

GENTLE TEACHING

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Introduction

Gentle Teaching techniques are based on a humanizing and liberating posture toward persons with mental retardation. Without such a posture the techniques are meaningless. This posture shapes the use of technology. Each technique should be studied and used from the perspective of this value-system. The techniques focus on the prevention of aggressive, self-injurious or avoidant behaviors whenever possible. They provide means to gently and respectfully deal with aggression or self-injury when it occurs. They provide a mechanism to develop and actualize a teaching structure through which the caregiver can create multiple opportunities to teach the value of human presence and reward-opportunities to ignore most negative behavioral situations and simultaneously redirect the person toward personally and socially appropriate tasks and interactions. They also provide ways to actually teach tasks so that tasks can be used as vehicles to teach the value of human presence and reward.

These techniques are not a recipe for the teaching of bonding. They are techniques we have found useful in our daily work with persons with these needs. There is no uniform formula to determine which of these techniques to use nor how to use them since each person brings his/her own history, caregivers, developmental potentials and personal learning characteristics. However, if caregivers develop highly personalized mixtures of these

techniques for a particular person, they will likely have at least the framework to teach bonding. And with the posture which we have discussed, caregivers should be able to develop a much broader range of Gentle Teaching techniques.

The initial teaching posture at first refers to a posture which weds affection and tolerance with the objective of teaching interactional control. This attitudinal merger signifies that there is a personal commitment to at first superimpose bonding (interactional control). At the start the person will display behaviors which obviously indicate that the person does not want anything to do with the caregiver—screaming, hitting, biting, kicking, scratching, avoiding, etc. At this initial point the caregiver superimposes his/her posture on the person with the aim of teaching the value of human presence and reward. The caregiver is at this point the one responsible for the initiation of a pedagogy of mutual liberation and humanization.

In order to teach the goodness and power of human presence and the reward inherent therein, caregivers need to become teachers of human presence and reward. This can be accomplished by structuring the person's day in such a way so as to provide multiple opportunities throughout the day which involve teaching new skills or maintaining current skills (behaviors which can be rewarded and which enable the caregiver to teach human interactions). These skills serve as the behavioral link for teaching interactional control. To use them in this manner caregivers need to apply a range of teaching techniques which preclude

the use of punishment. initially this requires a structure to the day and, depending on the needs of the person, sufficient caregivers present to carry out these "programs." Within this context caregivers present structured tasks to the person and ensure success as much as possible to make their presence and the rewards given positive and meaningful.

Specific Techniques

Based on our experiences with over 600 persons with both mental retardation and severe behavioral problems we have adapted a number of techniques which enable caregivers to gain interactional control and avoid the use of punishment. None of these techniques are new; rather they are time tested, common sense techniques which have been used by other caregivers for years. In our experience, however, what is new is that mixtures of these techniques enable us to avoid using punishment and, more importantly, teach interactional control which leads to bonding. The principle techniques are:

1) Ignore-Redirect-Reward (Berkson & Mason, 1964; Favell, 1973; Favell, McGimsey & Schell, 1982; Gaylord-Ross, Weeks & Lipner, 1980; Horner, 1980; Mulick, Hoyt, Rojahn & Schroeder, 1978): saying nothing to and not looking at the person as maladaptive behaviors occur and simultaneously directing to a task in order to minimize any attention given to maladaptive behaviors and, more to the point, in order to maximize reward-beaching.

2) Interrupt-Ignore-Redirect-Reward (Azrin, Besalel SWizotzek, 1982; Azrin & Wesolowski, 1980; Peterson & Peterson, 1968; Tarpley

& Schroeder, 1979) : intervening in the least conspicuous and most gentle manner possible to protect self, the person or others. Interruption should be a last resort. Even it can be and should be done in a gentle, respectful and minimal manner. In our experience interruption too often occurs when the person is allowed to work him/herself into a fury. It is preferable to avoid pushing the person into a fury. On the few occasions - when this happens, the caregiver needs to protect self and others. Generally, this is accomplished by backing off. Occasionally it is necessary to physically protect the person but in an ignoring and calming manner.

3) Environmental control (Boe, 1977; Hewitt, 1967; Murphy & Zahm, 1978; Rago, Parker & Cleland, 1978): setting up the physical setting in such a way as to increase the chances of learning reward by preventing maladaptive behaviors from occurring through consideration of such factors as seating arrangements, safety precautions, the grouping of persons, etc.

4) Stimulus control (Bellamy, Horner & Inman, 1979; Gold, 1972; Irvin, 1976; Panyan & Hall, 1978; Striefel & Wetherby, 1973; Striefel, Wetherby & Karlan, 1978; Terrace, 1963; Walls, Zane & Ellis, 1981): setting up the tasks before the person so as to ensure on-task success through the consideration of factors such as the arrangement of the tasks, control of materials, concreteness of the task, teaching methods, etc.

5) Errorless learning (Becker & Engelmann, 1976; Coon, Vogelsberg & Williams, 1981; Cronin & Cuvo, 1979; Foxx & Azrin,

1973; Lambert, 1975; Terrace, 1966; Touchette, 1968; Walls, Zane & Thvedt, 1980; Weeks & Gaylord-Ross, 1981): breaking learning skills into a sequence which facilitates their acquisition and providing adequate assistance in order to avoid errors so that structured tasks can serve as vehicles to teach reward throughout the day.

6) Shaping and fading (Becker & Engelmann, 1978; Horner, Colvin & Bellamy, 1981; Horner & McDonald, 1981; Sprague & Horner, 1981; Stokes & Baer, 1977): using the caregiver's initial intense presence, necessary assistance and reward teaching as a way to ensure as much as possible the person's on-task attention and as rapidly as possible removing the external assistance and reward so that the person will remain on-task and be able to receive sufficient reward.

7) Teaching quietly (Gold, 1972): initially using minimal verbal instructions in order to maximize the power of verbal reward and gradually using more language as the reward-learning takes hold. This requires using non-verbal means of communication (e.g., gestures or signs) along with teaching quietly to facilitate correct responses and to maximize the power of verbal reward.

8) Assistance envelope (Brown, Holvoet, Guess & Mulligan, 1980; Heads, 1978; Kazdin, 1980): initiating learning with a sufficiently high degree of assistance to ensure success and systematically and rapidly decreasing the degree of assistance, but ready at any given point in time to offer higher degrees of assistance for purposes of redirection or reward-teaching.

9) Reward envelope (Koegel & Williams, 1980; Saunders & Sailor, 1979; Williams, Koegel & Egel, 1981): initiating learning with a sufficiently high degree of reward-teaching to ensure that the person learns the power of verbal and tactile praise and systematically and rapidly decreasing the degree of reward, but ready at any given point in time to offer higher degrees of assistance for the purpose of redirection.

Selecting Techniques

Gentle Teaching techniques are not "recipes" which guarantee the effective teaching and management of mentally retarded individuals with severe behavioral/emotional problems. They comprise a group of techniques which are effective in various combinations and which lead to interactional control. The best guide for this use is a problem-solving approach: 1) select a combination of techniques which serve to prevent as many maladaptive behaviors as possible and which enable reward-teaching to occur; 2) implement; 3) evaluate; and 4) continue to choose a new combination based on evaluation results. It is important to note that this problem-solving approach is an ongoing process. From moment to moment the combination of techniques can change depending on the needs of the person. During the first several days there is a behavioral ebb and flow—initially high frequency problems become less intense, but reappear occasionally at a high frequency. The caregiver needs to adapt his/her techniques to this ebb and flow and avoid a lock-step approach.

