DOCUMENT RESUME

ED 260 051 SP 026 373

AUTHOR Sparzo, Frank J.
TITLE Changing Behavior: [redacted] Guide for Teachers and Parents. Fastback 221.
INSTITUTION Phi Delta Kappa Educational Foundation, Bloomington, Ind.
REPORT NO ISBN-0-87367-221-6
PUB DATE 85
NOTE 52p.
AVAILABLE FROM Phi Delta Kappa Educational Foundation, 8th St. & Union Ave., Box 789, Bloomington, IN 47402 ($0.75).
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Behavior Change; *Behavior Modification; *Behavior Problems; Change Strategies; Elementary Secondary Education; *Negative Reinforcement; *Positive Reinforcement; Student Behavior

ABSTRACT

This booklet is about changing human behavior in everyday settings in the school and home. The approach to human behavior outlined is called "behavior analysis," which is based on that approach to psychology called the exerimental analysis of behavior. The ABC model of behavior is explained. In this model, the A refers to the "antecedent" that occasions or cues the behavior, B refers to the "behavior" itself, and C refers to a "consequent" event that increases the likelihood of the behavior occurring again. An outline is presented of a general plan for changing behavior. Illustrating how the plan works in practice, behavior analysis principles are applied to three cases: a child who acts aggressively (a behavioral excess), a student said to be unmotivated (a behavioral deficit), and an unruly class (a group management problem). (JD)

FASTBACK

221

Changing Behavior: A Practical Guide for Teachers and Parents

Frank J. Sparzo

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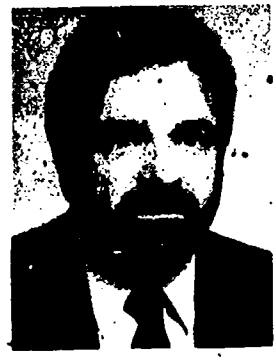

FRANK J. SPARZO

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Sparzo is co-author of *Self-Instructional Program in Psychology and Effective Behavior* and *Self-Instructional Program in Psychology*. He also has published in the areas of educational evaluation and learning. He has been a behavioral analysis consultant to school districts, is involved in community mental health projects, and conducts workshops in applied psychology for teachers and parents.

Series Editor, Derek L. Burleson

Changing Behavior: A Practical Guide for Teachers and Parents

by
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Library of Congress Catalog Card Number 84-62991
ISBN 0-87367-221-6

Bloomington, Indiana

This fastback is sponsored by the University of Miami Chapter of Phi Delta Kappa, which made a generous contribution toward publication costs.

The chapter sponsors this fastback to honor the memory of Dr. Orlie Clem (1891-1980). Dr. Clem's teaching career began in a country school in Illinois and extended from there to the University of Illinois and then to the University of Miami, where his many students in his secondary education courses enjoyed the kindness and wisdom of a dedicated teacher and friend.

An ardent and loyal Kappan with many years of service to the University of Miami Chapter, Dr. Clem was named as "Man of the Year in Education" in 1971.

It is fitting that Dr. Clem be well remembered through this publication. His teachings will continue.

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Introduction

This fastback is about changing human behavior in everyday settings in the school and home. You will find in it many practical principles and suggestions for changing the behavior of children and youth — a task facing every teacher and parent.

The approach to human behavior outlined in these pages is called *behavior analysis*, which is based on that approach to psychology called the experimental analysis of behavior. My general plan of this fastback is first to introduce you to the ABC model of behavior, then to outline a general plan for changing behavior, and finally to see how the general plan works in practice. This will be done by applying behavior analysis principles to three cases involving: a child who acts aggressively (a behavioral excess), a student said to be unmotivated (a behavioral deficit), and an unruly class (a group-management problem).

There is a final step, which is beyond the scope of this fastback. That is the improvement of your skills in changing behavior, and that is up to you. You must decide how far you want to go in extending your knowledge and skills beyond the rudiments presented in these pages. Should you decide to continue, the resources at the end of this fastback should be of help. But whatever you decide, you will find this booklet useful; its principles are applicable to a wide range of human action.

Understanding Human Behavior: Two Orientations

Several years ago a former student, Sandra, came to my office. She was concerned about a seven-year-old female who masturbated openly in her classroom over a period of three months. At one point she said, "I think the child has a poor self-concept." After hearing a number of details, I suggested a plan that involved a few minor changes in the classroom. Fortunately, the plan worked without a hitch. The child was easily taught to do other things.

Sandra's visit disturbed me for weeks. To be sure, I had had similar visits from other former students but none that disturbed me as much as Sandra's. I wondered what many former students and Sandra had learned *or failed to learn* in my course and in their methods classes. Sandra had a degree in education, had been teaching three years at the time of her visit, and was genuinely perplexed over what turned out to be a relatively simple problem to correct. And I was partly responsible! I and others had failed to teach her practical ways to deal with a variety of problem behaviors. The fundamental difficulty appeared to lie in the way in which Sandra perceived the problem — in where she had been taught to look for an explanation of behavior.

Some people, like Sandra, search for explanations of behavior by focusing on factors thought to reside in some way *within* the person. When attempting to explain behavior, these people use such terms as attitudes, beliefs, values, habits, motives, intelligence, self-concept, and so on. There are hundreds of terms that refer to feelings or inner states that presumably account for various actions. Sandra appeared to be partial to self-concept. On the other hand, some people, those who call

themselves behavior analysts, attempt to understand behavior by focusing on the act itself and on the *environmental* circumstances surrounding it.

Consider the following situation of an eighteen-year-old female named Jill. On several occasions Jill bought clothes for herself and charged them to her parents' account. They found out about these shopping sprees when the next charge account balance statement arrived and after Jill had worn the new clothes. On each occasion they had scolded Jill, but without apparent effect. When asked for an explanation of her daughter's behavior, Jill's mother referred to Jill's "irresponsibility" and her "uncaring attitude toward the family." This kind of explanation is very common in everyday life. But note that it focuses on two assumed inner factors: irresponsibility and uncaring attitude.

A behavior analyst might look at this situation from a different perspective, focusing on the act of shopping itself. For example, as an indication of the seriousness of the situation, he might simply count the number of times Jill had made charges to her parents' account. He might also focus on the relationship between Jill's shopping and certain environmental circumstances, specifically, those relevant antecedents and consequences that accompany the act of shopping.

Whether Jill is planning a date might be an important *antecedent*. It might be found, for instance, that Jill buys clothes whenever she has a date with a new beau. We can assume that *consequences* are also influencing Jill. She may attract compliments whenever she wears new clothing. And visual consequences may be involved -- she likes what she sees when she models her purchases in front of a mirror. There even may be a tactile consequence that plays a part in Jill's shopping – she simply likes the way the clothes feel. The fact that Jill's parents ultimately paid for her purchases is still another environmental circumstance or consequence that may, in part, account for Jill's actions.

Let us now compare the two orientations again. Jill's mother turned to inner factors to explain Jill's shopping ventures. The behavior analysis approach, in contrast, focused on clothes-buying itself (its amount), the antecedents (when it occurred), and the consequences following the purchases (attention, visual and tactile stimulation, and parents' payment). Note that behavior analysis did not concentrate on

factors within the person — whatever these might have been — but on observable actions and their link with environmental events. There is, of course, a lot going on within the individual. No one questions this. However, the issue is whether what goes on inside a person *ultimately controls overt action*. Some psychologists think not.

Teachers and parents are in a relatively good position to make the kinds of observations I have been describing. If, indeed, much of human action is under the influence of antecedent and consequent environmental conditions, then we must pay closer attention to these conditions once we are clear about the behavior we wish to change. The steps outlined in this fastback are designed to get you to do just that.

Many years ago I failed to teach Sandra where to look for clues that might be useful in changing behavior. I hope I will be more successful with you.

