Chapter 18
Evidence-Based Interventions for Violent Behavior in Children and Adolescents

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Introduction

There are very few evidence-based interventions specifically for violent behavior in children and adolescents. Given that violent individuals do not typically limit their offences to violent acts (Polaschek 2010) this is perhaps not surprising. However, interventions for antisocial behaviour problems, in particular conduct disorder (CD) and delinquency, target aggressive and violent behavior alongside other forms of antisocial behavior. In some cases these interventions have shown some efficacy in violence reduction. Therefore, the majority of this chapter will focus on the etiology and treatment of antisocial behavior in childhood and of delinquency in adolescence, rather than limit itself to the very few interventions that focus on violent behavior alone. However, it will conclude by considering some of the particular challenges faced when treating very violent individuals. Violent individuals are also typically male so for the sake of convenience we will use the male pronoun.

Factors Influencing the Development of Antisocial and Violent Behavior

There is a great deal of research describing factors influencing antisocial and violent behavior (Lahey et al. 2003; Loeber et al. 2005; Rutter et al. 1998), so a sensible starting point when deciding on interventions is to consider the main causal

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J. Lindert and I. Levav (eds.), *Violence and Mental Health*,
DOI 10.1007/978-94-017-8999-8_18,

factors and processes, and then design interventions around them. However, in practice many other considerations have shaped interventions, from the desire to punish violent youths, to making use of what is currently available at relatively low cost. These different motives may conflict with what is effective for children and young people and what works in reducing the damage they cause to society. One of the best examples of this is shock incarceration in military style boot camps, which although recommended in the 1990s by the US Office of Juvenile Justice and Delinquency Prevention, and satisfying the desire for retribution and somewhat lower running costs, has repeatedly proven at least ineffective, and often positively harmful (Benda 2005; this is discussed in more detail later). Another intervention is the use of medication. No pharmacological intervention is currently approved specifically for conduct disorder or antisocial behavior. Nevertheless, medication is used relatively frequently and increasingly for this behavior in the USA (Steiner et al. 2003; Turgay 2004). In the UK, medication would not generally be supported as good practice because there is very little evidence of effectiveness, particularly for children without comorbid ADHD.

Whilst risk factors are present in multiple domains (see Murray and Farrington 2010, for a review), recent research indicates that there are likely to be 3 distinct pathways to antisocial and violent behavior, each with its own cluster of risk factors (Pardini and Frick 2013).

First, the timing of onset of antisocial behavior has shown to delineate groups of individuals, such that those with early onset of antisocial behavior (before age 10) appear to constitute a separate and more severe group to those whose antisocial behavior begins in adolescence. Individuals with early onset antisocial behavior are more likely to exhibit early hyperactivity and oppositional behavior (Moffitt 2006), tend to come from families who use harsh and inconsistent parenting practices (Odgers et al. 2008), and are at higher risk of lifetime criminality (Farrington 2005; Odgers et al. 2008) and life failure (Piquero et al. 2010). They are at substantially greater risk of delinquent acts in adolescence and continued violence and offending into adulthood and many develop Antisocial Personality Disorder (ASPD), a disorder synonymous with psychopathic traits and violence (Loeber et al. 2005; Seagrave and Grisso 2002; Soderstrom et al. 2004; Sourander et al. 2006).

Second, children with callous-unemotional (CU) traits appear to be an etiologically distinct group with low empathy and high fearlessness. These are children who are cruel to animals, have difficulty making friends and engage in acts of premeditated violence. CU traits have higher genetic heritability than conduct disorder (Viding et al. 2005), and are associated with a different pattern of neurocognitive deficits such as reduced amygdala function (Kiehl et al. 2001). They are also strongly associated with the development of ASPD and psychopathy (Feilhauer and Cima 2012; Frick and White 2008) and are predictive of criminal offending in early adulthood (Kahn et al. 2013). The presence of CU traits in antisocial children has important treatment implications. Studies have shown that these children are more resistant to punishment and are more difficult to treat (Hawes and Dadds 2005). However, it is not the case that they cannot benefit from treatment (see Waller et al. 2013, for a systematic review).

Third, a number of studies have begun to support a causal pathway associated with poor regulation of anger. These are children who misinterpret ambiguous social cues as threatening which may lead them to respond in an aggressive and violent manner (De Castro et al. 2002). There is often a history of harsh discipline in this group (Pasalich et al. 2011). However, the association between harsh discipline and antisocial behavior seems to be most pronounced amongst those with a genetic susceptibility (Taylor and Kim-Cohen 2007).

The relationship between parenting and the development of violent and antisocial behavior is a particularly important one in informing intervention approaches. Family factors have repeatedly been shown to be associated with childhood antisocial behaviour and delinquency. The finding that parent–child relationship quality is associated with aggressive and violent behavior, conduct disorder and delinquency is one of the most widely reported in the literature, repeatedly found in large-scale epidemiological investigations, intensive clinical investigations and naturalistic studies of diverse samples using a mixture of methods (e.g. Denham et al. 2000). In particular, parenting styles characterised by low warmth and involvement, high hostility, inconsistent and harsh discipline, and poor supervision have been found to be associated with violent and antisocial behavior (Stouthamer-Loeber et al. 2002). These are not just a reaction to child behavior, they have a causal role too (Patterson 2002; Snyder and Stoolmiller 2002), and are modifiable (see below). More distal parental characteristics such as having a criminal record and alcoholism may be impossible or hard to treat, but the mechanism through which they increase the risk of delinquency and violence is likely to be partly through parenting style and values (Rutter and Quinton 1987), which may be modifiable.

Beyond the family, peers play an important role through 2 mechanisms, peer rejection and association with delinquent peers (Gifford-Smith et al. 2005). Again, both of these are potentially modifiable. A particularly harmful aspect of the latter is membership of a gang (Gatti et al. 2005). The neighbourhood a youth lives in can also exacerbate delinquent tendencies, with low ties to the neighbourhood, poor social control of behaviour, and exposure to risky activities such as drug–taking all contributing (Murray and Farrington 2010).

