EMOÇÕES E COMPORTAMENTO EMOCIONAL: UMA ABORDAGEM CONSTRUCIONAL PARA COMPREENDER ALGUNS BENEFÍCIOS SOCIAIS DA AGRESSÃO

EMOTIONS AND EMOTIONAL BEHAVIOR: A CONSTRUCTIONAL APPROACH TO UNDERSTANDING SOME SOCIAL BENEFITS OF AGGRESSION[1]

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HEADSPROUT

RESUMO

A distinção entre emoção e comportamento emocional é uma diferenciação importante que não tem sido feita amplamente. Apesar das muitas abordagens existentes para emoção, a abordagem utilizada aqui é baseada em uma análise de contingência conseqüencial. Emoção é tratada não como uma causa do comportamento, nem causada pelo comportamento. Em vez disso, tanto o comportamento quanto a emoção (um evento privado especificamente) são considerados como função de contingências de seleção. O objetivo não é mudar emoções, mas tornar o cliente sensível a elas, e dessa maneira às contingências das quais elas são função. Quando alguém age mostrando características comportamentais e fisiológicas tipicamente associadas com uma emoção, a evidência pública é tratada como comportamento emocional. Um exemplo construído sobre uma forma de comportamento agressivo é utilizado para ajudar a fazer a distinção entre emoções e comportamento emocional, e fornece uma ilustração da transição de emoção como um descritor de uma contingência conseqüencial para o comportamento emocional que é mantido pelas próprias conseqüências. Uma vez que emoção muda para comportamento emocional, a emoção privada sentida pode não ser mais indicativa da contingência originária da qual ela era um descritor, mas em vez disso pode ser um componente necessário para alcançar o requisito da contingência.

Palavras-chave: emoções, comportamento emocional, agressão, contingência conseqüencial, eventos evocativos, pontencializar

ABSTRACT

The distinction between emotion and emotional behavior is an important one that has largely not been made. There are many approaches to emotion and the approach taken here is based on a consequential contingency analysis. Emotion is treated not as a cause of behavior, nor as caused by behavior. Rather, both behavior and emotion (a strictly private event) are considered to be a function of contingencies of selection. The goal is not to change emotions, but to help sensitize the client to them and thereby to the contingencies of which they are a function. When one acts while displaying the behavioral and physiological characteristics typically associated with an emotion, this public display is treated as emotional behavior. An example drawing on a form of aggressive behavior is used to help make the distinction between emotions and emotional behavior and to provide an illustration of the transition of emotion as a descriptor of a consequential contingency to emotional behavior that is maintained by consequences in its own right. Once emotion transitions to emotional behavior, the private emotion felt might no longer be indicative of the originating contingency of which it was a descriptor, but instead may be a necessary component to meet a contingency requirement.

Key Words: emotions, emotional behavior, aggression, consequential contingency, evocative events, potentiate

Emotions have been of interest to science for some time. The great 19th century biologist Charles Darwin (1872) thought it was important enough to devote an entire book to the subject. The young field of psychology took up the topic early in the next century. As the distinguished 20th century behavioral scientist Israel Goldiamond (1975a) summarized:

> Many theories have been formulated to account for emotion, and to relate it to behavior. Some approach emotion from an evolutionary,

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developmental point of view, citing its functions in the survival of the organism. Others take a physiological point of view, focusing on the role of the autonomic and central nervous systems. Emotions have been considered to be a complex set of autonomic and skeletal responses, from which the practitioner makes inferences, and it has been argued that the emotional experiences of the client himself derive from such responses. This, in essence, is the James-Lange theory of emotions. It states that emotions are the experiential concomitants of such responses, which, in turn, are the feedback from the behavior itself. This is reflected in the statement, "He threatens me; I hit him; therefore [the feedback from hitting], I am furious." This statement is in opposition to the more classic formulation, "He threatens me; I am furious; therefore, I hit him." Experimental distinction between the two formulations has been inconclusive, and other theories have been proposed, including physiological theories. (p. 70)

Recently, attempts have been made to analyze emotions through computer simulation (Johnston, 1999), face recognition (Ekman, 2003), neuroimaging (see for example, Baas, Aleman, & Kahn, 2004), other brain research (Damasio, 2003; LeDoux, 1996) and Developmental Systems Theory (Griffiths, 1997). Many of these approaches rely on essentialist (after Donahoe & Palmer, 2004) explanations that often consider emotions to be fixed brain reactions to certain triggering stimuli. Some behavioral approaches tend to accept this position as well, often with an extension of triggering events to those stimuli paired with other "originating or primary" stimuli (often internal) such that there is some transfer of function from one stimulus to the next (Friman, Hayes, & Wilson, 1998).

