Aggression Replacement Training in Australia: Youth Justice Pilot Study

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This article describes the findings of a 10-week pilot programme of aggression replacement training (ART) in an Australian youth justice, custodial setting. Five male subjects (17–18 years old) completed pre- and post-treatment self-report measures of aggression, social skills, and cognitive distortions typically associated with violent and antisocial behaviour. As expected, results showed a significant reduction in overall aggression and improved social skills from before to after assessment, but the predicted reduction in cognitive distortions was not supported. Treatment outcomes were examined relative to the specific multi-modal (cognitive, behavioural, and affective) components of ART. Hence, results are discussed in relation to a cognitive behavioural theory of change, which underpins ART. A single case study is presented to illustrate qualitative change throughout participation in ART. Overall the results provide preliminary support for the efficacy of ART in an Australian context, and further investigation with a larger, multi-informant sample is warranted.

Key words: aggression replacement training; cognitive behavioural therapy; evaluation; outcome study; treatment; violent offenders; youth justice.

The Australian national survey of young people aged 6–17 years: Mental Health of Young People in Australia (Sawyer et al., 2000), reported a prevalence rate for conduct disorder (CD) of 3% and 11.2% for attention-deficit–hyperactivity disorder, a combined total of 14.2% for young people presenting with disorders characterized by externalizing behaviours such as aggression. While this survey was not based on the full criteria set according to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition–Text Revised (American Psychiatric Association, 2000) the rates reported approximate US prevalence data for CD, which range from 4% to 10% (Kazdin, 1987). Kazdin suggested that given the difficulty in pinpointing “how many children might be identified as having CD at a particular age, data consistently reveal that the problem is great by most definitions” (p. 187).

Disorders associated with aggression tend to be relatively stable over time (Kazdin, 1987; Loeber, 1991). Bor, Najman, O’Callaghan, Williams, and Anstey (2001) conducted a longitudinal study of 3,792 Australian mothers and their children at age 5 with follow-up at 14 years. The strongest predictor of adolescent delinquency was aggressive behaviour at age 5. Bor et al. concluded that aggression in the early years...
is a reliable and powerful predictor of continuing adolescent aggressive behaviour. The stability of aggressive and antisocial behaviour across time suggests that the prognosis is likely to be poor. Indeed, Webster-Stratton and Dahl (1995) suggested that almost 50% of severely conduct disordered children continue to be antisocial into adulthood. Gelhorn, Sakai, Price, and Crowley (2007) reported an even higher rate of antisocial behaviour persistence. Seventy-five per cent of their large \( (N = 43,093) \) US, stratified sample who met criteria for CD also met criteria for adult antisocial personality disorder. Moreover, persistent antisocial behaviour was most strongly predicted by victim- and violence-orientated offences, including “stealing with confrontation”, “cruelty to people”, “[use of] weapons”, and “lies” (p. 536).

The findings of Gelhorn et al. (2007) fit within the developmental framework of CD, which distinguishes between a childhood-onset pathway and an adolescent-onset pathway (e.g., Ferguson & Horwood, 2002; Frick, 2004; Moffitt, Caspi, Harrington, & Milne, 2002; Odgers et al., 2008). Using data from the Dunedin Longitudinal Study, a detailed examination was provided of a relatively uncommon group of life-course-persistent (LCP) individuals compared to the more prevalent adolescence-limited (AL) group of antisocial offenders (Moffitt, 1993; Moffitt & Caspi, 2001; Moffitt et al., 2002). LCP is characterized by early childhood cognitive deficits, difficult temperament, and hyperactivity, which are exacerbated by environmental risks including poor parenting, economic impoverishment and family discord. In later childhood and throughout adolescence, environmental risk factors broaden to include problematic social relationships such as peer isolation and conflict with teachers, and a later tendency toward antisocial peer associations and poor relations with employers and partners. By contrast, AL antisocial behaviour is thought to co-occur with the onset of puberty and is consistent with the normative task of individuation and separation from parents and the greater influence of peers. The early environmental and neurobiological risk factors associated with LCP are not typically seen in the AL group. In cases in which AL youth become involved in criminal activities, however, they are less likely to be convicted of a violent offence or to spend time in prisons compared to youth in the LCP group (Odgers et al., 2008). Clearly, once aggression has become an entrenched pattern of behaviour, it is not surprising that many aggressive youth come to the attention of the youth criminal justice system. For many of these young people this is the first point of contact for treatment, which is often legally mandated (Boni, 1999).

