Children who have experienced relational trauma present a host of problems related to the inability to manage emotions and behavior. Aggression Replacement Training can be integrated with established trauma therapy models to help address these challenges.

Aggression Replacement Training and Childhood Trauma

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Aggression Replacement Training (ART) was developed by the late Arnold Goldstein of Syracuse University to teach positive alternatives to children and youth with emotional and behavioral problems (Glick & Gibbs, 2011; Goldstein, Glick, & Gibbs, 1998). ART provides cognitive, affective, and behavioral interventions to build competence in social skills, anger control, and moral reasoning. This article describes how strength-building ART strategies can enhance other therapeutic models which are specifically designed to serve traumatized children and youth.

Developmental Trauma

The traditional diagnosis of PTSD—developed on adult populations such as combat soldiers—fails to adequately describe trauma in children and youth. Children depend on adults to provide safety and security, so abuse, neglect, and loss can spark a potpourri of diagnostic labels (Ackerman, Newton, McPherson, Jones, & Dykman, 1998). Their symptoms can extend well beyond PTSD descriptors to include conduct and attention problems, impulsivity, depression, anxiety, sexualized behaviors, mistrust, shame, fear, and aggression.

Drawing from a growing body of research in neuroscience, attachment, and childhood psychopathology, Bessel van der Kolk and colleagues proposed adding a new category of "Developmental Trauma Disorder" for inclusion in the diagnostic manual of the American Psychiatric Association (D'Andrea, Ford, Stolbach, Spinazzola, & van der Kolk, 2012; van der Kolk, 2007). However, the latest *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; APA, 2013) retains its focus on profiles of symptoms rather than etiology or therapy. But, unless these children and youth receive appropriate treatment, their challenging behavior problems can lead to retraumatization and reenactment in victim, persecutor, or rescuer roles.

The wide-ranging impact of Adverse Childhood Experiences is discussed in detail in the accompanying article by Foltz et al. (2013) in this journal issue. There

have been major advances in the development of new models of therapeutic intervention for children who have experienced abuse, neglect, and other trauma. These include conjoint child and family therapy (Cohen, Mannarino, & Deblinger, 2006), the neurosequential model of therapy (Perry & Hambrick, 2008), the system-focused Sanctuary model (Bloom & Farragher, 2011), and the strength-based Trauma and Loss in Children (TLC) model (Steele & Malchiodi, 2011).

What is the primary impact of complex childhood trauma? The ability to regulate emotion and behavior (Bath, 2013; Teisl & Cicchetti, 2008). Whatever their diagnostic labels, these children populate our educational, foster care, mental health, and juvenile justice systems. Such problems have long been the primary focus of ART interventions.

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ART Interventions

Arnold Goldstein moved beyond narrow theories to create multimodal interventions that integrated cognitive, behavioral, and affective approaches. His colleagues Glick and Gibbs note that a principle of ART is that "every act of adolescent or child aggression—in school, at home, in the community—has multiple causes, both external and internal to the youth" (2011, p. 33). They describe three interlocking developmental challenges:

1. Skills. These youths have strengths but lack many of the personal, interpersonal, and social-cognitive skills that underlie prosocial behavior.

2. Emotions. Frequent impulsiveness and use of aggression to meet their daily needs and longer term goals may reflect impairment in anger control.

3. Values. Such adolescents have been shown to respond at a more egocentric, concrete, and self-serving level of moral reasoning.

The three components of ART described below address these developmental lags.

Skillstreaming focuses on specific prosocial behavioral skills (Goldstein & McGinnis, 1997; McGinnis 2012). Structured learning groups follow this process:

1. Modeling behaviors that constitute the skills being taught.

2. Role-playing to practice and rehearse these specific skills.

3. Feedback and encouragement on how participants perform role-playing.

4. Transfer of training so skills will be applied beyond the training setting.

Anger Control Training is the emotional component of ART. This was developed by Feindler and her research group at Adelphia University (Feindler & Ecton, 1986). Anger Control Training teaches trainees what not to do, and coping strategies to respond to provocations. These include focusing on: (a) external and internal triggers, (b) bodily cues, (c) anger reducers, (d) reminders, (e) thinking ahead, (f) use of Skillstreaming abilities, and (g) self-evaluation.

Moral Reasoning Training is the values component. This was derived from pioneering research on moral development by Lawrence Kohlberg (1981) and continued by his colleague John Gibbs (2013) of The Ohio State University. Youth are exposed to a series of moral dilemmas in a discussion group context. Youth adopt more prosocial values and thinking as they interact with peers who display higher levels of empathy and moral reasoning.