Another position, articulated by Goldiamond (1974; 1979a), is that emotions may be approached within the context of a contingency analysis. As Goldiamond (1974, reprinted 2002) notes:

We consider emotions neither as caused by behavior, in the James-Lange tradition, or as causing behavior, in the more classic tradition. We consider them as contingency-related. Often they serve to indicate important contingencies which have been omitted…

… Extinction, high cost, and punishment contingencies usually accompany reports of anger and fear, in accord with the laboratory literature on the emotional effects of such contingencies. Occasionally, atypical entries appear: a homosexual masturbated and a clinically obese patient stuffed himself after the occurrence of transactions describable as extinction and high cost contingencies. In all cases, affect is related to the contingencies and is used to teach the patient to uncover such contingencies in their inception and before they become controlling. Thus, the blushing of a woman increased until her face turned purple, at which point the others noted that their conversation embarrassed her and changed the topic. She was told: Your skin is more sensitive to the embarrassing trend of a conversation than your ears are. Heed it. When you start feeling hot, stop, look, and listen, and start changing the direction of the conversation then. A contingency analysis of emotions does not attempt to eliminate those emotions considered undesirable, disruptive, or distressful. It attempts to sensitize people to those emotions so they can be utilized to analyze and control the contingencies relevant to them and thereby to control these emotions. (p.146, 2002)

In this approach, feelings are not the cause of action, nor are actions the cause of feelings. Instead what is felt, a private event, may describe a regnant contingency. For our purposes these private events will be designated as emotion. A feeling may be expressed publicly and may accompany other behaviors that together may be necessary to meet a contingency requirement. These behaviors will be designated as emotional behavior. This distinction between an emotion, as a descriptor of a contingency, and emotional behavior, as a required component of reinforced behavior, is an important one. In the former, the emotion may tell us something about environmental requirements by reflecting a particular type of contingency; that is, it may help us with a contingency analysis. In the case of emotional behavior, the accompanying emotion may be part of the requirement for reinforcement. Whereas the first treatment of emotion shares characteristics with some of the more essentialist theories, the roles these private events play are considered here to be tightly woven into the consequential contingencies of which the behavior is a function. This treatment can be extended to include the analysis of complex social and societal emotions as "descriptors" of intricate nonlinear, or alternative sets, of contingencies and satellite variables that are often social in nature (Gimenes, Layng, & Andronis, 2003; Goldiamond, 1975b, 1976, 1979b, 1984; Layng, 1995, 2003; Layng & Andronis, 1984; Layng & Robbins 2002). Such nonlinear analyses often obviate the need to resort to two factor accounts as well. That is, they may remove the need to postulate that an observed behavior is a function of the removal (or presentation) of some internal or private event or feeling (factor 1) that has been triggered by yet another event (factor 2). This treatment, however, is beyond the scope of this paper and is the subject of another work in preparation.

As stated earlier, emotions, as the term is used here, are private events. That is, emotions or feelings are only truly accessible to the individual experiencing them. As a private event, emotions raise special problems for a scientific analysis of behavior. One solution is to use some observable response as an indicator of the occurrence of the emotion. This is not, however without many problems of its own, including the problems inherent in using overt responses as indicators of private events, and their questionable role in the assignment of causation. Since this has been addressed in detail elsewhere (see Layng, 1995), it will not be discussed here.

This issue, however, may not be considered necessarily to undermine the present effort. The goal of this paper is to begin to describe a useful set of tools, a heuristic, for working with emotions and for determining the contingencies of reinforcement that may be maintaining behaviors of interest, in this case, those that constitute some forms of aggression. The goal is not to present a fully scientific account of emotions or aggression, but to demonstrate a way of working with emotions as private events using what has been learned developing a science of behavior and its applications. The analysis presented here is an extension of concepts first developed by Israel Goldiamond (1974, 1975a, 1979a) over thirty years ago, with whom the author had the privilege of collaborating on this and other topics. Accordingly, the analysis presented represents a combination of Goldiamond's and the author's thinking.

EMOTIONS AS DESCRIPTORS OF SOME BASIC CONTINGENCY RELATIONS

Fear and anger are basic emotions experienced by us all. When afraid we may run, when angry we may attack –the common flight or fight. Anger may give way to fear, and fear to anger. There appears to be a common feature to both. A contingency analytic approach looks for this commonality not in the essence of the emotion, nor in a common property found in all things that make us afraid or angry, but in common properties of similar contingencies. In the case of fear and anger, a common feature of the contingency appears to be reinforcement by an increase in distance between an individual and some object or event. Stated differently, one will engage in a variety of behaviors to produce a greater distance between oneself and a particular event or object. However, both emotions can also be distinguished one from another. Accordingly, a contingency analytic position dictates that though both emotions share common contingency elements, there must be differences as well. How the distancing is achieved may differentiate the contingency fear describes, and the contingency anger describes. With fear, distance is achieved by removing oneself from the event, –flight. With anger, distance is achieved by removing the event, –fight (Goldiamond, 1979a).