**Criminal Offenders: Treatment Efficacy**

Subsequent to the Martinson (1974) influential publication “What works? Questions and answers about prison reform” there has been a pervasive belief that lasting behaviour change among criminal offenders was at best unlikely, if not impossible (Hollin, Browne, & Palmer, 2004). More recently, several meta-analytic studies (Andrews et al., 1990; Landenberger & Lipsey, 2005; Lipsey, Chapman, & Landenberger, 2001; Lipsey & Wilson, 1998) have reported favourable results in treating offender populations using structured cognitive behavioural therapy (CBT) programmes. Lipsey et al. (2001) reviewed 14 studies in which CBT group treatments were used with juvenile \( (M \text{ age } 15–18 \text{ years}) \) or adult \( (M \text{ age } 20–30 \text{ years}) \) offenders. In nine of the studies, the intervention took place in a custodial setting, while the remaining five programmes were administered in a community setting in which participants were either on a parole or probation order. An overall greater reduction in recidivism for
the CBT participants compared to the treatment-as-usual control group (i.e., standard parole, probation or prison case-management) was reported. The largest reductions in recidivism were associated with the “demonstration programmes”, which were implemented by researchers and administered by personnel with high-level training in CBT and an emphasis upon treatment integrity. Taken together, the research indicates that effective treatment programmes should be highly structured, skills orientated, and multimodal, as are CBT (Conduct Problems Prevention Research Group, 1999; Kazdin, 1997).

Aggression replacement training (ART) (Goldstein, Glick, & Gibbs, 1998) is a multimodal, cognitive behavioural, group programme for moderate to high-risk, violent young offenders. Several researchers (Fonagy & Kurtz, 2002; Goldstein, 2004; Palmer, 2007; Polaschek, 2006) have indicated that ART is one of the most efficacious interventions in working with aggressive offenders. Improvement in pre-post-treatment follow-up measures of anger control, decreased frequency of acting-out behaviours and increases in prosocial behaviours have been reported (see Goldstein, 2004 for review).

In order to assess transfer of treatment effects beyond the institutional setting, Goldstein and Glick (1994) evaluated the carry-over of ART treatment gains after release back into the community. Of 54 youths released from a juvenile detention centre in New York, 17 had received ART while 37 had not. Parole officers completed a global assessment measure on all 54 participants. On four of the six psychosocial domains assessed (i.e., home and family, peer, legal, and overall, but not school or work) ART recipients rated better than the non-ART group. No statistical significance data, however, were reported.

Studies conducted with juvenile offenders have reported decreased recidivism rates for ART programme participants compared to no-ART or waitlist control groups. Washington State Institute for Public Policy (WSIPP) conducted a 2-year longitudinal evaluation of ART by assigning 1,500 juvenile offenders to either an ART group or a wait-list control group. Results from the 18-month follow-up showed a marked reduction in recidivism (24%) for the ART participants compared to the control group (WSIPP, 2004). More recently, McGuire and Clark (2004) adapted the ART youth programme for adult inmates in the United Kingdom. ART is an accredited programme within the UK justice system. Recoversion rates for ART participants at a 1-year follow-up showed a clear reduction (i.e., 20.4% compared to 34.5% for non-ART participants).

ART has also been effective in the treatment of a community-based sample of post-release delinquents. Three groups (i.e., ART for youths and parents/family members, ART for youths only, and no-ART control group) were compared on a measure of total skill change. Although there were no significant differences between the ART groups, there were differences between these groups and the controls. Compared to the no-ART control group, the two treatment groups showed an overall increase in interpersonal skills and a decrease in self-reported anger in response to mild anger-provoking situations. Subjects in the ART for youths and parents/family members group were the least likely to be re-arrested (15%), followed by those in the ART for youth only group (30%), while the no-ART control group were most likely to be re-arrested (43%) (Goldstein & Glick, 1994).

More recently, Gundersen and Svartdal (2006) reported the outcomes of a 24-session intervention based on ART, delivered in school settings by teachers. Participants were 16 girls (Mean age = 14.1 years) and 49 boys (Mean age = 12.6 years). From
before to after treatment, there was significant improvement in social skills for parent and teacher report but not for youth self-report. Parent and teacher ratings of problem behaviours showed a significant reduction for the ART treatment group but not the comparison group. For the youth self-report of problem behaviours and cognitive distortions associated with aggression, the treatment and control groups showed significant improvement. The authors suggested that this result could partly be explained by a possible dilution effect between treatment conditions because some participants were drawn from the same classrooms, resulting in a positive peer influence between members of the two conditions.

