# UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL, HUMAN AND MATHEMATICAL SCIENCES

School of Psychology

**The Role of Emotion Recognition and Externalising Behaviour for Educational Outcomes**

By

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Thesis for the degree of Doctorate in Educational Psychology

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# ABSTRACT

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## THE ROLE OF EMOTION RECOGNTION, EXTERNALISING BEHAVIOUR FOR EDUCATIONAL OUTCOMES

Nicola Joanne Samos

The first chapter of this theses outlines a systematic literature review investigating the relationship between emotion recognition skills and academic outcomes of school age children. Four databases were systematically searched applying clear inclusion criteria. Six articles were identified and critically appraised to assess the existing literature. The review highlights a positive relationship between emotion recognition skills and academic outcomes. This was identified across a range of countries/cultures, however the utilisation and impact of these skills may differ between genders and be moderated by other factors including cognitive ability, motivation and achievement goals. Although this review supported the hypothesis that strengths in emotion recognition skills are associated with increased academic achievement, a gap in the research was identified surrounding the improvement of emotion recognition skills and impact on outcomes for school age children. The review also highlighted to professionals working within education the importance of the development of these skills for school success.

The second chapter reports on research conducted investigating emotion recognition and behavioural outcomes. Previous research highlights challenges experienced by all children during education can be exacerbated for those with challenging behaviour and redirection

of this is crucial for development and academic progress. Further findings consistently document associations between deficits in emotion recognition and conduct difficlties (in addition to psychopathology in general). As a result, emotion recognition training has been developed for use with both antisocial and clinical samples. Previous research has suggested that the Training of Affect Recognition intervention programme (Frommann, Streit, & Wölwer, 2003) is effective in improving emotion recognition, executive function skills and may be suitable for those experincing conduct difficulties. The current research aimed to investigate whether brief delivery of the TAR intervention programme could enhance emotion recognition skills in an adolescent experiencing conduct difficulties compared to a matched wait control pariticipant and attempted to explore potential transfer effects on behaviour. Visual analysis highlighted difficulties in specific areas of emotion recognition consistent with previous research for both participants. Results for the intervention participant showed brief significant improvements in accuracy post-intervention, specifically for fear, disgust and surprise. The wait control participant was shown to experience no significant improvement in accuracy throughout the duration of the study. A reduction in school reported negative behaviours for the participant who took part in the intervention during and immediately after its implementation were also reported. Strengths, limitations and implications for Educational Psychologists are also discussed.

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# Academic Thesis: Declaration of Authorship

I, Nicola Samos declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

**The Role of Emotion Recognition and Externalising Behaviour for Educational Outcomes**

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signed:

Date: 19.03.19

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Chapter 1

# Definitions and Abbreviations

| | |
|---|---|
| ADHD | Attention Deficit Hyperactivity Disorder |
| AEI | Ability Emotional Intelligence |
| CASP | Critical Appraisal Skills Programme |
| CBCL | Child Behaviour Checklist |
| EA | Empathic Accuracy |
| EHCP | Education Health and Care Plan |
| EI | Emotional Intelligence |
| ER | Emotion Recognition |
| GEM | Griffith Empathy Measure Parent Report |
| GPA | Grade Point Average |
| ICU | Inventory of Callous-Unemotional traits |
| IRI | Interpersonal Reactivity Index |
| KSADS | Schedule of Affective Disorders and Schizophrenia for School-Age Children |
| OECD | The Organisation for Economic Co-operation and Development |
| ONS | Office of National Statistics |
| PFA | Pictures of Facial Affect |
| PRISMA | Preferred Reporting Items for Systematic Reviews and Meta-Analysis |
| TAR | Training of Affect Recognition |
| TEI | Trait Emotional Intelligence |
| WASI | Wechsler Abbreviated Scale of Intelligence |
| YSR | Youth Self Report of Behaviour |

# Chapter 1 Does Emotion Recognition Support Academic Achievement?

## 1.1 Introduction

Education systems often place focus on ensuring that students can master basic skills such as reading, writing and mathematics in addition to other subjects including science, history and foreign languages. However, a broader educational agenda has emerged, emphasising the importance of social and emotional skill development in schools. This can be seen in the UK education system with the introduction of initiatives such as the Social and Emotional Aspects of Learning programme (SEAL, 2010) in addition to acknowledgements in government legislation surrounding the importance of specialist staff (Emotional Literacy Support Assistants) to support children to develop their emotion skills (DfE, 2014).