Basic "positive" emotions may, conversely, be described as contingencies involving nearing relations; that is, a "nearing" is achieved by either bringing oneself closer to an event or object, or by bringing the event or object closer to the individual. The different emotions described by longing, chasing (in some instances predation may enter), enticing, seducing, etc. may be descriptors of these relations.

If it were simply a matter of certain emotions describing certain contingencies or alternative sets of contingencies (Layng & Andronis, 1984; Goldiamond, 1975b, 1984) our task of understanding emotions would be greatly simplified. Unfortunately, emotions, even basic ones, do not typically remain private. Aggressive behavior, for example, is usually considered as an attempt to damage an opponent, chase someone away, or exert control over another; in all cases distancing the event or producing stimuli associated with distancing; accordingly, aggression is often associated with anger and fear. A person may appear to get "worked-up." We may observe an increase in heart rate, an increase in speech rate, and perhaps an increase in other activities such as pacing, running, or screaming. The indicators of the emotion describing this distancing relation may be quite public. But once public, the emotional indicators may become candidates for selection by a contingency relation that may be quite different than the contingency the originating "felt" emotion describes. The contingent environment may adduce (after Andronis, Layng, & Goldiamond, 1997; Layng & Andronis, 1984) entirely new repertoires from those whose initial function was described by a totally different contingency. The emotional indicators and perhaps the emotions to which they are linked may take on a new function quite different from the original. These "emotional behaviors" may come to have consequences of their own, and may be occasioned by quite different events than those evoking the original emotion. It is this transition from emotion to emotional behavior that provides one of the challenges to understanding emotions and the role they play in complex human behavior. In regard to aggression, the question is raised as to

whether some forms of aggression and the accompanying affect are a description of distancing contingencies, and an attempt to obtain such distance, or an operant selected by its success in meeting a host of social outcomes. It is this topic that shall be addressed in the remainder of this paper, using an analysis of aggressive behavior and its constructional (after Goldiamond, 1974, 1975a) treatment in a controlled environment, i.e. a group home, as a basis for the discussion.[3]

In a constructional approach, the emphasis is upon establishing patterns, the absence of which is the problem (Goldiamond, 1974). Disturbing behavior is considered an adaptive (though often costly) outcome of the selective action of alternative sets of contingencies. Considering the behavior to be adaptive does not imply a lack of suffering, either on the part of the individual or the community. It implies only that the occurrence of disturbing behavior and its alternatives have been shaped and maintained by a matrix of potent consequences (see for example, Goldiamond, 1974; Layng & Andronis, 1984). Accordingly, understanding disturbing–behavior requires understanding the matrix of consequential contingencies into which the behavior and its available alternatives enter (Goldiamond, 1975b, 1979b, 1984).

A Contingency Analysis of Emotion and the Treatment of Aggression

Damage to another, warding off an attack, and keeping others away from one's turf all may at times be the consequences maintaining aggression. Feelings of anger may likely accompany these contingencies and describe them. However, the social nature of aggressive behavior suggests these behaviors may produce other consequences as well. These social outcomes of aggression, especially at a facility such as a group home, may account for more aggressive episodes than the more readily acknowledged outcomes of aggression, and obscure a more effective analysis and treatment. Distinguishing emotions, which describe or tact (after Skinner, 1957) a set of contingencies, from emotional behavior, which is directly maintained by a set of contingencies, becomes a critical requirement for effective intervention. It also helps to bring clarity to the apparent inconsistencies of observed emotional indicators.

The obvious disruptive and damaging outcomes of aggression may in fact hide other social benefits of acting aggressively; "who do you want to hurt?" may not necessarily be the right question. Aggressive acts that tend to be directed at property, fights with no real attempt to damage another (although this may be a by-product), and unprovoked "outbursts" all may indicate that certain social benefits may be maintaining the aggressive behavior. But why are emotional outbursts and behaving aggressively the behavior of choice to achieve these social benefits? This is particularly perplexing when the typical consequences of aggression (i.e., damage) are not the critical consequences. And, why do acts of aggression often appear to occur unprovoked or with little provocation?