Implications for Intervention

Social learning theory proponents (e.g. Patterson 1982) suggest that the immediate environment is crucial in engendering antisocial and violent behaviour, with the responses to delinquent behaviour provided by parents, and then later peers, shaping delinquency. By ignoring prosocial behaviour, and inadvertently rewarding aggression (e.g. by giving in to threats or tantrums), parents and peers reinforce violent behaviour. This has formed the basis of parenting programmes for antisocial behaviour that try to change these contingent responses; some peer-relationship programmes also take this approach (Frankel and Myatt 2003).

With regard to the indivdual's psychological level, different theories lead to different intervention approaches. For example, cognitive theory has led to cognitive therapies that concentrate on the way the youth perceives threats and cues. On the other hand, if the causal theory postulates that the fundamental problem is one of emotional over-reactivity, then teaching youth to become more aware of their own emotions and develop strategies to control these emotions may be tried, as in anger management programmes. Likewise, where a deficit in empathy has been postulated, "restorative justice" programmes have attempted to reduce recidivism by confronting perpetrators with their victims, so they have sympathy for what they have done. Each of these treatment approaches is discussed below.

Whilst evidence is accruing for neurobiological risks, rather few findings on these mechanisms have led to treatment approaches so far. As previously mentioned, there is no well-validated drug treatment for antisocial and violent behaviour so the use of drug therapy is not based on sound evidence. On the other hand, the large body of evidence on the relationship between early-onset of conduct problems and juvenile delinquency suggests that early prevention may be sensible (Loeber and Farrington 2000).

It is important to note that intervention is not only about the removal of risks for antisocial and violent behaviour but also about enhancing protective factors. For example, this could involve encouraging youth to engage in an activity or hobby in which they can take pride and which would therefore improve their self-esteem.

Further, risk factors do not appear to operate in a purely additive way, with a linear increase in risk of conduct problems or delinquency per each additional risk factor. Instead, a larger number of risk factors appear to confer a disproportionately higher risk (Appleyard et al. 2005; Rutter 1979; Stattin and Magnusson 1996). The implications of this for intervention would appear to be that several risk factors need to be tackled in order for interventions to be successful. It follows then that children and young people should be assessed for these risk and protective factors and interventions tailored accordingly.

General Intervention Principles

Rates of drop-out from treatment for families of children with conduct problems are high – often up to 60.0 % (Kazdin 1996). Practical measures such as helping with travel and providing childcare are all likely to facilitate retention. Forming a good alliance with the family is especially important. Prinz and Miller (1994) showed that, for example, showing parents that the therapist clearly understood their viewpoint, led to increased attendance at treatment sessions. Once engaged, the quality of the therapist's alliance with the family affects treatment success. In one meta-analysis it accounted for 15.0 % of the variance in outcome (Shirk and Karver 2003).

If possible, interventions should specifically address each context. For example, improvements in the home arising from a successful parent training programme

will not necessarily lead to less violent and antisocial behavior at school (Scott 2002). If the child has pervasive problems including fighting with peers, individual work on anger management and social skills should be added. Typically health services have insufficient resources to treat all antisocial behavior in childhood, so the mental health professional must decide whether other agencies can be involved. A number of voluntary-sector bodies now provide parent training, and schools may be able to set up suitable behavioral programmes.

Identifying the strengths of both the child and the family is crucial. This helps engagement, and increases the chances of effective treatment. Encouraging prosocial activities may lead to increased achievements, heightened self-esteem and greater hope for the future. Treatment involves more than the reduction of violent and antisocial behavior – positive behaviors need to be taught too. Specific intellectual disabilities such as reading retardation, which is particularly common in these children, need to be addressed, as do more general difficulties such as planning homework.

Making use of existing guidelines is important. The American Academy of Child and Adolescent Psychiatry (Bernstein and Shaw 1997) has drawn up sensible practice parameters for the assessment and treatment of conduct disorder, and the UK National Institute for Health and Clinical Excellence (National Institute of Health and Clinical Excellence 2006) has published an appraisal of the clinical efficacy and cost-effectiveness of parent training programmes. Furthermore, new NICE guidelines on the treatment of conduct disorder have recently been published (National Collaborating Centre for Mental Health 2013).

Most of the interventions described below are intended for out-patient or community settings. Psychiatric hospitalization is very rarely necessary: there is no evidence that in-patient admissions lead to gains that are maintained after the child goes home.

When treating violent and antisocial adolescents, a number of additional concerns need to be kept in mind (for more details see McGuire and Priestley 1995). First, the intensity of the intervention should match the extent of the risk posed by the young person. Second, there should be a focus on active collaboration, which is not too didactic or unstructured. Third, there should be close integration with the community from which the young person comes. Fourth, there should be an emphasis on behavioral or cognitive approaches. Fifth, the programmes should be delivered with high quality and the staff should be trained adequately and monitored. Finally, there should be a focus on the proximal causes of violent and antisocial behavior rather than distal causes. In other words, the programmes should focus on peer groups, promoting current family communication, and enhancing self-management and problem-solving skills. There should not be a focus on early childhood or other distal causes of delinquency.

All of the reviews suggest that there are a number of promising targets for treatment programmes for adolescents, which include antisocial thoughts, antisocial peer associations, promotion of family communication and affection, promotion of family supervision, identification of positive role models, improving problem-solving skills, reducing chemical dependencies, provision of adequate

living conditions, and helping the young offender to identify high risk situations for antisocial behaviors. Conversely, the systematic reviews have also suggested a number of approaches that are unlikely to be promising. For instance, improving self-esteem without reducing antisocial cognitions is unlikely to be of value. Similarly, it is unlikely that a focus on emotional symptoms that is not clearly linked to criminal conduct will be of great benefit.

Programmes for Children

Programmes Based on Social Learning Theory

These programmes have evolved for more than 40 years and there is a large evidence base. Most are aimed at antisocial behavior as their proximal target outcome, but also aim to reduce violent behavior in children and most take the form of parent management programmes. The content and delivery of a typical programme is shown in Box 18.1 and described below. Most basic programmes take 8–12 sessions, lasting 1.5–2 h each. Full accounts of programmes are given by the developers (e.g. Markie-Dadds and Sanders 2006; Webster-Stratton and Reid 2003).