Emotionally competent individuals are usually characterised by optimal functioning in two major domains— emotion production and emotion recognition (Scherer, 2007), with emotion recognition being generally acknowledged as a key factor of emotional intelligence (Matthews, Zeidner, & Roberts, 2007; Mayer & Salovey, 1993). Despite this, Department for Education initiatives often fail to highlight emotion recognition as a key component of emotional skill development and instead highlight self-perception. As a social species, the ability to make quick accurate assessments of other people within our surroundings is essential. Faces are considered one of the most important social cues in our environment, and are one of the primary signals used to understand the non-verbal intentions and feelings of others, with it being argued that the ability to recognise emotions of others is universal (Ekman, 2016). As schools are largely social environments it is

therefore likely that emotion recognition is crucial to the development of emotion intelligence and in turn, academic achievement.

### 1.1.1 Emotion recognition and development.

The term "Emotional Intelligence" (EI) captures the differences in the way individuals perceive, communicate, regulate, understand their own emotions and those of others (Zeidner, Matthews, & Roberts, 2009). According to models of EI, this can be constructed as both 'Ability Emotional Intelligence' (AEI) (Mayer, Salovey & Caruso 2016) and 'Trait Emotional Intelligence' (TEI) (Mayer, Roberts, & Barsade, 2008). The AEI model refers to the individual's capacity to perceive, access and generate emotions in order to assist thoughts, develop emotional knowledge and reflectively regulate emotions in order to promote emotional and intellectual growth (Mayer, Salovey & Caruso, 2004). The TEI model was developed by Petrides (2001) and is viewed as a cluster of emotion-related dispositions and self-perceptions that are considered to relate to lower levels of personality (Petrides, Pita & Kokkinaki, 2007), usually being measured by self-reports. Research has also highlighted that correlations between measures of AEI and TEI are consistently low, supporting the distinction between the two 'intelligences' (Brannick, Wahi, Arce & Johnson, 2009). Considering the above definitions of what constitutes these two 'intelligences', for the purpose of this review the term 'emotion recognition' will refer to recognition of the emotions of other people, in line with Mayer et al's (2004) definition of AEI.

Facial emotion recognition ability has been shown to be crucial to establishing strong interpersonal connections from early on in life. Typically developing infants have been found to be able to discriminate between static images of sad, happy and surprised faces by 3-4 months old (Young-Browne, Rosenfeld, & Horowitz, 1977) and angry and happy faces by 7 months old (Soken & Pick, 1992). In addition to this, typically

developing children of 4 years old have been found to display high levels of accuracy when freely labelling happiness, sadness and anger with increasing ability to recognise surprise and fear (Widen & Russell, 2003). A number of research findings have suggested that a child of 10 years old has the ability to recognise a majority of emotional expressions to that similar of adult levels (Durand, Gallay, Seigneuri, Robichon, & Baudouin, 2007; Mondloch, Geldart, Maurer, & Le Grand, 2003). However, some studies also indicate that even during adolescence, some individuals may struggle to recognise less intense emotions (Thomas, De Bellis, Graham, & LaBar, 2007) and that this skill along with the processing speed of emotions continues to develop before peaking at adulthood (De Sonneville et al., 2002). In terms of additional individual differences that may impact emotion recognition skills, from the age of three, females have been found to have higher emotion recognition abilities compared to males (Boyatzis, Chazan, & Ting, 1993; Rotter & Rotter, 1988). An extensive review conducted by McClure (2000) reported evidence of a female advantage in the ability to recognise facial expressions, suggesting these differences may be related to differences in biological maturation in addition to gender related socialisation.

