

EVALUATION
OF AN
ANGER MANAGEMENT PROGRAM
WITH AGGRESSIVE CHILDREN IN
RESIDENTIAL TREATMENT

by

Conway Christian Fleming

Dissertation submitted to the Graduate Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements of the degree of

DOCTOR OF PHILOSOPHY

in

Psychology

APPROVED:

Thomas Ollendick, Ph.D.
Co-Chairman

Betsey Benson, Ph.D.
Co-Chairman

George Clum, Ph.D.

E. Scott Geller, Ph.D.

Marshall Tessnear, Ph.D.

June, 1982

Blacksburg, Virginia

ACKNOWLEDGEMENTS

It seems that most people I have had the good fortune to befriend in the last two or three years have had the questionable fortune of becoming involved in this project. An enormous amount of time, effort, and support went into seeing the study and the experimenter through to the end.

Betsey Benson heads a list of truly helpful committee members. From the day she accepted the chairmanship through the weekend she flew in from Chicago for the defense, Betsey provided guidance, encouragement, and effort far beyond the ordinary. Her competence and dedication to my professional and personal progress were invaluable in my completion of graduate school. Tom Ollendick became a hero when, as co-chairman, he pulled through with everything from insightful comments to memos and overhead projectors. I am grateful for Marshall Tessnear, Scott Geller, Jim Fritzen, George Clum, and Al Schulman, who served anywhere from two-and-a-half years to two-and-a-half hours as committee members.

At the Virginia Treatment Center for Children hardly anyone on the staff escaped participation in this project by the time children were observed, rated, and shuttled about to sessions. My thanks to unit staff and professional staff who invested time and energy for the cause. Under the expert supervision of Dr. Waldo Shark, volunteer lackeys also made substantial contributions. I am indebted to Jackie Nelson, Pat Prichett, Tyrone Hilton, Godwin Lau, Ann Marie Albano, Susan Knaisi, and Laury Goolsby. Special thanks go to Sanford Cassell, Stan Shoemaker, and Jim Einhaus for their invaluable, not to mention entertaining,

impressions of angry kids.

As if it wasn't enough to take me in, train me, and - ahem - educate me, the Big Guys at VTCC even pulled through with professional level lackey power when I needed it. Mary Margaret Kelly, Anne Sitarz, and Skip Montgomery are 3 unique and wonderful folks whose mix of humor, caring, and professional competence altered (for the good?) my entire outlook on clinical psychology. Al Finch, who educated all the Big Guys on how to educate all of us little guys was the brain and the support behind my work at VTCC. He taught me everything he knows about spelling, organization, and etiquette, and tried his darndest to teach me something about research. His efforts to teach me not to take any crisis too seriously were only partially successful, but did enable me to complete a treatment outcome study.

My fellow interns Drew-Bob Bradlyn and Ron Belter took double duty in nursing me through the last stages of the project. Besides putting up with my crazed behavior, they came through not once but twice as "professional" raters. Katherine McLagan and Michael McCarthy lent new meaning to the word "friend" by providing for my spiritual, emotional, physical and mental health during this period. Although Michael and Katherine's all night typing sprees were sensational, I owe the production of an acceptable-by-six-sets-of-guidelines draft to typist Monica Freeman.

I've been told that no one can prioritize and invest in a Dissertation as much as the author. Two people who are quite precious to me challenged this assumption. Lynne "L-Wood" Einhaus invested nearly two

years as my co-therapist, and completed data collection after I left VTCC. Although it was our extra-curricular activities that made her my closest friend, her dedication to this project certainly testified to the depth of her friendship. Bart Saylor, who has just begun a career of valuing my professional life as his own, pulled through with the practical and emotional support I needed to become a Ph.D. I cherish and appreciate them both.

It is my family to whom I owe the greatest debt. Their love and belief in me have made me believe in myself even through grad school. With love and gratitude I am dedicating this project and the accomplishment it represents to Nene, Rives, Mimi, Martha, Kate, and my parents, Rives and Mary Fleming.

TABLE OF CONTENTS

	<u>Page</u>
Acknowledgements.....	i
List of Tables.....	viii
List of Figures.....	x
INTRODUCTION.....	1
Overview.....	1
Definition of Aggression.....	2
Aggression in Children: Incidence, Sex and Age Differences, and Long-term Follow-up.....	2
Theories of Aggression.....	5
The Role of Anger in Aggression.....	13
Treatment of Aggression.....	17
Cognitive Therapies: Background and Applications to Anger and Aggression.....	21
Application of Cognitive Therapies for Anger-management in Children.....	25
RATIONALE AND HYPOTHESES.....	28
METHOD.....	31
Subjects.....	31
Therapists.....	33
Dependent Measures.....	34
Self-report.....	34
Unit Ratings.....	37
Teacher Ratings.....	38
Behavioral Observations.....	40

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Procedure.....	43
Pre-treatment Phase.....	43
Intervention Phase.....	45
Post-treatment Phase.....	48
Analysis of Therapy Tapes.....	52
RESULTS.....	53
Group Comparisons.....	53
Self-report Inventories.....	53
Unit Ratings.....	65
Behavioral Observation.....	65
Teacher Ratings.....	65
Therapist Effects.....	69
Relationship Among Measures.....	74
DISCUSSION.....	83
Review of Findings.....	83
Discussion of Self-report Findings.....	85
Discussion of Other-report Findings.....	90
Issues Pertaining to Treatment Conditions.....	90
Measurement Issues.....	96
Methodological Concerns.....	100
Strengths of the Study and Future Directions.....	102
REFERENCES.....	106
APPENDIX A: Self-report Measures.....	117
APPENDIX B: Unit Ratings.....	136

TABLE OF CONTENTS (continued)

	<u>Page</u>
APPENDIX C: Behavioral Observation.....	141
APPENDIX D: Teacher Ratings.....	150
APPENDIX E: Consent Forms.....	161
APPENDIX F: Treatment Manual.....	164
APPENDIX G: Relaxation Instructions.....	177
APPENDIX H: Instructions to Raters of Therapy Tape Samples....	185
APPENDIX I: Raw Data.....	193
VITA.....	197
ABSTRACT.....	

List of Tables

<u>Table</u>		<u>Page</u>
1	Age, Race, I.Q., Diagnosis, and Medications of Subjects in Each Group.....	32
2	Schedule for Participants.....	44
3	Session Outline for the Anger-management Group.....	46
4	Session Outline for the Attention-control Group.....	49
5	Follow-up and Discharge Conditions for Subjects in Each Group.....	51
6	Summary of Analyses of Variance for CIA, with Full Scale I.Q. as a Covariate.....	55
7	CIA Means, Standard Deviations, and Adjusted Means for Subjects Included in Each Analysis of Variance.....	57
8	Summary of One-way Analyses of Variance Comparing CIA Scores of the Two Groups.....	59
9	Summary of Analyses of Variance for Situation Self-report "Thinking" Score, with Full Scale I.Q. as a Covariate.....	60
10	Summary of Analyses of Variance for Situation Self-report "Doing" Score, with Full Scale I.Q. as a Covariate.....	62
11	Situation Self-report "Thinking" and "Doing" Means, Standard Deviations, and Adjusted Means.....	63
12	Summary of One-way Analyses of Variance Comparing Situation Self-report Inventory Scores of the Two Groups.....	64
13	Summary of Analyses of Variance for Unit Ratings and Behavioral Observations with Full Scale I.Q. as a Covariate.....	66
14	Summary of One-way Analyses of Variance for Unit Ratings and Behavioral Observations.....	67

List of Tables (continued)

<u>Table</u>		<u>Page</u>
15	Means, Standard Deviations, and Adjusted Means for Unit Ratings and Behavioral Observations.....	68
16	Summary of Analyses of Variance for Teacher Ratings with Full Scale I.Q. as a Covariate.....	70
17	Summary of One-way Analyses of Variance Comparing Teacher Ratings of the Two Groups.....	72
18	Means, Standard Deviations, and Adjusted Means for Teacher Ratings.....	73
19	Summary of Analyses of Group, Therapist, and Group X Therapist Effects for Self-report Inventories with Pre-treatment Scores as Covariates.....	75
20	Summary of Analyses of Group, Therapist, and Group X Therapist Effects for Unit Ratings and Behavioral Observations with Pre-treatment Scores as Covariates.....	76
21	Summary of Analyses of Group, Therapist, and Group X Therapist Effects for Teacher Ratings with Pre-treatment Scores as Covariates.....	77
22	Percent of Anger-management and Attention-control Therapy Tapes Accurately Identified by Blind Raters.....	79
23	Correlations Among Measures at Pre-treatment Assessment Period.....	81
24	Correlations Among Measures at Post-treatment Assessment Period.....	82

List of Figures

<u>Figure</u>		<u>Page</u>
1	Determinants of Anger Arousal.....	16
2	Mean CIA Scores for Anger-management and Attention- Control Subjects Across Trials.....	56

INTRODUCTION

Overview

The purpose of the present study is to assess the efficacy of an anger management program in the reduction of aggressive behavior in emotionally disturbed children. Although vast amounts of literature have addressed the topic of aggression, including its etiology, assessment, and treatment, the emotional state of anger has been almost totally neglected by researchers in psychology. The paucity of research concerned with anger is somewhat surprising considering the number of theories which implicate anger in the precipitation of aggressive behavior. It has been suggested, for example, that arousal attributed to anger increases the likelihood of aggressive responding, and that anger acts as a mediator in the relationship between frustration and aggression (Rule & Nesdale, 1976).

It has been proposed that the scarcity of data pertaining to anger and anger management is due to the difficulty encountered in identifying and measuring such a construct (Biaggio, 1980). Aggressive behavior presumably has an advantage over anger, in that it might be observed and recorded, once consensus has been reached concerning its definition.

The presence of "anger" is inferred primarily from outward displays of hostility and aggression. Furthermore, anger management becomes of interest to therapists when anger is manifested in problem levels of aggressive responding. Because of the interdependence of anger and aggression, the reader will be presented with an overview

of the literature pertaining to the etiology and treatment of aggression, as well as the literature on anger, and its relationship to aggression. Subsequent sections of the review will provide background information on cognitive training procedures (Meichenbaum & Cameron, 1972) and their application to anger management and reduction of aggressive behavior. Finally, a rationale for modifying cognitive therapy procedures to help aggressive children in residential treatment manage their anger and a method for assessing the efficacy of such a program will be offered.

Definition of Aggression

Aggression is a term which has been applied to a host of child behaviors ranging from verbal or physical attack of other persons, to destruction of inanimate objects, self-injury, or mutilation of animals. Even when its range is narrowed and carefully defined, "aggression" can describe complex behaviors or sequences of behaviors which show tremendous variability across individuals and situations. In the subsequent discussion, aggression will refer to verbal or physical assault which is directed toward an animal, inanimate object, or human other than oneself. The aggressive behavior discussed in this paper typically occurs in response to frustration or provocation, and is frequently accompanied by an increased level of arousal which, it will be argued, can be labeled as anger.

Aggression in Children: Incidence, Sex and Age Differences, and Long-term Follow-Up

Aggression in children as it is defined above presents a rather

unique problem for clinicians in that it is considered adaptive for children (especially males) to display moderate amounts of such behavior. Barring outcomes of severe disruption of order or injury to others, there are few criteria on which to base the judgement that aggressive responding is pathological. As a result, it is difficult to gather data on the incidence of socially inappropriate or "pathological" levels of aggression. The epidemiological and follow-up data presented here pertain to aggression which has been severe or inappropriate enough to be reported on a behavior problem checklist, brought to the attention of school or legal authorities, or brought to the attention of mental health professionals in both inpatient and outpatient settings. Data on sex and age differences apply to "normal" as well as "pathological" expression of aggressive behavior.

Werry and Quay (1971) published data summarizing parental reports of behavior problems in 926 boys and 827 girls between the ages of five and eight. According to this report, 31.3% of the boys and 6.2% of the girls displayed fighting behavior, while 8.6% of the boys and 4.6% of the girls displayed "temper tantrums". In other studies the incidence rate is difficult to determine because aggression is grouped with other behaviors under "Conduct Disorder" and there is inconsistency in the way it is defined across longitudinal studies. Quay and Werry (1979) report surveys in which the incidence of conduct disorders in 10 and 11 year olds range from 4% in the Isle of Wight in Great Britain (Rutter, Tizzard, & Whitmore, 1970) to 8% in a sample from the London boroughs (Rutter, Cox, Tupling, Berger, & Yule, 1975; Rutter, Yule,

Quinton, Rowlands, Yule, & Berger, 1975).

Data are more conclusive in the areas of sex and age differences in the incidence of aggression. Feshback (1970) cites a review of 53 studies of sex differences in children's aggression (Oetzel, 1966), as well as more recent findings. Together the data support the general belief that boys are more aggressive than girls, when direct physical aggression is the dependent variable. In other forms of aggression, e.g., verbal aggression and aggressive responses on projective tests or personality inventories, females occasionally emerge as the more aggressive sex.

Age differences in aggression are parallel with the normal trends in language development and social maturation. Goodenough (1931) is credited with one of the best descriptive investigations of age differences in spite of his study's relatively small sample size (N=45). From daily parental monitoring, Goodenough noted a number of trends, including a) a peak in the frequency of outbursts at age two (and subsequent decline until age five), b) a steady increase in the duration of sulking after outbursts between ages one and eight, c) a transition away from temper tantrums and on to increased incidents of retaliatory behavior around age three, and d) a change in the antecedents of aggression from physical discomfort before age one, to conflict with adult authorities between one and three, to interpersonal problems with peers after age three. Feshback (1970) summarizes additional evidence that there is a tendency for verbal aggression to increase and replace or predominate over physical aggression between the ages of two and

five.

Studies which investigate the correlates of aggression and its value as a predictor of later problems underscore the importance of early, effective intervention. Robins (1966) observed that a large percent of "highly aggressive" children have assorted adjustment problems as adults. In a long-term follow-up of children in "River City", Havinghurst, Bowman, Liddle, Mathews, and Pierce (1962) observed that a significant number of the children ranked most aggressive by their sixth and seventh grade teachers went on to become delinquents. This was especially true of children who had academic failures as well. Of this sample, 57% of the high-aggressive children failed to finish school, as opposed to 17% of the children ranked least aggressive. Kagan and Moss (1962) reported that of all behaviors examined in their "Fels Study", aggression was the most likely to persist over time.

Theories of Aggression

The notion that aggression is mediated by anger or, for that matter, any covert event is one which has evolved over time. Freud's theories of aggression labeled energizing forces underlying aggression in terms of drives, urges, and psychic energy. Dollard, Miller, Mower, and Sears' "Frustration-Aggression" hypothesis brought psychology closer to the idea that an emotional response might trigger subsequent aggression. Berkowitz (1962) is credited with the first theories labeling anger as a salient intervening variable in aggression. As the present study assumes a close relationship between anger and aggression, it is important to critically review the theories which preceded and evolved

into aggression theories implicating anger. This section gives a historical overview of psychological theories of human aggression. Although emphasis will be on theory and data pertaining to children, there is some attention directed toward adult aggression, as models tend to be developed with adult behavior in mind and then are generalized to children. Freud's original formulation of aggression as an innate drive is presented, as is the frustration-aggression hypothesis of Dollard and his colleagues. Criticisms and limitations of the motivation-based frustration-aggression theory are discussed, and data pertaining to a social learning theory of aggression are presented.

Although the psychoanalytic explanation of aggression did not survive empirical scrutiny, it did offer certain observations and principles which reappeared in later, more tenable theories. Briefly, Freud (1930) redesigned his own theory on instincts to include a set of life-enhancing, positive drives (under the term "Eros") and a set of drives directed toward death, destruction, and aggression ("Thanatos"). Thanatos and Eros energies were assumed to be in ongoing conflict, and the fact that destruction is often directed toward external factors was attributed to the inhibitory effects of self-preservation drives (Eros) on the self-destructive tendencies subsumed under the "death urge", Thanatos. Just as sexual impulses had been viewed as manifestations of some sort of internal, innate arousal, aggressive impulses were seen as the product of extreme levels of innate excitation (Feshbach, 1970).

In support of his notion that there is an innate drive toward aggression and destruction, Freud cited two readily observed infant

behaviors. The "rage response", i.e., vocal cries and autonomic arousal in response to stress, was cited as one unlearned form of reactive aggression. Oral activity such as sucking and bringing objects into the mouth was interpreted as a symptom of "aggressive greed", with the destruction of the object as its goal.

The development of ego function was seen to be central to the etiology of aggression. Specifically, the extent to which the ego had developed was thought to determine the amount of frustration a person would experience before exhibiting aggressive behavior, as well as the amount of control he would display in his expression of the aggression.

There was apparently very little consistency in the psychoanalytic theories which evolved post-Freud. Feshbach (1970) reports that subsequent analytic theories varied on a number of critical points:

- a) what kinds of frustrations were seen as antecedents of aggression,
- b) whether Thanatos or "death urge" was accepted as a valid concept,
- c) whether aggression was viewed as indicative of an innate, biological need,
- d) which mechanisms were important to the inhibition or expression of aggression, and
- e) which behaviors were, in fact, indicative of aggression.

According to Gillespie (1971) the death urge is no longer accepted by leading psychoanalysts, but aggression is still viewed as an innate drive.

In 1939, Dollard, Miller, Mowrer, and Sears published their now classic book, Frustration and Aggression. In it the authors outlined the propositions of a "Frustration-Aggression" hypothesis, which represented the first major effort by experimental psychologists to

account for aggressive behavior. The Frustration-Aggression hypothesis departed from Freud's theory in that the existence of a death/aggression instinct was denied, and aggression was seen as reactive rather than innate. Specifically, aggression was seen as a reaction to frustration, defined as "an interference with the occurrence of an instigated goal-response at its proper time in the behavior sequence" (Dollard et al., 1939, p. 7). The basic premise of this theory was that frustration leads to behavior whose goal is the destruction of some person or object, i.e., aggression. Following from this was the supposition that the strength of the aggressive response is a product of the frequency and intensity of frustrating events. It was hypothesized that if the original inclination toward aggression was inhibited, additional frustration would develop, and be the motivational force behind aggression toward the source of that inhibition. This type of process was posited as the explanation for displacement of aggression to objects or persons not directly responsible for the initial frustration.

In making specific statements about the parameters of frustration, inhibition, and direct vs. indirect aggression, Dollard et al. (1939) made claims which proved problematic in light of subsequent data. For example, the inhibition of aggression was said to vary positively with the amount of punishment anticipated. One would assume, on the basis of this premise alone, that a child who is frequently or severely punished by his parents for aggressive acts would demonstrate a low rate of aggressive responding. Data from studies of parental punishment

and physical abuse in the home (Lefkowitz, Huesmann, & Eron, 1978; Reidy, 1977) directly contradict this assumption, and demonstrate instead that frequent punishment leads to increased aggression through modeling.

A second problematic assumption of the Frustration-Aggression hypothesis was that direct and indirect (displaced) aggression served equally well as means of reducing the frustration-induced drive to aggressive behavior. The theory predicts that children who are encouraged to "vent their frustrations" by aggressing in socially appropriate ways, e.g., beating a Bobo doll, will not display that aggression in more destructive ways. This "catharsis" might also occur if children are allowed to experience vicarious aggression through watching TV or films. Again, data support the opposite effect: namely, viewing violence on television is often positively correlated with aggression (Anderson, 1977; Eron, 1982).

A more specific criticism of the Frustration-Aggression hypothesis was that frustration does not necessarily lead to aggression, i.e., that it may lead to other types of behavior instead. Data on this issue were mixed and highly variable in terms of how "frustration" and "aggression" were defined. Feshbach (1970) reviewed research which involved frustrating young children artificially (usually via games or learning tasks) or observing their responses to naturally-occurring frustrating events. He cited five studies that failed to find aggressive responding in response to frustrating tasks, and seven that did report differences. Data with school-aged children did seem to offer consistent support for the notion that frustration leads to an increase in

arousal, drive, and vigor of responding. However, it was not clear whether this heightened activity was always of an aggressive nature.

Other critics of the Frustration-Aggression hypothesis were not satisfied with the simple relationship posited between frustration and aggression, i.e., a causal relationship acknowledging no influence of emotional or cognitive intervening variables. Brown and Farber (1951) were among the first to propose that anger might serve as a drive to increase the probability of aggression. It was hypothesized that anger arousal is the source of the energy behind the aggression allegedly provoked by frustration (Berkowitz, 1962). Still others criticized the theory for ignoring cognitive factors in the frustration-aggression relationship. Specifically, it was noted that the theory fails to account for individual differences in interpretations of arousal, and the impact that such interpretations might have on the arousal-aggression relationship.

A final criticism of the Frustration-Aggression hypothesis was that it did not address the well-documented influence of learning on aggression. Learning models, in particular, Bandura's social learning theory, have been used to explain the etiology and maintenance of aggressive behavior. In general, social learning theories posit that children do not have an innate drive to respond aggressively but instead they learn to express or inhibit aggressive behaviors in particular situations. This learning occurs within the framework of a basic operant learning paradigm. Bandura (1973) acknowledges the role of contingencies in determining aggressive responding, but his social

learning theory departs from a simple conditioning model in its heavy emphasis on modeling.

It has been experimentally demonstrated that by increasing the level of reinforcement for verbal aggression, one can increase the level of aggressive responding in the play of preschool children (e.g., Cowan & Walters, 1963). A learning model of aggression is further supported by studies which document that naturally occurring reinforcers increase the aggressive responding of young children. Patterson, Littman, and Bricker (1967) observed 60 3-4 year old children in two nursery schools, to assess the extent to which aggression would be reinforced (or punished) in that setting, and the effect that naturally occurring contingencies would have on children who were initially rated as high or low in aggression. For the majority of the incidents, aggression against peers was positively reinforced by the victim, who retreated, cried, or relinquished a sought-after object. As predicted, children who started nursery school with a high level of aggression maintained that high level. Moreover, children who had low levels of aggression originally increased their aggressive activity, if they were generally socially active. These correlational data were presented as evidence for the theory that aggressive responding is enhanced or maintained as soon as children enter a social environment where the opportunities for aggression and subsequent reinforcement exist.

Bandura (1973) summarizes literature which demonstrates that children can learn new aggressive responses by observing others and modeling those responses under similar circumstances. He describes

two major functions for modeling in the acquisition of aggressive behavior. The first is that modeling enhances aggressive behavior by teaching children novel patterns of aggressive responding (e.g., Bandura, Ross, & Ross, 1961). The second is that modeling enables children to learn when to inhibit or express their aggression by allowing them the opportunity to observe the reward or punishment of other's aggression in particular situations (Bandura, Ross, & Ross, 1963).

There are only a few studies which directly compared the predictive utility of the Frustration-Aggression theory and Social Learning theory. Specifically, Christy, Gelfand, and Hartmann (1971) used competitive games to instill frustration, then had participants watch films of either an aggressive model, a restrained model, or an active but non-aggressive model. Children who were involved in the competitive games displayed increases in whatever behavior they saw modeled, relative to controls who engaged in noncompetitive games. There were no differences among children who experienced repeated success in the competitive games and those who experienced repeated failure. These data run counter to predictions one would make based on the Frustration-Aggression hypothesis, and are presented by Bandura (1973) in support of a social learning model of aggression.

In general, the research on these models of aggression is plagued by inconsistencies in the definition of "aggressive behavior", failure to demonstrate generalizability of effects outside of a laboratory setting, and failure to demonstrate reliability or validity of measures. Advocates of both the Frustration-Aggression and the Social Learning

position depend on data from studies whose methodology reflects a belief in face-valid assumptions. For example, "frustration" is assumed to result from playing unfair or difficult games, and a person who kicks, sits on, and "pommels" an inflated Bobo doll is assumed to be an "aggressive model". Theories have been largely supported by research which use unique methodological paradigms. In short, there are too few applied studies and too many methodological limitations to directly compare approaches and to allow an undisputed model to emerge.

The Role of Anger in Aggression

The intervention evaluated in the present study attempted to reduce aggressive responding in children by enhancing the ability to manage anger. Implicit in such an intervention is the assumption that anger is directly linked to the expression of aggression. The purpose of this section is to review the research which examines the relationship between anger and aggression.

Berkowitz (1962) introduced the emotion "anger" as an intervening variable in the hypothetical process by which frustration leads to aggression. Anger was described as a drive which increases the likelihood that aggressive responses will be emitted, a state of arousal which can result from attack, insult or frustration. Subsequently, Rule and Nesdale (1976) reviewed a set of issues which evolved from Berkowitz's (1962) position. These issues included a) the relationship between anger and external cues; b) the interaction between anger and a more general state of internal arousal; and c) the importance of cognitions in the anger-aggression relationship.

In his 1962 paper, Berkowitz stated that anger acts as a drive to increase the likelihood of aggression, but only in the presence of external cues or releases which are linked with aggression. This position was discredited by subsequent researchers who demonstrated that anger arousal alone was sufficient to induce aggressive responding. Baron (1971) demonstrated that college-age subjects who were supposedly angered by insults and verbal abuse delivered more punitive shocks to alleged partners than did non-angered subjects, with no external cues present (e.g., weapon in room) to induce this effect. Rule and Hewitt (1971) added a measure of cardiac arousal in a similar paradigm, and verified that being angered via insult does induce physiological arousal, and that this arousal seems to have specific cue effects of its own which lead to aggressive behaviors.

