Review

Not peer-reviewed version

Parent-Child Systemic Therapy for Children with Behavioural Disturbances: A Clinician's Perspective

Richard Don Tustin *

Posted Date: 6 March 2026

doi: 10.20944/preprints202603.0366.v1

Keywords: attributions; children's aggression; co-occurring internalizing and externalizing behaviours; court involved family; dual-involved children; early intervention therapy; proactive and reactive children's aggression; systemic therapy; temperament; universal parenting programs

 doi:10.20944/preprints202603.0366.v1

Review

Parent-Child Systemic Therapy for Children with Behavioural Disturbances: A Clinician's Perspective

Richard Don Tustin

Adelaide Psychological Services, Adelaide 5045, Australia; don@psychadelaide.com.au

Abstract

Concern is expressed in Australia about a group of children called dual-involved children. Dual-involved children live in families who are described as having multiple and complex needs, where a child is referred first to a child protection court and later to a juvenile justice court as the child has committed offences. One concern is that these families and children commonly do not receive early intervention therapy. Method. The article provides a rapid review of research relevant to early intervention for children with increased likelihood of developing a mental disorder and offending. Results. Sixteen psychological models of child development are identified that have generated research and evidence about child development trajectories that are relevant to provision of early therapy to meet needs of children who are vulnerable to developing a mental disorder and becoming a dual-involved child. The review summarises effect sizes associated with each model. Cohorts of children who follow trajectories of aggressive behaviour are one focus. Conclusion. The review concludes there is a need for targeted therapy interventions for parents of vulnerable children using a systemic approach to supplement universal parenting interventions. Topics for further research are identified, including a need for research into how therapists who use a systemic approach might practice in ways that avoid ethical dilemmas that arise when working with two members of one family.

Keywords: attributions; children's aggression; co-occurring internalizing and externalizing behaviours; court involved family; dual-involved children; early intervention therapy; proactive and reactive children's aggression; systemic therapy; temperament; universal parenting programs

1. Introduction

Research is ongoing about how to identify children who are at risk of developing a mental disorder, and about the most efficient methods to provide early intervention therapy for vulnerable children. Research interest has been extended beyond children in mainstream families to include children who are referred to child protection systems and who become involved in legal systems. The review focuses on research that is relevant for clinicians who provide therapy for families where a notification has been made to child protection authorities. The review focuses on interventions that can be provided by a clinician who follows a systemic approach by providing therapy simultaneously to a parent-child combination.

The traditional approach for providing therapy for a child is based on a diagnostic process where one family member is diagnosed as exhibiting a disorder, either a parent or a child, and treatment is provided for this family member. A second approach is emerging that focuses on interactions between family members, that leads to co-joint therapy being provided to both family members, where these interventions can be delivered in an early intervention program before either family member is diagnosed with a disorder. The term 'systemic therapy' is used to describe evidence-informed interventions that are provided simultaneously by one therapist to two family members [1,2]. Systemic therapy is distinguished from traditional therapy as a clinician has two clients whose interests need to be considered. Another characteristic of systemic therapy is that early intervention therapy is provided to address risk factors rather than diagnoses. This definition of systemic therapy

 doi:10.20944/preprints202603.0366.v1

includes interventions that are derived from different theories, provided interventions generate evidence of efficacy in improving collaboration between family members.

Carr [1,2] reviewed evidence informed systemic therapies and cited data that systemic therapy is as effective as individual therapy in the management of many child issues. However, commentators have noted that interventions used in systemic therapy are often not well defined, making it difficult to replicate studies [3].

Arguably families who present with the most complex issues are those who are referred to family-oriented courts, either a family law court when parents separate and take disputes to court, or a child protection court when an allegation is made that a child is at risk of harm due to maltreatment by their parent. Legislation governs practices in family-oriented courts. Legislation in some jurisdictions requires that a family be offered an opportunity to participate in focused therapy to remedy parenting practices that have been criticised before steps are taken to remove children from parental care. Before issuing an order, a court might review the evidence base for a proposed intervention.

The review focuses on parent-child therapies that have been identified in research, that are relevant for families where there are risks to the development of a child's mental wellbeing, and that are relevant for court-involved families. The review includes research that is relevant to a cohort of children called crossover children as the family first presents to a child protection court over allegations a child has been maltreated, and later the child faces a juvenile justice court as the child is alleged to have committed offences including violent offences while in the care of the state [4,5].

A beginning to identify therapy interventions that are relevant to helping children who live in court-involved families has been made by Greenberg et al. [6]. The article reviews evidence about efficacy of psychological models used by clinicians to analyse children's behaviour and to design therapy interventions for families where there is evidence of risk factors for a child being on a trajectory that involves ongoing aggressive behaviour, and where early intervention therapy is warranted.

The review is based on a premise that delivery of systemic therapies involving parents and children who are vulnerable will be enhanced if interventions used by systemic therapists are clearly defined, with known inter-rater reliability. The article reviews psychological models that have generated evidence about families where children are at an increased risk of developing a mental disorder and engaging in aggressive offending.

Researchers who contribute to systemic therapy use distinctive research designs. Commentators note that it is common practice for researchers to study behaviours of two family members at one point in time, called cross sectional research [7], where observations are made of variables without any intervention to change variables. Cross sectional research allows associations between variables to be identified using correlations, but correlations at one point in time provide no insight into causal mechanisms that link variables. On the other hand, longitudinal research measures the same variables repeatedly over prolonged periods of time, and identifies differing pathways of development or trajectories. Longitudinal studies provide greater insight into causal links between variables. The paper reviews studies that have used a longitudinal design to examine patterns that occur in dysfunctional parent-child relationships.

The aims of the review are to clarify evidence about themes that are identified in longitudinal studies of families where children are vulnerable, and to build an evidence informed framework that will help policy makers and clinicians to provide early intervention systemic therapy for court-involved families where children are vulnerable.

2. Methodology

The study used a rapid review approach. A Google Scholar search was conducted until December 2025 using each of the following key words: attachment, attributions, children's aggression, children's disturbed behaviour, children's emotions, co-occurring behaviours, court involved family, disorganized attachment, early intervention therapy, early onset aggression,

 doi:10.20944/preprints202603.0366.v1

empathy, externalizing behaviour, forms of children's aggression, functions of children's aggression, high risk children, internalizing behaviour, late onset aggression, longitudinal study, maltreatment, moral emotions, parenting practices, parental mental health, parental personality, parenting style, physical aggression, proactive aggression, reactive aggression, relational aggression, reflective functioning, systemic therapy, targeted parenting program, temperament, therapy for vulnerable children, trajectory of child development, universal parenting programs.

Preference was given to studies that reported quantitative data that was summarised using a correlation (*r*) or a measure of effect size including Cohen's *d* or Hedges *g*, where effect size is the mean difference between two contrasted populations as a percentage of the common standard deviation *d* [8]. An effect size of .2 is viewed as small, .5 is viewed as moderate, and .8 is viewed as large. The three effect sizes correspond to probabilities of difference in means of .56, .64 and .71 respectively. Effect size is influenced by the accuracy of an assessment instrument and by the size of a sample.

Articles were included in the review if they met the following criteria: (a) an article provides information about children's severely disturbed behaviour including aggression; (b) it provides information about modifiable risk factors that can be influenced by a clinician; (c) it provides information that is relevant to a clinician who aims to provide evidence-informed parent-child systemic therapy; and (d) is relevant to clinicians who provide therapy for court-involved families.

The review cites 517 articles that were published in 121 journals, 52 books and 13 agency reports. Journals that published the highest numbers of cited articles are Child Development (7.2%), Development and Psychopathology (6.1%), Developmental Psychology (4.5%), and Journal of Child Psychology and Psychiatry (3.3%).

The reviewer is a clinical psychologist with 30 years' experience providing therapy for families who were court-involved regarding child custody and child protection issues. The reviewer followed a scientist-practitioner approach and regularly reviewed research about court-involved clients. The reviewer was invited to publish a four-volume review book entitled 'Psycho-legal concepts for parenting in child custody and child protection [9].

3. Results

Results of the review are presented using six section headings: (a) prevalence of high-risk children; (b) provision of no therapy for vulnerable children; (c) types of parenting intervention; (d) psychological models to analyse children's disturbed behaviours; (e) screens to identify high-risk children; and (f) evolution of an intervention model for vulnerable children.

The largest section is section d that provides a review of psychological models that have produced evidence that is relevant to clinicians. The section addresses 16 models that are: (i) internalizing and externalizing behaviours; (ii) over- and under-controlled children; (iii) extrinsic and intrinsic motivation; (iv) attachment bonds; (v) parenting styles; (vi) forms of aggression; (vii) functions of aggression; (viii) early- and late-onset aggression; (ix) children's emotions; (x) children's temperaments; (xi) peer influences; (xii) parental appraisals of their child; (xiii) parental personality; (xiv) involving parents in joint parent-child therapy; (xv) parental mental health issues; and (xvi) disorganized attachment.

The review distinguishes between evidence-informed interventions (where there are empirical studies supporting principles used in interventions) and evidence-based interventions (where efficacy of interventions has been published in peer reviewed journals).

3.1. Prevalence of High-Risk Children

Studies have examined the prevalence of children who present with severe behavioural disturbance that warrant intervention.

Kokko [10] examined trajectories of1025 community boys from the ages 6 to 12 years and identified a cohort of 3.4% of the boys who were assessed as displaying both high aggression and

 doi:10.20944/preprints202603.0366.v1

moderate prosocial skills. Silver et al. [10] identified a cohort of 5.8% children in a community sample as displaying a chronic high level of externalizing behaviour throughout elementary school.

Piquero et al. [12] reviewed research about the stability of children's aggression over time. Their review found that the use of aggression by many children declined between the ages of 2 and 8 years, but between 12% and 19% of boys continued to behave aggressively into adolescence.

Shi et al. [13] examined 784 children in a clinical sample who were at-risk of maltreatment, and followed the sample over a 12-year period, assessed their internalizing and externalizing behaviours, and examined early childhood antecedents that were associated with differing trajectories. They identified 4 distinct developmental patterns / trajectories: (a) a chronic group who exhibited co-occurring internalizing and externalizing behaviours who comprised 30.1% of the cohort; (b) a moderate co-occurring group comprising 28.5% of the cohort; (c) an externalizing-only group comprising 18.6%; and (d) a low-risk group comprising 22.8% pf the sample. Children who belonged to the three higher risk groups had a history of more adverse early childhood experiences compared to the low-risk group. The chronic co-occurring group displayed the most severe profiles of early childhood experiences compared to the moderate co-occurring and the externalizing only groups. Two common modifiable factors for the three higher risk groups were a child's less resilient temperament, and more adult– child conflict. Low language ability and peer rejection were identified as unique identifiers for the chronic co-occurring group.

Goulter et al. [13] examined children with co-occurring internalizing and externalizing problems in a community population where children had an initial mean age of 5.3 years. They identified four trajectories: low problems in 61.3% of the sample; externalizing only in 14.0%; internalizing only in 11.3%; and co-occurring externalizing and internalizing in 13.1% of the sample. Membership of the co-occurring group was associated with both high family adversity and a physiological measure of high reactivity to stress.

Prevalence of problem behaviours in fostered children. A number of studies have examined the prevalence of severe behavioural problems in children who have been removed from parental care and placed in foster care.

Gevers et al. [15] examined externalizing and internalizing problems of adolescents in residential youth care using up to three sources of information (self-reports, carer reports, & parent reports). The majority of adolescents (50–73%) showed nonsignificant change in either externalizing or internalizing problems during their stay in residential care, according to each source of information. The study found that higher problem severity at the beginning of a placement was a significant predictor of whether improvements would occur in externalizing and internalizing problems during a placement.

Dalmaso et al. [16] reviewed 31 studies into the externalizing and internalizing profiles of children in out-of-home (OOH) care. They found that, while children in OOH care displayed disproportionate levels of externalising behaviour problems compared to the general population, not all children in OOH care displayed externalizing problems. They examined protective factors for the cohort of children who did not display externalizing problems. The review found that individual protective factors were a better self-concept, an active coping style, and good social skills. The quality of relationships that children had with other people was found to be an important protective factor in reducing externalizing behaviours. More frequent interactions a child had with their biological parents was found to be protective for externalizing behaviours. Engagement with community groups that were meaningful to the child and achievement orientated such as engaging in sports and hobbies, and with school, were found to be associated with fewer externalising problems. Residing with fewer children in a home was associated with fewer externalizing problems.

In summary, studies have identified trajectories where some children are at increased risk of acting in antisocial ways throughout their childhood, including children who are referred to child protection services. The constructs of internalizing and externalizing behaviours have been used to identify high risk cohorts of children.

 doi:10.20944/preprints202603.0366.v1

3.2. Provision of No Therapy for Vulnerable Children

This section summarises two sets of research. The first set of research investigated outcomes for children who were removed from parental care and placed in OOH care with no specific arrangement for therapy to be provided. The second set of research involved children who are called crossover children or dual-involved children as they became involved in offending and appeared before a juvenile justice court after being notified to a child protection system.

3.2.1. Children in Out-of-Home Care

Since 1991 agencies who provide OOH care for children in England have been required to administer the Strength and Difficulties Questionnaire (SDQ) to each child in OOH care on an annual basis. SDQ data have been analysed by Hiller and St Clair [17] and Hiller et al. [18].

Hiller and St Clair [17] analysed SDQ profiles of children in long-term OOH care over a five-year period in one English district and identified five trajectories. They found that the trajectory with the largest membership involved children who scored as having severe problems (in abnormal range) from their first year in care and who remained in this range across the five years. Children in this chronic trajectory had significantly more placement moves than their peers on resilient trajectories. The authors concluded that young people in OOH care had significant mental health problems, and that only removing these children from an adverse parental environment was not enough for the child to regain resilient functioning.

Hiller et al. [18] examined a larger sample of English children in OOH care using SDQ data over a three-year period. The most common profiles involved stable functioning over time (either resilient or chronic), while changing trajectories of recovery and delayed resilience were less common. Approximately 50–60% of young people were rated as having elevated difficulties on domains that contribute to externalizing problems (peer problems, conduct & hyperactivity), and these problems were shown to persist over the three years for approximately 70% of this group of young people. The study found that children with the greatest difficulties were more likely to be living in residential care rather than in a foster home. The study found that being separated from all siblings was associated with higher internalising and externalising problems. The authors concluded that only removing a child from parental care and placing them in the care system was not sufficient to produce recovery from their mental health difficulties, as recovery did not occur naturally. The authors expressed concern about the under-identification of common mental health problems in children in OOH care.

The studies by Hiller and colleagues illustrate that when children who have been removed from parental care and placed into out-of-home care did not receive adequate therapy, their functioning did not improve. There is an evident pressing need to develop and deliver therapies that are suited to the needs of children who are in the most dire circumstances [19].

A meta-analysis of 41 studies of children in OOH care by Dubois-Comtois et al. [20] found an association between placement in foster care and child psychopathology of d = .19, with children in foster care having higher levels of psychopathology. The study found that the prevalence of psychopathology in children in foster care was similar to the prevalence in a matched sample of children who remained living with their biological parents, indicating that simply removing a vulnerable child from parental care was not a protective factor for the child's mental health.

3.2.2. Dual-Involvement Children

In Australia there is concern about the plight of children called crossover children or dual-involvement children [5,6]. Dual-involvement children are children who are first removed from the care of their parents and placed in out-of-home care following an order from a child protection court, and the child later commits offences and faces a second court that dispenses juvenile justice. Government policies encourage provision of early intervention therapy for children and parents before a child is removed from parental care and placed into OOH care.

 doi:10.20944/preprints202603.0366.v1

Schaeffer et al. [21] drew attention to use of modelling to identify boys who behaved aggressively in elementary school and progressed to a range of ongoing antisocial behaviours.

Macvean et al. [22,23] reviewed evidence about parenting programs for vulnerable children and identified 81 published parenting interventions for children aged up to 6 years that appeared relevant for children who were vulnerable to a risk of being maltreated and developing mental health disorders. They reported that the majority of effective interventions were delivered partly in the family home. Outcomes that were targeted most frequently involved managing children's behaviour, parent-child relationships, and child development. Interventions that were most effective were delivered by professionals who operated independently of the child protection agency that prosecuted families.

The Macvean et al. reviews identified common components in effective parenting interventions as being: (a) assess and promote the mental health of children; (b) use structured planning sessions; (c) involve both parents and children; (d) assess interactions between a parent and child; (e) educate parents about usual child development; (f) focus on child safety and what is maltreatment; (g) educate parents about managing risks and resilience in children; (h) teach relevant safety skills; (i) teach negotiation skills to parents; (j) convey information to parents in the form of discussions rather than lectures; (k) focus on positive methods to manage child behaviours rather than on criticisms of current parental practices; (l) regulate both parents' and children's expression of emotions and encourage moderate expression of emotions; (m) promote parental problem solving skills; (n) reduce excessive externalized thinking and blaming by parents, and inappropriate feelings of guilt in children; (o) monitor and promote positive/healthy peer relationships with children outside of the family; and (p) promote family wellbeing. Other models video a parent interacting with their child while they engage in structured tasks, and a therapist provides feedback to the parent.

Wade et al. [24] found that there was low use of evidence-based intervention programs for vulnerable children in Australia. They identified three explanations for the low use of early intervention programs. The first explanation is that many interventions are published in journals that are not easily accessible. A second explanation refers to a shortage of practitioners qualified to provide interventions. A third explanation is that practitioners prefer to provide individualised interventions for vulnerable families, but authors of some parenting programs insist their programs be implemented in a standardised way to meet fidelity requirements that facilitate comparisons in scientific studies.

3.3. Types of Parenting Intervention

Interventions to improve parenting practices have emerged in two phases. Initial programs were designed to meet the needs of families in the mainstream community and are called universal programs. Further programs were introduced to address specific risk factors in families where there are more risk factors and children are more vulnerable, and these are called targeted programs as they are available only to eligible families.

Carr [1] identified six universal parent education programs as having demonstrated efficacy with mainstream community families: Oregon model of parent management; Parent-Child Interaction Therapy (PCIT); Incredible Years Programme; Triple-P positive parenting programme; Parents Plus programme; and Kazdin's parent management training and social problem-solving skills programmes. Each of the universal intervention programs aim to change the parent-child relationship, as well as co-parenting relationships, and relationships between parents and relevant professionals such as teachers. Programs aim to change repetitive and dysfunctional relationship behaviours of parents and children, and their associated beliefs and emotions. The universal programs draw on principles from a range of theories including social learning theory, attachment theory, and ecological social systems theory. The programs include two core sets of interventions; first to increase children's prosocial behaviour by coaching parents to use positive parenting practices with their children rather than frequent punishment, and second to reduce children's antisocial behaviour both by improving the consistency and efficiency with which parents address these

 doi:10.20944/preprints202603.0366.v1

behaviours and also by improving children's self-regulation skills. Intervention methods used in effective programs include in-session psychoeducation, modelling, rehearsal, feedback while a parent watches their own parenting practices in a video recording, home visits, and practice between sessions that is reviewed in a session.

Reviews of efficacy of universal interventions find they are effective in changing parenting practices and in turn benefiting children. Comer et al. [25] provided a meta-analysis of 36 controlled trials of effects of psychosocial treatments on children's early disruptive behaviour problems. Their analysis found that psychosocial treatments collectively demonstrated a large and sustained effect on children's early disruptive behaviour problems, with an effect size of g = .82. The largest effects were associated with behavioural treatments (g = .88). The authors concluded that universal psychosocial programs used to target children's early disruptive behaviour problems should emphasise behavioural interventions that are implemented by caregivers.

A number of further meta-analyses of efficacy of universal parent education programs have been provided [26–32]. Meta-analyses find that effective parent education programs are based on the principles of cognitive behaviour therapy. Reported effect sizes range from d = .26 to .64.

Sanders and colleagues [29] provided a meta-analysis of 116 studies that used a Triple P positive parenting program and found the following effect sizes: d = .58 for changing parenting practices; d = .47 for beneficial outcomes for children's social, emotional and behavioural functioning; d = .50 for observational data about children's functioning; d = .52 for parental satisfaction; d = .34 for parental personal adjustment; and d = .22 for parental relationships.

Some meta-analyses have compared efficacy of different models of parent education for children who exhibit clinical levels of disruptive behaviour and have reported efficacy for each model [31].

However, a systematic review of outcomes of 262 parent training studies by Chacko et al. [33] found that 25% of parents who were identified as appropriate for a parent training program did not engage, and a further 26% dropped out of the program. In a meta-analysis of 31 studies, Reyno and McGrath [34] found that parents who had limited social support, high levels of poverty-related stress, and mental health problems derived less benefit from universal parent training programs. The usual interpretation of these figures is that there is a need for universal programs to be supplemented by more targeted programs that meet the needs of specific groups of high-risk families where children have clinical issues [35–39].

As an example of a targeted program, Lindstrom-Johnson et al. [40] conducted a meta-analysis of 21 trauma-informed parenting interventions to identify best practice interventions for families who had been exposed to domestic violence. They identified a distinctive set of interventions that provided benefits for outcomes of positive parenting practices (d = .62) as well as for children's internalizing problems, externalizing problems, and trauma symptoms with d ranging from .48 to .59.

In another example of a targeted program, Kerns et al. [41] examine factors associated with the development of anxiety symptoms during middle childhood. They found that children who were more anxious at the beginning of middle childhood had been more behaviourally inhibited as preschoolers, their mothers were more anxious, and in middle childhood the children lived in families who experienced more negative life events.

Sameroff et al. [42] proposed that the number of risk factors in a family appears to be more predictive of future harm to a child than any single risk factor, and proposed that a cumulative risk score be used to identify families who are eligible for targeted intervention programs. They proposed that a cumulative risk score be used to set a threshold between families where parenting is inadequate to meet the needs of their child and the family can safely be referred to an early intervention therapy program for a limited period of time while remediation occurs, and families where parents are abusive and children need to be removed immediately from the care of their parents.

In summary, commentators note a need to supplement universal parenting programs with specific programs that are designed to meet the identified needs of sub-groups of families who present with more risk factors.

 doi:10.20944/preprints202603.0366.v1

3.4. Psychological Models to Analyse Children's Disturbed Behaviours

Psychologists have developed several models to analyse the disturbed behaviour of children, based on the following constructs: (i) internalizing and externalizing behaviours; (ii) over- and under-controlling coping styles; (iii) extrinsic and intrinsic motivation; (iv) attachment bonds; (v) parenting styles; (vi) relational and physical forms of aggression; (vii) reactive and proactive functions of aggression; (viii) early and late onset aggression; (ix) children's emotions; (x) children's temperaments; (xi) influence of peers; (xii) parental appraisals; (xiii) parental personality; (xiv) involving parents in joint therapy; (xv) parental mental health factors; and (xvi) disorganized attachment. Research about each construct that is relevant to clinicians is briefly summarised.

i – Internalizing and externalizing behaviours

Achenbach and colleagues [43,44] categorised children's disturbed behaviours as being externalizing and internalizing. A child's externalizing behaviours are acting out behaviours that are directed towards the environment and include actions of non-compliance, defiance, aggression, impulsivity, and rule breaking. In contrast, a child's internalizing behaviours are focused inwards and reflect internal distress, and are displayed by signs of social withdrawal, anxiety, depression, and negative self-talk. The two types of behaviour are assessed using questionnaires that include the Children's Behavior Checklist (CBCL) [44], BASC3 [45], and Strengths and Difficulties Questionnaire (SDQ) [46]. Each instrument identifies behaviours that contribute to higher order factors of internalizing and externalizing behaviours, and also identifies clusters of behaviours or lower order traits that contribute to the higher order factors. Clinicians who use these assessment instruments can adopt a trait-oriented approach to therapy where they address sets of behaviours that cluster together rather than problem behaviours in isolation [47].

A meta-analysis of 1435 studies about children's externalizing behaviours by Pinquart [48] associated *externalizing* behaviours with parenting dimensions and found that harsh control, psychological control, and authoritarian, permissive, and neglectful parenting styles were associated with higher levels of externalizing problems. Parental warmth, behavioural control, autonomy granting, and an authoritative parenting style showed small positive and negative concurrent and longitudinal associations with externalizing problems with effect sizes ranging from d = .14 to .20, and were associated with reduced externalizing problems over time. A second meta-analysis of studies about children's *internalizing* behaviours by Pinquart [49] associated internalizing behaviours with parenting dimensions and found that harsh control, psychological control, and authoritarian and neglectful parenting styles were associated with higher levels of internalizing symptoms in children with effect sizes in the range d = .20 to .24.

It is conventional to provide different individual therapies and parenting approaches for internalizing and externalizing behaviours. Moller et al. [50] provided a meta-analysis of 28 studies of the parenting practices where children were anxious. They found distinctive but small associations involving parental practices of overcontrol, overprotection, and overinvolvement, with associations between parenting practices and child anxiety symptoms being higher for fathers than for mothers.

Co-occurring problems. Using the categories of internalizing and externalizing behaviours can give an impression the behaviours occur at opposite ends of a continuum and are mutually exclusive. However, research shows that internalizing and externalizing behaviours can co-occur in children. Children who display co-occurring internalizing and externalizing behaviours provide special challenges for parents, carers and therapists and they require very careful therapy and parenting.

Bornstein et al. [51] followed community children in three waves at ages 4, 10, and 14 years, and measured their social competence, and internalizing and externalizing behaviours. They found that children with lower social competence when aged 4 years exhibited more co-occurring externalizing and internalizing behaviours at age 10 years, and more externalizing behaviours at age 14 years. They described the development of problems as cascading, as low social competence in early childhood forecast behavioural problems in adolescence.

Kunimatsu and Marsee [52] noted that co-occurrence of internalizing and externalizing problems produce unique complex behavioural profiles that require distinctive parenting

 doi:10.20944/preprints202603.0366.v1

approaches. They offered a model to explain how the co-occurrence of internalizing and externalizing behaviours is based on a child's strong stress response, and on a tendency for the child's fight response to predominate over their flight-and-avoidance tendencies. The authors drew attention to the importance of treatment programs for children with co-occurring problems to use coordinated interventions based on emotion management, cognitive strategies and behaviour management strategies to teach emotionally reactive children to manage their aggressive tendencies.

Fanti and Henrich [53] studied the trajectories of 1232 community children from ages 2 to 12 years who were assessed as displaying internalizing problems, externalizing problems, and co-occurring internalizing and externalizing problems. They found that a small proportion of 5-7% of young children did not outgrow their temper tantrums and the defiant and irritable behaviours that characterize toddlers, and if untreated these children were at increased risk of following a life-long course of persistent externalizing problems. The study provided evidence supporting a hypothesis that children who display co-occurring internalizing and externalizing problems have poorly differentiated responses to stress, where their fight tendency predominates over their avoidance / flight tendency when they become stressed. The study found that co-occurring disorders are more likely to occur when, as well as a child having a *sensitive temperament*, there is an additive effect from exposure to early childhood risk factors. Membership of the co-occurring group was associated both with high family adversity and with a child receiving a high score on their physiological reaction to stress. The authors hypothesised that a child's increasing cognitive abilities during the mid-childhood years enables children to reflect and to anticipate events that are negative and distressing for themselves and for other people, and to learn to self-manage their behaviour if they are raised using suitable supportive parenting practices.

Schermerhorn et al. [54] followed a group of community families when their children were aged between 5 and 13 years and examined children's traits that were associated with externalizing behaviours. Their study found that children's traits of resisting control (unmanageability) and low adaptivity to novelty were associated with externalizing behaviours. Children who scored highly on traits of resisting control and low adaptivity to change were found to display more externalizing behaviours when they became stressed.

Zarling et al. [55] assessed the internalizing and externalizing behaviours of children aged 6-8 years whose mothers were exposed to domestic violence. The study found that children who were exposed to high levels of domestic violence displayed higher levels of co-occurring externalizing and internalizing behaviours. The study found that harsh discipline increased the likelihood of a child developing externalizing behaviours, but not internalizing behaviours.

Wiggins [56] examined the co-occurrence of internalizing and externalizing behaviours in children between the ages of 3 to 9 years, and associated parenting practices. They identified three developmental trajectories: low / normal levels of behaviours; severe behaviours that decreased over time; and severe ongoing behaviours. They found that parental use of harsh parenting increased after the toddler years, and use of harsh parenting increased more steeply with children in the category of displaying severe behaviours, and became a stable parenting practice in some families. They found that harsh parenting was uniquely associated with ongoing externalizing symptoms. The authors interpreted their results as showing the importance of addressing both internalizing and externalizing behaviours from an early age to understand and reduce risk for developing psychopathology, and of recognizing the role that harsh parenting plays in influencing the trajectory of co-occurring behaviours.

Goulter et al. [57] examined children with co-occurring internalizing and externalizing problems in a community population of children with a mean age of 5.3 years. They found that co-occurring problems occurred in 13.1% of the sample. Membership of the co-occurring group was associated both with high family adversity and with a child receiving a high score on their physiological reaction to stress.

Studies have found that co-occurring behaviour problems occur more commonly in families who have been notified to child protection authorities as parents struggle to manage their child's

 doi:10.20944/preprints202603.0366.v1

disturbed behaviours [15,16,55,58]. Mental health clinicians interpret the finding that children notified to child protection authorities have high levels of co-occurring problems to mean that it is especially important to provide carefully targeted therapies for these children.

In summary, studies draw attention to the co-occurrence of internalizing and externalizing problems both in children in the mainstream population, and in children in OOH care. Having co-occurring problems complicates childrearing as parents need to manage both stress reactions and conduct behaviour that occur simultaneously in their child. Studies indicate that internalizing behaviours reflect a physiological disposition to react strongly to stress. Research has identified protective factors that reduce chances a child will develop externalizing problems, and has identified issues that can be addressed in therapy interventions.

While reports of effect sizes have not been cited in this section, it appears that the framework that categorises the behaviour of children as internalizing and externalizing has a strong empirical basis, and should be viewed as a primary approach for analysing children's disturbed behaviours.

ii - Over- and under-controlled children

Another approach that is relevant to the construct of self-discipline involves a dimension of children under-controlling their impulses, over-controlling impulses, and being resilient, as used by Asendorpf [59,60]. Asendorpf linked under-controlled children to externalizing behaviours, and over-controlled children to internalizing behaviours.

Bohane et al. [61] reviewed 43 studies about over- and under-controlled children. Children who are 'over-controllers' were hypothesised as being constricted and inhibited, organised, avoidant and conforming, showing minimal emotional expression and being willing to delay gratification. Children at the 'under-controlled' end of the continuum were hypothesised to be overly emotionally expressive, spontaneous, seek immediate gratification of their desires, be distractible, less conforming, and comfortable with ambiguity and uncertainty. Bohane et al. concluded that research supports the distinctions between the coping styles of over-controlled/constricted children, resilient children, and under-controlled/dysregulated children.

The review by Bohane et al. included research about associations between children's over- and under-controlled types and adult personality disorders. The review found that the overcontrolled coping style was associated with Cluster C personality disorders (anxious and fearful disorders), whereas the under-controlled coping style was associated with Cluster B personality disorders (dramatic, emotional or erratic disorders, borderline personality disorder, & antisocial personality disorder). Bohane et al. noted agreement that personality prototypes have fuzzy, rather than discrete borders, and that results vary when researchers use factor analyses or cluster analyses. Bohane et al. introduced a hypothesis that too much self-control can be as maladaptive as too little self-control.

In summary, the constructs of children using under-controlled and over-controlled coping styles appears to be a framework that is easily understood by all stakeholders, and can be used by researchers.

iii - Extrinsic and intrinsic motivation

Ryan and Deci have drawn attention to whether children's motivation is driven by internal or external factors, and whether a child is internally or externally motivated [62–64].

Kochanska and Aksan [65] differentiated between children's compliance that is internally motivated and shows an internalized committed compliance, and compliance that is externally motivated. They considered that only internalized compliance is relevant to a child's sense of responsibility and morality. They report that internalization of parental rules is observed in children between ages 24 and 53 months.

Hoffman [66,67] distinguished types of discipline, and proposed that internal motivation and moral development are best developed by parental use of inductive discipline as compared to power assertive discipline. A parent who uses inductive discipline expresses expectations about their child's behaviour, praises their child for compliance, expresses disappointment if their child does not behave as expected, and accepts a child's expression of remorse and offers of reparation. A parent who uses power assertive discipline demonstrates their power over their child by delivering consequences for

 doi:10.20944/preprints202603.0366.v1

their child's actions, including withdrawing their affection if they are disappointed and displeased by their child.

Krevans and Gibbs [68] found that children aged 11.5 to 14 years who were raised using inductive discipline demonstrated more empathy and empathy-based guilt, and they displayed more prosocial behaviour than children who were raised primarily using a power-assertive approach. Krevans and Gibbs reported that children learn empathy when their parents use inductive discipline as compared to using power-assertive discipline when their child acts in unsociable ways.

Patrick and Gibbs [69] described a study where parents used inductive discipline rather than asserting power over their child. They identified three components of inductive discipline; asking their child how a child who is treated badly might feel to build empathy; reminding a child of an expectation / rule; and expressing disappointment in their child's inappropriate actions. Inductive discipline was presented as an alternative to methods where a parent asserts power over their child by arranging artificial consequences for the child's misbehaviour. Proponents of inductive discipline cite studies that dynamic cycles can develop when a parent uses strong power-assertion when a child misbehaves, a parent exerts punishment and their child responds by resenting the discipline and blaming their parent for treating them unfairly, especially a child has an attachment bond with their parent that is insecure [70].

Di Domenico and Ryan [71] described intrinsic motivation as being driven by natural consequences of an action. When a person is intrinsically motivated, they practice skills freely and independently of whether any external reward is provided for the action as they enjoy the natural consequences of the responding. Motivation is described as extrinsic if a person engages in an action primarily to obtain an arranged consequence.

A study of how use of inductive discipline where a parent explains the reason for a rule or restriction, without using punishment, was provided by Chloe et al. [72] who followed children in a longitudinal study from ages 3.5 to 10 years. The study found that mothers who endorsed use of inductive discipline where they explained reasons for rules when their child was aged 3.5 years reported less use of physical discipline and their children displaying fewer externalizing problems when aged 5.5 years.

In summary, the constructs of intrinsic and extrinsic motivation appear relevant to children who both experience strong emotions and who can resist authority. There is a need for further research about how to integrate constructs about intrinsic motivation into childrearing programs.

3.4.1. Reinforcer Sensitivity Theory

Corr [73,74] proposed that one explanation of why groups of children consistently behave in distinctive ways and display temperamental behaviours across situations and over time. Corr et al. proposed that children and adults vary in how they evaluate environmental events including consequences of their actions, in a theory called reinforcer sensitivity theory (RST). Corr proposed that differences in reinforcer sensitivity have a biological basis. Corr proposed that differences in how children evaluate environmental events may explain the consistent clusters of behaviour that are observed in children's temperaments. Early evidence in support of the RST hypothesis involved reports that introverts and extraverts experience different levels of cortical arousal when they are exposed to high levels of environmental stimulation, with extraverts seeking high levels of environmental stimulation and introverts avoiding high levels of stimulation [75].

Gray [76,77] used a construct of personal sensitivity to both reinforcing and punishing consequences, hypothesising there are individual differences in people's sensitivity to signals of different types of consequence. An updated RST model proposes that individuals have three biologically based systems that are associated with brain structures: a flight-flight-freeze system (FFFS); a behavioural approach system (BAS) associated with impulsiveness; and a behavioural inhibition system (BIS) associated with avoidance and defensiveness. The RST model links strengths of reactivity in each system to personality traits [78]. The reactivity of the BAS and BIS systems are hypothesised to be related to a person's perception of the likelihood and magnitude of consequences

 doi:10.20944/preprints202603.0366.v1

of their actions. Corr and Cooper [79] provided an instrument to assess the sensitivity of individuals to consequences, where a factor analysis of items identified six factors that are: a defensive FFFS factor related to fear, a behavioural inhibition factor related to anxiety, and four behavioural approach factors (reward interest, goal-drive persistence, reward reactivity, and impulsivity).

In summary, as discussed further below, the construct of reinforcer sensitivity appears relevant to understanding the temperaments of children and why children behave differently to similar environmental circumstances. Reinforcer sensitivity is a construct that can be incorporated into childrearing practices by ensuring that caregivers identify activities that are valued by each child, and by allowing children to earn access to activities they value by behaving in prosocial ways. It is important that, while disciplinary practices expose children to safe natural and logical consequences of their actions, authority figures do not use disciplinary practices to arbitrarily deny a child access to legitimate activities the child values.

iv - Attachment bonds

Attachment theory emphasises the importance of bonds that infants and children form with a parent who is their primary caregiver. Mary Ainsworth and colleagues introduced a procedure to assess the quality of an attachment bond formed by infants with their parents, called the Strange Situation Procedure [80]. The Strange Situation procedure was described by Main et al. [81]. The infant is videotaped in a playroom during a series of eight structured 3-minute episodes involving the infant, the mother, and a friendly stranger, giving a total of 24 minutes of observation. The mother twice leaves the room and re-joins the infant, first leaving the infant with a friendly stranger for 3 minutes, then later leaving the infant alone for 3 minutes. An observer records how the infant behaves when the mother leaves and re-enters the room, and the mother's responses. The procedure is designed to be mildly stressful for an infant to activate the infant's attachment behaviours toward the mother.

Ainsworth et al. identified three types / patterns of attachment bond, a secure bond and two types of insecure bond called insecure-avoidant and insecure-ambivalent / resistant. Each pattern is defined by a set of infant's behaviours. Ainsworth et al. proposed that infants with an avoidant bond minimize their attachment behaviours while keeping close to their parent. Children with an ambivalent bond accentuate their attachment behaviours to maintain proximity to their parent. Main et al. added a fourth pattern called a disorganized pattern where an infant alternates between behaviours associated with the avoidant and ambivalent patterns [81].

A review in 2016 into types of attachment bonds by Madigan et al. [82] found that 51.6% of bonds were secure, 14.7% were avoidant, 10.2% were resistant, and 23.5% were disorganised.

Ainsworth et al. hypothesised there are consistent relationships between children's attachment bonds and a parent's sensitivity and responsivity to their child's communication cues. Bosmans et al. [83] noted that use of different terminology between attachment theory and therapists who followed other approaches has led to confusion. They recognised that therapies based on learning theory enhance attachment approaches in therapy by specifying mechanisms through which the child's attachment develops and changes, and by providing new learning experiences for children.

Studies have examined relations between parenting practices and attachment bonds. A meta-analysis by van IJzendoorn and Bakermans-Kranenburg [84] identified the following associations: (a) parenting practices that are sensitive and responsive are associated with a child having a secure attachment; (b) parenting practices that are dismissive / rejecting / preoccupied are associated with avoidant-insecure attachments; (c) parenting practices that are inconsistent are associated with ambivalent/resistant attachments; and (d) parenting practices that are frightening for children are associated with disorganized attachments.