Ignore-redirect-reward is the most basic and widely used

technique in the Gentle Teaching approach. These three nearly concurrent steps are best considered as one process rather than as separate techniques. Essentially the final step of reward is the most important of the three steps involved in this sequence. The goal of bonding dictates that this reward is primarily social reinforcement (Bandura, 1977; Ferster, 1958; Gardner, 1971). Once reward is given, appropriate alternative responses become more likely to occur and problematic behaviors become less likely. Caregivers need to remember that initially verbal and tactile praise will likely have little or no meaning to the person. The process of continuously redirecting and giving reward is a teaching process. Through repetition the person begins to internalize the meaning of reward and that the very presence of the caregiver is inherently good. The task toward which the person is redirected is a vehicle for the caregiver to use to ignore the maladaptive behaviors and to teach the value of human presence, reward and participation. The reward allows the caregiver to regain control over the situation as behaviors become directed towards a designated task or activity. The reward step is the most important; the first two steps—ignore and redirect—are necessary in that they allow and make reward more likely to occur. Reward is essentially taught through the repeated ignoring of inappropriate behaviors, redirecting toward appropriate behaviors, and rewarding the person as he/she redirects. The redirection step in this process requires the most creativity on the part of caregiver. Generally, the caregiver

needs to do everything possible to prevent maladaptive behaviors from happening. If they still occur then he/she has to find a way to prevent these in the future and ways to interrupt the maladaptive behavioral cycle at the moment of occurrence.

In many cases "ignore" means that no attention is paid to distractive or disruptive behaviors. This includes both verbal responses to as well as eye contact with the person. In this way attention is provided selectively for only appropriate behaviors (Bandura, 1969; Harris, Wolf & Baer, 1964). Caregivers do not need to, and should not, give verbal reprimands such as, "No, don't do that," "Our rule is not hitting," or other verbal instructions or descriptions of consequences i.e., because you did X, you lose privilege Y (Madsen, Becker, Thomas, Koser & Plager, 1968). Likewise, caregivers should not engage in debates or feel the need to respond to an individual's off-task response (e.g., "I'm tired." "When do we go?" or "Why do I have to do this?"). Ignore means that no consequences are administered which relate directly to the behavior presented by the person. Ignore means that teaching continues as if the particular problematic behavior has not occurred. It means that the caregiver does not allow the problematic behaviors to terminate the activity in which the person is involved. Ignore also means that the caregiver needs to develop a certain personal serenity. He/she cannot become insulted by the behaviors (e.g., being spit in the face). The caregiver needs to continuously avoid the violent and retribution-based posturings so prevalent in our culture.

In most cases inappropriate behaviors to some degree disrupt the sequence in teaching alternative appropriate behavior. The purpose of redirection is to provide a strong cue to the learner to return to these learning activities. This process requires a momentary shift in focus from the teaching of task-oriented behaviors to teaching of appropriate social behaviors (Karan, 1983). The redirection serves as a prompt or cue in this teaching process. It is a communication (initially non-verbal) to the person about what alternative behaviors are expected and will be rewarded. Rather than responding to various off-task behaviors, the caregiver helps the person get back "on track" by communicating, "Do this instead." In the beginning this message is best communicated non-verbally through the caregiver's actions (e.-g., a gestural, prompt) . The major purpose of the redirection is to provide a cue for the person to engage in some on-task behavior so that reward can be given.

Several examples can best illustrate this ignore-redirect-reward sequential technique. If a person is engaged in an activity while seated at a table and throws the teaching material or pushes all materials from the table, such behaviors should be ignored. In other words, the caregiver should not-verbally reprimand the person, look angrily at the person or require him/her to get up and retrieve the thrown materials. The throwing response should be ignored. The response to such behavior by the caregiver should be to obtain new materials from the most readily available location and cue the person to return to the

task. This may take the form of pointing to the task, picking up the material and placing it near the person's hand or physically assisting the person in engaging in on-task behaviors. As soon as any approximation to on-task behavior occurs, such as reaching out, touching the materials or otherwise beginning to engage in appropriate behavior, immediate reward is given. In this way the process of teaching reward through task interaction can continue.

Another example of this process occurs when a person engaged in activities slides from his/her chair to the floor. In this case, the behavior may not be able to be ignored in the sense of allowing the person to remain on the floor or leave the area. However, it is not recommended that any attempt be made to physically return the person to his or her seat. The out-of-seat behavior is ignored programmatically in the sense that activities are not discontinued because of such out-of-seat behavior. The most appropriate response at this time in accordance with the ignore-redirect-reward technique is for the caregiver to follow the person onto the floor with materials in hand. A redirection is given by presenting a cue to return to task in whatever fashion the particular task allows, for example, by pointing to the task or even physically assisting the person in engaging in on-task behavior. Such prompts allow reward to be given. Once the on-task/reward sequence begins, the person is typically easily returned to his/her seat with a cue such as "Good working! Let's put this away and get another." Once the person learns

that the task and reward will continue regardless of physical location, returning to the seat is easily accomplished.

Interrupt-ignore-redirect-reward. The commonly accepted understanding of the word "ignore" typically includes some connotation of "allow-to-continue" in addition to "no-attention-to." We are not suggesting that more serious behaviors such as violent, aggressive, self-abusive or destructive behaviors be allowed to continue unattended. The first rule is that harm should come to no one. Interruption means that caregivers need to protect self or others. If a behavior escalates to the point of a fury, it is then necessary to interrupt behaviors such, as hitting, scratching, headbanging or other aggressive or self-abusive behaviors. Behaviors in these instances are ignored in the sense of not responding programmatically in an attempt to reprimand or decelerate such behaviors. The behavior is interrupted, no particular attention is paid to the off-task behavior and a redirection cue is provided with reward given for any approximation to on-task behavior. Examples of interruption include the caregiver raising his forearms to block/protect self from the person or the caregiver blocking or quietly "shadowing" the hands of a person who hits him/herself.

This ignore-redirect-reward sequence, with the addition of the interrupt phase when necessary, serves as the basic technique in Gentle Teaching. it permits the caregiver to continue to teach reward while engaging the person in appropriate alternatives to maladaptive behaviors. The other techniques which we will

explain are mainly preventive in nature. The major function is to increase the likelihood that inappropriate off-task behaviors do not occur and that on-task behaviors do occur. In this manner the chances of teaching the value of human presence and reward are increased, which is the goal of Gentle Teaching.

Environmental control. There are a number of environmental variables which can be managed in such a fashion as to increase the probability of on-task behavior. These variables include furniture arrangement, type of furniture (e.g., sidearm vs. no arm chairs), location of other persons in the room, accessibility to doors, windows, cabinets, additional training materials, location of the caregiver in relationship to the person, etc. By controlling these variables, the caregiver can greatly increase the chances that the person will not engage in off-task behaviors. For example, if the person is easily distracted by another person in the room, changing the seating position so the second person is no longer in view decreases the chances of such distraction. The caregiver sitting across the table from a person can decrease the chances that the caregiver will be hit. Moving all extraneous materials from a table or other learning area reduces the chances of throwing behaviors. By environmentally managing the likelihood of such off-task behaviors, the chances for on-task, engaged behaviors are automatically increased. By preventing unrewardable responses the challenge of teaching reward becomes all the easier. Environmental control needs to be done in the least intrusive manner possible. Caregivers should do everything possible to

integrate, the person into the normal flow of the day while at the same time taking precautions to prevent the occurrence of maladaptive behaviors.

stimulus control. stimulus control is very similar to the technique of environmental control. It differs mainly in that it relates to specific events in the task arrangement. Just as it is possible to enhance the chances for successful performance through control of environmental factors, it is also possible to increase the likelihood of successful performance and reward by managing variables related to the task (Carr, Newsom & Binkoff, 1976; Gaylord-Ross, Weeks & Lipner, 1980; Weeks & Gaylord-Ross, 1981). Positioning of materials, using a layout board or other devices to provide information about the proper sequence of activities or other manipulations of the task can influence the likelihood of success on the task. Increasing the chances for success increases the likelihood that reward can be given and taught.