Box 18.1: Features of Effective Parenting Programmes Based on Social Learning Theory

Content

- Structured sequence of topics, introduced in set order during 10–12 weeks
- Curriculum includes play, praise, rewards, setting limits and discipline
- Parenting seen as a set of skills to be deployed in the relationship
- Emphasis on promoting sociable, self-reliant child behaviour and calm parenting
- Constant reference to parent's own experience and predicament
- Theoretical basis informed by extensive empirical research and made explicit
- Plentiful practice, either live or role-played during sessions
- Homework set to promote generalization
- Accurate but encouraging feedback given to parent at each stage
- Self-reliance prompted (e.g. through giving parents tip sheets or book)
- Emphasis on parents' own thoughts and feelings varies from little to considerable

(continued)

Box 18.1 (continued)

- Detailed manual available to enable replicability

Delivery
- Strong efforts made to engage parents (e.g. home visits if necessary)
- Collaborative approach, typically acknowledging parents' feelings and beliefs
- Difficulties normalized, humour and fun encouraged
- Parents supported to practise new approaches during session and through homework
- Parent and child can be seen together, or parents only seen in some group programmes
- Creche, good-quality refreshments, and transport provided if necessary
- Therapists supervised regularly to ensure adherence and to develop skills

Format of a Typical Social Learning Parenting Programme

Teaching a Child-Centered Approach

The first session covers play. Parents are asked to follow the child's lead rather than impose their own ideas. Instead of giving directions, teaching and asking questions during play, parents are instructed simply to give a running commentary on their child's actions. As soon as the parent complies, the practitioner gives feedback. After 10–15 min, this directly supervised play ends and the parent is 'debriefed' for half an hour or more alone with the clinician.

The second session involves elaboration of play skills. The previous week's 'homework' of playing at home is discussed with the parent in considerable detail. Often there are practical reasons for not doing it ('I have to look after the other children, I've got no help') and parents are then encouraged to solve the problem and find ways around the difficulty. For some parents there may be emotional blocks ('it feels wrong – no one ever played with me as a child'), which need to be overcome before they feel able to practice the homework.

After this discussion, live practice with the child is carried out. This time the parent is encouraged to go beyond describing the child's behavior and to make comments describing the child's likely mood state (e.g. 'you're really trying hard making that tower', or 'that puzzle is making you really fed up'). This process has benefits for both the parent and the child. The parent gets better at observing the fine details of the child's behavior, which makes them more sensitive to the child's mood. The child gradually gets better at understanding and labeling his/her own emotional states.

Increasing Desirable Child Behavior

Praise and rewards are covered here. The parent is required to praise their child for lots of simple everyday behaviors such as playing quietly on their own, eating nicely, and so on. In this way the frequency of desired behavior increases. However, many parents find this difficult. Usually, with directly coached practice, praise becomes easier. Later sessions go through the use of reward charts.

Imposing Clear Commands

A hallmark of ineffective parenting is a continuing stream of ineffectual, nagging demands for the child to do something. Parents need to be taught to reduce the number of demands, but make them much more authoritative. This is done through altering both the manner in which they are given, and what is said. The manner should be forceful. The emotional tone should be calm, without shouting and criticism. The content should be phrased directly ('I want you to … '). It should be specific ('keep the sand in the box') rather than vague ('be tidy'). It should be simple (one action at a time, not a chain of orders), and performable immediately. Commands should be phrased as what the parent does want the child to do, not as what the child should stop doing ('please speak quietly' rather than 'stop shouting'). Instead of threatening the child with vague, dire consequences ('you're going to be sorry you did that'), 'when–then' commands should be given ('when you've laid the table, then you can watch television').

Reducing Undesirable Child Behavior

Consequences for disobedience should be applied as soon as possible. They must always be followed through: children quickly learn to calculate the probability that consequences will be applied, and if a sanction is given only every third occasion, a child is being taught he/she can misbehave the rest of the time. Simple logical consequences should be devised and enforced for everyday situations (e.g. if a child refuses to eat dinner, there will be no pudding). The consequences should 'fit the crime', should not be punitive, and should not be long term (e.g. no bike riding for a month), as this will lead to a sense of hopelessness in the child, who may see no point in behaving well if it seems there is nothing to gain. Consistency of enforcement is central.

Time-out from positive reinforcement remains the final 'big one' as a sanction for unacceptable behavior. The point here is to put the child in a place away from a reasonably pleasant context. Parents must resist responding to taunts and cries from the child during time-out, as this will reinforce the child by giving attention. Time-out provides a break for the adult to calm down also.

Effectiveness

Behavioral parent training is the most extensively studied treatment for children's conduct problems, and there is considerable empirical support for its effectiveness (Weisz et al. 2004). Several programmes are considered well-established according to American Psychological Association criteria, after multiple randomized trials (e.g. Patterson 1982; Webster-Stratton et al. 2001) and replications by independent research groups (e.g. Scott et al. 2001). Randomized trials have shown the effectiveness of Triple Parenting Program (e.g. Bor et al. 2002; Sanders et al. 2000), and there is at least one independent replication supporting the Parent-Child Interaction Therapy model (Nixon et al. 2003). These studies suggest that behavioral parent training leads to short-term reductions in antisocial behavior. Follow-up studies suggest enduring effects at up to 6 years after treatment (Hood and Eyberg 2003; Reid et al. 2003). It should be noted that the wider terms 'parenting support' and 'parenting programmes' cover a broad range of approaches, many of which are not evidence-based and therefore cannot be advocated.

Cognitive-Behavioral and Social Skills Programmes

The most common targets of cognitive–behavioral and social skills therapies for children are aggressive behavior, social interactions, self-evaluation and emotional dysregulation (see Box 18.2 for examples of good practice). These interventions may be delivered in individual or group therapy. Although groups offer several advantages (e.g. opportunities to practice peer interactions), they may have potentially harmful effects (Dishion et al. 1999). These appear to be particularly common in larger groups and those with inadequate therapist supervision, where children learn deviant behavior from their peers and encourage each other to act antisocially.

In 2 randomized control trials (RCTs), Kazdin et al. (1987, 1989) found that Problem-Solving Skills Training results in significant decrease in deviant behavior and increase in prosocial behavior. Outcomes were superior to a client-centred, relationship-based treatment and were maintained at 1-year follow-up. The addition of real-life practice and a parent training component both enhanced outcomes. Evaluations of the Coping Power Program found reductions in aggression and substance use, and improved social competence (e.g. Lochman and Wells 2002). Treatment effects were maintained at 1-year, particularly for those whose parents also received parent training (Lochman and Wells 2004).