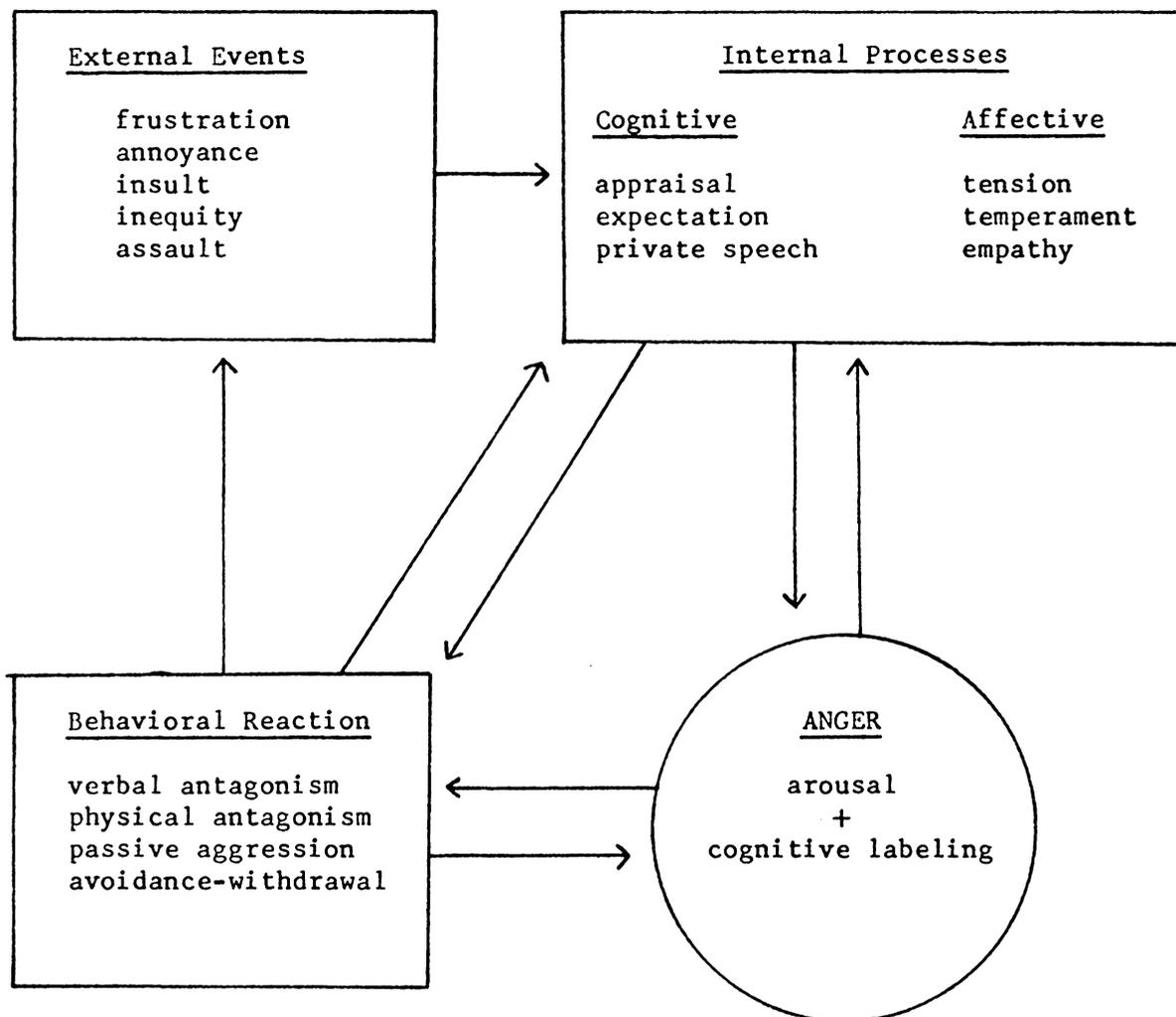
A second empirical question was whether general arousal mediates the effects of anger on aggression. General or "nonaggressive" arousal has typically been induced by exercise, white noise, or excessive temperature. Using exercise as a means of increasing general arousal, Zillman and Bryant (1974) demonstrated that anger (via verbal provocation) in combination with general arousal led to an increase in "delayed aggression" (shock administered six minutes later) relative to subjects who were provoked but not aroused. Rule and Nesdale postulated that this effect occurred via increased or decreased anger level rather than through direct activation of aggression per se.

In addition, the attributions of the subject concerning the nature of the arousal he/she is experiencing have been shown to significantly

influence the effects of that arousal on aggression. Harris and Huang (1974) demonstrated that subjects who were led to attribute their arousal to anger (because they had just been insulted) showed enhanced aggression relative to subjects who attributed their arousal to an external source (noise). This research, of course, was an outgrowth of Schacter's cognitive-attribution theory of emotion (Schachter & Singer, 1962).

In the past seven years, Novaco (1978) has outlined a model of anger which includes attention to the anger-aggression relationship. Following the model outlined by Schacter and Singer (1962), Novaco describes anger as an intense emotional response to frustration or provocation which is characterized by heightened automatic arousal, alterations in central nervous system activity, and cognitive identification of the arousal as anger (Novaco, 1975). His model of anger and its determinants (summarized in Figure 1) addresses all three of the issues previously described: the role of external cues and events, the role of internal arousal, and the role of cognitions. In his own words, "anger is viewed as a combination of physiological arousal and a cognitive labeling of that arousal as a function of internal and external cues and of one's own overt and covert behavior in the situation" (Novaco, 1978, p. 141).

According to this model, external events influence aggression only indirectly. Specifically, external events are appraised, evaluated relative to one's expectations, and addressed in private statements, all at a cognitive level. Arousal and mediating cognitions about



¹This figure is taken directly from Novaco, R. W., Anger and coping with stress: Cognitive behavioral interventions. In J. P. Foreyt & D. P. Rathjen (Eds.), Cognitive behavior therapy: Research and application. New York: Plenum Press, 1978, p. 141..

Figure 1

Determinants of Anger Arousal¹

external events have a reciprocal relationship. The level of arousal biases subsequent cognitions about the external events and the cognitions about the external event serve as the basis on which "anger" arousal is identified. Similarly, the model posits a two-way relationship between anger and aggressive behavior. That is, anger arousal tends to increase the likelihood of aggressive responding, and the occurrence of aggressive responding tends to reduce the level of anger arousal.

Novaco's primary contribution to the psychological investigation of anger is not his model per se, but the treatment package which has been based on the model. Novaco's stress inoculation for anger control will be discussed in final sections of this review. First, however, an overview of treatment programs based on more traditional models of aggression will be presented.

Treatment of Aggression

Relative to the amount of literature devoted to inquiry and debate about the etiology of aggression, there is limited research evaluating those treatments based on the different theoretical models. The analytic and Frustration-Aggression hypotheses offer little other than case reports to recommend them as treatment models. Variations on a learning model of aggression have yielded the majority of the empirically valid treatment packages. Contingency management, social skills training, modeling, and enhanced self-control are all treatment components which have documented utility in the reduction of aggressive responding.

Redl and Wineman (1951, 1952) described an intensive residential treatment program based on the premise that aggression reflects

inadequate ego development. The authors' "Pioneer House" for 8-11 year olds was the site of successful treatment for a number of highly aggressive children. However, it was difficult to ascertain whether it was the ongoing group and individual psychotherapy aimed at developing internal controls, or any of several behavior management techniques, which were the key ingredients in therapeutic change.

Combs and Slaby (1977) reported that treating aggressive children by having them displace their aggression to "more appropriate" objects was still frequently advocated by clinicians, in spite of the absence of data which might support the efficacy of such a procedure. Thus, the Frustration-Aggression concept of displaced aggression, or "catharsis" lingers on in spite of the evidence (Foss & Fouts, 1977).

Patterson and his colleagues demonstrated that an aggressive child's family members can be trained in behavior modification and can apply these techniques to reduce the frequency of targeted "aggressive" behaviors. Patterson and Reid (1973) found that having parents reinforce children for reductions in individually selected problem behaviors such as noncompliance, tantruming, fighting, and teasing, led to moderate reductions in the observed frequencies of these behaviors, as well as tremendous improvement in parental report of global change. The study involved 11 clinically-referred aggressive boys, and was a replication of earlier work (Patterson, Ray & Shaw, 1968; Patterson, Cobb, & Ray, 1970). Kaufmann and Wagner (1972) used material and social reinforcers in combination with repeated exposure to provoking stimuli and specification of appropriate responses to reduce temper outbursts of an aggressive male in a residential treatment setting. Bolstad and Johnson (1972)

took the procedure a step further, and had children reward themselves for their own nonaggressive responding in the classroom.

Extinction procedures have been successfully applied to the treatment of aggression, but carry with them special problems. First, completely withholding attention is not a viable treatment plan if aggression is of a physically harmful nature. This problem was overcome by Pinkston, Reese, LeBlanc, and Baer (1972), who ignored the explosive attacks of an aggressive boy while lavishing attention (and physical protection simultaneously) on his victim. A second problem is that the aggressive behavior may be maintained by reinforcers beyond the experimenter's control. In laboratory studies it has been demonstrated that feedback to an "angered" subject that the victim of his aggression (shock) is experiencing pain has reinforcing properties (Baron, 1971). Patterson et al. (1967) observed that pre-school children were reinforced by their victims' cries, retreats, or relinquishing of toys for 80% of their aggressive actions.

Training children in the skills they need to obtain goals without aggression, i.e., social skills training, has been another successful means of reducing aggressive responding. The rationale for this type of intervention comes from research suggesting that people who have a propensity for getting into fights tend to lack verbal and social skills (e.g., Toch, 1969). Using a multiple baseline design, Bornstein, Bellack, and Hersen (1980) demonstrated the efficacy of social skills training in treatment of four highly aggressive children in a psychiatric setting. Individualized training typically consisted of the introduction

of appropriate social responses in roleplay settings, therapist modeling, rehearsal, and feedback. Elder, Edelstein, and Narick (1979) used similar components in their treatment of aggressive adolescent psychiatric patients, but saw all four of their subjects as a group. Generalizability and maintenance of treatment gains was variable in both studies.

Ollendick and Hersen (1979) compared social skills training to discussion and control conditions in a group design using 27 juvenile delinquents as subjects. After ten weeks of a program involving instruction, feedback, modeling, and rehearsal of appropriate responding, subjects in the social skills group improved on several measures, unlike subjects in discussion and control conditions. Specifically, data from videotaped roleplaying indicated significantly less aggressive content and significantly more appropriate requests for alternative behavior in the social skills training condition.

In some cases, psychopharmacological treatment of aggressive behavior has been employed in addition to, or in lieu of the psychologically-based treatments described above. Conners and Werry (1979) reviewed a number of investigations which suggest that stimulants, specifically amphetamine, dextro-amphetamine, and methyl-phenidate (Ritalin), may reduce the incidence of impulsive or disruptive aggression. The usefulness of this literature is limited by classification problems already discussed, i.e., aggression per se is not considered apart from hyperactivity, impulsivity, and general disruptive behavior. The primary conclusion that can be drawn from these

data is that stimulants reduce hyperactive behavior relative to placebos, and as such, can be linked to reported reductions in "temper tantrums" and "irritability" (Knobel, Wolman, & Mason, 1959), "demanding" and "quarrelsome" behavior (Eisenberg, Lachman, Molling, Lockner, Mizelle, & Conners, 1963), and general "hyper-aggressive responding" (Conners & Werry, p. 349).

Cognitive Therapies: Background and Application to Anger and Aggression

The final group of therapies which has been proposed for the management of anger and aggression is the cognitive therapies. Cognitive restructuring, problem solving, and introduction of coping skills, all have been considered as means of reducing aggressive responding of children (Camp, Blom, Herbert & VanDoorninck, 1977; Goodwin & Mahoney, 1975; Spivack & Shure, 1974). Novaco (1975, 1978) has proposed that "stress inoculation" which combines components from all three of these other cognitive therapies, is an effective means of enhancing one's ability to manage anger. Subsequent researchers have adapted Novaco's model and procedures to assist children in anger management (Johnson, 1980; Spirito, Finch, Smith, & Cooley, 1981). The cognitive models of treatment which provide the basis of the intervention assessed in the present study are outlined below. In addition, the few studies which have attempted to utilize and evaluate these procedures in angry or aggressive children will be described.

There are at least three different approaches to cognitive therapy. The first, cognitive restructuring, involves instructing people to recognize and modify maladaptive thoughts. Albert Ellis's Rational

Emotive Theory (RET) is the earliest and best known application of this approach. Ellis's treatment entails restructuring one's maladaptive "irrational" cognitions about events and self as a means of relieving the subjective distress which is caused by these irrational beliefs (Ellis, 1962). Cognitive restructuring has been adopted by Beck in his "cognitive therapy" for depression (Beck, 1976) and has served as a basis for "self-instruction" training popularized largely by Meichenbaum and his colleagues (Meichenbaum, 1974; Meichenbaum & Goodman, 1971).

A second approach to cognitive therapy is problem-solving. D'Zurilla and Goldfried (1971) proposed a model of behavioral problem-solving based on the premise that,

much of what we view clinically as 'abnormal behavior' or 'emotional disturbance' may be viewed as ineffective behavior and its consequences, in which the individual is unable to resolve certain situational problems in his life and his inadequate attempts to do so are having undesirable effects such as anxiety, depression, and the creation of additional problems, (p. 71).

Spivack and his colleagues (e.g., Spivack & Shure, 1974) are credited with the documentation of problem-solving deficits in a number of "deviant" populations, as well as the successful implementation and evaluation of problem-solving therapies.

A third category of cognitive treatment emphasizes training participants in general coping skills which might facilitate their adaptation to a number of stressful situations. Kazdin (1973) trained phobics to approach feared objects by having them imaginably rehearse their approach in a procedure labeled "covert modeling". Similarly, Goldfried (1971), modified systematic desensitization procedures so

that a client could retain his image of a feared stimulus, "cope with the anxiety, and learn to relax it away" (Mahoney & Arkoff, 1977, p. 70). The presumption in both of these strategies is that the coping skills practiced during imagination generalize and are subsequently applied in similar stressful situations.

Stress inoculation, like other coping skill therapies, combines self-instruction and modification of cognitions from "cognitive restructuring" techniques with systematic analysis of problems from "problem solving" strategies, then applies them with an emphasis on enhancing skills which will enable the client to cope effectively with future stressors. "Stress inoculation" is a label coined by Meichenbaum (1975) who popularized the procedure. "Inoculation" implies that the participant is, in effect, immunized against the effects of stress.

Meichenbaum proposed that one's resistance to the effects of stress can be enhanced through a training procedure consisting of three phases: education, skill acquisition and rehearsal, and application. In the education phase, clients are made aware of their autonomic responses or reactivity and cognitive behavior in response to stressors. Alternative responses, such as relaxation to reduce arousal, more appropriate cognitions, and more adaptive behaviors, are introduced and rehearsed in the second phase. Training children to relax and use positive self-statements requires that a therapist model appropriate self-statements overtly, then systematically phase out the audibility of these responses following the steps outlined by Meichenbaum and

Goodman (1971):

1. The therapist models self-statements in hypothetical situation, talking aloud while the child observes.
2. The child imitates appropriate responding in the same situation, talking aloud with coaching from the therapist.
3. The child repeats the procedure at stage 2, but with no assistance from the therapist.
4. The therapist models the same statements, but in a whisper.
5. The child repeats statements, whispering to himself.
6. The therapist repeats performance in hypothetical situation, this time remaining silent but suggesting with his facial expressions that he is saying the correct self-statements to himself.
7. Child performs in same hypothetical situation, using silent self-statements.

In the final stages of stress inoculation training, newly acquired coping skills are practiced in increasingly stressful imaginal and roleplay situations.

The efficacy of stress inoculation training has been demonstrated with adults in the reduction of phobic anxiety (Meichenbaum & Cameron, 1972) and coping with laboratory-induced pain (Turk, 1975). The most notable application of this procedure, however, has been in the area of anger control. Novaco (1975) reported significant improvements in the laboratory and extra-laboratory anger-control of 34 adults who participated in six sessions of stress inoculation training. A second

study (Novaco, 1977a) utilized a single-case design to demonstrate the improvement of an aggressive, hospitalized, depressed adult after 15 sessions of stress inoculation training. Self-report data indicated that the patient was able to apply his coping skills toward controlling his anger in the face of provocation outside of the treatment setting. In a novel application of this procedure, Novaco (1977b) trained law enforcement officers to control their anger in spite of frequently encountered confrontation and provocation.

Application of Cognitive Therapies to Anger-management in Children

Researchers have only recently begun to examine the utility of cognitive therapies for anger-management in children. Some of the first efforts in this area were by Goodwin and Mahoney (1975), who demonstrated that children who had coping statements modeled for them, and then had the opportunity to rehearse them, were better able to withstand verbal taunting in a "game" where they were encircled by peers who were trying to make them angry. Camp, Blom, Herbert, and VanDoorninck (1977) adapted a procedure outlined by Meichenbaum and Goodman (1971) to intervene with 12 second graders judged to be "aggressive" by their teachers. Teaching children to ask themselves "What is my problem?", "What is my plan?", "Am I using this plan?", and "How did I do?", led to improvement on teacher ratings of behavior. Unfortunately, control subjects who did not learn this cognitive strategy showed the same significant improvement. The fact that experimental groups demonstrated greater improvement on a measure of cognitive impulsivity (Matching for Familiar Figures Test; Kagan,

1965) than controls suggests that the intervention may have affected impulsivity more than aggression.

Novaco's successes with applying stress inoculation to anger-management in adults inspired clinicians to extend this model to children as well. Schrader, Long, Panzer, Gillet, and Kornblath (1979) reported in an unpublished manuscript that stress inoculation training enabled chronic drug-abusing adolescents to curtail their expression of anger. Using an adaptation of Novaco's stress inoculation package which was especially designed for children (Moss & Finch, 1979), Spirito, Finch, Smith, and Cooley (1981) increased the ability of an emotionally disturbed boy in residential care to cope with anxiety- and anger-provoking stressors. Progress in this single case study was evidenced in increased compliance on school assignments, and a reduction in verbal and physical aggression reported by unit staff in daily behavior ratings.

Johnson (1980) further investigated the efficacy of the package outlined by Moss and Finch (1979). Six children rated highly aggressive on the basis of self-report, peer report, and teacher ratings, were given eight sessions of treatment which included education components of anger, modeling of coping statements, and opportunities to rehearse new skills through imagery and roleplay. All six participants reported reductions in the frequency and intensity of anger in response to a variety of provoking stimuli on a self-report anger inventory. However, daily behavior ratings on the units and teacher reports produced mixed results. In spite of methodological difficulties and ambiguities

in her data Johnson (1980) concluded that anger management via stress inoculation seems to be a viable treatment option.

Hart (1981) combined procedures from the same stress inoculation package (Moss & Finch, 1979) with problem-solving techniques from Spivack and Shure (1974). Children treated with this stress inoculation/ problem-solving program did not differ from children receiving attention only or even no contact with the experimenter. This was the case on measures of problem solving ability, teacher ratings of daily aggression levels, and self-report ratings of anger level. Failure to demonstrate treatment effects was attributed largely to issues of measurement and methodology, (Nelson, Fleming, & Hart, 1982).

To review and summarize, cognitive therapies have been applied both to the management of anger and to the reduction of aggressive responding. Three major types of cognitive therapies are cognitive restructuring, problem-solving, and coping imaginally or in vivo. Stress inoculation, which combines elements from cognitive restructuring, problem-solving, and other coping procedures, has been successfully applied to adults' anger management. Cognitive therapies have only recently been applied to the management of childrens' anger and aggression. Single case evaluations of a modified stress-inoculation package suggested that such a procedure might be useful in reducing childrens' anger and aggression.

RATIONALE AND HYPOTHESES

Anger has been defined as an intense emotional response to frustration or provocation which is characterized by heightened autonomic arousal and cognitive identification of the arousal as anger (Novaco, 1975). Although it can be expressed in various forms of pathological responding, e.g., depression, truancy, and suicidal ideation, (Biaggio, 1980) anger becomes particularly salient when it is manifested in overt expression of rage and aggression. Because of the imminent danger to the aggressive child and those around him, and because of the long-term consequences associated with this type of responding in children, aggressive behavior is likely to be targeted by a child's therapist for expedient and effective treatment. The question becomes, "what is an effective way to treat aggression in children?".

Theoretical models which implicate anger in the probability and severity of aggressive responding have been reviewed. Although some models of aggression do not address the construct of anger, there is sufficient data to suggest that enhanced anger control might be directly linked to reductions in the frequency and intensity of aggressive behavior.

Research that evaluates cognitive approaches to anger management provides evidence that they may be effective in the reduction of anger-related aggressive outbursts in adults and children. Single-case studies have suggested that an adapted version of a stress inoculation procedure (e.g., Moss & Finch, 1979) may be a viable treatment for children whose anger is manifested in verbal and physical aggression (Johnson, 1980; Spirito et al., 1981).

The purpose of the present study was to assess the efficacy of a modified stress-inoculation program in the reduction of anger and aggression of children in a psychiatric residential facility. Assessment instruments were selected to reflect changes in level of anger as well as frequency and severity of aggressive responding. It was expected that children who participated in the Anger-management (treatment) group would show reduced anger and aggression relative to control subjects who had equivalent experiences with therapists but were not exposed to the Anger-management program (Attention-control group). Specifically, it was hypothesized that the following changes would occur:

Hypothesis I: Children in the Anger-management group would report greater reductions in anger on the Children's Inventory of Anger (CIA) than children in the Attention-control group at post-treatment and follow-up periods.

Hypothesis II: Children in the Anger-management group would show reductions in reports of angry cognitions and aggressive actions in response to situations in the Situation Self-report Inventory. Their scores on both "Thinking" and "Doing" items would decrease more than those of Attention-control children at post-treatment and follow-up intervals.

Hypothesis III: Unit staff would rate Anger-management children as displaying fewer angry and aggressive responses relative to their own pre-treatment scores and to the scores of Attention-controls at post-treatment.

Hypothesis IV: Behavioral Observations at post-treatment intervals would indicate that anger-related incidents of aggression had decreased in severity and frequency more for Anger-management children than for Attention-control children.

Hypothesis V: Teacher ratings at post-treatment intervals would indicate that Anger-management children displayed less aggressive behavior and more self-control than Attention-control children.

METHOD

Subjects

Fourteen participants were selected from among the residents of the Virginia Treatment Center for Children (VTCC), a short-term psychiatric hospital for children. Participants were all males, and ranged in age from 9 years, 8 months to 14 years, 8 months, with a mean age of 11 years, 9 months. In addition to the treatment being assessed in the present study, all children were involved in individual, group, and family therapy, as well as recreation therapy, occupational therapy, art and music therapies, and academic programs. Some children were also taking medication during their involvement in the study. Table 1 summarizes the age, race, diagnosis, and medication for each participant.

Children were selected for participation in the following manner. First, the experimenter examined the "Problem List" of every child admitted to VTCC over a 15 month period, and noted children who presented with problems of excessive anger, difficulty with anger management, or physical or verbal aggression. The "Problem List" is a required part of each child's record, and is initially compiled by a multidisciplinary team which conducts complete psychological, psychiatric, and historical evaluations prior to the child's admission.

If a child's "Problem List" included any of the problems described above, the experimenter contacted the child's Primary Therapist. The Primary Therapist is the social worker, psychologist, psychiatrist, or

Table 1
Age, Race, IQ, Diagnosis, and Medications of Subjects in Each Group

Subject Number	Age	Race	IQ	Diagnosis	Medication
ANGER-MANAGEMENT GROUP					
01	10-6	White	90	Depressive Neurosis	Mellaril
02	10-10	Black	86	Dysthymic Disorder	Mellaril
03	10-9	White	97	Conduct Disorder, Undersocialized Aggressive	Mellaril, Ritalin
04	14-8	White	68	Dysthymic Disorder	Amitryptiline, Stelazine
05	11-9	Black	76	Conduct Disorder, Undersocialized Aggressive	Thorazine/Mellaril, Ritalin/Haldol
06	11-6	White	86	Conduct Disorder, Socialized Aggressive	Ritalin/Mellaril
07	12-5	White	87	Tourette's Disorder	Haldol, Catapres (for tics)
ATTENTION-CONTROL GROUP					
08	12-6	Black	101	Depressive Neurosis	Imipramine, Thorazine/Haldol
09	12-11	Black	85	Attention Deficit Disorder with hyperactivity	Benedryl, Ritalin
10	9-8	White	128	Oppositional Disorder	Ritalin, Mellaril
11	12-2	White	104	Dysthymic Disorder	
12	11-5	White	95	Dysthymic Disorder	Tofranil
13	12-7	White	92	Schizophrenia, Residual Type	Navane, Tofranil
14	13-5	White	98	Conduct Disorder, Undersocialized Aggressive	Thorazine

/ indicates medication change
, separates medications administered simultaneously

Psychology Intern having primary responsibility for a child's treatment. The program was explained to the Primary Therapist, and he or she was asked to consider referring the child. The decision to refer the child to the program was typically made at the treatment staffing scheduled four weeks after the child's admission. If the Primary Therapist approved, the child's parents and the child himself were contacted and asked for informed consent.

Under this system, 21 children were selected as potential participants. Although both males and females were screened at this stage, only two females were judged to be appropriate referrals. One of these refused to participate, and the other ran away after two weeks of hospitalization. Of the five boys who were selected by the experimenter but not included in the study, one refused to participate, one was omitted because of the parents' refusal, and three were not recommended by their Primary Therapists (one felt the child was too young, and two predicted that the children would be hospitalized for too short a time to complete treatment). The 14 remaining boys were randomly assigned to experimental conditions according to admission date.

Therapists

The therapists for the study were the experimenter, a female Ph.D. candidate in clinical psychology and a Psychology Assistant at VTCC, and a second female whose experience, academic level, and position at VTCC matched those of the experimenter. Subjects were alternately assigned to therapists such that one therapist saw three anger-management and three attention-control subjects, while the other saw four anger-management and four attention-control subjects.

Dependent Measures

Self-Report. Two self-report measures were administered to all participants. The first, the Children's Inventory of Anger (CIA), is a 71-item paper and pencil measure of a child's probable anger in response to conflict situations (Nelson & Finch, 1978). The inventory was developed at VTCC and is modeled after a measure which Novaco designed for adults. Unpublished normative data indicate that normal school children average 202.39 (SD=33.10) for a total CIA score (N=911), but that this mean varies with age and sex. Boys tend to report more anger (N=677, \bar{x} =205.78, SD=32.64) while girls report less anger (N=677, \bar{x} =199.50, 32.85). In addition, CIA score seems to correlate negatively with age. Means and standard deviations by age levels are included in Appendix A along with the inventory itself. The one published study to report means for a hospitalized population is by Eastman (1979), who administered the CIA to 38 emotionally disturbed children at VTCC. He reported a mean of 196.9 and a standard deviation of 41.56 for this particular sample. It should be noted that although the mean was slightly lower than that of the larger normal sample, the variability, as evidenced in the standard deviation, was considerably higher in this population.

Montgomery, Nelson, and Finch (1979) reported a significant test-retest reliability of .823 ($p < .01$) when the CIA was administered to 30 inpatients at VTCC. More recently, unpublished investigations of the measure's internal consistency indicate an Alpha coefficient of .96 in a sample of 911 school children. Criterion validity is suggested by a finding that CIA score correlated significantly with Peer Nomination (Finch & Eastman, 1982).

Typically the CIA is administered individually by an adult who reads the items and records the responses. To insure standardization and to minimize bias in this study, the items were audiotaped and someone other than the child's therapist administered the test. As each item was read, the child was asked to look at four faces depicting increasingly angry reactions. Each face corresponded to a statement of anger level ranging from "I don't care, that situation doesn't bother me," to "I can't stand that! I'm furious!" In addition each face corresponded to a number. After hearing the item and scanning the faces, the child was asked to respond with a number from one to four, with four representing the highest level of anger. The child's responses were recorded and summed for a score ranging from 71 to 284.

The CIA was administered to all subjects at pre-treatment, post-treatment, and follow-up intervals. A copy of the CIA can be found in Appendix A.

The second self-report measure was designed by the experimenter to assess specific changes expected in the present study. This "Situational Self-report Inventory" consisted of 12 situations followed by inquiry about the cognitions and responses the child expected to have in those situations. Details of the inventory's development are as follows.

First, three types of situations most likely to provoke anger in the VTCC population were deduced by clinical observation and discussions with VTCC staff members. Four hypothetical conflict situations were then created for each of these conflict categories. The items were tailored to the VTCC population in that they utilized the jargon and

idioms in vogue at the time. The 12 items were audiotaped, along with instructions to the child to listen to the situation, imagine he was in the situation, and respond to two questions: "What would you be thinking?" and "What would you do?". The script of questions and instructions can be found in Appendix A.

The scoring system for the Situational Self-report Inventory consisted of a two-step process. First, the experimenter developed eleven descriptive categories into which all possible responses might be categorized. A group of three Ph.D. Clinical Psychologists then examined each of the responses in the context of each situation presented, and rated them on a 1 to 5 scale. The 1 to 5 scale represented the intensity of anger or seriousness of aggression in the context of each situation, with 1 being an appropriate response to that situation and 5 being an extremely inappropriate, highly aggressive response to that situation. In all, 11 response categories for the question "What would you be thinking?" and 11 response categories for the question "What would you do?" were rated. The resulting numerical values assigned to each type of response for each item are summarized in a matrix in Appendix A.

