

Aggression Replacement Training: Curriculum and Evaluation

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Aggression Replacement Training (ART) is a multimodal intervention design to alter the behavior of chronically aggressive youth. It consists of skillstreaming, designed to teach a broad curriculum of prosocial behavior, anger control training, a method for empowering youth to modify their own anger responsiveness, and moral reasoning training, to help motivate youth to employ the skills learned via the other components. The authors present a series of efficacy evaluations, which combine to suggest that ART is an impactful intervention. With considerable reliability, it appears to promote skills acquisition and performance, improve anger control, decrease the frequency of acting-out behaviors, and increase the frequency of constructive, prosocial behaviors. Beyond institutional walls, its effects persist. In general, its potency appears to be sufficiently adequate that its continued implementation and evaluation with chronically aggressive youngsters is clearly warranted.

KEYWORDS: *anger control training; chronic aggression intervention; gaming; moral reasoning training; skillstreaming; simulation.*

Counselors, teachers, and others who deal with aggressive adolescents or juvenile delinquents understand that these youngsters often make use of high levels of acting-out behaviors in combination with substandard and deficient alternative prosocial behaviors. Many of these young people are skilled in fighting, bullying, intimidating, harassing, or manipulating others; however, they are frequently inadequate in more socially desirable behaviors such as negotiating differences, dealing appropriately with accusations, and responding effectively to failure, teasing, rejection, or anger.

For the past 10 years, we have been developing and evaluating aggression replacement training (ART), our response to this behavior deficit perspective. It is a multimodal, psychoeducational intervention. The primary ART trainers are teachers, counselors, child care workers, and others who have direct responsibility for youngsters who frequently behave aggressively. The intervention is made up of the following three components, each of which the youngster attends on a weekly basis.

The Curriculum

Skillstreaming

Skillstreaming is an intervention in which a 50-skill curriculum of prosocial behaviors is systematically taught to chronically aggressive adolescents (Goldstein, Sprafkin, Gershaw, & Klein, 1980) and younger children (McGinnis & Goldstein, 1984, 1990). The skillstreaming curriculum is implemented with small groups of youngsters (preferably age 6 to 8) by (a) *modeling*, that is, showing several examples of expert use of behaviors constituting the skills in which they are weak or lacking; (b) *role-playing*, providing several guided opportunities to practice and rehearse these competent interpersonal behaviors; (c) *performance feedback*, or providing praise, reinstruction, and related feedback on how well the youth's role playing of the skill matched the expert model's portrayal of it; and (d) *transfer training*, or encouraging the youth to engage in a series of activities designed to increase the chances that the skills learned in the training setting will endure and be available for use when needed in the youth's real-life environment, whether it be the institution, home, school, community, or other real-world setting.

The skills that students learn from these procedures fall into one of six families that compose the entire curriculum and include:

1. Beginning social skills (e.g., starting a conversation, introducing yourself, giving a compliment).
2. Advanced social skills (e.g., asking for help, apologizing, giving instructions).
3. Skills for dealing with feelings (e.g., dealing with someone's anger, expressing affection, dealing with fear).
4. Alternatives to aggression (e.g., responding to teasing, negotiation, helping others).
5. Skills for dealing with stress (e.g., dealing with being left out, dealing with an accusation, preparing for a stressful conversation).
6. Planning skills (e.g., goal setting, decision making, setting priorities for solving problems).

Anger Control Training

Anger control training (ACT) was first developed by Feindler, Marriott, and Iwata (1984). It was partially based on the earlier anger control and stress

inoculation research of Novaco (1975) and Meichenbaum (1977). Its goal is teaching youngsters self-control of anger. In ACT, each young person is required to bring to each session a description of a recent anger-arousing experience (a hassle), which they record in a binder (hassle log). For 10 weeks the youngsters are trained to respond to their hassles with a chain of behaviors that include:

1. Identifying triggers (i.e., those external events and internal self-statements that provoke an anger response).
2. Identifying cues (i.e., those individual physical events, such as tightened muscles, flushed faces, and clenched fists, which let the young person know that the emotion he or she is experiencing is anger).
3. Using reminders (i.e., self-statements, such as "stay calm," "chill out," and "cool down," or nonhostile explanations of others' behavior).
4. Using reducers (i.e., a series of techniques that, like the use of reminders, is designed expressly to lower the individual's level of anger, such as deep breathing, counting backward, imagining a peaceful scene, or imagining the long-term consequences of one's behavior).
5. Using self-evaluation (i.e., reflecting on how well the hassle was responded to by identifying triggers, identifying cues, using reminders, and using reducers and then praising or rewarding oneself for effective performance).