Box 18.2: Examples of Good Practice

Parent Management Training
- Helping the Non-compliant Child programme (McMahon and Forehand, 2003)
- Parent–Child Interaction Therapy (PCIT; Eyberg 1988)
- Incredible Years Programme (Webster-Stratton 1981)
- Positive Parenting Programme (Triple P; Sanders et al. 2000)

Child Therapies
- Problem-solving Skills Training with in vivo practice (PSST–P; Kazdin 1996)
- Coping Power Program (Lochman and Wells 2002)

School Interventions

At a universal level, Social and Emotional Learning (SEL) programmes aim to enable children to acquire core competencies to recognize and manage emotions, set and achieve positive goals, appreciate the perspectives of others, establish and maintain positive relationships, make responsible decisions, and handle interpersonal situations constructively. The proximal goals of SEL programmes are to foster the development of 5 interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Durlak et al. 2011). These competencies, in turn, should provide a foundation for better adjustment and academic performance as reflected in more positive social behaviours, fewer conduct problems, less emotional distress, and improved test scores and grades. Over time, mastering SEL competencies should result in a developmental progression that leads to a shift from being predominantly controlled by external factors to acting increasingly in accord with internalized beliefs and values, caring and concern for others, making good decisions, and taking responsibility for one's choices and behaviors.

Probably the best researched and most widely implemented formal SEL programmes is Promoting Alternative Thinking Strategies (PATHS) (Domitrovich et al. 2007). This is a programme where children are encouraged through stories and role-play to identify their emotions and how to cope with difficult situations in a problem-solving way. It is taught by the children's regular teachers in weekly lessons throughout the school year. Results of trials suggest that after exposure to PATHS, intervention children had greater skills in recognizing their own emotions and those of others and were rated by parents and teachers as more socially competent compared to peers. Further, teachers rated intervention children as less socially withdrawn at the end of the school year compared to controls.

There have been many RCTs of a range of SEL programmes, almost all in the USA. A meta-analysis of 213 school-based, universal (SEL) programmes involving 270,034 primary and secondary school pupils found that compared to controls, SEL participants demonstrated significantly improved social and emotional skills, attitudes, behavior, and academic performance that reflected an 11-percentile-point gain in achievement (Durlak et al. 2011). Such findings are encouraging but the huge problem is whether such demonstration projects can be translated into everyday life. There was widespread adoption in schools in England of Social and Emotional Aspects of Learning (SEAL) programmes. The evaluation in primary schools of the small group, selective-targeted aspect showed small effect-sizes in some of the measured outcomes, with increases in pupil-rated overall emotional literacy; increases in staff-rated self-regulation, decreases in staff-rated peer problems, and increases in pupil-rated empathy, self-regulation, social skills and overall emotional literacy (Humphrey et al. 2008). Thus while these approaches appear to be promising, further evaluations are needed.

Programmes for Adolescents

In adolescence somewhat different approaches are necessary, with more emphasis on negotiation and close supervision when the young person is out of the home. Also, whilst many components of programmes based on social learning theory are incorporated, additional elements may be required. In particular, there may need to be more of a focus on the wider systems around the youth, be they the wider family, school or peer networks. Thus interventions tend to be 1 of 3 types: interventions with individual youth, family-based interventions or multicomponent interventions.

Psychological Interventions for Individual Youth

On theoretical grounds, working with youths to control anger and promote more sociable interactions would seem a plausible approach. A number of programmes exist, broadly-based on cognitive behavioral principles. Elements include: (1) attributional retraining, (2) anger management, (3) social problem-solving, (4) social skills training, and (5) helping the youth set targets for desirable behavior and negotiate rewards for achieving them. Whilst each of these elements can be separated out on its own, most modern programmes incorporate a number of these themes blended together.

Attributional retraining helps correct the cognitive distortions identified by Dodge (1993) whereby the youths tend to perceive threat and hostile intent even in neutral scenarios, and work is done to help understand others' points of view. The anger management aspect usually lasts several sessions and provides techniques to slow down instant angry arousal. Early therapeutic sessions involve assisting the

children to recognize their anger in difficult interpersonal encounters, identify the triggers, and take the perspective of the other person including recognizing whether their intentions are truly hostile. The next stage is to practice coping techniques to reduce anger arousal and avoid impulsive, rage-filled responses. Social problem-solving programmes follow classic lines of (1) defining the problem, (2) analyzing the intentions of the other party, (3) generating a range of solutions, (4) evaluating them, (5) selecting the best and putting it into action, then (6) reviewing how well it worked. The social skills element involves repeated practice in role plays and in real life, whereby the youth practices conversations, asking teachers for guidance, expressing disappointment, declining drugs without getting angry, and so on. The target setting is usually agreed in negotiation with teachers or parents, and involves starting with small, achievable goals with strong immediate rewards to promote success.

Perhaps the best known preventive anger management programme is the Coping Power Programme (Larson and Lochman 2011). In line with many CBT interventions, the steps for the young person are: (1) identify the problem and their emotional reaction to it; (2) analyze the possible intentions of the other party; (3) come up with potential solutions to the conflict; (4) analyze the short-and long-term consequences of each solution; (5) choose and enact a plan; and (6) evaluate the effectiveness of the plan as it was implemented and learn the lessons from this.

Evaluations by the programme's developer suggest short-term effectiveness that is maintained at 2-year follow-up and (in a Dutch replication) that led to reduced substance misuse 4 years later (Larson and Lochman 2011).

A similar programme, Problem-Solving Skills Training (PSST), which lasts, 22 weeks was found to be effective in an RCT with inpatients with severe conduct problems (Kazdin et al. 1992), but now needs independent replication. More generally, a meta-analysis of RCTs of social skills training confirmed its usefulness, although studies with larger samples led to smaller effect-sizes (Losel and Beelmann 2003). Likewise, a meta-analysis of CBT with offenders found that it worked, and better effects were obtained for higher risk offenders, higher quality treatment implementation, and CBT programmes that included anger control and interpersonal problem-solving but not victim impact or behavior modification components (Landenberger and Lipsey 2005). Whilst there have been attempts to use CBT programmes to reduce gang membership, it is not currently possible to assess their effectiveness due to the lack of high quality evaluations (Fisher et al. 2008).