Investigation into the development of emotion recognition is well documented throughout the literature, in addition to the way in which these skills appear to be closely tied to an individual's ability to establish and maintain positive social relationships throughout the school years. Specifically, researchers have found that young children who have better developed emotion recognition skills demonstrate higher levels of pro-social behaviour and peer popularity (Leppanen & Hietanen, 2001) in addition to increased incidences of pretend play and higher emotional competence when interacting with their peers (Lindsey & Colwell, 2003). Conversely, those children who demonstrate poorer emotion recognition skills have been found to be at increased risk of being disliked by their peers (Leppanen & Hietanen, 2001) and more likely to be described by their teachers as socially withdrawn (Strand, Cerna, & Downs, 2008). Children with emotion recognition

deficits have also been found to be at increased risk for numerous negative psychosocial and educational outcomes known to be associated with peer rejection (Asher & Coie, 1990; Ladd, 1990). Furthermore, findings have also suggested that those with emotion recognition deficits may be more vulnerable to increased levels of social anxiety, obsessive compulsive disorder and psychopathology (Aka & Gencoz, 2014; Surcinelli, Codispoti, Montebarocci, Rossi & Baldaro, 2006). Beyond childhood and adolescence, emotion recognition of faces has also been found to continue to serve an important social function, with the accurate decoding and encoding of emotion signals being found to enhance and sustain social relationships and interactions throughout the lifespan (Izard & Ackerman, 1997).

### 1.1.2 Linking emotion recognition and emotion regulation.

It has been suggested that poor use of information gained from recognising facial expressions may be more detrimental than being unable to perceive emotion information at all (Hall, 1979). Implying that whilst the ability to apply emotion recognition skills is an important component of emotional intelligence, the way in which an individual uses this information (through regulation of emotions) may also play a significant role. As previously mentioned, the AEI model also refers to the individual's capacity to not only perceive emotions but to be able to do this in order to reflectively regulate them to promote emotional and intellectual growth (Salovey et al, 2004). As such, it is important to consider how the recognition of emotions may impact the regulation of emotions.

Emotion regulation has been defined as a process that is used to manage and change if, when and how one experiences emotions and emotion related physiological and motivational states, as well as the way they express these behaviourally (Eisenberg & Spinrad, 2004). Deriving from an approach from the EI framework (Mayer, Salovey, Caruso & Sitarenios, 2001), research has identified a link between emotion recognition and

emotion regulation. Findings indicate that emotion recognition is an important pre-cursor to emotion regulation, suggesting that if emotions are not recognised (both in oneself and others) the individual will be unable to identify what they are required to regulate, with incorrect recognition of emotions in oneself and others being likely to impact emotion regulation (Yoo, Matsumo & LeRoux, 2006).

Research has further explored the importance of emotion recognition skills and how this can effect behavioural expressions of emotion. For example, facial emotion perception of others has been found to be a crucial feature of complete social functioning, with the ability to infer expressions correctly being essential in guiding the behaviour and regulation of emotional states when in a social context (Montagne et al, 2005). Associations have also been found between emotion recognition accuracy and pro-social behaviour (Côté et al, 2011) and additional findings suggest that this is specifically related to abilities in correctly appraising expressions of distress, such as sadness and fear (Marsh & Blair, 2008; Marsh, Kozak & Ambady, 2007).

In contrast, poor emotion recognition has been associated with impaired social emotional functioning and conditions including Autism (American Psychiatric Association, 2013), ADHD (Kats-Gold, Besser & Prield, 2007) and Schizophrenia (Kee, Green, Mintz & Brekke, 2003). Moreover, individuals who frequently exhibit inappropriate antisocial and interpersonal behaviour also typically have deficits in facial emotion recognition skills, particularly distress related cues (Marsh & Blair, 2008). In line with these findings, further empirical research has found that impairments in the recognition of anger have also been observed in young offenders (Bowen, Morgan, Moore & Van Goozen, 2014), adolescents who show anti-social behaviour (Leist & Dadds, 2009) and those with early onset conduct disorder (Fairchild, van Goozen, Calder, Stollery & Goodyer, 2009).