The next step in scoring was the categorization of each subject's responses into the 11 categories of "Thinking" responses and 11 categories of "Doing" responses. Two Child Psychology Interns were asked to categorize subjects' responses to each item. By listing all subjects' responses to each question, and not identifying the source of each response, the experimenter was able to keep raters blind to subjects' experimental groups and testing intervals. The two raters agreed in

their categorizations of 79% of the "Thinking" responses and 90% of the "Doing" responses, for an overall agreement rate of 85%.

After the two blind raters had categorized responses, numeric values were assigned according to the matrix devised in the initial stages. The mean of the two raters' values was then taken as the score for that child on that item. The dependent measures derived by this process were a "Thinking" score which was the mean value for 12 items and a "Doing" score which was the mean value for the same 12 items. These scores were reported at pre-treatment, post-treatment, and follow-up intervals.

To summarize, there were three self-report measures taken at each of the three assessment intervals. They were the total score on the Children's Inventory of Anger, the "Thinking" score from the Situational Self-report Inventory, and the "Doing" score from the Situational Self-report Inventory.

Unit Ratings. The measure given to unit staff to rate participants' anger was a 29-item rating scale designed by Eastman (1979). The inventory combines anger-related items from three problem behavior checklists. His original item pool was a combination of items loading on the "conduct problem" factor of the Quay-Peterson Behavior Problem Checklist (Quay & Peterson, 1967), items loading on the "emotional overresponsiveness" factor of the Devereux Child Behavior Scale (Spivack & Spotts, 1965), and items loading on the "Aggression" scale of a School Behavior Checklist, (Miller, 1972). Eastman asked six professionals at VTCC to select the items which they felt were reflective

of anger. Twenty-nine of the original 63 items were retained for Eastman's inventory after being selected by four out of six judges. Ratings on his 29-item scale range from 1 (hardly ever) to 4 (frequently) and are summed for a possible score ranging from 29 to 116. In his sample of 38 emotionally disturbed children at VTCC, Eastman (1979) obtained a mean of 63.75 and a standard deviation of 20.20.

For the present study, each subject's head nurse and staff from day and evening shifts were asked to complete the rating scale at pre-treatment and post-treatment intervals. The mean of the three unit staff members' ratings was entered as a dependent measure at each interval. The Unit Staff rating scale and Eastman's original procedure and item pool are presented in Appendix B.

Teacher Ratings. Teachers at VTCC are routinely asked to complete three rating scales for each new child: the Conners Teacher Questionnaire (Conners, 1969), the Locus of Conflict Rating Scale (Armentraut, 1971), and the Self Control Rating Scale (Kendall & Wilcox, 1979). A subject's teacher completed ratings at the pre-treatment period - four to six weeks after admission - and again at that subject's post-treatment assessment period.

The Conners Teacher Questionnaire is a behavior rating scale with 39 items that are rated on a scale of 1 to 4, with 4 representing the most severe level. Factor analysis has yielded four significant factors: hyperactivity, anxiety reaction, daydreaming, and defiant/aggressive conduct (Conners, 1969). The latter factor accounted for 39% of the variance. Although reliability of the total score was not

determined by the author, there was a .91 correlation between the pre-treatment and post-treatment aggression factor scores of 50 children in a placebo condition for four weeks. This would at least suggest good test-retest reliability for the aggression factor. The total Conners score and score on the defiant/aggressive factor were dependent measures in the present study.

The Locus of Conflict Rating Scale includes 15 items which indicate inwardly directed manifestations of emotional conflict and 15 items which indicate outward expression of these conflicts. Each item is rated on a scale of 1 (behavior absent) to 4 (behavior present at a severe level). Armentraut (1971) administered the inventory to the teachers of 50 fifth and sixth graders at the beginning and end of a three week period. Significant test-retest correlations were .89 for the internal scale, .92 for the external scale, and .90 for the total score. In his overall sample of 312 fifth and sixth graders, Armentraut reported significant differences between males and females, with males scoring higher on total score. In addition, he found a significant positive correlation between internal and external scores. The three dependent measures included in the present study were the total score, the score on the internal factor, and the score on the external factor.

The Self Control Rating scale consists of 33 items rated on a 1 to 7 scale. It is designed to assess the cognitive and behavioral components of self-control in children. A high score suggests impulsive responding while a low score is indicative of greater self-control.

Kendall and Wilcox (1979) report high internal reliability ($\alpha = .98$) and test-retest reliability ($r = .84$). The latter is based on ratings of 24 children over a three to four week interval.

Copies of the three teacher rating scales can be found in Appendix C.

Behavioral Observation. Undergraduate research assistants blind to treatment group assignment were trained to observe children in gym classes and unstructured unit activities, and to record their behavior using a system designed for this study. The system involved the notation of provoking events and aggressive or angry responses occurring any time in a half hour observation period. There were three categories of provocation - physical, non-physical, or none apparent - and four categories of responding - appropriate, complaining or tantruming, verbal assault of another person, and physical assault of another person. Observations were ideally made for thirty minutes at pre-scheduled times, twice weekly, for three weeks before and after treatment. When no provocations or behaviors were observed, or unusual events precluded taking the data, additional observations were scheduled.

Behavior raters were trained in a three step process that began with presentation of the instructional materials in Appendix D. These materials briefly described the nature of the observational system and defined categories of provocation and categories of responses. The experimenter went over these materials with each rater individually, then demonstrated how events were to be recorded on the data sheets.

In the second step of training, the experimenter gave verbal

descriptions of typical interactions to the rater, who then practiced recording these interactions according to the coding system. Simple examples in each category were presented along with examples that would be more difficult to code, and the rater was coached on how to decide what to record. This process was repeated until raters reached 90% agreement with the experimenter.

Finally, raters practiced recordings in vivo, with the experimenter or a previously trained rater. Raters who had observed subjects at pre-treatment intervals were asked to rate children along with the new rater if the experienced rater would be leaving VTCC before the post-treatment observation period. During this time inter-rater reliability was assessed, and the new rater was trained to judge events as closely as possible to the original raters. Inter-rater reliability ranged from 20% to 88%, with a mean percent of agreement around 66%. Percent agreement for each pair of raters is tabled in Appendix D.

The scoring system for these observations reflected value judgements about the seriousness of different provocation-response combinations. For example, physically attacking another person with no apparent provocation was considered a more serious problem than physically attacking someone after being physically provoked. Although neither is desirable, it was considered less serious for a child to complain and stomp his feet after being verbally attacked, than for him to retaliate with a physical or verbal assault.

The relative seriousness of each event was quantified by assigning numerical values to each provocation and each response. Less intrusive

provocations were given higher values (none apparent = 2, non-physical = 1.5, physical = 1) while less severe responses were given lower values (complains/tantrums = 1, verbal attack = 2, physical attack = 3). When the provocations and responses were noted together, their values were multiplied for the score of that interaction. For example, for verbally attacking someone in response to a non-physical provocation, a child scored three points (2 x 1.5). Three points were also scored if a child responded to physical provocation with physical assault. Children who responded with a physical attack following minimal provocation (e.g., none apparent or non-physical) scored even higher, while children who responded to physical provocation with a less serious response (e.g., complaining, verbal attack) received lower scores. Overall a high score represented more aggressive responding to less intrusive or intense provocation.

Appropriate responses were assigned negative values so that they could balance out inappropriate responses in each child's final total. Appropriate behavior following a physical provocation earned the child a -5, while appropriate behavior following a non-physical provocation earned him a -3.

At pre-treatment and post-treatment assessment periods, mean scores from six observations were averaged for a single "Behavior Rating" score. In order to avoid dealing with negative numbers in analyses, the sum of 10 was added to every "Behavior Rating" score.

Procedure

Subjects in both experimental groups were seen according to the timetable outlined in Table 2. In the pre-treatment phase (weeks 1-6) subjects were screened and selected, therapists, parents, and children were contacted for consent, and pre-treatment assessment was conducted. In the intervention phase (weeks 7-15), eighteen individual half-hour meetings with one of the two therapists were scheduled. In the post-treatment phase, assessment was repeated on all measures. Follow-up assessment was conducted ten weeks after the end of the intervention phase. Details of these phases are presented below.

Pre-treatment Phase. The subject selection process which transpired during each participant's first month at VTCC has been detailed earlier. As a potential subject, a child's first official encounter with the experimenter was in the sixth week of hospitalization. At this time the child met individually with the experimenter, who explained the study and received the child's consent to participate. Forms used for parents' and childrens' consents are found in Appendix E.

Pre-treatment assessment was routinely conducted as follows. The experimenter distributed unit staff ratings and teacher ratings at week four and attempted to collect them by week six. Behavioral observations commenced at week four and ran through week six. Self-report inventories were administered by a researcher other than the child's therapist for this study, usually in the sixth week. One to three week alterations in this schedule occurred when assessment was hampered by individual logistical problems.

Table 2
Schedule for Participants

Weeks Since Admission	Procedures
	<u>Pre-treatment Phase</u>
1	Examine "problem list"
2	Contact Primary Therapist
3	Contact parents
4	Distribute Unit Ratings, begin Behavioral Observation (continues for 3 weeks)
5	
6	Introductory meeting with experimenter, administration of self-report measures
	<u>Intervention Phase</u>
7	Treatment Sessions (1) and (2)
8	(3) and (4)
9	(5) and (6)
10	(7) and (8)
11	(9) and (10)
12	(11) and (12)
13	(13) and (14)
14	(15) and (16)
15	(17) and (18)
	<u>Post-treatment Phase</u>
16	Post-treatment assessment - repeat all measures, begin Behavioral Observation (continues for 3 weeks)
25	Follow-up assessment - repeat self-report measures

Intervention Phase. Table 3 presents a summary of the program conducted with the Anger-management children. The content of the sessions is presented in more detail in Appendix F. In general, the first four sessions focused on educating the child about the nature and determinants of anger, while helping him apply this information to his own experiences. In sessions four through six relaxation procedures were introduced. Instructions to breathe slowly and deeply were accompanied by training in muscle relaxation. In the first session where relaxation was introduced, children tried out imagery based instructions for muscle relaxation. Standard instructions for relaxation were also available for children balking at the imagery-based instructions, but only one child chose the standard. Both sets of instructions are in Appendix G. Relaxation was practiced in conjunction with imaginal coping with provocation in subsequent sessions.

Once the child had learned determinants of anger and stages of coping (Sessions 1-4), the therapist modeled appropriate self-statements which the child could use in the situations he had described as anger-provoking. In Sessions 6 through 15, the therapist gradually reduced the audibility of the self-statements she was modeling, and encouraged the child to imitate, first aloud and then to himself, until statements were only made "inside his head". In the final sessions (16-18), the child rehearsed his new coping skills in roleplay situations with the therapist and an unfamiliar adult male.

Table 3

Session Outline for the Anger-Management Group

Weeks Since Admission	Session	
7	1	Discuss nature of anger
7	2	Discuss determinants of anger, apply to child's situation
8	3	Introduce 4 stages of coping; deep breathing relaxation
8	4	Model self-statements in 4 stages; introduce muscle relaxation
9	5	Rehearse relaxation in imaginal confrontation
9	6	Cognitive modeling (aloud) by therapist
10	7	Cognitive modeling including self-instruction to relax
10	8	Cognitive modeling including self-instruction to relax; child repeats
11	9	Child roleplays, stating cognitions aloud, therapist prompts
11	10	Child roleplays, stating cognitions aloud, therapist prompts
12	11	Child roleplays as in 9 & 10, therapist reduces prompts
12	12	Therapist models using whispered self-statements, child repeats
13	13	Therapist models using whispered self-statements, child repeats
13	14	Therapist models silent self-statements, child & therapist roleplay
14	15	Therapist models silent self-statements, child & therapist roleplay

Weeks Since Admission	Session	
14	16	Third person joins roleplays to take part of provoker, therapist coaches
15	17	Therapist and child review, with emphasis on application to novel situations
15	18	Third person returns, roleplays

Children in the Attention-control group had intervention sessions that followed the same time schedule as the Anger-management group. In these sessions the children did not discuss issues relevant to anger, but instead, discussed other emotions with the therapist. In each session, one emotion or objective was addressed (e.g., happy, sad, surprised, confused). In sessions coinciding with the educational phase of the anger control treatment (1-4), conversation was the only means of exchanging information. Where modeling was taking place in the Anger-management group (sessions 6-15) the therapist modeled facial expressions and actions appropriate to the targeted emotion in the Attention-control group. Finally, Attention-controls roleplayed and contrasted several of the emotional responses they had discussed in Sessions 16-18. This included meetings with an adult male as was the case with the Anger-management group. Table 4 summarizes the topics addressed in each of the Attention-control sessions, and the activity involved, i.e., discussion, modeling and rehearsal.

At the end of each session, children in both groups were verbally reinforced for their participation and were allowed to choose a piece of gum. At the end of eighteen sessions, the child's therapist took him on an outing of his choice, typically a walk downtown or a trip to McDonald's.

Post-treatment Phase. At the end of the intervention phase there was a three week post-treatment assessment interval in which all dependent measures were re-administered. Self-report inventories were administered immediately upon completion of the intervention phase.

Table 4

Session Outline for Attention-Control Group

<u>Week</u>	<u>Session</u>	<u>Topic</u>	<u>Format</u>
7	1	Discuss nature of emotion	Discussion only
7	2	Happy	Discussion only
8	3	Sad	Discussion only
8	4	Afraid	Discussion only
9	5	Doubtful	Discussion and Modeling
9	6	Surprised	Discussion and Modeling
10	7	Confused	Discussion and Modeling
10	8	Excited	Discussion and Modeling
11	9	Hurt	Begin "Acting out" Scenes
11	10	Bored	Begin "Acting out" Scenes
12	11	Bored versus Excited	Begin "Acting out" Scenes
12	12	Happy versus Sad	Begin "Acting out" Scenes
13	13	Enthusiastic	Begin "Acting out" Scenes
13	14	Disappointed	Begin "Acting out" Scenes
14	15	Review of Different Emotions	Begin "Acting out" Scenes
14	16	Review of Different Emotions	Roleplays with third person
15	17	Review of Different Emotions	Therapist & child only
15	18	Review of Different Emotions	Roleplays with third person

Teacher and Unit staff ratings were distributed immediately and collected as quickly as possible, usually within two weeks. Behavioral observations were conducted twice a week for three weeks following the completion of the intervention phase.

Follow-up assessment varied according to whether subjects were still inpatients or were discharged and followed as outpatients. For the subjects who were still inpatients, all measures except Behavioral Observation were repeated. Subjects who were discharged prior to the follow-up assessment period were asked to come back ten weeks after the end of the intervention phase to complete both self-report inventories. Under this system, four children received complete follow-ups, six received self-report only, and four failed to return at all for follow-up. Table 5 summarizes this information by groups, in addition to presenting the number of days each child was hospitalized.

Additional discharge information reported in Table 5 was particularly interesting when examined by groups. That is, three out of seven of the subjects in the Attention-control condition were discharged or transferred with less than three days' notice after staff members decided they were too aggressive to be managed at VTCC. The practice of discharging children in this fashion was linked to internal politics and at times contested by individuals familiar with the children. Nevertheless, it was noted that none of the children in the Anger-management group were identified as behaving in these extremes, while almost half the subjects in the Attention-control group were seen as escalating to a dangerously high level of aggression.

Table 5
Follow-up and Discharge Conditions for
Subjects in Each Group

SN	Status at Follow-up	Conditions of Discharge	Duration of Hospitalization
ANGER-MANAGEMENT GROUP			
01	inpatient	normal procedure	275
02	outpatient	normal procedure	164
03	inpatient	normal procedure	319
04	unavailable (op)	normal procedure	190
05	outpatient	normal procedure	142
06	outpatient	normal procedure	120
07	inpatient	normal procedure	134
ATTENTION-CONTROL GROUP			
08	unavailable	Sudden Transfer - excessive aggression	131
09	unavailable (op)	Sudden Discharge	111
10	inpatient	normal procedure	327
11	outpatient	normal procedure	142
12	outpatient	Discharged early at parents' request	098
13	outpatient	normal procedure	152
14	unavailable (op)	Sudden Discharge - excessive aggression	210

Analysis of Therapy Tapes. In order to determine the integrity of the independent manipulations, audiotapes were made of randomly selected Anger-management and Attention-control sessions and rated to determine whether therapists followed the designated protocols. Children had the option of refusing to be taped, and frequently exercised that option. As such, there was some bias in the selection of subjects or sessions to be taped.

From the collection of audio-tapes that was accumulated, twelve ten-minute samples were combined in random order onto a master tape. The tape contained a total of four samples from Attention-control sessions and eight samples from Anger-management sessions. The tapes were then given to two graduate research assistants along with a brief description of the Anger-management and Attention-control conditions. Raters were then asked to listen independently to each ten minute segment and decide whether it was a tape of an Anger-management session or an Attention-control session. The accuracy of these ratings was viewed as an indicant of the extent to which the content of the two treatments actually differed. Instructions and explanations provided to the research assistants are included in Appendix H.

RESULTS

Group Comparisons

One-way Analyses of Variance were used to compare pre-treatment scores, ages, and Full Scale IQ's of the Anger-management and Attention-control groups. There were no significant differences between groups on any of the measures taken at the pre-treatment interval ($p > .05$), and there were no age differences. However, there was a significant difference in Full Scale IQ, $F(1,12) = 6.60$, $p < .02$. The Anger-management group's mean IQ of 84.3 was significantly lower than the Attention-control group's mean IQ of 100.4. Because of this unexpected difference, Full Scale IQ was included as a covariate in analyses of main effects and interactions.

Hypotheses were tested by 2 x 3 and 2 x 3 (Group X Trial) designs. Each Repeated Measure Analysis of Variance included the between-subject variable, Group, the within-subject variable, Trial, and the covariate, Full Scale IQ. Hypotheses were further investigated by one-way Analyses of Variance which simply compared post-treatment scores of the two groups and follow-up scores of the two groups. Results of these analyses are detailed below.

Self-report Inventories. After subjects with missing follow-up data were eliminated, five Anger-management subjects and four Attention-control subjects were included in the 2 x 3 (Group X Trial) analysis of Children's Inventory of Anger (CIA) score. Analysis of Variance with total CIA score as the dependent measure and Full Scale IQ as a covariate yielded a significant Trial effect, $F(2,14) = 6.59$, $p < .01$,

with both groups reducing their CIA scores over time. There was no significant group effect and no Group X Trial interaction ($p > .05$). This analysis is summarized in the first section of Table 6. Group changes over trials are depicted graphically in Figure 2.

The second half of Table 6 includes the summary of an analysis that was run with only two trials, pre-treatment and post-treatment. This analysis, which also used Full Scale IQ as a covariate, was conducted so that CIA differences across the first two periods could be examined without loss of the five subjects lacking follow-up data. In this analysis, which included all 14 subjects, there was a significant Trial effect, $F(1,2) = 15.46$, $p < .002$, with both groups decreasing their CIA scores in the second trial. More importantly, there was a significant Group X Trial effect, $F(1,12) = 7.24$, $p < .02$, with Anger-management subjects lowering their scores at post-treatment significantly more than Attention-control subjects. Means, adjusted means, and standard deviations for both analyses are reported in Table 7.

To further test the hypothesis that there would be post-treatment and follow-up differences on the CIA, one-way Analyses of Variance were conducted. A comparison of the post-treatment CIA scores of five Anger-management and four Attention-control subjects yielded a significant difference, $F(1,7) = 6.36$, $p < .04$, with Anger-management subjects reporting less anger than Attention-controls. This difference was even more salient when the post-treatment scores of all 14 subjects were compared, $F(1,12) = 8.64$, $p < .01$. Comparison of follow-up scores did not yield significant differences, though there was a non-significant

Table 6
 Summary of Analyses of Variance
 for CIA, with Full Scale IQ, as a Covariate

(2 x 3) DESIGN WITH 5 ANGER-MANAGEMENT AND 4 ATTENTION-CONTROL SUBJECTS

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Group	1	8838.58	4.75	.07
Covariate (FSIQ)	1	1387.77	.75	.42
Error Between	6	11171.54		
Trial	2	8114.19	6.59	.01
Group x Trial	2	1518.64	1.23	.32
Error Within	14	8623.73		

(2 x 2) DESIGN WITH 7 ANGER-MANAGEMENT AND 7 ATTENTION-CONTROL SUBJECTS

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Group	1	2245.40	2.15	.17
Covariate (FSIQ)	1	.64	.00	.98
Error Between	11	11508.50		
Trial	1	6820.32	15.46	.002
Group x Trial	1	3192.89	7.24	.02
Error Within	12	5292.29		

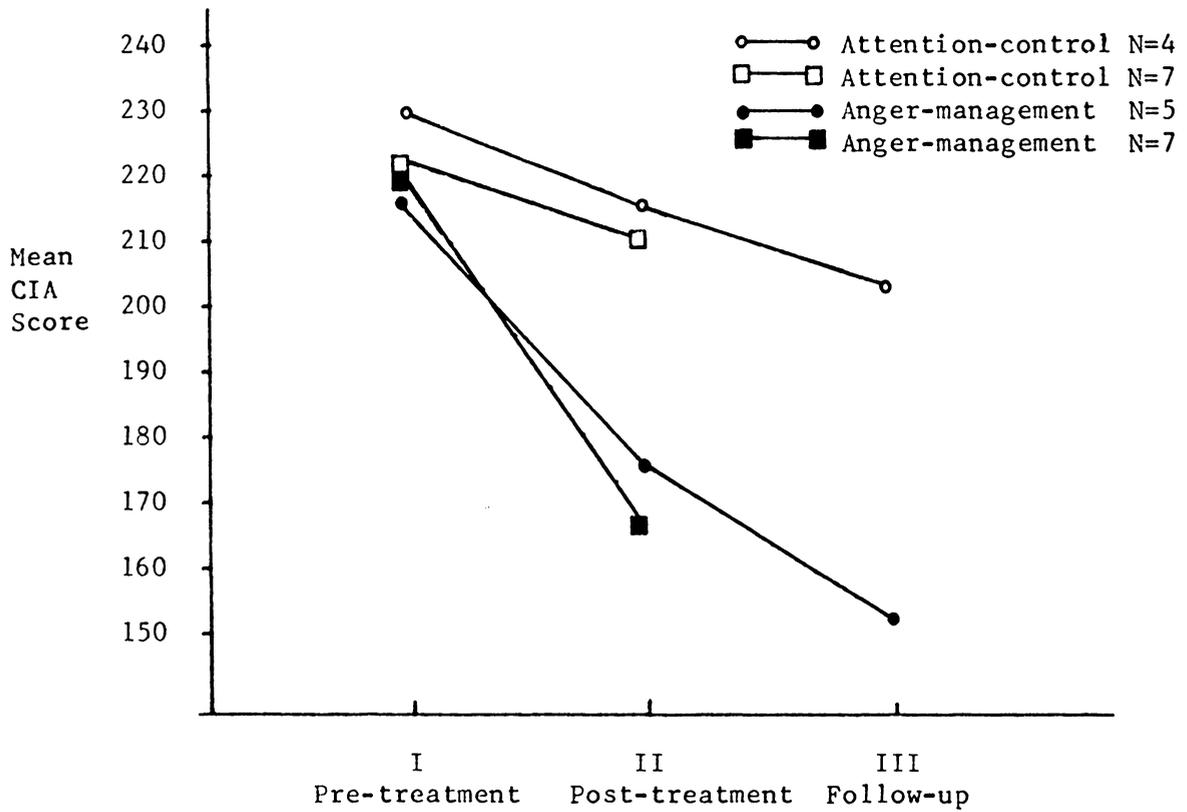


Figure 2

Mean CIA Scores for Anger-management and
Attention-control Subjects Across Trials

Table 7
 CIA Means¹, Standard Deviations, and Adjusted
 Means for Subjects Included in Each Analysis of Variance

2 x 3 Analysis (N=9)	Anger-management (N=5)			Attention-control (N=4)		
	Mean	SD	Adjusted Mean	Mean	SD	Adjusted Mean
pre-treatment	215.6	27.6	210.4	230.8	19.2	237.3
post-treatment	176.8	24.3	171.6	215.8	21.2	222.3
follow-up	155.2	51.9	150.0	206.8	29.3	213.3
2 x 2 Analysis (N=14)	Anger-management (N=7)			Attention-control (N=7)		
	Mean	SD	Adjusted Mean	Mean	SD	Adjusted Mean
pre-treatment	218.9	27.3	218.7	219.6	22.9	219.7
post-treatment	166.3	34.3	166.2	209.7	18.7	209.8

¹Higher CIA score indicates greater anger

trend for Anger-management subjects to report less anger, $F(1,7) = 3.10$, $p < .12$. These analyses are summarized in Table 8.

Like the CIA scores, the "Thinking" and "Doing" scores from the Situation Self-report measure were first analyzed in 2×3 and 2×2 Analyses of Variance. When "Thinking" was the dependent measure and Full Scale IQ was the covariate in a 2×3 (Group X Trial) analysis, there were no significant Group or Trial effects, and no Group X Trial interactions ($p > .05$). This finding was based on data from six Anger-management subjects and four Attention-control subjects who had complete data for all three trials. When only two trials were examined so that all 14 subjects could be included, there was significant Trial effect, $F(1,12) = 12.10$, $p < .005$, with both groups scoring lower at the post-treatment period. There was no Group effect and no Group X Trial interaction in this analysis. Both analyses for the dependent variable "Thinking" are included in Table 9.

In the 2×3 (Group X Trial) analysis with "Doing" score as the dependent variable and Full Scale IQ as the covariate, a significant Group effect was noted, $F(1,7) = 17.64$, $p < .004$, with Anger-management subjects scoring lower than Attention-controls at each phase. There were no significant Trial effects or Group X Trial interactions in this analysis with six Anger-management and four Attention-control subjects. In a 2×2 Analysis with all 14 subjects, there was a significant Group effect, $F(1,11) = 4.93$, $p < .05$, and a nonsignificant trend toward a Group X Trial interaction, $F(1,12) = 2.94$, $p < .11$. Table 10 summarizes both the 2×3 and the 2×2 analyses for the "Doing"

Table 8
 Summary of One-way Analyses of
 Variance Comparing CIA Scores of the Two Groups

Source	df	SS	F	P
CIA				
post (N=14)	1	6601.14	8.64	.01
Error	12	9170.86		
post (N=9)	1	3371.34	6.36	.04
Error	7	3709.55		
follow-up (N=9)	1	5905.34	3.10	.12
Error	7	13327.55		

Table 9

Summary of Analyses of Variance for Situation Self-report

"Thinking" Score, with Full Scale IQ as a Covariate

(2 x 3) DESIGN WITH 6 ANGER-MANAGEMENT AND 4 ATTENTION-CONTROL SUBJECTS

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Group	1	24.99	.32	.59
Covariate (FSIQ)	1	175.65	2.24	.18
Error Between	7	548.12		
Trial	2	62.07	2.71	.09
Group x Trial	2	9.01	.39	.68
Error Within	16	183.06		

(2 x 2) DESIGN WITH 7 ANGER-MANAGEMENT AND 7 ATTENTION-CONTROL SUBJECTS

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Group	1	33.84	.98	.34
Covariate (FSIQ)	1	85.70	2.48	.14
Error Between	11	380.87		
Trial	1	89.29	12.10	.005
Group x Trial	1	5.14	.70	.42
Error Within	12	88.57		

measure. Means, standard deviations and adjusted means for subjects in all Situation Self-report Inventory analyses are presented in Table 11.