Limitations of anger management programmes include: quite a few young people with conduct disorders will not engage in them; there are few practitioners with the necessary skills available; and some young people can demonstrate the necessary steps in the clinic situation, but in real-life provocations still cannot control their angry outbursts.

More directly within the justice system, individual offenders have had to take part in victim-offender mediation sessions, so-called "restorative justice" (Latimer et al. 2005). A meta-analysis of 15 studies concluded the approach was effective,

with a rate of re-offending of 70.0 % of that of controls (Nugent et al. 2003). Similarly, a meta-analysis of "reasoning and rehabilitation" programmes by Tong and Farrington (2006) concluded that these reduced offending by 14.0 %. However, a more recent meta-analysis of restorative justice failed to find a reduction in offending or victim satisfaction (Livingstone et al. 2013).

Special Education

Because of the high rates of poor literacy and educational attainments in offenders, educational components are an important part of interventions. If formerly offending youths are expected to conform to societal norms and become employed and work within the system, then they need sufficient educational attainments and work skills to succeed in getting and holding down jobs. Without these, it is far harder even for well motivated youths to avoid the apparently quick rewards crime appears to offer them (Hawkins et al. 1998).

Promising school-based interventions for violent and antisocial adolescents typically attempt to enhance socio-emotional learning, as they do in younger children. However the SEL programmes described above have not been shown to work with adolescents. For example, in secondary schools SEAL showed no overall effects on pupils (Humphrey et al. 2010). This was due to poor implementation; where it had been well-implemented, a trend towards significant results emerged (Humphrey et al. 2010). Schools that implemented it well tended to be schools that were generally well-organized, with high morale, low turnover of staff and a clearly transmitted set of rules and sense of a guiding ethos. Therefore whilst these approaches appear promising, there is currently not enough evidence to properly assess their effectiveness.

Family-based Interventions

As described above, parenting programmes are one of the best researched interventions for behavior problems in children and are recommended by the UK National Institute for Clinical Excellence as the intervention of choice for conduct disorder (National Collaborating Centre for Mental Health 2013). However, there is less evidence for their effectiveness in young people and family-based interventions for delinquent youth have typically added additional elements to parent management techniques attempting to alter the structure and functioning of the family unit, being based on systemic family therapy theories. The best known in the context of delinquency is Functional Family Therapy (FFT), brought into being in 1969 by Alexander et al. (1998). It is designed to be practicable and relatively inexpensive; 8–12 one hour sessions are given in the family home, to overcome attendance

problems common in this client group; for more intractable cases, 26–30 hours are offered, usually over 3 months. The target age range is 11–18.

Following assessment, there are 3 phases to treatment. The first is the *engagement and motivation* phase. Here the therapist works hard to enhance the perception that change is possible. The aim is to keep the family in treatment, and then to move on to find what precisely the family wants. Techniques include reframing, whereby positive attributes are enhanced e.g. a youth who offends often but does not get caught is labeled as bright, and the emotional motivation is brought out, e.g. a mother who continually nags may be labeled as caring, upset and hurt.

The second phase of FFT targets *behavior change*. There are 2 main elements to this, communication training and parent training. The success of this stage is dependent on the first 2 having been achieved, and it is not commenced unless they have been. This stage is applied flexibly according to family needs. Thus if there are 2 parents who continually argue and this is impinging on the adolescent, the 'marital subsystem' will be addressed, using standard techniques. Parent training techniques are similar to those found in standard approaches, and include praise, rewards (called contracting in FFT – e.g. if you come home by 6 pm each night, I will take you to the cinema on Saturday), limit setting, consequences and response-cost (e.g. losing TV time for swearing).

The third and final phase of FFT is *generalization*. Here the goal is to get the improvements made in a few specific situations to generalize to other similar family situations, and to help the youth and family negotiate positively with community agencies such as schools and help them get the resources they need. Sometimes this latter goal may require the therapist to be a case manager for the family. To do this therefore requires that the therapist knows the community agencies and how the system works, and be prepared to spend time engaging it – these characteristics are specified in the model. This is a very different approach from traditional therapies in which the therapist stays neutral with regard to outside agencies.

The effectiveness of FFT is fairly well established; there have been over 10 replication studies (Alexander et al. 1998) of which over half have been independent of the developers. The trials published to date all have been positive, with the typical recidivism rates being 20.0–30.0 % lower than in controls. However, methodological quality of evaluations has not always been high. A rigorous effectiveness trial from the UK has recently been completed and the results will be published shortly.[1]

[1] Contact the authors for more details.

Multiple Component Interventions

The example of Multisystemic Therapy (MST) will be taken as it is one of the best developed treatments of this kind. MST was developed by Henggeler et al. (1999) in the USA. There are 9 treatment principles:

1. An assessment should be made to determine the fit between the problems and the wider environment: difficulties are understood as a reaction to a specific context, not seen as necessarily intrinsic deficits.
2. Therapeutic contacts emphasize the positive and use systemic strengths as levers for change. Already the assessment will have identified strengths (such as being good at sports, getting on well with grandmother, the presence of prosocial peers in grandmother's neighborhood). The implementation of this principle means that each contact should acknowledge and work on these. The strengths may be in the young person (competencies and abilities), the parent (skills, friendliness, motivation), the family (practical resources such as nice house, affection between members, some good parenting practices, supportive friends locally, and so on), peers (any with prosocial activities or hobbies, with parents who monitor well), at the school (good classroom management, understanding of youth's special needs, drama, music or sports facilities etc.), and in the community (such as organized activities by voluntary or church organizations, parks, well functioning social services departments, children's centers). Each contact should reinforce these strengths and use a problem-solving approach to mobilize them.
3. Interventions are designed to promote responsible behavior and decrease irresponsible behavior. This principle is similar to other parenting programmes: by increasing prosocial behavior and the amount of time during which it is carried out, then inevitably antisocial behavior is not being carried out. Eventually, the objective is more than the elimination of antisocial behavior, it is to help the youth become independent and to have prosocial life skills to make relationships, contribute effectively in work, and so stay out of trouble and have a productive life. This goal however is not just for the youth; parents too have their role to play in changing their practices and beliefs, which includes taking more responsibility for their youth's behavior and making life changes to enable this to happen – which could include giving up a second job, helping with school work, and so on.
4. Interventions are focused in the present and are action oriented, and have specific, well-defined goals. The approach is what can be done in the here and now, in contrast to some therapies that emphasize the need to understand the family and the youth's past. By having clear targets, all family members are aware of the direction of treatment and the criteria that will