Considerable research has been conducted into hypothesis proposed in attachment theory, leading to several meta-analyses.

 doi:10.20944/preprints202603.0366.v1

3.4.2. Attachment and Parental Sensitivity

van IJzendoorn [85] conducted a meta-analysis that found only 23% of the variation in infant's attachment bonds / strategies was explained by parental sensitivity, indicating that there was a transmission gap and that other mechanisms are also involved in the development of attachment bonds. A meta-analysis of 66 studies of attachment bonds by de Wolff and van IJzendoorn [86] also found only low correlations between measures of maternal sensitivity/responsiveness and types of attachment, with a combined effect size of $r = .24$.

Verhage et al. [87] examined studies into the transmission gap based on 95 studies. They found there were associations between caregiver sensitivity and attachment bonds, with larger effect sizes for secure-autonomous transmissions ($r = .31$) than for unresolved / insecure transmissions ($r = .21$). The authors again concluded that transmission of attachment was explained only partially by caregiver sensitivity.

Other hypotheses have been advanced to explain the transmission gap. Brumariu and Kerns [88] hypothesised that distressed children who don't receive comfort from their mothers suppress their emotions and are likely to develop internalizing disorders. A second hypothesis is that mothers whose children have insecure attachments are reluctant to accept influence from their child, and their child is likely to act out and display externalizing behaviour disorders [89–91]. Observations of parent-child interactions can assess these hypotheses.

A hypothesis that attachment bonds might be associated with children's temperament was assessed by Groh et al. [92]. Groh et al. found an overall association between insecure attachments and temperament of $d = .14$, with an association with resistant attachment being $d = .30$.

Madigan et al. [93] summarised findings from meta-analyses about the association between parental sensitive caregiving and attachment bonds, reporting an overall association between caregiver sensitivity and parent–child attachment of $r = .25$. They found that maternal sensitivity was inversely associated with all three classifications of insecure attachment (avoidant $r = -.24$, resistant $r = -.12$, and disorganized $r = -.19$). They found the level of association varied with the assessment instrument used.

In summary, considerable research has been conducted into associations between parental sensitivity and attachment bonds, with effect sizes found in the range of .14 to .30.

3.4.3. Attachment and Internalizing/Externalizing Behaviours

A number of studies have examined associations between parent-child attachments and children's externalizing and internalizing behaviours, and meta-analyses have been conducted.

Fearon et al. [94] reviewed 69 studies that examined the relationship between types of attachment and children's externalizing behaviours. They found the effect size between externalizing behaviour and disorganized attachment was higher ($d = .34$) than effect sizes found with avoidant attachment ($d = .12$) and ambivalent/resistant attachment ($d = .11$). While low correlations are sufficient to guide therapy, low correlations do not provide adequate evidence that an insecure attachment *per se* is a reliable indicator of externalizing behaviours.

Madigan et al. [95] reviewed 60 studies that examined associations between attachment types and internalizing behaviours. They found that effect sizes were higher between avoidant attachment and internalizing behaviours ($d = .29$) than between disorganized attachment and internalizing disorders ($d = .20$). They found no association between ambivalent attachment and internalizing behaviours. The low correlations between insecure attachments and children's internalizing behaviour are sufficient to guide therapy, but correlations are too low to support a prediction that an individual child with an insecure attachment will develop an internalizing behaviour disorder.

A meta-analysis by Groh et al. [96] found the following associations between avoidant attachment and children's functioning: child's lower social competence ($d = .17$), child's higher level of internalising problems ($d = .17$), and child's higher levels of externalising problems ($d = .12$). The meta-analysis also found associations between resistant attachment and lower social competence ($d = .29$).

 doi:10.20944/preprints202603.0366.v1

Dagan et al. [97] reviewed studies about the joint effects of both a mother's and father's attachment practices on children's internalizing and externalizing behaviour problems. They conducted a meta-analysis of 9 studies involving children with a mean age of 29 months. They found that children who had an insecure attachment with one or both parents had a higher risk of elevated internalizing problems than children who were securely attached to both parents. Children whose attachment bonds with both parents were disorganized displayed more externalizing behaviour problems than children who had a disorganized relationship with only one or neither parent.

In summary, considerable research has been conducted into associations between attachment styles and the constructs of internalizing and externalizing behaviours, with effect sizes found to be in the range .12 to .34.

3.4.4. Stability of Attachment Bonds

Studies have examined the stability of parent-child attachment bonds over time. Van IJzendoorn et al. [98] conducted a meta-analysis of studies of stability of attachment types as children grew older. They dichotomised measures into organised/disorganised and found a moderate effect size of d = .34 in a sample of 840 children. Fraley [99] dichotomised measures of attachment into secure-insecure and also found a moderate effect size of d = .37 in a sample of children aged 12-72 months. The moderate effect sizes indicate that classifications of children's attachment styles change over time.

Opie et al. [100] reported a meta-analysis of 63 studies about the stability of attachment bonds across early childhood, where attachment was assessed twice using the Strange Situation procedure between the ages of 12 and 75 months. The review found that measures of stability of attachment type reached statistical significance for each of the four attachment patterns. The effect size for a child being assessed as maintaining a secure attachment over time was k = .23. The study found that secure attachments were significantly more stable than both disorganized attachments and resistant attachments, with resistant attachments being the most variable. The study found that avoidant attachments and disorganized attachments were least likely to transition to secure attachments without intervention.

In summary, studies find that the effect sizes for stability of attachment bonds are in the range .23 to .37.

3.4.5. Attachment Types and Maltreatment

A number of studies have examined associations between maltreatment of a child and attachment bonds they form. A meta-analysis of 55 studies by Cyr et al. [101] found that children who had been maltreated or who lived in high-risk situations showed more disorganised attachments (d = .77) and fewer secure attachments (d = .67) than children who lived in low-risk families. The analysis also found that children who were exposed to five or more socioeconomic risks were as likely as children who had been maltreated to show disorganized attachments.

Associations between maltreatment as a child and attachment bonds formed with offspring as an adult were studied by Buisman et al. [102–104]. Buisman et al. [102] studied associations between parents' experiences of having been maltreated and their perceptual, behavioural and autonomic responses to hearing their infant cry. The study found associations between a parent's experience of neglect as a child and their increased heart rate on hearing their infant vocalise either by crying or joyfully. The authors interpreted this result as indicating that a history of childhood neglect negatively influences a parent's capacity to regulate their emotions and behaviour when hearing their infant vocalise, and this becomes problematic when the new parent reacts to their child's expressions of emotion.

Buisman et al. [103] examined whether childhood maltreatment experiences were associated with parents' behavioural and autonomic responses while they participated in a videotaped parent–offspring discussion about a conflict when their offspring was an adult with a mean age of 24 years. The study found that experiences of abuse and neglect were associated with behavioural and physiological responses when discussing disputes with their adult offspring.

 doi:10.20944/preprints202603.0366.v1

In summary, research into effect sizes of the association between attachment bonds and maltreatment are in the range of .67 to .77.

3.4.6. Therapy Based on Attachment Theory

Attachment theory has generated therapies. Van IJzendoorn and Bakermans-Kranenburg [105] noted that, while it is accepted that attachment patterns are transmitted across generations within families, the method of transmission had not been firmly established. While the role of sensitive parenting had been established, low effect sizes show there is a large explanatory gap and other mechanisms need to be added to the theory to explain the transmission of parenting practices between generations. Van IJzendoorn et al. [106] reviewed 12 intervention studies in a meta-analysis and found that, while attachment interventions changed parental sensitivity (d = .58), there was less change in infants' attachment insecurity (d = .17). A review of 20 intervention studies that aimed to reduce maltreatment by Euser et al. [107] found a low effect size of d = .13.

A later meta-analysis by van IJzendoorn et al. [460] of interventions based on attachment concepts to prevent or reduce child maltreatment showed an effect size of d = .23.

Velderman et al. [108] observed interactions between mothers and infants aged 7-12 months, and provided two sets of interventions. They found that therapeutic interventions were most effective with infants who were highly emotionally reactive, supporting a hypothesis of differential susceptibility to childrearing influences.

Van IJzendoorn and Bakermans-Kranenburg [105] proposed an intervention model that adds the concept of differential susceptibility, and placed an emphasis on parenting practices of autonomy support, limit-setting, protectiveness, parental warmth, and repair of mismatched interactions.

Obeldobel et al. [109] reviewed studies into the relationship between attachment styles and children's emotion regulation styles of recovery and reactivity. They found that secure attachment was more consistently related to recovery than to reactivity, avoidant attachment was related to low emotion reactivity and recovery, ambivalent attachment was associated with greater emotion reactivity, and disorganized attachment was related to high reactivity and to recovery difficulties.

Van IJzendoorn et al. [110] provided a meta-analysis of 25 intervention studies where mothers observed video recordings of their interactions with their child, with feedback being provided by a therapist. The study found significant effect sizes for parenting behaviours (r =.18), parental attitudes (r =.16), and for child attachment security (r =.23), but not for children's externalizing behaviours (r =.07).

In summary, research into efficacy of therapy interventions based on attachment principles find effect sizes in the range .13 to .58.

3.4.7. How Is Attachment Assessed?

As noted above, Ainsworth recommended that attachment bonds between a child and parent be assessed using a Strange Situation Procedure [81]. A number of alternative assessment procedures have been introduced [111,112].

Lotzin et al. [113] reviewed the psychometric properties of 24 instruments that had been used in publications. They found that, while most instruments demonstrated a valid rating procedure, the instruments lacked factorial analyses, predictive validity, and standardized norms.

Gridley et al. [114] analysed the psychometric properties of 14 observational instruments used to assess parent-child interactions in parenting research. They assessed reliability of measurement in four domains (internal consistency, test-re-test, inter-rater, and intra-rater reliability), and they assessed validity using four domains (content, structural, convergent/divergent, and discriminant). They found that the majority of instruments used to assess parent-child interactions for children aged up to 3 years had established psychometric properties regarding internal consistency, inter-rater reliability, and structural validity, although evidence was often weak. Their findings suggest a need for further validation of instruments to establish acceptability for the whole target age group.

 doi:10.20944/preprints202603.0366.v1

Gridley et al. [115] provided a systematic review of psychometric properties of a wider range of 24 instruments used to assess outcomes sought from parenting programs and found that evidence supporting the psychometric properties of the instruments was weak.

Canas et al. [116] analysed psychometric properties of 9 observational instruments used to assess parent-child interactions in families with children aged 0-12 years who were involved with the child protection system. They identified the Keys to Interactive Parenting Scale for infants aged 2-71 months as obtaining the highest rating.

Stuart et al. [117] reported a study where parents involved with child protection services were asked to engage in a set of structured tasks with their children that was videoed and analysed. The study distinguished two sets of interactions, 25% of parents displayed high quality interactions involving more positive parenting behaviour, and 75% of parents displayed lower quality interactions involving more negative parenting behaviour.

Wittkowski et al. [118] reviewed instruments used to assess self-report parent-infant relationship factors. They found that while most instruments had good clinical utility, the psychometric properties of instruments were largely poor.

Zumbach et al. [119] reviewed observational coding systems of parent–child interactions that are applicable for psychological evaluations of the risk of child maltreatment. The review identified 11 unique observational coding systems. The review found 13 studies that detected behavioural differences between parents who had and had not engaged in child maltreatment. Several studies supported the hypothesis that parents who displayed a significantly low level of parental sensitivity/ responsiveness distinguished parents who had engaged in child maltreatment, as the parents showed lower levels of sensitivity to their child's signals, lower levels of understanding, less empathy, and less comforting when the child displayed emotional distress. Four studies found that maltreating parents engaged in significantly higher levels of "strict/hostile control" or "critical and controlling behaviour" with harsh commands. Three studies found significantly lower levels of supportive and developmentally appropriate behaviour from maltreating parents. Two studies found that maltreating parents engaged in significantly higher levels of emotional control with parental anger and significantly lower levels of positive affect with their child. The authors noted that no instrument had gained widespread acceptance in risk assessment practice, and they did not recommend any instrument for use with families where children are vulnerable to maltreatment. The authors expressed concern that many instruments appear to have high false positive rates.

In summary, a range of instruments have been used by researchers to assess relationships between parents and children, including with families who have bene referred to child protection services. Researchers have not identified any instrument as having high psychometric properties and as warranting widespread support in the assessment of parent-child relationships in the context of child protection.

3.4.8. Court Standards of Evidence

Commentators have noted that instruments designed to assess types of attachment bond that are used by some researchers do not display the levels of reliability required to meet the legal standard of being admissible evidence for use in court [120–124].

Granqvist et al. [124] wrote a paper to inform courts about risks of using concepts from attachment theory to assess individual families where children are vulnerable. The authors note that attachment theory was developed to guide research and clinical interventions, and that assessment instruments were not designed to be used for legal purposes.

In summary, research indicates that assessment instruments designed to study parent-child attachments have been viewed as adequate for research and for some therapeutic purposes, but are not adequate to be used in courts where decisions are made about an individual child's living arrangements.

 doi:10.20944/preprints202603.0366.v1

3.4.9. Summary

Attachment theory has been very influential with researchers who examine the relationship between parents and children. Effect sizes have been reported in the range of d = .12 to .34. However, reviews find that instruments designed to assess parent-child relations do not have high psychometric properties, whether instruments are based on concepts from attachment theory or from other sources.

v – Parenting styles

Diana Baumrind [125–128] introduced the construct of parenting styles to analyse parenting practices. Baumrind identified two parenting dimensions of warmth and directiveness as being most important in parenting. The dimension of warmth assesses the level of affection a parent shows for their child. The dimension of directiveness assesses the level of expectation a parent sets for their child. Baumrind identified four parenting styles by combining high and low scores on the two parenting dimensions. The four parenting styles are called authoritative (high on warmth & directiveness), authoritarian (low on warmth & high on directiveness), permissive (high on warmth & low on directiveness), and disengaged/uninvolved (low on warmth & directiveness).

Baumrind proposed there are systematic links between parenting styles and children's behaviours and mental disorders. Baumrind recommended use of the authoritative parenting style, and discouraged use of the authoritarian style as it is associated with use of harsh parenting practices.

Rajan et al. [129] reviewed 10 instruments used to measure parenting styles, and concluded that most instruments had adequate psychometric properties, but found that samples used in factor analyses have often been too small. Their review identified the Parental Authority Questionnaire (PAQ) and Parent Behavior Importance Questionnaire (PBIQ) as suitable instruments to assess parenting styles.

Bahrami et al. [130] and Sanvictores and Mendez [131] reviewed research about social-emotional functioning of children raised using an authoritarian parenting style. Their reviews concluded that children raised using an authoritarian style displayed lower decision-making skills, lower social skills and academic competence, lower creativity, experienced more depression and behavioural issues involving emotional suppression, had difficulty in handling negative emotions, and showed a fear of failure. A systematic review of literature by Masud et al. [132] found that the authoritarian parenting style was associated with higher levels of aggression by adolescents. A meta-study of 51 studies from eight countries by Sunita and Sihag [133] found that children raised using authoritarian methods were verbally and physically more aggressive than children of parents who used an authoritative style, and they displayed higher levels of anxiety and depression. A systematic review of studies by Ruiz-Hernandez et al. [134] found the parenting style most associated with externalizing problems in adolescents was the authoritarian style.

A literature review by Bahrami et al. [130] found that permissive parenting was associated with children having low self-control and more egocentric behaviour. Miller et al. [135] reported a study involving children aged 11-14 years that examined relations between parenting styles and children's responses, and found that children who experienced a more permissive parenting style expressed more intense negative emotional reactions in situations that can provoke conflict.

Sanvictores and Mendez [131] reported that parents who use a disengaged / uninvolved style grant their children a high degree of freedom. While the parents provide for their child's physical needs, parents who are emotionally detached do not provide high levels of emotional support for their child. Uninvolved parents engage in limited communication with their child, provide minimal nurturing and express few expectations of their child.

Further research into parenting styles has identified a number of dimensions of parenting that are important for children's wellbeing, in addition to the two dimensions identified by Baumrind. An example of a study that examined a parenting dimension that was not included in the Baumrind model was provided by Aunola and Nurmi [136]. Aunola and Nurmi followed up children six times, monitored their problem behaviours, and asked parents annually to complete a questionnaire assessing their use of a parenting style involving psychological control [137]. The study found that a

 doi:10.20944/preprints202603.0366.v1

high level of psychological control exercised by mothers, even when combined with high affection, was associated with increased levels of both internalizing and externalizing behaviours in children.

A study by Gugliandolo et al. [138] examined the perception by adolescents that their parents had used methods of psychological control to raise them. The study found a correlation of r = .45 between maternal and paternal use of psychological control, indicating that often both parents used the approach of psychological control. The correlation between mother's use of psychological control and adolescents' externalizing problems was r = .21 and with internalizing problems was r = .19. The correlation between father's use of psychological control and adolescents' externalizing problems was r = .21 and with internalizing problems was r = .17.

Goagoses et al. [139] conducted a meta-analysis of studies about parenting styles and identified additional parenting dimensions that had not been included in the original Baumrind model of parenting and that have been shown in later research to be associated with children's emotional regulation. Six additional dimensions of parenting identified by Goagoses et al. are: (a) structure and routines; (b) parental protectiveness and over-protection; (c) parental acceptance / rejection of a child [140]; (d) parental use of power-assertion by delivering arbitrary consequences; (e) psychological control using methods of guilt induction and shame; and (f) parental over-involvement.

Goagoses et al. noted that effective parenting practices need to change as children grow older and their skills improve, so parents need to be flexible and to adjust their parenting practices to suit their child's developmental level. For example, while providing high levels of structure is appropriate for young children, as children grow older and seek more autonomy it's important for parents to adjust and to provide less structure while still maintaining supervision. One implication of the analysis by Goagoses et al. is that clinicians and parents might focus on specific parenting practices rather than on broad parenting styles.

Benoit [141] discussed different types of parenting behaviour that are required to raise a child. Benoit distinguished parenting practices that build attachment from other important parenting practices. Benoit distinguished between: (a) attachment building practices that develop an emotional bond between a child and parent that is demonstrated when a child seeks comfort and safety from their parent; (b**)** caregiving when a parent meets a child's physical needs; (c) entertainment when a parent plays with a child; and (d) discipline when a parent sets limits on their child's behaviour.

Further sets of parenting practices have been discussed by researchers. Bendel-Stenzel and Kochanska [142] addressed the issue of power assertion by parents. The construct of parental emotional over-reactiveness was raised by van den Akker et al. [143]. Koerner et al. [144] addressed a topic where parents over-involved their child in adult topics, and reported a study that examined how much separated mothers disclosed their personal concerns to their adolescent daughters following a divorce by talking about adult topics of financial concerns, negative feelings toward their ex-husband, employment tensions, and other personal concerns. The study found that disclosures by mothers were associated with increased distress in their daughters, but not with greater feelings of mother-daughter closeness.

The topics of family cohesion and family enmeshment were discussed by Barber and Buehler [145]. Coe et al. [146] reported a study examining relations between two levels of family closeness (cohesive and enmeshed), maternal relationship instability, and externalizing problems of children aged 4.6 years. Their study found that higher levels of enmeshment were associated with increased children's externalizing problems when mothers were more unstable.

The topic of parental over-involvement was discussed by McCoy et al. [147] who analysed 53 studies of helicopter parenting and found that helicopter parenting was associated with increased internalizing behaviours in offspring (r = .18), together with reduced academic adjustment (r = − .13), lower self-efficacy (r = − .21), and low regulatory skills (r = − .18).

Parent and Forehand [148] provided a Multidimensional Assessment of Parenting Scale (MAPS) that identifies 7 sets of parenting practices that are four positive parenting practices (proactive parenting, positive reinforcement, warmth & supportiveness) and three negative parenting practices (hostility, physical control & lax control). The MAPS instrument addresses a wider range of sets of

 doi:10.20944/preprints202603.0366.v1

parenting practices than the Baumrind model, but does not include all of the sets of parenting practices cited above.

In summary, considerable research has been conducted using the construct of parenting styles, with research providing information that there are links between sets of parenting practices described in parenting styles and children's social-emotional development. Effect sizes between parenting styles and children's adjustment are found to be in the range .13 to .45. Researchers have added a number of parenting dimensions to the two dimensions emphasised by Baumrind, and more types of inadequate parenting practices have been identified. There has been a move away from using the broad constructs of parenting styles towards a greater emphasis on specific sets of parenting practices.

vi – Forms of aggression - physical and relational aggression

The review places an emphasis on cohorts of children who are continuously aggressive. Tremblay [149] reflected on how research had changed perspectives about the development of aggression in children, away from an early view that aggression is primarily instinctual towards recognising that children learn to display anger and aggression from influences they experience in their family. How parents interpret anger influences whether parents view anger as bad and teach their child to inhibit any urge to be angry, or parents teach their child how to express their anger in a socially acceptable way.

Researchers have introduced three models to analyse children's aggression, distinguishing between the form of aggression as being either physical or relational, the function of aggression as being either reactive or proactive, and the age of onset of continuing aggression. Research about these constructs about aggression is summarised.

Distinctions between types of aggression have been based on longitudinal studies that analyse children's aggression over long periods of time and make repeated measures of the same variables in waves of research. Longitudinal research permits more insight into the causal direction when variables are correlated.

Vaillancourt et al. [150] examined types of childhood aggression in three waves with 3,089 children at ages 4-7 years, 6-9 years, and 8-11 years. Their analysis distinguished two types of aggression that were stable across both time and gender, that have been labelled physical aggression and relational aggression (also called social aggression).

Underwood et al. [151] followed a sample of children aged 9-13 years and assessed their developmental trajectories for social and physical aggression. Their analysis identified subgroups of children, with one cohort following a trajectory that combined high social and physical aggression. Membership of the high use trajectory of combined aggression was associated with both maternal authoritarian parenting and maternal permissive parenting. Permissive parenting was also associated with membership in a trajectory where use of aggression increased over time.

Lansford et al. [152] examined relations between relational aggression and physical aggression in nine countries for children aged 7–10 years. They found that physical and relational aggression were significantly correlated in all nine countries (mean r = .49). Boys were reported as being more physically aggressive than girls across all nine countries, but no consistent gender differences were found regarding relational aggression.

Comparisons between aggression by boys and girls were reported by Harachi et al. [153] who observed children from mid-childhood and identified four trajectories of aggression. They identified four predictors of membership of two high aggression trajectories for both boys and girls that were attention problems, family conflict, low school commitment, and attachment difficulties. Members of the high aggression cohort were more likely to engage in violent behaviour, to engage in covert delinquency, and to use substances in ninth grade. Low involvement in their family was a predictor of the high aggression cohort for boys. Depression and having a single parent were predictors of membership of the high aggression cohort for girls.

In summary, researchers who distinguish between relational and physical forms of aggression have found relationships between forms of aggression used by children and parenting used to raise

 doi:10.20944/preprints202603.0366.v1

the children. Research about children's aggression trajectories provides an evidence base to predict likelihood that some children will follow a trajectory involving high use of aggression. Research identifies a need to develop distinct therapy interventions to manage the two forms of aggression.

vii – Functions of aggression, reactive and proactive aggression

A further framework for analysing children's aggression focuses on the functions of aggression, as outlined by Dodge and colleagues [154–160]. Dodge and Coie [161] distinguished two functions of aggressive behaviour by children they called reactive aggression and proactive aggression. They proposed that the motivation driving the two subtypes of aggression differ, and the functions served require different intervention strategies. This distinction generated considerable research and meta-analyses.

Dodge and Coie hypothesised that children who engage in reactive aggression are triggered by antecedents that produce strong feelings, resulting in perceptions they are being rejected and provoked, leading to misperceptions of their perceived opponent's intentions and to the child forming hostile attributions about the intentions of their opponent in situations they find challenging. Crick and Dodge [162] hypothesised that children who engage in reactive aggression have limited skills both in managing their own strong emotions, and in processing social information about the intentions of other people. Dodge et al. [155] provided evidence in support of a hypothesis that children who have been maltreated are more likely to express reactive aggression rather than proactive aggression, and that children with the two subtypes of aggression require different therapy approaches.

Crick and Dodge [162] hypothesised that children who engage in proactive aggression are motivated by the outcomes / consequences they anticipate from their aggressive actions, indicating that consequence-oriented interventions are more appropriate to manage the aggression of children who engage in proactive aggression.

Fite et al. [164] assessed the psychometric properties of an instrument developed by Dodge and Coie to assess the two subtypes of aggression. They identified two-factors and found that reactive aggression was more strongly associated with effortful control and symptoms of depression than proactive aggression.

Vitaro et al. [165] conducted a longitudinal study where they assessed a community sample of children annually for three years from age 10 years, and measured several dimensions of children's personal functioning. They found that children who engaged in reactive and proactive aggression had distinct profiles on their personal functioning, but also overlaps occurred between the subtypes so the subtypes could not be clearly differentiated in terms of the children's personal functioning.

Little et al. [166] conducted a study involving 2723 aggressive youth to assess whether subtypes of aggression could be identified based on self-reports by children about why they behaved aggressively. The study identified five subtypes of aggression: (a) an 'instrumental' group comprising 21.3% of the sample who scored highly on only instrumental reasons for aggression; (b) a 'reactive' group comprising 21.3% who scored highly on reactive reasons only; (c) a 'both' group comprising 12.6% who scored highly on both instrumental and reactive reasons for aggression; (d) a 'typical' group comprising 32.0% whose scores on both dimensions were moderate; and (e) a 'neither' group comprising 12.7% who scored lowly on both dimensions. The 'reactive' and 'both' groups showed consistent maladaptive patterns across measures of adjustment. The 'instrumental' and 'typical' groups showed generally adaptive and well-adjusted patterns. Little et al. concluded that the typological approach that identified functions of aggression was promising for assessment and intervention purposes.

Arsenio et al. [167] assessed associations between adolescents' reactive and proactive aggressive tendencies and their social information processing skills, moral reasoning and emotion attributions. They found that reactive aggression was uniquely related to lower verbal abilities and to a hostile attributional bias, and these associations were mediated by adolescents' attention problems. In contrast, proactive aggression was uniquely associated with adolescents' higher verbal abilities and expectations of more positive emotional and material outcomes resulting from their aggression.

 doi:10.20944/preprints202603.0366.v1

Babcock et al. [168] reviewed research and found there was more correspondence between reactive and impulsive aggression than between proactive and premeditated aggression.

Several meta-analyses of research about subtypes of children's aggression have addressed hypotheses proposed by Dodge and colleagues.

de Castro et al. [169] reported a meta-analysis of 41 studies examining the relationship between children's hostile attributions and their aggressive behaviour in children aged 8-12 years. Most studies presented hypothetical stories to children and assessed their responses. The meta-analysis found the hostile attribution bias was linked to aggression across different ages, and found a positive association between hostile attribution bias and aggression with an overall weighted mean effect size of d = .33. However, effect sizes relating hostile attributions to sub-types of aggression varied widely between studies, and were found to depend on the level of children's emotional engagement. Different assessment instruments influenced effect sizes.

de Castro et al. [170] conducted a meta-analysis of 41 studies about relations between children's aggressive behaviour and their forming hostile attributions about the intentions of peers. They found positive effect sizes for both community children and very aggressive children, with larger effects associated with more severely aggressive behaviour, rejection by peers, and the age of 8-12 years.

de Castro et al. [171] reported that the aim of children who display reactive aggression appeared to be to vent their anger and spite. They asked both highly aggressive boys and community boys to explain their responses to hypothetical provocations by peers. They found that both groups of boys primarily explained their aggressive responses to provocative situations by a feeling of being impelled to act by their strong emotions, without reference to outcome goals. Reactive aggression was specifically related with emotional explanations for aggression. As well, highly aggressive boys more frequently advocated aggression by referring both to their emotions and to a perceived moral rule that taking revenge is imperative, regardless of its consequences.

Card and Little [172] reported a meta-analysis of studies into whether the two functional subtypes of aggression could be distinguished. They found that the two subtypes of aggression were highly correlated on six measures of psychosocial adjustment that were: internalizing problems, emotional dysregulation, delinquent behaviours, low prosocial behaviour, sociometric status, and peer victimization. They found a small tendency for reactive aggression to be more strongly related to most indices of poor adjustment than proactive aggression.

Polman et al. [173] conducted a meta-analysis of 51 studies about the relation between reactive and proactive aggression in children and adolescents. They found that studies found an overall significant correlation between reactive and proactive aggression when assessed using both behavioural observations and questionnaires, with the strength of association between subtypes of aggression varying between studies from −.10 to .89. They concluded that the subtypes of aggression are best measured by behavioural observations and by questionnaires that provide information about both the forms and functions of aggression.

Fontaine [174] provided a review of social processing cognitions used by children who participate in instrument/proactive aggression. Fontaine et al. [175] proposed that the key elements in decision making by children who engage in aggressive behaviours involve their evaluations of behavioural alternatives and their decisions about how to select a response to manage a challenging social situation. One study found that children developed a consistent decision-making style by the age of about 8 years, when the decision-making styles of aggressive and nonaggressive could be distinguished. A second study found that once a child has developed a decision style, their style tended to persevere until about 16 years of age.

Hubbard et al. [176] provided a review of research about the steps used by children who act aggressively when they process social information. They found strong evidence that reactive aggression, but not proactive aggression, is associated with children using a hostile attribution bias where the child views an opponent's intent as being provocative and antagonistic in situations that are ambiguous. Research showed that children who had been subjected to maltreatment were more likely to engage in use of a hostile attribution bias. Hubbard et al. concluded that children who engage

 doi:10.20944/preprints202603.0366.v1

in reactive aggression recalled fewer details during interactions, and they could be inattentive to benign social cues. Children who engaged in reactive aggression responded quickly and did not take the time to consider alternative explanations of events that occurred.

Hubbard et al. reported that children who used proactive aggression followed distinctive patterns. When these children were more confident about their ability to act aggressively, they were more likely to become aggressive to achieve a goal. Several studies have found that children who use proactively aggression expect to achieve positive outcomes from their aggression, including to receive respect from their peers. Hubbard et al. concluded there is sufficient evidence to distinguish between the two subtypes of children's aggression in terms of different family precursors, children's differing processing of social information, different motivations of children, association with different emotions, and different outcomes. Hubbard et al. drew attention to alternative instruments to assess subtypes of children's aggression including by making observations in structured situations.

Fite et al. [177] studied associations between negative life events and peer relationships in children aged 8 years who were assessed as displaying either proactive or reactive aggression. They found that some negative life events were uniquely associated with reactive aggression, whereas having a best friend who was delinquent was uniquely associated with proactive aggression. The authors concluded that the subtypes of childhood aggression can be distinguished in terms of associated social circumstances.

A hypothesis that children aged 9-12 years who display reactive aggression are sensitive to rejection was tested by Jacobs and Harper [178]. They found that sensitivity to rejection was associated more with reactive aggression than with proactive aggression.

Paciello et al. [179] reported a longitudinal study of aggression in youth aged 14-20 years. They found that adolescents who maintain higher levels of moral disengagement were more likely to show frequent aggressive and violent acts in late adolescence. A longitudinal study by Cen et al. [180] found that both emotional self-control and engagement with moral principles were associated with lower reactive aggression over time.

McClain et al. [181] examined associations between proactive and reactive aggression and peer likability in elementary school children. The study found that a negative relation between reactive aggression and reciprocated liking. The authors noted that a child's desire to be liked by peers can be used to motivate them to avoid reactive aggression.

Martinelli et al. [182] reviewed 27 studies about the relation between hostile attribution bias and aggression in children. They found that hostile attribution biases were more consistently related to reactive aggression than to proactive aggression, there is evidence for separate pathways of development between relational and physical aggression and their respective attribution biases, and hostile attributions are associated with aggression in both genders.

Verhoeff et al. [183] conducted a meta-analysis on 111 studies into the relation between children's hostile intent attribution and their aggressive behaviour. The review found a positive association between hostile attributions and aggression, but effect sizes varied widely between studies. They proposed a dual model of social-information-processing that distinguishes between an automatic and a reflective processing mode. They hypothesised that whether a child uses the automatic or reflective mode depends on factors including their level of emotional arousal, temperament, and sensitivity to rewards and punishment. Research shows that children who display high (hyper) emotional reactivity and children who display low (hypo) emotional reactivity are prone to aggressive behaviour [184–187].

Evans et al. [188] examined 1420 children aged 5-12 years annually to assess trajectories of proactive and reactive aggression in middle childhood and their outcomes in early adolescence. Their study identified four trajectories: low aggression comprising 76.7% of the sample; predominantly reactive aggression comprising 13.7%; declining aggression comprising 4.9%; and co-occurring high proactive and reactive aggression comprising 4.7% of the sample. Children in all elevated-aggression clusters had higher levels of peer problems, depressive symptoms, were subject to more disciplinary action, and obtained lower grades at the end of 5th grade. The reactive cohort had the most

 doi:10.20944/preprints202603.0366.v1

consistently unfavourable pattern of outcomes. The authors recommended that clinicians adopt an individualised person-centred approach when designing interventions for aggressive children, rather than using a universal approach.

Van Dijk et al. [189] conducted a study including a community sample of 228 children aged 10-13 years who displayed some aggression, and a sample of 238 children aged 8-13 years with more aggressive behaviours. They confirmed that two subgroups of children who display reactive and proactive aggression could be distinguished in both samples. Across samples, 55-62% of children were classified as displaying reactive aggression, 10-24% were classified as displaying proactive aggression, and 18-33% were classified as displaying both types of aggression. The authors noted there were overlaps between the subtypes in terms of their social-emotional characteristics.

Vaughan et al. [190] studied a sample of 1211 justice-involved males aged 15-22 years and found that reactive aggression was associated with impulsivity and this continued over time. The authors concluded that proactive and reactive aggression are unique constructs with separate developmental trajectories and distinct covariates.

McRae et al. [191] described a pathway from child maltreatment to reactive and proactive aggression after a child developed post-traumatic stress symptoms (PTSS). The study involved children who were enrolled in a residential treatment program due to being maltreated, and followed children between the ages of 6 to 14 years. The children completed self-report instruments. The study found significant effects of PTSS symptoms in the cohort who displayed reactive aggression.

Romero-Martinez et al. [192] conducted a systematic review of 157 studies that assessed underlying biological markers of reactive and proactive aggression. The reviewers concluded that heritability accounted for approximately 45% of the explained variance in both subtypes of aggression, with 60% of variance shared by both subtypes, and with 10% of variance being specific to each subtype of children's aggression. Brain analyses revealed an overlap between the two subtypes of aggression. High activation of the medial prefrontal cortex facilitated proneness to both types of aggression equally. Psychophysiological correlates did not clearly differentiate between the two subtypes of aggression. The review supported a model that recognises co-occurrence of both reactive and proactive subtypes of aggression rather than a dichotomous model that does not recognise any overlap between the subtypes of aggression.

Luijkx et al. [193] examined the influence of Adverse Childhood Events (ACEs) on both reactive and proactive aggression, and the possible moderating role of mentalization (operationalized as reflective functioning) in 65 adult inpatients. The study found a positive relationship between the total number of ACEs experienced (including childhood maltreatment and current adverse household factors), and both reactive and proactive aggression.

Perry and Ostrov [194] analysed relationships between internalizing and externalizing behaviours in community children with a mean age of 47 months, and the two types of aggression. They hypothesised that a child who displays reactive aggression responds to a strong emotion that is triggered by an antecedent, whereas a child who displays proactive aggression uses aggression that is planned to achieve certain outcomes as a consequence of their aggression. They also distinguished between the two forms of aggression (physical aggression & relational aggression). They factor analysed items in an assessment instrument and identified four clusters that combine the forms and functions of aggression: (a) reactive relational aggression; (b) reactive physical aggression; (c) proactive relational aggression; and (d) proactive physical aggression. The authors reported that their results support a two-factor model of externalizing aggression as both reactive and proactive relational aggression and deception load on one externalizing factor, while reactive and proactive physical aggression and hyperactivity load on a second externalizing factor**.** The authors noted that different interventions are required to manage the differing profiles, and that interventions need to be planned by a skilled clinician.

Verhoef et al. [195] expanded on the dual model of processing social information. They hypothesised that children use their attention skills to alternate between the two modes, and that children with limited attention skill struggle on the task of switching their attention between modes

 doi:10.20944/preprints202603.0366.v1

of processing. They hypothesised that children initially use the automatic mode, as the reflective mode requires cognitive resources. When a child is stressed and is struggling to manage their own body arousal, they find it difficult to use the reflective mode to analyse social information, so they continue to use the automatic mode. The implication for therapists and parents is that it is wise to conduct a debrief following a stressful incident when a child acted aggressively to encourage reflective processing when the child is calm. Giving a child practice at improving their attention skills can assist, including: (a) practice switching attention between tasks when they are calm; (b) attending to informative cues including other's body language; and (c) practice noticing own body cues of stress. In a debrief, a child can be encouraged to reflect on alternative response strategies to manage a challenging situation including self-protection, reconciliation, and retaliation. Verhoef et al. also recommended helping children to classify challenging social situations into categories to help a child to identify situations they find more difficult, proposing categories of being threatened, provoked, disadvantaged, coping with competition, and dealing with an authority figure. Specific skills can be taught to manage each challenging situation as required.

Obradović [196] highlighted advances in ability to measure physiological responsivity (that can be measured readily) and executive functioning (that is difficult for clinicians to measure), and recommended greater use of coordinated measures in understanding individual differences in how children cope with stressful circumstances.

In summary, researchers have shown that the two functions of children's aggression (reactive and proactive) can be distinguished. A complication for therapists and parents is that the two types of aggression can overlap as some children simultaneously display both subtypes of aggression. Co-occurring reactive and proactive aggression complicates parenting and complicates the task of designing an intervention plan. The age when this issue can be targeted is around 6-8 years.

Research shows that reactive aggression occurs more commonly in children who have been abused and in children who have been exposed to a high number of adverse childhood events. Both sub-types of aggression are associated with negative reactions from peers and with social disadvantage. Interventions based on a model of social information processing are emerging. It is timely to introduce targeted interventions for children who display co-occurring reactive and proactive aggression, and to assess the efficacy of these interventions.

viii – Early-onset and late-onset aggression

Researchers who use longitudinal studies identify the age of onset of a child's continuing aggression as important. Longitudinal research focuses on patterns of children's use of aggression over time as they grow older. Loeber and Hay [197] reviewed research about trajectories of aggression from childhood to adulthood. They used a concept of 'onset of aggression' to examine differing patterns of children's aggression over time. They identified patterns that are linked to a child's stage of development, giving time-based patterns of aggression. In one pattern, the onset of aggression commenced in the preschool period and was ongoing, and this was called early-onset aggression. In a second pattern, the onset of aggression occurred in mid-childhood or adolescence and was more related to conflict with authority figures.