In discussing the evaluations of ART to date, Palmer (2007) noted that none had attempted a separate analysis of the different components of ART, making it difficult to determine the relative impact of each component. Notwithstanding this, ART has shown considerable promise in terms of generalizability across time and setting in working with aggressive youth (Hollin, 2003).

Present Study

There is little published Australian research in which treatment programmes for aggressive youth, particularly violent juvenile offender programmes, have been empirically investigated (Boni, 1999). The main aim of this pilot study was to investigate the effectiveness of a pilot ART group programme in an Australian youth justice, custodial setting. Consistent with the Palmer (2007) recommendation, this pilot study also aimed to examine treatment outcomes relative to the different components (i.e., cognitive, behavioural, and affective) of ART. Therefore the measures used were selected on the basis of their broad theoretical relationship to each of the three components of ART and more specifically, their ability to assess actual cognitive and behavioural change relative to the aims of the intervention. Accordingly, from before to after programme participation, an overall reduction in aggressive thoughts and behaviours was expected, as well as an increase in pro-social skills and a reduction in aggression-related cognitive distortions.

Method

Participants

Six young men (17–18 years) initially agreed to participate in this pilot study. All had committed violence-related offences and were serving a custodial sentence at a Victorian state Juvenile Justice Centre. In week 3 of the 10-week programme, one participant self-selected out of the group and the research. The remaining five participants completed the 10-week ART programme.

ART Intervention

ART (Goldstein et al., 1998) is a multimodal, cognitive behavioural, group programme designed to reduce aggressive and antisocial behaviour. ART consists of three components that are delivered in three weekly group training sessions (one meeting per week for each of the three curriculum) over a 10-week period. Sessions typically last approximately 1 hr. Each session is co-facilitated by two ART trainers. The three components of ART are as follows.

Skillstreaming

This is designed to teach young people effective social skills aimed at displacing aggressive behaviour. Ten core social skills that research has demonstrated to be lacking among juvenile offenders (e.g., understanding the feelings of others; dealing with someone else’s anger; dealing with
an accusation) are taught through role-plays. Each skillstreaming session over the 10-week course is dedicated to the acquisition of one of the social skills.

**Anger Control Training**

The intention of anger control training is twofold: (a) to reduce the frequency of anger arousal, and (b) to teach techniques of self-control when anger is aroused. Anger control training is based upon developmental research (Luria, 1961; Meichenbaum & Goodman, 1971) showing that certain self-regulatory skills (e.g., the ability to think before acting) are measurably deficient in impulsive children and that such skills can be taught. In addition, numerous researchers (Dodge, Laird, Lochman, & Zelli, 2002; Dodge, Pettit, Bates, & Valente, 1995; Slaby & Guerra, 1988) have reported that antisocial/impulsive youth frequently misinterpret the behaviour and intentions of others as well as their own bodily responses that signal certain emotions (i.e., anger, fear, anxiety), which further increases the likelihood of anger arousal. Each anger control session over the duration of the 10-week curriculum is dedicated to the rehearsal and acquisition of specific skills through modelling by trainers, role-plays by trainees, performance feedback by trainees and trainers, and homework assignments that are recorded on a “hassle log”, which provides a form for describing a problematic/provocative situation, its setting scenario and outcome.

**Moral Reasoning Training**

The incorporation of the moral reasoning training component was influenced by research showing that the ability to perspective-take and undertake moral decision-making is arrested or delayed among antisocial and chronically aggressive youths (see Gibbs, 2003 for review). There is thought to be a developmental progression of social perspective taking and moral reasoning that is developed over the normal course of social interaction through childhood and adolescence (Kohlberg, 1984). According to Gibbs (2003), the developmental delays in moral reasoning among antisocial youth are also associated with two types of cognitive distortions: primary cognitive distortion, which is a thinking error characterized by a tendency among egocentric young people to attribute far greater importance to one's own views or positions at the expense of others’ legitimate views; and secondary cognitive distortion, which is represented by a number of self-centred thinking errors that serve to reinforce the primary distortions. In moral reasoning sessions, participants are encouraged to identify and challenge the presence of cognitive distortions in each other’s responses to various problem situations, which are tabled and discussed in the sessions.