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3   It should be noted that anger and aggression are used for illustrative purposes and that a broader range of basic emotions, as well as social emotions (e.g., guilt, shame, embarrassment, pride) and societal emotions (e.g., prejudice, bigotry, patriotism) are equally amenable to a contingency analysis (Layng & Robbins, 2002). Though the analysis presented here does not draw upon current neuroscience investigations, it is not in conflict with them. Indeed, a more complete understanding of the role of consequential contingencies in understanding both emotions and emotional behavior is likely to provide a basis for a more complete account of brain, behavior, environment relations. A broader treatment of these relations is currently in preparation.

Aggressive episodes that might occur at a group home, or in a related context, cannot typically be tolerated. The elimination of these episodes is important for the maintenance of a secure living environment for the residents, as well as the progress of the aggressing client. Aggressive patterns, which have disturbing consequences for other persons or for a facility, typically result in efforts to decrease the frequency of the pattern. Programs aimed at decreasing aggression often employ some type of response cost or reward loss. Although this may work at times, and may be necessary for the good of the overall program, the effects tend to be transitory and often short-lived. Drug therapy (or chemical restraint) can end up being the only apparent recourse.

To better understand what might be done, it is necessary to describe some of the basic behavioral processes that may be responsible for aggressive episodes. In order to increase the frequency of a particular class of behaviors, it is common practice to make a consequence contingent on behaviors of that class. What is often over looked, however, is that if a particular behavioral episode is already occurring frequently, an important consequence is likely contingent upon its occurrence. Finding the consequential relations maintaining frequently occurring disturbing behavior is critical to understanding it. Further, placing the episode in a larger context and examining alternative contingencies, that is, asking, "What are the consequences for behaving differently?" is of equal importance (after Goldiamond, 1974; 1975a, 1979b, 1984; Layng & Andronis, 1984).

What is also often overlooked is that the same form or topography of behavior may be producing different benefits on different occasions, thereby serving different functions on those occasions. Programs targeted toward decreasing the frequency of aggressive behavior may be also decreasing the frequency of important social benefits. If the conditions still exist that make those benefits important, the program used to decrease those behaviors, whether it be behavioral or chemical, will only have a suppressive effect and therefore be transitory. Remove the program or the drug, with the original contingencies still in place, and the suppressed pattern will likely recur (see Wylie & Grossmann, 1988).

Trying to understand the underlying emotion and what it reflects may be an initial step, but other behavioral processes need to be investigated if a program to replace aggression with other more successful patterns is to have lasting effects. First, the benefits of aggression not typically associated with acting aggressively need to be identified. This investigation must include the various occasions for acting aggressively and the consequences produced under those occasions. It is not atypical to find a single emotional report (and the aggressive behavior itself) serving many different functions, including as a true tactor of a distancing contingency. Each function must be addressed and the benefits (if possible) provided for other behaviors less disturbing and less costly to the individual. Second, where an individual either has poor communication skills, or attempts at directly requesting have had little success, aggression may be a substitute for more commonly used verbal behavior in obtaining critical benefits. Stated differently, aggressive patterns may be used because other patterns are not available to the client, or have not been as successful as the aggressive patterns at producing the benefits.

AGGRESSION AND ANGRY FEELINGS IN NON-THREATENING SITUATIONS

To understand the apparently spontaneous aggressive episode and collaterally reported angry feelings in non-threatening environments we must examine what events are likely to *evoke* such an episode. Evocative events (Michael, 1982) or conditions are not to be confused with events which trigger or elicit simple responses, such as an onion followed by a tear, nor are they cues or occasions for behavior, such as a light switch that might occasion a flip (of the switch). Evocative events are those events that make a consequence effective as a reinforcer on a particular occasion, or the occurrence of a certain kind of behavior more likely than another. Deprived of food, a person might open a refrigerator and take out a yogurt. Entering a dark room, reaching for the light switch might be more probable than reaching for a book. Presented with a noisy room, a person may turn off the television. Behaviors that have in the past been successful in procuring food, lighting a room, or quieting a room, are likely to recur. Stated differently, the absence of food for some time, the absence of light, and the presence of noise are all events that may evoke, make likely, or "potentiate" (Goldiamond, 1966; Goldiamond & Thompson, 2004) visiting the refrigerator, flipping on the light, or turning off the television.