One-way Analyses of Variance were used to compare post-treatment "Thinking" and "Doing" scores of subjects in the two groups. Regardless of whether all 14 subjects were included, or just the ten with complete follow-up data, there were no post-treatment differences ($p > .05$). In addition there were no differences at follow-up on either "Thinking" or "Doing" scores. The one-way analyses for all self-report measures are summarized in Table 12.

Table 10

Summary of Analyses of Variance for Situation Self-report

"Doing" Score, with Full Scale IQ as a Covariate

(2 x 3) DESIGN WITH 6 ANGER-MANAGEMENT AND 4 ATTENTION-CONTROL SUBJECTS

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Group	1	677.84	17.64	.004
Covariate (FSIQ)	1	970.11	25.24	.001
Error Between	7	269.06		
Trial	2	14.03	.27	.77
Group x Trial	2	45.63	.86	.44
Error Within	16	423.50		

(2 x 2) DESIGN WITH 7 ANGER-MANAGEMENT AND 7 ATTENTION-CONTROL SUBJECTS

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Group	1	354.22	4.93	.05
Covariate (FSIQ)	1	327.30	4.56	.06
Error Between	11	789.85		
Trial	1	18.89	.70	.42
Group x Trial	1	78.89	2.94	.11
Error Within	12	321.71		

Table 11
 Situation Self-report "Thinking" and "Doing"
 Means¹, Standard Deviations, and Adjusted Means

	ANGER-MANAGEMENT			ATTENTION-CONTROL		
	Mean	SD	Adjusted Mean	Mean	SD	Adjusted Mean
<hr/>						
"Thinking"						
(2 x 3) N=10						
pre	2.60	.66	2.43	2.53	.29	2.78
post	2.30	.63	2.13	2.18	.15	2.43
follow-up	2.43	.85	2.26	2.10	.57	2.35
(2 x 2) N=14						
pre	2.60	.60	2.47	2.70	.44	2.83
post	2.33	.58	2.20	2.26	.20	2.39
<hr/>						
"Doing"						
(2 x 3) N=10						
pre	3.02	.65	2.62	3.03	.95	3.62
post	2.63	.74	2.24	3.25	1.00	3.85
follow-up	3.00	.78	2.60	3.22	.99	3.82
(2 x 2) N=14						
pre	3.11	.65	2.86	3.16	.72	3.41
post	2.61	.68	2.36	3.33	1.00	3.58

¹Higher score on "Thinking" or "Doing" score signifies more angry or aggressive content.

Table 12

Summary of One-way Analyses of Variance

Comparing Situation Self-report Inventory Scores of the Two Groups

Situation Self-report Inventory <u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
"Thinking"				
post (N=14)	1	1.78	.10	.76
Error	12	223.14		
post (N=10)	1	3.75	.15	.71
Error	8	202.75		
follow-up (N=10)	1	26.7	.46	.52
Error	8	461.3		
<hr/>				
"Doing"				
post (N=14)	1	178.58	2.46	.14
Error	12	872.29		
post (N=10)	1	91.3	1.28	.29
Error	8	572.3		
follow-up (N=10)	1	12.1	.16	.70
Error	8	604.7		

Unit Ratings. A 2 X 2 (Group X Trials) Analysis of Variance with Full Scale IQ as a covariate indicated that there were no significant Group effects, Trial effects, or Group X Trial interactions, when Unit Ratings served as the dependent measure ($p > .05$ in all analyses). One-way Analysis of Variance comparing the post-treatment unit ratings of the two groups also failed to yield significant differences ($p > .05$). Tables 13 and 14 include summaries of these analyses. Table 15 includes means, adjusted means, and standard deviations from the seven Anger-management subjects and five Attention-control subjects used in these analyses.

Behavioral Observations. Six Anger-management subjects and four Attention-control subjects had complete Behavioral Observation data. Their mean behavior ratings were analyzed first in a 2 X 2 (Group X Trials) Analysis of Variance with Full Scale IQ as a covariate and second in a one-way Analysis of Variance comparing post-treatment scores. Neither analysis yielded significant differences ($p > .05$). Table 13 summarizes findings for Group, Trial, and Group X Trial analyses. Table 14 includes the one-way Analysis for Behavior ratings, and Table 15 reports relevant means and standard deviations.

Teacher Ratings. Each of the six measures stemming from teacher ratings was analyzed by the same 2 X 2 (Group X Trial) analysis, each with Full Scale IQ as a covariate. Whether the dependent measure was the Self-control Rating Scale (SCRS), the Conners total score, the Conners aggression factor, the Locus of Conflict Internal Scale, the Locus of Conflict External Scale, or the Locus of Conflict total score,

Table 13

Summary of Analyses of Variance for Unit Ratings
and Behavioral Observations with Full Scale IQ as a Covariate

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
UNIT RATINGS (N=12)				
Group	1	148.99	.63	.45
Covariate (FSIQ)	1	357.58	1.50	.25
Error Between	9	2141.73		
Trial	1	103.60	1.46	.26
Group X Trial	1	3.60	.05	.83
Error Within	10	710.86		
BEHAVIORAL OBS. (N=10)				
Group	1	214.08	.66	.44
Covariate (FSIQ)	1	1605.18	4.96	.06
Error Between	7	2263.82		
Trial	1	19.20	.07	.79
Group X Trial	1	76.80	.30	.60
Error Within	8	2064.00		

Table 14
 Summary of One-way Analyses of Variance
 for Unit Ratings and Behavioral Observations

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Unit Ratings	1	2.59	.01	.91
Error	10	1969.66		
Behavioral Obs.	1	345.60	.65	.44
Error	8	4244.50		

Table 15

Means, Standard Deviations, and Adjusted Means
for Unit Ratings¹ and Behavioral Observations²

	ANGER-MANAGEMENT			ATTENTION-CONTROL		
	Mean	SD	Adjusted Mean	Mean	SD	Adjusted Mean
Unit Ratings (N=12)						
Pre-treatment	76.57	11.56	73.70	77.20	10.47	81.22
Post-treatment	73.14	15.25	70.27	72.20	11.99	76.22
Behavioral Obser. (N=10)						
Pre-treatment	10.95	1.67	11.64	11.35	.98	10.32
Post-treatment	10.75	1.98	11.44	11.95	2.76	10.92

¹A higher Unit Rating score represents more reported anger and aggression.

²A high Behavioral Observation score represents more frequent and intense aggression in response to observed provocations.

there were no significant main effects or interactions. One-way Analyses of Variance were consistent in showing no significant differences on any of the teacher ratings. There was a nonsignificant trend for Attention-control subjects to show less acting out over time as evidenced by the nearly significant Group X Trial interaction on Locus of Conflict External Score, $F(1,10) = 3.90, p < .08$. Analyses for the six Anger-management subjects and the five Attention-control subjects who had complete teacher ratings are summarized in Tables 16 and 17. Means, adjusted means, and standard deviations for all teacher ratings are reported in Table 18.

Therapist Effects

Therapist effects were examined in two ways. First Therapist and Therapist X Group interactions were examined for each variable. Multiple 2 x 2 (Therapist X Group) analyses were conducted with post-treatment or follow-up scores as dependent measures and pre-treatment scores as covariates. Second, the accuracy with which blind raters were able to distinguish Anger-management versus Attention-control therapy tapes was examined by Therapist.

Table 19 summarizes the Group, Therapist, and Group X Therapist effects for each self-report measure. There was only one significant Therapist difference, and that was on the follow-up "Doing" score, $F(1,5) = 7.81, p < .05$. Examination of means revealed that this difference was caused by the second therapist's (not the experimenter's) subjects reporting less aggressive content at follow-up regardless of condition. There were no significant Group X Therapist interactions

Table 16

Summary of Analyses of Variance for
Teacher Ratings with Full Scale IQ as a Covariate

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
<u>Self-control Rating Scale (N=7/5)</u>				
Group	1	491.34	.36	.56
Covariate (FSIQ)	1	110.02	.08	.78
Error Between	9	12161.29		
Trial	1	438.63	.42	.53
Group X Trial	1	12.63	.01	.92
Error Within	10	10539.83		
<hr/>				
<u>Conners (N=7/5)</u>				
Group	1	1.68	.00	.96
Covariate (FSIQ)	1	2.41	.00	.95
Error Between	9	4584.99		
Trial	1	.53	.00	.96
Group X Trial	1	401.86	1.18	.30
Error Within	10	3418.60		
<hr/>				
<u>Conners Factor</u>				
Group	1	10.14	.05	.83
Covariate	1	.77	.00	.95
Error Between	9	1840.94		
Trial	1	14.93	.19	.67
Group X Trial	1	67.43	.84	.38
Error Within	10	802.40		

Table 16
(continued)

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
<u>Locus of Conflict Internal (N=7/5)</u>				
Group	1	59.52	.92	.36
Covariate (FSIQ)	1	1.96	.03	.86
Error Between	9	581.50		
Trial	1	62.97	1.73	.22
Group X Trial	1	.48	.01	.91
Error Within	10	363.86		
<hr/>				
<u>Locus of Conflict External (N=7/5)</u>				
Group	1	6.60	.04	.84
Covariate (FSIQ)	1	6.53	.04	.84
Error Between	9	1446.30		
Trial	1	38.57	.83	.39
Group X Trial	1	181.07	3.90	.08
Error Within	10	464.43		
<hr/>				
<u>Locus of Conflict Total (N=7/5)</u>				
Group	1	26.48	.12	.73
Covariate (N=7/5)	1	15.64	.07	.79
Error Between	9	1913.47		
Trial	1	200.12	1.82	.21
Group X Trial	1	200.12	1.82	.21
Error Within	10	1098.71		

Table 17

Summary of One-way Analyses of Variance
Comparing Teacher Ratings of the Two Groups

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Conners	1	151.20	.28	.61
Error	10	5312.80		
Conners Factor	1	80.61	.65	.44
Error	10	1242.06		
Self-control Rating Scale	1	130.37	.08	.78
Error	10	15610.63		
Locus of Conflict				
Internal	1	29.87	.50	.50
Error	10	598.80		
External	1	168.47	2.30	.16
Error	10	731.20		
Total	1	56.47	.54	.48
Error	10	1039.20		

Table 18
Means¹, Standard Deviations, and
Adjusted Means for Teacher Ratings

	ANGER-MANAGEMENT (N=7)		Adjusted Mean	ATTENTION-CONTROL (N=5)		Adjusted Mean
	Mean	SD		Mean	SD	
<u>Conners¹</u>						
Pre-treatment	50.00	10.92	50.19	29.40	22.23	59.14
Post-treatment	58.00	26.34	58.19	50.80	16.95	50.54
<u>Conners Factor</u>						
Pre-treatment	23.86	9.21	23.75	25.40	14.94	25.55
Post-treatment	28.86	9.56	28.75	23.60	13.16	23.75
<u>SCRS²</u>						
Pre-treatment	145.57	27.97	144.32	155.20	25.03	156.96
Post-treatment	155.71	44.01	154.46	162.40	31.57	164.16
<u>Locus of Conflict³</u>						
<u>Internal</u>						
Pre-treatment	31.43	6.21	31.26	35.20	5.40	35.43
Post-treatment	35.00	7.96	34.83	38.20	7.39	38.43
<u>External</u>						
Pre-treatment	37.86	8.76	37.55	41.40	13.46	41.83
Post-treatment	46.00	8.29	45.69	38.40	8.93	38.83
<u>Total</u>						
Pre-treatment	69.29	11.74	68.81	76.6	17.03	77.26
Post-treatment	81.00	11.73	80.52	76.6	7.30	77.26

¹On the Conners and Conners Factor, higher score is indicative of more severe levels of aggression or acting out.

²Higher score on SCRS is indicative of less self-control.

³Higher score on all scales is indicative of more severe expression of symptom.

on any self-report measures. Two Group differences were noted in these analyses. Anger-management subjects had significantly lower CIA scores, $F(1,9) = 7.63, p < .05$, and significantly lower "Doing" scores, $F(1,9) = 5.56, p < .05$, than Attention-control subjects at post-treatment assessment.

Tables 20 and 21 summarize the Group, Therapist, and Group X Therapist effects for Unit Ratings, Behavioral Observations, and Teacher Ratings. There were no significant Group effects, Therapist effects, or Group X Therapist interactions on any of these measures.

Therapist differences in apparent adherence to guidelines for Anger-management versus Attention-control conditions are reflected in the percentages found in Table 22. In rating the 12 tape segments, each rater made one error. Rater A thought that one Anger-management session with the experimenter as therapist was an Attention-control session. Rater B thought that one Anger-management session with the other therapist was an Attention-control session. There were no errors in identifying Attention-control sessions.

Relationship Among Measures

Pearson Correlations were performed to determine the relationship among the dependent measures. Correlations among measures at pre-treatment are summarized in Table 23. Self-report measures did not correlate with one another, nor did they correlate with any of the other measures. Interestingly, Unit ratings correlated significantly with the Conners, the Conners aggression factor, and the Locus of Conflict External scale. Teacher ratings generally correlated highly

Table 19

Summary of Analyses of Group, Therapist, and Group X Therapist
Effects for Self-report Inventories with Pre-treatment Scores as Covariates

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
CIA Post-treatment (N=14)				
Group	1	6592.49	7.63	.02
Therapist	1	38.19	.04	.84
Group X Therapist	1	90.79	.11	.75
Error	9	7778.11		
CIA Follow-up (N=9)				
Group	1	3518.02	1.32	.31
Therapist	1	1161.51	.44	.54
Group X Therapist	1	20.74	.01	.93
Error	4	10649.11		
<hr/>				
"THINKING" Post-treatment (N=14)				
Group	1	5.61	.51	.49
Therapist	1	15.92	1.44	.26
Group X Therapist	1	.19	.02	.90
Error	9	99.57		
"THINKING" Follow-up (N=10)				
Group	1	18.27	.60	.47
Therapist	1	.05	.00	.96
Group X Therapist	1	114.43	3.79	.11
Error	5	151.07		
<hr/>				
"DOING" Post-treatment (N=14)				
Group	1	200.55	5.56	.04
Therapist	1	155.36	4.30	.07
Group X Therapist	1	112.38	3.11	.11
Error	9	324.86		
"DOING" Follow-up (N=10)				
Group	1	11.65	.37	.57
Therapist	1	246.95	7.81	.04
Group X Therapist	1	2.89	.09	.77
Error	5	158.04		

Table 20
 Analyses of Group, Therapist, and Group X Therapist
 Effects for Unit Ratings and Behavioral Observations
 with Pre-treatment Scores as Covariates

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
Unit Ratings (N=12)				
Group	1	6.68	.04	.85
Therapist	1	49.30	.28	.62
Group x Therapist	1	4.47	.03	.88
Error	7	1250.38		
Behavioral Observations (N=10)				
Group	1	286.12	.70	.44
Therapist	1	1272.56	3.13	.14
Group X Therapist	1	669.62	1.65	.26
Error	5	2032.23		

Table 21

Summary of Analyses of Group, Therapist, Group X Therapist
Effects for Teacher Ratings with Pre-treatment Scores as Covariates

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
<u>Conners Total (N=12)</u>				
Group	1	298.55	.47	.52
Therapist	1	48.21	.08	.79
Group X Therapist	1	300.55	.47	.52
Error	7	4487.12		
<hr/>				
<u>Conners Factor (N=12)</u>				
Group	1	155.95	1.38	.28
Therapist	1	68.89	.61	.46
Group X Therapist	1	259.12	2.30	.17
Error	7	788.88		
<hr/>				
<u>Self-control Rating Scale (N=12)</u>				
Group	1	5.94	.00	.96
Therapist	1	39.89	.02	.89
Group X Therapist	1	617.50	.29	.61
Error	7	14848.94		
<hr/>				
<u>Locus of Conflict-Internal (N=12)</u>				
Group	1	12.48	.19	.67
Therapist	1	50.49	.78	.41
Group X Therapist	1	85.18	1.31	.29
Error	7	455.59		
<hr/>				
<u>Locus of Conflict-External (N=12)</u>				
Group	1	269.05	4.11	.08
Therapist	1	1.47	.02	.88
Group X Therapist	1	53.30	.82	.40
Error	7	457.68		

Table 21
(Continued)

<u>Source</u>	<u>df</u>	<u>SS</u>	<u>F</u>	<u>P</u>
<u>Locus of Conflict Total</u> (N=12)				
Group	1	97.70	.72	.42
Therapist	1	.89	.01	.94
Group X Therapist	1	1.36	.01	.92
Error	7	948.80		

Table 22

Percent of Anger-management and Attention-control
Therapy Tapes Accurately Identified by Blind Raters

	<u>Therapist</u>	
	Experimenter	Other
Anger- management	90%	83%
Attention- control	100%	100%

with one another, with the exception of the Locus of Conflict Internal scale. Behavioral Observations did not correlate significantly with any other measure at the pre-treatment assessment period.

There were only a few changes in these relationships when post-treatment scores were examined. The CIA correlated negatively with the Locus of Conflict External score and total score. This correlation is in the opposite direction than one would expect. The "Thinking" score from the Situation Self-report Inventory correlated significantly with staff report on Unit Ratings at post-treatment. Unit Ratings again correlated consistently with teacher ratings, except for Locus of Conflict Internal score. Teacher ratings continued to correlate among themselves, while Behavioral Observations continued to correlate with nothing. Correlations and significance levels for the post-treatment assessment period are contained in Table 24.

Table 23

Correlations Among Measures

At Pre-Treatment Assessment Period

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	CIA	Th	Do	UR	B	C	Cf	SCRS	LC-I	LC-E	LC-T
(1) CIA (N=14)											
(2) Self-Report "Thinking" (N=14)	.43							*p < .05 **p < .01 ***p < .001			
(3) Self-Report "Doing" (N=14)	.31	.42									
(4) Unit Ratings (N=14)	-.19	.46	.10								
(5) Behavioral Observation (N=13)	-.48	.09	-.03	-.06							
(6) Conners (N=14)	-.17	.10	-.08	.57*	-.05						
(7) Conners Factor (N=14)	-.04	.31	-.06	.66**	-.11	.91***					
(8) Self-Control Rating Scale (N=14)	.17	.18	.06	.07	.21	.63**	.56*				
(9) Locus of Conflict - Internal (N=14)	-.35	-.34	-.05	.19	-.23	.56	.29	.30			
(10) Locus of Conflict - External (N=14)	.05	.25	-.006	.53*	-.06	.83***	.85***	.77***	.34		
(11) Locus of Conflict - Total (N=14)	-.11	.04	-.03	.49	-.14	.88***	.78***	.72**	.69**	.91***	

Table 24

Correlations Among Measures

At Post-Treatment Assessment Period

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	CIA	Th	Do	UR	B	C	Cf	SCRS	LC-I	LC-E
(1) CIA (N=14)										
(2) Self-Report "Thinking" (N=14)	-.47							*p < .05 **p < .01 ***p < .001		
(3) Self-Report "Doing" (N=14)	.31	.27 **								
(4) Unit Ratings (N=12)	-.43	.70	-.30							
(5) Behavioral Observation (N=10)	.02	.02	.46	.13 ***						
(6) Conners (N=12)	-.56	.50	.23	.90 *	.04					
(7) Conners Factor (N=12)	-.39	.28	.13	.67	.26	.53				
(8) Self-Control Rating Scale (N=12)	-.33	.51	.47	***	.20	***	*	.62		
(9) Locus of Conflict - Internal (N=12)	-.11	-.19	.06	.23	-.42	.33	-.25	.06		
(10) Locus of Conflict - External (N=12)	-.68	.45	-.03	.68	.27	.61	.77	.70	-.29	
(11) Locus of Conflict - Total (N=12)	-.70	.27	.01	.78	-.08	.81	.51	.68	.49	.69

DISCUSSION

Review of Findings

Hypothesis I predicted that children experiencing the Anger-management program would report greater reductions in anger on the CIA than children in the Attention-control group at post-treatment and follow-up. When CIA scores of the nine subjects who had complete data at follow-up were examined, the expected effect was not observed. However, when the post-treatment only scores of all 14 subjects were compared, a significant group difference was observed. Thus, the Anger-management subjects did report significantly less anger on the CIA at post-treatment compared to Attention-control subjects, but these differences were not maintained at follow-up.

Hypothesis II predicted that Anger-management subjects would report fewer angry cognitions and less aggressive behavior in response to situations described in the Situation Self-report Inventory than children in the Attention-control group. Differences between Anger-management and Attention-control subjects were expected to exist on both "Thinking" and "Doing" scores at both post-treatment and follow-up periods. Results indicated that there were no significant differences across trials on either measure. When the 10 subjects with complete follow-up data were compared, there were significant differences between Anger-management and Attention-control subjects on the "Doing" score only. Anger-management subjects reported less aggressive responding to provocative situations at post-treatment, but the differences were not maintained at follow-up.

Hypothesis III predicted that Unit Ratings would show Anger-management subjects displaying fewer angry and aggressive behaviors relative to Attention-control subjects at post-treatment. This hypothesis was not supported, as there were no post-treatment differences between groups on Unit Staff Ratings.

Hypothesis IV predicted that behavioral observations at post-treatment intervals would indicate that anger-related incidents of aggression had decreased in severity and frequency for Anger-management subjects, relative to Attention-control subjects. This hypothesis was also not confirmed, as there were no between-group differences on behavioral observations.

Finally, Hypothesis V predicted that teacher ratings at post-treatment intervals would show Anger-management subjects displaying less aggressive behavior and more self-control than Attention-control subjects. Analysis of scores on three rating scales completed by teachers yielded no significant group differences.

In summary, hypotheses that group differences would emerge at the post-treatment assessment interval were not supported by the Unit Ratings, teacher ratings, and behavioral observation. The first two hypotheses, which predicted differences on self-report measures, were at least partially confirmed. On the CIA and "Doing" score of the Situation Self-report measure, the predicted changes did occur. Predicted effects were only observed at post-treatment, however, and were not maintained through follow-up.

Discussion of Self-report Findings

On both the CIA and the Situation Self-report "Doing" score, Anger-management subjects reported less anger and less aggressive responding to anger at post-treatment. These results are consistent with earlier investigations in anger-management. Furthermore, they raise provocative questions about the precise impact of cognitive interventions. In this section, self-report findings will be discussed in terms of their relationship to Novaco's model of anger. In addition, the possibility will be raised that score changes were due to factors other than the predicted cognitive changes.

Johnson (1980) assessed a program similar to the Anger-management group's treatment program using single case methodology. After eight sessions of treatment over a two week period, each of her six subjects (inpatients at VTCC) reported less anger on the CIA. The CIA was the only self-report measure, and the only measure to change in each of her six subjects. In contrast, three subjects improved and three were worse on peer ratings, while one improved and five were worse on teacher ratings. Our replication of the self-report finding in a controlled study with more than one self-report measure suggests that the phenomenon may be more than simply due to artifact. One conclusion that might be drawn here is that the only changes to take place were covert or internal. This is not an untenable notion since the intervention focused largely on cognitive and affective events accessible only to the subject himself.

Before considering what sort of covert changes may have occurred,

it is important to discuss what the reduced scores might represent besides sought after changes. One explanation is that the differences may have to do with limitations inherent in the self-report modality. Unlike reports by outsiders blind to experimental condition, the self-report measures in the present study and in the Johnson study may have been vulnerable to the influence of demands inherent in the assessment situation. Efforts to reduce the salience and potency of demand characteristics were made, e.g., research assistants other than the therapist administered measures, and all instructions were taped. However, the measures themselves clearly delivered the message that anger was being assessed. Furthermore, the timing of post-treatment measures could easily have conveyed that this was the opportunity to show off what had been learned in 18 sessions of treatment. For children in the Anger-management condition, who had discussed anger and aggression for weeks, these cues might have been pulling for report of reduced anger. The cues would not, in contrast, have been directly related to the content of the Attention-control program. Thus, the Anger-management children would have shown significantly greater responsiveness to demand characteristics, and reported less anger without actually experiencing changes in level of perceived anger.

Assuming they are legitimate reflections of change, the post-treatment differences on the CIA and "Doing" scores merit further examination. Similarly, the failure of Anger-management subjects to alter "Thinking" scores merits attention. All three results are directly relevant to Novaco's model of the determinants of anger

arousal and the relation of anger arousal to behavior. As outlined in Figure 1 (see INTRODUCTION), Novaco (1978) alludes to three internal cognitive processes - appraisal of external events in terms of their ability to induce anger, formation of expectations, and private speech.

The CIA seems to best reflect the first of these processes. From their scores one might assume that after treatment, Anger-management subjects evaluated fewer situations as inducing high levels of anger. Another way of looking at the same responding is that they saw themselves as less angry about identical external events. It is interesting to note that the individuals who were inpatients when they completed follow-up measures returned to viewing themselves as more angry at follow-up while those who were assessed as outpatients continued to appraise their level of anger to the same cues as being low.

It is the "Doing" score which best reflects changes in expectation. To examine the importance and fate of this expectation, it may be useful to look briefly at treatment of depression which has been more thoroughly researched than the treatment of anger in either children or adults. In a recent publication, Rush and his associates discussed possible implications of a pattern evidenced in their work (Rush, Kovacs, Beck, Weissenburger & Hollon, 1981). They described a study in which 18 depressed adults treated with cognitive therapies tended to report changes in their cognitions and mood before reporting changes in vegetative symptoms and motivation. This was in contrast to 13 depressed adults treated pharmaceutically who showed no pattern to the sequence of their report. The authors implied that change in expecta-

tions for oneself was a precursor of behavioral change, at least for cognitive therapies.

Although methodological and statistical shortcomings limit the generalizability of the findings of Rush et al., particularly to a different population and a different disorder, the authors' speculative comments seem pertinent here. The "Doing" scale of the Situation Self-report Inventory gave children a format for providing information about how they expected they would respond in anger-provoking situations. If their report of less aggressive responding is labeled "hope" or "expectation" the next step in the course of progress would be confirmation or lack of confirmation of this expectation. In line with this, one can hypothesize that Anger-management subjects expected to be better able to cope with anger at the end of treatment. By the time follow-up occurred, this prevalent expectation had been disconfirmed in certain subjects, and had decreased. This would lead to the disappearance of differences at follow-up and high within-group variability at follow-up, both of which were, in fact observed. If this hypothesis is correct, it underscores the importance of arranging for and attending to success experiences in practicing the Anger-management techniques. The possible failure of the current program to provide enough confirmation of this nature is discussed in later sections.

The third process from Novaco's model, private speech, was best reflected by the "Thinking" score, which unfortunately did not change significantly for either group. It is possible that private speech simply was not altered. It is also possible, however, that children's

responses to the "Thinking" questions in isolation did not reflect the covert changes acutally occurring. In private speech modeled in the Anger-management condition, statements often contained references to anger along with appropriate self-statements, e.g., "I feel like killing that guy, but I know I will be the one to lose out if I mess with him - I'll just ignore him." Examination of individual responses on the Situation Self-report Inventory showed frequent pairs of angry "Thinking" responses (e.g., "I'd like to kill him") and adaptive "Doing" responses (e.g., tell staff). It seems that an unreported bit of private speech would have to have led to the "Doing" stage from the initial angry thought.