The ABC Model of Behavior

Up to this point I have used an anecdote to illustrate a model of behavior analysis without naming it. It is sometimes called the ABC model of behavior, where A refers to the *antecedent* that occasions or cues the behavior, B refers to the *behavior* itself, and C refers to a *consequent* event that increases the likelihood of the behavior occurring again. In the case of Jill, attention was a plausible consequence (C) that made shopping (B) more likely on the occasion (A) of an upcoming date.

Understanding the ABC model of behavior is essential to the behavior analysis approach. Whenever we want to teach anybody anything, we must pay close attention to what is presented, how the person responds, and what happens afterward. Consider, for example, the lecture method. It is still a widely used method of instruction, yet it has not proven to be especially effective. This may be due to the heavy emphasis given to presentation (A), and the relative neglect of student responses during the presentation (B) and what happens after these responses are made (C).

More About Antecedents

Why does a person pass the salt when asked to do so or answer the phone when it rings? The answer lies in the person's past learning experiences. We learn to respond to environmental cues because we have been rewarded for doing so. We learn to respond to the "right" antecedent stimuli or events but not the "wrong" ones as a result of discrimination training. Such discrimination occurs when a behavior is rewarded in

the presence of a particular stimulus but not rewarded when other stimuli are present. Thus only a certain stimulus (or combination of stimuli) comes to cue the behavior. This type of learning does not necessarily involve another person. For example, cave men probably first learned to bank a fire by being rewarded (finding embers the next morning) for responding appropriately to the stimuli of glowing cinders. Most often we respond to more than one antecedent stimulus or cue simultaneously, for example, when we learn to enter an elevator after the up light comes on, the doors open, and a tone sounds.

You can no doubt think of many situations in which prior or antecedent stimuli control your behavior. But in the way of illustration, let me confess a personal stimulus control situation. I have found that the regular barber of the shop I patronize does a good job on my hair but not on my beard. The Wednesday barber (the regular barber is off on Wednesdays) does a much better job on my beard, or so it seems to me. I have therefore learned to discriminate. When it is time for a haircut, I go to the regular barber; beard cuts are scheduled for the Wednesday barber.

What I have been describing is not unlike what happens when a child behaves badly in the presence of one parent but not the other, or when a person says one thing in one situation but does the opposite in another. In the first case, the child has learned to discriminate between parents. One parent has probably rewarded problem behaviors, the other has not. In the second case, acting with duplicity is sometimes interpreted as hypocrisy. But note that here the explanation for "hypocrisy" is located mainly in the environment, not within the person in the form of a trait or characteristic called hypocrisy.

More About Consequences

In most cases what comes after a response (consequence) is as important as what comes before it (antecedent). For most people, getting a speeding ticket slows them down; losing a large sum of money in the stock market alters their later investment practices; eating an excellent meal in an inexpensive restaurant makes a return visit likely; meeting an attractive person of the opposite sex may conjure up some delightful fantasies. We constantly are affected by events that follow our actions.

Some of these events are presented or "turned on" after we act, while others are removed or "turned off." We will examine some effects of turning on and turning off events called reinforcers (rewards) and punishers. Reinforcers and punishers are two prime movers of human behavior. Let us first examine the idea of reinforcement in more detail.

Reinforcement and Behavior

There are two types of reinforcers, positive and negative. Both strengthen behaviors but in different ways. Practically speaking, positive reinforcement involves turning on an event after a response occurs; negative reinforcement involves turning one off. Both procedures, as I have said, strengthen behavior.

Try your hand at determining whether the incidents below illustrate positive or negative reinforcement.

- A comedian retains in his repertory only those jokes that get favorable audience reactions.
- A woman adds a touch of lemon oil to her German cheesecake and finds that its taste improves. She adds lemon oil to all subsequent cheesecakes.

Did you decide that both episodes illustrate positive reinforcement? In the first case, audience reaction is a positively reinforcing event because it makes the retention of certain jokes more likely. Similarly, the response of adding lemon oil to the cheesecake is strengthened by a subsequent event, improved taste.

Now try your hand with these two.

- Many people buckle their seat belts in order to turn off an irritating buzzer.
- Rosalie got a big smile from her teacher immediately after completing all the assigned math problems.

Since buckling is strengthened by turning off an unpleasant event, the

first case illustrates negative reinforcement. The second case is a little tricky. Since no change in behavior is implied, this is an indefinite incident. Rosalie did not change her behavior as a result of her teacher's smile. It is important to remember that a reinforcer or punisher is defined by its *effect* on behavior, not by whether it *looks like* a reward or punisher.

Your next test is bit longer. Before you attempt it, let me point out that the principles described here are applicable to desirable as well as undesirable behavior. The situations below reflect this notion.

- Jason makes his bed each morning and thus avoids his mother's complaints.
- A teacher encourages creativity by acknowledging students' innovative compositions but not their routine ones.
- A politician discovers that choosing his words carefully keeps him from angering his constituents.
- Melissa's father removes a splinter from her hand. Subsequent splinters send her running to him for help.
- Kingsley's tantrums are frequent because his parents give in to his demands.
- Kingsley's parents have learned to quell his outbursts by complying with his wishes.

Now let's see how accomplished you have become. Since Jason avoids his mother's complaints by making his bed, the act of bed-making has been negatively reinforced. Jason himself was not negatively reinforced; his bed-making was. This restriction forces us to focus on a person's actions and what follows them. In the second case, the teacher positively reinforced innovation by recognizing only truly creative compositions. Since the politician prevents anger by speaking cautiously, his verbal behavior is negatively reinforced by his constituents. Melissa runs to her father because doing so has been negatively reinforced by the removal of something unpleasant. Positive and negative reinforcement are both illustrated in the last situations. First, since Kingsley's tantrums are followed by his getting his way, his parents are strengthening this behavior through positive reinforcement. Second, Kingsley is negatively reinforcing his parents' actions; he simply "turns off" when they accede

to his demands. As we interact with others, we may reinforce, ignore, or punish, each other's behavior. The last two situations reflect this reciprocal character of social relationships: Kingsley's parents reward his tantrums positively; he in turn rewards their reactions negatively. You may want to take note of who does what to whom the next time you interact with someone.

Avoidance and Escape

The concept of negative reinforcement helps us understand how we learn to avoid or escape many unpleasant things in life. Suppose a father says to his son, "Go to your room," but the son refuses. The father then says loudly, "Go to your room or I'll smack you!" This is quite enough; the son complies and thus avoids the smack. Avoidance learning, as in this case, refers to behavior that *prevents* the possibility of unpleasant consequences. Escape learning, in contrast, refers to behavior that terminates an *existing* unpleasant consequence. Technically, the son did not escape from the smack since it was threatened but not delivered.

We sometimes see people do things for which they get no apparent reward. For example, you may know a child who keeps to himself on the playground rather than joining his peers. Since being alone is not considered to be particularly rewarding, this child might be said to be socially withdrawn. But if we ask, "What's controlling this behavior?" the answer may well lie in the child's learning history. The child may have learned to avoid painful situations. A characteristic of avoidance behaviors is that they may occur with little awareness that they are based on the avoidance of something unpleasant. In serious cases, it is helpful to interpret various defensive patterns of adjustment in terms of avoidance and escape behaviors.

What is important to keep in mind when analyzing behavior for which there is no apparent reward, such as avoidance, is that you may not be aware of the events in the person's life that are functioning as rewards, or the behavior you are observing may be rewarded only occasionally and you are not privy to these occasions. This leads us to the topics of *classifying reinforcers* and *schedules of reinforcement*, which we now consider in turn.

Classifying Reinforcers

Reinforcers may be classified into four broad categories: activities, social, tangible, and primary. Given human differences, what is a reinforcer will vary considerably, of course from one person to another. A few common reinforcers are listed under each category below. Try adding some of the things you find rewarding to the lists. What activities do you enjoy? What tangibles do you prize?