The trainee, having participated in both skillstreaming and anger control training, is thus knowledgeable about what to do and what not to do in circumstances that instigate aggression. But because aggressive behavior is so consistently, immediately, and richly rewarded in many of the real-world settings in which youngsters live, work, go to school, and interact, they may still consciously choose to behave aggressively. Thus we believed that it was important to add a values-oriented component to this intervention approach. The final component of ART, therefore, is moral education.

Moral Education

Moral education is a set of procedures designed to raise the young person's level of fairness, justice, and concern with the needs and rights of others. In a long and pioneering series of investigations, Kohlberg (1969, 1973) demonstrated that exposing youngsters to a series of moral dilemmas (in a discussion group context in which youngsters reason at differing levels of morality) arouses an experience of cognitive conflict, the resolution of which will frequently advance a youngster's moral reasoning to that of peers in the group who reason at a higher level. Such advancement of moral reasoning is a reliable finding but, as with other single-component interventions, efforts to use it alone as a means of enhancing actual, overt moral behavior have resulted in mixed success (Arbuthnot & Gordon, 1983; Zimmerman, 1983). We suggest a need for

increasing youngsters' levels of moral reasoning because such youngsters did not have in their behavioral repertoires either the actual skills for acting prosocially or for successfully inhibiting antisocial or more aggressive behaviors. We thus reasoned that Kohlberg's moral education has marked potential for providing constructive direction toward sociability and away from antisocial behavior. We have offered the ART curriculum in a variety of lengths, but a 10-week sequence has emerged as a core curriculum, as detailed in Table 1.

Evaluation

Annsville Youth Center

Our first evaluation was conducted at a New York State Division for Youth facility in central New York state (Goldstein, Glick, Reiner, Zimmerman, & Coultrey, 1986). Included were 60 youths at Annsville, most having been incarcerated at this limited-security institution for such crimes as burglary, unarmed robbery, and various drug offenses. Twenty-four youngsters received the 10-week ART program outlined in Table 1. As noted earlier, this required them to attend three sessions per week, one each of skillstreaming, anger control training, and moral education. An additional 24 youths were assigned to a no-ART, brief instructions control group. This condition controlled for the possibility that any apparent ART derived gains in skill performance were not due to ART per se, but, in cases where youngsters already possessed the skills but were not using them, simply enhanced motivation to display already possessed skills. A third group, the no-treatment control group, consisted of 12 youths not participating in ART or brief instructions procedures. The overall evaluation goal of this project was to examine the effectiveness of ART for the purposes of

- (a) *Skill acquisition*, that is, do the youngsters *learn* the 10 prosocial skillstreaming skills in the ART curriculum?
- (b) *Minimal skill transfer*, that is, can the youngsters perform the skills in response to new situations, similar in format to those in which they were trained?
- (c) *Extended skill transfer*, that is, can the youngsters perform the skills in response to new situations, dissimilar in format and more like real life than those in which they were trained?
- (d) *Anger control enhancement*, that is, do the youngsters actually demonstrate fewer altercations or other acting-out behavior as reflected in weekly behavior incidents reports completed by center staff on all participating youth?
- (e) *Impulsive reduction*, that is, are the youngsters rated to be less impulsive and more reflective and self-controlled in their interpersonal behavior?