**Measures**

Aggressive behaviours and thoughts were assessed using the Aggression Questionnaire (AQ; Buss & Warren, 2000), which is designed to assess aggressive tendencies among children and adults. The instrument is written at a third-grade reading level, and consists of 34 items providing scores on five subscales: Physical Aggression; Verbal Aggression; Anger; Hostility; and Indirect Aggression. Respondents rate each item on a 5-point scale from not at all like me to completely like me. The AQ was standardized in a large (N = 2,038) community based sample, and reported reliability (Cronbach’s α) is moderate to high for the subscales, with alphas ranging from .71 to .88. Internal consistency for the total scale score was very high (α = .94).

The Social Skills Rating System (SSRS) (Gresham & Elliot, 1990) was used to
measure social skills. In the present study, the self-report Secondary Student Form was used, consisting of 34 items that are rated on a 3-point scale (never, sometimes, and very often) across four subscales: Cooperation (e.g., “I use my free time in a good way”); Assertion (e.g., “I make friends easily”); Empathy (e.g., “I say nice things to others when they have done well”); and Self-control (e.g., “I ignore other children when they tease me or call me names”). Gresham and Elliot reported reliability coefficients ranging from adequate to high (i.e., $\alpha$ coefficients from 0.67 to 0.77 for the four subscales, and 0.83 for the total scale score).

Cognitive distortions were assessed using the How I Think Questionnaire (HIT) (Barriga, Gibbs, Potter, & Liau, 2001). This is a 54-item self-report measure designed to assess four categories of self-serving cognitive distortions (i.e., thinking errors): Self-Centred (“When I get mad, I don’t care who gets hurt”); Blaming Others (“If I made a mistake it’s because I got mixed up with the wrong crowd”); Minimizing/Mislabelling (Everybody lies, its no big deal”); and Assuming the Worst (“It’s no use trying to stay out of fights”). These four cognitive distortions represent inaccurate or biased ways of perceiving and interpreting environmental stimulus, which have been shown to play a central role in antisocial behaviour and criminogenic thinking (Gibbs, 2003). Items consisting of first-person statements are rated on a 6-point scale ranging from agree strongly to disagree strongly. The HIT can be administered in groups or to individuals. It is typically completed in 5–15 min and requires only a fourth-grade reading level. Barriga et al. reported moderate to high internal consistency, with Cronbach’s alphas ranging from 0.63 to 0.92 for the cognitive distortion subscales and the behavioural referent subscales. Estimates of internal consistency were very high for the total scale score ($\alpha = .95$).

**Procedure**

Prior to commencing this pilot study, approval was sought and granted from relevant human research ethics committees. Initial referral to ART was made by the health workers (i.e., psychologists or social workers) who undertake a case-management role of young people for the duration of the custodial sentence. The principal researcher then met with each young person individually to explain ART and the expectations and requirements for participation in the programme. The participant information and consent form was read to potential participants, and explanation offered for any terms or content requiring elaboration. Voluntary participation was emphasized and it was explained that participation in ART was not conditional upon participation in the research. After a cooling off period of 2 days all of the initial six referrals agreed to participate in the programme and the research.

Screening for history of substance use and previous psychiatric diagnoses was conducted during the initial intake assessment. Exclusion criteria included a history of psychotic symptoms in the last 2 years. None of the participants reported a history of psychosis. The self-report measures were administered in one-to-one interviews, which also provided an opportunity to assess the reading capability of each young person before entry into the programme. All participants appeared to have at least adequate reading, writing and comprehension skills required for participation in ART. The programme commenced in the week following the intake assessments.

The programme was facilitated by the principal researcher (provisional psychologist) and a female colleague (Master of Social Work). Only the principal researcher had received accredited training in ART, so he was the main trainer for the duration of the 10-week programme, while the co-trainer assisted. Both facilitators had previous experience in CBT group therapy programmes.
Results

Statistical analysis was conducted using SPSS 14 (SPSS, Chicago, IL, USA). Several researchers (Cohen, 1994; Kazdin, 1999; Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999) have been critical of the arbitrary cut-off of \( p < .05 \) in determining statistical significance, particularly in the case of psychotherapy outcome studies. Hence, because this pilot study was exploratory we set a liberal \( p \) of .10 in determining statistical significance.

Table 1 shows case-by-case, pre–post-treatment raw scores and indication of clinical versus non-clinical scores for all participants on the three total scale score outcome measures.

Participant raw scores for the total scale score on the AQ showed a downward trend from before to after treatment for all but one subject (subject A), who reported a slight increase in overall aggression at post-treatment assessment. An improvement in social skills was evident after treatment, with scores on the SSRS slightly higher at post-treatment assessment, except for subject A who reported no change. For all subjects except subject E, participants remained within the clinical range for cognitive distortions at post-treatment assessment on the HIT. The HIT scores for subjects A and B showed an increase in cognitive distortions after treatment, while the remaining three subjects reported a decrease at post-treatment assessment.