Early onset aggression. The pattern of early-onset aggression has been associated with the co-occurring externalizing and internalizing behavioural problems where children experience a strong stress reaction and express their frustrations by acting out [198]. In this interpretation, early-onset aggression that continues is viewed as reflecting on a temperament of a child who has been described by Chess and Thomas [199] as being a 'difficult temperament.'

Shaw and Gross [200] commented on the two trajectories of early-onset aggression and late-onset aggression. They reported that a high proportion of boys who showed aggression at school age had been showing a broad range of externalizing behaviours including aggression since the age of 2 years. They noted that parents appeared more willing to adjust their parenting practices to manage their child's externalizing behaviours during the child's early years compared to in later childhood, and they recommended that targeted parent-education programs be made available during early childhood from about 3 years of age to prevent continuation of childhood aggression.

 doi:10.20944/preprints202603.0366.v1

Shaw and Gross identified a number of modifiable risk factors that were associated with an elevated likelihood that early onset aggression could become ongoing, including: (a) prenatal heavy alcohol use by the mother; (b) prenatal cigarette smoking; (c) continuous children's disruptive behaviours involving impulsivity and low inhibition and under-controlled behaviours; (d) a child's fearlessness; (e) insecure attachments by children; (f) a child's limited language skills; (g) parental mental health issues of depression and antisocial behaviour; (h) parental substance misuse; and (i) severe marital conflict. These modifiable risk factors can be used to formulate a screening instrument of indicators to assess likelihood that a child's early aggression will be ongoing.

Brennan and Shaw [201] reviewed studies about whether girls follow similar trajectories as boys regarding conduct problems. Their findings indicate that one subgroup of females exhibited an early-starting and an ongoing persistent of conduct problems, while a second subgroup of females demonstrated an onset of conduct problems in adolescence.

Parenting interventions have been found to be effective in reducing child conduct problems. Shellaby and Shaw [202] conducted a review to assess for differential effectiveness according to severity of initial problems, and conclude that greater initial problematic child behaviour may be associated with greater benefit from parenting interventions.

A meta-analysis of efficacy of 13 trials involving parenting intervention for early-onset aggression in children aged 3-12 years was provided by Furlong et al. [203]. The analysis found that parent training produced significant reductions in child conduct problems (d = -.53), improvements in parental mental health (d = -.36), more positive parenting skills (d = .53), and reduction in negative or harsh parenting practices (d = -.77). Further, the review found evidence of cost-efficacy as the cost of delivering interventions was approximately $2500 (GBP 1712; EUR 2217) per family to bring the average child with clinical levels of conduct problems into the non-clinical range.

Armstrong-Carter et al. [204] noted that additional factors arise if a child has been raised by parents who are abusive as these children often display heightened physiological reactivity to acute stressors, indicating that their early experiences of fear might sensitize the child's nervous system to react more to future threatening situations by heightening their stress response. Researchers have developed a cumulative index of allostatic load which is a way of measuring multiple types of heightened physiological stress response and inflammation including heart rate, blood pressure, cortisol levels and immune and metabolic markers that are linked to poor health outcomes in adulthood. Children who experience more adversity in their early life consistently show greater allostatic load which is linked to a broad range of negative outcomes later in life. These physiological markers can be used by clinicians both to indicate need for treatment and as a measure of treatment effectiveness. The physiological markers can also be used to identify children who have a sensitive temperament that leaves a child prone to physiological over-reactivity, where over-reactivity is not adaptive if a child lives in an environment with high adversity.

The concept of age of onset of aggression is important as it implies there is a need for early intervention programs that manage children's aggression to be adjusted according to a child's stage of development.

Onset in mid-childhood. Girard et al. [206] examined whether clusters of children can be identified who have distinct profiles in the development of forms and functions of their aggression, and whether risk factors can be identified that are associated with children in clusters. They examined 787 children from birth to adolescence and assessed subtypes of aggression between the ages of 6-13 years. They identified five trajectory clusters: non-aggressors / low-stable / moderate-engagers / high-desisting / and high-chronic aggressors. They found that coercive parenting increased risk of membership in the moderate-engagers and high-chronic clusters. Maternal depression increased risk for only the high-desisting cluster. Lower maternal IQ increased risk for both high-desisting and high-chronic clusters. Never being breastfed increased risk for the moderate-engagers cluster. Boys were at greater risk for belonging to clusters displaying elevated aggression. Individuals with chronic aggression used differing forms of aggression.

 doi:10.20944/preprints202603.0366.v1

Girard et al. concluded there is a need for strategies to deal with maternal depression to replace coercive parenting practices with positive parenting practices. The authors recommend that prevention programs for risk factors should start early in life and should target mothers with depression and with lower IQ.

In summary, research has distinguished two trajectories where onset of children's aggression occurs either very early on and continues, or commences in the mid-childhood years. While the distinction between early-onset and late-onset aggression has been established, therapy interventions for the two trajectories of aggression have not yet been well developed and publicised.

ix - Children's emotions

Bowlby [207] noted that when children are separated from their parent, they are likely to experience a complex set of emotions including fear, apprehension, anger, despair, grief, and guilt (p 145). Young children are unsure how to show their feelings, and they might either try to hide their feelings, or display their emotions strongly. Bowlby emphasised that children who are removed from parental care are likely to experience strong emotions of hostility, grief, and to regress into babylike behaviour (Bowlby, p 170). Many children who have been removed from parental care test their new carer by misbehaving, by showing distrust in the new carer, and by rejecting their new carer. This is challenging for a new carer who is trying to win over a child by showing unconditional love and affection, as the carer doesn't receive the appreciation from the child they seek and deserve.

Robertson and Robertson [208] observed young children who were separated from their attachment figure for a prolonged period while either a parent or child was in hospital. They described children's displays of their emotions during separation. Robertson and Robertson reported that young children who experience prolonged separations from their attachment figure commonly expressed their emotions in three phases that were: (a) *protest* at separation; (b) then *despair* at missing their parent, marked by weaker crying and rejecting overtures by nurses, with signs of anger and ambivalence; (c) followed by *detachment* where a child appears blank and unresponsive to their original attachment figure, while the child might comply with requests from their new carer. A child in the detached phase has given up all hope of reunification and regaining their previous attachment. On reunion, the child might avoid the parent they previously favored, and the child might readily greet other people and ignore their previously favored parent, showing indiscriminate attachment behaviours.

Bowlby [207] proposed that it is essential for a child's mental health that they experience a warm, intimate and continuous relationship with their mother or a permanent mother-substitute. A child who does not experience this relationship is described as experiencing maternal deprivation. A child experiences maternal deprivation if they are removed from their mother's care for a prolonged period for any reason. The deprivation is mild if a child is cared for by someone they know and trust, producing partial deprivation; but maternal deprivation is considerable if a child is cared for by a stranger, producing complete deprivation (Bowlby, p 14). Partial deprivation was hypothesised to produce anxiety, powerful feelings of revenge, guilt and depression. Complete deprivation might cripple a child's capacity to form relationships with other people, producing an emotionless character.

Bowlby noted that children who are emotionally disturbed often test carers to see if carers are trustworthy, and these children are slow to award their trust. Bowlby recommended that all disturbed children receive therapy to help the child to address issues including to identify and express their feelings, and to recognise that they deserve affection. Bowlby recommended that it is important for a therapist to steer older children away from engaging in emotional thinking, where they associate a favoured parent with all of their positive emotions, and they associate another person with all of their negative emotions. Children tend to want to see their parents in a positive light and to be loyal to their parent, so they defend their favoured parent against criticisms, and they make excuses for any inadequate parenting they receive from their favoured parent. Children might idealise one parent and not acknowledge any shortcomings in that parent. Idealisation is more likely to occur if a child doesn't spend time with their parent, as the child cannot perform a reality check. A

 doi:10.20944/preprints202603.0366.v1

child who spends time with two parent-figures can discuss in therapy whether each parent-figure is the ideal parent they would like to have, and to discuss experiences they have with each parent figure.

A child who spends time with two parent figures and is exposed to differing parenting styles is in a position to discuss parenting standards that are important to them and meet their needs.

Bowlby discouraged a strategy of trying to over-protect a child from experiencing any negative emotions by ensuring the child does not encounter any adverse experiences, as a child who is over-protected learns to suppress their feelings about events that actually happened, rather than to process their feelings. Bowlby emphasised the need for therapists of children who spend time in two households to understand the dynamics that occur in separated families (p 184).

Cooke et al. [209] provided a meta-analysis of 72 studies of associations between parent-child attachment styles and children's experience and regulation of emotions. They found associations with each attachment style as follows. More securely attached children experienced more global positive affect and less global negative affect, expressed less elicited negative affect, were better able to regulate their emotions, and made more use of cognitive and social support coping strategies. Avoidantly attached children experienced less global positive affect, were less able to regulate emotions, and were less likely to use cognitive or social support coping strategies. Ambivalently attached children experienced more global and more elicited negative affect, and were less able to regulate emotions. Disorganized children experienced less global positive affect and more global negative affect.

Researchers who examine emotions conclude that emotions are complex rather than simple. Ben-Ze'ev [210] recommended that researchers view emotions as having four components involving internal body sensations, an evaluation of sensations as either positive or negative, a cognitive component, and a motivational component with an action tendency.

Ellsworth and Scherer [211] proposed that the way a person cognitively appraises a situation influences the emotion the person experiences in the situation. Ellsworth and Scherer proposed that people intuitively appraise situations, and the intuitive appraisal produces an immediate emotional response. People can learn to reflect on their immediate appraisal, and their reflection might result in a person re-interpreting a situation and producing a change in the emotion they experience. A therapeutic intervention that encourages a person to reflect on a situation is described as reframing or cognitive reappraisal if a reflection results in a reconceptualization of an issue by viewing it from a different perspective.

Parents and therapists usually focus on teaching their child to regulate how they express their emotions. Lin [212] reviewed 49 studies that found that family factors impact on a child's ability to regulate their emotions, and that a child having a limited ability to regulate their emotions increases risk the child will develop an internalizing disorder. Morris et al. [213] proposed that parents influence their child's ability to regulate emotions through four mechanisms: as a role model as children observe how their parent regulates their own emotions; by helping their child to name and differentiate their emotions; by parenting practices that encourage a child to express emotions in ways that are acceptable in the family; and from the overall emotional climate in a family.

A range of approaches have emerged to help children to manage their emotions, based on differing principles. Theories that link expression of emotions to physiological arousal emphasise the importance of teaching children to relax their body.

Schweizer et al. [214] proposed using a cognitive model to help all children and adolescents to regulate their emotions from an early age, and hypothesised that children with both internalizing and externalizing disorders do not adequately use their cognitive skills to control and express their emotions. The emotion regulation skills proposed by Schweizer and colleagues involve identification of specific emotions, use attentional skills to inhibit some emotions, and shift one's attention to adjust to changing environmental demands. Core emotion management skills are hypothesised to be relevant to a range of children's mental disorders including anxiety, depression and conduct disorder, so the model proposes that cognitive skills for managing emotions is linked to several disorders and therapists need to use a transdiagnostic approach in therapy.

 doi:10.20944/preprints202603.0366.v1

3.4.10. Categorising Emotions

One approach to analysing the development of children's emotions is based on a categorisation of emotions that children experience as they grow older. Riddell et al. [215] conducted a meta-analysis of 129 studies on how well children recognised various emotions between the ages of 2 and 12 years, with a focus on primary emotions. They found that children begin to distinguish negative emotions at about age 2 years, and they begin to use words to describe negative emotions. They found that happiness was the most easily recognized emotion category, followed by anger, surprise, sadness, disgust, and fear.

The current review distinguishes four categories of emotions that are relevant in family life: primary emotions, social emotions, self-evaluative emotions, and social evaluative emotions. Specific emotions are included in each category are follows: Primary emotions include happiness, sadness, fear, surprise and anger; Social emotions include empathy and compassion; Self-evaluative emotions include pride, confusion, helplessness, loneliness, envy, jealousy, regret, remorse, and resentment; and Social evaluative emotions include embarrassment, disappointing others, guilt, and shame. While research is limited, it is proposed that each category of emotions develops during the following ages. Primary emotions are present soon after birth. Social emotions develop from the age of 3-7 years when children recognise that the emotions experienced by other people can differ from their own emotions. Self-evaluative emotions develop from the age of about 5 years when children recognise their actions impact on other people. Social evaluative emotions develop from the age of about 6 years. The mid-childhood years see development of three categories of emotions.

A framework of categorising a child's emerging emotions allows a parent to adjust how they help a child to regulate their emotions as the child grows older and has new experiences. Managing primary emotions is important during the toddler years. Managing the other three categories of emotions is important during the mid-childhood years when children meet more peers, are exposed to more authority figures, and their cognitive skills improve.

Infants use emotions to communicate their needs. Theorists propose that if a child doesn't learn to express and process their primary emotions and instead suppresses their emotion, then a child will feel misunderstood and their strong emotions are likely to be displaced and to emerge as another feeling or to linger as a residual emotion of resentment [216–218]. For example, a feeling of sadness might be converted into a feeling of anger, or an emotion might turn into a psychosomatic symptom.

Research shows that children who have difficulty in regulating how to express their emotions are more likely to develop behavioural disorders. Lin et al. [219] conducted a meta-analysis of 49 studies into factors that influence the ability of children to regulate their emotions. Their analysis identified eight family factors associated with children's having more difficulty in regulating their internalizing symptoms that are: unsupportive socialization by parents, use of psychological control, insecure attachments, parental use of harsh discipline, exposure to high family conflict, poor parental emotion regulation, and parental psychopathology.

3.4.11. Processing Emotions

It is common for theorists to promote the concept of helping children to process their emotions. However, research about efficacy of interventions to help children to process and regulate their emotions is limited [220–222].

Some researchers have associated children's difficulties in processing emotions with certain temperaments, including shyness [223].

Caiozzo et al. [224] identified parental behaviours that promote a child's processing of emotions as sensitivity to children's emotions during play, listening effectively to children's expression of sadness, and their own capacity for emotion regulation. Cicchetti [225] reported that parents who maltreat their child often fail to provide many of the experiences that are required for normal emotional development. One implication for therapists is they need to be able to pass on a high level of skills in helping parents to encourage appropriate expression of emotions in themselves and their children.

 doi:10.20944/preprints202603.0366.v1

Chernovsky and Hunt [226] discussed dilemmas over balancing the expression and suppression of emotions by adults in a meta-analysis of 43 research papers. They found that high levels of suppression of emotion were significantly associated with poorer social wellbeing, including more negative first impressions by other people, lower social support, lower social satisfaction and quality, and poorer romantic relationship quality. Inappropriate expression of anger was associated with poorer social wellbeing. Expression of positive and general/nonspecific emotion was related to better social outcomes.

Weir [227] reported that a child's ability to regulate their emotions is influenced by both their temperament and by the parenting they receive. Parenting practices that were encouraged are: begin to name emotions from toddler age; emphasise naming emotions for children who are hard to sooth; describe feelings experienced by characters in stories; be a good model of expressing emotions; for parents to remain calm when teaching their child about emotions; role play and practice acceptable expression of each emotion; talk about different ways to manage a tricky situation when the child is calm; identify ways for expressing each emotion that are accepted in the household; praise more and punish less; seek consistency between parents; and not set perfectionistic expectations for children, but arrange repairs after things go wrong.

One approach used by clinicians to help parents to teach their child to regulate emotions is called sequential thinking. A parent who encourages their child to think sequentially about emotional situations asks their child to describe an emotional situation using seven steps / components that are: a trigger, a thought, a feeling, a goal, an action, consequences of action, and evaluations of consequences. Young children and impulsive children often refer to three components of a trigger, their feeling and their action, implying they have little control over their actions as their actions are controlled by an external trigger. Impulsive children emphasise their feelings over their thoughts. A child demonstrates more control over their emotion if their description of an emotional situation includes reference to inner processes the child can control (thoughts, action and goals). Most children experience difficulty identifying a goal for an emotional situation before the age of 7 years.

A second model to help children to process their feelings involves integrating their thoughts, feelings, and actions to reduce cognitive dissonance [228,229]. Cognitive consistency therapy helps a child to anticipate likely consequences of their actions and to select actions that are more likely to produce outcomes desired by the child when they make a choice between alternative actions.

Schafer et al. [230] distinguished between constructive and maladaptive emotion regulation strategies. Constructive strategies for youth were identified as cognitive reappraisal, problem solving and acceptance. Maladaptive emotion regulation strategies were identified as avoidance, suppression and rumination. They conducted a meta-analysis of 35 studies of coping strategies used by youth with depressive and anxiety symptoms. The study found that youth who habitually used constructive emotion regulation strategies had significantly fewer symptoms of depression and anxiety, whereas youth who habitually used maladaptive emotion regulation strategies experienced more symptoms of anxiety and depression.

Foroughe et al. [231] reported use of a brief Emotional Focused Family Therapy (EFTT) intervention for new parents with an aim of preparing the parents to take a primary role in their child's recovery from an adverse experiences. They found the EFTT intervention significantly reduced parents' reluctance to intervene, improved parental self-efficacy regarding their child's recovery, and produced significant improvement in children's symptoms.

3.4.12. Maltreatment and Emotions

Buisman et al. [232] examined a hypothesis that a child being maltreated can result in the child having difficulty recognising even basic emotions, and misinterpreting emotions. They asked parents in three-generation families to compete emotion recognition tasks. They found that parents with a history of being abused as a child needed a shorter reaction time to identify fear and anger. Parents who showed higher levels of neglectful behaviour made more errors in identifying fear, whereas parents who showed higher levels of abusive behaviour made more errors in identifying anger. The

 doi:10.20944/preprints202603.0366.v1

authors interpreted the results as indicating that a parent's own childhood history can influence how they perceive emotions in other people. The authors recommended that interventions be developed to break the intergenerational transmission of abuse and neglect by helping parents to address specific issues associated with processing of emotions by parents who are abusive or neglectful.

3.4.13. Efficacy of Emotion-Oriented Therapies

Jugovac et al. [233] reviewed 43 studies that used attachment- and emotion-focused parenting interventions to help parents to understand and respond to their child's underlying attachment and emotional needs. They found that emotion-oriented interventions were superior to waitlist controls for internalizing (d = -.34) and externalizing behaviours (d = −.17), and effects were sustained at follow-up periods of 6 months and longer.

Zahl-Olsen et al. [234] reported a meta-analysis of 33 studies of emotionally oriented parenting interventions with community parents. They found small to medium effect sizes for parental use of emotionally oriented parenting, with benefits for parenting behaviour both at a post-test (d = .44) and a follow-up (d = .36), for children's internalizing behaviour (d = .25) and externalizing behaviours (d = .31), and for parental mental health (d = .18).

England-Mason et al. [235] reviewed 26 studies about emotion socialization parenting interventions during children's first six years of life. Parents who follow an emotion coaching approach attend to their own and their children's emotions, and view their children's emotions as a time for connection and teaching rather than discipline. They found that interventions had a positive effect on positive and negative emotion socialization parenting practices (g = .50) and on child emotional competence (g = .44). Interventions had a positive effect on both positive (g = .74) and negative parenting behaviours (g = .25), on parent psychological well-being (g = .28), and on child behavioural adjustment (g = .34).

In summary, research into efficacy of interventions to help children to regulate their emotions finds effect sizes ranging from .17 to .74.

3.5. Personal Evaluative Emotions

Children evaluate their own activities, and they experience personal evaluative emotions [236,237]. Researchers have identified ten personal evaluative emotions that are commonly experienced by children during the mid-childhood years involving pride, hubris, empathy, helplessness, confusion, loneliness, envy, jealousy, trust, forgiveness, regret, remorse, and resentment. Parents can be asked to help a child during the mid-childhood years to manage each of the emotions above. Due to space limitations, the review covers only empathy, conscientiousness, trust and forgiveness.

3.5.1. Empathy

Davidov et al. [238] reviewed the last 25 years of research into the development of empathy in children aged up to 3 years, with findings cited below. Research has identified an emotional contagion effect where infants automatically match their facial expression to another person's expression and share the other's emotional state for both positive and negative emotions, leading to an other-oriented empathic response. Researchers have also identified reactions that are self-oriented rather than other-oriented and that are associate with less empathy. Researchers distinguish three components of empathy: cognitive empathy where another's feelings are identified accurately as reflected in perspective taking; distinguishing own emotions from the emotions of others; and an ability to regulate own emotional arousal. A child's reflective ability develops during the second and third years of life. Children aged 18-25 months can show concern for a person who has been harmed, even if the person is not displaying distress. Children's spontaneous helping and comforting behaviours increase markedly during the second year of life.

 doi:10.20944/preprints202603.0366.v1

Moderately consistent differences between children in their empathic behaviours are evident from age 14 months. One longitudinal study observed infants from 3 to 36 months and found that 46% of infants increased in their empathic behaviours over time, while 37% of children consistently showed low empathy over time.

Studies find a temperamental influence, where infants who experience strong negative emotions show less empathy. Further, maternal reactions to an infant's distress influences empathy as a mother's sensitive responsiveness to cues of distress from their child is associated with the child's observed concern for distress in others.

Frick and Kemp [239] reviewed research about older children who engage in externalizing behaviours and concluded that sub-types of externalizing behaviours can be distinguished based on children's empathy, and that sub-types of externalizing behaviours require different therapy interventions. One sub-type of externalizing behaviours involves children who experience difficulty in processing the emotion of fear. A meta-analysis of 20 studies by Marsh and Blair [240] about children who displayed externalizing behaviours found the children had impairments in processing fear. The study found the children were able to distinguish and to process anger and happiness shown in photos of faces, but they were impaired in their ability to distinguish facial signals in other people of fear, sadness and surprise. These children had limited ability to recognise some emotions in other people, and limited ability to understand the perspectives of other people. These children might display blunted emotions themselves and be emotionally unresponsive to other people. Children in this sub-type showed less physiological reactivity to signs of fear in others and they scored lower on measures of affective empathy. The children have been described as being insensitive and unfeeling.

Two sub-types of children with externalizing behaviours were differentiated according to whether they scored highly or lowly on anxiety. A meta-analysis of 59 studies by Waller et al. [241] found correlations between externalizing behaviours and guilt of r = -.40, and between externalizing behaviour and prosocial behaviour of r = -.66. One group of children who scored highly on anxiety had a history of higher exposure to trauma, had a bias to perceive highly emotional situations as posing a threat to themselves, and over-interpreted strong emotions in others as being a threat [242]. When tested, these children avoided paying attention to visual cues that reflect pain and fear in other people, perhaps to avoid being influenced by emotional contagion involving negative emotions.

A second group of children who displayed externalizing behaviours scored lowly on measures of anxiety and they appeared to be fearless from a young age. They did not display distress on seeing the negative impacts of their behaviour on others, and they appeared indifferent and insensitive to negative emotions displayed by others. These children did not display empathy or remorse or guilt, and they displayed limited prosocial emotions. The children justified their own actions that produced negative consequences for others. If these children were punished for their actions, they tended to view the punishment as reflecting hostility towards them. These children were slow to internalise social standards of conduct. They displayed limited ability to understand the perspectives of other people, and this was attributed to the children not experiencing the same level of emotional arousal as their affected peers. The low level of empathy in these children was viewed as reflecting an inherited influence.

Frick and colleagues [243–247] describe some children who display proactive aggression as having callous-unemotional traits as the children lack empathy for peers they victimise. Frick and Kemp reported that the early onset trajectory for these children involves children showing disturbed behaviour from an early stage and where their disruptive behaviour continues to be problematic over several developmental stages. Children in the childhood-onset trajectory begin by showing mild conduct problems such as oppositional behaviour and prolonged temper tantrums early in childhood, and their behavioural problems increase in rate and severity throughout childhood and into adolescence. One group in the early onset cluster shows high levels of emotional reactivity, poor impulse control, lower verbal intelligence, a hostile attribution bias, and high levels of impulsive

 doi:10.20944/preprints202603.0366.v1

anger and aggression in response to perceived provocations from others. These children are dysregulated and often show high distress about the impacts of their own behaviour on other people.

A second group of early onset children identified by Frick and Kemp were children who displayed conduct problems and who lacked empathy and didn't show concern for other people. Indicators of the second group include a lack of guilt, absence of effort to do well on important activities, and constricted or superficial displays of emotion. Frick and Kemp proposed that children in the second group benefit from a focus on developing their emotional expressions in socially acceptable ways, and promotion of the cognitive components of conscience where a child engages in cooperation and rule-compatible conduct.

Frick and Kemp reviewed literature about efficacy of therapies for the subtypes of externalizing behaviours. A meta-analysis of therapies by Piquero et al. [248] found that while Behavioural Parenting Therapies (BPT) had an overall efficacy of d = .37 in reducing behaviour problems, these therapies were less effective with children who were emotionally insensitive and who displayed low empathy.

Frick and Kemp recommended adding components to parenting training programs for children who show low empathy. They recommended both a Tuning in to Kids intervention by Havighurst et al. [249] that is delivered in 6 sessions for parents of children aged 4-5 years, and an intervention by Kimonis et al. [250] that emphasises coaching on parental warmth and emotional responsiveness, use of correction and reinforcement, building empathy, teaching children to attend to details of facial expressions of emotions, identifying triggers for distress, role plays, and story-telling.

Perlstein et al. [251] conducted a meta-analysis of 60 studies of children with subtypes of externalizing behaviours where the mean age of children was 10 years. They compared outcomes of programs when children had only disruptive behaviours (DB) and when children had both disruptive behaviours and unemotional traits (DB+ET). The reviewers drew two main conclusions. First, treatment was associated with similar reductions in disruptive symptoms in both DB and DB+ET groups. However, the DB+ET group started and ended treatment with more DB symptoms. Second, although there was no overall direct effect of treatment on unemotional traits, there were moderating factors as treatment-related reductions in unemotional traits were found when studies included a parenting-focused component and used parent-reported measures.

In summary, research has made progress in identifying the development of empathy, and in identifying children who follow trajectories involving low empathy. While therapy programs have been identified that appear promising, there is little research about whether these programs are widely disseminated.

3.5.2. Conscientiousness

There has been debate about how conscientiousness develops, and whether learning is involved.

Kochanska et al. [252] found that some children aged 26–41 months exhibited evidence of a conscience as they were reported by their mothers to feel affective discomfort over people's transgressions and to display evidence of spontaneous reparation, confession, attempts to regulate their own behaviour, and concern over others' wrongdoing. Individual differences between children were found.

Eisenberg et al. [253,254] used the construct of effortful control to describe the ability of children to self-regulate their actions. Eisenberg et al. reviewed developmental and personality research and concluded that a temperament trait of conscientiousness could be identified in children and adolescents, and that the development of this trait was related to a child's level of effortful control and self-regulation, with environmental factors contributing to the development of conscientiousness. Research about the development of effortful control was also summarised by Rothbart and Rueda [255].

Kim and Kochanska [256] examined a hypothesis that a developmental interplay occurs between a children's temperament trait of early effortful control and their internalized or committed compliance between the ages of 4.5 to 6.5 years, and this is associated with the development of

 doi:10.20944/preprints202603.0366.v1

conscientiousness. An examination of trajectories in the development of children's consciousness between the ages of 10 and 16 years was provided by Tackman [257].

Turner and Hodis [258] noted a paucity of intervention studies about how to improve children's conscientiousness.

3.5.3. Trust in Others

Rotenberg et al. [259] examined relations between trust beliefs of children aged 8-11 years and their interactions with peers. The study found that, compared to children who received middling scores on trust beliefs, children who scored both highly and lowly on trust beliefs: (a) were less accepted and more rejected by their peer group in group interactions; (b) were alone more and showed more non-engagement with peers; (c) showed more indirect aggression; and (d) showed greater distress. The findings support the hypothesis that children who are gullible and trust peers too much, and children who are unduly suspicious and trust people too little, are both at risk of psychosocial maladjustment.

Rotenberg [260] proposed a model of trust with three bases of trustworthy behaviour: (a) a person is reliable in fulfilling their promise; (b) a person shows emotional trustworthiness by refraining from causing emotional harm and maintains confidentiality; (c) a person is honest by telling the truth as opposed to lying and engaging in deceitful behaviour and is guided by benign rather than by malevolent intentions. Rotenberg summarised research on the relationship between trust beliefs and psychosocial adjustment, and concluded that the relationship is curvilinear as both high and low trust beliefs are associated with maladjustment. The curvilinear relationship is relevant to a concern that children can be too trusting and so are vulnerable to maltreatment by bullies and by some adults. The curvilinear relationship indicates that children who are very trusting and children who are very distrusting are both subject of peer maltreatment including aggression and rejection. One implication of the findings is that it is important for parents to teach children how to assess the trustworthiness of other people.

Malti et al. [261,262] examined the role of children's beliefs about trust and associations with childhood aggression in a longitudinal study involving 1028 children aged 8-11 years. The study found that the developmental course of aggression during middle childhood was semi-predictable from children's own trustingness and trustworthiness. A growth curve analysis revealed one trajectory of a developmental course of aggression during middle childhood using measures of children's trustworthiness and trustfulness, as children who were rated by peers as being low in trustworthiness were more likely to exhibit aggression that was stable over time, indicating that perceived trustworthiness is an important variable in the development of friendships. Children who were consistently aggressive also showed lower levels of trust in other people, and this was interpreted by the authors as suggesting that many aggressive children didn't appreciate the impact of their own aggression on other people, or appreciate that children reciprocate by showing distrust in people who distrust them.

Malti and Krettenauer [263] conducted a meta-analysis of 42 studies of relations between attributions of moral emotions and prosocial and antisocial behaviour, and found a significant association between the variables (d = .26). A further meta-analysis by Lefebvre and Krettenauer [264] involving 57 studies found that larger effect sizes occurred with the positive emotions of sympathy, empathy and compassion (r = .41), and smaller effect sizes were associated with the negative emotions of moral anger, contempt, and disgust (r = .16).

In the meta-analysis by Malti and Krettenauer prosocial behaviour was defined as actions that benefit others, while antisocial behaviour was defined as actions that harm or distress others. The review noted that many very young children spontaneously engage in prosocial other-oriented behaviours of sharing, helping and consoling others. On the other hand, some young children are self-centred, and they focus on benefits of actions to themselves without considering impacts on other people, as many children lack the cognitive skills to develop a sense of perspective-taking and to recognise the perspectives of other people before the age of about 7 years. The authors proposed that

 doi:10.20944/preprints202603.0366.v1

children who are able to recognise the perspectives of other people are better able to coordinate their emotional responses to the emotional responses of other people, and this helps children to develop a sense of fairness and to care for others.

Malti and Krettenauer used the construct of children's 'emotion attribution' to explain the development of children's moral judgments and behaviour, where emotion attribution refers to the way children explain their emotions and behaviour. Emotion attribution is presumed to be based on emotional reactions experienced by a child during their upbringing, leading to their expecting certain emotional reactions to follow their own actions. The meta-analysis found relations between emotion attributions and both prosocial and antisocial behaviours. Associations were stronger between children's emotion self-attributions for aggressive behaviour (d = .39) that for prosocial behaviour (d = .26). The review found that associations between children's emotion attributions were higher when a child explained their own antisocial behaviour (d = .47) than when they explained another child's antisocial behaviour (d = .26), indicating that children referred to their own emotions when they explained their own antisocial behaviour, but they explained the antisocial behaviour of other children in terms of other factors. One implication for therapists is that it is good practice to help a child to discuss and reflect on their own prosocial and unsociable actions and emotions to accurate promote attributions of emotions, and to promote the idea that other children are similar to themselves.

Krettenauer et al. [265] proposed that encouraging children to make moral judgments and moral emotion attributions is a critical element in helping a child to develop a conscience, and they indicate this can commence from the age of 6 years.

Smetana and Ball [266,267] studied how children aged 4-9 years judge and attribute emotions in tasks where intentions were rated for three types of hypothetical harm (physical harm, psychological harm, & uneven distribution of resources) that involved four groups of peers (close friends, acquaintances, disliked peers, & bullies). The study found that children aged 4 years judged some actions as wrong based on presumed intentions of the violator because the violator harmed others or was unfair, independently of whether actions were prohibited by authorities, indicating that children made their own innate moral judgments, and this occurred increasingly with children's age. Young children made attributions about peers who displayed helpful and harmful intentions, and they avoided helping peers who might harm them. When children viewed moral transgressions as wrong independently of rules and sanctions by authorities, they justified their views by referring to negative consequences for the welfare of others and to principles of fairness using moral criteria. As children grew older, they increasingly recognised psychological harm resulting from the actions of other people. Older children agreed with a principle that allocation of resources is fair if resources are allocated according to each child's effort, need and merit.

The Malti and Krettenauer analysis found that when parents used three categories to help children describe the intensity of their feelings, the effect size of emotion attribution was higher (d = .50) than when parents used only two categories to describe intensity of their child's emotions (d = .24), indicating that children learn to reflect on their own emotions more carefully when their parents describe their child's emotions using three levels of intensity of emotion.

Malti and Krettenauer found that children under the age of 7–8 years commonly did not experience negative self-evaluative emotions such as remorse when they acted in ways that broke a moral principle, and they did not expect other children to experience negative emotions as a consequence of their moral transgressions. The authors noted this phenomenon is not consistent with writings that presume development of self-evaluation emotions of guilt and shame are important indicators of a child's readiness to comply with social rules and standards.

Overall, Malti and Krettenauer concluded that some children have a temperament where they experience moral motivation from a young age, and this temperament might be indicated by the traits of high agreeableness and conscientiousness that are associated with empathy that becomes associated with an internalized sense of responsibility for feelings generated in other people.

 doi:10.20944/preprints202603.0366.v1

Malti and Krettenauer noted that their meta-analysis focused on studies that examined negative emotions of guilt and shame rather than on positive emotions such as pride in one's own achievements. They hypothesised that a child's prosocial behaviour can be built by encouraging self-pride in prosocial actions.

In a subsequent study, Malti et al. [268] examined the relative effects of sympathy, guilt and moral reasoning in promoting cooperation, helping and sharing in children aged from 6 years to 12 years. One finding was that sympathy is an important antecedent of all three prosocial behaviours from early childhood to early adolescence, confirming longitudinal research that shows the central role of sympathy in the development of prosocial behaviour.

Malti et al. [269] examined the development of respect in samples of children between the ages of 5 and 15 years. The reported three main results. First, across age, children considered prosocial behaviour to be the most important component of respect. Second, they found that age-related increases in children's beliefs about fairness were a core component of respect, and older children reported feeling higher levels of respect for people who engaged in ethical behaviours such as sharing and inclusion, rather than for personal achievements.

Ma et al. [270] reported that children who received an apology following a transgression against them were significantly more likely to demonstrate trusting behaviours and positive emotions towards the transgressor compared to children who received no apology, and that an apology improved the emotional state of children who had been a subject of a transgression.

A study by Tang et al. [271] found that children aged 4-5 years displayed more trust in adults who express more positive emotions towards the child.

Markson and You [272] reviewed studies indicating that young children trust people who they consider to be well-meaning and who keep their promises.

A longitudinal study of 7-13-year-olds by Li et al. [273] involved three waves over a period of 2-years found that how children evaluate interpersonal trust has a significant influence on the formation of their friendships, especially for girls. The study found that children first learn to trust based on the extent to which their potential friends are considered to be generally trustworthy, then individuals spend more time together, and their experience of trustworthiness influences the ongoing nature of their relationship.

A study by Petrocchi et al. [274] found that both very high and very low trust beliefs were associated with higher pessimism than intermediate trust levels in young adults.

In summary, there is a considerable body of research about the development of trust in children that can be referred to by clinicians who follow an evidence-informed approach. Effect sizes are reported in the range .16 to .50.

3.5.4. Forgiveness

Oostenbroek and Vaish [275] reported studies where a transgression occurred between two children, a transgressor showed remorse, and questions of forgiveness arose. The study found that some young children show remorse and attempt to repair harm they have caused. The study examined whether victims were willing to forgive, and found that 4-year-olds were willing to forgive a transgressor who apologized, while 5-year-olds might forgive a transgressor who showed remorse without an explicit apology.

A study by McElroy et al. [276] found that the forgiveness of children aged 6 years who were a bystander takes account both a transgressor's intentions and their display of remorse.

Cheng et al. [277] found that children aged 4-6 years were more likely to forgive transgressions that were viewed as unintentional, and transgressions made by people who held an authoritative position.

McLaughlin et al. [278] found that interventions by third parties such as a parent or teacher influenced forgiveness by children aged 5-9 years, when intervention involved compensation, punishment, pardoning, or doing nothing. The study found that children considered both who is intervening and how the intervener engaged in justice-oriented interventions when deciding about

 doi:10.20944/preprints202603.0366.v1

forgiving a transgressor. The study found that forgiveness by victims was more likely if an intervening third party compensated, or punished, or forgave, compared to if a third party did nothing.

Enright and Fitzgibbons [279] report that researchers generally do not equate forgiveness with reconciling or restoring a damaged relationship because forgiveness is not contingent on a continued relationship with a person who has behaved offensively. Rather, forgiveness is associated with the offended person not having to carry a burden of remaining angry at their offender and experiencing ruminations.

A REACH model of forgiveness by Worthington [280] defines forgiveness as having two components; decisional forgiveness which is a decision to not seek revenge, and emotional forgiveness where an injured party replaces negative emotions of resentment, bitterness, hate, hostility, anger and fear with positive emotions such as understanding and compassion. Therapists who use the REACH model engage their client in five steps of: (a) Recall the hurt; (b) Empathize with the offender; (c) Altruistic giving a gift of forgiveness; (d) Commit to forgive; and (e) Hold onto the forgiveness.

A meta-analysis of 20 studies of children with a mean age of 11 years by Rapp et al. [281] found that interventions that encouraged forgiveness were positively associated with forgiveness (g = .54) and with less anger (g = .29).

In summary, there is a body of research about forgiveness that can be used by clinicians who follow an evidence-informed approach.

3.6. Social Evaluative/Moral Emotions

Haidt [282] distinguished between primary emotions that are triggered by external events, and self-conscious emotions that originate from self-evaluative processes that occur when a person realizes they are being evaluated and judged by other people [283–286]. Social evaluative emotions include embarrassment, guilt and shame.

3.6.1. Embarrassment, Guilt and Shame

Eisenberg [286] and Kochanska et al. [287] drew attention to an association between the social evaluative emotions of embarrassment, shame and guilt, and children's traits of effortful control and conscientiousness. Both guilt and shame occur when a child experiences a feeling that a social standard has been violated and they are perceived as having some responsibility for the violation. Kochanska et al. [288–290] reported that indicators of shame and guilt appear by the age of about 3 years, with evidence that some young children distinguish between shame and guilt. Research indicates that between the ages of 21–46 months, children show remorse for their own actions by indicating discomfort about their wrongdoing, by apologizing, by complying with standards of conduct, and by expressing concern when others engage in wrongdoing.