TABLE 1: Aggression Replacement Training Core Curriculum

<i>Week</i>	<i>Skillstreaming</i>	<i>Moral Reasoning</i>	<i>Anger Control</i>
1.	<p><i>Expressing a complaint</i></p> <ol style="list-style-type: none"> 1. Define what the problem is, and who's responsible for it. 2. Decide how the problem might be solved. 3. Tell that person what the problem is and how it might be solved 4. Ask for a response. 5. Show that you understand his or her feelings 6. Come to an agreement on the steps to be taken by each of you. 	<p><i>Moral Reasoning</i></p> <ol style="list-style-type: none"> 1. The used car 2. The dope pusher 3. Riots in public places 	<p><i>Anger Control</i></p> <p><i>Introduction</i></p> <ol style="list-style-type: none"> 1. Rationale: presentation and discussion 2. Rules: presentation and discussion 3. Training procedures: presentation and discussion 4. Contracting for anger control training, initial history 5. Antecedent provocations-behavioral response consequences (A-B-C)
2.	<p><i>Responding to the feelings of others (empathy)/Assessment</i></p> <ol style="list-style-type: none"> 1. Observe the other person's words and actions. 2. Decide what the other person might be feeling, and how strong the feelings are. 3. Decide whether it would be helpful to let the other person know you understand his or her feelings. 4. Tell the other person, in a warm and sincere manner, how you think he or she is feeling. 	<ol style="list-style-type: none"> 1. The passenger ship 2. The case of Charles Manson 3. LSD 	<ol style="list-style-type: none"> 1. Hassle log: purposes and mechanics 2. Anger self-assessment: physiological cues 3. Anger reducers: Reducer 1: deep breathing training; Reducer 2: refocusing, backward counting; Reducer 3: peaceful imagery
3.	<p><i>Preparing for a stressful conversation</i></p> <ol style="list-style-type: none"> 1. Imagine yourself in the stressful situation. 2. Think about how you will feel and why you will feel that way. 3. Imagine that other person in the stressful situation. Think about how that person will feel and why. 4. Imagine yourself telling the other person what you want to say. 5. Imagine what he or she will say. 6. Repeat the above steps using as many approaches as you can think of. 7. Choose the best approach. 	<ol style="list-style-type: none"> 1. Shoplifting 2. Booby trap 3. Plagiarism 	<p><i>Triggers</i></p> <ol style="list-style-type: none"> 1. Identification of provoking stimuli: a. Direct triggers (from others); b. Indirect triggers (from self) 2. Role play: triggers + cues + anger reducer 3. Review of hassle logs

TABLE 1: continued

<i>Week</i>	<i>Skillstreaming</i>	<i>Moral Reasoning</i>	<i>Anger Control</i>
<i>4. Responding to anger</i>	<ol style="list-style-type: none"> 1. Listen openly to what the other person has to say. 2. Show that you understand what the other person is feeling. 3. Ask the other person to explain anything you don't understand. 4. Show that you understand why the other person feels angry. 5. If it is appropriate, express your thoughts and feelings about the situation. 	<ol style="list-style-type: none"> 1. Toy revolver 2. Robin Hood case 3. Drugs 	<p><i>Reminders (Anger reducer 4)</i></p> <ol style="list-style-type: none"> 1. Introduction to self-instruction training 2. Modeling use of reminders under pressure 3. Role play: triggers + cues + reminders + anger reducer 4. Homework assignments and review of hassle log
<i>5. Keeping out of fights</i>	<ol style="list-style-type: none"> 1. Stop and think about why you want to fight. 2. Decide what you want to happen in the long run. 3. Think about other ways to handle the situation besides fighting 3. Think about other ways to handle the situation besides fighting. 4. Decide the best way to handle the situation and do it. 	<ol style="list-style-type: none"> 1. Private country road 2. New York versus Gerald Young 3. Saving a life 	<p><i>Self-evaluation</i></p> <ol style="list-style-type: none"> 1. Review of reminder homework assignment 2. Self-evaluation of post-conflict reminders: a. Self-reinforcement techniques; b. Self-coaching techniques 3. Review of hassle log postconflict reminders 4. Role play: triggers + cues + reminders + anger reducer + self-evaluation
<i>6. Helping others</i>	<ol style="list-style-type: none"> 1. Decide if the other person might need and want your help. 2. Think of the ways you could be helpful. 3. Ask the other person if he or she needs and wants your help. 4. Help the other person. 	<ol style="list-style-type: none"> 1. The kidney transplant 2. Bomb shelter 3. Misrepresentation 	<p><i>Thinking ahead (anger reducer 5)</i></p> <ol style="list-style-type: none"> 1. Estimating future negative consequences for current acting out 2. Short-term versus long-term consequences 3. Worst to least consequences 4. Role play: "If... then" thinking ahead 5. Role play: triggers + cues + reminders + anger reducers + self-evaluation + skillstreaming skill
<i>7. Dealing with an accusation</i>	<ol style="list-style-type: none"> 1. Think about what the other person has accused you of. 2. Think about why the person might have accused you. 3. Think about ways to answer the person's accusations. 4. Choose the best way and do it. 	<ol style="list-style-type: none"> 1. Lt. Berg 2. Perjury 3. Doctor's responsibility 	<p><i>The angry behavior cycle</i></p> <ol style="list-style-type: none"> 1. Review of hassle logs 2. Identification of own anger-provoking behavior 3. Modification of own anger-provoking behavior 4. Role play: triggers + cues + reminders + anger reducers