Given the small sample size \( (N = 5) \) a one-tailed, Wilcoxon signed-ranks test was used to test for significant differences between pre- and post-treatment scores on the outcome measures. Table 2 shows means, standard deviations, and Wilcoxon signed-ranks \( T \)-values for the AQ, SSRS, and HIT.

As predicted, a comparison of mean aggression scores showed a significant overall reduction from before to after treatment \( (p = .06) \). The AQ subscales of Anger \( (p = .06) \) and Hostility \( (p = .03) \) also showed a significant reduction at post-treatment assessment. As predicted, there was a significant increase in scores on the Self-Control subscale \( (p = .03) \) and the total scale score \( (p = .06) \) on the SSRS from before to after treatment. Contrary to expectation, there was no significant difference between pre- and post-treatment scores on the total scale score for the HIT \( (p = .50) \) or any of its subscales.

Discussion

The main aim of this pilot study was to explore the effectiveness of ART in an Australian youth justice setting. The results supported the predicted reduction in overall aggression and increased pro-social skills from before to after treatment. Contrary to expectations, however, there was no change in cognitive distortions associated with antisocial and aggressive behaviour.

Table 1. Raw Scores \((N = 5)\).

<table>
<thead>
<tr>
<th>Subject</th>
<th>( \text{AQ Before} )</th>
<th>( \text{AQ After} )</th>
<th>( \text{AQ Before} )</th>
<th>( \text{AQ After} )</th>
<th>( \text{AQ Before} )</th>
<th>( \text{AQ After} )</th>
<th>( \text{SSRS Before} )</th>
<th>( \text{SSRS After} )</th>
<th>( \text{Hit Before} )</th>
<th>( \text{Hit After} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>105(^f)</td>
<td>108(^f)</td>
<td>50.0</td>
<td>50.0</td>
<td>3.64(^f)</td>
<td>4.33(^f)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>96</td>
<td>89</td>
<td>42.0</td>
<td>48.0</td>
<td>3.23(^f)</td>
<td>3.54(^f)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>113(^f)</td>
<td>77</td>
<td>47.0</td>
<td>49.0</td>
<td>3.38(^f)</td>
<td>3.11(^f)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>129(^f)</td>
<td>99</td>
<td>61.0</td>
<td>63.0</td>
<td>4.31(^f)</td>
<td>3.79(^f)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>90</td>
<td>80</td>
<td>66.0</td>
<td>75.0</td>
<td>2.41</td>
<td>1.92</td>
<td></td>
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</table>

Note: AQ = Aggression Questionnaire; HIT = How I Think Questionnaire; SSRS = Social Skills Rating System.

\(^f\)Score within clinical range.
With respect to the predicted reduction in aggressive thoughts and behaviours, there was a significant reduction in scores on the Anger (i.e., irritability, easily frustrated, affective lability) and Hostility (i.e., feelings of bitterness, paranoia, social isolation) subscales of the AQ, which are thought to represent an internalizing approach to anger (Buss & Warren, 2000, p.15). According to Buss and Warren, high scorers on the Anger subscale are most likely to respond to CBT interventions aimed at identifying common external triggers, internal physiological cues, and techniques in arousal reduction such as cognitive distraction and relaxation techniques. These modes of change are consistent with the anger control training component of ART. High scorers on the Hostility scale are thought to be responsive to treatments aimed at challenging the consistent and erroneous hostile attributions made toward others (Buss & Warren, 2000). Improving social problem-solving skills represents an implicit aspect of the social skills training component of ART (i.e., skillstreaming). By teaching the substitution of social skills in place of aggression and the breaking down of those skills into sequential skill steps, ART participants learn to become aware of the perspectives of others, increase their capacity to interpret social cues, and rehearse different social solutions to potentially anger-arousing situations. Overall, the reduction in Anger and Hostility scores suggests a change in cognitive appraisals of anger-provoking situations and increased capacity to use self-control techniques when anger is aroused.