Eisenberg et al. [291] distinguished between effortful self-control and compliance. They reported that toddlers aged 2-3 years are capable of complying with parental demands on topics such as to stop playing and to tidy up toys, with toddlers usually complying with instructions from the age of 12–18 months. The ages of 2-4 years were identified as the developmental period when compliance skills usually develop, with most children being able to manage their attention and to inhibit behaviours by the age of 5 years.

Eisenberg et al. [292] proposed that children move from complying with externally imposed controls to internalizing rules they follow, and that children who internalize rules gradually become more self-regulated and follow rules even when they are not being monitored by a parent. Eisenberg et al. distinguished between 'committed compliance' that reflects an internalization of a standard and value, and 'situational/externally-motivated compliance.' A child exhibits situational compliance when they lack interest in a task, and they need frequent prompting to comply.

Eisenberg et al. pointed out that one method used by well-regulated children to exercise restraint over their actions is to think about likely consequences of their actions that will impact on themselves

 doi:10.20944/preprints202603.0366.v1

and on other people. Committed compliance is identified when a child is asked to refrain from touching an attractive object and is given a reason to refrain, and refrains. Committed compliance is observed in preschool children.

Eisenberg et al. considered research about a child's perseverance where a child's persists on tasks despite distractions and where a child continues to work on a task until the task is completed, and links between persistence and the development of effortful self-control. Leonard et al. [293] found that parents who took over when their child performed a challenging task rated their child as showing less perseverance. Taylor et al. [294] found that children of parents who used intrusive parenting practices when their child was aged 18-30 months scored lower on effortful control at 42 months, indicating that parenting practices that are intrusive and over-helping reduce children's abilities to persist and to regulate their own attention and behaviour.

Eisenberg et al. distinguished between guilt and shame by proposed that guilt refers to regret about a single action a person has performed that breaches a moral standard the person accepts. A person who experiences guilt is primarily concerned about one action they can remedy, rather than with their overall sense of self. Guilt is viewed as being situational, rather than as reflecting on the self. A person experiences shame when they breach a social convention that is important to a group, and they then become concerned about their whole self, rather than only about one action. A person who feels shame fears they will be evaluated negatively by other people, and they are likely to be rejected by a group. A person feels shame when their wrongdoing is disclosed, while a person can experience guilt although their wrongdoing has not been disclosed.

Singh and Bhushan [295] reviewed studies and distinguished the negatively valued socially evaluated (moral) emotions of embarrassment, guilt and shame and drew the following conclusions. Embarrassment occurs when a person is observed to breach a social convention of a group. People who have increased social sensitivity report higher levels of embarrassment. Guilt is associated with a specific action of breaching an ethical or moral standard, and might evoke repentance and reparation. Shame is defined as a self-conscious feeling that is closely related to both an internal negative self-judgment and social evaluation, and is associated with a desire to hide or withdraw. Pride is a positively valued emotion that is associated with one's achievements and prosocial behaviour, whereas hubris is associated with arrogance. Singh and Bhushan note that the moral emotions are often studied by focusing on non-verbal cues of the emotions.

Dos Santos et al. [296] examined the roles of parenting and child temperament when children aged 8–10 years explain guilt and shame. They found that children whose parents used inductive discipline practices that were victim-oriented were more prone to feel constructive guilt meaning they were more prone to offer reparation in sociomoral situations. In contrast, children whose parents used love withdrawal techniques were more likely to display a negative form of guilt-proneness where they did not offer reparation. The study found that a child scoring highly on effortful control was associated with constructive guilt-proneness.

Van Eickels et al. [297] reported meta-analyses of 65 studies involving parent-child relationship and child shame, adaptive guilt, and maladaptive guilt. They found small correlations between the variables ranging from r = .14 to .17.

Other social evaluative emotions that are relevant for children are disappointing other people and experiencing insult. These social evaluative emotions appear to have been less studied. The lack of study of the emotion of disappointing another person is of concern to clinicians, as many people confuse the emotion of disappointing others with induced guilt.

Yeo and Ong [298] reviewed cognitive appraisal therapies of emotion that are based on a premise that emotions are produced from a person's interpretation / appraisals of events they experience. Yeo and Ong conducted a meta-analysis of 309 studies of relationships between appraisals and emotions experienced, and found an effect size of r = .33.

In summary, research has been conducted on social evaluative emotions that are experienced by children when they realize they are being evaluated and judged by other people. The therapy that is nominated to help children to manage social evaluative emotions is cognitive reappraisal therapy.

 doi:10.20944/preprints202603.0366.v1

3.6.2. Cognitive Reappraisal Therapy

Researchers have examined efficacy of therapies that are designed to help people to manage social evaluative emotions.

Eadeh et al. [299] conducted a meta-analysis of 41 studies of efficacy of therapy interventions to improve emotion regulation skills of adolescents. They found a pre/post effect size of g = .29, with community samples showing significantly lower effect sizes than clinical samples.

Helland et al. [300] analysed practice elements in 30 studies of mental health interventions that measured emotion regulation in adolescents aged 13-17 years. They found that psychoeducation about acceptance (d = .50) and setting goals for treatment (d = .40) were components of effective interventions.

Espenes et al. [301] conducted a meta-analysis on studies of efficacy of psychosocial interventions on emotion regulation outcomes in children and youth aged up to 23 years. They found an overall effect size of d = .37 with more effective interventions being ACT, DBT, CBT and behavioural parent education interventions. The analysis also found that improving a young person's ability to recognise emotions was associated with improved mental health with an effect size of d = .39.

Meyers et al. [302] found that cognitive reappraisal therapy is an effective intervention for changing emotions, rather than for changing moods. However, Shu et al. [303] reported that cognitive reappraisal was less effective with individual who have a trait involving intolerance of uncertainty. Sahib et al. [304] provided a meta-analysis of 91 studies into relations between intolerance of uncertainty and emotional regulation, and found a moderate relationship.

In summary, research into the efficacy of cognitive reappraisal therapy reports effect sizes that range from .29 to .50.

x –Children's temperaments

Researchers have examined relations between children's temperamental traits and their disturbed behaviours. Research has been conducted in the context of models, so we commence by reviewing models of temperament used by researchers.

3.7. Models of Temperament

Sanson et al. [305] identified three models used by researchers to examine children's temperaments. One model emphasises a biological role in determining children's behaviour, and might imply that it is difficult to change temperament related behaviour. A second model indicates that a child's temperament is influenced primarily by parenting a child receives, implying that a child is a passive recipient of the parenting they receive, leading to a unidirectional model that appears to underlie some universal parenting programs. A third model proposes that influences are bi-directional as a parent's actions influence their child's behaviour, and the child's actions also influence the parenting practices used to raise them. The third model indicates that therapists need to pay attention to interactions that occur between a parent and child. Sanson et al. described an approach that groups children according to their temperament as being a person-oriented approach.

The construct of temperament guiding Sanson's review that temperament is a relatively stable, biologically based, intrinsic characteristic, which is nevertheless modifiable through environmental influences and learning is similar to the definition of temperament proposed by Zentner and Shiner [306].

A fourth model of temperament was described by Widiger and colleagues [307,308] who hypothesised that some of children's misbehaviours represent maladaptive versions of standard temperament traits. This interpretation is important as it means that a therapist who follows a trait approach is not attempting to change a child's temperament, but rather aims to help a child to express their temperamental needs in prosocial ways.

A fifth model of temperament described by Zuckerman is called a stress-diathesis model [309]. A stress-diathesis model indicates that a child will develop a mental disorder if they both have an underlying vulnerability or diathesis (that might be associated with a temperamental predisposition),

 doi:10.20944/preprints202603.0366.v1

and they also experience a specific environmental stressor that triggers the predisposition. The hypothesis indicates that a person who encounters a negative event will experience harm only if the person has a predisposition that renders them vulnerable to the stressor. According to the stress-diathesis model, a child's temperament might render them vulnerable to certain types of negative life event.

A sixth model of temperament was proposed by Rothbart [310] who provided evidence that children are not simply passive recipients of their parent's attachment related behaviours, but that children participate actively in the attachment process and their responses are influenced by their temperament.

A seventh model of temperament was proposed by Belsky and colleagues who advanced a differential susceptibility model [311–315]. The differential susceptibility model proposes that children with different temperaments are differentially sensitive to environmental events, and that some children are both more susceptible to negative influences and also are more positively responsive to supportive environments and benefit more from supportive intervention programs.

One version of the differential susceptibility model of temperament allows that while all children have the same basic needs, the rank order of importance of needs might vary between children who have differing temperaments, and the rank order of importance of a child's needs might be reflected in a child's trait profile.

As discussed above, Corr proposed a reinforcer sensitivity hypothesis [317–319] proposing that individuals vary in their sensitivity and responsiveness to consequences. Tustin developed the reinforcer sensitivity construct by hypothesising that one reason each trait dimension is associated with specific behaviours is that children prefer the natural outcomes of these behaviours, and that children with differing traits allocate more responding to actions that deliver their preferred reinforcer [320]. This interpretation of behavioural consistency indicates that one way to examine choices made by children is to examine their preferences for alternative types of reinforcer, an interpretation that leads to the introduction of concepts used in behavioural economics [321–323]. It is presumed that children reveal their preferences for reinforcers both by their allocation of responses between alternatives, and by constraints they object to. Morgan and Tustin [324] used a behavioural economic model of work-rate that distinguishes two aspects of performance (total work rate measured on an expansion path, and efficiency of allocating responses assessed by movement off an efficient expansion path). Morgan and Tustin analysed data from an experiment with animal subjects to test hypotheses about the sensitivity of animals' allocation of responses when schedule arrangements varied, and found individual differences in both allocation of total work rate and efficiency in allocating responses. Another re-analysis of data used the behavioural economic model to distinguish effects of drugs in energising behaviour and allocating responses efficiently [325]. Three single case studies were reported where adults with an intellectual disability worked for different reinforcers when the price of reinforcers was increased, showing different patterns of allocating responses when analysed using the work-rate model [326].

The behavioural economic model used experimental procedures to assess sensitivity to reinforcers. There is a need to find simpler procedures to obtain objective assessments of how children reveal their preferences for different reinforcers and constraints. If the hypothesis linking reinforcer sensitivity to children's temperaments is substantiated, then it is wise to help parents to identify rewards that are valued by their children, to allow children to earn legitimate rewards that are more important to them, and not to arbitrarily withhold legitimate rewards that are important to children as a form of discipline.

The following hypotheses about relations between temperament traits and outcomes are offered. The trait of extraversion involves sensitivity to environmental stimulation, and extraverts prefer strong stimulation while introverts prefer low stimulation. The trait of agreeableness / collaboration is about sensitivity to social feedback from other people, and other-centred children prefer praise and acceptance while individualistic children prefer to follow their own preferences. The trait of emotionality is about expression of emotions, and expressive children prefer to express their feelings

 doi:10.20944/preprints202603.0366.v1

freely while calm children prefer low expression of negative emotions. The trait of self-management is about orderliness, and orderly children prefer to follow rules and routines while spontaneous children prefer to be free of constraints. The trait of open mindedness is about receiving new information, and open-minded children are curious while practical children are content to operate using the information they already have.

Clarifying whether children's temperaments are related to their evaluations of environmental events will facilitate a long-standing aspiration to provide parenting that matches a child's needs as reflected in their temperament, and providing a good fit between a child's needs and the parenting the child receives. Researchers hypothesise that behavioural problems are more likely to occur when there is a poor match between a child's temperament and the parenting a child receives [327–331].

In summary, a range of models have been used to analyse children's temperamental traits. Research that evaluates the alternative models of temperament is limited.

3.7.1. Stability of Temperament Traits

A review of literature about children's temperaments by Perez-Edgar et al. [332] countered a popular assumption that children's temperamental traits are rigid, static and determine the child's development, as the reviewers found that research has established that temperaments are dynamic, sensitive to environmental input, and have a probabilistic influence on children's behaviour rather than a deterministic influence. In other words, parents can teach children to behave in ways that vary from their child's natural temperamental inclinations.

A meta-analysis of 152 studies of the consistency of traits obtained in longitudinal studies was provided by Roberts and DelVecchio [333]. Their analysis found that correlations measuring the consistency of traits increased from .31 in childhood to .54 during the college years, to .64 at age 30, and then reached a plateau around .74 between ages 50 and 70 years. These figures demonstrate both that there is consistency in traits over long periods of time, as well as change as consistency measures were lower than 1.0.

In summary, analyses of the consistency of traits finds that traits are moderately consistent in children, and become more consistent as people grow older.

3.7.2. How Is Temperament Assessed?

Goldsmith and Gagne [334] reviewed approaches used by researchers and clinicians to assess children's temperaments and identified six approaches in use: (a) parent report using a structured questionnaire; (b) a report by a third-party such as a teacher; (c) observations of a child's behaviour in a natural environment; (d) observations of a child performing structured challenging tasks; (e) self-reports by older children; and (f) measures of physiological reactivity. The reviewers favoured use of multiple methods to gather information when assessing temperaments, especially when a family is court-involved.

3.7.3. Questionnaire Measures of Temperament

The development of questionnaires to assess children's temperament has gone through three phases. Chess and Thomas [179] proposed that temperaments of infants be assessed using 9 dimensions that are activity level, regularity, approach – withdrawal, adaptability, responsiveness threshold, intensity of reaction, quality of mood, distractibility, and attention span / persistence. However, a review by Saudino [335] found that no consensus had emerged between researchers about instruments to measure these variables in infants and very young children.

Mary Rothbart and colleagues assessed temperaments of community children aged 3-8 years using a 195-item instrument called Children's Behavior Questionnaire (CBQ) [336–338]. Factor analyses of CBQ items identified three factors, leading to temperament traits being described on dimensions called surgency / positive emotions, negative emotionality, and effortful control / conscientiousness.

 doi:10.20944/preprints202603.0366.v1

Kotelnikova et al. [339] conducted separate factor analyses of CBQ items for children aged 3 years and 5-6 years. Their analyses found that only 88 of the 195 CBQ items loaded on factors. They identified five higher order traits in children aged 3 years that were called: (a) sensation seeking; (b) effortful control / inhibition; (c) negative emotionality involving anger-sadness and impulsivity; (d) soothability and emotion regulation; and (e) smiling / positive anticipation. Their analysis identified four higher order traits in children aged 5-6 years that were called: (a) disinhibition/anger with low effortful control, anger-frustration and activity level; (b) sensation seeking with adventurous play – quiet play; (c) smiling and approach/ positive anticipation; and (d) soothability.

Subsequent researchers have favoured use of a five-factor model to assess children's temperaments, drawing attention to research showing that childhood temperamental traits are similar to adult personality traits [340–344].

A review of research about the five-factor model of children's temperaments by Chernyshenko et al. [345] on behalf of OECD identified two instruments to assess traits in children's temperaments, a Hierarchical Personality Inventory for Children (HiPIC, Mervielde & de Fruyt) [346], and an Inventory for Child Individual Differences (ICID, Halverson et at.} [347].

HiPIC uses 144 items to assess temperaments in children aged 6-12 years. A factor analysis by Mervielde and de Fruyt identified five higher order traits and 18 lower order traits. Vollrath et al. [348] reported a need for a short form of HiPIC for clinical use, so they developed a 30-item HiPIC form to replace the long form. ICID uses 141 items to assess temperaments of children aged 3-12 years. A factor analysis of ICID items by Halverson et al. identified five higher order traits and 15 lower order traits. Halverson et al. reported correlations between the five higher order children's traits assessed by ICID and measures of children's problems behaviours using the Revised Behavior Problem Checklist [349].

Tackett et al. [350] analysed relationships between the HiPIC and ICID instruments and found strong convergence in higher-order traits measured by the two instruments. Tackett et al. analysed associations between HiPIC/ICID traits and children's internalizing and externalizing problems and found that internalizing problems were best predicted by traits of high neuroticism and low extraversion. The HiPIC and ICID-S instruments made divergent predictions regarding the role of the agreeableness trait in producing internalizing problems, as the Benevolence scale in HiPIC had a small negative correlation with internalizing problems (r = -.08) whereas the Agreeableness trait in ICID had a small positive correlation with internalizing problems (r = +.17).

Chernyshenko et al.'s Table 1.2 lists recommended names for higher order temperament traits. Their Table 7.2 proposes names for end points of each trait dimension. Recommended names for traits and end-points are: Emotion regulation ranges from calm to emotionally expressive; Collaboration ranges from self-centred / in dependent / individualist to other-centred; Engagement ranges from reserved to exuberant; Self-management ranges from spontaneous to orderly; and Open-mindedness ranges from practical to open-minded.

Instruments used to assess the five-factor model of children's temperament have been reviewed [351–353].

In summary, research about children's temperaments has moved from identifying 3 dimensions to identifying 5 dimensions, facilitating comparison between childhood temperament traits and adult personality traits. Limited research has been conducted into similarities in clusters of children's temperament traits identified using the two five-factor model of children's temperaments and clusters of children's maladaptive behaviours that are identified in tests that assess internalizing and externalizing behaviours.

3.7.4. Observational Measures of Temperament

An alternative approach to assessing temperament by asking adults to complete questionnaires is for a trained observer to record a child's behaviour while the child is engaged in a standardised set of challenging activities that are likely to highlight temperamental differences [354,355]. One observational approach uses a set of 20 everyday situations that each last for 3-5 minutes called a Lab-

 doi:10.20944/preprints202603.0366.v1

Tab procedure [356]. Planalp et al. described the Lab-Tab procedure and provided a list of activities selected for the procedure. Planalp et al. report that Lab-Tab activities can be used to assess the emotional responsiveness of a child on the topics of fearfulness, anger, sadness, positive affect, persistence and activity level.

Limited research has been reported about consistency between observational measures and report measures of children's temperaments.

3.8. Associations Between Temperaments and Disturbed Behaviours

As stated above, one model of temperament is based on a hypothesis of differential susceptibility that proposes children have different sensitivities to environmental events, and that this can be associated with children's disturbed behaviours. A review by van IJzendoorn et al. [357] found evidence in support of the differential susceptibility hypothesis. A study by van Zeijl et al. [316] found that mothers of children aged 1-3 years with a difficult temperament used more negative discipline as the children engaged in more externalizing behaviours, and the children were more responsive to positive discipline by displaying fewer externalizing behaviours, compared to children with a relatively easier temperament.

Eggum et al. [358] studied two temperament traits (shyness and negative emotionality} of children in a longitudinal study in three waves between ages 6 to 9 years, and their internalizing behaviours. The study found that for some children, shyness predicted negative emotionality two years later, and that shyness and negative emotionality were associated with internalizing behaviours.

Bayer et al. [359] explored a question of why temperamentally inhibited young children develop anxiety disorders and internalizing problems, with a focus on family factors. They found that close to half of inhibited young children had anxiety disorders and one in seven had clinical-level internalizing problems, with girls being at higher risk. Family factors associated with this high risk profile were overinvolved/protective parenting for both girls and boys, and use of harsh discipline for both girls and boys.

Tackett et al. [360] analysed temperament traits of 1080 young people aged 6-18 years and found that the traits of negative emotionality and disagreeableness were correlated with externalizing behaviours, making the point that children who display externalizing behaviours often experience emotional distress and that clinicians need to address more than a single syndrome of conduct disorder.

Kostyrka-Allchorne et al. [361] conducted a meta-analysis of 25 longitudinal studies that examined associations between infant temperament and child/adolescent psychopathology. They found small associations between measures of psychopathology aggregated across all domains. They found that both infant negative emotionality (r = .15) and self-regulation (r = -.19) were associated with later psychopathy.

Forbes et al. [362] examined data for 4983 children from the first five waves of a cohort from the Longitudinal Study of Australian Children spanning children aged 4-5 to 12-13 years to assess whether childhood traits of reactivity, approach-sociability (uninhibited in approaching people), and persistence at age 4-5 predicted children's subsequent development of symptoms of psychopathology. The study found that higher levels of persistence were related to lower trajectories towards conduct disorder and ADHD, and higher levels of approach-sociability predicted higher trajectories towards conduct disorder and ADHD. The findings indicate that some traits in children are associated with later disorders.

Scholars who examine temperaments agree that temperamental differences between children reflect both inherited genetic factors and environmental influences [363].

Sulik et al. [364] examined relations between combinations of specific genes called haplotypes and the development of children's non-compliance and aggression during the ages 18-54 months. They found that quality of early parenting was related to noncompliance only for children with a specific haplotype. The authors interpreted their results as supporting a hypothesis of differential

 doi:10.20944/preprints202603.0366.v1

susceptibility where children with some temperaments are more sensitive and reactive to both supportive and unsupportive parenting practices.

Walters [365] reported a study of 2,697 children in a National Longitudinal Survey of Youth–Child. Walters found that a child having a difficult temperament at age 0-2 years was associated with the child's lower self-control at age 10-11 years. Walters concluded that consideration needs to be given to children's temperament in parent education programs.

Zhou et al. [366] examined the attention skills of 356 children from the ages of 5 to 10 years in a longitudinal study where measures were taken in three waves, and examined associations between attention skills and externalizing problems. Measures were taken of children's ability to focus their attention based on reports by parents and teachers, and on children's attentional and behavioural persistence as observed in a laboratory task, and of effortful control. The study found that attention focusing skills remained relatively stable over time, but persistence skills were variable especially among children with lower levels of effortful control. Children with lower and less stable trajectories of effortful control showed more elevated and/or fluctuating trajectories of externalizing problems.

Mesman et al. [367] examined the development of externalizing problems in a sample of 150 children who were selected at age 2-3 years for displaying high levels of externalizing problems. The children were followed to age 5 years. The study investigated associations with maternal psychopathology, maternal parenting, and child temperament. The study found that mean levels of externalizing problems decreased over time. Parental sensitivity was associated with a stronger decrease in externalizing problems only for children with difficult temperaments. The authors interpreted their results as showing that temperamentally difficult children are more susceptible to environmental influences in the development of externalizing behaviours.

Olson et al. [368] examined a hypothesis that there are five sub-components of children's externalizing behaviour that remain consistent over time involving overt aggression, covert aggression, oppositional defiance, impulsivity/inattention, and emotion dysregulation. They studied 543 children aged 5-13 years in three waves. They found that most components of externalizing behaviour increased significantly across the early school age period, except for aggression. The authors interpreted their results as showing a need to adopt a developmental approach to the analysis of the development of children's externalizing behaviours.

Zarra-Nezhad et al. [369] reported a longitudinal study of Finnish parents and children between Grades 1 to 3. The study examined three variables: (a) parenting styles involving affection, behavioural control, and psychological control; (b) children's temperaments on a scale of difficult negative emotionality, easy, and inhibited; and (c) children's social-emotional development. The study found that mothers' high affection was associated with low levels of negative emotions, particularly among children with a reserved / inhibited temperament. Mothers' behavioural control was associated with low levels of negative emotions among children with a reserved temperament. Mothers' psychological control was associated with a high level of negative emotions among children, independently of the child's temperament.

Bayer et al. [370] conducted a longitudinal study of community children assessed as displaying inhibition as preschoolers until age 10 years to assess associations between a trait of behavioural inhibition and anxiety. The study found that by mid-childhood, 57% of preschoolers who had been inhibited had a clinical level of anxiety problems, and 22% had depressive problems. The study identified parental distress and two parenting practices (overinvolved/protective & harsh discipline) as key predictors of inhibited preschoolers developing internalising problems in mid-childhood.

Van IJzendoorn and Bakermans-Kranenburg [371] highlighted that the construct of children's differential susceptibility to environmental influences has facilitated an integration of principles from temperament and attachment theories, ending decades of a competitive approach between the two fields of study.

4. Summary and Discussion

 doi:10.20944/preprints202603.0366.v1

In summary, research has established that consistent temperaments can be identified in children, and has linked traits in children's temperaments to traits in the five-factor model that is used to describe adult personalities.

Research has established that children's temperament trait of negative emotionality and conscientiousness / effortful control are related to development of children's mental health disorders, and need to be considered by clinicians when planning therapy interventions. No evidence was found that universal parenting programs have introduced tests that assess children's temperaments, or recommended that interventions be varied according to a child's temperament. Limited progress has been made in determining how universal intervention programs might be adjusted to cater for a child's temperamental profile.

Limited research has been conducted on the relationship between behaviours that define children's normal traits and clusters of misbehaviours that are identified using tests that identify mental disorders.

xi – Peer influences

Dishion et al. [372] videotaped 186 adolescent boys aged 13-14 years who were delinquent, and a matched sample of non-delinquent adolescents, and asked both groups to discuss with a friend how they would manage three social situations: planning a joint activity; solving a problem about getting along with peers; and solving a problem about getting along with parents. Assessments were made of verbal and nonverbal behaviours that were coded into two topic categories (normative & rule-breaking), and two reaction codes (laugh & pause). The study found differences in conversations between delinquent and non-delinquent boys. Non-delinquent pairs reacted more positively to normative talk and were less likely to laugh in response to rule-breaking talk. Delinquent pairs displayed the opposite pattern as they engaged in rule-breaking comments four times more than did the non-delinquent pairs, they were more likely to react to comments about rule-breaking with laughter, their laughter led to an increase in rule-breaking comments, and they were less likely to socially reward normative comments.

Vitaro and colleagues reported research on the influence of peers on each other's antisocial behaviour, with an emphasis on the concept of late-onset reactive aggression [377]. One longitudinal study found that coercive parenting practices increased membership of a trajectory where aggression was high and chronic. The research group drew the following conclusions: (a) caution is needed regarding programs that provide group therapy for youth with severe conduct disorders from a concern that peers will reinforce each other's antisocial behaviour; (b) use of suspension by schools to manage conduct disordered behaviour increases children's feelings of being rejected by society; (c) a public policy of placing youth with severe conduct behaviours together in group accommodation that is supervised by rostered staff is sub-optimal, especially when staff are reluctant to exercise a parental role.

Studies that are relevant to the education of staff who supervise children in congregated accommodation is summarised.

De Haan et al. [378,379] conducted a longitudinal study where they observed children between the ages of 6 to 15 years. They found that aggression in youth was associated with carer over-reactiveness, especially for youth with a temperamental profile of being introverted, individualist and spontaneous (rather than conscientious).

Rathert et al. [380] studied a community sample of children aged 9-12 years and examined relations between children's level of effortful control (ability to focus and shift attention), parental use of psychological control by manipulating a child's inner experiences, and children's proactive and reactive aggression. The study found that use of psychological control with youth with high levels of effortful control was positively associated with proactive aggression, but this result was not evidence for children with low levels of effortful control.

In summary, studies caution against bringing youth with conduct problems together in congregated accommodation. There is research that is relevant for staff who work in congregated accommodation for youth with conduct problems.

 doi:10.20944/preprints202603.0366.v1

xii – Parental appraisals of their child

van IJzendoorn et al. [381] reported that simply changing parent's behaviour so that parents are more sensitive to their child's cues had not proven to be sufficient to prevent a child's maladjustment, and they proposed that some parents also need to change the way they perceive and appraise their child's behaviour. Similar comments have been made by Frijda [382] and Bogels and Brechman-Toussaint [383].

Verhage et al. [87] reviewed 95 studies involving 4819 dyads and found that transmission of insecure attachments could not be explained only by carer insensitivity to a child's cues. Main and Solomon [384] introduced an Adult Attachment Interview which is a semi-structured clinical interview used to assess a parent's attachment state of mind and how parents view and appraise their children that has been widely used in research.

Four additional theoretical constructs have been introduced by researchers to assess how parents appraise their child's behaviour that are mentalizing, reflective functioning, mindfulness, and attributions. Research about the five constructs is summarised.

5. Adult Attachment Interview

Bakermans-Kranenburg et al. [385] reviewed research using the Adult Attachment Interview (AAI) which assigns parents to four attachment styles that are secure, dismissing, preoccupied and unresolved. Bakermans-Kranenburg et al. found the following frequencies of parents in each category; 53% of parents were classified as secure, 22% were classified as dismissing, 17% were classified as unresolved, and 8% were classified as preoccupied. An earlier review of AAI [386] found associations between AAI categories and the four types of children's attachment bonds, and found that adults with clinical diagnoses had higher frequencies of dismissive, preoccupied and unresolved attachment classifications than non-clinical adults.

Bakkum et al. [387] discussed the assessment procedure to identify unresolved loss and trauma. Katz et al. [388] noted that AAI has been used to predict subsequent psychopathology, more than to generate treatment interventions.

Three treatment programs that focus on people with complex grief and unresolved attachment have been outlined by therapists [389–391].

6. Mentalizing

Zeegers et al. [392] noted that the construct of parental mentalization was introduced to assess the degree to which a parent shows frequent, coherent, and appropriate appreciation of their infant's internal states. Attachment theory proposes a triangular relationship between parental mentalization, parental sensitivity, and attachment security. A meta-analysis of studies by Zeegers et al. found an overall correlation between parental mentalization and infant attachment security of $r = .30$, an overall correlation between parental sensitivity and attachment security of $r = .25$, an overall correlation between parental mentalization and sensitivity of $r = .25$, and a correlation between parental mentalization and attachment of $r = .24$. The review concluded that mentalization exerts both direct and indirect influences on attachment security, and recommended that parental mentalization be included in parent educational programs that promote infant-parent attachment.

Madigan et al. [393] conducted a meta-analysis of 281 studies that examined relations between measures of parents' mentalizing about their child's feelings and thinking for children aged 3-18 years and externalizing behaviours. They found an effect size between children's externalizing behaviours and their parent's mentalization of $d = .49$. They also found a large effect between measures of mentalizing and children's internalizing behaviours of $d = .67$, with different assessment instruments producing similar results.

Forbes et al. [394] found that a wide range of instruments were used in studies of children's mentalization, and found considerable variation in therapeutic approaches used to promote mentalization, with no tightly controlled manualised treatments being available.

 doi:10.20944/preprints202603.0366.v1

Trepiak et al. [395] reviewed 36 studies about constructs used to guide research into parenting practices and concluded that mentalization is an umbrella construct that has been assessed using many instruments.

7. Reflective Functioning

The construct of reflective functioning was used by Fonaghy and colleagues [396,397]. Reflective functioning refers to a parent's capacity to understand and describe their own behaviour and the behaviour of their child in terms of underlying internal mental states that are unobservable.

Camoirano [398] reviewed 47 studies of reflective functioning and mentalization and found evidence that children of mothers who scored lowly on instruments that assessed reflective functioning experienced anxiety disorders, impairments in their emotion regulation, and externalizing behaviours. The review discussed studies that had evaluated the efficacy of mentalization-based interventions in high-risk samples of mothers, and found that studies raised questions about the suitability of using verbal measures to assess mentalizing processes.

Barlow et al. [399] reviewed parent-child dyadic interventions that had been developed to improve parental reflective functioning with infants and toddlers reported in 6 studies. Their meta-analyses found a non-significant moderate improvement in parental reflective functioning in intervention groups. They found no evidence for benefits of intervention for attachment security, or parent–infant interaction, or parental depression, or parental global distress.

Stuhrmann et al. [400] provided a systematic review of 16 studies about associations between parental reflective functioning and parenting practices. They found that most studies had examined positive parenting behaviours rather than negative parenting practices. Assessment instruments included rating scales and observational instruments of parenting behaviours. Most studies found a small positive association between parental reflective functioning and positive parenting practices.

In summary, a number of studies have examined the contribution of the construct of parental reflectiveness, without finding substantial benefits.

8. Mindfulness

Huynh et al. [401] reviewed 301 articles about mindfulness and concluded that parental reflective functioning and mindful parenting have overlapping characteristics, and that the two constructs of mindful parenting and parental reflective functioning have usually been examined separately by researchers. Their review found a significant association between mindful parenting and child well-being, and associations between mindful parenting and other elements of positive parenting including parental warmth and responsiveness, less parenting stress, and fewer child externalizing and internalizing problems. Many studies included a mindfulness-based intervention that aimed to increase level of mindfulness in parenting, using a Mindfulness Based Stress Reduction or a Mindfulness Based Cognitive Therapy model that aimed to improve a parent's ability to cope with and reduce psychological reactivity to stressful parenting situations by paying attention to moment-by-moment parent-child interactions while remaining nonjudgmental of self and the child.

Huynh et al.'s review found that mindfulness therapies were found to be effective with mental health risk factors of anxiety, depression, stress, mood and substance use disorder.

A meta-analysis of studies about parenting programs by Featherstone et al. [402] compared programs that included mindfulness-enhanced components in a parent training programme with parenting programs without a mindfulness component and found immediate postintervention improvement in child emotional and behavioural adjustment (d = .46) and a smaller improvement in parenting skills (d = .22) in favour of programs that include mindfulness, but no postintervention improvement in child emotional and behavioural adjustment (d = -.09).

In summary, studies about parental mindfulness report effect sizes in the range up to .46.

9. Attributions

 doi:10.20944/preprints202603.0366.v1

Dadds and Hawes [403] used the construct of attributions to analyse ways parents respond when their child continues to misbehave after the parent has asked the child to stop the misbehaviour. Some parents express a presumption that their child must be misbehaving to annoy them if the child continues to misbehave after being asked them to stop. Parents who express this presumption can be described as showing a hostile attribution bias by the parent's presumption that their child's misbehaviour is intentional and is designed to annoy the parent. Dadds and Hawes drew on attribution theory to analyse how these parents explained their child's behaviour. Dadds and Hawes noted that if a parent explains their child's misbehaviour in certain ways, then the parent will feel powerless to change their child's behaviour.

Johnston et al. [404] studied attributions / explanations made by mothers of children with and without ADHD, using the attribution dimensions of internal, stable, and global causes of oppositional behaviour. The study found that mothers' attributions of their child's oppositional behaviour to causes that were internal, stable, and global cause was positively associated with their child's continuing oppositional behaviour, suggesting that this attribution style contributed to the maintenance of child problems over time and that this parenting attribution style could be targeted in therapy interventions.

One dimension in attribution theory refers to a locus of control and describes how much control a person believes they have over life events, varying from externalizing explanations to internalizing explanations [405]. An externalizing explanation attributes outcomes to factors that are beyond an individual's control such as luck or powerful forces, while explanations with an internalizing focus attribute outcomes to an individual's personal actions. Harris et al. [406] emphasised the importance of understanding the developmental process of children's behaviours that are internalizing and externalizing, and identified a child's belief about their own ability to control events as one causative influence on their perceived ability to exercise self-control. One hypothesis that is worth investigating is that children who display internalizing behaviour problems engage more in internalized thinking; that children who engage in externalizing behaviour problems engage more in externalized thinking; and that children who display co-occurring internalizing and externalizing behaviours display disorganised internalized and externalized thinking [407,408].

Sawrikar et al. [409] discussed the importance of including an analysis of the way parents describe their children's behaviour in parent education programs. They noted that while evaluations find that traditional Behavioural Parent Training (BPT) programs are effective in helping many parents to manage their children's conduct problems, BPT programs are less effective with 30% of families [410]. Sawrikar et al. proposed that one explanation of the low efficacy of BPT with some families is that traditional BPT programs do not address parents' explanations / attributions of why their child misbehaves, so this motivational aspect of the child's behaviour is overlooked.

Sawrikar et al. [411] proposed a model of how attributions by parents about their child's conduct behaviours can be addressed in therapy. A re-attribution model for parenting involves three steps: (i) identify how a parent expresses explanations about the cause of the child's behaviour, and whether blame is attributed excessively to a child's internal character; (ii) does a parent's explanation increase their experience of and expression of negative emotions towards their child; and (iii) does the explanation lead to a parent adopting a hostile attribution bias towards their child and favour use of harsh discipline. They hypothesised that a parent's explanation of a child's behaviour that places strong pressure on a young child to adopt an entirely internalizing explanation of their misbehaviour leads to a deterioration in the parent-child relationship and potentially to mutual rejection between a parent and child. The parent adopts a belief that their child's misbehaviour will be ongoing regardless of any intervention used by the parent.

Sawrikar et al. recommended that parenting interventions be adjusted to incorporate steps that address parental internalizing attributions that place excessive blame for a child's misbehaviour on the child's disposition / character. They sought interventions that will reduce the tendency for parents to make hostile attributions about their child's motivations when a child misbehaves.

 doi:10.20944/preprints202603.0366.v1

Sawrikar et al. [411] developed a 16-item Parental Attribution Measure (PAM) to assess explanations used by parents to understand their children's misbehaviours that can be used by clinicians for children aged 3-16 years. A factor analysis of PAM items identified three attributional factors called Intentionality, Permanence, and Disposition. PAM items are provided in the publication. Items with highest loadings for each factor are: Intentionality is assessed by 'My child deliberately does awful things;' Permanence is assessed by 'My child's problems are likely to continue throughout their life;' and Disposition is assessed by 'It is difficult to like my child.'

Some researchers have applied principles from attribution theory in their analyses of parent's explanations of their children's behaviours. Bailes and Leerkes [412] reported a study where mothers were video recorded while they engaged in tasks that distressed their infant. The study found that mothers explained their infant's distress in various ways, as some mothers gave externalizing explanations by referring to situational circumstances that upset the infant, while other mothers gave internalizing explanations by referring to their infant's temperament to explain the infant's distress. The study found that explanations given by mothers were associated with the mother's own personality traits, as mothers who gave externalizing explanations were more likely to score highly on the agreeableness trait, while mothers who gave internalizing explanations were more likely to score highly on the neuroticism trait.

Fleming et al. [413] found that a pattern where mothers who participated in parent education programs expressed doubts about the chances of their child changing was associated in significantly less improvement in their child's conduct problems and internalizing problems, in ongoing parenting stress, and in limited change in parenting behaviours.

Tustin [414] outlined therapy principles based on attribution theory that can be used to address a range of attribution biases that occur in families where children are vulnerable.

One hypothesis that is worth investigating is that parents who are questioned about their parenting practices become defensive, especially when they are court-involved, and this contributes to their adopting a hostile attribution bias where they deny responsibility for their shortcomings. If this hypothesis is substantiated, then a new form of therapy could be introduced for court-involved families based on a principle of bibliotherapy where a parent reads and discusses a short story / vignette that describes both inappropriate and more appropriate parenting practices that are engaged in by other parents, and that relevant to their circumstances.

In summary, the topic of how parents describe and appraise their child's behaviour has been identified as having an important influence on how children manage their own behaviour. Five psychological models of parental appraisals have been developed to address this issue. Insufficient research has been conducted to determine the efficacy of alternative models of intervention for analysing the influence of parental appraisals on children's behaviour.

xiii – Parental personality

One body of research enquires into whether a parent's personality traits influence their selection of parenting practices [415]. Adult personality is usually assessed by psychologists using the NEO-PIR or NEO-FFI instruments that identify five-factors or trait dimensions that are openness, conscientiousness, agreeableness, extraversion, and negative emotionality / neuroticism [416]. Each of the five higher order factors are defined by six lower order factors or dimensions.