Emotion recognition abilities appear to be key in contributing to skills for emotion regulation and behaviour, especially within social environments and situations and research has identified a number of potential negative consequences for those who experience deficits in this area. Such findings are especially important to consider as schools are largely social environments and one in which an individual will spend a significant amount of their childhood and adolescence. To gain a better understanding of how emotion recognition may impact on academic achievement it is important to consider how the subsequent difficulties in the aforementioned areas may impact the educational experiences and outcomes of young people within a school environment.

### 1.1.3 Emotion recognition skills and school outcomes.

Impaired emotion recognition skills can contribute to reduced emotion regulation skills and inappropriate behaviours which may be considered 'challenging' within an educational institution. The term challenging behaviour can be defined as a repeated pattern of behaviour that can interfere with or is at risk of interfering with learning or engagement in pro-social interactions with peers and adults (Dunlap et al, 2006). Such behaviours within educational environments are likely to be of significant concern to schools as society on the whole expects them to provide a safe environment (Nickerson & Spears, 2007). Schools also have a duty of care to protect staff and students within them. It is therefore imperative that educational institutions ensure they address this issue (Massey, Boroughs & Armstrong, 2007). For example, this can be seen throughout UK educational settings whereby Government guidance is provided to support the development of behaviour policies, and schools are held accountable for the management of challenging behaviour occurring within and outside of their settings (Ofsted, 2015).

It is important to acknowledge that students' challenging behaviour is a difficult issue for schools to address (Hemphill & Hargreaves, 2009). Whilst school responses to

students' challenging behaviour can be varied and include academic or therapeutic intervention, they often involve punitive approaches and exclude the student from their learning in some way, through expulsion, suspension or within school exclusionary practises (Michail, 2011). However, a growing body of evidence is emerging to suggest that such actions can have a range of unintended negative consequences for students. Regular school attendance is regarded as fundamental to children's success in academic, work-related, language and social domains due to the experiences and opportunities designed to scaffold learning in these areas. Research has consistently identified an association between school attendance and higher standardised test or achievement scores and grades (Epstein and Sheldon 2002; Tanner-Smith and Wilson 2013) with poor attendance patterns also being found to predict lower grades (Morrissey, Hutchison and Winsler, 2014). Research has specifically explored the impacts of punitive approaches (such as exclusionary discipline). For example, Christie, Jolivette & Nelson (2004) examined suspension rates across 40 middle schools in America. Findings indicated that suspension rates were negatively correlated with academic achievement and the authors concluded that whilst such a punitive measure may be a temporary solution to behaviour difficulties, this is academically detrimental to students. These findings have also been further supported by Rausch and Skiba (2004), who identified a relationship between school suspension and exclusion rates with pass rates in literacy and numeracy skills. After controlling for poverty, school size, school type and location these were found to be negatively related to achievement in these areas. Therefore, it could also be reasoned that a loss of educational instruction due to school exclusion is also likely to impact academic achievement in this way.

It is also important to consider potential social consequences of students' challenging behaviour and how this may impact their academic experiences and achievement. The role of the teacher-student relationship has been found to be crucial to all

students' learning engagement (Skinner, Wellborn, & Connell, 1990) and academic achievement (Valiente, Lemery-Chalfant, Swanson and Reiser, 2008). Children who have experienced exclusions as a result of their challenging behaviour may be particularly at risk of developing poor teacher-student relationships. Quantitative evidence reported by Flanagan (2007) captures student perceptions of their school exclusion and how this may contribute to feelings of alienation, finding that although 60% of those suspended felt that teachers did not view them differently upon returning to school, 40% felt that they were treated differently. In addition to this, research findings regarding teacher self-efficacy relating to feelings of competence surrounding instructional strategies, behaviour management, student engagement and emotional support has been found to be negatively associated with students' challenging behaviour. This is of concern considering findings surrounding teacher self-efficacy report that those experiencing high self-efficacy have greater instructional skills and ability to keep students on tasks whereas those with reduced self-efficacy are more likely to feel angered or threatened by challenging behaviour and experience difficulties maintaining student engagement (Ashton and Webb,1986), potentially influencing the quality of educational instruction children with challenging behaviour receive even when attending school.