Evocative or potentiating conditions often result in an individual seeking occasions or cues upon which behavior has been reinforced in the past, what B. F. Skinner (1953) called precurrent behavior. To illustrate, if a person has a piece of paper and an important phone number to remember, but no pencil or pen, that person is likely to seek out and ask another individual for a pencil. The reinforcer here is receiving the pencil, the behavior is asking for it, and the occasion is the other person. The precurrent episode is evoked because the pencil can now be used in another episode: piece of paper – write with pencil – have the number. If the request for a pencil or pen is not successful, requests for something that will make a mark on paper may occur. A piece of burned match–head may eventually be used. The match–head may share little in physical resemblance to a pen, but it can serve the function of a pencil – readable marks on a paper. Procuring the match head satisfies the writing requirement evoked by the necessity of having that important phone number. Further, one can predict that asking for a pencil or pen on these occasions is much more likely than asking for the time. It is also predictable, given that obtaining a pencil or a pen is not possible, that other behaviors related to writing will occur until the number is written down. These evocative or potentiating variables are what helps us understand when, where, and what behaviors might occur. That is, we can predict that given a set of evocative conditions, behaviors will occur on occasions that have previously produced changes in those conditions; and further, where a pattern is unavailable other patterns historically related to the function of the unavailable pattern will occur. Deprived of water, we would predict water related behaviors—asking for water, opening a water faucet, buying a bottle of water, drinking from a river, etc.

Evocative conditions or events are at times difficult to identify. Water deprivation, which may result in a request for water, may not be readily evident to an outside observer.

We may be left guessing at, or inferring, the potentiating variables for a particular behavioral episode. Behavior that appears to spring out-of-nowhere, or to occur spontaneously may, in fact, be made likely by evocative conditions operating over a long period of time.

Knowing something about the individuals involved, their likes and dislikes may, however, give us valuable clues to identifying these conditions. Fortunately, potentiating variables often result in a direct statement of what will change those conditions. Deprived of water, we might ask for a glass of water. Our path blocked we might say "excuse me, I'm having trouble getting through here." Or, we might engage in some behavior that may have the same effect as speaking if speaking is not available, such as using a horn in traffic. Although using the horn doesn't specify verbally to "get out of the way," the verbal community responds as if it does. The observed outcomes of the behavior, therefore, may be used as a guidepost to help identify the critical benefit, and the conditions that make the benefit important, or increase the likelihood of occurrence of any kind of behavior that has in the past resulted in a similar benefit. Where the change required necessitates the intervention or mediation of other people, the behavior can be considered social and often verbal (Skinner, 1957).

What does a person do who does not have training as a speaker? Or, one is a person whose requests have been ignored? At this point, it is necessary to distinguish between having skills as a listener (sometimes called receptive skills), and having skills as a speaker (sometimes called expressive skills). Listeners can respond to verbal or written instructions, can often recite poetry or sing songs, and can name or describe things

in their world. Speakers can ask questions, compose statements, and request things.

To be a speaker does not require audible speech. Sign language can be effective, as can gestures, a telegraph key, or honking a horn. Conversely, being able to speak audibly does not imply a speaker in the sense used here. That is, saying "pencil" when a teacher points to a pencil (a receptive or listener repertoire) is different than asking for a "pencil" when confronted with a blank piece of paper (an expressive or speaker repertoire). Many of the residents in supervised living situations, especially those for autistic or learning disabled individuals, have had histories of training as listeners including, to some extent, question answering and instruction following. A history of training as effective speakers may be more rare.

Being an effective speaker is very important when a response to an evocative condition is required. For example, what does one do to terminate, postpone or otherwise "distance" an aversive event? As noted earlier, such distancing situations are often accompanied by feelings of anger or fear. Reports of fear or anger are often good indicators that behavior that increases the distance between the individual and the event will be a reinforcer. Consider a situation where it appears an attack by someone is eminent. "Don't even think about it", or, "If you do that, then I will have to...", or, "I need help over here," might be what a person would normally say when faced with this event. All are verbal responses that may help to ward off or "distance" the aversive event. But if the expressive verbal repertoire is absent, a preemptive attack might instead be evoked. The preemptive attack may put the would-be attacker off guard, and it may summon help or at least an intervention. In essence, it produces the same or at least a

similar change in the social community that a spoken response might, even if there are repercussions for agressively "acting out." As noted earlier, once they occur, destructive or aggressive actions may come to serve other functions. These functions may include postponing an onerous task, getting or taking something of value (the more recognized effect of aggression), producing a period of prolonged interaction with someone else, etc.

But why is an aggressive or destructive pattern, rather than another pattern, likely to appear in response to these evocative or potentiating conditions when an expressive verbal repertoire is absent? An answer is suggested by the pencil example. The absence of a pencil or pen makes asking for one more likely. The initial failure to obtain a writing device then makes other behaviors related to writing more likely, such as writing or drawing with chalk or charcoal. A cascade of behaviors related to writing may continue until a change in the condition that potentiates writing is produced or all attempts fail. The attempts will have something in common; they will all be a part of a current repertoire of behaviors related to marking on something (after Andronis, Layng, & Goldiamond, 1997; Goldiamond, 1966; Layng & Andronis, 1984; Layng, Andronis, & Goldiamond, 1999).