Prinzie et al. [417] provided meta-analyses of studies conducted at a population level that examined relations between parents' personality traits measured using the five-factor model and their parenting practices. The analyses found low correlations between traits and parenting practices. The highest correlations between parenting practices and two personality traits are cited: (a) correlation between parental warmth and the trait of agreeableness was $r = .19$ and neuroticism was $r = -.17$; (b) between parental control over their child's behaviour and neuroticism was $r = -.14$, and conscientiousness was $r = .11$; and (c) between autonomy support and neuroticism was $r = -.15$, and openness was $r = .14$. While all correlations are low, it is plausible that parents who score at end points of trait dimensions use distinctive parenting practices that contribute to the correlations. If a parent struggles to acknowledge that their parenting practices have an adverse impact on their child, then a

 doi:10.20944/preprints202603.0366.v1

clinician might administer a personality test to the parent to help highlight whether there is an association between a personality trait and parenting practices used.

Sahithya and Raman [418] reviewed 20 studies into whether children's anxiety is associated with parental personality traits and parenting styles. The review found positive associations between authoritative parenting positively and parental personality traits of higher extraversion, openness and agreeableness, and moderate conscientiousness. Authoritarian and permissive parenting styles were associated with higher neuroticism, lower extraversion, openness, and agreeableness, and very high conscientiousness.

Tehrani et al. [419] provided a meta-analysis of results from 28 studies that examined associations between parenting styles and five-factor personality traits. The analyses found that parental traits of openness to experience, conscientiousness, extraversion, and agreeableness were positively associated with use of an authoritative parenting style, and low parental neuroticism was associated with an authoritative style. The authoritarian parenting style was associated with high scores on parental neuroticism. The detached / indifferent parenting style was associated with low parental conscientiousness and low agreeableness, and with high parental neuroticism.

In summary, the studies cited show there are small associations between some parental personality traits and parenting practices they use, with effect sizes in the range .11 to .19.

Research about specific parental personality traits that have been identified as being associated with distinctive parenting practices is reviewed.

9.1. Adult Negative Emotionality

Several studies have examined relations between parental negative emotionality and their parenting practices. Lipscomb et al. [420] reported a longitudinal study involving 382 families that examined relations between toddlers with negative emotionality and over-reactive parenting by their caregivers. The study found that increases in children's negative emotionality were associated with increases in caregivers' emotional over-reactivity.

Kochanska et al. [421] examined links between parental personality and parenting practices and found that mothers high in neuroticism reported more use of power assertion as occurs in the authoritarian parenting style.

Bahrami et al. [130] reported that parenting practices of parents who scored highly on neuroticism were more intrusive, involved more power-assertive discipline, showed less sensitivity and warmth and responsiveness, and were similar to parenting practices reported from parents who use an authoritarian and a permissive parenting style.

Sahithya and Raman [418] reported that parents who scored highly on neuroticism tended to use more emotion-focused coping skills and less positive parenting practices regardless of their child's temperament. The review found that certain personality traits were differentially associated with parenting styles, as parents high on neuroticism were more likely to use authoritarian and permissive parenting styles. The review concluded that the parental trait of neuroticism was associated with parenting practices that increased anxiety in children.

Roskham et al. [422] examined a different aspect of parental personality by examining parental burnout. They reported that parents who displayed a particular trait profile were at higher risk of burnout. Le Vigouroux et al. [423] reported a risk profile for inadequate parenting that involved a combination of three traits; high neuroticism, low conscientiousness, and low agreeableness. The authors proposed that: high neuroticism makes it harder for parents to maintain a positive relationship with their child; a parent with low agreeableness is slower to recognise their child's cues; and a parent with low conscientiousness finds it harder to maintain the structured routines that children require.

Schlatter et al. [424] examined relations between five-factor scores and anticipatory stress. They found that higher parental neuroticism was associated with higher levels of anticipatory stress vulnerability, whereas lower conscientiousness was associated with lower anticipated stress vulnerability.

 doi:10.20944/preprints202603.0366.v1

9.2. Adult Agreeableness

Kochanska et al. [425] examined personality traits of 103 mothers and found that mothers who scored lowly on agreeableness and high on negative emotionality displayed more negative emotions towards their children, and their children were angrier and more defiant. The mothers provided less nurturing parenting and used more power assertion, and their children exhibited more behavioural problems with less internalization of rules.

Kochanska et al. [426] examined personalities of parents in a longitudinal study and observed parent-child interactions in naturalistic contexts when children were aged from 9 to 45 months. The study found that a mother's low score on the agreeableness trait was positively correlated with use of power assertion and with emotional detachment, and was negatively correlated with sensitivity and warmth.

Coplan et al. [427] found that maternal agreeableness was negatively associated with the use of a harsh and coercive parenting style. Coplan et al. assessed relations between two of mothers' personality traits (neuroticism and agreeableness), their parenting styles, and two characteristics of children's temperament (shyness & emotional dysregulation). They found that a tendency for mothers to use an overprotective parenting style increased with both the mother's neuroticism and a child's shyness. They also found that mothers with a low agreeableness score were more likely to use a harsh/coercive parenting style with children who were more emotionally dysregulated.

De Haan et al. [428] reported that a higher level of parental agreeableness was related to lower levels of over-reactivity and to higher levels of warmth. A two-year longitudinal study by De Haan et al. [429] found that agreeable parents were nurturing, responsive, and autonomy-granting, whereas their disagreeable counterparts tended to overreact and to engage in harsh discipline.

A study by Bagherian and Mojambari [430] examined relations between the five-factor traits and parental assertiveness and found a negative relationship between assertiveness and neuroticism (d = -.31), and a positive relationship between assertiveness and both extraversion (d = .28) and conscientiousness (d = .23).

A meta-analysis conducted by Prinzie et al. [417] found that many parents who scored low on the agreeableness dimension were supportive of their child's autonomy, as these parents viewed their child's striving for autonomy positively rather than viewing their child as challenging their authority.

A review of 20 studies by Sahithya and Raman [418] identified low scores on the agreeableness trait (individualist) with both authoritarian parenting and permissive parenting. The review noted increased concern if a parent also shows a profile of higher neuroticism, lower extraversion, lower openness, and very high conscientiousness.

9.3. Adult Conscientiousness

A longitudinal study by Oliver et al. [431] found that parents who rated themselves as more conscientious found it easier to set limits for their adolescent offspring.

Kochanska et al. [432] found that higher parental conscientiousness was associated with less power assertion, and this finding was corroborated by Hong et al. [433].

The meta-analysis provided by Prinzie et al. [417] found a low correlation between parental warmth and conscientiousness.

Bahrami et al. [357] reported that authoritarian mothers scored highly on conscientiousness, indicating that very high scores on conscientiousness can be associated with parents placing a number of strict demands and rules on their young children, and may be linked with intrusive and over-controlling parenting practices.

Sahithya and Raman [418] reported that both the permissive and authoritarian parenting styles were associated with very high scores on conscientiousness, and with lower scores on extraversion, openness and agreeableness.

The studies cited indicate that combinations of traits in a parent's profile are more relevant for parenting than scores on one trait.

 doi:10.20944/preprints202603.0366.v1

9.4. Adult Introversion

An early review of studies by Metsapelto and Pulkkinen [434] reported that parental nurturance was associated with high scores on parental extraversion. However, the meta-analysis by Prinzie et al. [417] found that the correlation between parental extraversion and parental warmth was low (r = +.14), and the authors concluded that extraverted parents enjoy socialising and sharing positive emotions of warmth, including with their child, so it is possible the correlation is due to strong warmth from extraverted parents rather than to low warmth from parents who are introverted.

10. Summary

In summary, the studies cited indicate that a parent's overall trait profile, which is the combination their personality traits, appears relevant when analysing parenting practices rather than individual traits. If concern is expressed about parenting provided to a child, there is scope for clinicians to assess a parent's profile of normal personality traits before seeking explanations in terms of a personality disorder.

xiv - Involving parents in joint therapy

One debate involves whether therapy for children who are both vulnerable and troublesome should involve only the child or whether a parent should also be involved in joint therapy as occurs in systemic therapy. in a meta-analysis of 30 studies of behavioural parenting education and 41 studies of individual therapy, McCart et al. [435] found that effect sizes favoured parent education with an effect size of d = .45 for parent training and involvement compared to d = .23 for individual CBT therapy with children aged 6-12 years.

Dowell and Ogles [436] provided a meta-analysis of 48 studies that directly compared efficacy of individual child treatment against a combined parent-child/family therapy treatment. Their analysis found that the combined parent and child treatment produced a moderate benefit above outcomes achieved by individual child-only treatment, with an effect size of d = .27.

Brendel and Maynard [437] reviewed 8 randomized controlled trials examining effects of CBT involving family members or only a child. They found an effect size of d = .26 for parent–child interventions which was higher than the effect size for child only therapy.

Breinholst et al. [438] noted there are some circumstances where involving a parent in therapy is likely to reduce efficacy of an intervention, including if a parent has contributed to a child's anxiety by using parenting practices of intrusiveness, negativity and distorted cognitions. A clinical judgment is required before involving a parent in systemic therapy. Kurzweil [439] surveyed clinicians about their decisions to involve parents when providing therapy for children aged 6-12 years. Most clinicians reported using both cognitive-behavioural and family system interventions. The study found that 90% of clinicians believed that working with parents was effective, especially when children displayed symptoms of oppositional defiance or conduct disorder, with less involvement of parents when a child displayed symptoms of attention-deficit hyperactivity disorder, depression, anxiety, and posttraumatic stress disorder or trauma. Factors considered by clinicians when deciding about involving parents were a child's age and diagnosis, parental level of stress, and parental interest in working with the clinician.

Khanna and Kendall [440] examined how clinicians adjusted their practices when involving a parent as compared to providing individual therapy for a child. They identified two changes in practice that contributed significantly to improvements in children's global functioning when providing joint therapy, teaching parents anxiety management techniques, and transferring some control in sessions to a parent.

Wei and Kendall [441] reviewed literature showing that 40% of anxiety-disordered youth remain unresponsive to standard treatment. Their review cautioned against involving a parent in the treatment of a child's anxiety if the parent had contributed to the child developing anxiety.

Legerstee et al. [442] conducted a study where they assessed parental anxiety as well as anxiety of their child or adolescent offspring. The study found that involving the parent by providing four

 doi:10.20944/preprints202603.0366.v1

educational sessions for an anxious parent was associated with improvements for adolescents but not for children.

Cardy et al. [443] conducted a systematic review of 23 studies about involving parents in joint treatment of adolescents with anxiety. The review identified differing forms of parental involvement including some separate sessions for parents, joint parent-adolescent sessions, and worksheets for parents. Cardy et al. identified one benefit of involving parents is that parents understood the key principles of therapy, could participate in supporting their offspring, and might apply principles to manage their own behaviour. The review concluded from outcomes that CBT with parental involvement is an effective intervention for adolescent anxiety disorders, with cautions.

Calderone et al. [444] provided a systematic review of efficacy of one therapeutic model with children who displayed disruptive behaviours, and found the intervention produced significant reductions in both child behaviour problems and parental stress.

Scherpbier et al. [445] reported a follow-up of parents' satisfaction with one intervention program nine years after its completion. The parents described overall satisfaction with the decrease in their child's disruptive behaviour, in their own lower parenting stress, in lasting benefits of learning parenting skills, and in improved family relationships. The parents expressed dissatisfaction with some components of the program including its emphasis on the exclusionary timeout procedure, and the presumption that a universal program is suited to all children. Many parents reported a resurgence in behaviour problems three years after participating in the program, when they sought additional input.

Overall, research indicates that involving parents in joint therapy for children is effective, but therapists need to exercise clinical judgment about when and how to involve parents in joint therapy when their child experiences anxiety. It is not appropriate to involve a parent in joint therapy if a parent has actively contributed to a child's anxiety by being an offender.

One topic that warrants research involves including a parent in joint therapy if the parent was not an offender, but was considered to have been not sufficiently protective of a child.

xv – Parental mental health issues

Research has focused on the influence of parental mental health factors in influencing children's disturbed behaviours [446]. While initial research focused on links between parental diagnoses and children's adjustment, more recent research had focused on sets of parenting practices that impact on children's emotions and behaviour. An overview of research linking parental diagnoses of mental disorders that impact on children, and mechanisms of transmitting maladjustment, was provided by Tustin [447]. This section reviews further research that focuses on interactions that occur between parents and children in distressed families.

Ballash et al. [448] noted that anxiety disorders are among the most prevalent disorders, and that anxiety disorders are transmitted in families. They reviewed literature about a hypothesis that anxiety could be promoted by a practice of over-control or intrusiveness by parents. They reported that anxious parents were likely to become more controlling when their child expresses negative affect, as over-control may be the parent's strategy to alleviate their child's anxiety. They noted that parental over-control had not been well defined, with different researchers interpreting it to mean overprotection, or discouraging independence, or taking over tasks performed by children. Their review found that literature has consistently demonstrated that high levels of parental overcontrol, especially in the absence of warmth, leads to anxiety and negative outcomes for children and adolescents, as it contributes to a child perceiving that they are not trusted to manage events in their lives. Ballash et al. emphasised the need for developmental information about appropriate levels of parental control to be studied further and to be included in intervention programs. One approach that warrants research is to identify safety skills that should be taught to children at each developmental stage to assist children to learn to protect themselves from hazards in their environment.

Gross et al. [449,450] conducted a longitudinal study of associations between early childhood disruptive behaviours and maternal depressive symptoms from toddlerhood to adolescence. Gross

 doi:10.20944/preprints202603.0366.v1

et al. [449] found that early child noncompliance was the most robust predictor of more chronic elevated trajectories of maternal depression, and that early childhood non-compliance was associated with teacher reports of adolescent antisocial behaviour. The authors noted their findings are consistent with perspectives from developmental psychopathology that emphasize the dynamic interplay that occurs between child and parent characteristics. Gross et al. [450] reported that boys' disruptive behaviour when aged 5 to 10 years was associated with their mother experiencing more depressive symptoms, and the association between boy's disruptive behaviour and maternal depression remained evident until boys were aged 11-12 years. Gross et al. identified the combination of maternal depression and childhood noncompliance as an indicator for provision of targeted early intervention therapy.

Trentacosta and Shaw [451] conducted a longitudinal study of relationships between mothers and their sons between the ages 18 months to 12 years, with an aim of identifying maternal characteristics that are associated with sons rejecting their mother's parenting practices. The study found that a boy rejecting parenting practices in early childhood predicted sons' antisocial behaviour in early adolescence. Maternal characteristics that were associated with having their parenting practices rejected by their sons were identified as a mother's young age at the first birth, a maternal aggressive personality, and low maternal empathy.

Shaw and colleagues [200,452,453] examined predictors of early-onset and late-starting trajectories of children's antisocial behaviours. The study identified four trajectory groups. Membership of two trajectory groups were associated with by maternal depression and parenting practices, including an early-starting group whose members had 60-79% involvement in a juvenile court and elevated rates of clinical depression during adolescence.

The topic of how to support families who are recovering from an episode of parental mental illness is discussed by Price-Robertson et al. [454].

Canfield et al. [455] examined relations between maternal depression and children's internalizing and externalizing behaviours. They found that maternal depression was significantly associated with children's co-occurring internalizing and externalizing behaviours. They provided a tiered intervention program and found that their program reduced the association between maternal depression and children's early childhood internalizing and externalizing behaviours.

Dittman et al. [456] reported a survey in Australia of 3483 mothers and 1019 fathers of children aged 4 and 7 years to investigate normative parenting practices to manage children's distress. The study found the most common parental responses to a child's anxious or distressed behaviours were to use physical contact to sooth the child, talk in a soothing voice, and encourage their child to be brave, with fewer than 10% of parents ignoring their child's distress by not giving any attention. Fewer than 8% of parents reported ignoring their child's distress by not showing them any affection. The study found that a proportion of parents used smacking and threatened to do something their child would not like, but they did not necessarily follow through if their child remained distressed. The study found that a mother's emotional state was a unique predictor of elevated emotional symptoms in their children. The authors concluded that a double-pronged approach is required that combines mood management training for parents and emotion skill development for children to maximize the effectiveness of early intervention efforts. There is scope to review whether early recommendations from a behaviour modification approach for parents to view all of children's misbehaviour as reflecting attention seeking, with a recommendation to ignore attention seeking behaviour, is appropriate when children have a temperament including negative emotionality.

The lesson to draw from the Dittman survey is that firm parents distinguish the type of attention they provide to their distressed child, and they sooth their child without ceding to their child's emotional demands.

Lavi et al. [457,458] conducted two meta-analyses. The first meta-analysis of 9 studies found that parents who were emotionally maltreating their children reported higher levels of negative affect, depression, verbal aggression, and anger; and the parents were found, compared to non-maltreating parents, to report lower levels of emotional self-control, emotion regulation, and coping strategies.

 doi:10.20944/preprints202603.0366.v1

The second meta-analysis of 46 studies assessed the magnitude of the association and found an effect size of r = .44, with maltreating parents showing significantly higher problems with emotional reactivity and regulation than non-maltreating parents. The review identifies topics that can be addressed in targeted therapies for parents whose emotionality is influencing attributions they make.

Kiser et al. [459] reported that the Parent/Caregiver Trauma and Healing Coordinating Group (PCTHCG) of the National Child Traumatic Stress Network examined existing literature about involving a parent in evidence-based child trauma treatment when the parent has themselves experienced trauma. The PCTHCG identified core topics to consider when providing joint parent-child therapy if a parent has experienced trauma: engagement by parent/caregiver, parenting practices used, co-regulation of emotions, attachment, relationship repair, support by parent/caregiver, emotional coaching, addressing parent/caregiver's own trauma history and current symptoms, and parent/caregiver appraisals and meaning attributed to their child's behaviours.

In summary, research finds that parental mental health is important in influencing children's mental health adjustment, and needs to be included in comprehensive parent education programs. Addressing parental mental health issues is a topic for targeted therapy.

xvi – Disorganised attachment

A meta-analysis of studies about prevalence of types of attachment by Van IJzendoorn et al. [460] found that the frequency of each type of parent-child attachment bond in the general population was secure 55%, avoidant-insecure 23%, ambivalent-insecure 8%, and disorganized 15%.

A number of meta-analyses have found that a child having a disorganised attachment bond with their mother / carer is a risk factor for developmental problems and externalizing behaviours [461–465]. Fearon et al. [465] conducted a meta-analysis of 69 samples and found the association between disorganised attachment and externalizing problems was d = .34. This effect size makes it clear that children who have formed a disorganized attachment with their parent / carer need to be considered for targeted early intervention therapy. A review of 42 studies by Groh et al. [466] found that the association between disorganization attachment and internalizing behaviours was d = .08.

Dozier and Bernard [467] reported an Attachment and Biobehavioral Catch-up (ABC) program that is designed to assist parents whose child resists forming an attachment bond. Lind et al. [468] reported that the ABC program was effective in improving parental sensitivity and compliance by children with a mean age of 9.4 months who had been referred to a child protection service, with improvements in parental sensitivity being maintained when children were aged 18 months and 36 months.

Grandqvist et al. [469] wrote to correct misapprehensions that had arisen about disorganized attachment bonds including: (a) that disorganized attachment is a strong predictor of pathology; (b) that disorganized attachment represents a fixed trait; (c) that measures of disorganized attachment can be used in forensic assessments; and (d) that disorganized attachment is an indicator a child has bene maltreated. Granqvist et al. recognised that a child having a disorganized attachment bond is grounds to refer a family for early intervention therapy.

Three sets of research have focused on children who live in families where notifications have been made that a child is at a heightened risk of forming a disorganised attachment bond and being harmed. Each set of research has resulted in production of an assessment instrument designed to identify children at heightened risk.

Cooke et al. [470] developed an instrument that records observations of parenting practices called AMBIANCE-brief that identifies five types of disrupted caregiving. AMBIANCE-brief uses 45 items to assess five dimensions of disrupted caregiving that are: (a) affective communication errors e.g., laughing when the child is crying or distressed; (b) role confusion e.g., demanding a show of affection from the child; (c) fear or disorientation e.g., startling to infant behaviour without clear cause; (d) intrusiveness / negativity e.g., mocking or teasing a child; and (e) withdrawal e.g., backing away from a child.

Brumariu et al. [471] developed an observation-based instrument to record inappropriate parenting practices during the mid-childhood years they called Middle Childhood Attachment

 doi:10.20944/preprints202603.0366.v1

Strategies (MCAS). Observations are made of interactions between a parent and child when they discuss for 8 minutes a topic that has been in dispute. Interactions are coded into six interaction patterns: secure, ambivalent, avoidant, disorganized/disoriented, caregiving/role-confused, and hostile/punitive.

Khoury et al. [472] identified aspects of parent-child interactions during infancy that are predictors of severe maltreatment of children. Interactions associated with severe child maltreatment by age 18 years included: (a) maternal hostility during infancy; (b) maternal withdrawal in infancy and middle childhood; (c) child disorganized attachment behaviour in middle childhood and late adolescence; and (d) hostile and role-confused interactions in late adolescence.

In summary, research has identified a child having a disorganized attachment bond as being a risk factor for development of a mental disorder. Evidence-based therapy to address disorganized attachment has been developed. Instruments have been developed to assess ongoing risks to children. The topic of childhood disorganized attachment can be identified as one for immediate prioritization for provision of evidence-based early intervention therapy.

11. Screens to Identify High-Risk Children

One aim of the review is to encourage the development of early intervention therapies that are relevant for children who are at high risk of following a dual-involvement trajectory where a child is first removed from the care of their parents, and then engages in persistent offending. An essential task is to develop screens to identify children who are at high risk of becoming a dual-involvement child.

The research reviewed above shows that researchers have produced lists of indicators that can be used in screens to identify children who are at increased risk of becoming a dual-involvement child. The research indicates there are differing trajectories, so different screens will be needed to identify different cohorts of at-risk children.

A second step is to develop early intervention programs that can be delivered to families where potential dual-involvement children live. Research indicates that intervention programs will need to vary to address specific risk factors in each family. Preferably, early intervention therapy will be offered following a notification to a child protection service that a child is at risk of harm while a child still lives in parental care. One option is for parents to participate voluntarily in an early intervention program. A parent's response to an offer of early intervention therapy provided by a suitable agency can be submitted to authorities if further notifications are made.

12. Current Screens

A number of screens have been published that have potential to function as a screen for early intervention for vulnerable children. One research task is to assess suitability of proposed screens for identifying children who are at risk of becoming dual-involved children. Current screens are briefly reviewed.

Winter et al. [205] proposed use of a Knowledge of Effective Parenting Scale (KEPS) instrument to be used as a screening instrument for use by public health services to refer families to universal parenting programs. Canas et al. [116] reviewed instruments based on observations of parent-child interactions that were designed for use as a screen with the whole population to identify vulnerable families. They identified a Keys to Interactive Parenting Scale (KIPS) [473] as receiving the highest ratings from users for identifying vulnerable families who required additional services. KIPS is scored from films of 20 minutes of parent-child interaction of which 15 minutes are free play and 5 minutes involve clean-up. Observers rate parental behaviour on twelve items that are: Sensitivity of responses; Response to emotions; Encouragement; Promotes exploration/curiosity; Involvement in Child Activities; Language experiences; Touch/physical interaction; Limits & consequences; Open to child's agenda; Reasonable expectations; Adapts strategies to child; and Supportive directions. All

 doi:10.20944/preprints202603.0366.v1

items are scored on a 5-point scale where 5 reflects exemplary behaviour. KIPS both identifies strengths of each parent and identifies topics for intervention.

Zumbach et al. [474] reviewed 2137 reports about observational procedures used with families where a child either had been removed from parental care or were at risk of removal. They identified 11 coding systems that record observable interactions between parents and children in vulnerable families that appeared relevant to assessment of risk of child maltreatment, including the Dyadic Parent–Child Interaction Coding System-II [475]. Their review identified five parental variables that indicate children are at higher risk of maltreatment and of developing mental disorders: (a) low parental sensitivity; (b) low parental empathy and warmth; (c) low parental comforting; (d) hostile/strict control; and (e) developmentally inappropriate expectations. The reviewers didn't identify any instrument as suitable to be used alone for the forensic task of identifying parents whose practices posed high risks for children. The authors noted that sample sizes in studies were small, and this reduced the power of instruments. They recommended that instruments for forensic assessments be multi-dimensional, and include the presence of adaptive parental behaviours as well as the presence of maladaptive parental behaviours. They noted that the most effective instruments use behavioural observations of interactions between a child and carer, rather than questionnaires or self-reports that are completed by parents.

Peterson et al. [476] provided indicators that are both risk factors and protective factors for development of externalizing behaviours in children from the age of 5 years that cover domains of family process, peer process, stress, and individual characteristics. The model accounted for 70% of variance, with moderate sensitivity and specificity in predicting arrests.

Gach et al. [477] used multiple environmental risk factors during early childhood to predict a broad range of adverse developmental outcomes. They predicted children's externalizing behaviours at age 10 years using a cumulative risk index consisting of 6 singular risk variables: Social resources of low income and social isolation; Family resources of marital aggression and poor total family functioning; and Maternal resources of single parent status and poor maternal mental health. They found that the cumulative risk index was a better predictor of children's externalizing behaviours than any single predictor of corporal punishment, warm responsiveness, maternal efficacy, and negative perceptions of child's behaviour.

Piquero et al. [478] identified indicators of individuals who displayed highly stable aggression that are modifiable with targeted interventions. Indicators of ongoing aggression were identified as: a child's attention problems, being hyperactive, being unpopular with peers, using an aggressive problem-solving strategy, a lack of prosocial strategies for managing social challenges, and poor academic performance and poor school attendance. A poor family environment was identified as a further indicator of stable aggressors.

In summary, data have been gathered that can be used to develop screening instruments. Data indicates that an integrated tiered system of intervention is required. What is unknown is how many levels of intervention or tiers will be required, a topic that is addressed in the Discussion.

13. Evolution of an Intervention Model for Vulnerable Children

Scholars in different parts of the world have developed a number of parent education models to reduce the range of children's behavioural problems. It is not the purpose of the review to compare models of intervention. Components of effective universal programs were summarised above.

The outcome efficacy of universal parenting programs has been established by many meta-analyses including by Weisz [479] and Bakker [480]. O'Dwyer et al.'s [32] meta-analysis of 21 studies found effect sizes of g = .42 for children's behaviour, g = .67 for parent satisfaction, and g = .45 for parental stress. Comer et al. [25] provided a meta-analysis of 36 controlled trials of effects of psychosocial treatments on children's early disruptive behaviour problems, and their analysis found that psychosocial treatments collectively demonstrated a large and sustained effect on children's early disruptive behaviour problems, with Hedges' g = .82. The largest effects were associated with behavioural treatments (Hedges' g = .88). The authors concluded that first-line psychosocial

 doi:10.20944/preprints202603.0366.v1

treatments for programs to target children's early disruptive behaviour problems should emphasise behavioural interventions.

The review identifies an intervention model known as the Oregon model as a model that has been flexible and has evolved, rather than remaining static. This section summarises processes used by the developers of the Oregon model when evolving their interventions, as reported by Dishion et al. [480} and Moore et al. [481].

The Family Check-up program was described above [200–202]. The Family Check-up intervention commenced by providing coordinated sessions for parents and children, with services being delivered in a few sessions both in a clinic and through home visits. Interventions focus on interactions between parents and children. Components were identified for a generic / universal program, and further components have been developed to address specific risk factors in sub-groups of families leading to the introduction of more models to target the needs of specific groups of families. Some interventions address common needs of parents as well as needs of children, giving a family focus. The therapeutic approach is based on motivational interviewing, with interventions from other theoretical approaches being incorporated into interventions.

Dishion et al. [481] described the evolution of an integrated tiered model of interventions to meet the needs of families with more complex issues. A multi-stage system of assessments is used to identify the intervention model that is best suited to each family. Family Check-up was used with mainstream families that are intact and where a child displays behavioural disturbances including during transitions such as commencing school. Two further intervention models have been added, called Parent Management Training (PMT) and Treatment Foster Care (TFC). PMT is designed for families that experience internal tensions and where a child's problem behaviours might cascade over time from a child regularly engaging in minor problem behaviours that develop into more serious and ongoing forms of antisocial behaviour including violence [482]. TFC is designed for families where child protection concerns have been raised. In all models, interventions are provided by a trained parent consultant.

In PMT the parent / carer is the primary agent of change, with a consultant acting as an advisor. Dishion et al. [481] described steps a child experiences in a cascade model as: ongoing early childhood defiance, co-occurring reactive and proactive aggression, school difficulties, association with deviant peers, leading on to adolescent serious antisocial behaviours. The cascade model recognises that parents benefit from some personal assistance in managing their own issues so they can better support their children. The PMT program is delivered for an average of 25 weekly sessions and includes both clinic sessions and home visits. A parent receiving feedback while observing video recordings of their parenting practices is a common procedure.

TFC is provided when children present with very challenging behaviour and there are parental risk factors, so a clear multi-dimensional approach is required. TFC is offered for children who are in foster care where there is one key worker who is committed to caring for the child, but is not offered to children living in congregated care with rostered staff where there is no delegated keyworker. The emphasis of TFC is on providing nurturing, monitoring, and consistent limit setting and discipline. Both a foster carer and birth parent are involved in therapy that is provided for 6-9 months. The consultant is available to provide daily phone contact, and has a caseload of 10 families. Individualised therapy is provided that is based on an assessment of child and family needs. Interventions include parent education, therapy for a child on topics including managing distress and selection of friends and building trust in trustworthy adults, contact with a school, and a psychiatric referral if necessary. The aim of intervention is to reduce cascades of disruptions and involvement with state authorities such as police. The TFC program emphasises risks of peer contagion of antisocial behaviour, uses data-based decision making, and uses evidence-informed practices.

The current review identified the following in the Oregon models of intervention. The models emphasise use of scientific and quality improvement practices [483]. This included: (a) an emphasis on research findings about trajectories of child development [484–486]; (b) a focus on parent-child

 doi:10.20944/preprints202603.0366.v1

interactions [487,488]; (c) identification of modifiable risk and protective factors [489,490]; (c) use of interventions that are evidence-informed [491]; (d) a focus on children with complex problems [492]; (e) an ongoing emphasis on assessing efficacy of interventions using instruments to measure outcomes, including instruments relevant to child development and child safety [493]; (f) use of randomised controlled trials [494]; (g) a willingness to extend the model to newly identified high risk families [495,496]; (h) assessment of impacts on family functioning [497–499]; and (i) a focus on circumstances where interventions were less effective [500,501].

The developers of the Family Check-up model demonstrated a willingness to adapt their model to meet the needs of children's distinct temperaments including of dysregulated irritability [502], inhibitory control [503] and unemotional traits [504].

The initial assessment protocol used in the Family Check-up program was described by Lunkenheimer et al. [493]. During a home visit, an assessor videoed interactions between a parent and child as they performed the following activities: a period of free play (15 minutes), each carer and child participating in a clean-up task (5 minutes), a delay of gratification task (5 minutes), four teaching tasks (3 minutes each), a second free play (4 minutes), a second clean-up task (4 minutes), the presentation of two toys children are discouraged from playing with (2 minutes each), and a meal preparation and lunch task (20 minutes). The videoed assessment takes about an hour for 3-year-olds, and 72 minutes for 4-year-olds. Parents are invited to participate in brief educational sessions if shortcomings were noted in their parenting practices.

Other models include parent-child interactions for a child who has been separated from their parent for a prolonged period when the pair first meet.

An assessment of intervention programs by Piehler et al. [505] noted that intervention programs for children with externalizing problems that were not based on a careful assessment of family need and were not well targeted produced only modest overall effect sizes and were ineffective for a sizable proportion of children who participated.

The need to introduce tiered models of intervention for families where children are vulnerable was made by Shaw et al. [506]. It is noted that the Oregon model appears to provide three programs in a tiered approach: a Family Check-up with a few sessions for a large group of families; a PMT program for intact families; and a TFC program for families where a notification been made about child protection concerns.

The developers of the Oregon models saw the need to arrange financial evaluations of their programs. Kuklinski et al. [507] conducted a cost analysis of the initial Family Check-up program. The analysis found the annual average cost per family was US $1066. Costs declined significantly from children's ages 2 through to 5 years. Once training and oversight patterns had been established, new families were supported at half the initial cost, at US $501 per family. The analysis found that the cost of supporting higher risk families was higher (mean of US $583 per family compared to US $463 for lower risk families), but analyses found that higher risk families benefited more from the program.

Innovations to parenting programs have been proposed by other researchers. Connell et al. [489] provided the Family Check-up program to families with children aged 2-3 years, and followed up families 2 years after they participated in the initial program. Tustin [508] reported an intervention involving parents with severe mental health problems where a mental health clinician provided in-session therapy while a parenting coach provided in-home coaching of parenting practices, and where inputs were coordinated by regular meetings between the parent, clinician and coach.

Harnett [509,510] recommended a time-limited administrative procedure to facilitate assessment of the capacity of a parent to participate in a change process to adjust their parenting practices. The procedure can be summarised as involving five steps: (a) a parent is referred to an early intervention program, and is informed about reasons for concern; (b) a therapist who is equipped to address the concerns receives information about the referral and prepares an intervention plan; (c) the therapist delivers therapy and monitors the parent's level of participation; (d) the therapist assesses changes

 doi:10.20944/preprints202603.0366.v1

achieved, perhaps using a Stages of Change scale; and (e) the therapist provides a treatment report to authorities as agreed.

Gubbels and colleagues have provided new information about components of interventions to minimise child abuse [511–513]. Gubbels et al. [511] reported a meta-analysis of 51 studies examining the efficacy of parent training programs for preventing or reducing child maltreatment. They found an overall effect size of d = .416. The analysis supported a conclusion that parenting programs to prevent child abuse need to include many interventions. Gubbels et al. [512] conducted a meta-analysis of 77 studies examining the efficacy of home visiting programs to reduce child maltreatment. They found that programs using video feedback of parenting practices had an effect size of d = .397; programs that focused on improving parental expectations of the child had an effect size of d = .308; and programs targeting parental responsiveness / sensitivity to a child's needs had an effect size of d = .238.

Gubbels et al. [513] conducted a meta-analysis of 34 studies of school-based interventions to reduce child abuse and 22 studies examining children's self-protection skills. The analysis found that school-based programs improved children's knowledge (d = .57) especially if programs addressed children's social-emotional skills, and also improved children's self-protection skills (d = .528).

In summary, considerable information has accumulated about how to provide effective early intervention for families where children are at heightened risk of following a trajectory of becoming dual-involved children. One program is identified that uses a tiered approach to deliver early intervention therapy, based on three tiers. The first and second tiers provides universal interventions that are suitable for all families in a cohort. The third tier provides very individualised and targeted interventions.

14. Conclusions and Discussion

The aim of the review is to identify modifiable personal and family factors that are associated with the disturbed behaviours of children, including children with very disturbed behaviours, and that can be addressed in early intervention therapy for families where children are vulnerable to developing a mental disorder, to being maltreated, and to follow a trajectory of becoming a dual-involved child who in engaged in the two legal systems involving child protection and juvenile justice.

The review identified 16 psychological models used to assess children that have generated research relevant to providing therapy for children who have potential to become a dual-involved child. The review identified effect sizes that associate variables nominated by models as being important in influencing trajectories children follow, children's behaviour, and in some cases efficacy of therapies.

Effect sizes of universal therapies based on social learning principles were found to be in the range of up to .88, and in the range of .48 to .62 when a child has been traumatised. While these effect sizes are near the conventional criterion for a high association, the effect sizes are not sufficiently high for funding authorities to select any specific model of early intervention therapy for funding in a primary health approach. The review submits that further improvements need to be made to early intervention therapies, especially for children who are at high risk of developing a mental disorder, being referred to child protection services, and being at risk of becoming a dual-involved child.

The review identified 16 psychological models that are relevant to the development of children's disturbed behaviours and mental disorders. Identifying this large number of relevant models means that therapists who address very disturbed behaviours of children need to be well educated about a wide range of psychological theories and therapies.

The review found effect sizes that have been reported to explain children's disturbed behaviour for several psychological models. Effect sizes are summarised: internalizing behaviours (d ranges from .20 to .24), externalizing behaviours (d ranges from .14 to .20), attachment bonds (d ranges from .12 to .34), age of onset of child's aggression (d ranges from .5 to .77), and parenting styles (d ranges from .13 to .45). Research on a number of other psychological models that appear promising has not

 doi:10.20944/preprints202603.0366.v1

yet reached the stage where meta-analyses have calculated effect sizes, indicating that further research is warranted for some of the psychological models reviewed in the article. Effect sizes for some variables are positive but low, indicating that there is an evidence base for therapists to use a psychological model in some cases according to their assessment and clinical judgment.

hile the constructs of children's internalizing and externalizing behaviours are well established, and there is evidence the constructs are used by researchers who follow differing theoretical frameworks, these constructs have not been explicitly incorporated into universal parent training programs. The review indicates that it is important for programs that address children's difficult combinations of behaviours to assist parents and carers to manage children's co-occurring internalizing and externalizing behaviours, while not encouraging parenting practices that promote over-controlling and under-controlling coping styles. There is scope to assess a hypothesis supported by clinicians that interventions for children with co-occurring internalizing and externalizing behaviours should commence by teaching relaxation and calming skills to children, and then progress to more disciplinary approaches, and that these interventions should commence when children are very young.

As most effect sizes are in the range of moderate to small, it is clear that no single theoretical approach can be identified that provides all relevant interventions. To be effective with children who display complex patterns of behaviour, therapists need to adopt a trans-theoretical and a trans-diagnostic approach, and this has implications for training of therapists [514]. There is a need for an integrated system if interventions are to be delivered in a tiered way, supported by validated screening instruments.

Further research is required on the topics of how to encourage children to become intrinsically motivated; how to define the parenting styles of being over-protective, intrusive, and permissive; and how to promote parenting that provides adequate support for children's growing autonomy and confidence at each stage of development. The research might document common developmental pathways for children's autonomy, and deviant trajectories. One topic that has not attracted much research attention involves the development of children's healthy safety skills [515].

The topic of parenting children who have different temperaments is identified in the review as warranting further research. Progress has been made on topics of recognising that the five-factor model of traits is relevant to children, and progress has been made in identifying instruments to assess traits in children. However, the review found limited research on relationships between traits identified in children's temperaments and clusters of disturbed behaviours identified in instruments that assess internalizing and externalizing behaviours. The topic of children's temperamental traits receives little attention in many universal parenting programs, which treat all children as having essentially the same needs.

The topic of why certain behaviours of children cluster together in traits remains unanswered. The construct of reinforcer sensitivity warrants further research as a potential answer to the question of why behaviours that define traits cluster together. The hypothesis that clusters of children's behaviours reveal the preferences of children with each trait for distinct environmental events including consequences of their actions warrants further exploration. Research could examine whether there are consistencies shown by children with each trait for certain types of reinforcer, and whether children with distinct traits consistently object to certain constraints and hassles that trigger their misbehaviours.