Errorless learning. Errorless learning is a specific stimulus control technique (Bellamy, Wilson, Adler & Clarke, 1980; Gold, 1973; Irvin, 1976; Lambert, 1975; Terrace, 1963, 1966; Touchette, 1968; Touchette & Howard, 1984). The goal of errorless learning is to arrange the stimuli (sequential steps of a task) in such a manner that the probability of success is as near 100 percent as possible. In one sense, an error is an off-task behavior. In other words, if an individual puts on a shirt incorrectly, he/she must learn to remove it and start the sequence all over

again. The chances for reward to be taught during such a sequence are minimal. Any action by the caregiver which limits or prevents such errors provides an opportunity for reward and increases the likelihood that reward can be taught. The purpose of errorless learning in a sense is to reduce the "demands" of a task by making it as "easy" as possible (Carr, Newsom & Binkoff, 1976, 1980; Gaylord-Ross, Weeks & Lipner, 1980; Koegel & Egel, 1979; Plummer, Baer & LeBlanc, 1977; Weeks & Gaylord-Ross, 1981). For example, in teaching a person a simple food preparation activity, there typically are several ingredients which must be combined and stirred in a bowl. By arranging the training materials in proper order (bowl, ingredient A, ingredient B, spoon, etc.), with the first material near the person and the remaining materials further away, the chances for performing the sequence in the correct order are greatly increased. The more appropriate behaviors that occur, the greater the chances to teach reward.

shaping. in addition to the above-mentioned preventive techniques, there are several other techniques which relate primarily to the teaching of the task at hand. The first of these is shaping (Bandura, 1969; Bensberg, Colwell & Cassel, 1965; Skinner, 1953). Shaping is a very basic teaching technique used in the gentle approach in that it allows for the rewarding of successive approximations to the targeted response. The important aspect of the shaping process is that it initially allows for high "doses" of reward for "less than perfect" responses.

A high-reward/low-expectation combination is essential to Gentle Teaching in that it makes the "rules" for giving reward very kind, providing numerous opportunities to teach reward. In this way, the teaching process is heavily reward-oriented. In addition, this technique avoids the no-win situations of withholding reward until explicitly defined conditions of performance are met (Azrin, Schaeffer & Wesolowski, 1976). Instead, learning is made "easy" and reward is readily obtainable by initially requiring minimal standards of performance. As the learner becomes increasingly engaged on the task, the expectation of more accurate behavior is increased; as successful repetition of the task occurs with appropriate reward the caregiver is then able to make the task more complex and the degree of reward less frequent.

Fading. Concurrent with the shaping process is the technique of fading assistance (Dorri & Zeaman, 1973; Sidman & Stoddard, 1966, 1967; Touchette, 1971; Walls, Haught & Dowler, 1982). New tasks require a considerable amount of assistance from the caregiver for the person to be able to complete the learning activity. As successive approximations are rewarded through the shaping process, less and less assistance is required by the caregiver. This assistance is gradually removed as the person becomes more and more independent on the task. This assistance may also need to be increased to maintain and ensure on-task and rewardable responses when difficulty in maintaining appropriate behavior is encountered. The ebb of flow assistance,

however, gradually decreases over time.

Teaching quietly. Teaching quietly is recommended for three reasons. First, the ability to comprehend and follow complex verbal directions often must be questioned in the developmentally delayed individual when their maladaptive behaviors are so strong. This is difficult to remember when we live in a world which relies heavily on verbal communication to instruct - and otherwise control our environment and others. Lack of responsiveness to verbal cues can become a very frustrating experience and such frustrations often make positive reinforcement difficult. Secondly, an excessive amount of verbal instruction can often be very distracting and confusing to a person, drawing attention away from the particular task. Such an "overload" can lead to disruptive and off-task behaviors. Finally, verbal reward becomes much more effective when verbal interaction is "saved" for reinforcement. Teaching quietly then requires the caregiver to develop other means of instruction such as physical or gestural prompts, assistance and guidance. A combination of gestures, pointing, signing, demonstrating or modeling is much easier to fade than verbal instruction and is more effective particularly with more behaviorally challenging persons.

Assistance and reward envelopes. There is no "recipe" for the use of these techniques with any particular individual to effectively teach appropriate alternative behaviors. Generally, with experience a caregiver develops a skill in the "art" of teaching individuals with severe behavior problems. These skills

include knowing how long to wait before providing assistance, when to redirect and when to ignore, judging the rightness of the moment for a particular intervention, knowing when to ask for continued performance or when to take a break, etc. Such skills cannot be included in this book nor can they be written in a behavior management program. Rather, a good program allows the caregiver flexibility in making such decisions. They pertain - to the art of teaching. Caregivers need to be flexible and, if provided with sensitive supervision, they can learn this art. Program administrators need to provide support to direct caregivers so that they can learn this art. This means that trained professionals need to leave their offices and work along with direct caregivers, each sharing their knowledge and experiences in a spirit of solidarity.

Intervention strategies and teaching approaches which require percentages of correct responding for specified time periods do not allow for sufficient flexibility in the shaping of appropriate responses and the demands for increasingly interdependent behavior which are essential to the Gentle Teaching process. Often caregivers are trained to "carry out programs" in a lock-step manner. This manner ("You do this, you get that") fails to provide the caregiver with enough leeway to take into consideration the moment' to moment give and take which is so crucial in all learning. The caregiver should be encouraged to initially provide the mentally retarded person with a range of assistance techniques and reward mechanisms—going from a high degree of assistance

and reward to less, but at any given moment able to give more if necessary. When this flexibility is given to the caregiver, responses can be determined by not only the demands of the task but also the learner's ability to "handle" those demands at any given moment in time. This flexibility thus allows the learner to benefit from instruction as well as learn the genuine care and concern of the caregiver toward the learner as a human being. Initially, more assistance and reward are given. Over time, as bonding occurs, less is given. However, the caregiver should be free to go with the ebb and flow of behaviors. This means that program administrators need to empower direct caregivers with the flexibility to make "programmatic" decisions and to encourage teaching which moves away from the lock-step and mechanistic procedures which are so prevalent today. Indeed, if programs have non-punishment policies it would be easy and common to empower caregivers with this flexibility.

Degrees of Intervention

Initially tasks are vehicles for teaching interactional control which leads to bonding. The learning of tasks is secondary to initially using them as the behavioral link to teach human presence and reward. The acquisition of an independent level of performance on tasks is important in moving through the catch-on and generalization phases. Yet, in the beginning tasks are primarily vehicles to teach interactional control. Interactional control opens the door to bonding. The ultimate goal of teaching is interdependence—each person living, working and playing

in the confluence of family and community life with the minimal degree of support necessary, but at those points when he/she needs more support and intervention he/she must be able to have it available.

When the person's behaviors are so disruptive as to cause harm or prevent community integration the caregiver needs to "take away" the power of the person's maladaptive behaviors as a controlling factor in the interaction and "take over" the control of the interaction through the ignore-redirect-reward process. This generally takes anywhere from several hours to several days. The teaching goal is to arrive at a bonding between the caregiver and person.

"Taking over" the control of the interaction signifies that the caregiver assumes full responsibility for the prevention of harm, ongoing redirection and reward teaching. It does not signify that the caregiver takes an authoritarian, cold, mechanistic posture. The caregiver realizes that the behaviors which interfere with community life or which cause harm can only decrease as bonding is taught.

The desired initial outcome of instruction in most cases is to reduce or eliminate the need for 1:1 supervision and to teach the person to complete a sequence (making a bed, assembling a work sample, putting on pants, etc.) under his/her own "control." Gaining independence (control over his/her world) will create natural opportunities for reward.

The total process can therefore be conceptualized as a

"give and take" or a rhythmic flow between person and caregiver. Initially the caregiver takes total responsibility for the person's behaviors, the environment, his/her interactions with others and the responses to and consequences of behaviors. As the person and caregiver gain interactional control, greater independence on the task is acquired and the control is gradually given back to the person.

This process is seldom a smooth-flowing transition from superimposed control to self-controlled behavior. Neither can it be "prescribed" in a procedural fashion with specified criteria for changes as desired "objectives" are met. Rather this "give and take" process is more the "art" of teaching, with changes in the degree and intensity of prompts, assistance, verbal interaction, environmental control, etc. made on a moment-by-moment, as-needed basis.

Knowing when to increase assistance, when to back off, how to "bend without breaking," etc. comes primarily from a perceptive understanding of the person and a gentle posture. It varies from individual to individual. However, there are some guidelines that can be given which are best described along three interrelated factors: interactional intervention, caregiver expectations, and the person's behavior.