Similarly, once someone behaves aggressively or destructively for any reason, with the effect of getting rid of something, obtaining something, or producing an intervention, these behaviors become part of a repertoire and are likely to occur again if a situation arises requiring getting rid of something, obtaining something, or producing an intervention. The more functions a pattern serves, the more ubiquitous it is likely

to become across a range of evocative conditions. Further, early aggressive acts or destructive behaviors that occurred for other reasons, perhaps as a child, can be recruited into new situations having a variety of functions. Behavior that may be initially maintained by distancing an event, may come into contact with other important consequences in the controlled group-home environment as well, resulting in the adduction of these patterns into a new contingency (Andronis, Layng, & Goldiamond, 1997; Layng & Andronis, 1984; Layng, Twyman, & Stikeleather, 2004). Staff intervention is one of these consequences.

Evoking Aggressive Behavior: The Close Relation Between Social and Verbal Behavior

Aggression and angry emotional outbursts often have a history of social intervention. The link between social behavior and verbal behavior is important. B. F. Skinner (1957) has defined verbal behavior as behavior that is reinforced by the mediation of another person. And further, it is behavior whose primary function is that of evoking or potentiating that mediation. Aggressive behavior is social behavior whose outcome is almost always mediated by another person. Once aggressive behavior results in such mediation, it may enter into the class of at least once effective behavior that changed a situation evoked by conditions requiring mediation. Moreover, group home residents typically have a long history of relying on staff members to provide for their physical needs, protection, and recreational activities. Accordingly, aggressive behavior may be so close in function to spoken verbal behavior that its occurrence may even be more likely than other patterns in

an individual's repertoire when a spoken response is absent or ineffective. Summoning a staff person, and not an attempt to distance an event, may be the real effect (reinforcer) of the angry behavior and the anger felt. Further, faced with a need for staff intervention, an individual may seek out an occasion for aggression, just as the person for whom having a writing implement is important will seek out someone who can be asked for a pencil.

INTERVENTIONS

Interventions aimed at controlling or decreasing aggressive or destructive behavior often have two components. Both components can be intertwined to some degree. The first component is a strategy that attempts to intercede and provide an immediate change in the evocative condition that the aggression might produce. The outcome sought for this intervention is a rapid decline in aggressive or destructive episodes. The second component is a program to make the client more effective as a speaker. That is, a program that teaches an individual how to control the environment through the use of verbal behavior instead of the use of aggressive behavior. This includes teaching the client to identify evocative events and to respond verbally in ways that will result in changes in those conditions. These speaker (expressive) repertoires are necessary for achieving long term goals, such as independent living in the community.

Often, two types of programs are employed in residential treatment facilities. One may be considered a type of behavior management program. With this type of program, a behavior or the absence of a behavior is described and some extrinsic consequence is provided for the occurrence or nonoccurrence of that behavior, whatever the case may be. The frequency of the behavior is used to evaluate this type of program. Another type of program is one that is designed to teach skills, for example, how to bake a cake. Here, the outcome, a baked cake, is used to indicate the success of what is considered a teaching program. This later program often takes longer and may require many more steps and much more planning, but often produces changes in repertoires that may last a long time; indeed, cake making can last a lifetime.

Both the immediate intervention and the longer term teaching programs based upon a contingency analysis have more in common with the second type of program than with the first (Goldiamond, 1974; 1975a). That is, a target outcome or goal is identified and the eventual occurrence or nonoccurrence of that outcome is used to indicate the success or failure of the program. Usually, such constructional programs are made up of a series of subgoals whose successful completion indicates that progress is being made toward accomplishment of the targeted goals (see Goldiamond, 1974; Merely & Layng, 1976). Typically, subgoals are statements of what is to be accomplished a week-at-a-time. Weekly subgoals are based on what the person could successfully do the previous week, known as the individual's current relevant repertoire. The records obtained are of weekly progress of a changing repertoire, rather than simply the frequency of a specific steady–state behavior.