Activities	*Social*	*Tangible*	*Primary*
Watching TV	Attention	Money	Food
Reading	Smiles	Clothing	Oxygen
Playing games	Hugs	Sports cars	Sex
Thinking	Proximity	Jewelry	Liquids
Riding a bicycle	Praise	Pictures	Warmth
Working a puzzle	Touching	Records	Sleep

The examples above covering the four categories provide only a hint of the enormous range and variety of events that can serve as reinforcers for our actions. For example, access to TV (an activity) may be the consequence for completing a homework assignment; doing a favor for someone may be followed by a smile and hug (social); an A perched atop one's term paper (tangible) is the usual result of outstanding academic performance, and so on. I shall return to these categories when I take up the topic of motivation.

Schedules of Reinforcement

Our actions are not always followed by reinforcers or punishers. Even a successful bill collector is not always rewarded for his efforts; some folks just don't pay. And some drivers run red lights many times before they get caught. The particular schedules in which reinforcement occurs are called schedules of reinforcement. Behaviors that are attributed to such factors as drives, needs, or attitudes might, according to behavior analysis, be more profitably attributed to the effects of reinforcement schedules. For instance, if a student works long and hard on

a project, she may be doing so not so much because of some inner drive, need, or attitude but because some schedules of reinforcement generate high and stable rates of performance.

There are many possible schedules, and they may be combined in complex ways. Schedules have powerful and ubiquitous effects on behavior, although their influence often goes unnoticed. I will describe below everyday examples of basic reinforcement schedules. Each type has characteristic effects on behavior.

Continuous reinforcement is when a particular response is reinforced each time it occurs. Eating is usually reinforced continuously – before we feel full, each bite of food is rewarding. Apparatus kept in good working order also reward us continuously. For example, every time we turn on our television set, we are rewarded by the picture and sound.

Intermittent reinforcement is another type of scheduling, which is most prevalent in social situations and can occur in four ways: 1) fixed ratio, 2) variable ratio, 3) fixed interval, and 4) variable interval. In ratio schedules, reinforcement depends on the number of times a particular response occurs. If reinforcement is delivered after a constant number of responses, the schedule is called fixed-ratio or FR; if the number of responses varies, it is a variable-ratio or VR schedule. Paying people on a piece rate basis or rewarding students when they complete a fixed number of problems are two examples of FR schedules.

VR schedules are also quite prevalent in daily life. The bill collector referred to earlier is subject to a VR schedule of reinforcement, as are athletes. Batting averages in baseball and percentage of baskets made at the free-throw line in basketball are numerical indicators of VR schedules. And the obsession of gamblers or the football aficionado who sits glued to his television set is a mystery only to those who are unaware of the power of VR schedules. It is common to see teachers and parents shift from continuous to VR schedules of reinforcement as they teach children new skills. A mother may praise her young son for nearly every response he makes learning to tie his shoe for the first time; but at later stages of learning, her praise reflects a VR pattern.

Ratio schedules of reinforcement depend on one's own actions. Consider the bill collector once again. His level of activity is what determines when and how often he receives a payoff – the more contacts he makes,

the greater the likelihood of collecting an overdue account. But with interval schedules, the passage of time determines whether a particular response is rewarded; and it doesn't much matter what a person does during this time. For example, waiting for an elevator involves interval scheduling. On one occasion standing by the elevator is rewarded (by the opening of the elevator door) after, say, 10 seconds; on another occasion after 126 seconds; and on still another, after 48 seconds, and so on. What the person does while waiting has no influence on the arrival of the elevator.

In a fixed-interval or FI schedule of reinforcement, the first appropriate response that occurs after a fixed period of time elapses is reinforced. A student who is praised every five minutes for working diligently is on an FI schedule, assuming that praise is functioning as a reinforcer. On a variable-interval or VI schedule, the first appropriate response after a variable time interval has elapsed is reinforced. Waiting for an elevator, since it arrives at variable intervals of time, exemplifies a VI schedule. Unhappily, some parents reward and punish their children on VI schedules based more on the events in their lives that cause vacillations in their mood than on any characteristics of their children's behavior. It is not surprising that this incongruity often brings harmful results in child rearing.

In most aspects of daily life, the basic reinforcement schedules described above occur in combination. A salesman on salary and commission, for example, is subject to a mixed FI and FR schedule of reinforcement.

Discontinuation of Reinforcement

When a reinforcer that had once maintained a particular behavior is discontinued or withheld, the behavior is likely to weaken or decline in frequency. Psychologists refer to this as extinction.

An earlier example of positive reinforcement was illustrated by the comedian who kept certain jokes in his routine because his audiences liked them. Actually, the process of extinction was probably involved also. While some jokes brought warm applause and laughter and were thus reinforced, others were met with agonizing silence. Needless to say,

telling of these latter jokes was extinguished. In another previous example, Kingsley's parents rewarded his tantrums by giving him what he wanted. If instead they could have managed to ignore *every* instance of his tantrums, they might well have been eliminated (extinguished).

One final point about extinction needs to be made. Avoidance behaviors (maintained by negative reinforcement) are stubbornly resistant to the extinction process. Perhaps this is because negative reinforcement prevents a person from finding out that painful stimuli are no longer operating in a situation.

Punishment

Extinction is not the only way to weaken or eliminate certain behaviors. Punishment is another way. Psychologists are in general agreement that if punishment is used at all, it should be used sparingly and with caution.

There are two types of punishment. Type 1 is when an event is presented (turned on) after a response occurs and thus the response is weakened (that is, it decreases in frequency or likelihood). Type 2 is when an event is removed (turned off) after a response and thus the response is weakened. In other words, type 1 involves presenting something unpleasant after a response occurs, while type 2 involves taking something pleasant away. Both procedures weaken the response. There is a certain parallelism between positive and negative reinforcement and type 1 and type 2 punishment. In the case of reinforcement, what is presented is something positive, and what is removed or prevented is negative. A punishment procedure reverses this: what is presented is something negative; what is removed is positive.

Now let's see if you can determine whether the following situations are type 1 or type 2 punishment.

- A comedian drops certain jokes from his routine whenever his audiences boo them.
- Darrel's father fines him 50¢ each time he swears in front of his little sister. Swearing stops after the eleventh fine.

In the first situation we find that whenever audiences respond to a joke by presenting something unpleasant (booing), the joke is dropped.

This, of course, fits our definition of type 1 punishment. Notice that three prominent processes have affected our comedian's joke-telling behavior: positive reinforcement, extinction, and type 1 punishment. In Darrel's case, something positive (50¢) was removed each time he swore in his sister's presence. Since swearing diminished, this was a type 2 punishment.

Try two more:

- As Billy reached for the cookie jar, his mother yelled, "Get your hand away from there!" He stopped reaching.
- Lori got her hand slapped hard as she reached for the toys on display in a store. She no longer reaches for things on display unless she first gets permission.

Billy and Lori have both experienced type 1 punishment since, in both cases, the behavior was weakened. The punisher presented was verbal in the first episode ("Get your hand away from there!") and physical (the slap) in the second.

Lori's situation demonstrates an important outcome of punishment. If we assume that asking permission functioned as an avoidance response, then we can see how punishment and negative reinforcement go hand in hand: asking permission was negatively reinforced because it prevented further contact with a punishing event.

Discontinuation of Punishment

Reinforcement strengthens behavior, punishment weakens it. But these effects may disappear if the procedures are discontinued. Discontinuation of reinforcement may lead to a decrease in behavior. However, when a behavior has been punished, it may later reappear if the punishing event is withheld consistently. That is, discontinuing punishment may lead to an increase in a previously punished behavior. Thus, in Darrel's example, fining him for swearing may stop the swearing, but it may do so only if the possibility of a fine continues to exist.