Results also indicated a significant increase in Self-Control on the SSRS (Gresham & Elliot, 1990). According to Gresham and Elliot, this subscale provides a measure of non-aggressive behavioural responses used when faced with conflict situations, such as being teased, and in situations requiring prosocial skills such as

<table>
<thead>
<tr>
<th>Variable</th>
<th>Before treatment</th>
<th>After treatment</th>
<th>Wilcoxon t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>AQ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>31.00</td>
<td>4.85</td>
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</tr>
<tr>
<td>Anger</td>
<td>22.20</td>
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<td>19.60</td>
</tr>
<tr>
<td>Hostility</td>
<td>22.00</td>
<td>8.15</td>
<td>16.00</td>
</tr>
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<td>Indirect</td>
<td>17.00</td>
<td>5.29</td>
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<tr>
<td>Verbal</td>
<td>14.40</td>
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<td>13.60</td>
</tr>
<tr>
<td>Total Scale</td>
<td>106.60</td>
<td>15.27</td>
<td>90.60</td>
</tr>
<tr>
<td>SSRS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assertion</td>
<td>15.80</td>
<td>1.92</td>
<td>16.40</td>
</tr>
<tr>
<td>Self-Control</td>
<td>9.20</td>
<td>4.32</td>
<td>11.80</td>
</tr>
<tr>
<td>Empathy</td>
<td>15.00</td>
<td>3.54</td>
<td>15.60</td>
</tr>
<tr>
<td>Total Scale</td>
<td>53.20</td>
<td>9.98</td>
<td>57.00</td>
</tr>
<tr>
<td>HIT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assuming the Worst</td>
<td>3.16</td>
<td>.79</td>
<td>3.22</td>
</tr>
<tr>
<td>Blaming Others</td>
<td>3.46</td>
<td>.87</td>
<td>3.46</td>
</tr>
<tr>
<td>Minimizing/Mislabelling</td>
<td>3.69</td>
<td>.75</td>
<td>3.56</td>
</tr>
<tr>
<td>Self-Centred</td>
<td>3.27</td>
<td>.62</td>
<td>3.13</td>
</tr>
<tr>
<td>Total Scale</td>
<td>3.39</td>
<td>.69</td>
<td>3.33</td>
</tr>
</tbody>
</table>

Note: AQ = Aggression Questionnaire; HIT = How I Think Questionnaire; SSRS = Social Skills Rating System.
* p < .10.
taking turns or compromising. This finding is consistent with an increase in the participant’s repertoire of pro-social skills taught in skillstreaming and the self-regulatory techniques acquired through anger control training. Although these positive effects are promising, the lack of change in participants’ cognitive distortions from before to after treatment needs to be considered in the context of the theoretical underpinnings of CBT, and specifically the rationale for including the moral reasoning component in ART.

Goldstein et al. (1998) argued that the cognitive distortions Self-centred, Blaming Others, Assuming the Worst, and Minimizing/Mislabelling prevent cognitive dissonance, thereby inhibiting pro-social behaviour change. This proposition is consistent with the key premises of cognitive therapy that behavioural change is mediated through cognitive change and that the role of the therapist is to challenge maladaptive cognitions either directly or indirectly (DeRubeis, Tang, & Beck, 2001). Hence, CBT manuals typically describe specific methods aimed at altering dysfunctional cognitions such as psychoeducation about the role of distorted thinking in maladaptive affective states and subsequent behaviour, the use of thought records, and cognitive restructuring (Longmore & Worrell, 2007).

Several researchers (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004; Longmore & Worrell, 2007; Maruna & Mann, 2006) have questioned the value of cognitive interventions in ameliorating symptoms associated with psychopathology. Hayes et al. argued that symptom reduction in CBT is often evident “before procedures thought to be central to its success have been implemented” (p. 15). They further argued that behaviour change is not necessarily dependent upon cognitive change. In a review of CBT component analysis studies, Longmore and Worrell (2007) found no significant difference in effectiveness between the cognitive and behavioral elements of CBT in all but one of the 13 studies reviewed. Consistent with Hayes (2004) it was concluded that cognitive interventions appear to add nothing over and above that of the behavioural components of CBT but, as Longmore and Worrell (2007) noted, it may be the combined multi-modal packaging of CBT that makes it effective. In other words, an intervention using any CBT component may have implications for change in other components. It should also be noted that the component analysis research reviewed by Longmore and Worrell was limited to studies of depression and anxiety. There are differences in the cognitions associated with these disorders and those thought to be associated with the conduct-related disorders and, indeed, differences in treatment approach.