Self-Talk

Skillstreaming grew from social learning theory and behavioral principles and has evolved to include cognitive-behavioral strategies such as problem-solving, anger control, and verbal mediation through self-talk. Research shows that self-talk has been useful in teaching impulse control in hyperactive children (Kendall, 1993), anger control in adolescents (Feindler & Ekton, 1986), impulse control in aggressive youngsters (Camp & Bash, 1981), and academic behaviors (DiGangi & Maag, 1992; Meichenbaum, 1977). By practicing talking to themselves to execute a skill, students learn to regulate actions until these become nearly automatic.

Saying aloud what would normally be said to oneself silently is a valuable part of both modeling and role-playing. For example, in *Dealing with an Accusation* (Skill 40) the model might say something like "I need to think about what I'm being

accused of. I think he is saying that I....” This narration increases the effectiveness of modeling, highlights specific skill steps, and fosters learning and generalization. Self-talk may also be employed to demonstrate how one might cope with challenges. For example, *Dealing with Being Left Out* (Skill 35) may be put into this self-talk, “Others are all going to the party. I really want to go, but I can't—I wasn't invited. Yes, I feel hurt and angry! But feeling hurt won't get me an invitation. I need to think of my choices.”

Many group leaders find it useful to create visual cues to convey they are “thinking aloud” during a modeling display. For example, some leaders actually say “I'm going to step out of role now,” take a step to the side, and then proceed to say aloud what they are thinking to guide themselves through skill use. Other group leaders use a visual cue, such as holding up a “thinking bubble” drawn on a small poster. For those who find it difficult or embarrassing to think aloud, peers can practice thinking aloud while they are demonstrating specific activities (e.g., academic tasks, a sports activity). Strategies to teach, remind, and encourage group members to think aloud are included in the modeling and role-playing in Skillstreaming groups.

Neuroplasticity of Interventions

Goldstein often taught that aggression which is learned can be unlearned through prosocial modeling. This is an example of neuroplasticity, the ability of the brain to redesign itself to solve new problems and heal after trauma (Doidge, 2007). Our social interactions shape the brain—for better or worse. Thus, being emotionally nurtured, or chronically hurt and angered, can refashion a child's brain. Neuroplasticity is central in building social intelligence (Cacioppo, Bernston, Taylor, & Schacter, 2002; Goleman, 2006). Social interactions create repeated experiences that sculpt neurons and their connections.

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The discovery of mirror neurons explains how humans read and replicate the emotions and behavior of others (Iacoboni, 2009). This mirroring is integral in modeling, role playing, and empathy, all core constructs in ART. The brain also develops new pathways by “thinking about thinking” which is called metacognition (Darling-Hammond et al., 2003). Prosocial self-talk strengthens coping skills by providing maps for problem-solving and managing stress. Using these new brain pathways, children are better able to integrate thoughts and emotional experiences.

Evaluating ART

Perseus House, a multi-site youth serving organization in Erie, Pennsylvania, conducted a quasiexperimental evaluation for both community-based and residential programming (Neal, 2012). These studies yielded promising findings on the effectiveness of ART procedures (i.e., skill acquisition, anger control, enhanced moral reasoning) and lasting changes like reduced reoffending and community functioning.

The Collaborative Intensive Community Based Program evaluated the effectiveness of ART, which lasted for 12 weeks, 7 days a week, and

was presented to both youth and their parents. Participating youth were referred by the juveniles court and assigned to the program on either a deferred placement basis (diversion to the community program instead of residential placement) or on a community reintegration basis (following a period of residential placement). Youth ART sessions were conducted three times per week, an hour each for Skillstreaming, Anger Control Training, and Moral Reasoning. Parent sessions were held on Sundays. Participants showed significant increases in social skill, achievement, and overall psychological and social functioning as measured by the *Global Assessment of Functioning* (APA, 1994). Also noted were significant decreases in aggression scores as measured by the *Aggression Questionnaire* (Buss & Perry, 1992) and in thinking errors as measured by the *How I Think - (HIT)* questionnaire (Gibbs, Barriga, & Potter, 2001). The re-arrest rate for a 12-month period following the program was 10.5%.