Frequency of outcome must also be considered. Whereas the behavior used to produce a change in evocative conditions may differ from situation to situation, and the form that change takes may also differ from situation

to situation, the frequency of a change in those conditions may be of primary importance. For the shorter-term program, given a set of evocative conditions, behavior that results in a similar outcome as produced by an aggressive episode is the focus; an immediate by-product of the shorter-term program should be a decline in aggressive outbursts. For the longer term, the goal is to provide a wide range of communicative behaviors that in themselves may depotentiate the consequences that might otherwise maintain aggressive behavior. Often, very subtle evocative conditions, and how they potentiate a range of contingencies, should be considered. When an aggressive or destructive episode does occur, this type of program usually provides for no punitive consequences. Instead, the standard group home policies are to be followed. These policies typically specify what is to be done to quickly and gently bring the situation under control in order to protect both the aggressive or destructive resident and the other residents as well.

An edited excerpt from a brief case report for the staff of a residential facility for which the author was a consultant illustrates both programs in the context of the current discussion.

> *Overview*. An examination of Tim's [not his real name] aggressive behavior indicates that he is not "out-of-control." Additionally, damage to an individual does not seem to be the benefit maintaining the violent episodes (unfortunately this still may occur). Instead, it appears to be Tim's way of asking for or demanding and getting something from those whose job it is to intervene in these episodes.
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> A recent episode on the sheltered workshop bus is a good example. Tim physically attacked (but caused no damage to) a fellow resident at the group home while the bus transporting him home was parked and waiting for repair on the side of the highway. Instead, he by-passed others to attack "a known entity." Second, the fight did not continue after both of the individuals involved arrived at the group home, indicating that there was nothing personal about the fight. So how can we make sense out of this behavior?
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> Although there are many other things to consider, much of Tim's aggressive behavior may reflect his way of requesting immediate action. In the case of the stalled bus, Tim was removed from the bus and a car was sent to pick Tim up and return him to the group home. Tim did not attack the person seated next to him, who might retaliate. What action he is requesting depends upon the situation Tim is in at the time of the episode. It is not simply the other resident's presence or absence that sets the occasion for fighting. More often than not, Tim is around the other resident without fighting. If damage were the critical benefit maintaining the fighting, greater damage to the resident could be produced by "sneak attacks", etc. Instead, under conditions which Tim would like to see a change, such as getting off the bus, or getting quickly back to the group home, he strikes out just enough, and at the person that will result in intervention without much chance (from his point of view) of injury. Sitting for a while in a broken down bus may have made getting off of it, and back to the group home, a reinforcer for Tim. An examination of other times when aggression has been observed reveals other situations that Tim would like to see changed or have some control over, followed by just such a change after the aggression occurs.
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> Tim does not appear to be completely happy with this situation, telling a staff person after the

last incident that he (Tim) wouldn't try to hurt anyone any more. However, it is unlikely that Tim will be able to stop on his own. This shows that Tim is sensitive to the effects of his behavior on others, and is resorting to aggression as his only successful means of obtaining key reinforcers made important to him by current circumstance.

Recommendations.

Immediate Intervention. First, the staff should attempt to identify those conditions when the aggression is likely to be evoked. Look for changes in Tim's behavior, or other situations, which might indicate an aggressive act is likely to occur, then intervene before it occurs. (Although this may sound like the staff is giving in to Tim, he has simply to aggress to produce the intervention. Further, highlighting, and perhaps thereby reinforcing, the behavior in this situation that is suitable, recognizing the need for change, is part of the targeted outcome.) These interventions, however, may be used to provide opportunities to establish less disturbing ways of indicating a change is desired.

Specifically, a staff person should state explicitly that it looks as though Tim would like something changed (perhaps suggesting what it is Tim might like changed). If he responds in the affirmative, then, if at all possible, a change should occur, plus a brief statement of what Tim might do to get that change. Here, a procedure of "response expansion" should be used. Response expansion procedures require that a staff person restate a client's response to a situation, but in expanded form. This expanded form serves to provide a model of what can be said as well as to provide an indication that Tim's statement was heard. This is a procedure not unlike a mother would use with a young child. A child might point to a door, the mother might say, "Out?" Later the child might say, "Out!" with the mother responding "Go outside?", and waiting for the child to say yes or repeat "go outside," and so on. If there is no response for a given episode, the staff person might suggest a change and ask Tim if he thinks the change might be a good idea. A brief statement, pointing out, and perhaps praising some aspect of Tim's behavior that is acceptable such as waiting and listening to the staff person, might also be in order. The rationale for this approach is that Tim identifies an element or theme of control, or a change in a situation. That part of the episode is fine. It should be reinforced. Thereafter, Tim should be taught what to do upon those occasions. The expanding on Tim's responses and the brief suggestions of what to do are examples of what might be called incidental teaching. Such opportunities are program elements that cannot be explicitly specified prior to their occurrence. Instead, a consistent approach directed toward establishing a goal is required. How the staff responds will vary from one situation to the next, but the theme should remain the same. In this case Tim identifies something to be changed, and works out ways of producing that change without recourse to aggression.