Insert Figure 1 here

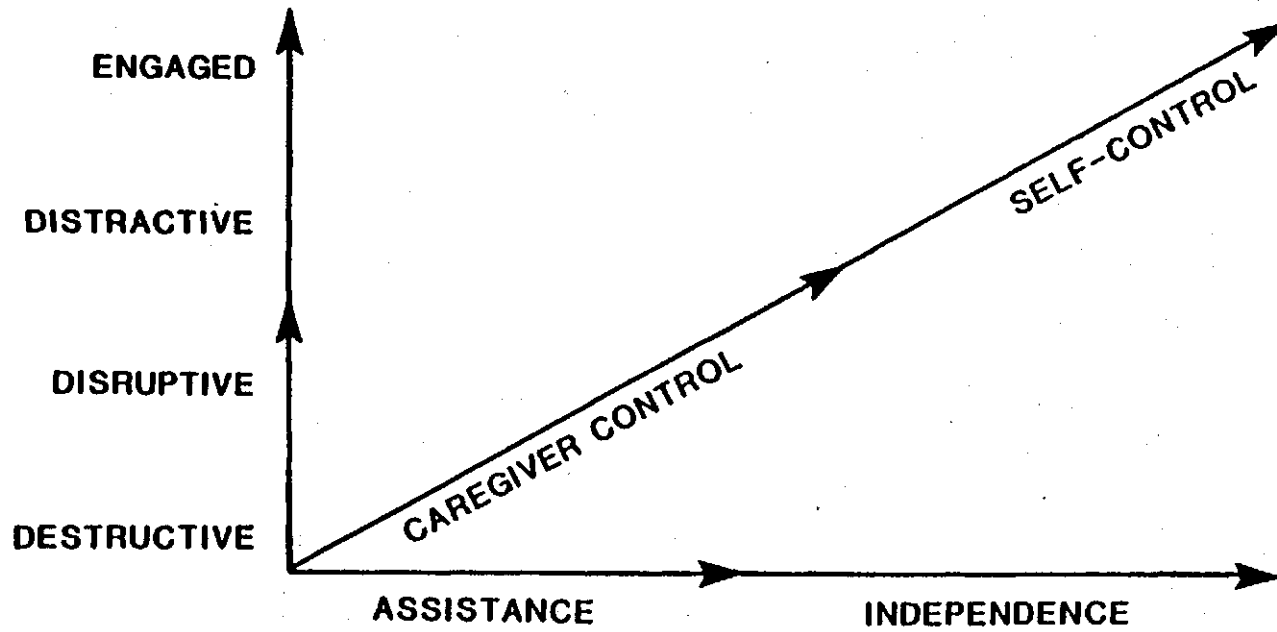
Interactional Intervention

Interactional intervention is basic in the teaching of



Figure 1

INTERACTIONAL INTERVENTIONISM



persons with challenging behaviors. The Gentle Teaching techniques allow interaction and instruction to occur, but initially impose caregiver control on the person's behaviors. Interactional intervention at the start of the bonding process implies that the caregiver prevents inappropriate behaviors from occurring and gives maximum assistance on tasks so as to be able to teach reward. As success on tasks occurs, controls are gradually reduced to allow for self-control to develop. However, this transfer of control is not a unilinear process. It fluctuates with the particulars of each situation. It is often necessary to "back track" in the transfer process and reimplement various control strategies before ongoing teaching can be attempted. This is often necessary not only when disruptive behaviors occur unexpectedly but also when such behaviors can be predicted. This may include any time when major changes in the interaction or environment occur, such as changes in the task, the environment, the caregiver, length of teaching time, etc. In some cases it is helpful to "tighten" the control at the beginning of each new situation. Once the person is engaged in the activity, it is possible (and important) to reduce these controls and allow him/her to gain independence on the task.

Typically increasing control prevents, reduces or eliminates problematic behaviors and allows teaching to continue. The amount of control required can then be rapidly decreased. Thus, there emerges for each person a continuum of interactional intervention strategies with a gradual but flexible movement toward

the person's self-control.

Caregiver Expectations

This factor represents the criteria used by the caregiver in deciding on the amount of intervention or assistance given on a moment-to-moment basis. It represents the probability of success or error which the caregiver allows. It is most easily understood as a continuum from errorless learning to successful and independent performance.

In most cases teaching is a shaping process where the person's performance gradually evolves into successful independence. Through repeated trials the caregiver's assistance is withdrawn and increased demands are placed on the person. The common expectation of caregivers is to see the person with mental retardation steadily progresses from one trial to the next and from day to day. This is not always the most helpful expectation for persons with problematic behaviors.

Just as it is often necessary to increase control when problematic behaviors occur, the caregiver's expectations regarding the person's independence must also be adjusted. Often expecting less independence and providing increased assistance is necessary to avoid or reduce problematic behaviors. Providing increased assistance means that the caregiver's expectation for independence on the part of the client must also be temporarily reduced. Once interactional control is established, expectations should be increased as less assistance is provided and greater demands for independence are presented to the person.

Expectations for independence must be varied not only when problematic behaviors occur but also when they are absent. At times it is too easy to sigh in relief at the absence of problem behaviors and relax caregiver expectations. This attitude often results in the missed opportunity for significant gains in independence, since the person is under interactional control and most available for instruction from the caregiver. Increased rather than relaxed efforts with the person should be the rule when behaviors are under control. Caregivers must remember that what they are teaching (the task) is the vehicle to teach interactional control and that as the person gains more independence on the tasks, he/she also has more opportunities to learn more complex forms of interactional control (e.g., self-correction, self-initiation, delayed reward, etc.).

Behavioral Expectations

The third factor represents the intensity of the person's behaviors. The goal is to move from destructive to disruptive or merely distractive behaviors and finally toward engaged behaviors. Destructive behaviors are those which can bring harm to the mentally retarded person him/herself, the caregiver(s) or even property. They are those which most concern caregivers and which traditionally result in the use of punishment and restraint. Most destructive behaviors are able to be prevented if caregivers identify the antecedents (precursors) which lead up to these behaviors and if they interrupt them before the person becomes destructive. These behaviors can bring the worst

out of caregivers (e.g., fear, anger and hostility). if the caregiver is not well grounded in his/her posture toward the mentally retarded person, it is likely that the caregiver will push the person into violence. Violence then breeds violence.

Disruptive behaviors are characterized by actions which break up the learning sequence, but which have not yet built up to a violent level. Often times these behaviors are precursors to destructive behaviors; other times they are milder forms of attention-seeking or avoidant behaviors. Generally, if the caregiver simultaneously ignores these behaviors and redirects the person to a task, the disruptive behaviors are brief and disappear rapidly. However, if the caregiver views them as "manipulation" and thus as "punishable," they often result in destructive behaviors. Distractive behaviors are minimal types of behaviors such as occasional off-task attention-seeking, mild self-stimulation and easily redirectable precursors to self-injurious and aggressive behaviors (e.g., a mild verbal threat). If the caregiver ignores these and redirects the person when distractive behaviors seem to be escalating, the retarded person remains well engaged. Engaged behaviors comprise the goal of all teaching. These behaviors are characterized by on-task involvement with minimal supervision, reasonable attending skills, the appropriate use of leisure time and, most importantly, the affectional ties which arise out of bonding with the caregivers. This categorization of behaviors represents a continuum of severity of behaviors typically encountered during structured teaching/

learning interactions. Behaviors will often fluctuate along this continuum with a general trend toward engaged behavior.

It is obvious that the highest degree of intervention is in the area of destructive behaviors. Such behaviors should be prevented and are preventable in most situations. The key to their prevention is the caregiver's posture toward the person—a posture of human warmth and solidarity rather than frigid authoritarianism, a posture which sets up conditions through environmental and stimulus control conducive to interactional participation. The prevention of these behaviors should be one of the basic goals of all caregivers. In fact what occurs is that caregivers often "push" the person down the continuum of behaviors either through the use of punishment or their own personal anger toward the mentally retarded person until violence is the result.

