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Behavior Theory and Punishment (Chapter 4 from The Human Reflex)

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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.¹

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-

havioral 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.*²

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.^{3*} 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.⁶ In place of punishment, Skinner suggests a number of alternatives, several of which will be explored in this chapter.⁷

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."⁸ 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."⁹ 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.¹⁰ They see some potentially adverse effects of punishment, but suggest that many of the effects associated with punishment that Skinner deplors 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.¹¹

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.¹² 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.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.¹⁵ (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.¹⁶

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.¹⁷ 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.¹⁸

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, tantrums would eventually cease. A problem with this approach, however, 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 procedure of terminating reinforcement.¹⁹

DEVELOPING A SPECIFIC RESPONSE THAT PREVENTS THE PROBLEM BEHAVIOR

One way to eliminate problem behavior is to develop an incompatible 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 incompatible. 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 immediately 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 protected 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 sat 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.²² 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.²³ 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."²⁴

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.²⁵ Finally, the suggestion that punishment be brief parallels the biblical principle that God's forgiveness is immediate and sure.²⁶

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.²⁷ 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.²⁸

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."²⁹ 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.³⁰

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

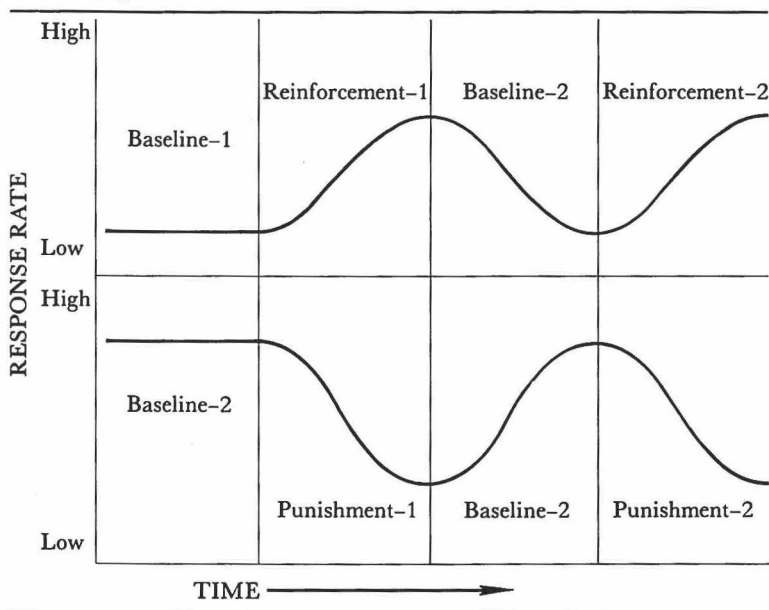
Table 4-1 summarizes parallels and contrasts between reinforcement and punishment. The first line indicates that reinforcement increases response rate, while punishment decreases response rate. The second line indicates that both punishment and reinforcement have *temporary* effects. Since this relationship, 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

Table 4-1. Effects of Reinforcement and Punishment

<i>Behavioral characteristic</i>	<i>Reinforcement effects</i>	<i>Punishment effects</i>
Target response	Increase	Decrease
Permanence	Temporary	Temporary
Emotional effects	Positive	Negative
Social effects	Interpersonal attraction (love, affection)	Interpersonal avoidance (hate, dislike)
Modeling effects	Imitation of reinforcing interactions	Imitation of punishing interactions
Generalization	Similar responses strengthened; co-occurring responses strengthened	Similar responses weakened; co-occurring responses weakened
"Unauthorized" behavioral effects	Theft, extortion, "conning"	Avoidance behaviors and aggression

Figure 4-1. Effects of Reinforcement and Punishment

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 4-1.³¹ 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.³²

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.³⁴ Just 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.³⁵ 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.³⁶

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.³³

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.*⁴⁰

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*.⁴¹ 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.⁴² It is desirable that a return to normal social relationships follow quickly after the completion of the punishment.⁴³

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.⁴⁴

NOTES

1. *Webster's New Collegiate Dictionary*, 1st ed., s. v. "punish."
2. See Nathan H. Azrin and W. C. Holz, "Punishment," in *Operant Behavior: Areas of Research and Application*, W. K. Honig, ed., (New York: Appleton-Century-Crofts, 1966), p. 381. For punishment defined as a *procedure* that may or may not affect the response, see C. B. Ferster, Stuart Culbertson, and Mary Carol P. Boren, *Behavior Principles*, 2d ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1975), pp. 199 ff.
3. Donald R. Thomas, Wesley C. Becker, and M. Armstrong, "Production and Elimination of Disruptive Classroom Behavior by Systematically Varying Teacher's Behavior," *Journal of Applied Behavior Analysis* 1 (1968): 199 ff.
4. For a discussion of time out, see Azrin and Holz, "Punishment," pp. 389 ff.
5. B. F. Skinner, *Science and Human Behavior* (New York: Macmillan Co., 1953), p. 183.
6. *Ibid.*, pp. 184 ff.
7. *Ibid.*, pp. 191 ff.
8. Arthur W. Staats, *Child Learning, Intelligence and Personality: Principles of a Behavioral Interaction Approach* (New York: Harper & Row, 1971), p. 234.
9. *Ibid.*, p. 236.