TABLE 1: continued

<i>Week</i>	<i>Skillstreaming</i>	<i>Moral Reasoning</i>	<i>Anger Control</i>
8.	<i>Dealing with group pressure</i>		<i>Full sequence rehearsal</i>
	<ol style="list-style-type: none"> 1. Thinking about what the other people want to do and why. 2. Decide what you want to do. 3. Decide how to tell the other people what you want to do. 4. Tell the group what you have decided. 	<ol style="list-style-type: none"> 1. Noisy child 2. The stolen car 3. Discrimination 	<ol style="list-style-type: none"> 1. Review of hassle logs 2. Role play: triggers + cues + reminders + anger reducers + self-evaluation + skillstreaming skill
9.	<i>Expressing affection</i>		<i>Full sequence rehearsal</i>
	<ol style="list-style-type: none"> 1. Decide if you have good feelings about the other person. 2. Decide whether the other person would like to know about your feelings. 3. Decide how you might best express your feelings. 4. Choose the right time and place to express your feelings. 5. Express affection in a warm and caring manner. 	<ol style="list-style-type: none"> 1. Defense of other persons 2. Lying in order to help someone 3. Rockefeller's suggestion 	<ol style="list-style-type: none"> 1. Review of hassle logs 2. Role play: triggers + cues + reminders + anger reducers + self-evaluation + skillstreaming skill
10.	<i>Responding to failure</i>		<i>Full sequence rehearsal</i>
	<ol style="list-style-type: none"> 1. Decide if you have failed. 2. Think about both the personal reasons and the circum - stances that have caused you to fail. 3. Decide how you might do things differently if you tried again. 4. Decide if you want to try again. 5. If it is appropriate, try again, using your revised approach. 	<ol style="list-style-type: none"> 1. The desert 2. The threat 3. Drunken driving 	<ol style="list-style-type: none"> 1. Review of hassle logs 2. Role play: triggers + cues + reminders + anger reducers + self-evaluation + skillstreaming skill

Analyses of study data revealed, first, that youths undergoing ART, compared to both control groups, significantly acquired and transferred (minimal and extended) 4 of the 10 skillstreaming skills: expressing a complaint, preparing for a stressful conversation, responding to anger, and dealing with group pressure. Similarly significant ART versus control groups comparisons emerged on both the number and intensity of in-facility acting out (behavior incidents measure), as well as on staff-rated impulsiveness.

Following completion of the project's posttesting, in week 11, new ART groups were constituted for the 36 youths in the two control group units. As before, these sessions were held three times per week for 10 weeks and duplicated in all major respects (curriculum, group size, materials, etc.) the first phase ART sessions. Our goal in this second phase was a test of the efficacy of ART, with particular attention to discerning possible reductions in acting-out behaviors by comparing, for these 36 youths, their incident reports while in ART (weeks 11-20) with their incident reports from the period when they had served as control group members (weeks 1-10). Both of the statistical comparisons-the number and severity-conducted to test for replication effects yielded positive results.