### 1.1.4 The importance of academic success for life outcomes.

Researchers have illustrated a number of ways in which academic achievement can positively impact the immediate life outcomes of young people, with higher academic performance being found to reduce the likelihood of students participating in health risk behaviours (Schvaneveldt, Miller, & Berry & Lee 2001; Hallfors et al., 2002) and increase feelings of positive self-regard (Filozof, Albertin, & Jones, 1998). However, research has also highlighted that perceived academic pressures can have a negative impact on outcomes for young people. For example, findings by Windle & Windle (1996) found a

significant effect of school related stress on emotional adjustment, school performance and behaviour outcomes. Reporting that negative daily events experienced at school can predict reduced GPA, increased delinquency and contribute to greater depressed affect within students. Further research from cross sectional studies (Frojd et al, 2008; Derdikman-Eiron et al, 2011) has also provided findings to suggest that depressive problems are in turn associated with poor academic performance, although may be more prominent in boys compared to girls (Derdikman-Eiron et al, 2011).

Throughout childhood and adolescence, academic success is considered important in today's society as academic accomplishments and failures can determine an individual's future academic career and job opportunities (Rana & Mahmood, 2010). For example, this is seen in the UK education system whereby students are required to achieve a grade 4 or above in English and Maths in order to access further education (Department for Education, 2017), with job opportunities, or lack of these, likely to have an impact on the more long-term life outcomes of low achieving individuals.

According to The Organisation for Economic Cooperation and Development (OECD, 2017), whilst figures may vary from country to country, a general rule applies indicating that the higher the level of formal qualifications, the increased chance of avoiding unemployment, and higher average earnings. Research also points to an increased polarisation between those who remain in education and those who leave school with fewer qualifications, with poorly qualified individuals being more likely to be marginalised in the labour market and society in general (Jones, 2002). Unemployment is also likely to lead to low income, low socioeconomic status and limited resources (Bynner & Parsons, 2002). Furthermore, low socioeconomic status has been found to be associated with numerous factors which can have a detrimental effect on life outcomes. These include poor housing, reduced physical health and access to healthcare (Adler & Ostrove, 1999), vulnerability to traumatic life events (Pinquart & Sorensen, 2000), poorer wellbeing and

increased prevalence of mental health difficulties and health impairing behaviours (Baum, Garofalo & Yali, 1999).

### 1.1.5 Summary and aims of the current review.

Emotion recognition ability is an important skill that emerges and is applied from infancy. Whilst emotion recognition skills are considered to be well established by age 4, they continue to develop throughout childhood and into adolescence. The existing literature surrounding the role of emotion recognition skills highlights the importance of this ability for social and emotional wellbeing both during childhood and throughout the lifespan. Alongside this, findings also provide evidence to suggest that emotion recognition is a vital precursor to the development of regulation skills which are crucial in further supporting the social and emotional wellbeing of individuals. It is not surprising that given the fact schools are largely social environments, deficits in these skills may negatively impact academic outcomes. This may be due to damaging the relationships children hold with their peers and teachers in addition to incidences of challenging behaviour which increase the likelihood of a child being excluded from their educational environment altogether.

Considering the importance of academic achievement for immediate and long-term outcomes in terms of ensuring emotional wellbeing and securing future education and employment, this systematic literature aims to identify and evaluate research evidence to answer the question: Does emotion recognition support academic achievement? It is hypothesised that a review of the literature exploring the role of emotion recognition abilities in relation to academic achievement will indicate that strengths in these skills are associated with increased levels of academic achievement.