The Interactional Cycle

These three factors (that is, the degrees of caregiver intervention, the caregiver's expectations and the types of behaviors displayed) are interrelated and it is this interaction which provides additional guidelines for the Gentle Teaching approach. From the "behavior" perspective, as problem behaviors occur or are anticipated, increased caregiver control and reduced expectations of independence are required. Likewise, as control is re-established, the control interventions can gradually be reduced as increased demands for independence are placed on the person. A progression toward more "engaged" behavior is noted as greater self-control is obtained and as expectations

are gradually increased.

Tightening or loosening control and decreasing or increasing expectations mean different things in different situations. The key element is best described as that of ensuring success. Greater controls are placed on the person to increase the likelihood of participation and greater assistance is given to guarantee that this participation is successful. The result is that interactional reward accompanies successful participation. That is, the entire process or cycle of antecedents, behavior and consequence forms a rewarding cycle involving positive regard between the caregiver and person, successful task completion and the verbal and tactile praise given as a result of the successful task completion. Once the reward is given, interactional control begins to develop, controls are reduced and expectations increased. The caregiver's focus needs to shift from teaching tasks to teaching interactional control. The key to teaching interactional control is reward; the key to reward is providing enough assistance to ensure success on tasks.

This process fits well with the ignore-redirect-reward process. Redirection is not only a cue to return to the task; it often is a means of providing assistance (i.e., "Do this next!"). By varying the intensity of the assistance included in a redirection, success can be ensured. Similarly, increasing control can also be included in redirection or during the interruption of more severe behaviors. In all cases, reward is a goal which allows both interactional control and on-task learning

to occur.

Making Decisions in Gentle Teaching

At any given moment the caregiver needs to know how much assistance to provide, what combination of techniques to use and how much interruption or ignoring should occur. Too much assistance can lead to learned helplessness, too little to constant failure. Too much interruption can lead to punishment, too little to harm. Too much ignoring can lead to missed opportunities to redirect, too little to frustration.

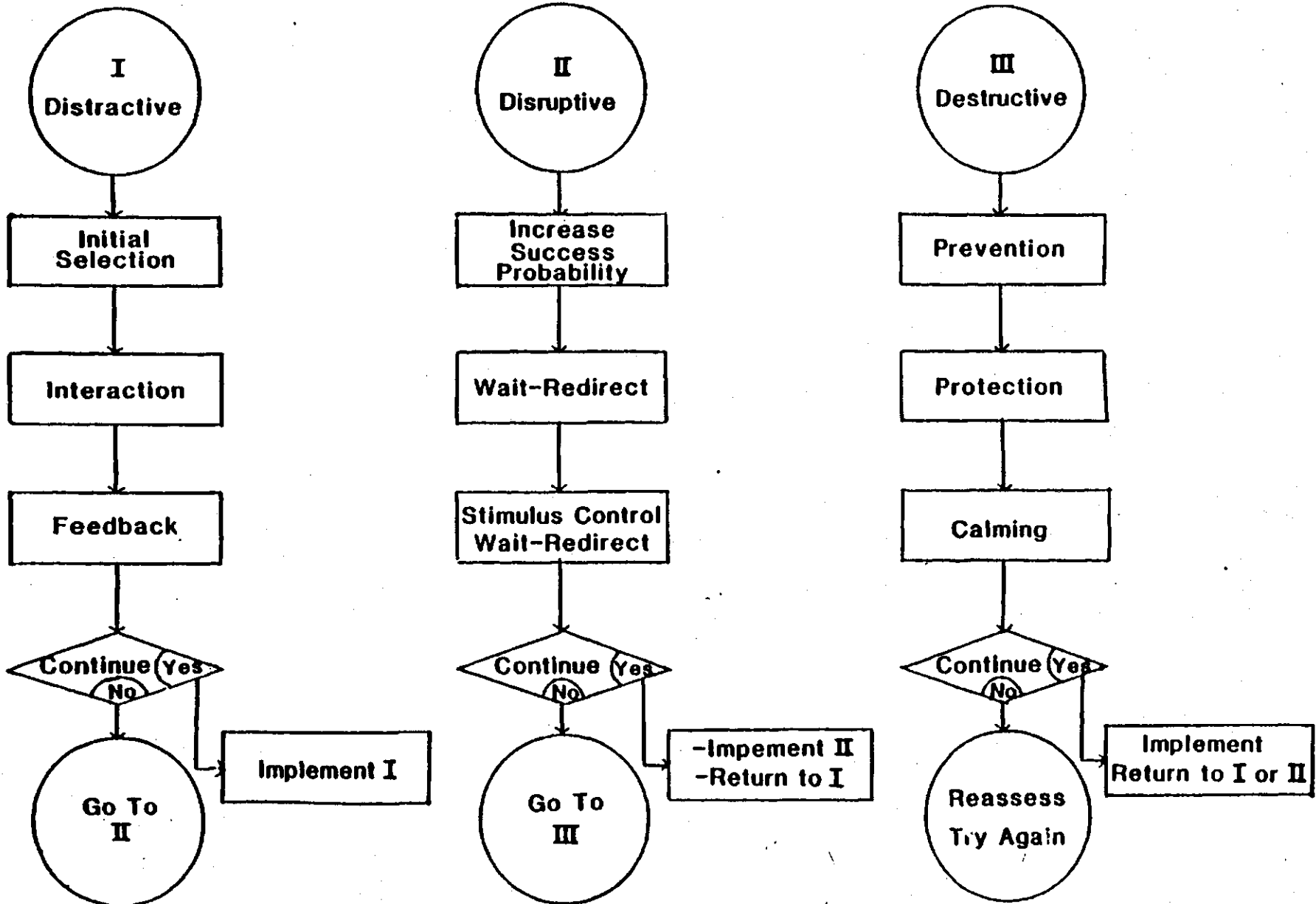
A key factor in decision-making is to define the seriousness of various behaviors at various points in time and to then develop general intervention strategies for those moments in an ebb and flow fashion, ever ready to give more support when necessary and sensitive to the moment when it should be withdrawn. There are three broad categories of inappropriate behaviors—distractive, disruptive and destructive behaviors. In this section we will examine each of these and offer intervention strategies.

Insert Figure 2 here

Distractive Behaviors

Distractive behaviors are minimal off-task behaviors which occur during the teaching-learning process. They often occur during structured activities, especially when interactional control and bonding have not yet been established. The first decision that must be made when inappropriate behaviors occur is whether teaching can continue in spite of such behaviors.

Figure 2
DECISION CHART



That is , are the behaviors simply "distractive" or do they interfere with learning? Often behaviors such as rocking in seat, talking or inappropriate vocalizations are not distractive enough to detract from teaching and such behaviors can simply be ignored while easily redirecting the person back to teaching activities with a simple gestural cue. Non-attending behaviors such as not looking at task materials, talking to others, etc., often fit the category of distractive behaviors and are best ignored as long as on-task behaviors continue. This is especially true when teaching tasks or interactions where "eye contact" may be helpful but not essential to participation or success on the task. If they are somewhat distractive a simple verbal or gestural redirection is strong enough to redirect the person to the task at hand. Caregivers need to give persons with distractive behaviors the freedom to engage in such behaviors as long as they do not interfere with learning or social interactions.