There is ample evidence to support the position that punishment may not be the best way to stop or prevent undesirable behavior. Juvenile delinquency provides a good example. Punitive programs have long been used as a way of coping with juvenile delinquency, but these pro-

grams have had a depressing history. While punishment may suppress unlawful activity, its effects are not permanent in far too many cases. Many delinquents have simply learned to avoid getting caught and punished. When away from the watchful eyes of parents or other authority figures, their unlawfulness reappears, maintained by supportive peers and the various rewards associated with the criminal activity itself. Recent work with delinquents has had more positive results. Programs that remove juveniles from situations that may have induced delinquency in the first place and that put juveniles in situations where they can learn desirable behaviors, such as academic, athletic, occupational, and communication skills, are beginning to show positive results compared to programs preoccupied with punishment.

Testing Your Knowledge

This final quiz covers several of the principles I have talked about. See if you can determine whether the following situations illustrate positive reinforcement, negative reinforcement, extinction, type 1 punishment, type 2 punishment, or none of these.

- Thelma's parents ignored her attempts to talk about school. She no longer brings the subject up.
- Frank used to greet his colleague with friendly "hellos" and other similar expressions. Subsequently, Frank's greetings were met with sarcastic comments. After several weeks of this, Frank stopped speaking to his colleague.
- Tamara's new haircut brought rave reviews. She has decided to adopt her new coiffure permanently.
- John touched Mary Ellen. She hauled off and slapped him.
- When he was first married, Jim liked to do the weekly grocery shopping. Almost invariably, though, he was criticized on his return for forgetting items, paying too much, and so on. He has since stopped shopping.
- A golfer changed his swing after a long series of drives hooked far to the left.
- Whenever little Mary jumped up and down on the sofa while watching TV, it was turned off for two minutes. She stopped jumping after the TV had been turned off five times.

Thelma's attempts to talk about school were ignored, attention was withheld. This situation illustrates extinction. Frank stopped speaking to his colleague because speaking was followed by unfriendly comments. This illustrates type 1 punishment. Tamara's case, positive reinforcement probably explains her decision to make a permanent change in hair style. Without more information we don't know how the slap affected John's behavior, so we can't say any principle is illustrated. Type 1 punishment (nagging criticism) appears to have been the key factor in eliminating Jim's trips to the grocery store. The golfer's swing, at least initially, was negatively reinforced. By altering his swing, it enabled him to avoid bad drive shots. Type 2 punishment accounts for the cessation of Mary's jumping.

A General Plan for Behavior Change

In this section I shall describe a nine-step plan for changing behavior. Of course, describing these steps is much easier than applying them; but if you are cautious and conservative in your approach, if you learn to walk before you run, your success in changing behavior will improve. There are no handy, sure-fire recipes to be mechanically applied. Sometimes the nine-step plan outlined below can be implemented rather easily, sometimes not. However, regardless of difficulty, we must apply the plan more like an artist than a mechanic. The nine steps to behavior change are:

Step One.	Define behavior
Step Two.	Estimate its level or amount
Step Three.	Set attainable goals
Step Four.	Identify potential motivators
Step Five.	Select procedures
Step Six.	Rehearse procedures
Step Seven.	Implement plan
Step Eight.	Monitor results
Step Nine.	Maintain gains

This general plan is appropriate whenever we are dealing with too much behavior (an excess), too little (a deficit), or inappropriate behavior. Physical aggression and monopolizing conversations are examples of behavioral excesses, lack of motivation and extreme shyness are examples of deficits. Breaches in etiquette, such as telling jokes at a funeral, are examples of inappropriate behaviors. The plan is applicable

not only for changing someone else's behavior but also for changing one's own. Before taking a closer look at each step in the plan, let me address some important preliminary matters.

Some Preliminary Concerns

Foremost among these concerns are questions about ethics. Whether a teacher or a parent, the following kinds of questions need to be raised before you attempt to implement a behavior change plan: Will a change in behavior serve the best interest of the child's emotional and social development? Does the child have a reasonably good chance of achieving the change goals? Am I competent to deal with the problem? Will I be using the most humane procedures possible? Am I violating any of the person's civil rights? These often are not easy questions to answer, but we must nonetheless do our best in confronting them. It is not generally acceptable, for instance, to deprive a person of food or other basic necessities as a means to motivate or change behavior. Nor would it be acceptable to tamper with a student's right, say, of free speech.

A second concern is obtaining background information before you begin your plan. It is important to get information directly related to the behavior with which you will be working. Try to get at least tentative answers to five key questions: How long has the behavior been going on? How has it been dealt with in the past? Under what conditions does it occur? How often does it occur? What usually happens immediately following its occurrence? If the last three questions sound familiar, they should; they each relate to a component of the ABC model discussed earlier.

These are important questions. The first tells us something about how easy or difficult behavior change could be. If the problem behavior has a long history, your task may be relatively difficult. With the second question, you may find that in the past several people have tried various techniques to alter the problem behavior with little or no success. The last three questions are important for reasons previously given, which I restate here: Whenever we want to teach anybody anything they are capable of learning, we must pay close attention to prior conditions, how the person responds in the presence of these conditions, and what happens afterward.

Since most human behavior takes place in social settings, you will also need to identify the people who will be involved in your program. Who will help you with the plan? Who might hinder it? Teachers, administrators, parents, siblings, relatives, and friends are all people who can make or break your program. After you identify key people to assist you, enlist their help in designing the program. People are more likely to support programs they have helped to design. Now let's take a closer look at each step in the general plan.

Step One: Define Behavior

The behavior analysis approach to change is based on the direct observation of behavior, where and when it occurs, and what happens afterward. First the behavior must be defined. Defining behavior means being clear and specific about the behavior we want to change. It means describing behavior so that others can observe the same behavior as you do.

To describe a student as "very aggressive" is not specific or clear enough. People can be verbally or physically aggressive, or both. And they can be verbally and physically aggressive in many different ways. Verbal aggression involves swearing in some cases, sarcasm in others. Some physically aggressive children will bite and scratch, others will push or punch. To determine what "very aggressive" means, we must find out what the person *does* and *how often*. As we watch the student closely, we may find that he is physically but not verbally aggressive, that is, he hits, kicks, and shoves others. These behaviors can be counted and recorded. In fact, if we cannot count or measure these acts in some systematic way, we have not adequately defined aggression. The definition of behavior must not only be clear, it must be as complete as possible. Defining aggression in terms of hitting, kicking, and shoving is adequate if that is all the person does. But it is an incomplete description if the person also throws things, pulls hair, and pinches.

"She's plain lazy" is an inadequate description of behavior. How would you count that? "She's unmotivated" may sound more professional, but it is really just as vague as "plain lazy." How would you measure "unmotivated?" We must be specific about what the person *does* or *does not do* to merit being called lazy or unmotivated.

If defining behavior requires that we focus on what a person does, it follows that the definition must make use of action verbs — verbs that direct our attention to behaviors that can be seen or heard. Hitting, kicking, and shoving are action verbs in this sense, as are painting, singing, writing, speaking, and running; but appreciating, thinking, and understanding are not.

Defining behavior in observable and measurable terms is the foundation of the behavior analysis approach to changing behavior. In formulating a definition it is important to observe how a person behaves in a variety of situations. In the case of aggression, one might first observe the person in those situations in which he has acted aggressively in the past. A definition of aggression could then be developed by describing those specific actions judged to be aggressive. Definitions for such terms as well-mannered, good attitude, shyness, and verbal abuse can be developed similarly. The following chart offers a few sample definitions of these terms to illustrate how behavior can be described clearly and specifically. Note that the verbs used in the sample definitions direct our attention to observable acts.