(continued)

be used to measure success. This also means that effectiveness can be monitored effectively and accurately, and there are clear treatment termination points when these are met. In this respect, MST is similar to behavioral and some other therapies, but differs from counseling and psychoanalytic approaches.
5. Interventions target sequences of behavior in multiple systems that maintain problems. This is an approach similar to systemic family therapy, in that change is postulated to be mediated by interpersonal transactions rather than insight. What is different is that multiple arenas are explicitly assessed and where appropriate targeted, e.g. the youth's peer group, extended family, school.
6. Interventions are developmentally appropriate. They should fit the life stage and personal level of the family members.
7. Interventions require daily or weekly efforts by family members. This enables frequent practice of new skills, frequent positive feedback for efforts made. Non-adherence to treatment agreements rapidly becomes apparent.
8. Intervention effectiveness is evaluated continuously from multiple perspectives with the intervention team assuming responsibility for overcoming barriers to successful outcomes.
9. Interventions are designed to promote treatment generalization by empowering parents to address youth needs across multiple contexts.

Interestingly, the precise nature of the moment-to-moment content of intervention is not tightly prescribed, although in practice the greater part is not dissimilar to the approach used in behavioral family therapy. However, MST is not limited to work on psychosocial interactions. For example, when the programme's developers found that despite influencing the more distal risk factors for drug taking, such as parental supervision and school attendance, drug use was not diminishing as much as they had hoped, they instituted daily urine tests and paid the young people if they were clear of drugs. What is noticeably different from many therapies is the explicit recognition of the multiple contexts in which difficulties may occur, and the need to influence these. In a sense, MST is a set of operating principles that draw on the evidence for whatever works, e.g. CBT, close monitoring of association with deviant peers, constructive teaching, and so on, rather than one specific therapy.

The way the therapy is delivered is closely controlled. Due to the weekly monitoring of progress, if there are barriers to improvement these should be rapidly addressed, and the hypotheses of what is going on in the family and systems around the youth should be revised in the light of progress. Clinicians only take on 4–6 cases since the work is intensive. There is close attention to quality control by weekly supervision along prescribed lines, and parents and youths themselves fill in weekly questionnaires on whether they have been receiving therapy as planned. Therapy is given for 3 months and then stopped.

Given that MST makes good use of up-to-date evidence on the causes of antisocial behavior, and good use of effective treatment principles such as close measurement of effectiveness during treatment and close attention to implementation quality, one might hope that results would be encouraging. Indeed, the first raft of outcome studies by the programme's developers were positive. Thus the meta-analysis of papers up to 2003, including by one of the programme's developers, Charles Borduin, found that in 7 outcome studies comparing MST to treatment as usual or an alternative with 708 youths by 35 therapists, the mean overall effect size across several domains was 0.55 (Curtis et al. 2004). Outcome domains ranged from offending (arrests, days in prison, self-reported criminality, self reported drug-use) where the mean effect size was 0.50, peer relations (0.11), family relations (self-reported 0.57 and observed 0.76), and individual youth and parent psychopathology symptoms (0.28). When these studies were subdivided into chronic offenders *vs.* the remainder (youths who were abusing drugs, sex offenders and psychiatrically disturbed youths), no differences were found. However, the 3 studies using the developers own graduate students as therapists got noticeably larger effect sizes (mean 0.81) than when the developers were supervising local community therapists, where the effect size mean was down to 0.26. Long-term follow-up 14 years later (when the individuals mean age was 29 years old) by the developers of one of the first trials, with 176 cases allocated to MST or usual individual therapy, gave recidivism rates of 50.0 % *vs.* 81.0 % respectively. Most recently a long-term follow-up of the siblings of treated youth found lower rates of arrest in middle adulthood (Wagner et al. 2014).

There have been at least 27 published reviews of MST (Littell 2005) and the sorts of findings cited above have led MST to be cited as an effective, evidence-based treatment by the US National Institute on Drug Abuse, the National Institute of Mental Health, the Office of Juvenile Justice and Delinquency Prevention, and others. However, in the process of evaluation, the next test of any therapy is its effectiveness when carried out by teams who have no financial or employment ties with the developers (although they may pay the developers for materials and supervision), with an independent evaluation team. The first independent evaluation was also the first one to use proper intention to treat analyses (rather than exclude treatment refusers), and it found, with a large sample (N = 409) in Ontario, Canada, that MST yielded no improvement on treatment as usual on any outcome, either immediately or by 3 year follow up (Lescheid and Cunningham 2002). A smaller independent study in Norway (N = 75; Ogden and Hagen 2006) was more positive, and found effect sizes of 0.26, for self-reported delinquency; 0.50, for parent-rated; and 0.68, for teacher-rated, though here there was 40.0 % missing data. Likewise, a totally independent trial by Timmons-Mitchell et al. (2006) in the USA randomized 93 delinquents and also got substantial beneficial effects also. The Canadian study (not published in a peer reviewed journal but of high quality) was included in the Cochrane Library's review of MST (Littell 2005), but the other 2 independent Norwegian and US studies were not. The Cochrane conclusion that *evidence suggests that MST is not consistently more effective than other alternatives* is thus in our view unduly harsh. Its general tone was very conservative, thus it also concluded that MST had no harmful effects and that nothing else was proven

better than MST. Furthermore, there have been 2 subsequent evaluations of MST in the last few years, one conducted by the programme developers (Letourneau et al. 2009) and one independent evaluation in the UK (Butler et al. 2011), both of which have demonstrated the effectiveness of MST. However, in the UK trial MST resulted in greater reductions in offending only at the long-term follow-up and only for non-violent offences.