Disruptive Behaviors

Many behaviors encountered may accurately be considered disruptive to learning in the sense that they temporarily prevent the continuation of the teaching process. In these circumstances several strategies are available. The first strategy is to ignore the behavior and redirect the person back to the task. It is important to note that the meaning of "ignore" is somewhat different in this situation than in the previous strategy of continuing teaching with a simple verbal or gesture redirection. A caregiver cannot "ignore" such behaviors as attempting or

actually hitting, kicking, biting or scratching in the sense of allowing them to continue. These behaviors should be ignored in the sense that they should not be conseqated per se. That is, typical interventions as verbal reprimand, restitution, physical restraint, over-correction, time-out, etc. are not recommended. Because the essence of Gentle Teaching is to teach the power of human presence, participation and reward, it is counter-productive to use any consequences (besides actions to protect self or others) which might reinforce the maladaptive behaviors or reinforce any human distancing. While some precautionary or protective measures such as blocking a hit or avoiding a scratch or a kick might occasionally be necessary, the basic strategy is to redirect the person back to the task. This can be accomplished by physically assisting the person back to the task, physically or verbally prompting him/her on the next step of the task, providing verbal instructions, modeling the appropriate response or a combination of these techniques. This requires that the caregiver develop an attitude toward such behaviors which puts him/her in the disruptive person's shoes. The caregiver must avoid becoming personally offended or insulted. Although natural feelings, these inevitably lead to a punishment-based posture. Fighting violence with violence leads to more violence. Several moments may elapse between the "ignoring" and the "redirecting." In these moments the caregiver should neither look at nor say anything to the person. As calming occurs he/she should be redirected to the task. The caregiver has to almost

sense when calming begins to occur. Although not looking directly at the person, the caregiver needs to pick up on the physiological signs which indicate calming (e.g., reduction in finger tremors, distractibility, rocking, disorganized speech patterns, etc.). Once the person is again participating on the task, reward should be presented and normal training activities can be continued. This procedure focuses on teaching reward as the primary consequating condition rather than detracting from the power of reward with the introduction of punishment. More importantly, it focuses on the development of the bonding which initially must evolve between the caregiver and the client if learning is to occur.

In some cases it is not possible to immediately redirect an individual back to the task. A flurry or cluster of behaviors may occur which prevent return to the task, such as teaching materials being thrown or scattered, or scratching or hitting occurring each time the client is approached with materials. In these instances it is often appropriate to avoid immediate redirection and simply wait until the disruptive behaviors have subsided to some extent. Again these behaviors are ignored in the sense of protecting self or others and not consequating. Nothing is said in the way of a reprimand. The basis of this strategy is to shape the return to task involvement by gradually rewarding successive approximations to appropriate on-task behavior. Typically this involves periods of attending/rewarding alternated with periods of ignoring. Calm, non-aggressive, cooperative behaviors is usually rewarded first. This behavior may not

even result in on-task behavior. It is often just an approximation of cooperation. The cooperative behavior leads to task completion (or sub-step completion). The key is to be able to teach reward for even cooperative behavior. Indeed, caregivers need to understand that at this point rewarding cooperative participation (e.g., the person allowing the caregiver to give hand-over-hand assistance) is more important than task completion. Caregivers need to seek out any behavior for reward which is incompatible with the disruptive behavior.

Another strategy which can be employed involves a variety of tactics which modify the environment in an attempt to increase the probability of successful responses. While this strategy can be effective during a particular teaching session in managing disruptive behaviors, its primary focus is preventive and it therefore can be continued through each additional training session with the person. This involves adjusting either the teaching method or the environment to increase the likelihood of success. The first option involves adjusting the teaching method to increase correct responses and avoid errors. Disruptive behaviors are often responses to frustration or uncertainty about the required response. Increasing assistance or providing additional instructions or cues can help avoid errors and thus prevent disruptive behavior. There should also be a focus on environmental circumstances which allow or cue off-task behaviors. For example, excessive materials on a work table or desk can become "invitations" to disruptive behaviors for individuals

who have a History of throwing materials, just as sitting near the door can cue fleeing a room. Removing such materials or rearranging seating arrangements and proximity or access to exits can significantly reduce the likelihood of these inappropriate behaviors. By reducing the likelihood of these high probability, off-task behaviors through environmental and stimulus control, the chances of remaining on-task are usually increased. This approach can have a positive impact not only in managing a disruptive behavior, but also in establishing interactional control. Most importantly it increases the probability of learning the value inherent in human presence and participation.

These strategies, alone or in combination, often succeed in controlling the disruptive behaviors and allowing teaching to continue. Often the selection of one of these strategies is sufficient to re-establish control and continue teaching.

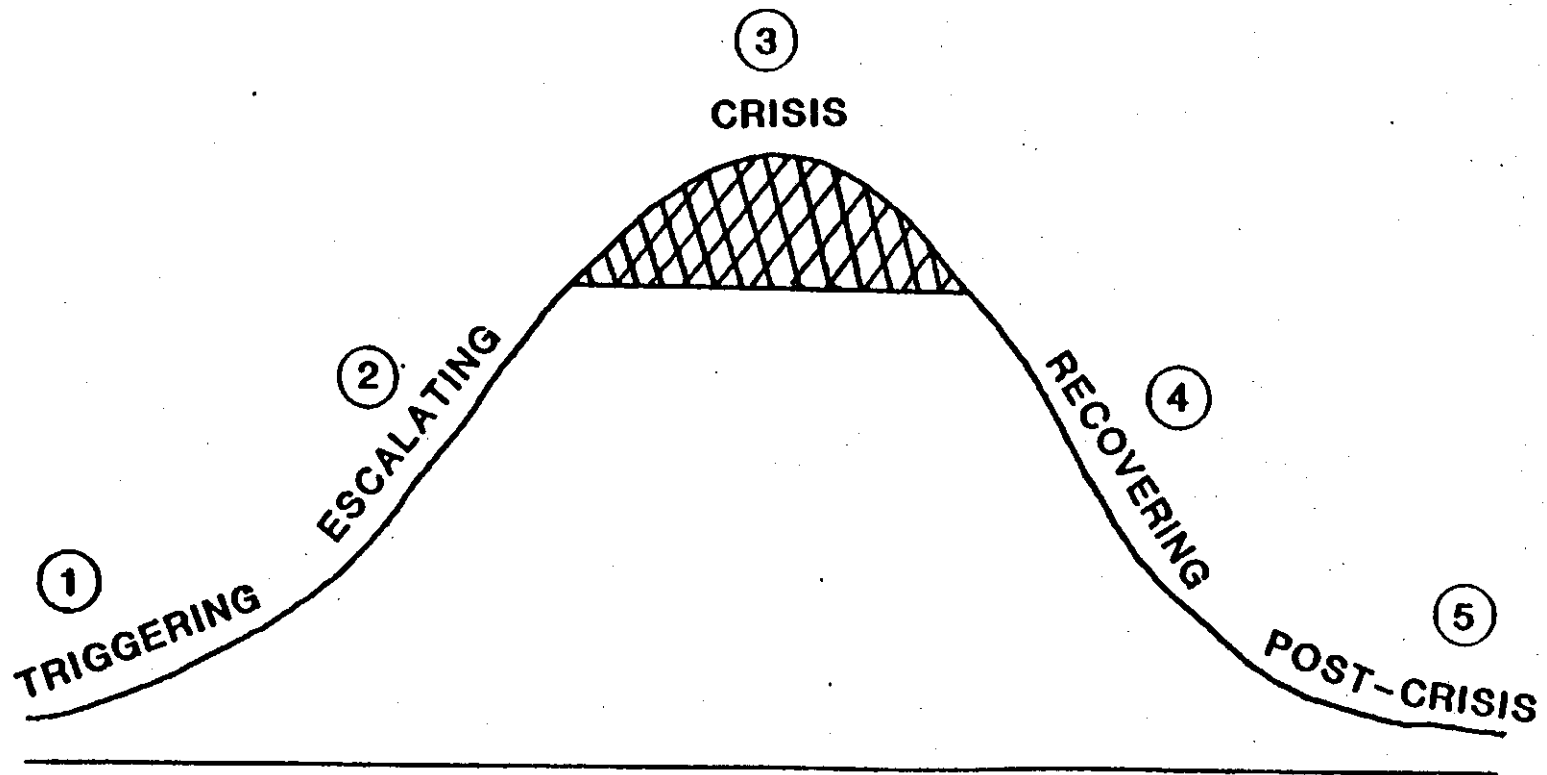
Destructive Behaviors

In some cases these strategies are not successful in managing disruptive behaviors and another decision must be made. This involves an assessment of the "direction" of the person's behavior, i.e., is the behavior "escalating" to an "out-of-control" phase—a phase which could result in behaviors which could be harmful to self or others—or has it already escalated?