The failure of Anger-management subjects to improve their "Thinking" scores after treatment seems to argue against the hypothesis that self-report differences were traceable primarily to Anger-management children's efforts to give socially desirable responses in the presence of cues suggesting it was time to show off newly learned anger-management skill. Private speech was by far the most strongly emphasized component of treatment. It seems likely that if they had been purely responding to demand characteristics, children would have changed their responding on "Thinking" first.

In sum, it is possible that changes in self-report are traceable to Anger-management children's particular vulnerability to demand characteristics. However, the failure to find differences on "Thinking" score argues against this hypothesis. Self-report data, if considered valid, suggest that changes in cognitive appraisal of anger in the face

of external events, and in expectation about ability to respond to anger-provoking events, both occurred after treatment. The third and most important of Novaco's (1978) hypothesized cognitive processes, private speech, would seem not to have changed. However, examination of "Thinking" responses in combination with "Doing" responses suggests children may not have reported private speech in its entirety.

Discussion of Other-report Findings

Issues Pertaining to Treatment Conditions. The most straightforward conclusion to draw from the finding that outside observers did not note behavior changes related to treatment condition is that the Anger-management program did not affect observable behavior. While this may be true, observations over a year and a half of treating children in this fashion suggest a number of areas to be investigated before the Anger-management program is discredited or abandoned altogether.

In conducting this project the experimenter had a sense that the procedures introduced in the Anger-management program could be applied toward reducing mild to moderate levels of aggression. However, they were not sufficient to counter the high levels of impulsive aggression typically displayed by members of this population. The children participating in the present study had been hospitalized with primary presenting problems of excessive aggression. Most had been unsuccessfully treated as outpatients, or had been so explosive that their dangerousness to self and others justified admission. At pre-treatment they were rated significantly more aggressive than other populations,

even by raters who deal with such children routinely. For example, the mean pre-treatment Conners aggression factor score for the 14 participants was 23.1. This is significantly higher than the pre-treatment mean of 10.8 (SD = 12.9) which Conners reported in his initial sample of 103 children (82 boys, 21 girls) with "behavior disorders, hyperactivity, and poor attention spans" (Conners, 1969, p. 885). Compared to a mean Self-control Rating Scale of 99.3 (SD = 46.0) in the original sample of 110 third through sixth graders (Kendall & Wilcox, 1979), participants in the present study had a mean pre-treatment score of 150.6. Pre-treatment Unit Ratings can only be compared to the 38 VTCC residents in Eastman's sample, who averaged 63.75 compared to 74.5 in the present population. In addition to high levels of aggression, participants in this study seemed to experience certain types of anger and provocation too severe to be impacted upon by anger-management procedures. Staff and therapist often noted children using self-statements and relaxation to avoid explosive behavior in response to moderate provocation. However, these same children were neither willing nor able to apply the procedures when they were faced with more serious experiences such as physical provocation or reminders of difficult family issues. At least four of the seven Anger-management children were facing perceived or actual abandonment by foster families or natural parents during and after treatment. Their report, combined with observation of rage and agitation around family therapy or passes, suggested that they felt too angry at these times to care about using coping techniques. Children who had exploded after a physical assault

reported retroactively that they had no intention of letting such an attack go unreturned, that using techniques at such times was pointless.

In general, children in Anger-management conditions reported utilizing techniques to reduce aggression, but not until an initial outburst had occurred. Staff remarked on tendencies for Anger-management participants to calm down more quickly and to refrain from typical patterns of escalation after initial blow-ups. Anger-management subjects reported anecdotally that self-statements and relaxation enabled them to cope with news of lost privileges, perceived injustices, trips to the "Quiet Room", and physical restraint which typically followed initial acts of anger or aggression.

The Anger-management program applied here consisted of techniques which Meichenbaum (1975) described under a heading of "stress inoculation". The data are probably accurate in suggesting that our program failed to "inoculate" or prepare the subjects in such a way that they would be more resistant to the initial impact of anger-provoking events. Initial unexpected provocations led to impulsive, angry outbursts before and after treatment. However, the techniques did seem useful to subjects in preparing for additional provocations in the chain, and for coping with some moderate levels of anger, so that the chain from anger to aggression might be interrupted.

The Anger-management program's apparent failure to produce observable change in observers' ratings might have been avoided if important components had been included. Even if the program had succeeded in providing mechanisms for the interruption of a maladaptive

behavior pattern (provocation leading to anger leading to aggression), subjects would probably not have had a repertoire of alternative behaviors. Within the confines of the program, it was not possible for the therapist to suggest more assertive or socially skillful responses to follow the containment of anger via coping. Most of the participants lacked appropriate interpersonal skills, and were left with virtually no alternative behavior if they managed to control their aggression or tantrumming.

A second component that was lacking in this project was a set of contingencies to effectively shape and maintain the use of Anger-management techniques. Staff members were kept blind to treatment condition because of their role as raters. Since they did not know the content of childrens' therapies, they were unable to encourage the use of the newly introduced coping strategies in vivo. In retrospect this was a loss of opportunity for immediate, potent reinforcement. Even if they had practiced skills outside of therapy, Anger-management children would have had little reinforcement for their efforts. Learning theory would predict that if children used the coping strategies without immediate reinforcement, the likelihood of their being repeated would decline.

The contingencies that were in effect across units contributed to a problem of low reinforcement for managing anger. Children lost the "band" associated with valued privileges immediately after an act of aggression. There was very little reinforcement inherent in subsequent efforts to control one's own anger. Staff members who did notice and

verbally reinforce childrens' efforts to calm down seemed to contribute tremendously to the treatment of those individuals. Unfortunately, the experimenter could not encourage or reinforce this staff attention without revealing the nature of the child's treatment.

Support for the notion that a combination of cognitive self-instruction and reinforcement might reduce explosive behavior is found in a recent study by Snyder and White (1979). The authors set out to enhance the effectiveness of an operant program for institutionalized adolescents by introducing cognitive self-instruction to certain subjects. The five who were instructed in the use of self-statements showed improved school attendance and compliance with daily living requirements relative to those who experienced the operant program alone or the operant program and an attention "placebo". In addition, impulsive behavior of the severe behavior disordered adolescents in the treatment group improved relative to that of the equally disturbed adolescents in the two control conditions.

A final difficulty with the Anger-management program was its vulnerability to phenomena inherent in any therapy. Manipulative behavior and resistance around attending or participating in sessions were frequently encountered. Older children particularly enjoyed reminding the therapists that participation was voluntary and they did not have to do anything if they did not feel like it. Pressure exerted by Primary Therapists and unit staff made completion of the program possible, but typically intensified resistance in sessions. The boys' relationships with their therapists seemed influential in both positive

and negative directions throughout the treatment sessions. High variability in the extent to which these processes occurred for each individual seemed to contribute significantly to tremendous individual differences in responsiveness to treatment.

In sum, it is possible that the absence of post-treatment group differences in other-report is traceable to problems with the Anger-management program employed in the study. Its impact may have been insignificant relative to the extreme levels of aggression and stress found in this population. Anecdotal evidence suggests that it was not effective in "inoculating" children against the initial effects of intense anger, but may have provided them with resources for coping with subsequent waves of anger and stress. The Anger-management program as it was designed for use in this study may have suffered from the absence of an assertiveness training or social skills component and from inadequate provision of positive contingencies for application of coping techniques. Finally, the impact of the program seemed to be limited by therapy-related phenomena including resistance and transference.

A second possible explanation for the lack of group differences may be found in the Attention-control group's program. In trying to accommodate both ethical and methodological considerations, the experimenter designed a control condition that may have had therapeutic value. Anecdotally, some children seemed to benefit from differentiating emotions and becoming more aware of the sources and effects of different emotions. Additionally, most children seemed to benefit from the

relationship and attention that the 18 sessions provided. The outcome data, which generally show neither group changing significantly at post-treatment, discredit this notion that differences failed to occur because both groups got better.

Measurement Issues. In interpreting the finding that there were no between-group differences in other-report, it is necessary to consider the possibility that changes did occur but the assessment techniques employed were not sensitive to these changes. There are two sets of problems related to assessment which may in fact have contributed to such measurement difficulties in the present study. The first set has to do with the precise identification of the events to be measured, while the second set pertains to the limits encountered on individual measures.

From its conception the present study has been plagued by the issue of measuring a construct, anger. In an effort to link the construct of interest to observable behaviors, the target was narrowed to anger which was purported to be a stimulus for aggressive behavior. The intervention, which addressed the management of anger, was then evaluated in terms of its effectiveness at reducing aggressive responding in children whose excessive anger and aggression were problematic.

Scrutiny of the assessment instruments raises the question of whether they would indeed measure the expected effects of the Anger-management program. The fact that self-reporting of anger did not correlate with measures from other sources suggests that the hypothesized link between anger and aggression levels should not have been a "given".

The Unit Rating was expected to more directly measure outsiders' report of aggression related to anger. It correlated more highly with global measures of problem behavior (e.g., Conners Total and Locus of Conflict Total) than with any of the self-report measures of anger. The failure to find group treatment differences on teacher ratings becomes less significant when the chasm between what they measure and what was allegedly manipulated in the Anger-management program is noted. These measures were selected because they came closest to measuring aggression with documented reliability and validity. In retrospect, they may have been reliable, valid measures of only partially relevant events.

The second category of measurement problems is related to the psychometric properties of the individual measures employed. Of course, there are limits to the usefulness of any paper and pencil measure. This is particularly true in a new area, such as anger in children, where there have been few attempts to develop new assessment instruments, and little opportunity for validation of existing instruments. Because of this reality, the experimenter relied on two measures with little published data to support their validity (Unit Ratings and CIA). In addition, two measures were designed specifically to meet needs for observational data noting responses to provocation (Behavioral Observation), and data about cognitions and anticipated behaviors during anger-provoking situations (Situation Self-report Inventory). These, of course, have no normative data or validation except their correlations with other measures at pre-treatment, which was reported in Table 23 (see RESULTS). Neither measure correlated with any other measure at

the pre-treatment interval.

Aside from these necessary confines, unanticipated events raised questions about the accuracy of certain measures. Rater turnover plagued the Behavioral Observations, as research assistants rotated through VTCC on a semester basis. Efforts to compensate with standard training, overlap of raters, and reliability measures may have only partially countered the bias of new raters at post-treatment.

Staff turnover on the units was another uncontrollable difficulty. When only two of the three original raters were assigned to a child at post-treatment, the experimenter opted to average only two ratings for the post-treatment Unit Rating score. When more than one of the original raters had switched units or left VTCC, the experimenter was forced to use ratings by different staff members or lose data altogether.

An additional threat to the validity of staff ratings was that "primary" staff members (e.g., primary nurses and aides especially assigned to work with a child) might have been reassigned such that pre-treatment raters had had less direct contact with a child at the time post-treatment ratings were obtained. This left the experimenter with the option of asking for ratings from a less knowledgeable rater who had rated the child at pre-treatment or asking for ratings with more up-to-date knowledge but no pre-treatment comparison point. The decision was made to keep the original rater as long as he had had some first-hand contact with the child in recent weeks. Compliance in returning ratings was a third threat overcome largely by repeated prompting by the experimenter and consistent support by supervisory

measures may have limited their reliability and validity. Besides known difficulties of using non-validated instruments, the experimenter encountered unexpected problems of staff and student turnover and rater bias.

Methodological Concerns. Aside from factors specific to the treatment programs and the measures used for assessment, the findings were most likely affected by methodological difficulties common to clinical research conducted in applied settings. A major source of concern was that the experimenter had virtually no control over other treatment programs the child experienced during the study, including pharmacological treatments. All but one child was receiving some sort of medication during treatment, and three experienced medication changes. In addition, there was tremendous variability in the extent to which each child's individual psychotherapy was compatible with the Anger-management program. At least one Anger-management subject's Primary Therapist was encouraging him to act out his rage at the same time we were working with him on self-statements to reduce the agitation. Interpretation of overall findings is hindered by the fact that we lacked access to information about the content of other therapies and lacked the power to coordinate them in any way with our program.

Perhaps the most damaging set of difficulties encountered in this setting were those which limited the number of subjects available for the study. A temporary freeze on admitting aggressive children, staff shortages, and other factors related to internal politics reduced the number of potential subjects admitted in 15 months to 21, compared to

60 in the previous 12 months. Sudden discharges and therapist consent for children to participate were linked to the same politics and affected results in more subtle ways.

The small number of subjects and large individual variability impacted directly on the significance of results when statistical analyses were conducted. A graphic illustration is the comparison of CIA scores. In scanning Figure 2 and the means in Table 7, it is surprising that there would not be a significant Group X Trial interaction. However, when one notes that the subject count dropped to nine at follow-up, and the standard deviation for Anger-management CIA scores jumped to 51.8, it becomes understandable that significant effects might not emerge.

Limits in the quantity and quality of follow-up data are traceable to both the uncontrollability of events at the hospital, and the inability of the experimenter to foresee these events in planning schedules. With vacations around holidays, special events in the childrens' schedules, and resistance or acting out that prevented attendance of a session, the nine weeks of treatment often dragged on longer. This was true more of the first subjects who participated, both because their treatments ran into Thanksgiving, Christmas, and New Years', and because the experimenter had not foreseen the necessity of rescheduling missed sessions within a few days of the original.

In a few cases, this kind of problem led to children finishing late, and then being discharged before a ten week follow-up could occur. More often, children finished on time, and those who had

improved were discharged. This left a significant selection factor in those who had follow-up data, and made analysis of the little follow-up data (other than self-report) rather meaningless. In some cases, post-treatment data were being collected while discharge planning was taking place. Anecdotally, several children regressed and became unusually angry as family issues and issues of termination were raised. This biased even post-treatment scores.

Strengths of the Study and Future Directions

In a special edition of the Journal of Consulting and Clinical Psychology, Barlow recently reviewed the difficulties clinicians face in attempting to adhere to a scientist-practitioner model in applied settings (Barlow, 1981). The most salient strength of the present study is that it attempted to cross the barrier between clinical practice and empiricism, and apply stringent controls and assessment techniques to the evaluation of an essentially untested treatment program. Like the numerous endeavors Barlow alludes to, this effort met with obstacles which diminished both the utility of the treatment and the integrity of the evaluation. These limits do not, however, negate the utility of the study as a whole.

In spite of its shortcomings this study stands out as one of the first attempts to assess the efficacy of a cognitive Anger-management program using a controlled group design. This experimenter compared treatment to a control condition matched as closely as possible for expectation of the child and staff, therapist time, and structure and format of sessions. The Anger-management program's didactic training,

roleplay with therapist, and roleplay with unfamiliar adult males were all mirrored session-by-session in the Attention-control condition. Only the content varied.

Unlike a number of treatment outcome studies, the present study included an attempt to document the integrity of the independent variable by verifying the distinction between the Anger-management and Attention-control conditions. The fact that blind raters were able to correctly identify taped segments of most randomly selected therapy tapes suggests that the conditions were indeed distinct. In particular, there was good documentation that anger was not discussed in the Attention-control condition.

Among investigations attempting to evaluate Anger-management programs or other cognitive therapies, the present study is exceptional in its nature and range of assessment techniques. Knowing the difficulties inherent in observing a low frequency behavior such as aggression, few if any investigators have included behavioral observations among their measures. While there were serious limits to the validity of the present study's behavioral ratings, they represented a significant attempt to note frequency and intensity of aggressive responses relative to anger-provoking incidents. It is also unusual to ask children what they would be thinking, i.e., assess their new cognitions directly, as was attempted in the Situation Self-report Inventory.

The recurrent finding of self-reported differences suggests that in spite of results from outside observers' ratings, there is reason to

think that the Anger-management program has at least potential for clinical utility. In addition to recommending that future researchers continue to attempt multimodal assessment and tight control in their investigations, we would add at least three suggestions concerning the program itself.

First, the potential for the program to succeed in altering aggressive behavior might be enhanced if training of more appropriate responding were included. The two seem to complement each other perfectly. The cognitive program ideally enables the child to stay in control and not respond impulsively to his anger. The assertiveness component ideally provides the child with the opportunity to behave adaptively once he is under control, and to avoid confrontations in the first place.

The second recommendation for an addition to the program would provide for ongoing immediate reinforcement for rehearsal and successful application of anger-management skills in vivo. Verbal reinforcement from significant adults could be directed both at the rehearsal of coping techniques in stressful situations and the successful curbing of aggressive responding.

The third and perhaps most promising recommendation is that an Anger-management program like the one assessed here be introduced to other populations whose aggression interferes with functioning, but is not as extreme as those of the sample used in the present study. The anecdotal observation that these children could use the techniques in the face of mild, everyday frustration and provocation suggests that

children singled out in regular classrooms as too aggressive might be perfect candidates. As unfortunate as the I.Q. differences were in terms of this study's methodology, the fact that children with a mean I.Q. of 84 completed the procedures suggests that mildly retarded adolescents and adults might also be good candidates for training.

An undertaking such as this is bound to have room for methodological flaws. The findings of the present study, even with their limitations, are promising in their suggestion that cognitive intervention with childrens' anger might lead to specific changes in thoughts and expectations. The program is ripe for refinement, with particular emphasis on components which will strengthen the successful application of techniques, and the subsequent confirmation of expectations. As scientist-practitioners, we must see that the modification and expansion of the Anger-management program goes hand-in-hand with careful, controlled evaluation.

REFERENCES

- Andison, F.S. TV violence and viewer aggression: A cumulation of study results, 1956-1976. Public Opinion Quarterly, 1977, 41, (3), 314-331.
- Armentrout, J. Parental childrearing attitudes and preadolescents' problem behaviors. Journal of Consulting and Clinical Psychology, 1971, 37, 278-285.
- Bandura, A. Aggression: A social learning analysis. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973.
- Bandura, A., Ross, D., & Ross, S.A. Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 1961, 63, 575-582.
- Bandura, A., Ross, D., & Ross, S.A. Vicarious reinforcement and imitative learning. Journal of Abnormal and Social Psychology, 1963, 67, 601-607.
- Baron, R.A. Aggression as a function of magnitude of victim's pain cues, level of prior anger arousal, and aggressor-victim similarity. Journal of Personality and Social Psychology, 1971, 17, 236-243.
- Barlow, D. On the relation of clinical research to clinical practice: current issues, new directions. Journal of Consulting and Clinical Psychology, 1981, 49, (2), 147-155.
- Beck, A.T. Cognitive therapy and emotional disorders. New York: International Universities Press, 1976.

- Berkowitz, L. Aggression: A social psychological analysis. New York: McGraw-Hill, 1962.
- Biaggio, M.K. Assessment of anger arousal. Journal of Personality Assessment, 1980, 44, (3), 289-298.
- Bolstad, O. D. & Johnson, S. M. Self-regulation in the modification of disruptive classroom behavior. Journal of Applied Behavior Analysis, 1972.
- Bornstein, M., Bellack, A. S., and Hersen, M. Social skills training for highly aggressive children. Behavior Modification, 1980, 4, (2), 173-186.
- Brown, J. S. & Farber, I. E. Emotions conceptualized as intervening variables - with suggestions toward a theory of frustration. Psychological Bulletin, 1951, 48, 465-475.
- Camp, B., Blom, G., Herbert, F., & VanDoorninck, W. Think aloud: A program for developing self-control in young aggressive boys. Journal of Abnormal Child Psychology, 1977, 5, (2), 157-169.
- Carroll, J. C. The intergenerational transmission of family violence: The longterm effects of aggressive behavior. Aggressive Behavior, 1977, 3, 289-299.
- Christy, P. R., Gelfand, D. M., & Hartmann, D. P. Effects of competition-induced frustration on two classes of modeled behavior. Developmental Psychology, 1971, 5, 104-111.
- Combs, M. L. & Slaby, D. Social skills training with children. In B. Lahey & A. Kazdin (Eds.), Advances in clinical child psychology, Vol. 1, New York: Plenum Press, 1977.

- Conners, C. K. A teacher rating scale for use in drug studies with children. American Journal of Psychiatry, 1969, 126, (6), 885-888.
- Conners, C. K. & Werry, J. S. Pharmacotherapy. In H. C. Quay & J. S. Werry (Eds.), Psychopathological disorders in childhood (Second Edition). New York: John Wiley & Sons, Inc., 1979, 336-386.
- Cowan, P. & Walters, R. Studies of reinforcement and aggression:
1. Effects of scheduling. Child Development, 1963, 34, 543-551.
- Dollard, J., Doob, L., Miller, N., Mowrer, O., & Sears, R. Frustration and aggression. New Haven, Conn: Yale University Press, 1939.
- D'Zurilla, T. J. & Goldfried, M. R. Problem solving and behavior modification. Journal of Abnormal Psychology, 1971, 78, 107-126.
- Eastman, E. S. The measurement of anger in children: A multi-model approach. Unpublished Masters' Thesis. Virginia Commonwealth, Richmond, Virginia. 1979.
- Elder, J. P., Edelstein, B. A., & Narick, M. M. Adolescent psychiatric patients - modifying aggressive behavior with social skills training. Behavior Modification. 1979, 3, (2), 161-178.
- Ellis, A. Reason and emotion in psychotherapy. New York: Stuart, 1962.
- Eisenberg, L., Lachman, R., Molling, P., Lockner, A., Mizella, J. & Conners, C. A psychopharmacological experiment in training school for delinquent boys. American Journal of Orthopsychiatry, 1971, 41, 371-379.
- Eron, L. D. Parent-child interaction, television violence, and aggression of children. American Psychologist, 1982, 37, (2), 197-211.

- Feshbach, S. Aggression. In P. Mussen (Ed.), Carmichael's manual of child psychology. New York: John Wiley, 1970, 159-260.
- Finch, A. J. & Eastman, E. S. Anger in children: A multimethod approach to measurement. Unpublished manuscript, 1982.
- Foss, L. & Fouts, G. Effects of frustration and cathartic opportunity on aggression. Psychological Reports, 1977, 41, 319-326.
- Freud, S. Civilization and its discontents. London: Hogarth, 1930. (Second Edition, 1957).
- Gillespie, W. H. Aggression and instinct theory. International Journal of Psycho-analysis, 1971, 52, 155-160.
- Goldfried, M. R. Systematic desensitization as training in self-control. Journal of Consulting and Clinical Psychology, 1971, 37, 228-234.
- Goodenough, F. L. Anger in young children. Minneapolis: University of Minnesota Press, 1931.
- Goodwin, S., and Mahoney, M. Modification of aggression through modeling: An experimental problem. Journal of Behavior Therapy and Experimental Psychiatry, 1975, 6, 200-202.
- Harris, A. An empirical test of the situation specificity/consistency of aggressive behavior. Child Behavior Therapy, 1979, 1, 257-270.
- Harris, M. & Huang, L. Aggression and the attribution process. Journal of Social Psychology, 1974, 92, 209-216.
- Hart, K. J. A cognitive/problem-solving treatment of anger. Masters' Thesis submitted to Xavier University, Cincinnati, Ohio, 1981.
- Havinghurst, R. J., Bowman, P. H., Liddle, G. P., Mathews, C. V., & Pierce, J. V. Growing up in river city. New York: Wiley, 1962.

- Jacobsen, E. Progressive Relaxation. Chicago: University of Chicago Press, 1938.
- Johnson, S. Anger-management via stress-inoculation with six emotionally disturbed children. Dissertation submitted to Virginia Commonwealth University, Richmond, Virginia, July 1980.
- Kagan, J. Impulsive and reflective children: Significance of conceptual tempo. In J. D. Krumboltz (Ed.), Learning and the educational process. Chicago: Rand McNally, 1965.
- Kagan, J. & Moss, H. A. Birth to maturity. New York: Wiley, 1962.
- Kaufmann, L. M. & Wagner, B. R. Barb: A systematic treatment technology for temper control disorders. Behavior Therapy, 1972, 3, 84-90.
- Kazdin, A. E. Covert modeling and the reduction of avoidance behavior. Journal of Abnormal Psychology, 1973, 81, 87-95.
- Kendall, P. C. & Wilcox, L. E. Self-control in children: Development of a rating scale. Journal of Consulting and Clinical Psychology, 1979, 47, (6), 1020-1029.
- Kent, R. N. & Foster, S. L. Direct observational procedures: Methodological issues in naturalistic settings. In A. R. Ciminero, K. S. Calhoun, & H. E. Adams, (Eds.), Handbook of Behavioral Assessment. New York: John Wiley & Sons, 1977, 279-327.
- Koeppen, A. S. Relaxation training for children. Elementary School Guidance and Counseling, 1974, October, 14-21.
- Knobel, M., Wolman, M., & Mason, E. Hyperkinesis and organicity in children. Archives of General Psychiatry, 1959, 1, 310-321.

- Lefkowitz, M. M., Huesmann, L. R., & Eron, L. D. Parental punishment - A longitudinal analysis of effects. Archives of General Psychiatry 1978, 35, 186-191.
- Lipinski, D. & Nelson, R. Problems in the use of naturalistic observation as a means of behavioral assessment. Behavior Therapy, 1974, 35, 186-191.
- Mahoney, M. J. Cognition and behavior modification. Cambridge, Mass: Ballinger Publishing Company, 1974.
- Mahoney, M., & Arkoff, D. Cognitive and self-control therapies. In S. L. Garfield & A. E. Bergin (Eds.), Handbook of Psychotherapy and behavior change (Second Edition), New York: Wiley, 1977.
- Meichenbaum, D. Cognitive behavior modification. Norristown, NJ: General Learning Press, 1974.
- Meichenbaum, D. A self-instructional approach to stress management: A proposal for stress inoculation training. In L. Sarason & C. D. Spielberger (Eds.), Stress and anxiety. New York: Wiley, 1975, (2), 227-263.
- Meichenbaum, D. & Cameron, R. Stress inoculation: A skills training approach to anxiety management. Unpublished manuscript, University of Waterloo, Ontario, Canada, 1972.
- Meichenbaum, D. & Goodman, J. Training impulsive children to talk to themselves: A means of developing self-control. Journal of Abnormal Psychology, 1971, 77, 115-126.
- Miller, Lovick C. School Behavior Checklist. Los Angeles California: Western Psychological Service, 1972.

- Montgomery, L., Nelson, M. & Finch, A. J., Jr. Anger in children: Preliminary investigation in evoking stimuli in children. Paper presented at the Southeastern Psychological Association, New Orleans, LA, March, 1979.
- Moss, J. H. & Finch, A. J. A manual for stress-inoculation for anger control in children. Unpublished manuscript. Distributed at Southeastern Psychological Association workshop, New Orleans, 1979.
- Nelson, W. M., Fleming, C. C., & Hart, K. J. Cognitive-behavioral treatment studies in the applied setting: Can they be done? Paper presented at the Southeastern Psychological Association meeting, New Orleans, 1982.
- Nelson, W. M. & Finch, A. J. The Children's Inventory of Anger (CIA). Unpublished, 1978.
- Novaco, R. W. Anger control: The development and evaluation of an experimental treatment. Lexington, Mass: D.C. Heath, Lexington Books, 1975.
- Novaco, R. W. The functions and regulations of the arousal of anger. American Journal of Psychiatry, 1976, 133, 1124-1128.
- Novaco, R. W. Stress-inoculation: A cognitive therapy for anger and its application to a case of depression. Journal of Consulting and Clinical Psychology, 1977a, 45, 600-608.
- Novaco, R. W. Anger and coping with stress. In J. P. Foreyt & D. P. Rathjen (Eds.), Cognitive behavior therapy: Research and application. New York: Plenum Press, 1978.