Situation	Term	Sample Definition
Student who asks for help in algebra class	Well-mannered	Saying "Please," "Thank You," "May I." Speaking slowly and softly
University football coach who is asked to identify most important player characteristic	Good attitude	Shows up at all practice sessions, does extra warm-ups, speaks positively about team and coach, and hustles
Student who keeps to herself in school	Shyness	Speaks only when spoken to, looks away when talking, eats alone, keeps physical distance from others (three or more feet)
Parent who is critical of family members	Verbal abuse	Swears at family members; speaks negatively of their dress, looks, opinions, friends

Step Two: Estimate Amount of Behavior

After you have clearly defined the behavior to be changed, you are now ready to estimate how much or how often this behavior occurs. You will need to count or record the behavior in some simple way. Recording behavior can be done by assessing products or records or by direct observation. The resulting information can then be shown on a chart or graph. This will enable you to see what has happened to the behavior before and after change procedures are implemented in Step Seven.

Much worthwhile information is available from the products, records, or outcomes of people's actions. Teachers have always been interested in student products and records, often interpreting them numerically in terms of frequency (Sally turned in four homework assignments this month), rate (Jimmy reads 150 words per minute), or percentage (Laura got 87% of her math assignment right). Parents also attend to records or outcomes of their children's behavior (mud tracks on the living room rug or finger marks on the wall). Observational recording requires that we personally observe and record behavior while it is actually going on. Frequency, duration, latency, interval, and time-sampling recording are procedures we use to do this.

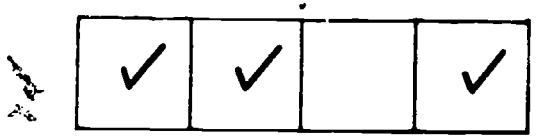
In *frequency recording* we simply count how often a behavior occurs. Using the definition developed in Step One of our plan, we can count how often a person acts aggressively, or swears, or does a good deed.

In *duration recording* we take note of how long a behavior lasts. I once used this method to resolve a dispute with my son. We disagreed about the length of his showers, so I decided to record their duration. He started taking shorter showers after I informed him that they averaged just over 23 minutes. This little anecdote illustrates how specific observational data can serve as a motivation for changing behavior; that is, simply counting or timing your own or someone else's behavior can be instrumental in changing it! Keeping tabs on how often and how far one jogs may encourage longer jogging sessions for some people; or counting calories may discourage the nibbling of snacks. Keeping daily

records of things you do or do not do could help you gain a measure of control over important aspects of your life.

Latency recording is noting the time between the onset of a signal or cue and the response to it. Latency recording is a useful measure of compliance or noncompliance for many kinds of instructions. An example of latency is the response time a person takes to answer the telephone. Some usually answer after one or two rings, while some consistently take longer. (I have been told that the response time for answering the phone in England is generally longer than in the U.S.)

Interval recording requires that each observation session be divided into equal intervals of time (usually seconds). One then notes whether a behavior occurs at any time during each interval. For example, suppose you wanted to observe someone studying. You would divide, say, a 15-minute observational session into sixty 15-second intervals and simply note whether the person is studying (according to your definition) during each interval. The first four intervals on your recording sheet representing one minute of observation time would look like this:



This record shows the person was studying during three of the four 15-second intervals.

Time-sampling is easier to use than interval recording because it does not require continuous observation. It can be used in a wide variety of settings. Time-sampling also requires us to divide observation sessions into equal intervals, but the intervals this time are longer (10, 15, 20 minutes). To use time-sampling we simply observe behavior at the end of each interval. For example, a principal might look in on a classroom for a few moments every 20 minutes throughout the day to see how many students are engaged in a particular activity.

Since there are several recording procedures to choose from, you may need some general guidelines. Counting behaviors is the most ac-

curate and you should use it whenever you can. You can count the number of questions asked, complaints voiced, pages read, words spoken, self-references made, chores left undone, trees planted, and so on. But what about recording the behavior of playing quietly? Can you count that? Can you count studying? Watching television? Since these and many other behaviors are normally continuous or ongoing rather than discrete events, they cannot be counted. But you can observe them by using duration, interval, and time-sampling recording.

Now let's take a closer look at Step Two. Before you implement a change procedure, you need to establish a baseline by using one or more of the recording devices just described. But establishing a baseline may take anywhere from a few seconds to four or five days, depending on the amount of fluctuation. For example, a person's weight fluctuates little from day to day, so this baseline would take only moments to establish. It is simply a matter of getting on a scale and recording the weight. On the other hand, many behaviors, such as physical aggression or homework assignments completed, do fluctuate from day to day. In these cases you would need to observe behaviors over several days in order to establish an estimate of their frequency. Also, while observing baseline behavior, don't forget the other components of the ABC model. Try to find out when and where the behavior occurs (antecedents) and pay close attention to the rewards (consequences) that keep it going.

There are several ways to record behavior. A simple chart or graph will serve in most cases. An example follows. Ms. King, a geometry teacher, is concerned about sixteen-year-old Keith, who habitually refers to his classmates in uncomplimentary terms like nerd, jerk, fatty, slob, and the like. She decides to put an end to it. After defining name-calling, her next task is to determine how often Keith uses uncomplimentary terms. She counts the following number of incidents over a five-day period: 15, 6, 6, 16, and 17. In Ms. King's chart below, note that she does not record incidences of name-calling for an equal amount of time each day. She computes response rate by dividing frequency of behavior by a unit of time, in this case in minutes. Whenever the time or the opportunity for behavior to occur varies, response rate is a more precise measure than simply counting the number of incidences.

RECORD CARD

Name: Keith

Behavior: Name-calling: calls others nerd, jerk, etc.

Where/When: Geometry. Mostly with Nancy and Joy

Possible Rewards: Attention from others. Including me!

Day	Number	Time	Rate/Minute
11/5	~~𝍸~~ ~~𝍸~~ ~~𝍸~~	.9:00-9:50	.30
11/6	~~𝍸~~ /	9:30-9:50	.30
11/7	~~𝍸~~ /	9:15-9:45	.20
11/8	~~𝍸~~ ~~𝍸~~ ~~𝍸~~ /	9:00-9:45	.35
11/9	~~𝍸~~ ~~𝍸~~ ~~𝍸~~ //	9:15-9:55	.42

PARENT RECORD CARD

Name: Carson

Behavior	M	T	W	Th	F
Up on time		✓	✓		✓
Makes bed		✓			✓
Breakfast on time	✓			✓	
To school on time	✓	✓		✓	
From school on time	✓		✓		✓
Do homework		✓	✓		✓
Total points	3	4	3	2	4

For parents, a simpler form of recording behavior might be more appropriate. The chart on p. 31 is a type of checklist used by Mrs. Brown for her nine-year-old son, Carson. Carson is a dawdler. In his mother's view, he is always late, which is disruptive to the family schedule. Carson thinks his mother nags at him too much. Mrs. Brown decided to use the chart to keep a record of Carson's behavior. With such a record, she has a baseline from which to judge progress as she attempts to change his behavior.

Step Three: Set Attainable Goals

When you are clear about what behavior you want changed, you then need to ask what the behavior should look like when the program is completed. For example, should your goal be to reduce aggression to a zero level? Just how neat should a high school student keep her room? Should Jimmy take the trash out every day? With behavior as serious as physical aggression, you no doubt want to reduce it to zero or near zero levels in almost all situations. But what about getting an already compulsive child to do her homework and practice the piano *every* day?

Setting goals must be tempered by what is appropriate and possible for you and the person with whom you are working. For instance, given the best plan possible, some socially withdrawn people will not learn to interact well with others, but some might become downright extroverted. Some young people will make great academic strides, while some will not no matter how noble your goals. In other words, your task in Step Three is to set change goals that are both attainable and in the best interest of the individual.