While the topic of children's emotions is generally considered to be important, the review found very little evidence-based information about how parents might teach their children to express strong emotions in socially acceptable ways, including for the primary emotions of sadness, anger and fear. Current research provides little guidance for therapists who want to follow evidence-informed practices.

The review identified five models that are used to explain the influence on children of how parents appraise their behaviour. Further research is warranted on the contribution each model is

 doi:10.20944/preprints202603.0366.v1

able to make to identifying effective therapy interventions. The emerging emphasis on re-attribution therapy appears promising as there is a large research base that can be drawn on.

The review considered effect sizes associated with systemic therapy where therapy is provided simultaneously to a parent and child, and where a parent is taught to be a change agent by improving their parenting practices. The review found that effect sizes for systemic parent-child therapy are moderate with effect sizes in the range of d = .26 to .45. The review concludes that systemic therapy should be recognised by authorities as providing effective interventions for parent-child difficulties. One set of research questions involves how therapists might provide systemic therapy for two members of a family simultaneously while operating within agreed ethical and legal guidelines about confidentiality, informed consent, multiple relationships, and conflicts of interest [6,516,517].

A study by Karjalainen et al. [518] raises issues about follow-up support for parents who have participated in an intervention program and whose children present with complex behavioural issues. Karjalainen et al. provided a 19-week group-based universal parenting program to parents in Finland who were involved with child protection services, where children had a mean age of 5.3 years. The study found that improvements were made in children's behaviour immediately post intervention, as assessed using CBCL. However, improvements were not sustained in a follow-up one year later, and improvements made at home did not generalise to the school environment. The authors pointed to a need for periodic ongoing support for this cohort of families. The provision of periodic follow-up support for some cohorts of children warrants further research.

One topic that is important for therapists who work with children who have been referred to legal systems involves the integration of legal and mental health concepts. For example, commentators agree that instruments used by researchers to assess the quality of parent-child relationships lack the scientific qualities to be used in court hearings about individual children, but research has not identified instruments that do meet scientific standards for court work. The legal system emphasises ages when children are sufficiently mature to make their own decisions on some topics, including when to accept personal responsibility for offences they commit. But research has not identified ages when many children have capacity to make their own decisions on topics that are important to them and that are discussed in the legal system, such as whether to participate in therapy, to participate in individual therapy, and to make decisions about the confidentiality of personal information they pass on to a therapist.

There is very limited research about efficacy of how child protection systems operate. For example, when a court issues an order to transfer custody of a child from the parent to a government department even on a temporary basis, it is common practice in some jurisdictions for the court to also issue an order that terminates the parent's right to make decisions affecting their child and to transfer this authority to the state. The review found no research on the topic of whether this transfer of decision-making authority is beneficial for children, or about the age when many children demonstrate capacity to make their own decisions about legal topics that arise in child protection work. There is scope to bring an evidence-informed approach to the child protection system.

The review used the psychological models to provide a framework for analysing effective interventions. The same framework might be adopted to analyse interventions used in parent-child systemic therapy. Adopting a consistent framework in systemic therapy to describe interventions would facilitate analyses of interventions that appear to be important in the management of children who are assessed as being on a trajectory towards becoming a dual-involved child. The review identifies the following parenting practices as requiring further research: parenting practices using over-involvement, over-protection, involving family enmeshment, parental attributions about their child's behaviour, how to build intrinsic motivation, replacing disorganized attachment bonds, interventions for co-occurring physical and relational aggression, management of co-occurring reactive and proactive aggression, early onset aggression, use of inductive discipline, encouraging constructive expression of emotions, parenting practices for differing children's temperamental traits, managing peer influences, impacts on parenting practices of certain combinations of parental traits, and impacts of parental mental disorders. Adopting a framework to organise parenting interventions

 doi:10.20944/preprints202603.0366.v1

will facilitate communication between therapists who use a systemic parent-child approach, and will facilitate scientific analysis of efficacy of interventions.

It is hypothesised that introducing a stronger emphasis on the influence of parental personality traits might reduce an emerging trend to overuse diagnostic terms when parenting practices are criticised.

The review found that effective interventions were derived from a range of theoretical approaches, or was trans-diagnostic therapy. One implication of using a trans-diagnostic approach with vulnerable children is the emphasis when evaluating moves away from the theoretical source of an intervention towards the efficacy of an intervention for clients, producing a more client-centred approach.

One idea that deserves research is whether it is worthwhile introducing a multi-disciplinary course that teaches models and interventions that are used in parent-child systemic therapy.

15. Limitations of the Review

The review has many limitations. First, the field of study that is reviewed is large, and it is likely that important contributions were not identified in the review procedure. Second, as terms to describe systemic therapy are not well standardised it is likely that key words used did not capture some important contributions. Third, the bias of the reviewer in favour of prioritising articles that have clear relevance for therapists may have resulted in the oversight of articles that emphasised theoretical points more than therapeutic implications. The reviewer encourages authors whose work is relevant but was inadvertently overlooked to make a further contribution.

References

1. Carr A. (2019). Family therapy and systemic interventions for child-focused problems: the current evidence base. *J of Family Therapy*, 41, 153-213.
2. Carr A. (2025). Family therapy and systemic interventions for child-focused problems: the evidence base. *J of Family Therapy*, 47(1), e12476.
3. Riedinger V, Pinquart M, Teubert D. (2017). Effects of systemic therapy on mental health of children and adolescents: a meta-analysis. *J of Clinical Child and Adolescent Psychology*, 46(6), 880–894.
4. Baidawi S, Sheehan R. (2019). 'Cross-over kids': Effective responses to children and young people in the youth justice and statutory Child Protection systems. Report to the Criminology Research Advisory Council. Canberra: Australian Institute of Criminology.
5. Baldawi S, Ball R. (2023). Child protection and youth offending: Differences in youth criminal court-involved children by dual system involvement. *Children & Youth Services Review*, 106736.
6. Greenberg LR, Fidler BJ, Saini MA. (2019). *Evidence-informed interventions for court-involved families*. Oxford University Press.
7. Figueiredo RG, Patino CM, Ferreira JC. (2025). Cross-sectional studies: understanding applications, methodological issues, and valuable insights. *J Bras Pneumol*. 51(1):e20250047
8. Liu SX. (2014). Statistical power analysis for the social and behavioral sciences. Routledge.
9. Tustin D. (2024). Psycho-legal concepts for parenting in child custody and child protection. Springer.
10. Kokko K, Tremblay RE, Lacourse E, Nagin DS, Vitaro F. (2006). Trajectories of prosocial behavior and physical aggression in middle childhood: links to adolescent school dropout and physical violence. *J Research on Adolescence*, 16(3), 403-428.
11. Silver RB, Measelle JR, Armstrong JM, Essex MJ. (2010). The impact of parents, childcare providers, teachers, and pers on early externalizing trajectories. *J School Psychology*, 48(6), 555-583.
12. Piquero AR, Carriaga ML, Diamond B, Kazemian L, Farrington DP. (2012). Stability in aggression revisited. *Aggression and Violent Behavior*, 17, 365-372.
13. Shi Q, Ettekal I, Deutz MHF, Woltering S. (2020). Trajectories of pure and co-occurring internalizing and externalizing problems from early childhood to adolescence: associations with early childhood individual and contextual antecedents. *Developmental Psychology*, 56(10), 1906–1918.

 doi:10.20944/preprints202603.0366.v1

14. Goulter N, Roubinov DS, McMahon RJ, Boyce WT, Bush NR. (2021). Externalizing and internalizing problems: associations with family adversity and young children's adrenocortical and autonomic functioning. *Res Child Adolesc Psychopathol*. 49(5), 629-642
15. Gevers SWM, Poelen EAP, Scholte RHJ, Otten R, Koordeman R. (2021). Individualized behavioral change of externalizing and internalizing problems and predicting factors in residential youth care. *Psychological Services*, 18(4), 595–605.
16. Dalmaso E, Taylor A, Whitham J, Klassman K, Malvaso C. (2024). Protective factors for externalising behaviour problems in children and adolescents living in out-of-home care: A systematic review. *Children and Youth Services Review*, 167, 107998.
17. Hiller RM, St Clair MC. (2018). The emotional and behavioural symptom trajectories of children in long-term out-of-home care in an English local authority. *Child Abuse Neglect*. 81, 106-117.
18. Hiller RM, Fraser A, Denne M, Bauer A, Halligan SL. (2023). The development of young peoples' internalising and externalising difficulties over the first three-years in the public care system. *Child Maltreat*. 28(1), 141-151.
19. Tustin D. (2024). Need for therapy for vulnerable families. In D Tustin (ed), Psycho-legal concepts for parenting in child custody and child protection, vol 4 Therapy interventions for vulnerable families, chapter 8, pp. 151-156. Springer.
20. Dubois—Comtois K, Bussiers EL, Cyr C, St-Onge J, Baudry C, Milot T, Labbe AP. (2021). Are children and adolescents in foster care at greater risk of mental health problems than their counterparts? A meta-analysis. *Children & Youth Services Review*, 127, 10610.
21. Schaeffer CM, Petras H, Ialongo N, Poduska J, Kellam S. (2003). Modeling growth in boys' aggressive behavior across elementary school: links to later criminal involvement, conduct disorder, and antisocial personality disorder. *Dev Psychol*, 39, 1020-1035.
22. Macvean M, Mildon R, Shlonsky A, Devine B, Falkiner J, Trajanovska M, D'Esposito F. (2013). Evidence review: An analysis of the evidence for parenting interventions for parents of vulnerable children aged up to six years. Commissioned by the Families Commission, New Zealand. Parenting Research Centre. Accessed 30 November 2025.
23. Macvean M, Sartore G, Mildon R, Shlonsky A, Majika C, Albers B, Falkiner J, Pourliakas A, Devine, B. (2015). Effective Intensive Family Services Review. Report prepared by the Parenting Research Centre and The University of Melbourne on behalf of NSW Department of Family and Community Services.
24. Wade C, Macvean M, Falkiner J, Devine B, Mildon R. (2012). Evidence review: An analysis of the evidence for parenting interventions for parents of vulnerable children aged up to six years. Parenting Research Centre. Accessed
25. Comer JS, Chow C, Chan PT, Cooper-Vince C, Wilson LA. (2013). Psychosocial treatment efficacy for disruptive behavior problems in very young children: a meta-analytic examination. *J Am Acad Child Adolesc Psychiatry*. 52(1), 26-36
26. Brendel KE, Maynard BR. (2014). Child–parent interventions for childhood anxiety disorders: a systematic review and meta-analysis. *Research on Social Work Practice*, 24(3), 287–295.
27. Manassis K, Lee TC, Bennett K, Zhao XY, Mendlowitz S, Duda S, .Saini M, .Barrett P, Dadds MR, Heyne D. Hudson J, Kendall PC, Wood JJ. (2014). Types of parental involvement in CBT with anxious youth: a preliminary meta-analysis. *J of Consulting and Clinical Psychology*, 82(6), 1163–1172.
28. Thulin U, Svirsky L, Serlachius E, Andersson G, Ost L. (2014) The effect of parent involvement in the treatment of anxiety disorders in children: a meta-analysis. *Cognitive Behaviour Therapy*, 43(3), 185–200.
29. Sanders MR, Kirby JN, Tellengen CL, Day JJ. (2014). The Triple P-Positive Parenting Program: a systematic review and meta-analysis of a multi-level system of family support. *Clin Psychol Review*, 34(4), 337-57.
30. Helander M, Asperholm M, Wetterborg D, Öst LG, Hellner C, Herlitz A, Enebrink P. (2024). The efficacy of parent management training with or without involving the child in the treatment among children with clinical levels of disruptive behavior: a meta-analysis. *Child Psychiatry Hum Dev*. 55(1), 164-181.
31. Piquero AR, Jennings WG, Diamond B, Farrington DP, Tremblay RE., Welsh BC, Gonzalez JMR. (2016). A meta-analysis update on the effects of early family/parent training programs on antisocial behavior and delinquency. *J of Experimental Criminology*, 12(2), 229–248.

 doi:10.20944/preprints202603.0366.v1

32. O'Dwyer C, Twomey C, Davis B, Sharry J, Brosnan E, Carr A. (2025). Parents Plus systemic, solution-focused parent training programs: an updated systematic review and meta-analysis. *Family Process*, 64(2). e70049.
33. Chacko A, Jensen SA, Lowry LS, Cornwell M, Chimklis A, Chan E, ... Pulgarin B. (2016) Engagement in behavioural parent training: review of the literature and implications for practice. *Clinical Child and Family Psychology Review*, 19(3): 204–215.
34. Reyno S, McGrath P. (2006). Predictors of parent training efficacy for child externalizing behaviour problem– a meta-analytic review. *J of Child Psychology and Psychiatry*, 47, 9–111.
35. Bayer JK, Prendergast LA, Brown A, Bretherton L, Hiscock H, Nelson-Lowe M, Gilbertson T, Noone K, Bischof N, Beechey C, Muliadi F, Mihalopoulos C, Rapee RM. (2023). Prediction of clinical anxious and depressive problems in mid childhood amongst temperamentally inhibited preschool children: a population study. *Eur Child Adolesc Psychiatry*, 32(2), 267-281
36. Bayer JK, Sanson AV, Hemphill SA. (2006). Parent influences on early childhood internalizing difficulties. *Applied Developmental Psychology*, 27, 542-559.
37. Karjalainen P, Santalahti P, Aronen ET, Kiviruusu O. (2021). Parent- and teacher-reported long-term effects of parent training on child conduct problems in families with child protection and other support services: a randomized controlled trial. *Child Adolesc Psychiatry Ment Health*, 15(1) 7.
38. Shaw DS, Mendelsohn AL, Morris-Perez PA, Weaver Krug C. (2024). Integrating equifinality and multifinality into the of prevention programs in early childhood: The conceptual case for use of tiered models. *Dev Psychopathol*. 36(5):2357-2368.
39. Dishion TJ, Brennan LM, Shaw DS, McEachern AD, Wilson MN, Jo B. (2014). Prevention of problem behavior through annual family check-ups in early childhood: intervention effects from home to early elementary school. *J Abnorm Child Psychol*. 42(3), 343-54.
40. Lindstrom-Johnson S, Elam K, Rogers AA, Hilley C. (2018). A meta-analysis of parenting practices and child psychosocial outcomes in trauma-informed parenting interventions after violence exposure. *Prevention Science*, 19.
41. Kerns KA, Siener S, Brumariu LE. (2011). Mother-child relationships, family context, and child characteristics as predictors of anxiety symptoms in middle childhood. *Dev & Psychopathology*, 23, 593-604.
42. Sameroff A, Gutman LM, Peck SC. (2003). Adaptation among youth facing multiple risks: Prospective research findings. In SS Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 364–391). Cambridge University Press.
43. Achenbach TM. (1966). The classification of children's psychiatric symptoms: A factor analytic study. *Psychological Monographs*, 80, 1–37.
44. Achenbach TM, Rescorla LA. (2007). Multicultural understanding of child and adolescent psychopathology: Implications for mental health assessment. New York: Guilford Press.
45. Reynolds CR, Kamphaus RW. (2004). *Behavior assessment system for children* (2nd ed.): Manual. Circle Pines: AGS Publishing
46. Goodman R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *J of Child Psychology and Psychiatry*, 38, 581-586.
47. McClowry SG, Collins A. (2012). Temperament-based intervention: reconceptualized from a response-to-intervention framework. In M Zentner & RL Shiner (Eds.). *Handbook of temperament*, chapter 29, pp. 607-644. Guilford Press.
48. Pinquart M. (2017a). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: an updated meta-analysis. *Developmental Psychology*, 53(5), 873-932.
49. Pinquart M. (2017b). Associations of parenting dimensions and styles with internalizing symptoms in children and adolescents: a meta-analysis. *Marriage & Family Review*, 53(7), 613-640.
50. Moller EL, Nikolic M, Majdandzic M, Bogels SM. (2016). Associations between maternal and paternal parenting behaviors, anxiety and its precursors in early childhood: a meta-analysis. *Clin Psychol Review*, 45, 17-33.

 doi:10.20944/preprints202603.0366.v1

51. Bornstein MH, Hahn CS, Haynes OM. (2010). Social competence, externalizing, and internalizing behavioral adjustment from early childhood through early adolescence: developmental cascades. *Dev Psychopathol*. 22(4), 717-35.
52. Kunimatsu MM, Marsee MA. (2012). Examining the presence of anxiety in aggressive individuals: The illuminating role of fight-or-flight mechanisms. *Child & Youth Care Forum*, 41(3), 247–258.
53. Fanti KA, Henrich CC. (2010). Trajectories of pure and co-occurring internalizing and externalizing problems from age 2 to age 12: findings from the National Institute of Child Health and Human Development Study of Early Child Care. *Developmental Psychology*, 46(5), 1159-1175.
54. Schermerhorn AC, Bates JE, Goodnight JA, Lansford JE, Dodge KA, Pettit GS. (2013). Temperament moderates associations between exposure to stress and children's externalizing problems. *Child Development*, 84(5):1579-93.
55. Zarling AL, Taber-Thomas S, Murray A, Knuston JF, Lawrence E, Valles NL, DeGarmo DS, Bank L. (2013). Internalizing and externalizing symptoms in young children exposed to intimate partner violence: examining intervening processes. *J Fam Psychol*. 27(6), 945-55.
56. Wiggins JE, Mitchell C, Hyde LW, Monk CS. (2015). Identifying early pathways of risk and resilience: the co-development of internalizing and externalizing symptoms and the role of harsh parenting. *Development & Psychopathology*, 1-18.
57. Goulter N, Roubinov DS, McMahon RJ, Boyce WT, Bush NR. (2021). Externalizing and internalizing problems: associations with family adversity and young children's adrenocortical and autonomic functioning. *Res Child Adolesc Psychopathol*. 49(5), 629-642.
58. Shi Q, Ettekal I, Deutz MHF, Woltering S. (2020). Trajectories of pure and co-occurring internalizing and externalizing problems from early childhood to adolescence: associations with early childhood individual and contextual antecedents. *Developmental Psychology*, 56(10), 1906–1918.
59. Asendorpf JB, van Aken MAG. (1999). Resilient, overcontrolled and undercontrolled personality prototypes in childhood: replicability, predictive power, and the trait-type issue. *J of Personality and Social Psychology*, 77, 815-832.
60. Asendorpf JB, Borkenau P, Ostendorf F, Van Aken MAG. (2001). Carving personality description at its joints: Confirmation of three replicable personality prototypes for both children and adults. *European Journal of Personality*, 15(3), 169-198.
61. Bohane L, Maguire N, Richardson T. (2017). Resilients, overcontrollers and undercontrollers: A systematic review of the utility of a personality typology method in understanding adult mental health problems. *Clin Psychol Rev*. 57, 75-92.
62. Ryan RM, Connell JP. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *J of Personality and Social Psychology*, 57, 749-761.
63. Ryan RM, Deci EL. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am. Psychol*. 55, 68–78.
64. Ryan RM, Deci EL. (2017). Self-determination theory: basic psychological needs in motivation, development, and wellness. The Guilford Press
65. Kochanska G, Aksan N. (2006). Children's conscience and self-regulation. *Journal of Personality*, 74:1587–1617.
66. Hoffman, ML, Saltzstein HD. (1967). Parent discipline and the child's moral development. *J of Personality and Social Psychology*, 5, 45-57.
67. Hoffman ML. (1994). Discipline and internalization. *Developmental Psychology*, 30(1), 26-28.
68. Krevans J, Gibbs JC. (1996). Parents' use of inductive discipline: relations to children's empathy and prosocial behavior. *Child Development*, 67(6), 3263–3277.
69. Patrick RB, Gibbs JC. (2011). Inductive discipline, parental expression of disappointed expectations, and moral identity in adolescents. *J of Youth and Adolescence*, 41, 973-983.
70. Bendel-Stenzel LC, An D, Kochanska G. (2023). Revisiting the debate on effects of parental power-assertive control in two longitudinal studies: early attachment security as a moderator. *Attach Hum Dev*. 25(5), 461-486.

 doi:10.20944/preprints202603.0366.v1

71. Di Domenico SI, Ryan RM. (2017). The emerging neuroscience of intrinsic motivation: a new frontier in self-determination research. *Front Hum Neurosci*. 24;11:145.
72. Choe, DE., Olson, SL., Sameroff, AJ. (2013). The interplay of externalizing problems and physical and inductive discipline during childhood. *Dev Psychol*., 49(11).
73. Corr PJ. (2004). Reinforcement sensitivity theory and personality. *Neuroscience and Biobehavioral Reviews*, 28, 317–332.
74. Corr PJ. (2008). Reinforcement Sensitivity Theory (RST): introduction. In PJ Corr (ed). *The Reinforcement Sensitivity Theory of Personality,* pp. 1-43. Cambridge University Press.
75. Eysenck HJ. (1967). *The biological basis of personality*. Thomas, Springfield.
76. Gray JA. (1972). The psychophysiological nature of introversion-extraversion: a modification of Eysenck's theory. In VD Nebylitsyn & JA Gray (eds). *The biological bases of individual behaviour,* pp.182–205. Academic Press.
77. Gray JA. (1981), A critique of Eysenck's theory of personality. In HJ Eysenck (ed.), *A model for personality*, pp. 246–276. Berlin: Springer.
78. Corr PJ, McNaughton N. (2008). Reinforcement sensitivity theory and personality. In PJ Corr (Ed.), *The reinforcement sensitivity theory of personality,* pp. 155–187. Cambridge University Press.
79. Corr PJ, Cooper AJ. (2016). The Reinforcement Sensitivity Theory of Personality Questionnaire (RST-PQ): Development and validation. *Psychological Assessment,* 28(11), 1427–1440.
80. Ainsworth MDS, Blehar MD, Waters E, Wall S. (1978). *Patterns of attachment: a psychological study of the strange situation.* Hillsdale: Erlbaum.
81. Main M, Hesse E, Hesse S. (2011). Attachment theory and research: overview with suggested applications to child custody. *Family Court Review,* 49, 426-463.
82. Madigan S, Fearon RM, van IJzendoorn MH; Duschinsky R, Schuengel C, et al. (2023). The first 20,000 strange situation procedures: A meta-analytic review. *Psychological Bulletin*, 149(1-2), 99-132.
83. Bosmans G, Van Vlierberghe L, Bakermans-Kranenburg MJ, et al. (2022). A learning theory approach to attachment theory: exploring clinical applications. *Clinical Child and Family Psychological Review,*
84. Van IJzendoorn MH, Bakermans-Kranenburg MJ. (1996). Attachment representations in mothers, fathers, adolescents, and clinical groups: a meta-analytic search for normative data. *J Counselling and Clinical Psychology*, 64, 8-21.
85. Van IJzendoorn MH. (1995). Adult attachment representations, parental responsiveness, and infant attachment: a meta-analysis of the predictive validity of the Adult Attachment Interview. *Psychological Bulletin*, 117, 387-403.
86. de Wolff MS, van IJzendoorn MH. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, 68, 571–591.
87. Verhage ML, Schuengel C, Madigan S, Fearon RMP, Oosterman M, Cassibba R, et al. (2016). Narrowing the transmission gap: a synthesis of three decades of research on intergenerational transmission of attachment. *Psychological Bulletin,* 142, 337–366.
88. Brumariu LE, Kerns KA. (2010). Parent-child attachment and internalizing symptoms in childhood and adolescence: a review of empirical findings and future directions. *Dev & Psychopathology*, 22, 177-203.
89. Guttmann-Steinmetz S, Crowell JA. (2006). Attachment and externalizing disorders: a developmental psychopathology perspective. *J of the American Academy of Child & Adolescent Psychiatry*, 45, 440-451.
90. Madigan S, Fearon RMP, Van IJzendoorn MH, Duschinsky R, Schuengel C, Bakermans-Kranenburg MJ, Ly A, Cooke JE, Deneault AA, Oosterman M, Verhage ML. (2023). The first 20,000 Strange Situation Procedures: a meta-analytic review. *Psychological Bulletin,*
91. Madigan S, Deneault A-A, Duschinsky R, Bakermans-Kranenburg MJ, Schuengel C, van IJzendoorn MH, Ly A, Fearon RMP, Eirich R, Verhage ML. (2024). Maternal and paternal sensitivity: Key determinants of child attachment security examined through meta-analysis. *Psychological Bulletin,* 150(7), 839–872.
92. Groh AM, Narayan AJ, Bakermans-Kranenburg MJ, Roisman GI, Vaughn BE, Fearon RMP, van IJzendoorn MH. (2017a). Attachment and temperament in the early life course: a meta-analytic review. *Child Dev*. 88(3), 770-795.

 doi:10.20944/preprints202603.0366.v1

93. Madigan S, Deneault AA, Duschinsky R, Bakermans-Kranenburg MJ, Schuengel C, van IJzendoorn MH, Ly A, Fearon RMP, Eirich R, Verhage ML. (2024). Maternal and paternal sensitivity: Key determinants of child attachment security examined through meta-analysis. *Psychological Bulletin,* 150(7), 839–872.
94. Fearon RP, Bakermans-Kranenburg MJ, van Ijzendoorn MH, Lapsley AM, Roisman GI. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: a meta-analytic study. *Child Development*, 81, 435– 456
95. Madigan S, Atkinson L, Laurin K, Benoit D. (2013). Attachment and internalizing behavior in early childhood: a meta-analysis. *Developmental Psychology*, 49, 672– 689.
96. Groh AM, Fearon RP, van IJzendoorn MH, Bakermans-Kranenburg MJ, Roisman GI. (2017b). Attachment in the early life course: meta-analytic evidence for its role in socioemotional development. *Child Development Perspectives*, 11, 70-76.
97. Dagan O, Schuengel C, Verhage ML, Van IJzendoorn MH, Sagi-Schwartz A, Madigan S, ... Cummings EM, & The Collaboration on Attachment to Multiple Parents and Outcomes Synthesis. (2021). Configurations of mother-child and father-child attachment as predictors of internalizing and externalizing behavioral problems: An individual participant data (IPD) meta-analysis. *New Directions for Child and Adolescent Development*, 180, 67–94.
98. van IJzendoorn MH, Schuengel, C, Bakermans-Kranenburg MJ. (1999). Disorganized attachment in early childhood: an analysis of precursors, concomitants and sequelae. *Development and Psychopathology*, 11, 225-249.
99. Fraley, RC. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6, 123–151.
100. Opie JE, McIntosh JE, Esler TB, Duschinsky R, George C, Schore A. (2021). Early childhood attachment stability and change: a meta-analysis. *Attachment & Human Development*, 23(6).
101. Cyr C, Euser EM, Bakersman-Kranenburg MJ, van IJzendoorn MH. (2010). Attachment security and disorganization in maltreating and high-risk families: a series of meta-analyses. *Development and Psychopathology*, 22, 87-108.
102. Buisman RSM, Pittner K, Compier-de Block LHCG, van den Berg LJM, Bakermans-Kranenburg MJ, Alink LRA. (2018). The past is present: The role of maltreatment history in perceptual, behavioral and autonomic responses to infant emotional signals. *Child Abuse & Neglect,* 77, 23-34.
103. Buisman RSM, Bakermans-Kranenburg MJ, Pittner K, Compier-de Block LHCG, van den Berg LJM, van IJzendoorn MH, Tollenaar MS, Elzinga BM, Lindenberg J, Alink LRA. (2019). Parents' experiences of childhood abuse and neglect are differentially associated with behavioral and autonomic responses to their offspring. *Developmental Psychobiology,* 61(6), 888-902.
104. Buisman RSM, Pittner K, Tollenaar MS, Lindenberg J, van den Berg LJM, Compier-de Block LHCG, van Ginkel JR, Alink LRA., Bakermans-Kranenburg MJ, Elzinga BM, van IJzendoorn MH. (2020). Intergenerational transmission of child maltreatment using a multi-informant multigeneration family design. *PLoS ONE,* 15(3), e0225839.
105. van IJzendoorn MH, Bakermans-Kranenburg MJ. (2019). Bridges across the intergenerational transmission of attachment gap. *Curr Opin Psychol*. 25, 31-36.
106. van IJzendoorn MH, Juffer F, Duyvesteyn MGC. (1995). Breaking the intergenerational cycle of insecure attachment: a review of the effects of attachment-based interventions on maternal insensitivity and infant security. *J Child Psychology & Psychiatry*, 36(2), 225-248.
107. Euser S, Alink LRA, Stoltenborgh M, Bakermans-Kranenburg MJ, van IJzendoorn MH. (2015). A gloomy picture; a meta-analysis of randomized controlled trials reveals disappointing effectiveness of programs aiming at preventing child maltreatment. *BMC Public Health*, 15, 1068.
108. Velderman, MK., Bakermans-Kranenburg, MJ., Juffer, F., & van IJzendoorn, MH. (2006). Effects of attachment-based interventions on maternal sensitivity and infant attachment: differential sensitivity of highly reactive infants. *J of Family Psychology*, 20, 266-274.
109. Obeldobel CA, Brumariu LE, Kerns KA. (2022). Parent-child attachment and dynamic emotion regulation: a systematic review. *Emotion Review*, 15(1), 28-44.

 doi:10.20944/preprints202603.0366.v1

110. Van IJzendoorn MH, Schuengel C, Wang Q, Bakermans-Kranenburg MJ. (2023). Improving parenting, child attachment, and externalizing behaviors: Meta-analysis of the first 25 randomized controlled trials on the effects of Video-feedback Intervention to promote positive parenting and sensitive discipline. *Development and Psychopathology*, 35(1), 241-256.
111. Mesman J, Emmen RAG. (2013). Mary Ainsworth's legacy: a systematic review of observational instruments measuring parental sensitivity. *Attachment and Human Development*, 15, 485-506.
112. Tryphonopoulos PD, Letournea N, Ditommaso E. (2014). Attachment and care-giver-infant interaction: a review of observational-assessment tools. *Infant Mental Health Journal*, 35, 642-656.
113. Lotzin A, Lu X, Kriston L, Schiborr J, Musal T, Romer G, Ramsauer B. (2015). Observational Observational tools for measuring parent–infant interaction: a systematic review. *Clinical Child and Family Psychology Review*, 18**,** 99–132.
114. Gridley N, Blower S, Dunn A, Bywater T, Whittaker K, Bryant M. (2019). Psychometric properties of parent–child (0–5 years) interaction outcome measures as used in randomized controlled trials of parent programs: a systematic review. *Clinical Child and Family Psychology Review*, 22, 253-271.
115. Gridley N, Blower S, Dunn A, Bywater T, Bryant M. 920190. Psychometric properties of child (0-5 years) outcome measures as used in randomized controlled trials of parent programs: a systematic review. *Clin Child Fam Psychol Rev*. 22(3), 388-405.
116. Cañas M, Ibabe I, De Paúl J. (2020). Promising observational instruments of parent-child (0-12 years) interaction within the child protection system: a systematic review. *Child Abuse Neglect*. 109, 104713.
117. Stuart A, Canário C, Cruz O. (2021). An evaluation of the quality of parent-child interactions in vulnerable families that are followed by Child Protective Services: a latent profile analysis. *Children (Basel)*, 8(10), 906.
118. Wittkowski A, Vatter S, Muhinyi A, Garrett C, Henderson M. (2020). Measuring bonding or attachment in the parent-infant-relationship: a systematic review of parent-report assessment measures, their psychometric properties and clinical utility. *Clinical Psychology Review*, 82, 101906.
119. Zumbach J, Oster A, Rademacher A, Koglin U. (2022). Reliability and validity of behaviour observation coding systems in child maltreatment risk evaluation: a systematic review. *J of Child & Family Studies*, 31, 545-562.
120. Van IJzendoorn MH, Bakermans JJW, Steele M, Granqvist P. (2018a). Diagnostic use of Crittenden's attachment measures in family court is not beyond a reasonable doubt. *Infant Mental Health Journal*, 39, 642-646.
121. Van IJzendoorn MH, Steele M, Granqvist P. (2018b). On exactitude in science: a map of the empire the size of the empire. *Infant Mental Health Journal*, 39(6), 652–655.
122. Forslund T, Granqvist P, van IJzendoorn MH, Schuengel C, Bakermans-Kranenburg MJ, Shaver PR, Cyr C, Tarabulsy GM, Madigan S, Fearon RP, Cicchetti D, Cassidy J, Zeanah CH, Dozier M, Belsky J, Lamb ME, Duschinsky R, et al. (2022). Attachment goes to court: child protection and custody issues. *Attachment & Human Development*, 24(1), 1-52.
123. Hammarlund M, Granqvist P, Elfvik S, Andram C, Forslund T. (2022) Concepts travel faster than thought: an empirical study of the use of attachment classifications in child protection investigations. *Attachment & Human Development*, 24, 712-731.
124. Granqvist P, Sroufe LA, Dozier M, Hesse E, Steele M, van Ijzendoorn M, et al. (2017). Disorganized attachment in infancy: a review of the phenomenon and its implications for clinicians and policy-makers. *Attachment & Human Development*, 19(6), 534-558.
125. Baumrind D. (1966). Effects of authoritative control on child behavior. *Child Development, 37*, 887–907.
126. Baumrind D. (1971). Current patterns of parental authority. *Developmental Psychology*, 4, 1–103.
127. Baumrind D. (1978). Parental disciplinary patterns and social competence in children. *Youth and Society*, 9, 239–276.
128. Baumrind D. (2005). Patterns of parental authority and adolescent autonomy. *New Directions for Child & Adolescent Development*, 108, 61–69.
129. Rajan S, Navaneetham J, Marriamma P, Muralidhar D. (2019). A review of scales of perceived parenting style. *J of Mental Health and Human Behaviour* 24(2), 73-77.

 doi:10.20944/preprints202603.0366.v1

130. Bahrami B, Dolatshahi B, Pourshahbaz A, Mohammadkhani P. (2018). Comparison of personality among mothers with different parenting styles. *Iran J Psychiatry*, 13(3), 200-206.
131. Sanvictores T, Mendez MD. (2022). *Types of parenting styles and effects on children*. StatPearls Publishing LLC.
132. Masud H, Ahmad MS, Cho KW, Fakhr Z. (2019). Parenting styles and aggression among young adolescents: a systematic review of literature. *Community Ment Health J*. 55(6), 1015-1030.
133. Sunita SC, Sihag J. (2022). The effects of parenting style on children's behavior: a systematic literature review. *The Pharma Innovation Journal*, 11(11):1695-1702.
134. Ruiz-Hernandez JA, Moral-Zafra E, Llor-Esteban B, Jimenez-Barbero J. (2019). Influence of parental styles and other psychosocial variables on the development of externalizing behaviors in adolescence: a systematic review. *The European Journal of Psychology Applied to Legal Context,* 11(1), 9-21.
135. Miller JM, DiIorio C, Dudley W. (2002). Parenting style and adolescent's reaction to conflict: is there a relationship? *J Adolesc Health*. 31(6), 463-8.
136. Aunola K, Nurmi JE. (2005). The role of parenting styles in children's problem behaviour. *Child Development*, 76(6) 1144-1159.
137. Barber BK. (1996). Parental psychological control: revisiting a neglected construct. *Child Development*, 67, 3296-3319.
138. Gugliandolo MC, Costa S, Cuzzocrea F, Larcan R. (2015). Trait emotional intelligence as mediator between psychological control and behaviour problems. *J Child Fam Studies*, 24, 2290–2300.
139. Goagoses N, Bolz T, Eilts J, et al. (2023). Parenting dimensions/styles and emotion dysregulation in childhood and adolescence: a systematic review and meta-analysis. *Curr Psychol,* 42, 18798–18822.
140. Morris TL, Oosterhoff B. (2016). Observed mother and father rejection and control: association with child social anxiety, general anxiety, and depression. *J Child Fam Studies*,
141. Benoit D. (2004). Infant-parent attachment: Definition, types, antecedents, measurement and outcome. *Paediatric Children's Health*, 9, 541-545.
142. Bendel-Stenzel, L. C., An, D., & Kochanska, G. (2023). Revisiting the debate on effects of parental power-assertive control in two longitudinal studies: Early attachment security as a moderator. *Attachment & Human Development,* 25(5), 461–486.
143. Van den Akker AL, Dekovic M, Asscher JJ, Shiner RL, Prinzie P. (2013). Personality types in childhood: relations to latent trajectory classes of problem behavior and overreactive parenting across the transition into adolescence. *J Personality and Social Psychology*, 104(4), 750-764.
144. Koerner SS, Wallace S, Lehman SJ, and Raymond M. (2002). Mother-to-daughter disclosure after divorce: are there costs and benefits? *J of Child and Family Studies*, 11(4), 1062-24.
145. Barber BK, Buehler C. (1996). Family cohesion and enmeshment: different constructs, different effects. *J of Marriage and Family*, 58(2), 433-441.
146. Coe JL, Davies PT, Sturge-Apple ML. (2018). Family cohesion and enmeshment moderate associations between maternal relationship instability and children's externalizing problems. *J Family Psychology,* 32(3), 289-298.
147. McCoy SS, Dimler LM, Rodrigues L. (2025). Parenting in overdrive: a meta-analysis of helicopter parenting across multiple indices of emerging adult functioning. *J Adult Dev,* 32, 222–245.
148. Parent J, Forehand R. (2017). The Multidimensional Assessment of Parenting Scale (MAPS): development and psychometric properties. *J of Child and Family Studies*, 26.
149. Tremblay RE. (2000). The development of aggressive behavior during childhood: what have we learned in the past century? *Int J of Behavioral Development*, 24(2), 129-141.
150. Vaillancourt T, Brendgen M, Boivin M, Tremblay RE. (2003). A longitudinal confirmatory factor analysis of indirect and physical aggression: Evidence of two factors over time? *Child Development*, 74(1), 1628-1638.
151. Underwood MK, Beron KJ, Rosen LH. (2009). Continuity and change in social and physical aggression from middle childhood through early adolescence. *Aggressive Behavior*, 35(5), 357-375.
152. Lansford JE, Skinner AT, Sorbring E, Di Giunta L, Deater-Deckard K, Dodge KA, Malone PS, Oburu P, Pastorelli C, Tapanya S, Tirado LMU, Zelli A, Al-Hassan SM, Alampay LP, Bacchini D, Bombi AS, Bornstein MH, Chang L. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive Behavior*, 38, 298-308.