For reasons primarily associated with the frequent indifference or even hostility expressed by real-world significant figures such as family and peers to newly performed prosocial skills, it is often very difficult for reformed delinquents to transfer successfully to community settings the gains acquired in the more protective and benign training setting. Family and peers frequently serve as reinforcers of antisocial behaviors, ignoring or even punishing constructive alternative actions. Our hope was that ART might serve as a sufficiently powerful inoculation so that at least moderate carryover of in-facility ART gains to the community would occur. To test for such possible transfer effects, we constructed a global rating measure of community functioning.

During the 1-year period following initiation of ART at Annsville, 54 youths were released from this facility. Of those released, 17 had received ART and 37 had not. We contacted the Division for Youth Service Team members (analogous to parole officers), in the New York area, to whom the 54 released youth reported regularly and, without informing the worker whether the youth had or had not received ART, asked the worker to complete the global rating measure on each of the Annsville discharges. In four of the six areas rated-namely, home and family, peer, legal, and overall, but not school or work-ART youth were rated significantly superior at in-community functioning than were youth who had not received ART.

MacCormick Youth Center

Our second evaluation of the efficacy of ART was conducted at MacCormick Youth Center, a New York State Division for Youth maximum security facility for male juvenile delinquents between the ages of 13 and 21 (Goldstein et al., 1986). In essence, this second evaluation project sought to both replicate the exact procedures and findings of the Annsville project as well as extend them to youth incarcerated for substantially more serious felonies. In residence at MacCormick at the time the evaluation was conducted were 51 youths. Crimes committed by these youths included murder, manslaughter, rape, sodomy, attempted murder, assault, and robbery. In all of its procedural and experimental particulars, the MacCormick evaluation project replicated the effort at Annsville. It employed the same preparatory activities, materials, ART curriculum, testing, staff training, resident training, supervision, and data analysis procedures.

On 5 of the 10 skillstreaming skills, significant acquisition and/or transfer results emerge. These findings, as well as for which particular skills it does and does not hold, essentially replicate the Annsville skillstreaming results. In contrast to the Annsville results, however, the MacCormick data also yielded a significant result on the sociomoral reflections measure. At MacCormick, but not at Annsville, youths participating in moral education sessions grew significantly in the moral reasoning stage over the 10-week intervention period.

Regarding overt, in-facility behavior, youths receiving ART, compared to those who did not, increased significantly over their base rate levels in the constructive, prosocial behaviors they employ (e.g., offering or accepting criticism appropriately, employing self-control when provoked) and decreased significantly in their rated levels of impulsiveness. In contrast to the Annsville findings, however, MacCormick youths receiving ART did not differ from controls in either the number or intensity of acting-out behaviors. These later findings appear to be largely explained by the substantial difference in potential for such behaviors between two facilities. Annsville, internally, is not a locked facility. Its 60 youths live in one dormitory, in contrast to the locked, single-room arrangement at MacCormick. The latter's staff is twice the size of that at Annsville and MacCormick operates under a considerably tighter system of sanctions and control than does Annsville. Thus the opportunity for acting-out behaviors are lower across all conditions at MacCormick, and thus a "floor effect" seems to be operating, which makes unlikely the possibility of decreases in acting out as a result of ART participation at MacCormick. At Annsville, such behaviors were contextually more possible at base rate, and this could (and did) decrease over the intervention

period. At MacCormick, all youths started low, and likely for these same contextual reasons (e.g., sanctions, controls, rich staffing, etc.), remained low. Their use of prosocial behaviors, in regard to which no floor- or ceiling-effect influences are relevant, did increase differentially as a function of the ART intervention.

Community-Based Evaluation of ART

The findings of our first two investigations reveal aggression replacement training to be a multimodal, habilitation intervention of considerable potency with incarcerated juvenile delinquents. It enhances prosocial skill competency and overt prosocial behavior, reduces the level of rated impulsiveness, and in one of the two samples studied, decreases both (where possible) the frequency and intensity of acting-out behaviors and enhances the participants' levels of moral reasoning.