- Novaco, R. W. A stress-inoculation approach to anger-management in the training of law-enforcement officers. American Journal of Community Psychology, 1977b, 5, 327-346.
- Oetzel, R. M. Classified summary of research in sex differences. In E. E. Maccoby (Ed.), The development of sex differences. Stanford, California: Stanford University Press, 1966.
- Ollendick, T. H. & Hersen, M. Social skills training for juvenile delinquents. Behavior, Research and Therapy, 1979, 17, 547-554.
- Patterson, G. R., Cobb, J. A., & Ray, R. S. A social engineering technology for retraining the families of aggressive boys. Paper presented at the meeting of the Georgia Symposium in Experimental Clinical Psychology, Athens, Georgia, May, 1970.
- Patterson, G. R., Littman, R. A. & Bricker, W. Assertive behavior in children: A step toward a theory of aggression. Monographs of the society for Research in Child Development, 1967, 32, (5), (Serial No. 113).
- Patterson, G. R., Ray, R. A., & Shaw, D. A. Direct intervention in families of deviant children. Oregon Research Institute Res. Bull., 1968, 8, (9).
- Patterson, R. G. & Reid, J. R. Intervention for families of aggressive boys: a replication study. Behavior, Research and Therapy, 1973, 11, 383-394.
- Pinkston, E. M., Reese, N. M., LeBlanc, J. M. & Ball, D. M. Independent control of a preschool child's aggression and peer interaction by contingent teacher attention. Journal of Applied Behavior Analysis, 1973, 6, 115-124.

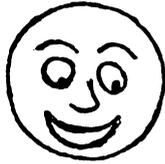
- Quay, H. C. & Peterson, D. R. Manual for the behavioral problem checklist, Unpublished, 1967.
- Quay, H. C. & Werry, J. S. Psychopathological disorders of childhood (Second Edition). New York: John Wiley & Sons, 1979.
- Redl, R. & Wineman, D. Children who hate. New York: Free Press, 1951.
- Redl, R. & Wineman, D. Controls from within: Techniques for the treatment of aggressive children. New York: Free Press, 1952.
- Reidy, T. J. The aggressive characteristic of abused and neglected children. Journal of Clinical Psychology, 1977, 33, (4), 1140-1145.
- Robins, Lee N. Deviant children grown up: A sociological and psychiatric study of sociopathic personality. Baltimore; Williams and Wilkins, 1966.
- Ross, A. O., Lacey, N. M. & Parton, D. A. The development of a behavior checklist for boys. Child Development, 1965, 36, 1013-1027.
- Rule, B. G. & Hewitt, L. S. Effects of thwarting on cardiac response and physical aggression. Journal of Personality and Social Psychology, 1971.
- Rule, B. G. & Nesdale, A. R. Emotional arousal and aggressive behavior. Psychological Bulletin, 1976, 83, (5), 851-863.
- Rush, A. J., Kovacs, M., Beck, A. T., Weissenburger, J. & Hollon, S. D. Differential effects of cognitive therapy and pharmacotherapy on depressive symptoms. Journal of Affective Disorders, 1981, 3, 221-229.
- Rutter, M., Cox, A., Tupling, C., Berger, M. & Yule, W. Attainment and adjustment in two geographical areas: Prevalence of psychiatric disorder. British Journal of Psychiatry, 1975, 126, 293-509.

- Rutter, M., Tizard, J. & Whitmore, K. (Eds.), Education, Health, and Behavior. London: Longmans, 1970.
- Rutter, M., Yule, B., Quinton, D., Rowlands, O., Yule, W. & Berger, M. Attainment and adjustment in two geographical areas III. Some factors accounting for area differences. British Journal of Psychiatry, 1975, 126, 520-533.
- Schachter, S. & Singer, J. Cognitive, social, and physiological determinants of emotional state. Psychological Review, 1962, 69, 379-399.
- Schrader, C., Long, J., Panzer, C., Gillet, D. & Kornblath, R. An anger control package for adolescent drug abusers. Paper presented at the annual meeting of the Association for Advancement of Behavior Therapy, Atlanta, Georgia, December, 1977.
- Siebert, S. M. & Ramanaiah, N. V. On the convergent and discriminant validity of selected measures of aggression in children. Child Development, 1978, 49, 1274-1276.
- Snyder, J. J. & White, M. J. The use of cognitive self-instruction in the treatment of behaviorally disturbed adolescents. Behavior Therapy, 1979, 10, 227-235.
- Spirito, A., Finch, A. J., Smith, T., & Cooley. Stress-inoculation for anger and anxiety control: A case study with an emotionally disturbed boy. Journal of Clinical Child Psychology, 1981, 10,
- Spivack, G. & Spotts, J. The devereux child behavior scale: Symptom behaviors in latency age children. American Journal of Mental Deficiency, 1965, 69, 834-846.

- Spivack, G. & Shure, M. B. Social adjustment of young children: A cognitive approach to solving real-life problems. San Francisco: Jossey-Bass, 1974.
- Toch, H. Violent men. Chicago: Aldine, 1969.
- Turk, D. Cognitive behavioral techniques in the management of pain. In Foreyt, J. P. & Rathjen, D. P. (Eds.), Cognitive Behavior Therapy: Research and Application. New York: Plenum Press, 1978, 199-232.
- Werry, J. S. & Quay, H. C. The prevalence of behavior symptoms in younger elementary school children. American Journal of Orthopsychiatry, 1971, 41, (1), 136-142.
- Zillman, D. & Bryant, J. Effects of residual excitation on the emotion response to provocation and delayed aggressive behavior. Journal of Experimental and Social Psychology, 1974, 30, (6), 782-791.

APPENDIX A
SELF-REPORT MEASURES

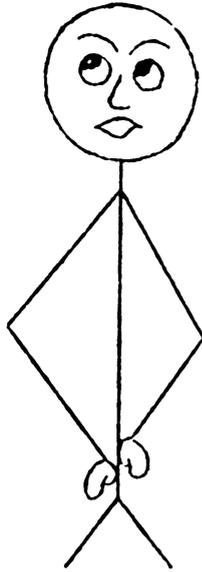
Children's Inventory of Anger (CIA)



These are some general situations that sometimes make boys and girls angry (mad). Read (listen to) each statement carefully and try to imagine that it's actually happening to you. Then decide how angry (mad) you would get in that particular setting.

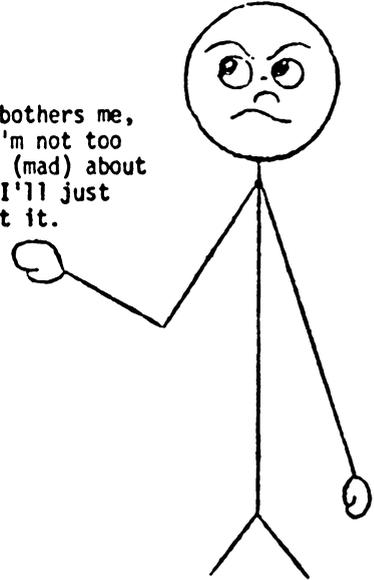
1.

I don't care. That situation doesn't even bother me. I don't know why that would make anyone mad (angry).



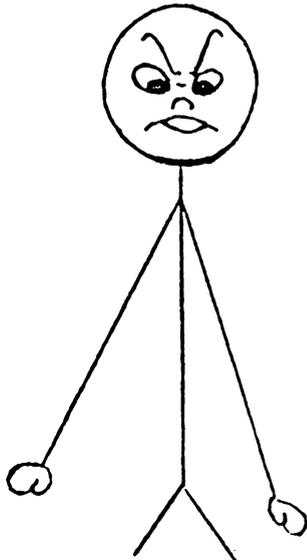
2.

That bothers me, but I'm not too angry (mad) about it. I'll just forget it.



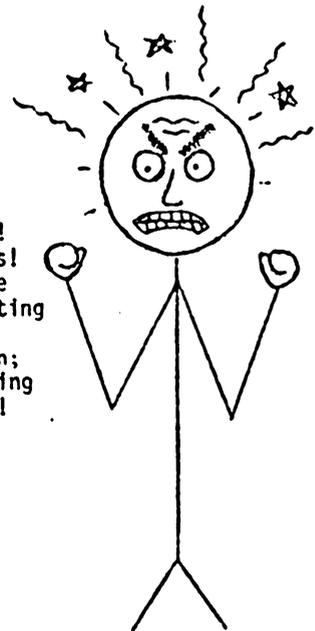
3.

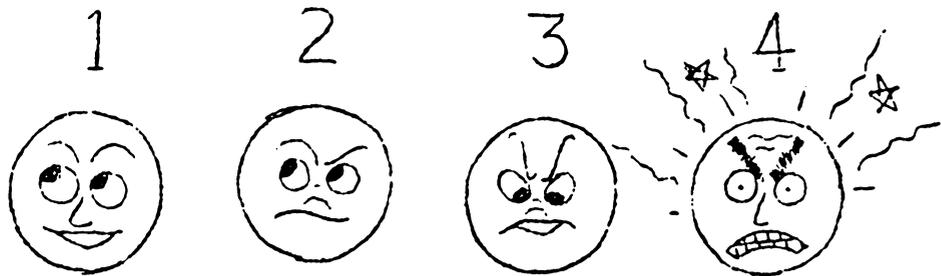
I'm really mad (angry), but I think I can control myself.



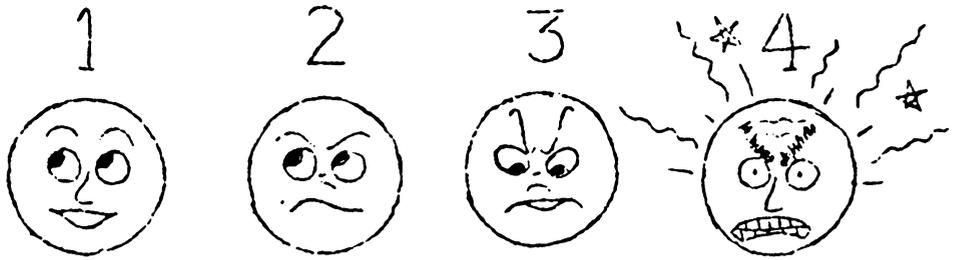
4.

I can't stand that! I'm furious! I feel like really hurting or killing that person; or destroying that thing!

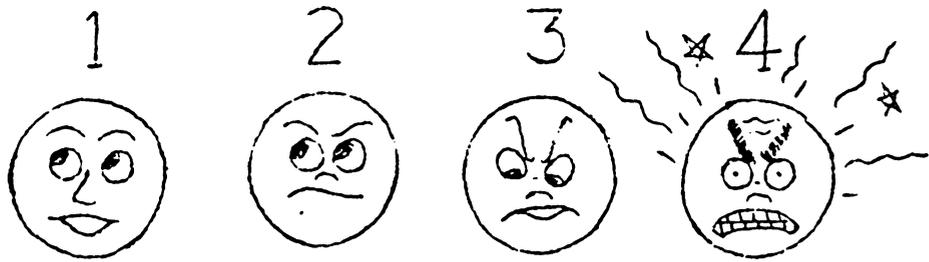




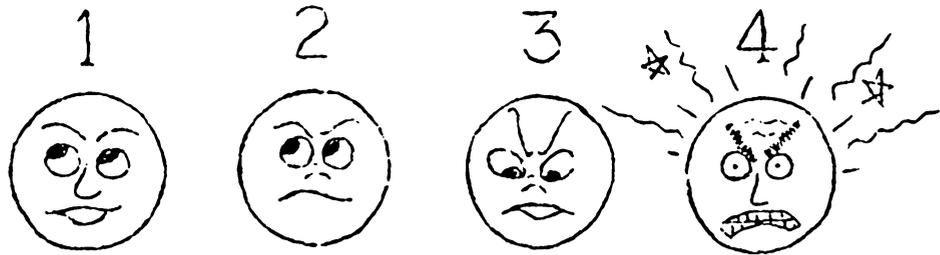
- 1 2 3 4 (1) On the playground a boy (girl) younger than you pushes you down.
- 1 2 3 4 (2) You are right in the middle of your favorite television program and your mother calls you to dinner.
- 1 2 3 4 (3) You convince your mother to let you ride your bike and then you find that it has a flat tire.
- 1 2 3 4 (4) You clean up your room on Saturday and want to go out to play, but your mom says you have to clean out your drawers and closet, too.
- 1 2 3 4 (5) You know you are right about something, but your mom insists that you are wrong.
- 1 2 3 4 (6) Your friends making fun of you.
- 1 2 3 4 (7) You are talking to your brother or sister or friend but he ignores you.
- 1 2 3 4 (8) Being blamed for something that was not your fault.
- 1 2 3 4 (9) You are going to show someone your new trick on your bike and you can't do it again.
- 1 2 3 4 (10) Somebody calls you a "chicken".
- 1 2 3 4 (11) You put your only quarter in the Coke machine and it takes your money.
- 1 2 3 4 (12) Someone in your classroom acts up, so the whole class has to stay after school.
- 1 2 3 4 (13) Someone cuts in front of you in the lunch line.
- 1 2 3 4 (14) You brought your favorite candy bar in your lunch today but when you go to get it out, it's all melted.
- 1 2 3 4 (15) Your mom makes you do a job that was really a job your brother or sister failed to do.



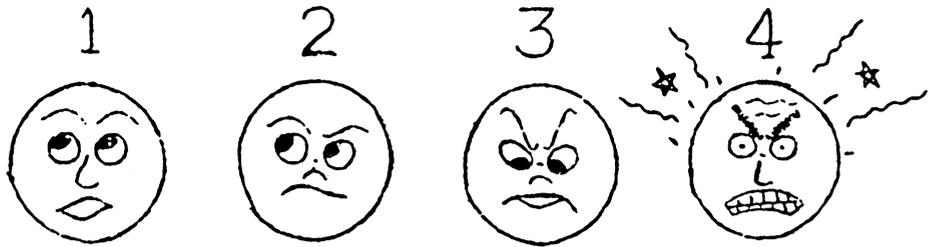
- 1 2 3 4 (16) Your mom refuses to buy your favorite cereal at the grocery store.
- 1 2 3 4 (17) Your friends say that they are going to come over Saturday and they do not come.
- 1 2 3 4 (18) On your bike you come to a steep hill and you have to get off and walk all the way up it.
- 1 2 3 4 (19) You want to go somewhere with a friend but your mom says no without any reason.
- 1 2 3 4 (20) Someone calls you a liar.
- 1 2 3 4 (21) Teachers who give out a lot of homework on the weekend.
- 1 2 3 4 (22) You have to do your homework and your brother or sister is getting to watch T.V.
- 1 2 3 4 (23) While it is raining, you are walking down the street and a car splashes you with mud and water as it drives by.
- 1 2 3 4 (24) While playing a game, someone on the other side tries to rough you up on purpose.
- 1 2 3 4 (25) Being told you are not old enough to do something.
- 1 2 3 4 (26) The teacher's pet gets to do all of the special errands in class.
- 1 2 3 4 (27) It snows, and your parents make you go to school anyway.
- 1 2 3 4 (28) You tell someone a real secret and they blab it to everyone.
- 1 2 3 4 (29) Someone calls your mother a name.
- 1 2 3 4 (30) You are playing a game and someone on the other side tries to cheat.



- 1 2 3 4 (31) You are trying to do your work in school and someone bumps your desk on purpose and you mess up.
- 1 2 3 4 (32) You ask your brother (sister) to do something for you and they say "no".
- 1 2 3 4 (33) You are watching T.V. and someone turns it to another station.
- 1 2 3 4 (34) Your brother or sister wears your clothes that you told them not to.
- 1 2 3 4 (35) You see your brother or sister riding your bike when they know they're not supposed to.
- 1 2 3 4 (36) Your mom or dad promises you something and you don't get it.
- 1 2 3 4 (37) Your friends are playing a game but won't let you play too.
- 1 2 3 4 (38) Somebody you don't like punches you.
- 1 2 3 4 (39) Being told "I warned you not to do it" once something goes wrong.
- 1 2 3 4 (40) Your mom says she doesn't want you to see certain friends.
- 1 2 3 4 (41) Your mom yells at you, "balls you out", and embarrasses you in front of other people.
- 1 2 3 4 (42) You do something special for a friend and later they won't do something for you.
- 1 2 3 4 (43) You tell the truth about something but your parents don't believe you.
- 1 2 3 4 (44) The teacher marks X's all over your homework.
- 1 2 3 4 (45) Your friends pick you last to be on a baseball team.



- 1 2 3 4 (46) Your sister breaks your favorite toy after you have asked her not to play with it.
- 1 2 3 4 (47) Your parents won't give you a "yes" or "no" answer but say "we'll see" when you want to plan on doing something.
- 1 2 3 4 (48) Your parents make you eat something you hate (e.g., spinach) in order to "clean your plate".
- 1 2 3 4 (49) You tell your mom that you don't have any homework but she makes you study anyway.
- 1 2 3 4 (50) The bus driver takes your name for acting up on the bus, but everybody else was acting up too.
- 1 2 3 4 (51) You have to go to bed at 9:30 even in the summertime and your friends get to stay up until 10:30 or 11:00.
- 1 2 3 4 (52) Your mom says that you have to do your homework as soon as you get home before you can go out to play.
- 1 2 3 4 (53) You get lost at the shopping center and when you finally find your parents your dad is mad and screams at you.
- 1 2 3 4 (54) At lunch, you select a piece of pie and the kid behind you knocks it out of your hand.
- 1 2 3 4 (55) At school, two bigger kids come and take your basketball and play "keep away" from you.
- 1 2 3 4 (56) You didn't notice that someone put gum on your seat on the bus and you sit on it.
- 1 2 3 4 (57) You run to catch the bus to go home but just as you get there, it drives away.
- 1 2 3 4 (58) You want to go to sleep, but your brother keeps making noise.
- 1 2 3 4 (59) Every Sunday, the minister talks 20 minutes overtime.
- 1 2 3 4 (60) You accidentally bump into a stranger on the bus and he threatens to beat you up if you get near him again.



- 1 2 3 4 (61) You find a pair of baby kittens or puppies without a mother and your mom says you can't keep them.
- 1 2 3 4 (62) Seeing your mom and dad fight or have a big argument.
- 1 2 3 4 (63) Your friend gets what he wants for Christmas, but you don't.
- 1 2 3 4 (64) Your mother whips you.
- 1 2 3 4 (65) People won't be quiet when you are trying to watch your favorite T.V. show.
- 1 2 3 4 (66) You are playing football or jump rope and the football or rope breaks.
- 1 2 3 4 (67) You drop and break one of your favorite toys.
- 1 2 3 4 (68) You go to your desk in the morning and find out that someone has stolen some of your school supplies.
- 1 2 3 4 (69) Someone in your class tells the teacher on you for doing something.
- 1 2 3 4 (70) Someone spits at you.
- 1 2 3 4 (71) Someone tries to trip you on purpose.

Preliminary Analysis on CIA normative data:¹

Means and Standard Deviations by Age

<u>Age</u>	<u>N</u>	<u>X</u>	<u>SD</u>
9	77	212.2	34.6
10	175	201.3	33.2
11	177	206.7	30.8
12	149	198.5	32.0
13	71	195.8	33.2

¹Unpublished.

Situation Self-Report Script

(Audiotaped)

On this tape you'll hear a voice describing a certain situation. Pretend you are in that situation and the thing being talked about is really happening to you. You probably know better than anyone how you'd act if it really did happen. After each situation is described we'll ask you what you'd probably be thinking when that happened, and then ask you what you'd probably do. Please answer as truthfully as you can. Here's a practice item, so that you can see what we mean:

Pretend that your unit is playing kickball and it's your turn to kick. It's against the rules to spin it when you pitch, but the guy who's pitching to you keeps doing it anyway. You've refused to kick until he rolls it right, and now he and his teammates are starting to yell at you. What would you probably be thinking?

In that case some people might be thinking, "That sucker better straighten up" or "those kids had better shut up or they're going to get it." Another person might think "I know I am right and I'm gonna sit right here and be calm until they come around."

What do you think you'd do in that situation? Different people might yell back, say "forget it" and quit, beat the crap out of the

pitcher, or just stay cool and wait until the yelling stops.

Try this one. Tell us as best as you can what you would probably do in this situation:

You left a comic book of yours on the bed and some other kid picked it up. When you try to get it back from him, he starts telling the staff that it was his all along and starts telling the staff that you are a liar. What would you be thinking? What would you do?

Now we're going to do a bunch of these. Tell us as honestly as you can what you'd probably do in these situations:

1. Pretend that you're standing in line and all of a sudden a guy shoves you out of the way and butts into the place in front of you. What would you probably be thinking? What would you probably do?
2. Pretend a whole bunch of kids have left a mess out on the unit. You walk out of your room and some staff points at you and says that it's your mess and you'll have to clean it up. What would you be thinking? What would you do?
3. Pretend you've been arguing a little with a guy outside and all of a sudden he starts yelling bad things about your momma. What would you be thinking? What would you do?
4. Pretend you're playing kickball. Some guy's trying to get you out but instead of just tapping you he smacks you as hard as he can in the face with the ball. What would you be thinking? What would you do?

5. Pretend you're minding your own business and some guy jumps on you from behind and starts fighting with you. When staff pulls you apart they let him go but they say you'll need to be punished. What would you be thinking? What would you do?
6. Pretend you're outside playing and a bunch of kids start calling you names. One kid is standing 2 feet from you yelling "black bitch", "black bitch", "black bitch". What would you be thinking? What would you do?
7. Pretend like you're carrying a big pile of books and papers and some kid comes up and shoves you so hard that you drop everything all over the place. What would you be thinking? What would you do?
8. Pretend like a bunch of kids have been getting wild and making noise on the unit. Staff comes out to tell people to settle down, and you get blamed for starting the whole thing. What would you be thinking? What would you do?
9. Pretend you're outside playing and a couple of kids are teasing you. They keep running by you yelling "Look at the queer! Que-er! Que-er!". What would you be thinking? What would you do?
10. Pretend that you're playing kickball and you've already made it to second base. You're standing with one foot on the base ready to take off and the second baseman from the other team is pushing right up against you trying to shove you off the base. What would you be thinking? What would you do?
11. Pretend that you and another guy have just gotten into a fight on the unit. After staff breaks things up, they just talk to him right

there, but they say you have to go to the Quiet Room. What would you be thinking? What would you do?

12. Pretend you've been playing backgammon on the unit and the kid you're playing with is starting to call you names since you're winning. He's calling you a cheater. "Cheater! Cheater! Cheater!" What would you be thinking? What would you do?

Categories of "Thinking" Responses on
Situation Self-Report Measure

1. "Nothing."
2. Rational evaluation of what the situation really is.
3. Feelings of anger (Ex. - "I'm mad," "I'm pissed off.")
4. A comeback (Ex. - "Well, look who's talking.")
5. Statement of hostility (Ex. - "Screw everybody.")
6. Intent to respond by avoiding or withdrawing.
7. Intent to respond with verbal attack.
8. Intent to respond with a physical attack.
9. Intent to retaliate--unspecified (Ex. - "I'm gonna get that guy.")
10. Self-instructions aimed at coping appropriately ("Relax," "Just forget it," "Calm down.")
11. Desire to retaliate without intent to retaliate ("I want to kill him" vs. "I'm gonna kill him.")

Categories of "Doing" Responses on
Situation Self-Report Measure

1. Ignores provocation; continues as though nothing has happened.
2. Withdraws or actively avoids (Ex. - walks away).
3. Reports to higher authority (Ex. - Staff, patient advocate).
4. Expresses emotion (without saying how) (Ex. - "I'd get mad.")
5. Asks provoker to lay off, "cool it"
 - a. With assertive/nonhostile vocabulary.
6. Asks provoker to lay off
 - b. With aggressive/hostile vocabulary.
7. Physically attacks perceived source of provocation.
8. Physically attacks apparently unrelated persons.
9. Sulks, tantrums.
10. Laughs.
11. Nonspecific ("I'd show him," "I'd prove him wrong.").

Scoring of the Situation Self-Report Measure

An undergraduate research assistant transcribed the audiotaped responses of all subjects on the "roleplay" measure. Children had been asked, "What would you be thinking?" and "What would you do?" in regard to twelve anger-provoking situations (Appendix A). In all, each child gave twelve "Thinking" and twelve "Doing" responses.

Eleven categories of "Thinking" responses and eleven categories of "Doing" responses were generated by the experimenter. Two Ph.D. Clinical Psychologists and one Clinical Psychology Intern at the Virginia Treatment Center for Children were then asked to rate the appropriateness of each type of responding for each of the twelve situations. Each response category was assigned one of the following values for each item:

- 1 = Appropriate for situation
- 2 = Not the best choice, but in the appropriate direction
- 3 = Inappropriate, but harmless
- 4 = Inappropriate response, mildly aggressive
- 5 = Extremely inappropriate, aggressive
- 6 = Can't tell from this statement

The median score from the three raters was selected as the value to be assigned to that category for that item.

A second group of professional raters was composed of a Ph.D. Clinical Psychologist, a Clinical Psychology Intern, and a third-year

graduate student on practicum at the Virginia Treatment Center for Children. These raters were given a list of the "Thinking" and "Doing" categories, and a copy of each child's responses to each item. Responses were only identified by item, so raters were blind to the subject's identity, and to whether the responses were given at pretest, posttest, or follow-up intervals. The raters determined which response category each individual response belonged in. In addition, for each "Thinking"- "Doing" pair, they indicated whether the thought reflected more anger than the action, the action reflected more anger than the thought, or the two were comparable.

The content score for each item was computed by averaging the values of the three categories by the three raters listed above.