Step Four: Identify Potential Motivators

This is one of the most important steps in a behavior change plan. When identifying motivators, remember that you are looking for *potential* rewards. Determining whether something is a reward is possible only by observing how it affects a person's actions.

Watch carefully what a person does in as many situations and settings as possible. A child who consistently chooses hamburgers or pizza

over other foods, even in posh restaurants, obviously likes them. Similarly, an adolescent who spends a lot of leisure time reading, talking on the telephone, watching television, and playing tennis likes doing these things. On the other hand, if someone says he loves opera but declines every opportunity to attend a performance or to listen to recordings, we can suspect that talking about opera is more rewarding than the music itself. As you observe what a person does in various situations, keep in mind the reward categories mentioned earlier: activity, social, tangible, and primary. When you see someone do something often, you have located an activity that might function as a motivator later. Also, if you can identify the important people in one's life, they might function as important social influences later on.

Another way to identify potential motivators is interview the person himself as well as others who know him well. A teacher, for example, might interview a child, his mother and father, and perhaps a former teacher. These interviews take time; but if they help you to find effective motivators, they will be well worth the effort.

If possible, interviews should be conducted individually to preserve the independence of the responses. Ask a series of gently probing questions related to each of the reward categories. For example, in the activity category appropriate questions might be: What do you enjoy doing in your spare time? What are your favorite games? In school? At home? What are your favorite TV programs? What do you do after school? How often do you do these things? This last question provides some indication of the intensity of the rewarding activity. Continue your interviews asking questions in each of the remaining reward categories. In instances when children have difficulty responding to your questions, you might try showing them a list of likely rewards (words or pictures) in each category and ask them to point to those they like.

After interviewing perhaps three people, you should have quite a list of possible rewards. The chart below shows a list of activity rewards for one child. The order of the rewards reflects how the child and his parents differ in their perception of the importance of the rewards, at least at the time of the interviews. All of this, of course, is only a rough estimate; the final test will come when some of the rewards are used in a behavior change program.

Child	Mom	Dad
Playing outside	Playing after school	Playing
Riding bike	Watching TV	Going with me
Fishing with Dad	Riding bike	Watching TV
Playing ball	Doing things with Dad	Reading
Watching TV	Talking on phone	Riding bike
Video games	Playing ball	Putt-putt golf
Swimming	Cooking with me	
Collecting things	Reading	
Playing tennis		
Making model airplanes		

A cursory look at the activities on the list shows a fair amount of agreement. Playing, watching television, bicycle riding, and doing things with Dad are found on all three lists; while playing ball and reading appear on two. Taken together these are the activities that appear to be especially rewarding for the child.

Step Five: Select Procedures

There are four important points to consider as you select and implement change procedures. First, timing is critical. Good behavior change procedures specify ways to deliver rewards immediately following behavior. Under most circumstances the sooner a reward follows a behavior the better. This is especially the case when we want to get a new or improved behavior firmly established. However, once a performance is well established, it is generally advisable to move to an intermittent reinforcement schedule of some kind.

In everyday life, of course, rewards are often delayed for minutes, hours, weeks, and sometimes years. But there are intermediary rewards that can sustain an activity until the ultimate reward is reached. For instance, it takes many years of study to become a medical doctor. The long chain of events associated with completing the academic requirements for the M.D. degree provide a series of intellectual, activity, and social rewards all along the chain. These rewards are immediate at

the time they are received but intermediate in terms of the final goal of achieving the M.D. degree.

Second, we must be *consistent* in our use of rewards and in the execution of our plan. If a child is promised a certain reward on completion of each homework assignment, then access to that reward should follow completion every time. So remember that everyone involved in a behavior change program must maintain a consistent approach.

Third, *deprivation* of rewards is likely to increase their motivating properties. This means that in designing your program you must be concerned not only with identifying potential rewards for the person but also with whether they can be controlled. For example, if a decision has been made to use access to television as a reward for doing homework, it probably would not be effective if the student could see all the television he wanted apart from your program. In other words, avoid building rewards into a program if access to them cannot be controlled or at least limited.

Fourth, the *amount* of a reward has a bearing on its effectiveness. There are many examples of this in daily life. One child in a family may require much more attention than a sibling, or one person will mow lawns for less money than another. You will need to determine just how much of a reward (or punisher) to use. This can sometimes be tricky business. Too much of a good thing may so satisfy a person that future performance suffers, while too little may fail to motivate.

Procedures for Increasing Behavior

We shall now briefly survey a number of procedures for increasing or decreasing behavior. While the procedures will be discussed separately, there is no reason to select only one procedure; good programs usually incorporate several.

Change the Physical Environment. Sometimes just altering the environment can have beneficial effects on behavior. Teachers commonly use this strategy. When two students cannot keep from talking to one another, a new seating arrangement sometimes does the trick. Or if assigned materials are too difficult, different or supplementary materials may be substituted. This strategy can be used in the home setting also. A study area is set up where it is free from distractions; fragile objects are

placed out of a toddler's reach; high calorie foods are removed from the house where a person is dieting.

Keeping records is another aspect of this strategy. If a child forgets to brush her teeth each morning, a self-recording chart taped to the bathroom mirror may prompt brushing (especially if praise follows). An elderly widow who has never handled the household finances can reduce the frustration associated with misplaced items if she learns to place bills and other important documents in a convenient filing system. These are relatively simple environment changes; but these changes, as well as complex changes such as the advent of home television, can exert a strong influence on human behavior.

Positively Reinforce Desired Behavior. To improve or increase a person's performance, positively reinforce its occurrence. This procedure often involves ignoring (extinguishing) undesired behavior. Positive reinforcement and changing the physical environment are fundamental strategies in behavior change. Thus, whenever feasible, try to use them together.

Many examples of positive reinforcement can be given. One that comes to mind took place in my living room. A young mother and her two-year-old daughter Anne came to visit. Anne went immediately to the television set and began tugging at the control knobs. Instead of physically or verbally punishing the child, the mother simply took Anne gently by the hand, led her to a window, and said, "Anne, look at the birdie on that tree." When Anne subsequently became engaged in more desirable activities, her mother duly noted them. Thus, quite simply and naturally, inappropriate behavior was ignored and acceptable behavior was positively rewarded with selective attention.

A point or token reward system is another example of positive reinforcement. Such a system can be used with individuals or an entire class. A teacher might give points for certain social or academic tasks. Later the points can be exchanged for various rewards. Token or point rewards have the advantage of immediate feedback for performance and increased motivation. However, this strategy probably should not be used if simpler procedures will do.

Reward Successive Approximations. To teach someone to behave in a *new* way, it is sometimes necessary to reward successive steps to the

new behavior, beginning with a behavior that only approximates the new behavior. For example, children sometimes have difficulty learning a new task if they have not acquired the subskills necessary to master it. A wise teacher or parent will help the child learn the subskills needed to perform the new task by breaking the new task down into component parts and then selectively rewarding the performance of each subtask on the way to the new behavior. If things go well, the new behavior will emerge in a series of small, gradual improvements. Rewarding successive approximations is a procedure useful in learning many skills, such as writing, playing the piano, speaking French, or swimming. .

Prompt Desired Behavior. In prompting, our attention shifts to stimulus events prior to action. When a child is given a small gift and his father interjects with "What do you say?" this cues the child to respond with "Thank you." Note that father's interjection served as an extra stimulus because young children often do not thank others without being reminded. The young girl in an earlier example was reminded to brush her teeth by a self-recording chart taped to the bathroom mirror. We can now say that the chart prompted brushing her teeth. A prompt, then, is simply an extra stimulus that occasions an action. The use of prompts in teaching improves our effectiveness. Rather than wait for responses to occur, we prompt them so they can be strengthened.