Insert Figure 3 here

There are various phases in the evolution of assaultive or explosive behavioral episodes, starting with a triggering

Figure 3
PHASES IN BEHAVIORAL OUTBURSTS



phase during which the caregiver can see precursor (i.e., indicators) to an eventual crisis, a crisis phase and a calming phase. In general the previous strategies constitute an attempt to "defuse" this cycle in the initial precursor phase. The caregiver must immediately decide whether the strategies employed were successful in defusing or avoiding a behavioral crisis or whether the behaviors are going out of control. If the latter situation occurs, the most appropriate decision often is to interrupt activities.

When the decision to interrupt is made, there are three strategies that can be employed, again individually or in various combinations. The first is a prevention strategy. While the behaviors may be in the escalation phase, sometimes the interruption of the demands of the teaching situation are sufficient to "defuse" the escalation process. Often simply taking a "break" from teaching is sufficient to avoid a major behavioral crisis. With some persons the verbal cue that a break will occur can have a similar effect. This can often be done by asking and helping the person to complete "one more" so that the caregiver can terminate the task in "control." Engaging in a non-demanding activity such as taking a walk can help avoid or decrease an aggressive outburst. This is essentially a soothing and calming redirection. In essence this time (as brief as possible) serves as an exaggerated form of redirection by taking the person—either physically or psychologically out of an overly stimulating situation. As the person calms, the caregiver should give a concrete

goal-oriented redirection so that the person returns knowing what the expectations are. Caregivers should not fear that they are giving in or are being manipulated by the person. By the time the person is approaching a behavioral outburst, he/she is virtually irrational, knowing neither the nature nor the consequences of the behaviors. It is much preferable to focus on decelerating the outburst and redirecting the person—rather than focusing on punishment or retribution.

In some cases the escalation phase progresses to the crisis or "outburst" phase and in these situations the only strategy is often one of protecting the person, others and (least importantly) property. Separating the person from others, either by moving to another room or by maintaining separation with objects (tables, chairs, etc.) can help protect others. Removing dangerous or valued objects from the area is another example of a protective strategy. In rare instances this involves physically restraining the person by using an open-handed, non-threatening approach. Calming in a non-punitive manner is the goal. This should be done in as non-reinforcing a manner as possible and for as short a time as possible. Although possibly reinforcing, these strategies are done only to protect the person and others from harm. Any strategies which focus on force should be avoided.

A third strategy that is often effective involves a "calming" or relaxation approach. Talking in a soothing, reassuring voice can help "de-escalate" an outburst as it is about to or is occurring and deep breaths exhaled can have a relaxing effect that also

helps avoid crisis situations. These techniques are helpful in the recovery phase if a crisis cannot be avoided.

The major purpose of this decision-making process is to allow the caregiver to decide upon several strategy "paths" which all have the objective of engaging the learner in an "interactionally-controlled" instructional activity. The goal in a sense is to come "full circle" through several teaching or management strategies to a manageable, non-destructive learning situation. The basic model for this process is a problem-solving approach of identifying, selecting and implementing strategies; evaluating the results; and modifying strategies accordingly. While the strategies identified here are valuable, the importance of the "feedback" loop cannot be over-emphasized. Without the "fine tuning" that occurs with the observation of the effects of a particular strategy, the strategies described here are not likely to be successful. It is the exponential effects of this feedback process (both minute-by-minute and day-by-day) that increase interactional control and allow for success in dealing with the most challenging individuals.

Conclusion

As behaviors become more destructive, there is a greater need for caregiver control and assistance. In the decision-making flow chart the caregiver's control and assistance are superimposed on the person as behaviors become more unmanageable. Interactional control arises out of this superimposed "control" and assistance. This enables the caregiver to literally teach the value of human

presence and participation—ignoring even extremely maladaptive behaviors (yet not allowing any harm) while redirecting the person toward appropriate interactional behaviors.

REFERENCES

- Azrin, N.H., Besalel, V.A., & Wisotzek, I.E. Treatment of self-injury by a reinforcement plus interruption procedure. *Analysis and Intervention in Developmental Disabilities*, 1982, 2 (1), 105-113.
- Azrin, N.H., Schaeffer, R.M., & Wesolowski, M.D. A rapid method of teaching profoundly retarded persons to dress by a reinforcement-guidance method. Mental Retardation. 1976, 29-33.
- Azrin, N.H., & Wesolowski, M.D. A reinforcement plus interruption method of eliminating behavioral stereotypy of profoundly retarded persons. *Behavior Research and Therapy*. 1980, 18, 113-119.
- Bandura, A. *Principles of Behavior Modification*. New York: Holt, Rinehart and Winston, 1969.
- Bandura, A. Social Learning Theory. Englewood Cliffs, NJ: Prentice Hall, 1977.
- Becker, W.C., & Engelmann, S. Analysis of achievement data on six cohorts in the Direct Instruction Follow Through model. Technical Report 76-1, University of Oregon, Eugene, 1976.
- Becker, W.C., & Engelmann, S. Systems for basic instruction: Theory and applications. In, A. Catania & T. Brigham (Eds.), Handbook of Applied Behavior Analysis: Social and Instructional Processes. New York: Irvington Publishers, 1978.

- Bellamy, G.T., Horner, R.H., & Inman, D.P. Vocational Habilitation of Severely Retarded Adults: A Direct Service Technology. Baltimore: University Park Press, 1979.
- Bellamy, G.T., Wilson, D., Adler, E., & Clarke, J. A strategy for programming vocational skills for severely handicapped youth. Exceptional Children Quarterly. 1980, 1, 85-98.
- Bensberg, G.J., Colwell, C.N., & Cassel, R.H. Teaching the profoundly retarded self-help activities by behavior shaping techniques. American Journal of Mental Deficiency. 1965, 69, 674-679.
- Berkson, G., & Mason, W.A. Stereotyped movements of mental defectives: IV. The effect of toys and the character of the acts. American Journal of Mental Deficiency. 1964, 68, 511-524.
- Boe, R.B. Economical procedures for the reduction of aggressions in a residential setting. Mental Retardation. 1977, 15, (5), 25-28.
- Brown, F., Holvoet, J., Guess, D., & Mulligan, M. The individualized curriculum sequencing model (III): Small group instruction. Journal of the Association for the Severely Handicapped. 1980 5, 352-367.
- Carr, E.G., Newsom, C.D., & Binkoff, J.A. Stimulus control of self-destructive behavior in a psychotic child. Journal of Abnormal Child Psychology. 1976, 4, 139-153.

- Carr, E.G., Newsom, C.D., & Binkoff, J.A. Escape as a factor in the aggressive behavior of two retarded children. Journal of Applied Behavior Analysis. 1980, 13, 101-117.
- Coon, M.E., Vogelsberg, R.T., & Williams, W. Effects of classroom public transportation instruction on generalization to the natural environment. Journal of the Association for the Severely Handicapped. 1981, 6, 46-53.
- Cronin, K.A., & Cuvo, A.J. Teaching mending skills to mentally retarded adolescents. Journal of Applied Behavior Analysis. 1979, 12, 401-406.
- Dorry, G.W., & Zeaman, D. The use of a fading technique in paired-associate teaching of a reading vocabulary with retardates. Mental Retardation. 1973, 11, 3-6.
- Favell, J.E., McGimsey, J.F., & Schell, R.M. Treatment of self-injury by providing alternate sensory activities. Analysis and Intervention in Developmental Disabilities. 1982, 2 (1), 83-104.
- Ferster, C.B. Reinforcement and punishment in the control of human behavior by social agencies. Psychiatric Research Reports. 1958, 101-118.
- Foxx, R.M., & Azrin, N.H. The elimination of autistic self-stimulatory behavior by overcorrection. Journal of Applied Behavior Analysis. 1973, 6, 1-14.
- Gardner, W.I. Behavior Modification in Mental Retardation. Chicago: Aldine Publishing, 1971.

