imitation in the pastoral role are numerous. Attention may be drawn to other members of the congregation as models of desired behaviors through the use of testimonies and reports. Discipleship groups may be established to foster contact among members, so that they may observe each other's manner of living and coping with various daily experiences such as disappointment, loss of a job, grief, finances, and so on. While it is possible in such contexts to observe undesirable as well as desirable ways to handle such experiences, drawing attention to the consequences of the performances and praising good models will result in a tendency for their performances to be imitated.25

Another principle to remember is that exposure to several models, each of whom demonstrates similar performances in a given setting, is more likely to be effective in establishing a desired performance than is exposure to a single model.26 Observing a single person who manages her finances without credit is likely to have limited impact in a society in which use of credit is widespread.
However, exposure to a group of persons, each of whom live in this way, may significantly alter the way one manages one’s own financial affairs.

From a biblical perspective, there is much that would support the use of modeling in pastoral ministry. As a part of his early ministry, Jesus selected a group of disciples: “And He appointed twelve, that they might be with Him, and that He might send them out to preach.”27 After spending time with Jesus, apparently to observe the manner of his ministry (he was a model), Jesus sent them out two by two to minister on their own.28 In a similar manner, Paul instructs Timothy to teach what he has learned to others.29

In the sections just discussed, imitation is not explicitly suggested, but other biblical passages refer to it more explicitly. Paul repeatedly instructs, “Be followers of me....”30 The word Paul used here is sometimes translated imitators, and is the same root word from which we get the word mimic; thus Paul is saying “be imitators of me.”31 At one point he says: “Be imitators of me, just as I also am of Christ.”32 Similarly, we are told that Jesus was our example. In summary, it is a clear biblical teaching that Jesus in particular, and spiritual leaders in general, are examples to be imitated. Numerous other scriptures support this view.33

Although modeling and imitation has a wide range of practical applications in establishing desired performances, some performances are not readily influenced in this way. A second approach that may be used, especially to increase the frequency of behaviors that are present but very weak, is that of seeking a behavioral commitment. For example, Carol and Jack came to their pastor complaining that they no longer loved each other and asking questions about divorce. They seemed convinced that divorce was wrong, but claimed that they saw no hope for their relationship. Some exploration suggested that they had begun to neglect their relationship some time ago; this, coupled with a financial problem, had produced the current crisis. The pastor’s first step in dealing with this couple was to ask them to make a commitment not to take divorce action for six weeks, while efforts were made by means of counseling to work on the problems in their relationship. The approach used here is technically referred to as priming. It involves
using a stimulus that controls a desired performance to get it started; later, the goal is to bring the performance under control of more natural stimuli rather than the pastor's instructions.

**PASTORAL USE OF REINFORCEMENT**

The suggestion of pastoral use of positive reinforcement probably brings to mind, for many, images such as giving hamburgers for attendance at Sunday School. Such approaches may have their place, as suggested in Chapter 8, but they are not our main concern here. Much of human behavior is primarily under control of social reinforcement.

Social attention is a major reinforcing event for most people. The mere fact that others notice and respond to a performance may be enough to maintain it; if the social response is positive, such as praise and admiration, this effect is especially likely. Although our focus in the previous section was on the role of observing a model in developing desired performances, reinforcement for imitation of the model is an important additional element in establishing such performances.

In the example of hospital visitation, the pastor might begin by reinforcing the elder for coming along. Simply saying, "I really appreciate your taking the time to accompany me today; I'd like for us to do this again," should be sufficient. For many people, in fact, the company of the pastor is sufficiently reinforcing in itself. Later, reinforcement may shift to a focus on specific aspects of interaction in the hospital setting; for example, "I really appreciate your reading the Bible to Mrs. Jones tonight." It is important to remember, too, that much of the reinforcement for making such visits will come in a natural way from the person who receives the visit, through expressions of gratitude.

A major limitation of the preaching ministry is that it encourages passive listening. The overwhelming evidence in favor of other approaches as more effective for teaching suggests that reliance on this approach needs to be reduced, and alternative modes of pastoral ministry correspondingly emphasized. Both behaviorally and biblically, the suggestion that the pastor become actively involved in functioning as a model in teaching various forms of ministry to members of the congregation cannot be ignored.
NOTES

4. Phil. 4:10, 16.
5. 1 Cor. 1:10–11.
6. 1 Cor. 4:18–21.
7. 1 Cor. 4:16; 11:1; Phil. 3:17.
8. 1 Cor. 11:1.
11. Amos 3:3.
12. Prov. 27:5.
15. 1 Pet. 3:7.
18. 1 Cor. 1:21.
20. Cf. 1 Cor. 15:1–8.
26. Ibid.
29. 1 Cor. 4:17.
30. 1 Cor. 4:16 (Authorized Version); see also 1 Cor. 11:1; Phil. 3:17; 2 Thess. 3:7–9.
31. 1 Cor. 4:16 (NASB).
32. 1 Cor. 11:1.
33. E.g., Eph. 5:1–2; Phil. 4:9; Heb. 6:11–12; 1 Pet. 2:21; 4:1.
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