There are several types of prompts. Guiding an infant's hand to hold and shake a rattle and guiding the arms of a golfer as she attempts her first swings are examples of physical prompting. Saying "Look at me" and "Don't forget your lunch money" are verbal prompts. The statement "This animal says meow" is a verbal prompt for the response "cat" when a child is shown a picture of a cat. Training wheels attached to a bicycle are mechanical prompts. Giving directions by pointing illustrates gestural prompting. Pictures can serve as prompts when they accompany new words in a language primer.

A problem occurs when people become too dependent on prompts. This calls for a technique called *fading*, which is the gradual elimination of a prompt. At some point, for example, training wheels must be eliminated so that normal bike riding will occur. One can usually fade training wheels by adjusting them upward in a series of small steps until they are eliminated completely.

Model Desired Behavior. A substantial amount of human behavior is learned by observing how others act. To teach someone a new behavior, we often prompt an imitative response by performing or demonstrating it ourselves. Parents and teachers are quite familiar with this procedure. A mother shows a child how to sew a basting stitch and then rewards the child's attempts at imitation. When people learn to pronounce new words, perform a dance step, or play tennis, they are frequently instructed to imitate the behavior of their teacher.

Imitation also occurs in the absence of planned instruction. In fact, children learn many social behaviors informally through imitation. A powerful anti-smoking public service spot on television illustrates this point. A father and his young son are shown walking down a country road. After the boy makes a few imitative responses (kicking a pebble after his father does), the two are seen sitting under a tree. The father then lights a cigarette and places the pack between them. As the scene ends, the son is seen picking up the pack and looking at it. The viewer is left with the clear impression that someday smoking also will be imitated.

This TV spot mirrors life. There is, in fact, a growing body of evidence showing that people do learn desirable (honesty) and undesirable (dishonesty) behaviors by observing how prestigious people act. This evidence indicates that children are especially likely to imitate others when 1) they observe a model rewarded for desirable behavior (seeing undesirable behavior go unpunished may also induce imitation), 2) they themselves are rewarded for imitating, 3) the model is prestigious, and 4) they perceive a similarity between the model and themselves. Thus, when using a modeling procedure, have a prestigious person model a desirable behavior and make sure that imitative responses are rewarded.

Contracting. The use of contracts with children and adults has brought about some remarkable changes in behavior. A contract is usually a written agreement between two or more people that specifies 1) required behaviors, 2) the individual responsibilites of the people involved, 3) rewards and privileges, and 4) a monitoring system for determining when rewards and privileges are due. Sometimes bonus arrangements and sanctions for contract violations are also included.

Contracting is a procedure that shows the direct relationship of behavior to consequences, and it is a ready means to help settle disputes – the contract can be brought out to find out who promised what in the original agreement.

Contracts can be rather simple as this example illustrates: "Pete agrees to make his bed, take out the trash, and walk the dog each day. He will earn one point for each of these chores. Failure to earn at least ten points per week means no television on Sunday. Twenty points means an extra dollar allowance." It's generally a good idea to date and sign contracts. In this case mother, father, and Pete would sign.

With older children and adults, contracts should be negotiated. All parties should view the contract as fair and enter into it with realistic intentions of carrying it out. Finally, you should strive to state contracts in language that is positive. The text should contain more do's than don'ts. If problems arise, renegotiate and try again.

Procedures for Decreasing Behaviors

The following procedures to reduce undesirable behaviors are classified into three levels in order of preference, though sometimes circumstances call for a different order within each level.

Level I: Reward other behavior, reward lower rates of misbehavior, or reward incompatible behavior.

Level II: Ignore the behavior, response cost, negative practice, timeout (nonexclusionary).

Level III: Timeout (exclusionary), verbal reprimands, overcorrection, physical restraint.

At Level I, the use of rewards predominates. These are the procedures you should emphasize. Those in Level III are last-resort procedures. Before trying any of them ask yourself: Have I tried seriously to use alternative procedures in the first two levels? If not, refrain from Level III procedures.

Rewarding Other Behavior is a simple procedure in which *desirable* behavior is reinforced at the end of a specified interval, provided that an undesirable behavior is absent during the interval. For example, Jamie watches television after school about five hours each day. His mother decides to reduce this amount by dividing after-school hours into half-

hour segments and rewarding any other behavior (reading, playing, talking with family members) whenever Jamie refrains from watching television during the segment. The length of the intervals would be increased gradually as things progressed. Note that Jamie's mother began at a level (30-minute intervals) lower than the initial level of watching television. This is a characteristic of good behavior change programming. Thus when designing programs, strive to arrange things so that desirable behavior can be rewarded in a series of small steps toward improvement.

Rewarding Lower Rates of Behavior also is a method designed to reduce behavior gradually. This procedure might be applied when someone consumes too many calories. Suppose a student consumes about 4,000 calories per day when 2,000 ought to be consumed. One might arrange special rewards to follow daily consumption of 3,600 calories or less, then 3,300, and so on, until an acceptable level is reached.

Rewarding Incompatible Behavior is a procedure that offers more control over misbehavior than those discussed so far. It is designed to strengthen behavior that is functionally contrary to the misbehavior. Suppose a student engages in four problem behaviors: out-of-seat, off-task, taking others' materials, and leaving the classroom without permission. Rather than confront all four problems simultaneously, one might begin by rewarding the student for completing assignments. The problem behaviors cannot occur at the same time because they are incompatible with completing the assignment. Therefore, a successful program of rewards will reduce the problem behaviors. This procedure is a powerful approach to use when someone engages in a variety of misbehaviors.

Ignoring the Behavior or extinction is the first of our Level II procedures. Ignoring behavior means not attending to it in any way, not commenting on it, and not looking in its direction. You may not be able to ignore misbehavior in a classroom if the rest of the students are unable to ignore it or if it is causing harm to the individual or others. Here is a situation that illustrates extinction: An eleven-year-old male developed a habit of "nervous eye blinking." His mother and younger sister talked a lot about it in his presence. After a medical examination

ruled out physical problems, his mother and sister consistently ignored it. It was gone in several weeks.

Response Cost is a procedure whereby a reward or privilege is taken away when misbehavior occurs. Fining someone for swearing or telling quarreling children they can't go to a promised movie are response cost procedures used to reduce swearing and quarreling.

Negative Practice is a procedure in which a person repeats an inappropriate behavior to the point of fatigue or satiation. This is sometimes successful in reducing the subsequent frequency of the behavior. When a child picks flowers from a neighbor's garden, he is made to pull weeds until weed pulling becomes aversive. Or a student is kept after school and made to throw paper wads over and over again in order to reduce the habit during class. Negative practice is a form of punishment and since many behaviors (fighting) should obviously not be practiced, this procedure should be used with a great deal of caution.

Timeout (Nonexclusionary) consists of withdrawing positive rewards for a specified period immediately following misbehavior. The person remains in the room but is not allowed to take part in activities. For example, a child might be made to sit in a part of the room away from the rest of the children for five minutes each time she grabs a toy from someone.

Timeout (Exclusionary) is a Level III procedure. This is similar to nonexclusionary timeout, except now the person is sent to a timeout area in another room – preferably one that is well-lighted and well-ventilated but bare and uninteresting. The basic idea behind both timeout procedures is that a person goes from a rewarding environment to a safe but very dull one. *This procedure is not to be confused with locking a child in a closet, which is inhumane and totally inappropriate.* The duration of timeout should be specified in advance. Two or three minutes is generally sufficient for younger children; five to ten minutes is usually plenty. Anything longer than 30 minutes should be avoided. If misbehavior is still occurring when time is up, the child should remain in timeout. Verbal instructions should be brief but firm (no threatening or nagging). Finally, have a back-up consequence ready, such as loss of some privilege, if the child refuses to go to timeout.