As described previously, the moral reasoning component of ART uses these techniques in challenging cognitive distortions specifically relevant to aggressive youth. Palmer (2007) noted that while the ART outcome research indicates overall effectiveness, the exact contribution of each module cannot be determined until component analysis is undertaken. Specifically, Palmer questioned if the moral reasoning component provides any added value over that of typical anger management programmes that do not include this cognitive/values component. Gundersen and Svartdal (2006) attempted to analyse the relative effectiveness of the different components of ART, and found a significant improvement in prosocial thinking (i.e., a reduction in cognitive distortions as assessed on the HIT (Barriga et al., 2001) for both the treatment and control conditions. They explained the finding in terms of a potential dilution effect between the two conditions because both groups of children continued to interact in the school/classroom setting. Notably, Gundersen and Svartdal delivered only four to five sessions of moral reasoning as part of the overall ART treatment and still found a positive effect. Consistent with Longmore and Worrell (2007), they suggested that
training youth in any one of the components (skillstreaming: behavioural; anger control training: affective; and moral reasoning: cognitive/values) appears to generalize across others.

Some methodological and sample differences between the present study and that of Gundersen and Svartdal (2006) also offer some explanation for the different outcomes on the HIT (Barriga et al., 2001). The Gundersen and Svartdal study was conducted in a school setting, with male and female participants, with a combined average age of 13.4 years. In contrast, the present pilot study was conducted in a custodial setting, with five young men between the ages of 17 and 18 years, who had committed serious violent offences. The differences in the degree and persistence of behavioural disorder between the two samples are also evident in their respective before–after mean scores on the HIT. The treatment group in the Gundersen and Svartdal study was just within the clinical range of scores at pre-treatment assessment ($M = 3.03$) while in the present study participants were well within the clinical range ($M = 3.39$). Given their age, history of aggressive behaviour and early incarceration it is reasonable to hypothesize that the ART participants would fit within the childhood-onset or LCP developmental pathway for antisocial behaviour (Frick, 2004; Moffitt et al., 2002). Certainly, they were further along in the developmental trajectory of the LCP subgroup than the participants described in the Gundersen and Svartdal study and more entrenched in the cognitive distortions associated with criminogenic thinking. As already noted, the HIT (Barriga et al., 2001) is a specific measure of cognitive distortions associated with antisocial and criminal behaviour. Hence the present results might reflect a lack of cognitive change specific to these distortions (i.e., Self-centred, Blaming Others, Assuming the Worst, and Minimising/Mislabelling) rather than cognition broadly. The SSRS (Gresham & Elliot, 1990) and the AQ (Buss & Warren, 2000) are not only measures of behavioural activation, both include items designed to assess cognition, and before–after change was found in the expected direction on these measures.

With respect to the general aim of this study in evaluating the cultural relevance of ART in an Australian cultural context, the Moral Reasoning problem situations were written in a language specific to US youth. Feedback given by participants at the conclusion of the pilot programme suggested the need to re-write the problems in a vernacular more familiar to Australian youth. Therefore, expressions such as “midtown bar and grill” became “local pub”, “AWOL” became “escaped”, “going steady” became “going out with”, “nark” became “dob”, “play ball” became “play footy”, and so on. A further limitation of the present study was the sole use of self-report outcome measures. Any extension of this investigation requires a broader, multi-informant approach to evaluating the effectiveness of ART. Moreover, given the sample population, any extension of this study would benefit greatly from the inclusion of recidivist data as an important measure of clinical outcome.

The present results provide some support for the efficacy of ART in reducing self-reported aggression and increasing social skills among Australian youth justice clients serving a custodial sentence for violence or violence-related offences. But the findings also indicate a lack of cognitive change specific to cognitive distortions associated with aggressive and antisocial behaviour. Of particular relevance to the present findings and future investigation of ART was the conclusions made by several researchers (Beck, 1996; Longmore & Worrell, 2007; Maruna & Mann, 2006) that the overall effectiveness of CBT interventions might lie in the interaction effects of the components or, as is the case with ART, a multimodal approach. Moreover, the distinction
between cognitive, behavioural and affective components in CBT might represent more of an arbitrary, theory-driven construct rather than the actual practice of the model in an applied setting. In conclusion, the findings of this small, pilot study warrant further investigation with a larger sample, over an extended period so that generalizability and maintenance of treatment gains can be assessed beyond the treatment setting and over time.

Illustrative Single Case Study: Subject C

Background
In 2005 subject C was serving a 6-month custodial sentence at a Victorian Youth Justice Centre for assault and assault-related offences, reportedly while substance affected and in the company of peers. At the time of participation in ART, C was 18 years old. He was the second oldest child in a sibship of five. Prior to incarceration he resided with his mother, three brothers and sister. The family immigrated to Australia in 2002, fleeing civil war in their homeland. Client records indicated that the family was well educated and of some standing in their community prior to the civil unrest. Family relationships were reported to be close and loving. C’s father was assumed to be deceased after 10 years of no contact, but some time after the family arrived in Australia, news was received that the father had survived and entered into a new marriage and begun a new family. The client reported no ill-feeling toward his father because his religion allowed for multiple wives. C conveyed an eagerness to initiate contact with his father again, but in 2004 he received news that his father had died. According to C, this news precipitated his violent and antisocial behaviour leading up to the offence.