Furthermore, some moderately substantial evidence provided independently reveal it to lead to valuable changes in community functioning. This latter suggestion--combined with the general movement away from residential-based and toward community-based programming for delinquent youths--led to our third evaluation of the efficacy of ART, seeking to discern its value when provided to youths (n = 84) on a postrelease, living-in-the-community basis (Goldstein, Glick, Irwin, McCartney, & Rubama, 1989). We were aware of the potent contribution to functioning in the community that parents and others may make in the lives of delinquent youths. This knowledge led to our attempt to discern the effects of offering ART not only to youths, but also to their parents and other family members. Family training emphasized reinforcement of youths' ART skills and additional support skills.

The community-based project is essentially a three-way comparison of ART provided to youths as well as to youths' parents or other family members (Condition 1), versus ART for youths only (Condition 2), versus a no-ART control group (Condition 3). For the most part, participating youths were assigned to project conditions on a random basis, with departures from randomization becoming necessary on occasion as a function of the five-city, multisite, time-extended nature of the project. Largely as a result of how long the New York State Division for Youth has aftercare responsibility for youths discharged from their facilities, the ART program offered to project participants was designed to last 3 months, meeting twice a week, for a planned total of approximately 25 sessions. Each session, 1 1/2 to 2 hours long, was spent in (a) brief discussion of current life events and difficulties, (b) skillstreaming skills training (of a skill relevant to the life events/difficulties

discussed), and, on an alternating basis, (c) anger control training or -moral education. Once weekly, an ART session was held for the parents and other family members of a sample of participating youths. Those parents selected to participate, but who did not appear, were provided ART in modified form via a weekly home visit or phone visit.

Because the different ART groups that constitute the project's two treatment conditions each chose, in collaboration with their respective trainers, which of the 50 skills that comprise the full skillstreaming curriculum they wanted to learn, different groups learned different (if overlapping) sets of skills. We did not, therefore, examine, in our statistical analyses, participant change on individual skills. Instead, analyses focused on total skill change for the ART-participating youths (Conditions 1 and 2) versus both each other and non-ART control group youths (Condition 3). Results indicated that although they did not differ significantly from one another, the two ART groups each increased significantly in their overall interpersonal skill competence compared to Condition 3 (no-ART) youths. A similarly significant outcome emerged (both ART groups versus the no-ART group) for decrease in self-reported anger levels in response to mild (e.g., seeing others abused, minor nuisance, unfair treatment) but not severe (e.g., betrayal of trust, control/coercion, physical abuse) anger-provoking situations.

A particularly important evaluation criterion in delinquency intervention work is recidivism. The very large majority of previously incarcerated youths who recidivate do so within the first 6 months following release (Maltz, 1984). Thus the recidivism criterion employed in the current project, rearrest, was tracked for that time period. For youths in Conditions 1 and 2, the 6-month tracking period consisted of the first 3 months during which they received ART, and 3 subsequent no-ART months. Analyses examining the frequency of rearrest by condition showed a significant effect for ART participation. Both Condition 1 and Condition 2 youths were rearrested significantly less than were youths not receiving ART. Table 2 represents the actual frequency and rearrest percentage data by condition.

Comparison of the rate of percentage rearrested for the two ART conditions shown in Table 2 reveals a substantial decrement in rearrests when the youths' families (i.e., parents and siblings) are also participating simultaneously in their own ART groups. These latter groups, teaching needed and reciprocal (to what the delinquent youths were learning) interpersonal skills, as well as anger control techniques, may well have provided for the delinquent youths a more responsive and prosocially reinforcing real-world environment. Perhaps it provided a context in which negotiating instead of hitting in conflict situations was praised, not castigated, providing a context support

TABLE 2: Frequency of Rearrest by Condition

<i>Condition</i>	<i>Total N</i>	<i>N Rearrested</i>	<i>Percentage Rearrested</i>
Youth ART and parent/ sibling ART	13	2	15
Youth ART only	20	6	30
No ART control	32	14	43

ive of, encouraging of, and reinforcing of prosocial, not antisocial, ways of being and doing.