Table 1

Collaborative Intensive Community Treatment Program

	Pre-Scores	Post-Scores
Global Assessment of Functioning	55.7	61.1
Skillstreaming (Youth)	168.3	188.4
Skillstreaming (Trainer)	143.8	163.5
Skillstreaming (Parents)	156.3	172.2
Aggression Scores	54.6	51.3
Thinking Errors (HIT)	2.8	2.4
Grade Point Average	1.8	2.2

Table 2

Perseus House Residential Programming

	Pre-Scores	Post-Scores
Global Assessment of Functioning	44.2	51.2
Skillstreaming (Youth)	170.7	189.4
Skillstreaming (Trainer)	136.6	171.5
Skillstreaming (Parents)	143.5	172.5
Aggression Scores	53.8	50.0
Thinking Errors (HIT)	2.60	2.10
Grade Point Average	2.1	2.9

The Perseus House Residential Program houses 90 male and female residents with a length of stay varying from 4 to 16 months. Evaluations of the effectiveness of ART covered the time a youth was in program. ART sessions were conducted three times per week (one hour each for Skillstreaming, Anger Control Training, and Moral Reasoning). ART participants showed significant increases in Skillstreaming skills scores, achievement, and staff ratings of youth's overall psychological and social functioning. Also noted were significant decreases in aggression scores as measured by the Aggression Questionnaire (Buss & Perry, 1992), and significant decreases in thinking errors as reported by the *How I Think* questionnaire.

Table 1 shows the behavioral gains for the Collaborative Intensive Community Treatment Program. The recidivism rate for 1127 individuals over a 10-year span, tracked one year following the discharge from the program, was 10.5%. Table 2 shows the behavioral gains for the Residential Program. The recidivism rate for 853 individuals over a 10-year span, tracked one year following discharge from the program, was 7%.

A third study with longitudinal impact was conducted by Barnoski (2004). The Washington State legislature passed the Community Juvenile Accountability Act in 1997 to reduce juvenile crime cost effectively, studying three "research-based" programs including ART. When competently delivered, ART had positive outcomes with an estimated 24% reduction in 18-month recidivism.

Combining ART and Trauma Treatment

ART provides a tested array of competency building strategies that can increase the effectiveness of trauma-focused treatment. In our experience at Perseus we found that ART® and Trauma Focused Cognitive Behavioral Therapy (TF-CBT) complemented each other. TF-CBT is a conjoint child and family psychotherapeutic approach for children

and adolescents who are experiencing significant emotional and behavioral difficulties related to traumatic life events (Cohen, Mannarino, & Deblinger, 2006). This treatment model incorporates trauma sensitive interventions with cognitive behavioral and humanistic principles and strategies. Youth gain new skills to process thoughts and feelings related to traumatic life events. This fosters a sense of safety, healthy relationships, social intelligence, and positive growth.

Social interactions create repeated experiences that sculpt neurons and their connections.

Since ART and trauma therapy share compatible principles, teaching staff to be effective in both is feasible. Each model is trained separately and each needs to be monitored for fidelity. ART training typically covers three days which present and practice its three components. TB-CBT is a 10-hour online experience and a three-day hands-on face-to-face training with follow up fidelity management. Training is reinforced by booster sessions, case staffing, and individual supervision. In a climate of trust, students develop new skills, emotional regulation, and positive potentials.

Application

ART and trauma treatment fit together because of their focus on developing strengths and strategies for dealing with stressful situations. Following are suggestions on integrating ART and trauma treatment models:

1. Training in Skillstreaming, Anger Control, and Moral Reasoning are provided on a weekly basis. Generalization and maintenance are the keys to any successful intervention. Carry over is fostered by transfer coaches who are directly involved in the youth's world. They may be parents, friends, peers, teachers, staff, and employers who can understand and reinforce behavior that a youth is attempting to modify. Coaches should understand the use of Skillstreaming modules *Dealing with Feelings* and *Dealing with Stress.* These skills are central to trauma treatment in developing the resilience to manage feelings and cope with difficult situations.

2. Managing physiological response to stress is part of Skillstreaming and Anger Control Training. As youth become aware of their body cues, they are better able to identify and express feelings and utilize anger reducers. They also need to be able to identify triggers in the environment that can feed the re-enactment of trauma. The ability to "tune-in" to body cues and better assess risk fosters development of healthy interpersonal relationships.

3. Relaxation, affective modulation, and cognitive coping are strategies common to both ART and trauma therapy. When abuse dates to early in life, youth can become extremely guarded and show marked emotional dysregulation. Effective treatment is a multimodal process that addresses all of the dimensions of complex childhood trauma. Psycho-educational components teach youth about triggers and help them manage dysregulation resulting from stress. They also become aware of thinking errors and learn cognitive corrections. These are but a few examples of the strategies that can assist adolescents in managing trauma symptoms and develop healthy relationships so that trauma need not define their lives.

Conclusion

Combining trauma treatment with psychoeducational strategies of ART enhances interventions with youth who have endured traumatic childhood experiences. With a focus on building strengths and restoring dignity, young people learn to take responsibility for their behavior, manage emotions, and build respectful interpersonal relationships.

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