Participation in ART
C initially presented as angry and mistrustful within the group. In the first session he commented that “it’s a jungle out there” referring to life in and outside of the institution and the apparent need to be hypervigilant for potential, real or imagined threat. Within the first few sessions C disclosed information regarding his experiences while living through the civil war, stating that he had witnessed friends and relatives beaten and killed. The ART trainers had some concern regarding C’s ability to follow the programme material. Initially, he appeared to struggle with understanding of the programme content and performing of the sequential steps in the role-plays. The trainers discussed the extent to which cultural differences (e.g., variations in social norms) might affect his ability to fully benefit from ART.

By midway through the programme (week 5), the trainers’ concerns regarding C’s ability to follow the material appeared unfounded, the following note was written by the trainers at that time: “[the client] is excited because he thinks he is getting the process”.

In week 8 the following was written.

[the client] presented calm and focused. Challenged other group members appropriately. Completed tasks well. Appears to be practising ART steps outside of group.

At that time the subject was challenged to respond to a series of incidents involving another young person making ongoing threats and racial taunts. During the break of the session in week 8, the ART trainers witnessed such an incident. Later the client stated that he had drawn upon some of the skills he learned in the programme to control his anger. C’s health worker and other Centre staff noted that he demonstrated a high level of self-control and mature problem-solving skills by avoiding aggressive confrontation and seeking staff support to manage what was a volatile situation. Information from C’s case file notes in week 9 of the 10-week-week programme stated the following.
[The client’s] behaviour since his last Incident Report has improved dramatically. He is learning that instead of dealing with issues through physical violence, mediation is the best possible way to sort through issues. [The client] has requested mediation on a number of occasions. Centre Management have acknowledged the improved behaviour and approach that [the client] adopts when dealing with challenging situations. He has consistently demonstrated his ability to remove himself from negative peers and obtains advice and solutions to manage these situations.

Psychometric Testing: Before–After Scores

On the AQ total score C’s pre-treatment raw score was 113, placing him at the 85th percentile and within the clinical range of scores. Whereas at post-treatment follow-up his self-reported level of aggression was 77, at the 40th percentile and within the normal range of scores on the AQ. A similar pattern of clinically significant reductions in aggressive behaviours and thoughts was evident for C across all of the AQ subscales, as follows: Physical, pre-treatment score placed him in the 92nd percentile, compared to post-treatment score in the 60th percentile; Verbal, pre-treatment score in the 81st percentile, post-treatment score in the 55th percentile; Anger, pre-treatment score in the 70th percentile, compared to a post-treatment score in the 50th percentile; Hostility, before treatment in the 93rd percentile, compared to the 33rd percentile after treatment; and Indirect, in the 23rd percentile beforehand, and in the 5th percentile afterwards. Apart from Indirect aggression, which was within the normal range of scores at both pre- and post-treatment assessment, all of C’s subscale scores on the AQ were within the clinical or subclinical range before treatment. At post-treatment follow-up C’s self-reported aggressive behaviours and thoughts were within the normal range of scores compared to the normative sample provided by Buss and Warren (2000). These results show clear evidence of clinically meaningful change for C subsequent to participation in ART, which is consistent with the case note entries cited above.

Subject C’s scores on the SSRS showed a slight increase in total social skills from pre-treatment assessment with a raw score of 47 (42nd percentile), compared to post-treatment assessment with a raw score of 49 (50th percentile). Both pre- and post-treatment scores were within the normal range. Scores on the HIT total remained within the clinical range at both before treatment (raw score = 3.38; 92nd percentile) and after treatment (raw score = 3.11; 86th percentile), indicating a slight, although non-significant, reduction in cognitive distortions at treatment end.

Subject C completed ART in mid-July 2005 and made a valuable contribution to the group. In particular, he provided his peers with real-life modelling of ART in practice. These changes are partly reflected in subject C’s pre–post-assessment scores on the outcome measures. Although scores on the HIT remained stable and clinically significant, C demonstrated effective application of pro-social skills, emotional self-regulation, and consequential thinking when he did not react to ongoing provocation from a peer within the institutional setting.

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References