Verbal Reprimands are an all too familiar means of reducing behavior. The line between reprimands and verbal abuse is precariously thin, so they are considered to be a Level III procedure. At a minimum, reprimands should 1) focus on a specific behavior, 2) specify what needs to be changed, and 3) be delivered calmly. Thus, "Stop that!" probably will work less well than a calm "Don't throw the ball in here, you can go outside and do that."

Overcorrection is a procedure in which a person is required to restore and improve a situation that was disturbed by his or her misconduct. For example, if an adolescent repeatedly wears his brother's clothes without permission, he might be required to wash and iron what he has worn plus several additional items from his brother's wardrobe. In addition, he might be required to apologize to all involved. However, most of the time overcorrection requires a person to practice the desirable behavior repeatedly. In the case described, one would practice asking permission over and over. Both components of overcorrection (improving the situation and practice) should be performed at a high rate. Since overcorrection is a form of punishment, one should not be rewarded in any way as he engages repetitively in one or both of its components.

Physical Restraint consists of physically preventing a person from moving his limbs or torso for a prespecified period (a few minutes usually). Obviously, this method should be used only under extreme circumstances — to prevent serious self-abuse, physical harm to others, or damage to property. When using physical restraint, be alert to the possibility that physical contact and attention to aggression, directed toward self or others, could increase its strength or frequency.

General Guidelines for Reducing Behavior

When using any reduction procedure to discipline children, keep these rules in mind:

1. Be firm, but stay calm (use a low, steady voice). If you begin to lose control, walk away until you calm down.
2. Respond as soon as possible to a particular act.
3. Be consistent. Say what you mean and mean what you say. Don't threaten and not follow through.

4. Save your feelings for later. Don't say how the misbehavior makes you feel ("You're driving me crazy").
5. Avoid over-reacting. Usually small rewards and punishers, when part of a good plan, will work fine.
6. Whenever punishment is used, try to reward an alternative behavior.
7. Above all, direct your criticism at a child's actions, not at the child personally. Statements like "What's wrong with you?" and "Can't you do anything right?" do not get at specific action and should be avoided.

Step Six: Rehearse Procedures

Actually rehearsing a plan is better than just talking about it. This calls for role playing all essential features of a plan before it is implemented. For example, in the case of a home-school contract for dealing with aggression, rehearsal might include play acting the various aggressive acts engaged in by a child (if this helps make the behavior clear to everyone, including the child) and actually recording mock data on a record card.

Step Seven: Implement Plan

If rehearsal goes well, the plan should get off to a good start. In your behavior change procedures, use plenty of social rewards (attention, recognition, approval). When contrived procedures are gradually eliminated (faded) in Step Nine, social rewards will help maintain gains.

Step Eight: Monitor Results

By continuing to observe behavior using the same methods that were used to establish the baseline, you can assess how the plan is working and make changes if necessary. Do not become impatient. It sometimes takes several days for a plan to take effect; and it is not unusual for some behaviors to get worse before they get better.

Step Nine: Maintain Gains

This is a critical step since many otherwise successful programs break down at this point. Only through continuous observation and the gradual elimination of contrived procedures can changes in behavior be sustained.

Behavior Analysis in Practice

In this section are three examples of the nine-step process of behavior analysis. In outline form they show how the approach is used in dealing with problems of aggression, lack of motivation, and classroom management. Background information on each case is not included.

Reducing Aggression: Too Much Behavior

Subject:	Fifth-grade male with reputation as fighter
Define Behavior:	Aggression: Includes hitting, kicking, grabbing
Estimate Amount:	Frequency recording. Baseline: averaged about 40 incidents during gym and lunch period
Set Goals:	Reduction of aggression during lunch and gym periods to near zero levels
Identify Motivators:	Six used in program. Bonus activities for good progress
Select Procedures:	1. Social rewards for progress 2. Response cost – removal of point for each act (20 points given at beginning of each day). 3. Home-school contract – points exchanged for rewards in home
Rehearse Procedures:	Done in school and home
Implement Plan:	Aggression initially increased

Monitor Results:	Uneven but gradual reduction over several months to average of about 3 incidents
Maintain Gains:	Social rewards continued. Point system faded. Subject earned bonus points for counting own behavior. Complete self-control toward end of project

Increasing Motivation: Too Little Behavior

Subject:	Sixteen-year-old female described as "academically unmotivated"
Define Behavior:	Completion of less than 20% of homework assignments
Estimate Amount:	Product recording. Homework a persistent problem for several years
Set Goals:	Increase homework completion in steps to 100%. Grades expected to improve
Identify Motivators:	Extra allowance and access to telephone, TV, and family car especially strong
Select Procedures:	1. Social rewards 2. Physical arrangements for study changed 3. Homework assignments broken down into units. Completion of units tied to minutes on telephone or TV watching or car mileage. Extra allowance used as bonus
Rehearse Procedures:	Done with subject and parents
Implement Plan:	Parties enthusiastic at first
Monitor Results:	Many adjustments in plan needed. Homework completion rose to about 70% and grades rose from "D" to "C" level over course of year
Maintain Gains:	Fading not feasible — altered procedures continued into second year

Group Management: An Unruly Class

Subjects:	Twenty-three students in fourth-grade class called "unruly"
Define Behavior:	1) out of seats, 2) not facing teacher, 3) inappropriate activities
Estimate Amount:	Frequency recording. Approximately two-thirds of class engaged in inappropriate behaviors during most of class period
Set Goals:	Increase appropriate behaviors: 1) staying in seats, 2) facing the teacher, 3) participating in class work
Identify Motivators:	Several potential activity rewards identified. Four class leaders interviewed
Select Procedures:	1. Praise and recognition of progress 2. Points earned if everyone engaged in all three appropriate behaviors when buzzer on kitchen timer sounded on VI schedule. Points exchanged for desired activities
Rehearse Procedures:	Done with whole class. Support of class leaders enlisted
Implement Procedures:	Plan worked reasonably well from beginning
Monitor Results:	Appropriate behaviors began to dominate
Maintain Gains:	Praise continued. Procedure faded, that is, timer was replaced by teacher's "OK" delivered at variable intervals for appropriate behaviors. Points faded several weeks later

A Word of Caution

Since human behavior is always more complex than any perception of it, we must be both cautious and humble in our attempts to change it. Although the approach outlined in these pages is a promising one for changing behavior, it is useful only insofar as it helps someone to live a better life. Otherwise some other approach may be required.

Finally, let me urge you to continue your studies in behavior analysis. Whether you are concerned with skill development, runaways, lying, stealing, shyness, fighting, or any other behavior problem, you will find the literature on behavior analysis helpful.

Sources for Additional Information on Behavior Analysis

Research Press, Box 31779, Champaign, IL 61821.

This publisher is an important source for practical training and teaching materials in behavior analysis. It offers an extensive line of books and media programs on classroom management, special education, counseling and therapy, and family life and parenting. Several books and films focus on the strategies for increasing and decreasing behaviors touched on in this fastback. One useful film is titled *Harry*, in which we see a young man transformed from an uncontrolled, institutionalized person to one capable of some adjustment outside the institution. Various techniques such as fading, extinction, and timeout are nicely demonstrated. Write for a free catalog.

Several applied research journals regularly publish articles concerned with behavior change. The four listed below are recommended.

Exceptional Children, Council for Exceptional Children, 1920 Association Dr., Reston, VA 22091.

Behavior Modification, Sage Publications, 275 South Beverly Dr., Beverly Hills, CA 90212.

Behavior Therapy, Association for Advancement of Behavior Therapy, Allen Press, Box 358, Lawrence, KS 66044.

Journal of Applied Behavior Analysis, Society for the Experimental Analysis of Behavior, Allen Press, Box 368, Lawrence, KS 66044.

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