Situation Self-report Measure

Scoring Key for "Thinking" Responses

Category

Item	1	2	3	4	5	6	7	8	9	10	11
1	3	2	1	2	4	3	3	5	3	1	2
2	3	1	1	4	4	3	4	5	3	1	2
3	3	1	1	2	3	2	4	5	2	1	2
4	3	2	1	2	3	3	4	5	2	1	2
5	3	2	1	2	4	3	4	5	2	1	2
6	3	1	1	2	4	2	4	4	2	1	2
7	3	2	1	2	2	3	2	4	1	1	2
8	3	1	1	3	3	3	4	4	3	1	2
9	3	1	1	2	3	3	4	5	3	1	2
10	3	1	2	2	4	3	4	5	3	1	2
11	3	2	1	4	4	3	4	5	3	1	2
12	3	1	2	3	4	2	4	5	3	1	2

Situation Self-report Measure
Scoring Key for "Doing" Responses

Category

Item	1	2	3	4	5	6	7	8	9	10	11
1	2	3	2	3	1	4	5	5	4	3	3
2	4	4	1	2	1	4	5	5	3	4	2
3	2	2	2	2	1	3	5	5	4	2	3
4	3	3	1	2	1	3	5	5	4	3	3
5	3	3	1	2	1	4	5	5	3	4	3
6	2	2	2	2	1	2	5	5	4	2	3
7	3	3	2	2	1	2	5	5	4	3	3
8	3	3	1	2	1	4	5	5	3	3	3
9	1	2	2	2	1	4	5	5	4	3	3
10	2	3	2	2	1	4	5	5	3	3	3
11	3	3	1	2	1	4	5	5	3	3	3
12	1	2	2	3	1	4	5	5	4	3	3

APPENDIX B
UNIT RATINGS

Rating Scale Distributed to
Unit Staff

Student's Name _____

Staff Name _____

Date _____

BEHAVIOR CHECKLIST

Please rate the behavior of _____
according to your knowledge of his/her behavior.*

- | | | | | | |
|---|---|---|---|------|---|
| 1 | 2 | 3 | 4 | (1) | Disruptiveness; tendency to annoy and bother others. |
| 1 | 2 | 3 | 4 | (2) | Jealousy over attention paid to other children. |
| 1 | 2 | 3 | 4 | (3) | Fighting. |
| 1 | 2 | 3 | 4 | (4) | Temper Tantrums. |
| 1 | 2 | 3 | 4 | (5) | Disobedience, difficulty in disciplinary control. |
| 1 | 2 | 3 | 4 | (6) | Destructiveness in regard to his/her own and/or other's property. |
| 1 | 2 | 3 | 4 | (7) | Negativism, tendency to do the opposite of what is requested. |
| 1 | 2 | 3 | 4 | (8) | Profane language, swearing and cursing. |
| 1 | 2 | 3 | 4 | (9) | Irritability: hot tempered, easily aroused to anger. |
| 1 | 2 | 3 | 4 | (10) | Bursts into tears or rage. |
| 1 | 2 | 3 | 4 | (11) | Gets very upset or overemotional. |
| 1 | 2 | 3 | 4 | (12) | Expresses anger in a poorly controlled way. |
| 1 | 2 | 3 | 4 | (13) | Reacts with immediate anger or upset. |
| 1 | 2 | 3 | 4 | (14) | Expresses anger. |

- | | | | | | |
|---|---|---|---|------|--|
| 1 | 2 | 3 | 4 | (15) | Teases or bullies other children. |
| 1 | 2 | 3 | 4 | (16) | Starts fighting over nothing. |
| 1 | 2 | 3 | 4 | (17) | Hits and pushes other children. |
| 1 | 2 | 3 | 4 | (18) | Does things to get others angry. |
| 1 | 2 | 3 | 4 | (19) | Will put up an argument when told not to do something. |
| 1 | 2 | 3 | 4 | (20) | Uses abusive language towards other children. |
| 1 | 2 | 3 | 4 | (21) | Is infuriated by any form of discipline. |
| 1 | 2 | 3 | 4 | (22) | When angry, will refuse to speak to anyone. |
| 1 | 2 | 3 | 4 | (23) | Fights back if another child has been asking for it. |
| 1 | 2 | 3 | 4 | (24) | Sulks when things go wrong. |
| 1 | 2 | 3 | 4 | (25) | Fights with other children. |
| 1 | 2 | 3 | 4 | (26) | When angry, threatens to hurt other children. |
| 1 | 2 | 3 | 4 | (27) | Gives other children dirty looks. |
| 1 | 2 | 3 | 4 | (28) | Finds fault with instructions given by adults. |
| 1 | 2 | 3 | 4 | (29) | Has a "chip" on shoulder. |

- *Ratings:
- 1) Not a problem
 - 2) Occasionally a problem (acting this way from time to time)
 - 3) Frequently a problem (common, usual, persistent)
 - 4) Always a problem

Original Item Pool for Rating Scale

Distributed to Unit Staff

(Eastman, 1979)

Please choose and check those items which describe, reflect or indicate anger. Use all lists included.

Items loading on the Conduct Problem Factor of the Quay-Peterson Behavior Problem Checklist.

- 2. Restlessness, inability to sit down.
- 3. Attention seeking, "show off" behavior.
- *8. Disruptiveness; tendency to annoy and bother others.
- 11. Boisterous, rowdiness.
- 16. Dislike for school.
- *17. Jealousy over attention paid other children.
- *25. Fighting.
- *27. Temper Tantrums.
- 33. Irresponsibility, undependability.
- *38. Disobedience, difficulty in disciplinary control.
- 40. Uncooperativeness in group situations.
- 44. Hyperactivity: "always on the go".
- *46. Destructiveness in regard to his/her own and/or other's property.
- *47. Negativism, tendency to do the opposite of what is requested.
- 48. Impertinence; sauciness.
- *51. Profane language, swearing and cursing.
- *53. Irritability: hot tempered, easily aroused to anger.

Items loading on the Emotional Overresponsiveness Factor of the Devereux Child Behavior Scale, American Journal of Mental Deficiency, Vol. 69, 1976.

- 51. Often easily upset by peers.
- *59. Occasionally bursts into tears or rage.
- *69. Often gets very upset or overemotional.
- *13. Very often expresses anger in poorly controlled way.
- 42. Often complains of being picked on.
- *35. Often expresses anger.
- *28. Often reacts with immediate anger or upset.
- 50. Occasionally says others don't like him/her or are against him/her.

Items loading on the Aggression Scale of the School Behavior Checklist by Lovick Miller.

- 3. Interrupts whomever is speaking.
- *5. Starts fighting over nothing.

- 11. Acts up when adults not watching.
- *13. Hits and pushes other children.
- 15. Finds fault with what other children do.
- 17. Is inconsiderate of others.
- *20. Does things to get others angry.
- *21. Will put up an argument when told not to do something.
- 23. Teases other children.
- 25. Is bossy with other children.
- *28. Uses abusive language toward other children.
- 29. Has changeable moods.
- *34. Is infuriated by any form of discipline.
- 35. Likes an audience all the time.
- 37. Has to have everything his own way.
- *39. When angry, will refuse to speak to anyone.
- *45. Fights back if another child has been asking for it.
- 46. Never seems to be still for a moment.
- 47. Argues with me.
- 49. Boasts of own toughness.
- 51. Tries to be the center of attention.
- *54. Sulks when things go wrong.
- 56. Resents even the most gentle criticism of work.
- *59. Fights with smaller children.
- 62. Is stubborn.
- 65. Tries to get other children into trouble.
- 66. Does things just to attract attention.
- *72. When angry, threatens to hurt other children.
- *77. Gives other children dirty looks.
- 78. Deliberately interrupts what is going on by asking silly questions.
- *81. Finds fault with instructions given by adults.
- 82. Seems unconcerned when misbehaving.
- 87. Acts in a "dare-devil", fearless manner.
- *89. Has a "chip" on shoulder.
- 92. Disturbs other children with boisterous humor.

Items loading on the Social Aggression Factor of the Devereux Child Behavior (DCB) Rating Scale, George Spivack, Ph.D., and Jules Spotts, Ph.D., Devereux Foundation, Devon, Penn., 1966.

- 23. Act bossy or domineering with other children.
- *27. Tease or bully other children.
- 38. Annoy or provoke peers into hitting or in other ways attacking him.

*Denotes items chosen by four of six judges which described, etc., anger. These items are those used to compose the teacher-report questionnaire.

APPENDIX C
BEHAVIORAL OBSERVATION

Instructions To Behavior Raters

As a rater for this research project, you will be going outside, to the gym, or to the units during free time to observe children interacting. When you go, you will have the name of a particular child to observe. In addition to watching his behavior, you will be looking at what goes on around him. Specifically you will be watching for events which seem likely to provoke anger in your average VTCC resident.

On the attached rating sheets you will see columns for two types of provocations - physical or non-physical. These categories are explained in detail later in this hand-out. As a rater you will primarily be watching for a provocation aimed at or impacting on the targeted child. When you see something you would consider a provocation, you should then watch the child to assess what his "immediate" reaction is. (Response should begin at most 30 seconds after the provocation to be labeled as a reaction to that provocation). If the child proceeds with the activity he was engaged in before the provocation, and shows no aggression or tantruming for 30 seconds, you should label his response "appropriate". If the child does react, you should rate his behavior as complaining/tantruming, verbal response, or physical response. These response categories are all defined later in this hand-out.

In examining the rating sheet, you will see from left to right two categories of provocation, four possible responses, then a final column marked "none apparent". If you see a provocation followed by a response (or appropriate ignoring of the response) you will simply

put a check under the type of provocation and, on the same line, a check under the type of response observed. Sometimes you will see a tantruming, verbally aggressive, or physically aggressive response without a visible provocation preceeding it. In these cases you should skip the columns for provocations, check the type of response observed, and check "none apparent" on the far right. Yes, it is possible that there was a provocation and you missed it. However, we have included this category so you will not think back over what just happened and retroactively decide something must have been a provocation.

After you have recorded one "event" (provocation and response or response with no apparent provocation) you will skip to the next line to record the next event. Once a child has responded to an event and gone back to regular activity, the event is considered over. Alternatively, the event is considered over once a new provocation occurs. Sometimes the child will begin to respond to a provocation and his response, uninterrupted, will intensify. For example, after being called a name the child might call a name back and throw something at the name-caller. In this case, you should record the most serious level of the response (the one furthest to the right on your recording sheet). In the example just given you would record physical even though the response started with a verbal attack. If the child had returned to appropriate play between calling back a name and throwing something, you would have had two events - a verbal response to a non-physical provocation followed by a physical response with no apparent provocation (assuming 30 seconds has passed). You could speculate that the child is still reacting to the initial provocation, but we are trying to eliminate

speculation from the recording process as much as possible. Please follow these guidelines carefully. It will get easier with practice!

Definitions of Provocation and Response Categories
For Behavior Raters

A) Types of Provocation

1. Physical - Another person makes physical contact with the observed child either directly (hits, pinches, holds, pushes) or indirectly (spits, throws something). Also code Physical provocation if any object physically touching the child is the source of the provocation (e.g., a ball hits him in the face, he is tripped by a stump or wire). In general, any provocation which involves physical contact with the identified child is coded in this category. The provocation need not have been intentionally or maliciously aimed at the child.
2. Non-physical - Anything which you observe as a provocation that does not involve physical contact belongs in this category. These types might be verbal (e.g., calling him names, challenging his call in a game) or may even be situational (e.g., striking out in a game). The provocation need not have been aimed specifically at him. For example, someone on his team may have botched a play, causing his team to lose the game.

B) Types of Responses

1. Appropriate (Approp) - Child avoids engaging in any of the behaviors described below. Ignores provocation, allows staff to intervene as necessary, continues involvement in appropriate activity. Child may look angry, or visibly react to a provocation

but catch himself before he acts out in any of the ways described below. Walking away from activity at an inappropriate time in response to provocation would NOT fall under this category.

2. Complaining/Tantruming (Comp/Tant) - This covers outward expressions of anger which do not involve physical or verbal attack on another person. For example, a child might throw something against a wall, slap his own hand and shout "Oh man, that ain't fair!", stomp his feet, stomp away from the activity, or shout profanity at no one in particular.
3. Verbal Attack (Verbal Att) - Profanity, name calling threats, orders directed at staff or another child, e.g., "You Bitch, let me go", "Oh yea, well you can just watch it...".
4. Physical Attack (Phys Att) - Physically assaults another person e.g., throws something at them, spits at them, hits, pushes, grabs, bites, trips, etc.

Raters for Behavioral Observations

<u>SN</u>	<u>Pre-treatment Raters</u>	<u>Post-treatment Raters</u>
01	A, B	C, D, E
02	A, B	C, D, E
03	A, B	C, D, E
04	A, B	D, E
05	C, D, E	F
06	F	F
07	-	-
08	A, B	-
09	A, B	-
10	D	F
11	D, F	F
12	F	-
13	F	F, G
14	F	G

Percent Agreement Among Raters for Behavioral Observations
(Averaged Across One to Five Overlapping Sessions)

<u>Raters</u>	<u>Percent Agreement</u>
A and B	72%
A and C, D, E	untested
B and C	83%
B and D, E	untested
C and D	88%
C and A, B, E, F	untested
D and F	66%
D and A, B, E	untested
E and A, B, C, D, F	untested
F and G	20%*
F and C, E	untested

*Following this low agreement, rater G was retrained by rater F and experimenter. Subsequent reliability checks were made, and improvement reported. However, the data sheets from these later trials were misplaced, so precise figures are unavailable.

APPENDIX D
TEACHER RATINGS

Conners Teacher Questionnaire

Child's Name: _____ Rater's Name: _____

Date: _____

Please fill out this scale by marking an X under the appropriate column for each item.

	<u>Not at all</u>	<u>Just a little</u>	<u>Quite a bit</u>	<u>Very much</u>
1. Sits fiddling with small objects.	_____	_____	_____	_____
2. Hums and makes other odd noises.	_____	_____	_____	_____
3. Falls apart under stress of examination.	_____	_____	_____	_____
4. Coordination poor.	_____	_____	_____	_____
5. Restless or overactive.	_____	_____	_____	_____
6. Excitable.	_____	_____	_____	_____
7. Inattentive.	_____	_____	_____	_____
8. Difficulty in concentrating.	_____	_____	_____	_____
9. Oversensitive.	_____	_____	_____	_____
10. Overly serious or sad.	_____	_____	_____	_____
11. Daydreams.	_____	_____	_____	_____
12. Sullen or sulky.	_____	_____	_____	_____
13. Selfish.	_____	_____	_____	_____
14. Disturbs other children.	_____	_____	_____	_____
15. Quarrelsome.	_____	_____	_____	_____
16. "Tattles".	_____	_____	_____	_____
17. Acts "smart".	_____	_____	_____	_____

	<u>Not at all</u>	<u>Just a little</u>	<u>Quite a bit</u>	<u>Very much</u>
18. Destructive.	_____	_____	_____	_____
19. Steals.	_____	_____	_____	_____
20. Lies.	_____	_____	_____	_____
21. Temper outbursts.	_____	_____	_____	_____
22. Isolates himself from other children.	_____	_____	_____	_____
23. Appears to be unaccepted by group.	_____	_____	_____	_____
24. Appears to be easily led.	_____	_____	_____	_____
25. No sense of fair play.	_____	_____	_____	_____
26. Appears to lack leadership.	_____	_____	_____	_____
27. Does not get along with opposite sex.	_____	_____	_____	_____
28. Does not get along with same sex.	_____	_____	_____	_____
29. Teases other children or interferes with their activities.	_____	_____	_____	_____
30. Submissive.	_____	_____	_____	_____
31. Defiant.	_____	_____	_____	_____
32. Impudent.	_____	_____	_____	_____
33. Shy.	_____	_____	_____	_____
34. Fearful.	_____	_____	_____	_____
35. Excessive demands for teacher's attention.	_____	_____	_____	_____
36. Stubborn.	_____	_____	_____	_____
37. Overly anxious to please.	_____	_____	_____	_____

	<u>Not at all</u>	<u>Just a little</u>	<u>Quite a bit</u>	<u>Very much</u>
38. Uncooperative.	_____	_____	_____	_____
39. Attendance problem.	_____	_____	_____	_____

Locus of Conflict Rating Scale

Child's Name: _____

Rater's Name: _____

Please rate the above-named child on the enclosed characteristics. Be sure to rate him as he compares to the "average", "normal" child. Do not be afraid to use the extreme categories and consider each statement separately.

Use the following criteria to guide you in your ratings.

<u>RATING</u>	<u>CRITERION</u>
1.	<u>None</u> : To the best of your knowledge, the child has never shown any indications of this behavior.
2.	<u>Mild</u> : The child has shown the behavior infrequently, but no more often than would be expected of the typical well-adjusted child. It has had very little or no adverse effect on his relationships with other children or adults, and as far as you know has been of little or no concern to those adults who have known him.
3.	<u>Moderate</u> : The child has shown the behavior over a considerable period of time, at least to a greater extent than would the typical well-adjusted child. It appears to have had some definite adverse effects, but the child nevertheless continues to function reasonably well in his school work and interpersonal relationships.
4.	<u>Severe</u> : The child shows the behavior repeatedly or to such an extent that it has had unmistakable adverse effects on his school performance and/or relationships with adults or other children. The behavior appears to be having such undesirable consequences that it warrants remedial attention.

RATING

- _____ 1. Self-consciousness, lack of self-confidence, feelings of inferiority.
- _____ 2. Social withdrawal, aloofness from others, emotional isolation.
- _____ 3. Nervousness, high strung, proneness to become flustered.
- _____ 4. Shyness, timidity, submissiveness.
- _____ 5. Anxiety, fearfulness in general but not of specific objects.
- _____ 6. Hypersensitivity, feelings easily hurt.
- _____ 7. Depression, unhappiness, sadness.
- _____ 8. Reticence, reserved, restrained, over-controlled.
- _____ 9. Drowsiness, fatigued, frequently over-tired, lethargy.
- _____ 10. Stomachaches, nausea, cramps, abdominal pains, vomiting, complaints of feeling sick.
- _____ 11. Preference for younger playmates rather than those of the same age.
- _____ 12. Headaches, pains or physical complaints other than abdominal.
- _____ 13. Fears of specific objects, events, animals, or individuals.
- _____ 14. Crying, weeping, tearfulness.
- _____ 15. Tics, nervous motor habits such as finger drumming or toe tapping.
- _____ 16. Disobedience, rebelliousness, refusal to obey known rules or specific requests.
- _____ 17. Fighting, aggressive behavior toward other children or adults.
- _____ 18. Attention seeking and demanding.
- _____ 19. Disruptiveness, boisterousness without rebelliousness.
- _____ 20. Impertinence, disrespect, discourtesy.
- _____ 21. Distractibility, inattentiveness, shortness of attention span.
- _____ 22. Restlessness, hyperactivity, "on the go".

RATING

- _____ 23. Negativism, stubbornness, irritability, uncooperativeness.
- _____ 24. Destructiveness toward property, belonging either to self or others.
- _____ 25. Irresponsibility, undependability, unreliability.
- _____ 26. Temper tantrums, emotional outbursts.
- _____ 27. Profanity, swearing, openly telling "dirty jokes".
- _____ 28. Dislike for school, truancy, running away.
- _____ 29. Stealing regardless of the value of what is taken.
- _____ 30. Lying, cheating, deliberate misrepresentation of information.

9. Does the child follow the instructions of responsible adults? 1 2 3 4 5 6 7
always never
10. Does the child have to have everything right away? 1 2 3 4 5 6 7
no yes
11. When the child has to wait in line, does he or she do so patiently? 1 2 3 4 5 6 7
yes no
12. Does the child sit still? 1 2 3 4 5 6 7
yes no
13. Can the child follow suggestions of others in group projects, or does he or she insist on imposing his or her own ideas? 1 2 3 4 5 6 7
able to follow/imposes
14. Does the child have to be reminded to do something before he or she does it? 1 2 3 4 5 6 7
never always
15. When reprimanded, does the child answer back inappropriately? 1 2 3 4 5 6 7
never always
16. Is the child accident prone? 1 2 3 4 5 6 7
no yes
17. Does the child neglect or forget regular chores or tasks? 1 2 3 4 5 6 7
never always
18. Are there days when the child seems incapable of settling down to work? 1 2 3 4 5 6 7
never often
19. Would the child more likely grab a smaller toy today or wait for a larger toy tomorrow, if given the choice? 1 2 3 4 5 6 7
wait grab
20. Does the child grab for the belongings of others? 1 2 3 4 5 6 7
never often

21. Does the child bother others when they're trying to do things? 1 2 3 4 5 6 7
no yes
22. Does the child break basic rules? 1 2 3 4 5 6 7
never always
23. Does the child watch where he or she is going? 1 2 3 4 5 6 7
always never
24. In answering questions, does the child give one thoughtful answer, or blurt out several answers all at once? 1 2 3 4 5 6 7
one answer several
25. Is the child easily distracted from his or her work or chores? 1 2 3 4 5 6 7
no yes
26. Would you describe this child more as careful or careless? 1 2 3 4 5 6 7
careful careless
27. Does the child play well with peers (follows rules, waits turn, cooperates?) 1 2 3 4 5 6 7
yes no
28. Does the child jump or switch from activity to activity rather than sticking to one thing at a time? 1 2 3 4 5 6 7
sticks to one/switches
29. If a task is at first too difficult for the child, will he or she get frustrated and quit, or first seek help with the problem? 1 2 3 4 5 6 7
seek help quit
30. Does the child disrupt games? 1 2 3 4 5 6 7
never often
31. Does the child think before he or she acts? 1 2 3 4 5 6 7
always never
32. If the child paid more attention to his or her work, do you think he or she would do much better than at present? 1 2 3 4 5 6 7
no yes

33. Does the child do too many things at once, or does he or she concentrate on one thing at a time?

1 2 3 4 5 6 7
one thing too many

APPENDIX E
CONSENT FORMS

Consent Form Distributed to Participants

By signing my name on the line below, I am agreeing to be involved in the special project that Ms. Fleming, Ms. Blanken, and Dr. Finch are doing with kids who need help controlling their anger. This means I agree to meet with Ms. Fleming or Ms. Blanken 18 times in the next eight weeks to learn new things about my emotions. I understand that my participation is completely voluntary, so I can withdraw from the program at any time. I understand that our meetings will be tape-recorded so that they can keep track of what was said in each meeting. If I do not want to be tape-recorded on a given day, I can just say so and the session will not be recorded. If anyone writes up reports about this project, my name will never be mentioned, and nothing will be said that would let someone know that it was me who participated. In other words, the things I say and do will be kept confidential.

At the end of every meeting I will get to choose some gum to take with me. If for any reason I leave the meeting early, I will not receive this gum.

If I have any questions about the project, Ms. Fleming will answer them for me when it's all over.

I have read this form, or had it read to me, and I understand it.

Name _____ Witness _____

Date _____

Letter to Participants' Parents and
Parental Consent Form

Dear Parent/Guardian:

Over the past few years, we have been working on developing effective ways to help children manage their anger. As part of this effort, we are currently working with a number of children on anger management, and keeping careful track of their progress so we can document how our treatments are working.

The purpose of this letter is to obtain your consent for _____ to participate in this therapy/research program. He/she would attend 18 individual treatment sessions with either Conway Fleming or Lynne Blanken, who are both advanced clinical psychology graduate students employed at VTCC. This special therapy would not take the place of any of his (her) other therapies, but would be an extra activity from which he (she) could withdraw at any time. During the meetings, some children will learn about all kinds of emotions and how to deal with them. Others will focus more on self-control, in particular, calming themselves down when things start to make them mad. Sometimes we will act out or talk about situations which have made children mad, and this might cause them to be angry all over again. Aside from this potential for temporary distress, there is no potential for danger or harm involved in either therapy.

The reason we need your written consent is that by collecting data about the effectiveness of these treatments, we are calling it "research", not just therapy. All information gathered in the course of the program will be kept strictly confidential. Numbers will be used so that children are never identified by name in the results.

If you have any questions, feel free to contact:

Ms. Conway Fleming	786-4374
or Dr. A. J. Finch	786-3133

By signing below, I give my consent for _____ to participate in the anger management program being offered by Ms. Fleming, Ms. Blanken, and Dr. Finch at VTCC. I understand that his/her participation is completely voluntary and he/she can decide not to participate or can drop out at any time. The decision to participate has no effect on other therapies the child is involved in. I understand that the child's identity will be kept completely confidential, and that Ms. Conway Fleming will answer any questions I may have at the end of the program.

Guardian

APPENDIX F
TREATMENT MANUAL

TREATMENT MANUAL
FOR ANGER-MANAGEMENT GROUP

Preliminary Meetings

There are two meetings with the child prior to the beginning of treatment. In the first, the experimenter talks to the child, reads and explains the consent form, and introduces him to a research assistant who will be administering the CIA and Situation Self-report Inventory. A schedule for subsequent therapy sessions is introduced. The CIA and Situation Self-report Inventory are administered in two sessions by someone other than the person who will be the child's therapist.

Treatment Sessions

Session 1. This is the first of four sessions in the "education" phase of treatment. The purpose of this session is to discuss the nature of anger and establish a rationale for treatment. There is a relatively small amount of material to be covered in this session so that time can be devoted to establishing rapport and reviewing procedures for the treatment sessions. The following points are made:

- 1) Anger (being mad) is a feeling or emotion.
- 2) Anger is a normal feeling, and can have good points.
- 3) Anger becomes a problem
 - a) when you get angry too often.
 - b) when you lose control or "lose your temper" because you're so mad.
 - c) when you get into a fight or try to hurt someone because you're mad.
 - d) when you stay mad for a long time.

The following questions are raised:

- 1) How much do you feel your anger gets you into trouble?
- 2) What kind of trouble do you get into when you are really mad?
- 3) How could things be different (better) if you could learn to control your anger?

As the child talks, notice the words he uses to describe his feelings. In future discussions you can use his words (e.g., being "mad") to make points about anger. A major goal is to help him feel relaxed and able to talk about his own experiences with anger.

Following this discussion of anger and the problems it can cause, the therapist explains to the child that the purpose of his meetings with the therapist will be to learn about things that can help him control his anger and stay out of trouble.

Finally, questions are raised which should help the child become more aware of external events which tend to precipitate his anger outbursts:

- 1) Where do you usually get mad the most?
- 2) Who is usually around when you get mad? Who makes you mad the most?

The child is asked to notice between sessions where he was, who he was with, and what happened when he got mad.

Session 2. The goals of this session are to explain anger in terms of a "situation X person X mode of expression" interaction, to make the child aware of the determinants of anger, and to identify

situations in which this child tends to have problems controlling his anger.

First, the therapist explains that the nature of a person's expression of anger is a function of the problem situation, the way the individual feels, and the way he reacts once he is angry:

"Last time we talked about anger. As you've probably noticed, different people act different ways when they get mad. Not only that, but things that make one person mad don't necessarily make someone else mad.

There are three things that affect what happens when someone gets mad. The first thing is what kinds of things are happening to that person, or the "situation". The second thing that is important is how the person feels. This includes things that are always true about that person, like he's a person who hates to have people tell him what to do, as well as things that he might be feeling right when the situation takes place, like if he isn't feeling well. The third important thing is going to be how he expresses his anger.

This poster shows how these three things - SITUATION, PERSON, and MODE OF EXPRESSION interact to make what we would call "someone getting mad". Suppose you are a person who can't stand being bugged by other kids. Being told by staff that you can't have an extra snack might not make you mad at all. On the other hand, if we mix a situation like a kid calling you a name with a person who hates that kind of thing or is already upset, we're liable to see someone REALLY getting mad. That getting mad might be expressed by fighting or cussing, or just by carrying on all alone. If someone accidentally bumps the backgammon board and messes up some of the pieces, someone who's in a good mood might hardly get mad at all, but mixing that situation with someone who's already upset, and expresses anger by fighting might result in big trouble.

Since the situation and the way the person feels and the way he behaves once he's mad are all important, we'll be discussing each of them during the next few weeks.

Right now I want to start with situations. Everybody has certain situations which tend to make them mad. Right now, I want to tell you what some of these are, and we'll write them on these cards."

After writing at least four problem situations on cards, the therapist asks the child to put them in order from the situation that would make him least mad to the one that would make him the maddest. Cards are numbered and filed for use in future sessions.

Finally the determinants of his expression of anger are introduced. These are the external events (as already discussed), the internal events (including how one feels and what he thinks to himself), and the behavioral reaction he chooses to make in order to help the child apply these factors to his own experience, have him think through a situation that might make him angry.