If aggression does occur, intervention should be as brief as possible and accompanied by a statement of concern for the harmful effects on others. Further, the staff person should state that it is clear that Tim wants something and that he will be helped to get it once he is calmed down. Whereas the aggressive behavior should be tended to immediately, it is important that the change produced, and the duration of staff intervention, should be far less than the change produced by the preemptive interventions.

Use of extrinsic rewards is not recommended. It may be necessary, however, to attach such rewards to the program if the social reinforcers that are naturally occurring do not

seem to be moving the program along quickly enough, or if the staff would find it easier to use this type of program. At this time, neither reward cost, nor direct behavior reduction programs are recommended.

Conversational Skills. The second part of the program recommendations involves language training, specifically conversations. Tim appears to be gregarious and enjoys contact with others. He likes to shake hands and will initiate conversations. However, his conversational skills tend not to be well developed. Tim tends to ask questions that seem out of context, or that appear to require correction. By asking this type of question Tim can maintain the interaction without having to be placed on the spot with questions from others, a situation he is likely to avoid. He has good listening skills, that is, he listens, reads, describes objects, and follows instructions (he learned to bake simply by following the directions on the back of cake boxes). His skills as a speaker are less well developed, that is, responding on-topic when spoken to, choosing topics, and asking for things. Tim's lack of speaking skills probably contributes to the use of aggression to convey a request or respond to situations where asking, demanding, or even arguing might normally occur.

Direct conversation training for Tim may provide the best long–term solution to his aggressive behavior. Beginning with his listening, and excellent reading and direction following repertoire, short, scripted, conversational exchanges will be designed. These exchanges should be read out loud by both the staff and Tim, much the same as found in play rehearsal. Tim would have experience playing all "roles". Next, elements of the script would be left out requiring greater reliance on the context of the conversation and upon speaking skills.

Eventually, completely unscripted conversations should occur with and without the presence of the training staff.

Each conversational episode should be designed to fit into a specific context. Some of those contexts would surround group home activities, others meeting new people and so forth. Conversation training sessions should also feature those situations likely to result in an aggressive response. Tim should be asked to identify the context and be taught (if he cannot already do it) to predict what the conversation might be about given the context. This should be kept simple and obvious at first, growing in complexity over time. Contexts should include evocative conditions (see accompanying description) so that requests and conversations will reflect what might be described as Tim's wants, needs, or desires. The conversational episodes should emphasize recognizing changing emotions, as an indicator of an evocative condition, and provide practice speaking about those conditions and requesting changes. Tim shows some verbal behavior along these lines now as indicted by his efforts to lobby for destinations and to set dates for activities…

CONCLUSION

Program requirements are somewhat different for these constructional approaches than the requirements of typical behavior management or brief therapy programs (Goldiamond, 1974, 1975a; Layng & Andronis, 1984). The similarities to teaching (after Twyman, Layng, Stikeleater, & Hobbins, 2004), rather than to rewarding or punishing, need to be stressed. It is also important that most aggressive behavior not be considered maladaptive; indeed, it is likely to be highly

adapted to its specific niche. The goal is to expand the niche and establish adaptive repertoires for its specific requirements that do not have the same personal and social costs as the aggressive pattern. The initial burden falls equally on the professional and the client, who will find it necessary to try and "read situations" and respond to those situations in accordance with weekly program subgoals. This approach is, of course, not limited to aggressive behavior, but can be generically extended to understanding emotions and emotional behavior of most types.

Constructional approaches require a great deal more analysis, planning, and experiment, than is often required by simply implementing an intervention that says, if client X does Y, then give him W or take away Z. A constructional program involves the design of a series of individualized training sequences based upon a particular client's current repertoire. Accordingly, each person's program, although sharing similarities with the others, must be individually designed.

All constructional interventions include teaching individuals to be sensitive to their emotions such that the contingencies the emotions describe can be examined and dealt with. The goal is not to directly change emotions, but together with the client, to use them to understand and change the contingencies they describe. Accordingly, both professionals and their clients must learn to recognize when those emotions transition to emotional behavior and become operant behaviors in their own right. Further, we must also examine the consequences of alternative patterns (Goldiamond 1974, 1975a, 1975b, 1979b, 1983; Layng & Andronis, 1984; Layng, 1991, 1995; Merely & Layng, 1976),

both the costs and the benefits and their potentiation, if we are to understand the complexity of behavior, the emotions felt, and the adaptiveness of seemingly irrational or disturbing behavior.

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