 doi:10.20944/preprints202603.0366.v1

153. Harachi TW, Fleming CB, White HR, Ensminger ME, Abbott RD, Catalano RF, Haggerty KP. (2006). Aggressive behavior amongst girls and boys during middle childhood: predictors and sequelae of trajectory group membership. *Aggressive Behavior*, 32, 279-293.
154. Dodge KA, Crick NR. (1990). Social information-processing bases of aggressive behavior in children. *Personality and Social Psychology Bulletin*, 16(1), 8-22.
155. Dodge KA., Somberg DR. (1987). Hostile attributional biases among aggressive boys are exacerbated under conditions of threats to the self. *Child Development*, 58(1), 213–224.
156. Dodge KA, Lochman JE, Harnish JD, Bates JE, Pettit GS. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *J of Abnormal Psychology*, 106(1), 37–51.
157. Dodge K, Lansford J, Burks V, Bates J, Pettit G, Fontaine R, Price J. (2003). Peer rejection and social information-processing factors in the development of aggressive behavior problems in children. *Child Development*, 74, 374-393.
158. Dodge KA. (2006). Translational science in action: hostile attributional style and the development of aggressive behavior problems. *Development and Psychopathology*, 18(3), 791–814.
159. Dodge KA, Greenberg MT, Malone PS. (2008). Testing an idealized dynamic cascade model of the development of serious violence in adolescence. *Child Development, 79*, 1907–1927.
160. Dodge KA. (2024). *Children's defensive mindset*. Cambridge University Press.
161. Dodge KA, Coie JD. (1987). Social-information-processing factors in reactive and proactive aggression in children's peer groups. *J of Personality and Social Psychology*, 53(6), 1146–1158.
162. Crick N, Dodge K. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin*, 115(1), 74–101.
163. Crick NR, Dodge KA. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development*, 67(3), 993-1002.
164. Fite PJ, Evans SC, Tampke EC, Griffith R. (2024). Parent, teacher, and youth reports on measures of reactive and proactive aggression. *Child & Youth Care Forum*, 53(4), 957–979.
165. Vitaro F, Brendgen M, Tremblay RE. (2002a). Reactively and proactively aggressive children: antecedent and subsequent characteristics. *J Child Psychol Psychiatry*, 43(4), 495-505.
166. Little T, Brauner J, Jones SM, Nock M, Hawley P. (2003). Rethinking aggression: a typological examination of the functions of aggression. *Merrill-Palmer quarterly*, 49(3):343-369.
167. Arsenio WF, Adams E, Gold J. (2009). Social information processing, moral reasoning, and emotion attributions: relations with adolescents' reactive and proactive aggression. *Child Development*, 80(6), 1739–1755.
168. Babcock JC, Tharp ALT, Sharp C, Heppner W, Stanford MS. (2014). Similarities and differences in impulsive/premeditated and reactive/proactive bimodal classification of aggression. *Aggression and Violent Behavior*, 19, 258-262.
169. de Castro BO, Veerman J, Koops W, Bosch J, Monshouwer HJ. (2002). Hostile attribution of intent and aggressive behavior: a meta-analysis. *Child Development*, 73(3), 916-34.
170. de Castro BO, Slot NW, Bosch JD, Koops W, Veerman JW. (2003). Negative feelings exacerbate hostile attributions of intent in aggressive boys. *J of Clinical Child and Adolescent Psychology*, 31(1), 56–65.
171. de Castro BO, Verhulp EE, Runions K. (2012). Rage and revenge: Highly aggressive boys' explanations for their responses to ambiguous provocation. *European Journal of Developmental Psychology*, 9(3), 331–350.
172. Card NA, Little TD. (2006). Proactive and reactive aggression in childhood and adolescence: A meta-analysis of differential relations with psychosocial adjustment. *International Journal of Behavioral Development*, 30, 466-480.
173. Polman H, Orobio de Castro B, Koops W, van Boxtel HW, Merk W. (2007). A meta-analysis of the distinction between reactive and proactive aggression in children and adolescents. *J Abnormal Child Psychology*, 35(4), 522-35.
174. Fontaine RG. (2006). Evaluative behavioral judgments and instrumental antisocial behaviors in children and adolescents. *Clinical Psychology Review*, 26(8), 956–967.
175. Fontaine RG, Yang C, Dodge KA, Pettit GS, Bates JE. (2009). Development of response evaluation and decision (RED) and antisocial behavior in childhood and adolescence. *Dev Psychol*. 45(2), 447-59.

 doi:10.20944/preprints202603.0366.v1

176. Hubbard JA, McAuliffe MD, Morrow MT, Romano LJ. (2010). Reactive and proactive aggression in childhood and adolescence: precursors, outcomes, processes, experiences, and measurement. *J Personality*, 78(1), 95-118.
177. Fite PJ, Wimsatt AR, Elkins SR, Grassetti SN. (2012). Contextual influences of proactive and reactive subtypes of aggression. *Child Indicators Res*. 5:123-133.
178. Jacobs N, Harper B. (2013). The effects of rejection sensitivity on reactive and proactive aggression. *Aggress Behav*. 39(1), 3-12.
179. Paciello M, Fida R, Tramontano C, Lupinetti C, Caprara GV. (2008). Stability and change of moral disengagement and its impact on aggression and violence in late adolescence. *Child Development*. 79(5), 1288-309.
180. Cen Y, Su S, Dong Y, Xia LX. (2022). Longitudinal effect of self-control on reactive-proactive aggression: Mediating roles of hostile rumination and moral disengagement. *Aggressive Behavior*. 48(6), 583-594.
181. McClain CM, Christian Elledge L, Manring S, Whitley ML, Vernberg EM. (2022). Functions of aggression and peer likeability in elementary school children across time. *J Appl School Psychol*. 38(2), 95-122.
182. Martinelli A, Ackermann K, Bernhard A, Freitag C, Schwenck C. (2018). Hostile attribution bias and aggression in children and adolescents: a systematic literature review on the influence of aggression subtype and gender. *Aggression and Violent Behavior*, 39, 25–32.
183. Verhoef REJ, Alsem SC, Verhulp E, de Castro OB. (2019). Hostile intent attribution and aggressive behavior in children revisited: a meta-analysis. *Child Development*, 90(5):e525-e547.
184. Branje S, Koot HM. (2018). Psychophysiology of aggression. In T Malti, KH Rubin (eds.), *Handbook of child and adolescent aggression* pp. 84–106. The Guilford Press.
185. Bookhout MK, Hubbard JA, Moore C. (2018). Emotion regulation. In JE Lochman, W Matthys (eds.), *The Wiley handbook of disruptive and impulse-control disorders*, pp. 221–236. John Wiley & Sons.
186. Frick PJ, Ray JV, Thornton LC, Kahn RE. (2014). Annual research review: A developmental psychopathology approach to understanding callous-unemotional traits in children and adolescents with serious conduct problems. *J Child Psychology and Psychiatry*, 55(6), 532–548.
187. Frick PJ, Ray JV, Thornton LC, Kahn RE. (2014). Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents? A comprehensive review. *Psychological Bulletin*, 140(1), 1–57
188. Evans SC, Díaz KI, Callahan KP, Wolock ER, Fite PJ. (2021). Parallel trajectories of proactive and reactive aggression in middle childhood and their outcomes in early adolescence. *Res Child Adolesc Psychopathol*. 49(2), 211-226.
189. Van Dijk A, Hubbard J, Deschamps P, Hiemstra W, Polman H. (2021). Do distinct groups of reactively and proactively aggressive children exist? A confirmatory latent profile approach. *Research on Child and Adolescent Psychopathology*, 49,1303–1317.
190. Vaughan EP, Speck JS, ... & Caufman E. (2023). Proactive and reactive aggression: Developmental trajectories and longitudinal associations with callous-unemotional traits, impulsivity, and internalizing emotions. *Development and Psychopathology*, 3, 1-9.
191. McRae EM, Stoppelbein L, O'Kelley SE, Fite PK, Smith SB. (2022). Pathways from child maltreatment to proactive and reactive aggression: The role of posttraumatic stress symptom clusters. *Psychological Trauma: Theory, Research, Practice, and Policy*, 14(3), 357–366.
192. Romero-Martínez Á, Sarrate-Costa, C, Moya-Albiol L. (2022). Reactive vs proactive aggression: a differential psychobiological profile? Conclusions derived from a systematic review. *Neuroscience & Biobehavioral Reviews*, 136.
193. Luijkx J, van Loon LMA, de Wit-de Visser B, van Dam A. (2024). Presence and impact of Adverse Childhood Experiences and reflective functioning on aggression in adults with antisocial behaviour. *Clin Psychol Psychother*. 31(6):e70011.
194. Perry KJ, Ostrov JM. (2018). Testing a higher order model of internalizing and externalizing behavior: the role of aggression subtypes. *Child Psychiatry Hum Dev*, 49, 20–32.
195. Verhoef REJ, van Dijk A, de Castro BO. (2022). A dual-mode Social-Information-Processing model to explain individual differences in children's aggressive behavior. *Clinical Psychological Science*, 10(1), 41 –57.

 doi:10.20944/preprints202603.0366.v1

196. Obradović J., Finch J. E. (2016). Linking executive function skills and physiological challenge response: Piecewise latent growth curve modeling. *Developmental Science*, 20(3), 1–16.
197. Loeber R, Hay D. (1997). Key issues in the development of aggression and violence from childhood to early adulthood. *Annual Review of Psychology, 48*, 371–410.
198. Kunimatsu MM, Marsee MA. (2012). Examining the presence of anxiety in aggressive individuals: The illuminating role of fight-or-flight mechanisms. *Child & Youth Care Forum*, 41(3), 247–258.
199. Chess S, Thomas A. (1984). Origins and evolution of behavior disorders: from infancy to early adult life. Harvard University Press.
200. Shaw DS, Gross HE. (2008). What have we learned about early childhood and the development of delinquency. The long view of crime: a synthesis of longitudinal research, pp. 79-127. National Institute of Justice.
201. Brennan LM, Shaw DS. (2013). Revisiting data related to the age of onset and developmental course of female conduct problems. *Clin Child Fam Psychol Rev*. 16(1), 35-58.
202. Shellaby EC, Shaw DS. (2014). Outcomes of parenting interventions for child conduct problems: a review of differential effectiveness. *Child Psychiatry Human Dev*, 45(5), 628-645.
203. Furlong M, McGilloway S, Bywater T, Hutchings J, Smith SM, Donnelly M. (2013). Cochrane review: behavioural and cognitive-behavioural group-based parenting programmes for early-onset conduct problems in children aged 3 to 12 years (Review). *Evid Based Child Health*. 8(2), 318-692.
204. Armstrong-Carter E, Portilla, XA, Jelena Obradović J. (2024). The role of physiological response in understanding resilience processes in children's development. *Encyclopedia on Early Childhood Development*.
205. Winter L, Morawska A, Sanders M. (2012). The Knowledge of Effective Parenting Scale (KEPS): a tool for public health approaches to universal parenting programs. *J Primary Prevention*, 33(2-3), 85-97.
206. Girard LC, Tremblay RE, Nagin D, Côté SM. (2019). Development of aggression subtypes from childhood to adolescence: a group-based multi-trajectory modelling perspective. *J Abnorm Child Psychol*. 47(5), 825-838.
207. Bowlby, J. (1953). Child care and the growth of love. Penguin.
208. Robertson, J., & Robertson, J. (1989). *Separation and the very young*. London: Free Association Books.
209. Cooke JE, Kochendorfer LB, Stuart-Parrigon KL, Koehn AJ, Kerns KA. (2019). Parent-child attachment and children's experience and regulation of emotion: a meta-analytic review. *Emotion*, 19(6):1103-1126.
210. Ben-Ze'ev A. (2000). *The subtlety of emotions*. MIT Press.
211. Ellsworth PC, Scherer KR. (2003). Appraisal processes in emotion. In RJ Davidson, KR Scherer, & HH Goldsmith (eds.), *Handbook of affective sciences,* pp. 572–595. Oxford University Press.
212. Lin SC, Kehoe C, Pozzi E, Liontos D, Whittle S. (2024). Research review: child emotion regulation mediates the association between family factors and internalizing symptoms in children and adolescents – a meta-analysis. *J of Child Psychology and Psychiatry*, 65(3), 260-274.
213. Morris AS, Criss MM, Silk JS, Houltberg B. J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Development Perspectives,* 11(4), 233–238.
214. Schweizer S, Gotlib IH, Blakemore SJ. (2020). The role of affective control in emotion regulation during adolescence. *Emotion*, 20(1), 80-86.
215. Riddell C, Nikolić M, Dusseldorp E, Kret ME. (2024). Age-related changes in emotion recognition across childhood: a meta-analytic review. *Psychological Bulletin,* 150(9), 1094–1117.
216. Pascual-Leone A, Greenberg LS. (2007). Emotional processing in experiential therapy: Why "the only way out is through." *J of Consulting and Clinical Psychology,* 75(6), 875–887.
217. Srivastava S, Tamir M, McGonigal KM, John OP, Gross JJ. (2009). The social costs of emotional suppression: a prospective study of the transition to college. *J Personality & Social Psychol*. 96(4), 883-97.
218. Thuillard S, Dan-Glauser ES. (2020). The simultaneous use of emotional suppression and situation selection to regulate emotions incrementally favors physiological responses. *BMC Psychol*, 8, 133.
219. Lin SC, Kehoe C, Pozzi E, Liontos D, Whittle S. (2024). Research Review: Child emotion regulation mediates the association between family factors and internalizing symptoms in children and adolescents – a meta-analysis. *J Child Psychology & Psychiatry*, 65(3), 260-274.

 doi:10.20944/preprints202603.0366.v1

220. Pollack SD, Camras LA, Cole PM. (2019. Progress in understanding the emergence of human emotion. *Developmental Psychology*, 55(9), 1801–1811.
221. Silk JS. (2019). Context and dynamics: the new frontier for developmental research on emotion regulation. *Developmental Psychology*, 55, 2009–2014.
222. Aghaziarati A, Nejatifar S. (2023). Emotional development and regulation in children: a review of recent advances. *KMAN Counseling and Psychology Nexus*, 1, 118-125.
223. Eisenberg N, Shepard SA, Fabes RA, Murphy BC, Guthrie IK. (1998). Shyness and children's emotionality, regulation, and coping: contemporaneous, longitudinal, and across-context relations. *Child Development*. 69(3):767-90.
224. Caiozzo, CN., Yule, K., & Grych, J. (2018). Caregiver behaviors associated with emotion regulation in high-risk preschoolers. *J of Family Psychology, 32*(5), 565–574.
225. Cicchetti, D. (2016). Socioemotional, personality, and biological development: Illustrations from a multilevel developmental psychopathology perspective on child maltreatment. *Annual Review of Psychology*, 67, 187–211.
226. Chervonsky E, Hunt C. (2017). Suppression and expression of emotion in social and interpersonal outcomes: A meta-analysis. *Emotion*. 17(4), 669-683.
227. Weir K. (2023). How to help kids understand and manage their emotions. American Psychological Association.
228. Draycott S, Dabbs A. (1998). Cognitive dissonance. 2: A theoretical grounding of motivational interviewing. *Br J Clin Psychol*. 37(3), 355-64.
229. Cancino-Montecinos S, Björklund F, Lindholm T. (2020). A general model of dissonance reduction: unifying past accounts via an emotion regulation perspective. *Front Psychol*. 11:540081.
230. Schäfer JÖ, Naumann E, Holmes EA, Tuschen-Caffier B, Samson AC. (2017). Emotion regulation strategies in depressive and anxiety symptoms in youth: a meta-analytic review. *J Youth Adolesc*. 46(2), 261-276.
231. Foroughe M, Stillar A, Goldstein L, Dolhanty J, Goodcase ET, Lafrance A. (2018). Brief emotional focused family therapy: an intervention for parents of children and adolescents with mental health issues. *J Marital & Family Therapy*, 45(3), 410-430.
232. Buisman RSM, Compier-Block LHCG, Bakermans-Kranenburg MJ, Pittner K, van den berg LJM, Tollenaar MS, Elzinga BM, Voorhuis A, Linting M, Alink LRA. (2024). The role of emotion recognition in the intergenerational transmission of child maltreatment: a multigenerational family study. *Child Abuse & Neglect*, 149, 106699.
233. Jugovac S, O'Kearney R, Hawes DJ, Pasalich DS. (2022). Attachment- and emotion-focused parenting interventions for child and adolescent externalizing and internalizing behaviors: a meta-analysis. *Clin Child Fam Psychol Rev*. 25(4), 754-773.
234. Zahl-Olsen R, Severinsen L, Stiegler JR, Fernee CR, Simhan I, Rekdal SS, Bertelsen TB. (2023). Effects of emotionally oriented parental interventions: a systematic review and meta-analysis. *Front Psychol.* 14, 1159892.
235. England-Mason G, Andrews K, Atkinson L, Gonzalez A. (2023). Emotion socialization parenting interventions targeting emotional competence in young children: A systematic review and meta-analysis of randomized controlled trials. *Clinical Psychology Review*, 100: 102252.
236. Dijkstra A, Buunk AP. (2008). Self-evaluative emotions and expectations about self-evaluative emotions in health-behaviour change. *Br J Soc Psychol*. 47(Pt 1):119-37.
237. Helm BW. (2009). Emotions as evaluative feelings. *Emotion Review*, 1(3), 248-255.
238. Davidov M, Roth-Hanania R, Paz Y, Orlitsky T, Uzefovsky F, Zahn-Waxler C. (2025). Empathy development from birth to three: Advances in knowledge from 2000 to 2025. *Infant Behavior and Development*, 81, 102144.
239. Frick PJ, Kemp EC. (2021). Conduct disorders and empathy development. *Annu. Rev. Clin. Psychol*. 17, 391–41.
240. Marsh AA, Blair RJR. (2008). Deficits in facial affect recognition among antisocial populations: a meta-analysis. *Neurosci. Biobehav. Rev*. 32(3):454–65.

 doi:10.20944/preprints202603.0366.v1

241. Waller R, Wagner NJ, Barstead MG, Subar A, Petersen JL, et al. (2020). A meta-analysis of the associations between callous-unemotional traits and empathy, prosociality, and guilt. *Clin. Psychol.*
242. Kahn RE, Frick PJ, Youngstrom EA, Kogos Youngstrom J, Feeny NC, Findling RL. (2013). Distinguishing primary and secondary variants of callous-unemotional traits among adolescents in a clinic-referred sample. *Psychological Assessment*, 25(3), 966–978.
243. Frick PJ. (2006). Developmental pathways to conduct disorder. *Child Adolesc Psychiatr Clin N Am*. 15(2), 311-31.
244. Frick PJ, Morris AS. (2004). Temperament and developmental pathways to conduct problems. *J of Clinical Child and Adolescent Psychology*, 33(1), 54–68.
245. Frick PJ, Viding E. (2009). Antisocial behavior from a developmental psychopathology perspective. *Development and Psychopathology*, 21, 1111 – 1131.
246. Frick PJ, Ray JV, Thornton LC, Kahn RE. (2014a). Annual research review: A developmental psychopathology approach to understanding callous-unemotional traits in children and adolescents with serious conduct problems. *J of Child Psychology and Psychiatry*, 55(6), 532–548.
247. Frick PJ, Ray JV, Thornton LC, Kahn RE. (2014b). Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents? A comprehensive review. *Psychological Bulletin*, 140(1), 1–57.
248. Piquero AR, Jennings WG, Diamond B, Farrington DP, Tremblay RE, Welsh BC, Gonzalez JMR. (2016). A meta-analysis update on the effects of early family/parent training programs on antisocial behavior and delinquency. *J of Experimental Criminology*, 12(2), 229–248.
249. Havighurst SS, Wilson KR, Harley AE, Prior MR, Kehoe C. (2010). Tuning in to kids: improving emotion socialization practices in parents of preschool children—findings from a community trial. *J of Child Psychol & Psychiatry*, 51(12), 342–50.
250. Kimonis ER, Fleming G, Briggs N, Brouwer-French L, Frick PJ, Hawes DJ, Bagner DM, Thomas R, Dadds M. (2019). Parent-Child Interaction Therapy adapted for preschoolers with callous-unemotional traits: An open trial pilot study. *J of Clinical Child & Adolescent Psychology*, 48(1), S347-S361.
251. Perlstein S, Fair M, Hong E, Waller R. (2023). Treatment of childhood disruptive behavior disorders and callous-unemotional traits: a systematic review and two multilevel meta-analyses. *J of Child Psychol Psychiatry*, 64(9), 1372-1387.
252. Kochanska G. (1995). Children's temperament, mother's discipline, and security of attachment: multiple pathways to emerging internalization. *Child Development*, 66, 597-615.
253. Eisenberg N, Duckworth A, Spinrad T, Valiente C. (2012). Conscientiousness: Origins in Childhood? *Developmental Psychology*, 50, 1331-1349.
254. Eisenberg N, Smith CL, Spinrad TL. (2004). Effortful control: relations with emotion regulation, adjustment, and socialization in childhood. In RF Baumeister & KD Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*, chapter 14, pp. 259–282. The Guilford Press.
255. Rothbart MK, Rueda MR. (2005). The development of effortful control. In U Mayr, E Awh, SW Keele (Eds.), *Developing individuality in the human brain: A tribute to Michael I. Posner*, pp. 167–188. American Psychological Association.
256. Kim S, Kochanska G. (2019). Evidence for childhood origins of conscientiousness: Testing a developmental path from toddler age to adolescence. *Developmental Psychology*. 55(1), 196-206.
257. Tackman AM, Srivastava S, Pfeifer JH, Dapretto M. (2017). Development of conscientiousness in childhood and adolescence: Typical trajectories and associations with academic, health, and relationship changes. *J of Research in Personality*, 67, 85-96.
258. Turner M, Hodis FA. (2025). Strengthening conscientiousness by means of interventions: a systematic review. *Educ Psychol Rev*, 37, 39.
259. Rotenberg KJ, Addis N, Betts LR, et al. (2010). The relation between trust beliefs and loneliness during early childhood, middle childhood, and adulthood. *Personality & Social Psychology Bulletin*. 36(8), 1086-1100.
260. Rotenberg K. (2019). The relation between interpersonal trust and adjustment: Is trust always good? In M Sasaki (Ed.), *Trust in Contemporary Society*, chapter 8, 161–173. Brill.

 doi:10.20944/preprints202603.0366.v1

261. Malti, T., Eisenberg, N., Kim, H., & Buchmann, M. (2013a). Developmental trajectories of sympathy, moral emotion attributions, and moral reasoning: the role of parental support. *Social Development*, 22(4), 773-793.
262. Malti, T., Averdijk, M., Ribeaud, D., Rotenberg, KJ., & Eisner, MP. (2013b). "Do you trust him?" Children's trust beliefs and developmental trajectories of aggressive behavior in an ethnically diverse sample. *J Abnorm Child Psychol*. 41(3), 445-56.
263. Malti T, Krettenauer T. (2013). The relation of moral emotion attributions to prosocial and antisocial behavior: a meta-analysis. *Child Development*, 84(2), 397-412.
264. Lefebvre JP, Krettenauer T. (2019). Linking moral identity with moral emotions: a meta-analysis. *Review of General Psychology*, 23(4), 444–457.
265. Krettenauer T, Malti T, Sokol BW. (2008). The development of moral emotion expectancies and the Happy Victimizer Phenomenon: a critical review of theory and application. *International Journal of Developmental Science*, 2(3), 221-235.
266. Smetana JG, Ball CL. (2018). Young children's moral judgments, justifications, and emotion attributions in peer relationship contexts. *Child Development*, 89(6), 2245-2263.
267. Smetana JG., Ball CL. (2019). Heterogeneity in children's developing moral judgments about different types of harm. *Developmental Psychology*. 55(6), 1150-1163.
268. Malti T, Ongley SF, Peplak J, Chaparro MP, Buchmann M, Zuffianò A, Cui L. (2016). Children's sympathy, guilt, and moral reasoning in helping, cooperation, and sharing: a 6-year longitudinal study. *Child Development*, 87(6), 1783-1795.
269. Malti T, Peplak J, Zhang L. (2020). The development of respect in children and adolescents. *Monographs of the Society for Research in Child Development*, 85(3), 7-99.
270. Ma F, Wylie BE, Luo X, He Z, Xu F, Evans AD. (2018). Apologies repair children's trust: The mediating role of emotions. *J of Experimental Child Psychology*, 176, 1-12.
271. Tang, Y., Harris, PL., Zou, H., & Xu, Q. (2019). The impact of emotional expressions on children's trust judgments. *Cognition & Emotion*, 33(2), 318-331.
272. Markson L, Luo Y. (2020). Trust in early childhood, in JB Benson (Ed.), *Advances in Child Development and Behavior*, 58(5), 137-162.
273. Li Q, Li Z, Zhang W, Wang Y, Heyman GD. (2021). Cross-sectional and longitudinal associations among children's interpersonal trust, reputation for trustworthiness, and relationship closeness. *Front. Psychol*. 12:634540.
274. Petrocchi S, Angelini G, Levante A, Lecciso F, Fiorilli C. (2024). Exploring the relationships between extreme levels of trust on young people's view of the future. *Basic and Applied Social Psychology*, 47(1), 26–36.
275. Oostenbroek J, Vaish A. (2019). The emergence of forgiveness in young children. *Child Development*, 90(6), 1969-1986.
276. McElroy CE, Kelsey CM, Oostenbroek J, Vaish A. (2023). Beyond accidents: young children's forgiveness of third-party intentional transgressors. *J Exp Child Psychol*. 228:105607.
277. Cheng X, Wang L, Fang M, et al. (2025). When do children forgive: the impact of the transgressor's intention and authority on children's forgiveness. *Early Childhood Educ J*,
278. McLaughlin A, Marshall J, Gonzalez-Rubio Saab I, McAuliffe K. (2025). Children's evaluations and expectations of forgiveness following second- and third-party interventions. *Child Development*, 96(6), 2146-2161.
279. Enright RD, Fitzgibbons RP. (2015). Forgiveness therapy: An empirical guide for resolving anger and restoring hope. American Psychological Association.
280. Worthington Jr EL. (2005). Understanding forgiveness of other people: definitions, theories, and processes. In EL Worthington & NG Wade (eds.), *Handbook of forgiveness* (2nd ed, pp. 11–21). Routledge.
281. Rapp H, Xu WJ, Enright RD. (2022). A meta-analysis of forgiveness education interventions' effects on forgiveness and anger in children and adolescents. *Child Development*, 93(5), 1225-1624.
282. Haidt J. (2003). "The moral emotions" in *Handbook of affective sciences*, vol. 11, 852–870. NY: Oxford University Press.

 doi:10.20944/preprints202603.0366.v1

283. Cacioppo JT, Berntson GG. (1999). The affect system: architecture and operating characteristics. *Current Directions in Psychological Science*, 8:133–137.
284. Dickerson SS, Gruenewald TL, Kemeny ME. (2004). When the social self is threatened: shame, physiology, and health. *J Personality*, 2004 72(6), 1191-216.
285. Lewis, M. (2022). *The self-conscious emotions*. Encyclopedia of childhood development.
286. Eisenberg N. (2000). Emotion, regulation, and moral development. *Annual Review of Psychology*, 51, 665-697.
287. Kochanska, G., Gross, JN., Lin, M-H., & Nichols, KE. (2002). Guilt in young children: development, determinants, and relations with a broader system of standards. *Child Development*, 73(2), 461-482.
288. Kochanska G, Aksan N, Koenig AL. (1995). A longitudinal study of the roots of preschoolers' conscience: Committed compliance and emerging internalization. *Child Development*, 66, 1752–1769.
289. Kochanska G, Aksan N. (2006). Children's conscience and self-regulation. *J of Personality*, 74, 1587–1617.
290. Kochanska G, Murray KT, Coy KC. (1997). Inhibitory control as a contributor to conscience in childhood: From toddler to early school age. *Child Development*, 68, 263–277.
291. Eisenberg N, Duckworth AL, Spinrad TL, Valiente C. (2014). Conscientiousness: origins in childhood? *Developmental Psychology*, 50(5):1331-49.
292. Eisenberg N, VanSchyndel SK, Spinrad TL. (2016). Prosocial motivation: inferences from an opaque body of work. *Child Development*, 87(6), 1668-1678.
293. Leonard JA, Martinez DN, Dashineau SC, Park AT, Mackey AP. (2021). Children persist less when adults take over. *Child Dev*. 92(4), 1325-1336.
294. Taylor ZE, Eisenberg N, Spinrad TL, Widaman KF. (2013). Longitudinal relations of intrusive parenting and effortful control to ego-resiliency during early childhood. *Child Development*, 84(4), 1145-51.
295. Singh D, Bhushan B. (2025). Understanding shame, guilt, embarrassment and pride: a systematic review of self-conscious emotions. *Front Psychol*. 16:1678930.
296. dos Santos MA, de Freitas e Castro JM, de Freitas Lino Pinto Cardoso CS. (2020). The moral emotions of guilt and shame in children: relationship with parenting and temperament. *J Child Fam Studies*, 29, 2759–2769.
297. Van Eickels, RL., Siegel, M., Juhasz, AJ., & Zemp, M. (2025). The parent–child relationship and child shame and guilt: A meta-analytic systematic review. *Child Development*, 96(3), 907-929.
298. Yeo GC, Ong DC. (2024). Associations between cognitive appraisals and emotions: A meta-analytic review. *Psychological Bulletin*, 150(12), 1440-1471.
299. Eadeh HM, Breaux R, Nikolas MA. (2021). A meta-analytic review of emotion regulation focused psychosocial interventions for adolescents. *Clin Child Fam Psychol Rev*. 24(4), 684-706.
300. Helland SS, Mellblom AV, Kjøbli J, Wentzel-Larsen T, Espenes K, Engell T, Kirkøen B. (2022). Elements in mental health interventions associated with effects on emotion regulation in adolescents: a meta-analysis. *Adm Policy Ment Health*. 49(6), 1004-1018.
301. Espenes K, Tørmoen AJ, Rognstad K, Nilsen KH, Waaler PM, Wentzel-Larsen T, Kjøbli J. (2025). Effect of psychosocial interventions on children and youth emotion regulation: a meta-analysis. *Adm Policy Ment Health*, 52(5), 833-852.
302. Meyers S, Hu D, Tamir M. (2025). Cognitive reappraisal is more effective for regulating emotions than moods. *Affective Science*, 6(3), 477-488.
303. Shu J, Ochsner KN, Phelps EA. (2022). Trait intolerance of uncertainty Is associated with decreased reappraisal capacity and increased suppression tendency. *Affective Science*, 3(3), 528-538.
304. Sahib A, Chen J, Cárdenas D, Calear AL. (2023). Intolerance of uncertainty and emotion regulation: a meta-analytic and systematic review. *Clin Psychol Rev*. 101:102270.
305. Sanson A, Hemphill SA, Smart D. (2004). Connections between temperament and social development: a review. *Social Development*, 13, 142-170.
306. Zentner M, Shiner RL. (2012). Fifty years of progress in temperament research: a synthesis of major themes, findings, and challenges and a look forward. In M Zentner & RL Shiner (eds.), *Handbook of temperament*, chapter 32, pp 673-700. The Guilford Press.
307. Widiger TA, Trull TJ. (2007). Plate tectonics in the classification of personality disorder: shifting to a dimensional model. *American Psychologist*, 62, 71-83.

 doi:10.20944/preprints202603.0366.v1

308. Widiger TA, Costa PT, McCrae RR. (2013). Diagnosis of personality disorder using the five-factor model and the proposed DSM-5. In TA Widiger & PT Costa (eds.), *Personality disorders and the five-factor model of personality*, chapter 19, pp. 285-310. American Psychological Associatoin.
309. Zuckerman M. (1999). Diathesis-stress models. In M Zuckerman, *Vulnerability to psychopathology: A biosocial model* (pp. 3–23). American Psychological Association.
310. Rothbart MK. (2019). Early temperament and psychosocial development. In *Encyclopedia on Early Child Development*, 9-15.
311. Belsky J, Bakermans-Kranenburg M, van Ijzendoorn M. (2007). For better *and* for worse: differential susceptibility to environmental influences. *Current Directions in Psychological Science*, 16, 305–309.
312. Belsky J, Pluess M. (2009). Beyond diathesis-stress: differential susceptibility to environmental influences. *Psychological Bulletin*, 135, 885–908.
313. Belsky J, Pluess M. (2013). Beyond risk, resilience and dysregulation: phenotypic plasticity and human development. *Development & Psychopathology*, 25, 1243–1261.
314. Pleus M. (2015). Individual differences in environmental sensitivity. *Child Development Perspectives,* 9(3), 133-200.
315. Belsky J, Zhang X, Sayler K. (2022). Differential susceptibility 2.0: Are the same children affected by different experiences and exposures? *Development & Psychopathology*, 34(3), 1025-1033.
316. Boyce WT, Ellis BJ. (2005). Biological sensitivity to context: I. An evolutionary–developmental theory of the origins and functions of stress reactivity. *Development & Psychopathology*, 17, 271–301.
317. Van Zeijl J, Mesman J, Stolk MN, Alink LRA, Van IJzendoorn MH. (2007). Differential susceptibility to discipline: the moderating effect of child temperament on the association between maternal discipline and early childhood externalizing problems. *J of Family Psychology*, 21(4), 626.
318. Corr PJ, Cooper AJ. (2016). The reinforcement sensitivity theory of personality questionnaire (RST-PQ): Development and validation. *Psychological Assessment*, 28(11), 1427–1440.
319. Corr PJ, McNaughton N. (2012). Neuroscience and approach/ avoidance personality traits: A two stage (valuation-motivation) approach. *Neuroscience and Biobehavioral Reviews*, 36(10), 2339–2354
320. Vecchione M, Corr PJ. (2020). Development and validation of a Short Version of the Reinforcement Sensitivity Theory of Personality Questionnaire (RST-PQ-S). *J of Personality Assessment*,
321. Tustin D. (2000). Revealed preference between reinforcers used to explain hypotheses about behavioral consistencies. *Behavior Modification*, 24(3), 411-424.
322. Tustin RD, Morgan P. (1985). Choice of reinforcement rates and work rates with concurrent schedules. *J of Economic Psychology*, 6, 109-141.
323. Tustin D. (1995). Preference for reinforcers under varying schedule arrangements; a behavioral economic analysis, *J Experimental Analysis of Behavior*, 27, 597-606.
324. Tustin D. (1995). Assessing preference for reinforcers using demand curves, work-rate functions, and expansion paths. *J Experimental Analysis of Behavior*, 64, 313-329.
325. Morgan P, Tustin D. (1992). The perception and efficiency of labour supply choices by pigeons. *The Economic Journal*, DOI:10.2307/2234381.
326. Tustin D. (1995). Assessing the effects of drugs on choice performance. *J Developmental & Physical Disabilities*, 7(2), 175-183.
327. Tustin D. (1994). Preference for reinforcers under varying schedule arrangements; a behavioral economic analysis. *J Applied Behavior Analysis*, 27, 597-606.
328. Kiff CJ, Lengua LJ, Zalewski M. (2011). Nature and nurturing: parenting in the context of child temperament. *Clin Child Fam Psychol Rev*. 14(3):251-301.
329. van den Bloom DC, Hoeksma JB. (1994). The effect of infant irritability on mother-infant interaction: A growth-curve analysis. *Developmental Psychology,* 30(4), 581–590.
330. Kochanska G, Friesenborg AE, Lange LA, Martel MM. (2004). Parents' personality and infants' temperament as contributors to their emerging relationship. *J Personality and Social Psychology,* 86(5), 744–759.
331. McClowry S, Rodriguez E, Koslowitz R. (2008). Temperament-based intervention: re-examining goodness of fit. *European Journal of Developmental Science*, 2, 120-135.

 doi:10.20944/preprints202603.0366.v1

332. McClowry SG, Collins A. (2012). Temperament-based intervention: reconceptualized from a response-to-intervention framework. In M Zentner & RL Shiner (Eds.). *Handbook of temperament*, chapter 29, pp. 607-644. Guilford Press.
333. Pérez-Edgar K, Morrison F, Rimm-Kaufman S. (2024). Revisiting Jerome Kagan and his research legacy: An introduction to a special issue of Developmental Psychology. *Developmental Psychology,* 60(11), 1949–1957.
334. Roberts BW, DelVecchio WF. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin*, 126, 3–25.
335. Goldsmith HH, Gagne JR. (2012). Behavioral assessment of temperament. In M Zentner & RL Shiner (Eds.), *Handbook of temperament,* chapter 11, pp. 209–228. The Guilford Press.
336. Saudino KJ. (2005). Behavioral genetics and child temperament. *J of Developmental and Behavioral Pediatrics,* 26(3), 214–223.
337. Rothbart MK. (1981). Measurement of temperament in infancy. *Child Development, 52*(2), 569–578.
338. Rothbart MK, Ahadi SA, Hershey KL, Fisher P. (2001). Investigations of temperament at three to seven years: the Children's Behavior Questionnaire. *Child Development*, 72(5), 1394-1408.
339. Putnam SP, & Rothbart MK. (2006). Development of short and very long forms of the Children's Behavior Questionnaire. *J Personality Assessment*, 87(1), 102-112
340. Kotelnikova Y, Olino TM, Klein DN, Mackrell SVM, Hayden EP. (2017). Higher- and lower- order factor analyses of the Children's Behavior Questionnaire. *Psychological Assessment*. 28(1), 92-108.
341. Shiner RL, DeYoung CG. (2011). The structure of temperament and personality traits: a developmental perspective. Human Capital and Economic Opportunity: a global working group, working paper No 2011-025. Chicago.
342. Shiner RL, DeYoung CG. (2013). The structure of temperament and personality traits: A developmental perspective. In PD. Zelazo (Ed.), *The Oxford handbook of developmental psychology*: Vol. 2. Self and other (pp. 113–141). Oxford University Press.
343. Shiner RL, Soto CJ, De Fruyt F. (2021). Personality assessment of children and adolescents. *Annual Review of Developmental Psychology*, 3, 113-137.
344. Soto CJ, Napolitano CM, Sewell MN, Yoon HJ, Roberts BW. (2021b). An integrative framework for conceptualizing and assessing social, emotional, and behavioral skills: the BESSI. *J. Personal. Soc. Psychol,*
345. Soto CJ, Napolitano CM, Roberts BW. (2021a). Taking skills seriously: toward an integrative model and agenda for social, emotional, and behavioral skills. *Current Directions in Psychological Science*, 30(1), 26 –33.
346. Chernyshenko OS, Kankaras M, Drasgow F. (2018). Social and emotional skills for student success and wellbeing: conceptual framework for the OECD study on social and emotional skills. OECD Education Working Papers, No 173, OECD Publishing, Paris.
347. Mervielde I, De Fruyt F. (1999). Construction of the Hierarchical Personality Inventory for Children (HiPIC). In I Mervielde, I Deary, F De Fruyt, & F Ostendorf (eds). *Personality psychology in Europe,* pp 107–127. Tilburg University Press, Tilburg.
348. Halverson CF, Havill VL, Deal J, Baker SR, Victor JB, Pavlopoulous V, Besevegis E, Wen L. (2003). Personality structure as derived from parental ratings of free descriptions of children: the Inventory of Child Individual Differences. *Journal of Personality*, 71(6), 995–1026
349. Vollrath ME, Hampson SE, Torgersen S. (2016). Constructing a short form of the hierarchical personality inventory for children (HiPIC): the HiPIC-30. *Personal Ment Health*, 10(2), 152-65.
350. Quay HC. (1983). A dimensional approach to behavior disorder: the Revised Behavior Problem Checklist. *School Psychology Review*, 12(3), 244-249.
351. Tackett JL, Kushner SC, De Fruyt F, Mervielde I. (2013). Delineating personality traits in childhood and adolescence: associations across measures, temperament, and behavioral problems. *Assessment*, 20(6), 738-751.
352. Campbell SB, Denham SA, Howarth GZ, Jones SM, Whittaker JV, Williford AP, Willoughby MT, Yudron M, Darling-Churchill K. (2016). Commentary on the review of measures of early childhood social and emotional development: Conceptualization, critique, and recommendations. *J Applied Developmental Psychology*, 45, 19-41.