At this stage it is particularly useful to help the child remember the "internal" events. If he cannot generate cognitions himself, give him choices:

"Like you might say to yourself, 'Man, I'm gonna kill that sucker!'. Some kids are thinking things like, 'I hate him' or 'He'd better watch it'.

Providing him with extreme choices can help him identify cognitions and feelings - even autonomic responses - that go with anger. You might, for example ask which of these go with being angry:

Are you thinking "Aw, no big deal" or "G-R-R-R!"?

Do you feel slow, lazy, and relaxed or all charged up?

Are your arms loose and hanging relaxed or tight with a balled up fist?

Does your stomach feel good or tight and knotted up?

Does your heart beat slow and easy or does it start racing?

Restate the factors that are important, emphasizing the internal

factors, what you are saying to yourself and how your body feels, as well as your behavioral reactions.

Session 3. The goals of this session are to introduce the four stages of coping with provocation, and to expose the child to deep breathing as a means of relaxation.

The four stages which Novaco would call "preparation for provocation", "impact and confrontation", "coping with arousal", and "reflection on provocation", are presented to the child under the labels "Get Ready", "Get Set", "Cope", and "Look Back". Sample explanations are provided below (From Johnson, 1980):

"The first stage is called Getting Ready. This happens when you know you will be faced with something that makes you angry. When you think you're gonna be in a situation that'll make you angry, you can figure out how to handle it before it happens. But this doesn't work all the time because sometimes you get angry without a warning. There are some things you can say to yourself to help you keep your cool. You might say:

'Be cool, don't get angry.
He's not gonna make me lose my cool.
If I punch him, I'll get in trouble.
He's gonna try to make me mad, but I
can handle it.'"

"The second stage is called Getting Set. Here are some things you can say to yourself when you know you're in a situation that might make you mad:

'He's not going to get to me.
She's just making a fool out of herself.
Just relax, everything is under control.
Don't get all bent out of shape.'"

"The third stage is called Coping. As things get worse, you will probably get more uptight and upset. If you start getting angry, and losing your cool, its right here that you really try to stay calm. It's hard to keep your cool sometimes, but keep trying. It will probably help you to say these kinds of things to yourself:

'Take a deep breath.
Take it easy now.
She's not going to push me around, but I'm not
going to go bananas.'

"The fourth stage is called Looking Back. This is when you look back and think about what got you so upset in the first place. After the situation has passed, you can think of either how well you handled it or what went wrong. Here are some things you can say to yourself if you handle the situation well:

'Alright! I kept my cool!
It worked.
That wasn't so hard after all.
I made it without getting angry.'

"Here are some things you can say to yourself when things go wrong:

'Relax, you'll do better next time.
Stop thinking about it, you'll just make your-
self feel worse.'

Once you feel that the child has some idea of the four stages, deep breathing is briefly introduced. It is presented as something that will help the child "Get Ready", "Get Set", and "Cope".

"It's very hard to be relaxed and angry at the same time. One thing that may make it hard for you to deal with situations that make you angry is that you get all upset and uptight. If you can learn to control your breathing, you'll be better able to cope with your anger. I'm going to teach you how to breath real deep and relax. Ok, now close your eyes. I want you to breathe in as deeply as you can...Now hold it (approximately 5-7 seconds). Now breathe out, exhale. Blow all the air out of your lungs."

The deep breathing relaxation is practiced for several minutes.

Session 4. The primary purpose of this session is to review the nature of anger and the four stages of coping. Muscle relaxation is also introduced.

The following points should be reviewed:

- 1) Anger is a feeling, an emotion.

- 2) Anger can get someone into trouble if it is too frequent, too enduring, or is expressed in ways that hurt or offend people.
- 3) Expression of anger is a function of external events (situation), internal events (what we think and feel), and how we choose to act once we're mad.
- 4) There are four stages in coping with anger - GET READY, GET SET, COPE, and LOOK BACK.

Especial attention is devoted to review of the four stages.

With the help of the therapist, the child recalls and generates statements which might be made in each of the four sessions.

Following this review, relaxation is once again discussed. Slow, deep breathing is presented once again as a way of calming down and relaxing. The procedure introduced in session 3 is rehearsed.

Muscle relaxation is presented as an additional way of relaxing. The child is asked to show what his arms and fists might look like and how they would feel if he was upset or about to be in a fight. Relaxing these muscles is introduced as an incompatible response. Imagery relaxation instructions for the hands and arms are introduced. If the child is unresponsive to these instructions or thinks they are "silly", you can substitute traditional non-imagery instructions.

Session 5. The primary purpose of session 5 is to rehearse relaxation procedures. Deep breathing is practiced as the therapist guides the child through with instructions:

"Now relax, breathe as deeply as you can. That's it, hold it, relax, slow, easy, that's it, just relax, slow, deep breathing..."

Using the instructions for which the child has expressed a preference, the therapist teaches the child to relax his jaw, neck, arms, and stomach muscles.

If there is extra time, review the 4 stages in coping.

Toward the end of the session, remind the child that as he learns to control his anger, he will be able to express it in more appropriate ways which will not lead to trouble. By now a relationship should be forming. Take time to find out what kind of trouble the child gets into, and how he would like to see things happen instead. It is crucial to emphasize his needs and desires in providing a rationale for what he is doing.

Finally, the child is reinforced for his cooperation during the session.

Session 6. This session marks the beginning of the "rehearsal and modeling" phase of treatment. The purpose of this session is to introduce appropriate self-statements through modeling by the therapist. The therapist chooses one of the problem situations that the child has written on a card in the second session, and models good coping statements for each of the four stages of the situation. The following is an example of the cognitive modeling procedure to be used: (From Johnson, 1980)

"I'm gonna show you how you can use what we have learned about how to cope with your anger. I'm gonna pretend I'm on the unit and I see Tom coming over towards me. I know that Tom is probably going to push on me and step on my toes. Every time he does that

I get really angry, punch him, and end up sitting in the hall. I want you to listen carefully and if you can tell me some of the things I've said after I've finished, you'll get a reward.

Getting Ready (Preparation for Provocation)

"Here comes Tom, he's gonna try to bug me again. I bet he's gonna try to push on me and step on my toes. He just wants to get me mad and get me in trouble. Well, I'm not gonna get mad, I know how to handle him...Ok, it's time to relax, take some deep breaths, ignore him."

Getting Set (Impact and Confrontation)

"Stay cool, relax, he's really not hurting me, he's just trying to get me in trouble. If I hit him, I'll get in trouble. He's just being a pest. I'm not gonna let him get me mad. It's not worth getting in trouble."

Coping (Coping with Arousal)

"Oh-oh, he's really getting to me...I'm gettin really uptight. If he keeps pestering me, I may punch him. Boy, he's really trying to make me mad and get me in trouble...but, I'm not going to fight. The kids will think I'm stupid if I let Tom get me in trouble."

Looking Back (Conflict Resolved)

"Alright!!! I did it. I didn't get mad. I knew I could do it. Look at Tom, the staff is going to make him sit out in the hall... They are really proud of me for not getting mad, for not punching him. That wasn't as hard as I thought it would be."

Looking Back (Conflict Unresolved)

"Well, I really blew that one...I hit him, and I'm in trouble now. I must have been stupid to let him get to me. But I almost made it without getting angry...I'll get better, I just need to practice some more. I need to relax. I'll try it next time."

The therapist goes through the situation twice, first with the "Looking Back" statements that would be used after successful coping, and then with the "Looking Back" statements that one might use after failing to maintain control. After modeling twice, the therapist asks the child to recall any statements he recalls from any of the four stages, using the poster of the four stages as an aid.

The child is reinforced at the end of the session.

Sessions 7 and 8. These sessions are again devoted to cognitive modeling by the therapist. The same situation and statements that were addressed in session 6 are addressed in session 7. The child is asked to listen to the therapist's self-statements and signal (by raising his hand) when he hears a statement which is part of his instructions to relax (e.g., OK, relax, take some deep breaths...). In a second repetition of the same situation, the child is asked to signal when he hears a self-statement which is serving as self-encouragement (e.g., OK, I'm doing fine, I'm handling this). Another game to hold a child's attention while the therapist models is to have the child signal one, two, three, or four as he hears the therapist making statements that belong in each of the four stages of coping.

As sessions 7 and 8 progress, the child should be able to repeat the modeled statements. In addition to reinforcing his imitation of your self-statements, encourage him to generate new ones. Make a note of the content and wording he chooses in talking to himself, and use these in subsequent modeling whenever possible. This is part of an ongoing process to find and teach self-statements which the individual child is comfortable with and benefits from.

Sessions 9 through 15. In these sessions the child should progress from a point of hearing about and imitating techniques to utilizing them consistently in roleplay situations. Scenes from the child's list of anger-provoking situations (session 2), scenes from his more recent experiences, and hypothetical scenes can all be played out to provide formats for rehearsal of new techniques.

In general, the pattern in these sessions will be for the therapist to play the coping child, modeling self-statements aloud, then for the child to play himself, modeling self-statements in the same voice. As the therapist becomes confident in the child's ability to generate appropriate statements, he can gradually fade the volume of the self-statements until he is speaking them in a barely audible whisper, or to himself (gestures and facial expressions are good ways of hinting to the child which stage you are in as you cope covertly). The child in turn roleplays with gradual reductions in volume. As the child becomes more proficient the therapist fades out the modeling and serves primarily to prompt and/or take oppositional roles with the child.

Typically a child will be limited in the variety of self-statements he can generate. Another possibility is that he will routinely neglect statements at a certain stage. Often, for example, kids forget "Look Back" statements. It maybe necessary to supplement roleplays with reviews, drills, and games to strengthen recall and generation of self-statements.

To add variety to roleplay sessions and insure maintenance of relaxation techniques, the therapist should review relaxation from time to time. While the child is relaxing, scenes that have been roleplayed can be replayed imaginally. The child must be constantly reminded of the application of relaxation in the coping process.

Sessions 16 through 18. In two out of three of the final sessions, an additional adult is brought in to roleplay scenes with the child while the therapist supports him with prompts and encouragement. The adult,

preferably a male, should be familiarized in advance with the overall treatment as well as the individual child's strengths and goals. Scenes played out in previous roleplay sessions can be shared with the new person and replayed. Since these are new conditions, it is advisable to have the child return at first to audible self-statements to be sure he is practicing techniques. In these sessions it may relax the child and enable you to model what you would like from the extra adult if the three of you take turns playing roles of the provoker, the coping child, and the prompter.

By these sessions the child should be practicing the techniques in and out of therapy. It is important to discuss whether and how the techniques have helped him between sessions, and encourage his generalization of skills to new situations.

APPENDIX G
RELAXATION INSTRUCTIONS

Imagery-Based Relaxation Procedures

(From Koeppen, 1974)

General Considerations:

1. Tensing section should last 7-10 seconds.
2. Relaxation section should last 20-30 seconds.
3. Observe the child and make sure he is doing relaxation correctly.
4. Follow the instructions loosely; do them in a relaxed manner; use much inflection in your voice.

Forearm

Keep your elbow on your leg (or side of chair) with your palm up (make sure the child is doing this). That's right. Good. Now, pretend you have a whole lemon in your left hand. Now squeeze it hard. Try to squeeze all the juice out. Feel the tightness. Now, relax; drop the lemon...Notice how your muscles feel when you are relaxed. Breathe smoothly and note how the muscles feel. They feel so relaxed--as if the fingers could fall out. Now, take another lemon with your left hand and squeeze it. Squeeze it hard. That's right--real hard! Now, drop the lemon and relax. See how much better your hand and arm feel when they are relaxed...Sit quietly in the chair becoming relaxed. (Repeat for the right hand).

Shoulders and Neck

Now pretend you are a turtle. You're sitting out on a rock by a nice peaceful pond, just relaxing in the warm sun. It feels nice and warm and safe here. Oh-oh! You sense danger. Pull your head into your

house. Pull your shoulders up to your ears and push your head down into your shoulders. Hold in tight. Tense the muscles. Relax. The danger is past. You can come out in the warm sunshine and once again you can relax and feel the warm sunshine. Watch out now! More danger. Hurry, pull your head back into your house and hold it tight. You have to be closed in tight to protect yourself. OK, you can relax now. Bring your head out and let your shoulder relax. Notice how much better it feels to be relaxed than to be all tight. Breathe smoothly and deeply.

Jaws

You have a giant jawbreaker bubble gum in your mouth. It's very hard to chew. Bite down on it. Hard! Let your neck muscles help you. Now relax. Just let your jaw hang loose. Notice how good it feels just to let your jaw droop. Sit quietly and breathe smoothly. OK, let's tackle that jawbreaker again now. Bite down. Hard! Try to squeeze it out between your teeth. That's good. Now relax again. Just let your jaw drop off your face. It feels so good just to let go and not have to fight that bubble gum. Sit quietly and breathe smoothly.

Nose

Here comes a pesky old fly. He has landed on your nose. Try to get him off without using your hands. That's right, wrinkle up your nose. Make as many wrinkles as you can. Scrunch up your nose real hard. Good. Relax. You've chased him away. Now you can relax your nose. Your face feels like you have just washed it, fresh and relaxed. Oops, here he comes back again. Shoo him off. Wrinkle it real hard. Hold it as tight as you can. OK, relax. He flew away. You can relax your face. Breathe

smoothly and relax. Note how fresh and clean your face feels.

Forehead

Oh-oh! This time that old fly has come back, but this time he's on your forehead. Make lots of wrinkles. Try to catch him between all those wrinkles. Hold it tight now. OK, relax. You can let go. He's gone for good now. You can just relax and let your face go smooth now, no wrinkles anywhere. Oh, no! He's back. Wrinkle up your forehead. Real tight! Hold it! Relax, let all the muscles go, becoming smooth and relaxed. Sit quietly and breathe smoothly. Note how all of the face feels relaxed.

Stomach

Hey! Here comes a cute baby elephant. But he's not watching where he's going. He doesn't see you lying there in the grass and he's about to step on your stomach. Don't move. You don't have time to get out of the way. Just get ready for him. Make your stomach very hard. Tighten up your stomach muscles real hard. Hold it. Relax, it's safe now. Let your stomach go soft. Let it be as relaxed as you can. That feels so much better. It feels so relaxed. Oh-oh, he's coming this way again. Get ready. Tighten up your stomach real hard. Make your stomach into a rock. OK, he's moving away again. You can relax now. Kind of settle down, get comfortable and relax. Notice the difference between the tight stomach and a relaxed one. That's how we want you to feel--nice and loose and relaxed.

Legs and Feet

Now pretend that you are sitting barefoot in your chair and you see

a dime in front of you hanging on a string in the air. Get the dime with your toes. You'll need your legs to help you reach the dime. Now spread your toes apart and get that dime. That's good. Relax, let your feet relax. It feels so good when you are relaxed. Feel your muscles-- they are so relaxed. OK, try to get the dime once more. This time you will probably get it. Then it will be yours. Spread your toes hard. Relax, you have the dime. Now relax. Let your feet fall to the floor. Feel your muscles relax. It feels so good to relax.

Standard (Non-imagery) Relaxation Instructions
(From Jacobsen, 1938)

The procedure for this relaxation procedure should be exactly like the imagery procedure except that the imagery suggestions should be eliminated. Each muscle should be tensed for 7-10 seconds and the time in between tensing should be about 25-30 seconds. Make sure the child is doing the tensing correctly. Also, make sure that the child is sitting fairly still in the chair. If the child is moving too much, explain that he can become relaxed only by sitting fairly still. The phrases listed below to be used in the relaxation part should be only suggestive and not adhered to exactly. Vary what phrases you use. Read the relaxation phrases very slowly, in a soft, relaxing tone of voice. Try to use much inflection in your voice, contrasting the tensing and relaxation segments. Have the child keep his eyes closed as much as possible (during the relaxation).

Forearm

Put your left (right) forearm on your leg or on the arm of the chair--whatever feels comfortable. In a second, I want you to ball your fist and hold it real tight until I say to stop (show the child what to do).

Now, close your eyes, and ball your fist and hold it real tight (make sure the child is doing it correctly). Hold it--feel the tension. Relax, let the muscles go (make sure the child is relaxing). Keep your eyes closed; sit quietly in the chair becoming relaxed. Just breathe smoothly and deeply becoming relaxed...Focus on how the muscles feel as

they become relaxed. (Repeat the above for left hand and do it twice for the opposite hand. Alter the relaxation phrases using such phrases as: Notice the tingling feelings in the muscles. Note how the muscles become warm and heavy.)

Neck

Now, switch your attention to the muscles of your neck. When I tell you to, I want you to push up your shoulders and push your chin down against your chest (show the child, if necessary.) OK, now close your eyes and tense the muscles (see if the child is doing it right.) Hold it, feel the tension. Do it real hard...Relax, let the muscles go, becoming relaxed. Note how the muscles feel as they become relaxed. Breathe smoothly and deeply, sitting quietly in the chair. (Repeat instructions.)

Nose

Now, I want you to tense and relax the nose muscles. You have to make a funny face for this one. You have to wriggle up your nose real tight like this (show the child.) Now, close your eyes and tense the muscles of the nose. Hold it real tight. Feel how tight it is. Relax. Let the muscles go, becoming relaxed. Breathe smoothly and deeply, sitting quietly in the chair. Focus on how the muscles feel as they relax. (Repeat above.)

Forehead

Like with the nose muscles, I want you to wrinkle up your forehead. Watch me. OK, now close your eyes, and tense the forehead muscles. Hold it real tight. Feel the tension. Relax, letting the muscles go,

becoming relaxed. Focus all your attention on the warm, heavy feeling in the muscles as they become relaxed. Sit quietly in your chair becoming relaxed. (Repeat above.)

Stomach

Now, I want you to focus on your stomach muscles. This will involve pushing in your stomach real tight, almost like you are pushing your bellybutton against your back. OK, tense the muscles, pushing real tight. Hold it real tight. Feel the tension. Relax. Let the muscles go, becoming relaxed. Sit quietly in your chair and focus all your attention on how the muscles are becoming relaxed. Note how the muscles are becoming warm and heavy, more and more relaxed. (Repeat above.)

Legs

Now, we are going to do the leg muscles. Stretch out your leg muscles and push your toes down real hard. Now, tense the muscles. Hold them real tight. Hold it, feel the tension. Relax. Sit quietly in your chair, letting the muscles become more and more relaxed. Allow the muscles to become heavier and warmer, more and more relaxed. Focus all your attention on how the muscles feel as they relax. (Repeat.)

Jaws

Now, I want you to focus your attention on your mouth and jaws. Grit your teeth real hard, bite down. Now, hold it tight. Real hard. Relax. Feel the difference between tensing and relaxing. Breathe smoothly and deeply, relaxed in your chair.

APPENDIX H
INSTRUCTIONS TO RATERS
OF
THERAPY TAPE SAMPLES

Instructions to Raters of Therapy Tape Samples

On this tape you will find 12 ten-minute segments of tapes made during two kinds of therapy sessions. One kind of therapy (Anger-management) was a treatment program to help aggressive children manage their anger. The second (Attention-control) was used as a control condition, and consisted of discussing all kinds of emotions with aggressive children. The content of these two programs is detailed below. After looking over the explanation of each type of program, you will be asked to listen to each of the twelve samples and decide whether it was probably an Anger-management session or an Attention-control session. When the segment is over, there will be an abrupt switch from the conversation on tape to about 5-15 seconds of static. At that time please stop the tape and write down either "Anger-management" or "Attention-control" to indicate what the session seemed to be. At the end of this process you will have 12 numbers and 12 ratings. There is not necessarily the same number of each kind, and the different types may be presented in random order. Please make every effort to judge each session independently, and judge only after hearing the entire 10 minutes.

Content of the Therapy Programs. In the Anger-management treatment, therapists first talked to children about anger, what it is, and what effects it has on ones behaviors. Efforts were made to find out what made that individual child angry, and to increase his awareness of his own thoughts, behaviors, and feelings while angry. Children were encouraged to share incidents in which they had been angry and/or

aggressive, and eventually were taught to roleplay with them and rehearse new ways of coping with them. Methods to cope with anger included relaxation (which you may hear being rehearsed), talking to oneself covertly with coping or calming statements, and changing subsequent behavior (deciding to ignore, walk away, avoid a provocative person, etc.). You may hear Anger-management kids/therapists discussing four stages of coping (Get ready/Get set/Cope/Look back). Many sessions involved rehearsing self-statements to be made at each of these stages. Sometimes extensive information about aggressive incidents the kids had been involved in was gathered, and alternative ways of handling that situation were discussed or rehearsed. In general, if relaxation, anger, or aggressive incidents are the primary focus of conversation, or if the therapist tries to steer the child toward these topics, you are listening to "Anger-management".

If the therapist is trying to steer the child away from the topic of anger, or is discussing other emotions, you are hopefully listening to "Attention-control" sessions. Kids in this group knew they were referred for excessive anger, and expected that to be addressed. Therefore they sometimes volunteered accounts of aggressive acts or anger-provoking situations. Therapists were instructed to terminate this line of discussion as quickly as possible, usually by distinguishing anger from another emotion to be discussed in the Attention-control condition (e.g., excitement, disappointment, sadness). Again, it is important to listen to what the therapist is attempting to do in the session. Emotions discussed are outlined on the attached table. At

times this did not fill the sessions and the therapists simply made idle conversation. Scenes tied to emotions other than anger were roleplayed in later sessions, but relaxation and coping were never introduced in "Attention-control" sessions.

APPENDIX I

RAW DATA

Pre-treatment Scores of All Subjects

<u>SN</u>	<u>CIA</u>	Situation Self-report		<u>Beh.Obs.</u>	<u>Unit</u>	<u>Conners</u>	<u>C. Factor</u>	<u>SCRS</u>	Locus of Conflict		
		<u>Think</u>	<u>Do</u>						<u>Int.</u>	<u>Ext.</u>	<u>Tot.</u>
01	236	2.8	3.6	10.8	69	56	27	150	30	33	63
02	202	1.9	2.8	10.8	63	27	9	106	25	21	46
03	177	1.7	1.8	13.4	72	48	16	165	36	39	75
04	252	2.6	3.7	9.2	74	49	20	165	36	42	78
05	196	3.4	3.2	9.2	100	59	31	106	40	38	78
06	230	2.8	3.4	12.3	82	57	35	155	23	45	68
07	239	3.0	3.3	-	77	54	29	172	30	47	77
08	204	2.4	3.7	12.1	59	36	12	143	38	25	63
09	184	2.9	3.0	13.2	86	67	30	151	34	45	79
10	205	2.3	2.3	11.0	81	89	43	184	44	50	94
11	251	2.6	2.2	10.2	66	42	20	147	30	40	70
12	231	2.9	2.2	11.3	86	66	31	174	36	53	89
13	236	2.3	3.4	11.7	66	33	3	120	32	19	51
14	226	3.5	3.3	12.5	87	35	18	136	25	27	52

Post-treatment Scores of All Subjects

<u>SN</u>	<u>CIA</u>	Situation Self-report		<u>Beh.Obs.</u>	<u>Unit</u>	<u>Conners</u>	<u>C. Factor</u>	<u>SCRS</u>	Locus of Conflict		
		<u>Think</u>	<u>Do</u>						<u>Int.</u>	<u>Ext.</u>	<u>Tot.</u>
01	184	2.2	2.8	12.2	80	74	39	180	31	51	82
02	188	1.8	1.7	7.4	56	41	17	91	40	32	72
03	158	1.9	2.2	12.8	67	73	31	183	40	48	88
04	132	2.5	2.5	9.6	84	70	31	176	48	50	98
05	155	3.5	3.7	10.9	95	91	39	211	32	55	87
06	215	2.0	3.2	11.6	53	14	30	106	25	37	62
07	172	2.4	2.2	-	77	43	15	143	29	49	78
08	211	2.5	4.8	-	-	-	-	-	-	-	-
09	185	2.1	2.5	-	-	48	41	174	34	51	85
10	185	2.1	1.8	14.8	63	47	18	126	38	35	73
11	225	2.1	3.4	10.4	59	27	11	150	33	33	66
12	233	2.4	4.0	-	78	73	34	201	35	44	79
13	220	2.1	3.8	8.6	72	59	14	152	51	29	80
14	209	2.5	3.0	13.5	89	-	-	-	-	-	-

Follow-up Scores of All Subjects

<u>SN</u>	<u>CIA</u>	<u>Situations</u>		<u>Unit</u>	<u>Connors</u>	<u>C. Factor</u>	<u>SCRS</u>	<u>Locus of Conflict</u>		
		<u>Think</u>	<u>Do</u>					<u>Int.</u>	<u>Ext.</u>	<u>Tot.</u>
01	234	2.1	3.5	-	78	42	166	41	56	97
02	-	2.5	3.5	-	-	-	-	-	-	-
03	171	1.5	2.3	75	85	41	153	49	51	100
04	-	-	-	-	-	-	-	-	-	-
05	102	4.0	4.0	-	-	-	-	-	-	-
06	152	2.5	2.7	-	-	-	-	-	-	-
07	117	2.0	2.0	-	-	-	-	-	-	-
08	-	-	-	-	-	-	-	-	-	-
09	-	-	-	-	-	-	-	-	-	-
10	166	2.1	1.8	56	28	14	153	47	48	95
11	217	1.6	3.3	-	-	-	-	-	-	-
12	209	2.9	4.0	-	-	-	-	-	-	-
13	235	1.8	3.8	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-

VITA

**The 6 page vita has been
removed from the scanned
document**

**The 6 page vita has been
removed from the scanned
document**

**The 6 page vita has been
removed from the scanned
document**

**The 6 page vita has been
removed from the scanned
document**

**The 6 page vita has been
removed from the scanned
document**

**The 6 page vita has been
removed from the scanned
document**

EVALUATION OF AN ANGER MANAGEMENT PROGRAM
WITH AGGRESSIVE CHILDREN IN RESIDENTIAL TREATMENT

by

Conway Christian Fleming

(ABSTRACT)

There is a theoretical basis for assuming that certain forms of anger and aggression are interdependent. While attempts have been made to reduce aggression in children by other means, there is evidence to suggest that cognitive therapies might be useful in reducing aggression by enhancing anger-management. The present study was one of the first efforts to evaluate the efficacy of an adapted stress-inoculation procedure for anger-management in children using a controlled group design.

Subjects were 14 boys in residential treatment with presenting problems of excessive anger or aggression. The subjects, who ranged in age from 9.8 to 14.8, were randomly assigned to an Anger-management (treatment) condition or an Attention-control condition. Subjects met with a female therapist for 18 half-hour individual sessions. In the Anger-management condition, children were exposed to education about anger, relaxation and cognitive coping statements, and opportunities to rehearse and generalize coping skills. Attention-control children had equal exposure to therapists and mode of presentation, but discussed emotions other than anger. Self-report measures were administered at pre-treatment, post-treatment, and 10-week follow-up intervals. Teacher Ratings, Unit Staff ratings, and behavioral observation were

taken pre- and post-treatment. The only significant changes were on self-report measures where children in the Anger-management condition reported greater reductions in anger and aggression than children in the Attention-control condition at post-treatments. This finding was compared and contrasted to recent results in cognitive therapy research. Possible explanations for the absence of significant differences on other measures were presented, and the utility of the study as a whole was discussed.