- Gaylord-Ross, R.J., Weeks, M., & Lipner, C. An analysis of antecedent, response and consequent events in the treatment of self-injurious behavior. Education and Training of «-h» Mentally Reharri>|j. 1980, 15. ID, 35-42.
- Gold, M.W. Stimulus factors in skill training of the retarded on a complex assembly task: Acquisition, transfer and retention. American Journal of Mental Deficiency. 1972, 2L, 517-526.
- Gold, M. Research on the vocational rehabilitation of the retarded: The present and future. In N. Ellis (ed.), International Review of Research in Mental Retardation. New York: Academic Press, 1973.
- Harris, F.R., Wolf, M.M., & Baer, D.M. Effects of adult social reinforcement on child behavior. Young Children. 1964, 21, 8-17.
- Heads, T.B. Ethical and legal considerations in behavior therapy. In, D. Marholin II (Ed.), Child Behavior Therapy. New York: Gardner Press, 1978.
- Hewitt, F.M. Educational engineering with emotionally disturbed Children. Exceptional Children. 1967, 21, 459-467.
- Horner, R.D. The effects of an environmental "enrichment" program on the behavior of institutionalized profoundly retarded Children. Journal of Applied Behavior Analysis. 1980 U (3), 473-491.

Horner, R.D., & Barton, E.S. Operant techniques in the analysis and modification of self-injurious behavior: A review. Behavioral Research of Severe Developmental Disorders. 1980, 1, 61-91.

Horner, R.H., Colvin, G.T., & Bellamy, G.T. Responding in the presence of non-trained stimuli: An applied analysis of "generalization." Unpublished manuscript, Division of Special Education and Rehabilitation, University of Oregon, Eugene, 1981.

Horner, R.H., & McDonald, R.S. A comparison of single instance training versus general case training on the acquisition of a generalized vocational skill by four severely handicapped high school students. Unpublished manuscript, Division of Special Education and Rehabilitation, University of Oregon, Eugene, 1981.

Irvin, L.K. General utility of easy-to-hard discrimination training procedures with the severely retarded. Education and Training of the Mentally Retarded. 1976, H, 247-250.

Karan, O.C. Habilitation programming for behaviorally disordered mentally retarded adults: Just because it feels right does not mean it is. In, O.C. Karan & W.I. Gardner (Eds.), Habilitation Practices with the Developmentally Disabled Who Present Behavioral and Emotional Disorders. Madison, WI: Research and Training Center in Mental Retardation, University of Wisconsin-Madison, 1983.

- Kazdin, A.E. Acceptability of alternative treatment for deviant Child behavior. Journal of Applied Behavior Analysis. 1980, 11, 259-273.
- Koegel, R.L., & Egel, A.L. Motivating autistic children. Journal of Abnormal Psychology. 1979, 21, 418-426.
- Koegel, R.L., & Williams, J.A. Direct vs. indirect response-reinforcer relationships in teaching autistic children. Journal of Abnormal Child Psychology. 1980, 8, 537-547.
- Lambert, J.L. Extinction by retarded children following discrimination learning with and without errors. American Journal of Mental Deficiency. 1975, 286-291.
- Madsen, C.H., Jr., Becker, W.C., Thomas, D.R., Koser, L., & Plager, E. An analysis of the reinforcing function of "sit down" commands. In, R.K. Parker (Ed.), Readings in Educational Psychology. Boston: Allyn and Bacon, 1968.
- Mulick, J., Hoyt, R., Rojahn, J., & Schroeder, S. Reduction of a "nervous habit" in a profoundly retarded youth by increasing toy play: A case study. Journal of Behavior Therapy and Experimental Psychiatry. 1978, 8, 381-385.
- Murphy, M.J., & Zahm, D. Effect of improved physical and social environment of self-help and problem behaviors of institutionalized retarded males. Behavior Modification. 1978, 2, 193-210.
- Panyan, M., & Hall, R.V. Effects of serial versus concurrent task sequencing on acquisition, maintenance and generalization. Journal of Applied Behavior Analysis. 1978, 11, 67-74.

- Peterson, R.F., & Peterson, L.R. The use of positive reinforcement in the control of self-destructive behavior in a retarded boy. *Journal of Experimental Child Psychology*. 1968, 6, 351-360.
- Plummer, S., Baer, D.M., & LeBlanc, J.M. Functional considerations in the use of procedural timeout and an effective alternative. *Journal of Applied Behavior Analysis*. 1977, 10, 689-705.
- Rago, W.V., Parker, R.M., & Cleland, C.C. Effect of increased space on the social behavior of institutionalized profoundly retarded male adults. *American Journal of Mental Deficiency*. 1978, 82., 554-558.
- Saunders, R., & Sailor, N. A comparison of three strategies of reinforcement on two-choice language problems with severely retarded children. AAESPH Review, 1979, A, 323-333.
- Sidman, M., & Stoddard, L.T. Programming perception and learning for retarded children. In, N.R. Ellis (Ed.), International Review of Research in Mental Retardation (Vol. 2). New York: Academic Press, 1966.
- Sidman, M., & Stoddard, L.T. The effectiveness of fading in programming a simultaneous form discrimination for retarded Children. *Journal of the Experimental Analysis of Behavior*. 1967, 10., 3-15.
- Skinner, B.F. *Science and Human Behavior*. New York: The Free Press, 1953.

- Sprague, J.R., & Horner, R.H. Experimental analysis of generalized vending machine use with severely handicapped students. Unpublished manuscript, Division of Special Education and Rehabilitation, University of Oregon, Eugene, 1981.
- Stokes, T.F., & Baer, D.M. An implicit technology of generalization. Journal of Applied Behavior Analysis. 1977, 10, 349-367.
- Striefel, S., & Wetherby, B. Instruction-following behavior of a retarded child and its controlling stimuli. Journal of Applied Behavior Analysis. 1973, 1, 663-670.
- Striefel, S., Wetherby, B., & Karlan, G. Developing generalized instruction-following behavior in the severely retarded. In C. Mevers (Ed.). Quality of Life in Severely and Profoundly Mentally Retarded Peoples Research Foundations for Improvement. Washington, D.C.: American Association on Mental Deficiency, 1978.
- Tarpley, H.D., & Schroeder, S.R. Comparison of DRO and DRI on rate of suppression of self-injurious behavior. American Journal of Mental Deficiency. 1979, 84, 188-194.
- Terrace, H.S. Discrimination learning with and without errors. Journal of the Experimental Analysis of Behavior. 1963, 1, 1-27.
- Terrace, H.S. Stimulus control. In W.K. Honig (Ed.), Operant Behavior; Areas of Research and Application. New York: Appleton-Century-Crofts, 1966.

- Touchette, P.E. The effects of graduated stimulus change on the acquisition of a simple discrimination in severely retarded boys. Journal of the Experimental Analysis of Behavior, 1968, 11, 39-48.
- Touchette, P.E. Transfer of stimulus control: Measuring the amount of transfer. Journal of the Experimental Analysis of Behavior, 1971, 15, 347-354.
- Touchette, P.E., & Howard, J.S. Errorless learning: Reinforcement contingencies and stimulus control transfer in delayed prompting. Journal of Applied Behavior Analysis. 1984, 11, 175-188.
- Walls, T.R., Haught, P., & Dowler, D.L. Moments of transfer of stimulus control in practical assembly tasks by mentally retarded adults. American Journal of Mental Deficiency, 1982, 87 (3), 309-315.
- Walls, R.T., Zane, T., & Ellis, W.D. Forward chaining, backward chaining, and whole-task methods: Training assembly tasks in vocational rehabilitation. Behavior Modification. 1981, 5, 61-74.
- Walls, R.T., Zane, T., & Thvedt, J.E. Trainer's personal methods compared to two structured training strategies. American Journal of Mental Deficiency. 1980, 495-507.
- Weeks', M., & Gaylord-Ross, R.J. Task difficulty and aberrant behaviors in severely handicapped students. Journal of Applied Behavior Analysis. 1981, 14, 449-463.

Williams, J.A., Koegel, R.L., & Egel, A.L. Response-reinforcer relationships and improved learning in autistic children. *Journal of Applied Behavior Analysis*, 1981, 14, 53-60.