This conclusion is more cautious than the previously established view. A number of reasons are possible. First, the developers own studies did not do full intention to treat analyses, and may have been more favorable since some cases with worse outcomes (the drop-outs) were excluded. Secondly, the degree of skill with which the intervention was delivered may have been higher in the developers' sites. Evidence on treatment fidelity for MST is mixed – in the independent Ontario study fidelity as rated on-site was unrelated to outcomes. Henggeler et al. (1999) stated that fidelity is crucial for effectiveness. Accordingly, in their first paper on the subject, they made 105 correlations between fidelity and outcomes, and only 11 were significant, with some being in the opposite direction predicted, i.e. better adherence leading to worse results. However, the same research group (Huey et al. 2000) found that when they used a latent variable approach, therapist rated fidelity improved family functioning and parent monitoring, both of which in turn reduced youth delinquency, but that parent and youth rated fidelity had no effect. This rater effect could be because it requires a therapist to appreciate the complexity of fidelity, and also because therapists working across cases will be more consistent in their ratings than parents and youths, who may differ widely in their rating of the same phenomena. Thirdly, the financial conflict of interest may have unconsciously led the developers to bias their results favourably. Henggeler et al. (1999) hold stock in MST Services Inc, which has the exclusive licensing agreement for MST. It serves around 10,000 families a year and total fees amount to around $500 per youth served (Littell 2006). Fourth, the comparison treatment may have been different in Canada, where the justice system may be better organized. However, the Cochrane reviewers (Littell 2005) point out that their conclusions would have been largely the same even without this study.

Given that MST is predicated on sound, modern principles, why is it often hard to get consistently reliable effects? A further possibility is that 3 months of treatment are too few. To disentangle possible explanations, we need good measures of mediators during treatment, and crucially, after the end of treatment. This would enable, for example, one to see whether parenting practices continue to be strong after the intervention ceases, and whether in turn this mediates relapse; or say, is it deviant peer association that leads to more offending? Some conclusions are in order. We need more RCTs independent of the programmes developers. They should use Intention to Treat analyses, develop therapist adherence and skill to as high a level as possible and measure it, and be of sufficient power to measure moderators and mediators, so that variations in outcomes can, where possible, be accounted for.

Interventions with Multiple Components that Put Youths into Foster Families

The best example of this approach is Multidimensional Treatment Foster Care (MTFC). It evolved at the Oregon Social Learning Centre, beginning in 1983 (Chamberlain 2003), where parent training with families of delinquents proved extremely difficult, (although reasonably effective – Bank et al. 1991), due to the inability of the family to cope with the extreme demands of having a delinquent youth. This led to the idea of placing them in a specially trained foster family. It has a number of similarities with MST. It is based on an interactive model, whereby the moment-to-moment interactions are seen as the key to change. However, it differs in that the regime in the foster home is based on the youth earning points from the moment they get up. They have to earn 100 points a day, then they can get privileges such as going to bed later, having time on the computer, extra time to phone friends, and so on. Points are awarded for day to day living and social skills, such as making the bed, being polite, getting to school on time, and so on. While at school points are awarded for good behavior in class.

Unlike some programmes, in MTFC points are also taken away, for example for swearing or being unhelpful. Foster carers are carefully trained to take away points with the minimum of negative affect and to quickly offer the young person the opportunity to make up points by doing a small chore. For the youth, the immediacy of experiencing a contingent response to their behavior is often a stark contrast to being left alone or having long coercive interchanges with their parents. In addition to close liaison with the school, close supervision is key – the young person loses fully a point a minute for all time where they cannot verify their whereabouts, a sizeable fine. There is a relatively large team to carry out MTFC. The programme supervisor oversees the case, and has a maximum case load of 10. Then there is an individual therapist who sees the youth once or twice a week, for problem-solving and to develop skills based coaching of how to negotiate everyday situations – not for traditional psychotherapy. When the youth is in the community, there is a skills trainer, usually a young graduate, to help them negotiate prosocial activities and avoid dangerous situations.

MTFC lasts for around 6 months and then the young person returns to their birth family. However, crucial to the model is the birth family therapist, who while the youth is in the foster family, works with the birth family to inculcate the same regime to be used. While the youth is in foster care, there is a weekly clinical meeting for all team members, and a weekly foster carer meeting attended by the programmes supervisor and other team members, at which progress is discussed, support given to foster carers, and the day-to-day management regime carefully adjusted. However, each youth's progress is even more closely monitored, since every morning a team member calls the foster carer and goes through the Parent Daily Report, a simple 36 item checklist of antisocial behaviors requiring a yes/no answer. The clinical team plots progress graphically, so that any deterioration is quickly detected, and remedial action put in place.

There have been 2 main trials completed with MTFC for delinquency, 1 with boys and 1 with girls, both by the programme's developers. With boys (n = 79), MTFC compared to group care led to a reduction in the number of arrests at 2-year follow-up (for 2 or more arrests 5.0 % *vs.* 24.0 %), and reduced self-reports of aggression and fighting (Eddy et al. 2004). With girls at 1 year follow up (n = 81), criminal referrals showed a trend (mean 0.76 referrals in MTFC, 1.3 for group care, $p = 0.10$), days locked up 22 *vs.* 56 ($p < 0.05$), a reduction on CBCL delinquency but none on Elliott delinquency. No report of CBC aggression scales or other measures such as the PDR are given (Leve et al. 2005). A Cochrane review of the intervention (Macdonald and Turner 2008) concluded that it was a promising intervention, that there was some evidence for reductions in aggressive and violent behavior, but that the evidence base is less robust than usually reported. Clearly, further evaluations of MTFC are now needed, and are in progress[2] and one has shown reductions in violent behavior in girls (Rhoades et al. 2013). The model is also being extended to younger children, and to less intensive forms.