Gang Intervention Project

Our research group's final ART evaluation, in which trainees were all gang members, grew from precisely the same spirit. If our community-based effort "captured," as seems likely, that part of the delinquent youths' actual interpersonal world made up of family members and turned it, at least in part, in prosocial reinforcing directions, can the same be done with delinquent gang youths this time seeking to capture and turn his or her peer group (the gang) in prosocial directions? Can we, our project asked, not only use ART to teach youths to be more prosocial but, when they indeed do behave in such a manner in their real-life peer environment, can they more frequently be met with acceptance, support, and even praise for such behaviors by fellow gang members?

This project was conducted in two Brooklyn youth care agencies, the Brownsville Neighborhood Community Youth Action Center and Youth D.A.R.E.S. (Dynamic Alternatives for Rehabilitation through Educational Services) of Coney Island. Each agency conducted three 4-month sequences of ART. Within each sequence, the trainees were all members of the same gang. Also, for each sequence, we constituted a control group, all of whose members were also from the same gang as one another—although a different gang than the ART trainees. Thus, across both agencies, 12 different gangs participated in the program, 6 receiving ART and 6 as no-ART controls. All of the youths, ART and controls, also received the diverse educational, vocational, and recreational services offered by the two participating agencies.

Repeated measures analysis of variance, crossing project condition (ART vs. control) with time of measurement (pre vs. post) revealed a significant interaction effect favoring ART participants for each of the seven skills categories: beginning social skills, advanced social skills, feelings-relevant skills, aggression-management skills, stress-management skills, and planning skills, as well as total skills score.

None of the ANOVA comparisons of ART with control group scores for anger control yielded significant differences. Of the five community domains, only work adjustment yielded a significant difference. This result accords well (and no doubt largely reflects) the real-world employment pattern for project participants. For example, in the months immediately following their ART sequence, the majority of the participating Lo-Lives left their gang and took jobs in one or another retail business. At an analogous point in time, following their own ART participation, a substantial minority of the participating Baby Wolfpack members obtained employment in the construction trades.

Arrest data was available for the youths participating in our first two ART sequences and their respective control group. Five of the 38 ART participants (13%) and 14 of the 27 control group members (52%) were rearrested during the 8-month tracking period (chi square = 6.08, $p < .01$). It will be recalled that our primary rationale for working with intact gangs in this project was the opportunity afforded by such a strategy to attempt to capture a major feature of the youths' environment and "turn it" in prosocial directions. Once having learned given prosocial behaviors, will the transfer and maintenance of them be facilitated or discouraged by the persons with whom the youths interact regularly in their real-world environments?

Our favorable outcome vis-à-vis rearrest implies the possibility that such a more harmonious and prosocially promotive post-ART peer environment may have been created. Although it is important that future research examine this possibility more directly, it is of considerable interest to note that very similar rearrest outcomes were obtained in our earlier attempt to create a prosocially reinforcing post-ART environment for delinquent youths by employing this intervention with both them and their families. For these youths (Condition 1), the rearrest rate on follow-up was 15%. For youths in Condition 3, the comparable figure was 43%. Both outcomes parallel closely that found here (13% and 52%) for the presence or absence of a rather different type of family—the youths' fellow gang members.

Other Efficacy Evaluations

Our own four studies of the effectiveness of ART yielded a series of promising findings, both proximal to the ART procedures (i.e., skill acquisition, anger control, enhanced moral reasoning) and distal to it, but central to its ultimate purposes (i.e., reduced rearrest, enhanced community functioning). What are the independent findings of other investigators?

Coleman, Pfeiffer, and Oakland (1991) evaluated the effectiveness of a 10-week ART program used with behavior-disordered adolescents in a Texas

residential treatment center. Study results indicated improved participant skill knowledge, but not actual overt skill behaviors. Coleman et al. (1991) comment

The current study thus provides additional support for the contention that although cognitive gains can be demonstrated, the link to actual behavior is tenuous, especially with disturbed populations. (p. 17)

As our own discussion above would suggest, however, we believe that the likelihood of overt behavioral expression (performance) of newly acquired skills is less a function of the degree of trainee emotional disturbance and more a matter of both trainee motivation to perform, and staff or other significant persons' perceived receptivity to, and likely reward for, such overt behaviors.