10. Azrin and Holz, "Punishment," pp. 420 ff.
11. Ibid., pp. 409 ff.
12. See W. K. Estes, *An Experimental Study of Punishment*, Psychological Monographs, 57, no. 263 (1948); and B. F. Skinner, *The Behavior of Organisms* (New York: Appleton-Century, 1938).
13. Azrin and Holz, "Punishment," pp. 425-426.
14. Staats, *Child Learning*, pp. 236 ff.
15. See Albert Bandura, *Aggression: a Social Learning Analysis* (Englewood Cliffs, N.J.: Prentice-Hall, 1973); and Albert Bandura, *Principles of Behavior Modification* (New York: Holt, Rinehart, and Winston, 1969).
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).
17. Sidney W. Bijou and Donald M. Baer, *Child Development II: Universal Stage of Infancy* (New York: Appleton-Century-Crofts, 1965).
18. See Ferster, Culbertson, Boren, *Behavior Principles*, pp. 513 ff., for an extensive discussion of the ways in which the presentation and removal of stimuli affect behavior.
19. Probably the earliest example of this principle in the literature is the elimination of a phobic response to white furry objects by Jones (1924); cited in Leonard P. Ullmann and Leonard Krasner, *Case Studies in Behavior Modification* (New York: Holt, Rinehart, and Winston, 1965). A more recent application of this procedure is found in T. Ayllon and J. Michael, "The Psychiatric Nurse as a Behavior Engineer," *Journal of the Experimental Analysis of Behavior* 2 (1959), pp. 323-334.
20. Wesley C. Becker, Donald R. Thomas, and Douglas Carnine. "Reducing Behavior Problems: An operant conditioning guide for teachers." In Wesley C. Becker, ed., *An Empirical Basis for Change in Education* (Chicago: Science Research Associates, 1971), pp. 129-165; see especially pp. 133-152.
21. Adapted from Richard W. Malott and Donald L. Whaley, *Elementary Principles of Behavior*, vol. 1 (Kalamazoo, Mich.: Department of Psychology, Western Michigan University, 1968).
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.
24. Prov. 6:23; see also Matt. 5:21-24, Luke 17:3; Eph. 6:1-2.
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.
26. See 2 Sam. 11:1-12:14, especially 12:13-14; 1 John 1:9.
27. See Gen. 3:1-24; Gen. 4:1-16; Josh. 7:1-26; 2 Sam. 11:1-12:14; Acts 5:1-11; Gen. 18:1-19:29; 2 Kings 17:1-18 ff., and 2 Kings 25:1-21, respectively.
28. Examples of the themes of disobedience, warning, and punishment, which are woven throughout the Old and New Testaments, occur in: Deut. 28:1-66; Josh. 7:1-8:3 ff.; Judg. 3:7-14, 4:1-24; Jer. 7:1-26 ff., 29:10-19 ff.; Matt. 12:38-45; Luke 10:1-16; Jude 3-11 ff.; Heb. 11:1-12:29, cf. especially 12:25-29. For a discussion of the Old Testament writings on this theme, see Larry Richards, *The Edge of Judgment* (Elgin, Ill.: David C. Cook Publishing Company, 1977).

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.
31. See G. S. Reynolds, *A Primer of Operant Conditioning*, rev. ed. (Glenview, Ill.: Scott, Foresman and Company, 1975), pp. 35-38.
32. *Ibid.*, pp. 123-128.
33. See Azrin and Holz, "Punishment," pp. 410 ff.
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.
35. See D. Byrne and R. Rhomey, "Magnitude of Positive and Negative Reinforcements as a Determinant of Attractions, *Journal of Personality and Social Psychology* 2 (1965): 884-889.
36. Staats, *Child Learning*, pp. 239 ff.
37. *Ibid.*, pp. 233 ff.
38. Azrin and Holz, "Punishment," pp. 416, 433-434.
39. *Ibid.*, pp. 383 ff., on Sidman avoidance.
40. For a discussion of some of these issues, see "Psychological Engineering," in *Modifying Man: Issues and Ethics*, ed., Craig Ellison, (Washington, D.C.: University Press of America, 1977), pp. 187-232.
41. For a discussion of the perceived social acceptability of various forms of punishment, see A. Kazdin, "Acceptability of Alternative Treatments for Deviant Child Behavior," *Journal of Applied Behavior Analysis* 13 (1980): 259-274.
42. Azrin and Holz, "Punishment," pp. 426-427.
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.
44. Azrin and Holz, "Punishment," pp. 393-409.