Ineffective Interventions

Harsh, military style shock incarceration, so-called "boot camps" are still popular for young offenders in the USA, and were promoted by the Office of Juvenile Justice and Delinquency Prevention in 1992 when 3 pilot programmes were set up. However, and as noted earlier, several reviews have concluded they are ineffective (Benda 2005; Cullen et al. 2005; Meade and Steiner 2010; Stinchcomb 2005; Tyler et al. 2001), and a RCT by the California Youth Authority that included long-term arrest data found no difference between boot camp and standard custody and parole (Bottcher and Ezell 2005). However, one review found that they do improve individuals' attitudes (Meade and Steiner 2010). In contrast, a meta-analysis of 28 studies of wilderness programmes found an overall effect size of 0.18, with recidivism rates of 29.0 % *vs.* 37.0 % for controls (Wilson and Lipsey 2000). Programmes with intense physical activity and a distinct therapeutic component were the most effective. Another approach is to attempt to frighten delinquents with visits to prisons in an attempt to deter them, as for example in the "Scared Straight" programmes. However, a meta-analysis of 9 controlled trials found that the intervention on average is more harmful than doing nothing, as it led to worse outcomes in participants (Petrosino et al. 2003).

Peer group work can also be harmful. In an evaluation of the Adolescent Transitions Programmes, Dishion and Andrews (1995) studied 120 families with an antisocial youth who were randomized to 1 of 4 conditions: parent only, youth only, parent and youth, and control. The parents attended standard parent training sessions, but the youths attended in groups of 4–6. At 1 and 3 year follow up, adolescents allocated to the youth groups intervention fared significantly worse on a

[2] http://www.mtfce.org.uk

number of outcomes, including teacher-rated delinquency and self-reported antisocial behavior and substance use. Those allocated to the parent only condition in contrast showed reduced teacher (but not parent) rated delinquency, and less negative family interaction patterns as assessed by direct observation. Videotapes of the group process revealed that despite the group leaders supporting a reduction in deviant talk and promoting positive peer support for prosocial behavior, in fact youth engaged in surreptitious deviant talk both during sessions and in intervals. Subsequent analyses proved that those youths who took part in increasing amounts of deviant talk predicted poor outcomes 3 years later, such as expulsion from school, arrests, and drug use (Granic and Dishion 2003). Over 40 years ago, Patterson had shown that within residential institutions for antisocial youths, for every one positive behavior reinforced by an adult, 9 deviant behaviors were reinforced by peers (Buehler et al. 1966).

The famous Cambridge-Somerville delinquency project studied 400 youths, half of whom were offered a range of interventions for 4 years that were state of the art at the time in the early 1940s, but 30 year follow up showed increased criminal activity, drug, cigarette and alcohol use by the intervention group compared to controls (McCord 1978). Reanalysis of the data led to the conclusion that that those who had done poorly were those who had been sent to summer camp twice, where the author hypothesized "deviancy training" occurred amongst delinquent peers; subsequent deviant acts were 10 times more likely (Dishion et al. 1999; McCord 1997). These lines of evidence have led the group (Gifford-Smith et al. 2005) to warn against peer contagion "in a whole range of settings". However, Weiss et al. (2005) have questioned these findings and in a fresh meta-analysis to address the question, found that in 17 of 18 studies group treatments for antisocial behavior did not support iatrogenic or deviancy training effects. In conclusion, it seems likely that unsupervised and prolonged contact with deviant peers is harmful, but well supervised and well supported contact during which youths are actively taught new skills can be effective. Recent evidence supporting this conclusion comes from a long-term follow up of British boot camps showing positive outcomes when this otherwise ineffective or harmful approach was combined with educational and vocational training (Jolliffe et al. 2013).

Callous-Unemotional Traits and Antisocial Personality Disorder

CU traits are being increasingly recognized in children and adolescents, and, as discussed above, are becoming recognized as a marker of a specific developmental path to violence and antisocial behavior. Youths with these traits are commonly seen in justice systems due to the combination of deceptiveness, violence and antisocial behavior. Factor analyses typically find 3 sets of characteristics (Cooke and Michie 2001): (1) an arrogant, deceitful interpersonal style, involving dishonesty, manipulation, grandiosity and glibness; (2) defective emotional experience, involving lack

of remorse, poor empathy, shallow emotions and a lack of responsibility for one's own actions; and (3) behavioral manifestations of impulsiveness, irresponsibility and sensation-seeking.

Delinquent offenders with these psychopathic traits have an earlier onset of offending, commit more crimes, reoffend more often (Forth and Burke 1998), and more violently (Spain et al. 2004) than non-psychopathic criminal youth. In addition, they exhibit insensitivity to punishment cues irrespective of whether or not they have conduct problems, making them especially hard to treat (O'Brien and Frick 1996). Antisocial Personality Disorder (using *DSM*-IV criteria) was found in 81.0 % of sentenced 16–20 year old males in the Office for National Statistics surveys (Lader et al. 2003). However, over-confident predictions about poor outcomes for youth with these traits should be avoided, as knowledge about the nature, stability and consequences of juvenile psychopathy is still very limited. There have been no published longitudinal studies of its stability and it remains unclear to what degree the antisocial behaviors in callous-unemotional youths change over time. For this reason many researchers in this field refer to juveniles with 'psychopathic characteristics' rather than using the term 'psychopathy'.

Recent findings are challenging the previous view that children with CU traits do not respond to treatment for antisocial behaviour. A number of recent studies have shown improvements in conduct problems in children with CU traits when treatment models have focused on emotion recognition skills (Dadds et al. 2012) and improving the parent-child bond (Somech and Elizur 2012). These studies show large effect sizes but have been conducted with children. However, one recent study has shown that violent youth with CU traits showed the most improvement after receiving FFT (White et al. 2012). Whilst this is a promising finding, it should be noted that there was no control group in this study. There have also been a handful of studies showing reductions in CU traits following treatment (Hawes and Dadds 2007; Kolko et al. 2009; McDonald et al. 2011; Somech and Elizur 2012; see Waller et al. 2013, for a review). However, there have been no studies showing improvements in CU traits in adolescents.

Conclusion

Many of the risk factors for the development of violent and antisocial behaviour are well-understood and this has allowed the identification of specific targets for intervention. Over the last 40 years a number of interventions based on these principles have been developed and tested. Those based on social learning theory and incorporating parent management training have been shown to be highly effective in children. There is also some evidence for programmes based on cognitive-behavioral approaches. In adolescents there is less evidence for what works but multi-systemic approaches are likely to be most effective. At the same time, there are a number of approaches that have been shown to be ineffective and, in some cases, positively harmful. Finally, the individual characteristics of the

violent child or adolescent should be taken into account when selecting interventions, with particular focus on identifying CU traits.

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