Coleman et al. (1991) continue

Of the ten social skills that were taught, three accounted for the improvement in social skills knowledge: keeping out of fights, dealing with group pressure, and expressing a complaint. The fact that Goldstein and Glick (1987) also found these same skills to be improved in two separate studies suggests that these skills may be the most responsive to intervention. One plausible explanation is that these three skills may be construed as contributing to selfpreservation, especially within the context. (p. 15)

Curulla (1990) evaluated (a) a 14-week ART program versus (b) ART without the moral education component versus (c) a no-ART control condition. Her trainees were 67 young adult offenders being seen in a community intervention setting in Seattle. She reports:

Tendency toward recidivism and actual recidivism were compared among the three groups. Tendency towards recidivism as measured by the Weekly Activity Record, was significantly reduced in the dilemma group [Condition 1 above]. The nondilemma [Condition 2] and control [Condition 3] groups showed no significant reduction. The dilemma group also had the lowest frequency of subsequent offense.... However, the differences in actual recidivism among the three groups did not reach statistical significance due to the low incidence of recorded charges during the six month followup. (pp. 1-2)

Unlike Coleman et al.'s (1991) result, in Curulla's (1990) study-as in our own--overt acting-out behaviors were significantly reduced via ART participation. However, unlike our own results, post-ART recidivism was not reduced Jones (1990) compared ART to moral education and a no-treatment control using a sample of highly aggressive male students in a Brisbane, Australia high school. Her results were consistent and positive:

Compared to the two control conditions, students completing the ART program: showed a significant decrease in aggressive incidences, a significant

increase in coping incidences, and acquired more social skills. Students in condition I [also] improved on ... self-control and impulsivity.... ART appears to be an effective intervention for aggressive youth within a high school setting. (p. 1)

A final investigation, also affirming of the efficacy of ART, takes this intervention in a new direction. Gibbs and his coworkers (Leeman, Gibbs, Fuller, & Potter, 1991) in the Ohio Department of Youth Services had for some years employed and evaluated a positive peer culture approach in their work with delinquent youths. This technique, described as an "adult-guided but youth-run small group approach," places major responsibility on the youth group itself for the management of their living environment, as well as for change in youth behavior. Feeling that youths were successfully motivated to conduct much of their own governance and direction but too frequently lacked the skills and anger-control to do so, Gibbs and his group combined the positive peer culture approach with ART to yield a motivation plus skills-oriented intervention, which they termed EQUIP. Leeman et al. (1991) note,

In EQUIP, moral discussion, anger management, or social skills sessions are designated as "equipment meetings," i.e., meetings wherein the group gains 11 equipment" for helping group members. (pp. 5-6)

These investigators conducted an efficacy evaluation of EQUIP at a medium-security institution for juvenile felony offenders, **the Buckeye Youth Center** in Ohio. Three conditions were constituted, EQUIP, a motivational control group, and a no-treatment group. Outcome results were significant and supportive of the EQUIP intervention on both proximal and distal criteria.

The investigators (Leeman et al., 1991) comment:

Institutional conduct improvements were highly significant for the EQUIP relative to the control groups in terms of self-reported misconduct, staff-filed incident reports, and unexcused absences from school. (p. 18)

Interestingly, whereas, the recidivism rate of EQUIP subjects was low (15 percent) at both 6 and 12 months following release, the control group rates worsened from 6-12 months (25 to 35 percent for the motivational control, 30 to 40 percent for the simple passage-of-time control). This pattern suggests that the treatment result is maintained as a stable effect. (p. 19)

Conclusion

The evaluations we have presented combine to suggest that ART is effective. With considerable reliability, it appears to promote skills acquisi-

tion and performance, improve anger control, decrease the frequency of abating-out behaviors, and increase the frequency of constructive, prosocial behaviors. Beyond institutional walls, its effects persist (less fully perhaps than when the youths are in the controlled institutional environment but they persist nonetheless). In general, its potency appears to us to be sufficiently adequate to warrant its continued implementation and evaluation with chronically aggressive youngsters.

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