 doi:10.20944/preprints202603.0366.v1

353. Halle TG, Darling-Churchill KE. (2016). Review of measures of social and emotional development. *J Applied Developmental Psychology*, 45, 8-18.
354. Shiner RL, Soto CJ, De Fruyt F. (2021). Personality assessment of children and adolescents. *Annual Review of Developmental Psychology*, 3, 113-137.
355. Goldsmith HH, Rothbart MK. (1996). Prelocomotor and Locomotor Laboratory Temperament Assessment Battery, Lab-TAB; version 3.0. Technical Manual, Department of Psychology, University of Wisconsin, Madison, WI.
356. Goldsmith HH, Gagne JR. (2012). Behavioral assessment of temperament. In M Zentner & RL Shiner (Eds.), *Handbook of temperament*, chapter 11, pp. 209–228. The Guilford Press.
357. Planalp EM, Van Hulle C, Gagne JR, Goldsmith HH. (2017). The Infant Version of the Laboratory Temperament Assessment Battery (Lab-TAB): measurement properties and implications for concepts of temperament. *Front Psychol*. 8, 846.
358. van IJzendoorn MH, Bakermans-Kranenburg MJ, Coughlan B, Reijman S. (2020). Annual Research Review: Umbrella synthesis of meta-analyses on child maltreatment antecedents and interventions: differential susceptibility perspective on risk and resilience. *J Child Psychology and Psychiatry*, 61, 272-290.
359. Eggum ND, Eisenberg N, Reiser M, Spinrad TL, Valiente C, Sallquist J, Michalik NM, Liew J. (2012). Relations over time among children's shyness, emotionality, and internalizing problems. *Social Development*, 21(1):109-129.
360. Bayer JK, Morgan A, Prendergast LA, Beatson R, Gilbertson T, Bretherton L, Hiscock H, Rapee RM. (2019). Predicting temperamentally inhibited young children's clinical-level anxiety and internalizing problems from parenting and parent wellbeing: a population study. *J Abnorm Child Psychol*. 47(7), 1165-1181.
361. Tackett JL, Herzhoff K, Reardon KW., De Clercq B., Sharp C. (2014). The externalizing spectrum in youth: Incorporating personality pathology. *J of Adolescence*, 37(5), 659–668.
362. Kostyrka-Allchorne K, Wass SV, Sonuga-Barke EJS. (2020). Research review: Do parent ratings of infant negative emotionality and self-regulation predict psychopathology in childhood and adolescence? A systematic review and meta-analysis of prospective longitudinal studies. *J Child Psychol & Psychiatry*, 61(4), 401-416.
363. Forbes MK, Rapee RM, Camberis AL, McMahon CA. (2017). Unique associations between childhood temperament characteristics and subsequent psychopathology symptom trajectories from childhood to early adolescence. *J Abnorm Child Psychol*., 45(6), 1221-1233.
364. Tucker-Drob EM, Briley DA. (2019). Theoretical concepts in the genetics of personality development. In DP McAdams, RL Shiner & JL Tackett (eds.), *Handbook of personality development*, chapter 3, pp. 40-58. The Guilford Press.
365. Sulik MJ, Eisenberg N, Lemery-Chalfant K, Spinrad TL, Silva KM, Eggum ND, Betkowski JA, Kupfer A, Smith CL, Gaertner B, Stover DA, Verrelli BC. (2012). Interactions between serotonin transported gene haplotypes and quality of mothers' parenting predict the development of children's noncompliance. *Developmental Psychology*, 48(3), 740-754.
366. Walters GD. (2015). Early childhood temperament, maternal monitoring, reactive criminal thinking, and the origin(s) of low self-control. *J of Criminal Justice, 43*(5), 369–376.
367. Zhou Q, Hofer C, Eisenberg N, Reiser M, Spinrad TL, Fabes RA. (2007). The developmental trajectories of attention focusing, attentional and behavioral persistence, and externalizing problems during school-age years. *Developmental Psychology*, 43(2), 369-385.
368. Mesman J, Stoel R, Bakermans-Kranenburg MJ, van IJzendoorn MH, Juffer F, Koot HM, Alink LRA. (2009). Predicting growth curves of early childhood externalizing problems: differential susceptibility of children with difficult temperament. *J Abnorm Child Psychol*, 37, 625-636.
369. Olson SL, Sameroff AJ, Lansford JE, Sexton H, Davis-Kean P, Bates JE, Pettit GS, Dodge KA. (2013). Deconstructing the externalizing spectrum: growth patterns of overt aggression, covert aggression, oppositional behavior, impulsivity/inattention, and emotion dysregulation between school entry and early adolescence. *Development & Psychopathology*, 25, 817-842.

 doi:10.20944/preprints202603.0366.v1

370. Zarra-Nezhad M, Aunola K, Kiuru N, Mullola S, Moazami-Goodarzi A. (2015). Parenting styles and children's emotional development during the first grade: The moderating role of child temperament. *J Psychology and Psychotherapy*, 5, 206.
371. Bayer JK, Prendergast LA, Brown A, Bretherton L, Hiscock H, Nelson-Lowe M, Gilbertson T, Noone K, Bischof N, Beechey C, Muliadi F, Mihalopoulos C, Rapee RM. (2023). Prediction of clinical anxious and depressive problems in mid childhood amongst temperamentally inhibited preschool children: a population study. *Eur Child Adolesc Psychiatry*, 32(2), 267-281.
372. van IJzendoorn MH, Bakermans-Kranenburg MJ. (2012). Integrating temperament and attachment. In M Zentner, RL Shiner (eds.), *Handbook of temperament*, chapter 19, pp. 403-424.
373. Dishion TJ, Spracklen KM, Andrews DW, Patterson GR. (1996). Deviancy training in male adolescents friendships. *Behavior Therapy*, 27(3), 373–390.
374. Vitaro F, Brendgen M, Barker E. (2006a). Subtypes of aggressive behaviors: a developmental perspective. *International Journal of Behavioral Development*, 30(1), 12-19.
375. Vitaro F, Brendgen M, Tremblay RE. (2002). Reactively and proactively aggressive children: antecedent and subsequent characteristics. *J Child Psychology & Psychiatry*, 43(4), 495-505.
376. Vitaro F, Brendgen M. (2012). Subtypes of aggressive behaviors: Etiologies, development, and consequences. In T. Bliesener, A. Beelmann, & M. Stemmler (Eds.), *Antisocial behavior and crime: Contributions of developmental and evaluation research to prevention and intervention*, pp. 17–38. Hogrefe Publishing.
377. Paquin S, Lacourse E, Brendgen M, Vitaro F, Dionne G, Tremblay RE, Boivin M. (2017). Heterogeneity in the development of proactive and reactive aggression in childhood: Common and specific genetic - environmental factors. *PLoS One*, 12(12).
378. Girard LC, Tremblay RE, Nagin D, Côté SM. (2019). Development of aggression subtypes from childhood to adolescence: a group-based multi-trajectory modelling perspective. *J Abnorm Child Psychol*. 47(5), 825-838.
379. De Haan AD, Prinzie P, Dekovic M. (2010). How and why children change in aggression and delinquency from childhood to adolescence: moderation of overreactive parenting by child personality. *J Child Psychology & Psychiatry*, 51(6), 725-733.
380. De Haan AD, Dekovic M, van den Akker AL, Stoltz SEMJ, Prinzie P. (2013). Developmental personality types from childhood to adolescence: associations with parenting and adjustment. *Child Development*, 1-16.
381. Rathert J, Fite PJ, Gaertner AE. (2011). Associations between effortful control, psychological control and proactive and reactive aggression. *Child Psychiatry & Human Dev*. 42, 609–621.
382. van IJzendoorn M. (1995). Adult attachment representations, parental responsiveness, and infant attachment: a meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin*, 117, 387-403.
383. Frijda NH. (1993). The place of appraisal in emotion. *Cognition & Emotion*, 7(3-4), 357-387.
384. Bogels SM, Brechman-Toussaint ML. (2006). Family issues in child anxiety: attachment, family functioning, parental rearing and beliefs. *Clinical Psychology Review*, 26, 834-856.
385. Main M, Solomon J (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In Greenberg M., Cicchetti D., & Cummings EM. (Eds.). *Attachment in the preschool years: Theory, research and intervention*, pp. 121–160. University of Chicago Press.
386. Bakermans-Kranenburg MJ, Dagan O, Cárcamo RA, van IJzendoorn MH. (2025). Celebrating more than 26,000 adult attachment interviews: mapping the main adult attachment classifications on personal, social, and clinical status. *Attachment & Human Development*, 27(2), 191–228.
387. Bakermans-Kranenburg MJ, Van IJzendoorn MH. (2009). The first 10,000 adult attachment interviews: Distributions of adult attachment representations in clinical and non-clinical groups. *Attachment & Human Development*, 11(3), 223–263.
388. Bakkum L, Verhage ML, Schuengel C, Duschinsky R, Cornelisz I, van Klaveren C, van IJzendoorn MH, et al. (2023). Exploring the meaning of unresolved loss and trauma in more than 1,000 Adult Attachment Interviews. *Developmental Psychopathology*. 35(2), 587-603.

 doi:10.20944/preprints202603.0366.v1

389. Katz D, Sellers T, Labella MH, Dozier M. (2025). The power of the adult attachment interview in predicting subsequent psychopathology: a tribute to Mary Main. *Attach Hum Dev*. 27(2), 275-291.
390. Boelen PA, Lenferink L, Spuij M. (2021). Cognitive behavioral therapy for prolonged grief in children and adolescents: A randomized clinical trial. *American Journal of Psychiatry*, 178(4), 294-304.
391. Komischke-Konnerup KB, O'Connor M, Hoijtink H, Boelen PA. (2025). Cognitive-Behavioral Therapy for complicated grief reactions: treatment protocol and preliminary findings from a naturalistic setting. *Cognitive and Behavioral Practice*, 32(1), 29-43.
392. Shear, M.K., Gribbin Bloom, C. Complicated grief treatment: an evidence-based approach to grief therapy. *J Rational-Emotive Cognitive-Behav Therapy*, 35, 6–25 (2017).
393. Zeegers MAJ, Colonnesi C, Stams GJM, Meins E. (2017). Mind matters: a meta-analysis on parental mentalization and sensitivity as predictors of infant-parent attachment. *Psychological Bulletin*, 143(12):1245-1272.
394. Madigan S, Brumariu LE, Villani V, Atkinson LR, Lyons-Ruth K. (2016). Representational and questionnaire measures of attachment: A meta-analysis of relations to child internalizing and externalizing problems. *Psychological Bulletin*, 142, 367-399.
395. Forbes DO, Lee M, Lakeman R. (2021). The role of mentalization in child psychotherapy, interpersonal trauma, and recovery: A scoping review. *Psychotherapy*, 58(1), 50-67.
396. Trepiak P, Deneault AA, Bureau JF. (2025). A systematic review and meta-analysis of parental mentalization in fathers and mothers. *Infant Mental Health J*. 46(4):406-423.
397. Fonagy P, Steele M, Steele H, Moran G, Higgitt AC. (1991). The capacity for understanding mental states: The reflective self in parent and child and its significance for security of attachment. *Infant Mental Health J*, 12(3), 201–218.
398. Slade A. (2005). Parental reflective functioning: an introduction. *Attachment & Human Development*, 7(3):269-281.
399. Camoirano A. (2017). Mentalizing makes parenting work: a review about parental reflective functioning and clinical interventions to improve it. *Front Psychol*. 8, 14.
400. Barlow J, Sleed M, Midgley N. (2021). Enhancing parental reflective functioning through early dyadic interventions: A systematic review and meta-analysis. *Infant Mental Health J*, 42(1), 21–34.
401. Stuhrmann LY, Göbel A, Bindt C, Mudra S. (2022). Parental reflective functioning and Its association with parenting behaviors in infancy and early childhood: a systematic review. *Front. Psychol.* 13:765312.
402. Huynh T, Kerr ML, Kim CN, et al. (2024). Parental reflective capacities: a scoping review of mindful parenting and parental reflective functioning. *Mindfulness*, 15, 1531–1602.
403. Featherston R, Barlow J, Song Y, Haysom Z, Loy B, Tufford L, Shlonsky A. (2024). Mindfulness-enhanced parenting programmes for improving the psychosocial outcomes of children (0 to 18 years) and their parents. *Cochrane Database Syst Rev*. 1(1):CD012445.
404. Dadds M, Hawes D. (2006). Integrated family intervention for child conduct problems: A behaviour-attachment-systems intervention for parents. Australian Academic Press.
405. Johnston C, Hommersen P, Seipp CM. (2009). Maternal attributions and child oppositional behavior: a longitudinal study of boys with and without attention-deficit/hyperactivity disorder. *J Consult & Clin Psycho*l. 77(1), 189-95.
406. Kaiser BN. (2024). Locus of control and mental health: human variation complicates a well-established research finding. *Am J Hum Biol.* 36(12):e24147.
407. Harris JL, LeBeau B, Petersen IT. (2025). Reactive and control processes in the development of internalizing and externalizing problems across early childhood to adolescence. *Development and Psychopathology*, 37(2), 836-858.
408. Marsiglia CS, Walczyk JJ, Buboltz WC, Griffith-Ross DA. (2007). Impact of parenting styles and locus of control on emerging adults' psychosocial success. *J Education and Human Development*, 1, 1-12.
409. Georgiou SN, Symeou M. (2018). Parenting practices and the development of internalizing / externalizing problems in adolescence. In L Benedetto & M Ingrassia (eds.), *Parenting - empirical advances and intervention resources*.

 doi:10.20944/preprints202603.0366.v1

410. Sawrikar V, Hawes DJ, Moul C, Dadds MR. (2020). How do mothers' parental attributions affect child outcomes from a positive parenting intervention? A mediation study. *Child Psychiatry & Human Development*, 51, 597-608.
411. Hood KK, Eyberg SM. (2003). Outcomes of parent-child interaction therapy: mothers' reports of maintenance three to six years after treatment. *J Clin Child Adolesc Psychol*, 32(3):419–429.
412. Sawrikar V, Diaz AM, Moul C, Hawes DJ, Dadds MR. (2018). Why is this happening? A brief measure of parental attributions assessing parents' intentionality, permanence, and dispositional attributions of their child with conduct problems. *Child Psychiatry & Human Development*,
413. Bailes LG, Leerkes EM. (2021). Maternal personality predicts insensitive parenting: effects through causal attributions about infant distress. *J Appl Dev Psychol*. 72:101222.
414. Fleming GE, Sawrikar V, Kaouar S, Neo B, McDonogh C, Kimonis ER. (2025). The impact of parental cognitions on outcomes of Behavioral Parent Training for children with conduct problems. *Behavior Therapy*, 56(5):917-934.
415. Tustin D. (2024). Re-attribution therapy to treat explanatory biases in vulnerable families. In D Tustin (ed), *Psycho-legal concepts for parenting in child custody and child protection, vol 4 Therapy interventions for vulnerable families*, chapter 12, pp. 221-240. Springer.
416. Prinzie P, Onghena P, Hellinckx W, Grietens H, Ghesquière P, Colpin H. (2004). Parent and child personality characteristics as predictors of externalizing problem behaviour in children. *European Journal of Personality*, 18, 73-102.
417. Costa PT, McCrae RR. (1992). Revied NEO Personality Inventory (NEO PI-R) and NEO Five Factor Inventory (NEO FFI) professional manual. Odessa, FL. Psychological Assessment Resources.
418. Prinzie P, Stams GJJM, Dekovic M, Reijntjes AHA, Belsky J. (2009). The relations between parents' Big Five Personality factors and parenting: a meta-analytic review. *J Personality & Social Psychology*, 97(2), 351-362.
419. Sahithya BR, Raman V. (2021). Influence of parental personality on parenting styles: A scoping review of literature. *International Journal of Psychology Sciences*, 3, 4-11.
420. Tehrani HD, Yamini S, Vazsonyi AT. (2024). Parenting styles and Big Five personality traits among adolescents: A meta-analysis. *Personality and Individual Differences*, 216, 1–11.
421. Lipscomb ST, Leve LD, Harold GT, Neiderhiser JM, Shaw DS, Ge X, Reiss D. (2011). Trajectories of parenting and child negative emotionality during infancy and toddlerhood: a longitudinal analysis. *Child Development*, 82(5):1661-75.
422. Kochanska G, Kim S, Koenig Nordling J. (2012). Challenging circumstances moderate the links between mothers' personality traits and their parenting in low-income families with young children. *J Personality and Social Psychology*, 103(6), 1040-1049.
423. Roskam I, Bayot M, Mikolajczak M. (2022). Parental Burnout Assessment. In: *Handbook of assessment in mindfulness research*, pp.1-22. Springer, Cham.
424. Le Vigouroux S, Scola C, Raes ME, Mikolajczak M, Roskam I. (2017). The big five personality traits and parental burnout: protective and risk factors. *Personality and Individual Differences, 119,* 216–219.
425. Schlatter S, Louisy S, Canada B, et al. (2022). Personality traits affecting anticipatory stress vulnerability and coping effectiveness. *Research Square*,
426. Kochanska G, Clark AL, & Goldman MS. (1997). Implications of mother's personality for their parenting and their young children's developmental outcomes. *J Personality*, 65(2), 387-420.
427. Kochanska G, Friesenborg AE, Lange LA, Martel MM. (2004). Parents' personality and infants' temperament as contributors to their emerging relationship. *J of Personality and Social Psychology*, 86(5), 744–759.
428. Coplan RJ, Reichel M, Rowan K. (2009). Exploring the associations between maternal personality, child temperament, and parenting: A focus on emotions. *Personality and Individual Differences*, 46(2), 241 246.
429. De Haan AD, Prinzie P, Deković M. (2009). Mothers' and fathers' personality and parenting: the mediating role of sense of competence. *Developmental Psychology*, 45(6), 1695.
430. de Haan AD, Deković M, Prinzie P. (2012). Longitudinal impact of parental and adolescent personality on parenting. *J Personality and Social Psychology*, 102(1), 189–199.

 doi:10.20944/preprints202603.0366.v1

431. Bagherian M, Mojambari AK. (2016). The relationship between Big Five personality traits and assertiveness. *Tendenzen*, 25(1).
432. Oliver PH, Guerin D[W, Coffman JK. (2009). Big five parental personality traits, parenting behaviors, and adolescent behavior problems: A mediation model. *Personality and Individual Differences*, 47(6), 631-636.
433. Kochanska G, Kim S, Koenig Nordling J. (2012). Challenging circumstances moderate the links between mothers' personality traits and their parenting in low-income families with young children. *J Personality and Social Psychology*, 103(6):1040-1049.
434. Hong RY, Tan CS, Lee SS, Tan SH, Tsai FF, Poh XT et al. (2015). Interactive effects of parental personality and child temperament with parenting and family cohesion. *Parenting*, 15(2):92-118.
435. Metsäpelto R, Pulkkinen L. (2003). Personality traits and parenting: neuroticism, extraversion, and openness to experience as discriminative factors. *European Journal of Personality*, 17(1), 59-78.
436. McCart M, Priester P, Davies W, Azen R. (2006). Differential effectiveness of cognitive-behavioural therapy and behavioural parent-training for antisocial youth: a meta-analysis. *J of Abnormal Child Psychology*, 34: 527–543.
437. Dowell K, Ogles B. (2010). The effects of parent participation on child psychotherapy outcome: a meta-analytic review. *J Clinical Child and Adolescent Psychology*, 39, 151-162.
438. Brendel KE, Maynard BR. (2014). Child–parent interventions for childhood anxiety disorders: A systematic review and meta-analysis. *Research on Social Work Practice,* 24(3), 287–295.
439. Breinholst S, Esbjørn BH, Reinholdt-Dunne ML, Stallard P. (2012). CBT for the treatment of child anxiety disorders: a review of why parental involvement has not enhanced outcomes. *J Anxiety Disorder,* 26(3), 416-24.
440. Kurzweil S. (2023). Involving parents in child mental health treatments: survey of clinician practices and variables in decision making. *Amer J Psychotherapy*,
441. Khanna MS, Kendall PC. (2009). Exploring the role of parent training in the treatment of childhood anxiety. *J Consult & Clin Psychol*. 77(5), 981-6.
442. Wei C, Kendall PC. (2014). Parental involvement: contribution to childhood anxiety and its treatment. *Clin Child Fam Psychol Rev*. 17(4), 319-39.
443. Legerstee JS, Huizink AC, van Gastel W, Liber JM, Treffers PDA, Verhulst FC, Utens EMWJ. (2008). Maternal anxiety predicts favourable treatment outcomes in anxiety-disordered adolescents. *Acta Psychologica Scand*, 117, 289-298.
444. Cardy JL, Waite P, Cocks F, Creswell C. (2020). A systematic review of parental involvement in cognitive behavioural therapy for adolescent anxiety disorders. *Clin Child Fam Psychol Rev*. 23(4):483-509.
445. Calderone A, Piccolo A, Latella D, De Luca R, Corallo F, Quartarone A, Militi A, Cucinotta F, Calabrò RS. (2025). Parent-Child Interaction Therapy for disruptive behavior: a systematic review of effectiveness in different settings. *J Clin Med*. 14(3), 856.
446. Scherpbier ICA, Westerveld MM, Lindauer RJL, Abrahamse ME. (2024). Long-term effects of parent-child interaction therapy: A mixed-methods follow-up study of three and nine years later. *Children and Youth Services Review*, 158, 107490.
447. Vidair HB, Fichter CN, Kunkle KL, Boccia AS. (2012). Targeting parental psychopathology in child anxiety. *Child Adolesc Psychiatric Clin N Amer*, 21, 669-689.
448. Tustin D. (2024). Parenting practices associated with specific parental mental illnesses. In D Tustin (ed), Psycho-legal concepts for parenting in child custody and child protection, vol 4., Therapy interventions for vulnerable families, pp. 69-102. Springer.
449. Ballash N, Leyfer O, Buckley AF, Woodruff-Borden J. (2006). Parental control in the aetiology of anxiety. *Clin Child & Fam Psychology Review*, 9(2), 113-133.
450. Gross HE, Shaw DS, Moilanen KL. (2008). Reciprocal associations between boys' externalizing problems and mother's depressive symptoms. *J Abnorm Child Psychol*, 36(5), 693-709.
451. Gross HE, Shaw DS, Burwell RA, Nagin DS. (2009). Transactional processes in child disruptive behavior and maternal depression: a longitudinal study from early childhood to adolescence. *Developmental Psychopathology*. 21(1), 139-56.

 doi:10.20944/preprints202603.0366.v1

452. Trentacosta CJ, Shaw DS. (2008). Maternal predictors of rejecting parenting and early adolescent antisocial behavior. *J Abnorm Child Psychol*. 36(2), 247-59.
453. Shaw DS, Dishion TJ, Supplee L, Gardner F, Arnds K. (2006). Randomized trial of a family-centered approach to the prevention of early conduct problems: 2-year effects of the family check-up in early childhood. *J Consult & Clin Psychol*, 74(1), 1-9.
454. Shaw DS, Hyde LW, Brennan LM. (2012). Early predictors of boys' antisocial trajectories. *Developmental Psychopathology*, 24(3), 871-88.
455. Price-Robertson R, Olsen G, Francis H, Obradovic A, Morgan B. (2016). Supporting recovery in families affected by parental mental illness. Australian Institute of Family Studies.
456. Canfield CF, Miller EB, Taraban L, Aviles AI, Rosas J, Mendelsohn AL, Morris P, Shaw D. (2025). Impacts of a tiered intervention on child internalizing and externalizing behavior in the context of maternal depression. *Developmental Psychopathology*, 37(1), 136-146.
457. Dittman C, Keown LJ, Sanders M, Rose D, Farrugia SP, Sofronoff K. (2011). An epidemiological examination of parenting and family correlates of emotional problems in young children. *American J of Orthopsychiatry*, 81, 360-371.
458. Lavi I, Manor-Binyamini I, Seibert E, Katz LF, Ozer EJ, Gross JJ. (2019). Broken bonds: a meta-analysis of emotion reactivity and regulation in emotionally maltreating parents. *Child Abuse & Neglect*, 88, 376-388.
459. Lavi I, Ozer EJ, Katz LF, Gross JJ. (2021). The role of parental emotion reactivity and regulation in child maltreatment and maltreatment risk: a meta-analytic review. *Clin Psychol Rev*. 90:102099.
460. Kiser LJ, Miller AB, Mooney MA, Vivrette R, Davis SR. (2020). Integrating parents with trauma histories into child trauma treatment: Establishing core components. *Practice Innovations*, 5(1), 65–80.
461. van IJzendoorn MH, Bakermans-Kranenburg MJ, Coughlan B, Reijman S. (2020). Annual Research Review: Umbrella synthesis of meta-analyses on child maltreatment antecedents and interventions: differential susceptibility perspective on risk and resilience. *J Child Psychol & Psychiatry*. 61(3), 272-290.
462. Van Ijzendoorn MH, Schuengel C, Bakermans–Kranenburg MJ. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology*, 11 (2), 225-250.
463. Bakermans-Kranenburg MJ, Van Ijzendoorn MH, Juffer F. (2003). Less is more: meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129(2), 195.
464. Bakermans-Kranenburg MJ, Van IJzendoorn MH, Juffer F. (2005). Disorganized infant attachment and preventive interventions: a review and meta-analysis. *Infant Mental Health Journal*,
465. Cyr C, Euser EM, Bakermans-Kranenburg MJ, Van IJzendoorn MH. (2010). Attachment security and disorganization in maltreating and high-risk families: a series of meta-analyses. *Development & Psychopathology*, 22(1), 87-108.
466. Fearon RP, Bakermans-Kranenburg MJ, van IJzendoorn MH, Lapsley AM. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: a meta-analytic study. *Child Development*, 81 (2), 435-456.
467. Groh AM, Roisman GI, van IJzendoorn MH, Bakermans-Kranenburg MJ. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: a meta-analytic study. *Child Development*, 83(2), 591-610.
468. Dozier M, Bernard K. (2019). Coaching parenting of vulnerable infants: The Attachment and Biobehavioral Catch-up Approach. Guilford Press.
469. Lind T, Bernard K, Ross E, Dozier M. (2014). Intervention effects on negative affect of CPS-referred children: results of a randomized clinical trial. *Child Abuse & Neglect*, 38, 1459-1467.
470. Granqvist P, Sroufe LA, Dozier M, Hesse E, Steele M, van IJzendoorn M, et al. (2017). Disorganized attachment in infancy: a review of the phenomenon and its implications for clinicians and policy makers. *Attachment & Human Development*, 19(6), 534-558.
471. Cooke, JE., Eirich, R., Racine, N., Lyons-Ruth, K., & Madigan, S. (2020). Validation of the AMBIENCE-brief: an observational screening instrument for disrupted caregiving. *Infant Mental Health J*, 41(3), 299-312.

 doi:10.20944/preprints202603.0366.v1

472. Brumariu, LE., Giuseppone, KR., Kerns, KA., van de Walle, M., Bureau, JF., Bosmans, G., et al. (2018). Middle Childhood Attachment Strategies: validation of an observational measure. *Attachment & Human Development*, 20(5), 491-513.
473. Khoury, JE., Rajamani, M., Bureau, JF., Easterbrooks, MA., & Lyons-Ruth, K. (2020). Aspects of parent-child interaction from infancy to late adolescence are associated with severity of childhood maltreatment through age 18. *Int. J. Environ. Res. Public Health*, 17, 1-21.
474. Comfort M, Gordon P. (2006). The Keys to Interactive Parenting Scale (KIPS): A Practical Observational Assessment of Parenting Behavior. *Nhsa Dialog: A Research-to-practice Journal for The Early Intervention Field*, 9, 22-48.
475. Zumbach J, Brubacher SP, Davis F, de Ruiter C, Ireland JL, McNamara K, October M, Saini M, Volbert R, Laajasalo T. (2022). International perspective on guidelines and policies for child custody and child maltreatment risk evaluations: A preliminary comparative analysis across selected countries in Europe and North America. *Front Psychol*. 13:900058.
476. Eyberg SM, Bessmer J, Newcomb K, Edwards D, Robinson E. (19M94). Manual for the Dyadic Parent-Child Interaction Coding System-II. Social and Behavioral Sciences Documents (Ms. No. 2897).
477. Peterson IT, Bates JE, Dodge KA, Lansford JE, Pettit GS. (2015). Describing and predicting developmental profiles of externalizing problems from childhood to adulthood. *Development & Psychopathology*, 27, 791-818.
478. Gach EJ, Ip KI, Sameroff AJ, Olson SL. (2018). Early cumulative risk predicts externalizing behavior at age 10: The mediating role of adverse parenting. *J Fam Psychol*. 32(1), 92-102.
479. Piquero AR, Carriaga ML, Diamond B, Kazemian L, Farrington DP. (2012). Stability in aggression revisited. *Aggression and Violent Behavior*, 17, 365-372.
480. Weisz JR, Kuppens S, Ng MY, Eckshtain D, Ugueto AM, Vaughn-Coaxum R, et al. (2017). What five decades of research tells us about the effects of youth psychological therapy: a multilevel meta-analysis and implications for science and practice. *American Psychologist*, 72(2), 79–117.
481. Bakker MJ, Greven CU, Buitelaar JK, Glennon JC. (2017). Practitioner Review: Psychological treatments for children and adolescents with conduct disorder problems - a systematic review and meta-analysis. *J Child Psychol & Psychiatry*, 58(1), 4-18.
482. Dishion T, Forgatch M, Chamberlain P, Pelham WE 3rd. (2016). The Oregon Model of behavior family therapy: from intervention design to promoting large-scale system change. *Behavior Ther*apy,47(6), 812-837.
483. Lansford JE, Malone PS, Dodge KA, Pettit GS, Bates JE. (2010). Developmental cascades of peer rejection, social information processing biases, and aggression during middle childhood. *Developmental Psychopathology*, 22(3), 593-602.
484. Gardner F, Shaw DS, Dishion TJ, Burton J, Supplee L. (2006). Proactive parenting and early prevention of conduct problems. *J Family Psychology*, 74(1), 1-9.
485. Shaw DS, Gross HE. (2008). What have we learned about early childhood and the development of delinquency. The long view of crime: a synthesis of longitudinal research, pp. 79-127. National Institute of Justice.
486. Shaw DS, Hyde LW, Brennan LM. (2012). Early predictors of boys' antisocial trajectories. *Developmental Psychopathology*, 24(3), 871-88.
487. Shaw DS, Galán CA, Lemery-Chalfant K, et al. (2019). Trajectories and predictors of children's early-starting conduct problems: child, family, genetic, and intervention effects. *Development and Psychopathology*, 31(5), 1911-1921.
488. Sitnick SL, Shaw DS, Gill A, Dishion T, Winter C, Waller R, Gardner F, Wilson M. (2015). Parenting and the Family Check-Up: changes in observed parent-child interaction following early childhood intervention. *J Clin Child Adolesc Psychol*. 44(6), 970-84.
489. Smith JD, Dishion TJ, Shaw DS, Wilson MN, Winter CC, Patterson GR. (2014). Coercive family process and early-onset conduct problems from age 2 to school entry. *Development and Psychopathology*, 26, 917–932.
490. Trentacosta CJ, Hyde LW, Shaw DS, Dishion TJ, Gardner F, Wilson M. (2008). The relations among cumulative risk, parenting, and behavior problems during early childhood. *J Child Psychology & Psychiatry*, 49(11), 1211–1219.

 doi:10.20944/preprints202603.0366.v1

491. Vanderbilt-Adriance E, Shaw DS, Brennan LM, Dishion TJ, Gardner F, Wilson MN. (2015). Child, family, and community protective factors in the development of children's early conduct problems. *Family Relations: An Interdisciplinary Journal of Applied Family Studies,* 64(1), 64–79.
492. Dishion, T. J., Brennan, L. M., Shaw, D. S., McEachern, A. D., Wilson, M. N., & Jo, B. (2014). Prevention of problem behavior through annual family check-ups in early childhood: intervention effects from home to early elementary school. *J Abnormal Child Psychology*, 42(3), 343-354.
493. Connell A, Bullock BM, Dishion TJ, Shaw D, Wilson M, Gardner F. (2008). Family intervention effects on co-occurring early childhood behavioral and emotional problems: a latent transition analysis approach. *J Abnorm Child Psychol*. 36(8), 1211-25
494. Lunkenheimer ES, Dishion TJ, Shaw DS, Connell AM, Gardner F, Wilson MN, Skuban EM. (2008). Collateral benefits of the Family Check-Up on early childhood school readiness: indirect effects of parents' positive behaviour support. *Developmental Psychology*, 44(6), 1737-1752.
495. Shaw DS, Dishion TJ, Supplee L, Gardner F, Arnds K. (2006). Randomized trial of a family-centered approach to the prevention of early conduct problems: 2-year effects of the family check-up in early childhood. *J Consult & Clin Psychol*, 74(1), 1-9.
496. Dishion TJ, Shaw D, Connell A, Gardner F, Weaver C, Wilson M. (2008). The family check-up with high-risk indigent families: preventing problem behavior by increasing parents' positive behavior support in early childhood. *Child Development*, 79(5), 1395-414.
497. Gross HE, Shaw DS, Burwell RA, Nagin DS. (2009). Transactional processes in child disruptive behavior and maternal depression: a longitudinal study from early childhood to adolescence. *Developmental Psychopathology,* 21(1), 139-56.
498. Gardner F, Connell A, Trentacosta CJ, Shaw DS, Dishion TJ, Wilson MN. (2009). Moderators of outcome in a brief family-centered intervention for preventing early problem behavior. *J Consult & Clin Psychol*. 77(3), 543-553.
499. Fosco GM, Van Ryzin M, Stormshak EA, Dishion TJ. (2014). Putting theory to the test: Examining family context, caregiver motivation, and conflict in the Family Check-Up model. *Development & Psychopathology,* 26(2), 305-318.
500. McEachern AD, Fosco GM, Dishion TJ, Shaw DS, Wilson MN, Gardner F. (2013). Collateral benefits of the family check-up in early childhood: Primary caregivers' social support and relationship satisfaction. *J Family Psychology,* 27(2), 271–281.
501. Shelleby EC, Shaw DS. (2014). Outcomes of parenting interventions for child conduct problems: a review of differential effectiveness. *Child Psychiatry Human Development,* 45(5), 628–645.
502. Pelham WE 3rd, Dishion TJ, Tein JY, Shaw DS, Wilson MN. (2017) What doesn't work for whom? Exploring heterogeneity in responsiveness to the Family Check-Up in early childhood using a mixture model approach. *Prevention Science,* 18(8), 911-922.
503. Smith JD, Wakschlag L, Krogh-Jespersen S, et al. (2019). Dysregulated irritability as a window on young children's psychiatric risk: transdiagnostic effects via the Family Check-Up. *Development and Psychopathology,* 31(5), 1887-1899.
504. Choe DE, Shaw DS, Brennan LM, Dishion TJ, Wilson MN. (2014). Inhibitory control as a mediator of bidirectional effects between early oppositional behavior and maternal depression. *Development & Psychopathology,* 26(4), 129-47.
505. Waller R, Dishion TJ, Shaw DS, Gardner F, Wilson MN, Hyde LW. (2016). Does early childhood callous-unemotional behavior uniquely predict behavior problems or callous-unemotional behavior in late childhood? *Developmental Psycho*logy, 52(11), 1805-1819.
506. Piehler T, Zhang J, Bloomquist M, August G. (2022). Parent and child risk profiles as predictors of response to a conduct problems preventive intervention. *Prevention Science*, 23, 1308–1320.
507. Shaw DS, Mendelsohn AL, Morris-Perez PA, Weaver Krug C. (2024). Integrating equifinality and multifinality into the of prevention programs in early childhood: The conceptual case for use of tiered models. *Developmental Psychopathology,* 36(5), 2357-2368.
508. Kuklinski MR, Crowley DM, Dishion TJ. et al. (2020). Supporting strategic investment in social programs: a cost analysis of the Family Check-Up. *Prevention Sci,* 21, 256–267.

 doi:10.20944/preprints202603.0366.v1

509. Tustin D. (2024). The Adaire program. In D Tustin {ed), Psycho-legal concepts for parenting in child custody and child protection, vol 4, Therapy interventions for vulnerable families, chapter 13, pp. 241-248. Springer.
510. Harnett P. (2007). A procedure for assessing 2parent's capacity to change in child protection cases. *Children & Youth Services Review*, 29, 1179-1188.
511. Harnett P, Dawe S. (2008). Reducing child abuse potential in families identified by social services: implications for assessment and treatment. *Brief Treatment and Crisis Intervention* 8(3), 226-35.
512. Gubbels J, van der Put CE, Assink M. (2019). The effectiveness of parent training programs for child maltreatment and their components: a meta-analysis. *Int J Environ Res Public Health*, 16(13), 2404.
513. Gubbels J, van der Put CE, Stams GJM, Prinzie PJ, Assink M. (2021). Components associated with the effect of home visiting programs on child maltreatment: A meta-analytic review. *Child Abuse & Neglect*, 114:104981.
514. Gubbels J, van der Put CE, Stams GJM, Assink M. (2021). Effective components of school-based prevention programs for child abuse: a meta-analytic review. *Clin Child Fam Psychol Rev*. 24(3), 553-578.
515. Schaeuffele C, Schulz A, Knaevelsrud C, et al. (2021). CBT at the crossroads: the rise of transdiagnostic treatments. *J Cognitive Therapy*, 14, 86–113.
516. Baruni RR, Miltenberger RG. (2022). Teaching safety skills to children: a discussion of critical features and practice recommendations. *Behav Anal Pract*. 15(3), 938-950.
517. Tustin D. (2024). Psycho-legal concepts for parenting in child custody and child protection: vol 2., Ethical and legal issues for mental health clinicians working with court-involved families. Springer.
518. Psychology Board of Australia. (2025). Code of Conduct for Psychologists. Australian Health Practitioners Regulatory Authority.
519. Karjalainen P, Santalahti P, Aronen ET, Kiviruusu O. (2021). Parent- and teacher-reported long-term effects of parent training on child conduct problems in families with child protection and other support services: a randomized controlled trial. *Child Adolesc Psychiatry Ment Health*. 15, 7.