## 1.2 Method

### 1.2.1 Search strategy.

For this current review, a systematic search was conducted 17.11.17 to establish whether there is a relationship between emotion recognition skills and positive academic outcomes for school-aged children. Guidelines were followed from the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Moher, Liberati, Tetzlaff, Altman & Grp, 2009). Refer to Figure 1 for a PRISMA diagram depicting the selection process of the literature that is reviewed through the various phases of this review. Four databases; PsychINFO, ERIC, Web of Science and IBSS were systematically searched for titles and abstracts that would be potentially relevant for inclusion in the current review. These databases were chosen as they would comprise articles from the fields of Psychology, Education and Social Sciences, all of which were deemed suitable sources of potentially relevant literature. Broad search terms (see Appendix A for complete breakdown of search strategy and terms applied) were used to include a number of studies that may be related to the topic, for example 'emotion categorisation' was included as recognition may be identified as a component of this. Terms also addressed different conceptualisations of (emotion) recognition and academic achievement. In addition, search terms that may have had a number of spellings or suffixes were entered in to the database using an asterisk. This allowed for all related terms to be captured in the search, e.g. emotion* categori* for emotion, emotional, emotions categorisation or categorization. Where applicable, filters were used to restrict age ranges for school-age only (ages 4 -18) and ensure articles retrieved would be peer reviewed and available in English.

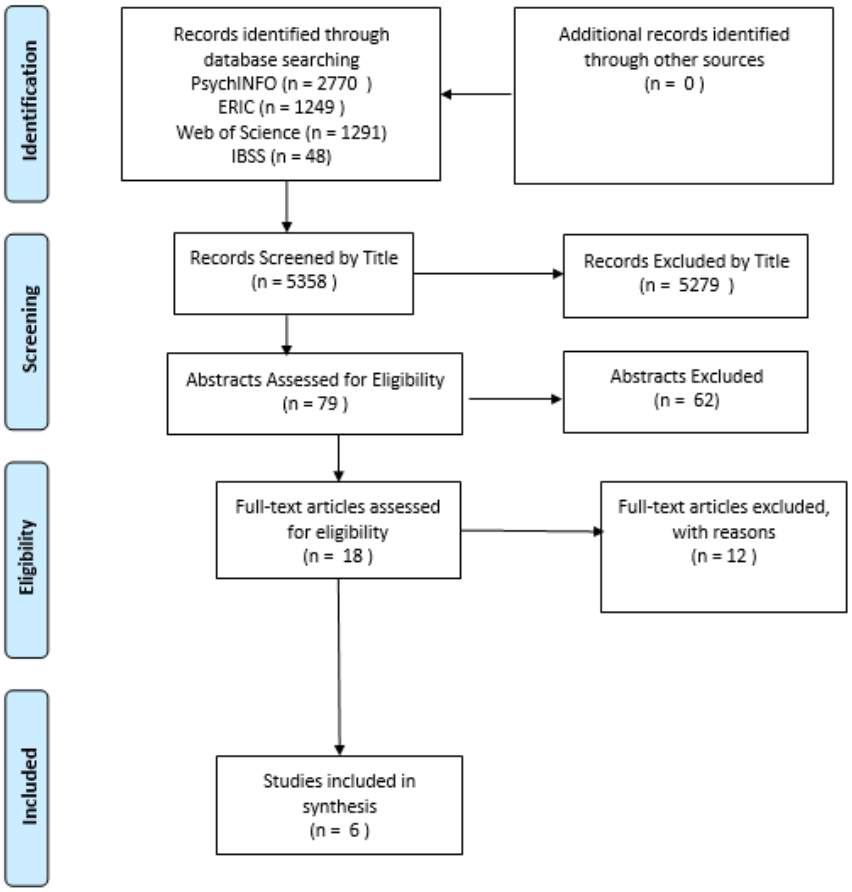


Figure 1 *PRISMA Flow Chart (2009) illustrates the selection process followed for the this systematic literature review (n = number of articles)*

### 1.2.2 Inclusion and exclusion criteria.

To ensure that all articles retrieved were relevant to the stated aims of this review and answer the question "Does Emotion Recognition Support Academic Achievement?", inclusion and exclusion criteria were established prior to conducting the systematic search. Articles retrieved were only included if they (a) reported on school-age children, between the ages of 4 – 18, (b) did not include a population who have Autism or other neurological condition linked to differences in emotion recognition, (c) were peer reviewed articles that were (d) published in English language, (d) within the last 20 years, as this incorporates more recent research and definitions emerging surrounding field of emotion intelligence and (e) had an abstract available. Articles were also required to (f) present quantitative

analyses, (g) have an independent variable related to the recognition of other peoples' emotions and (h) an outcome measure which included a quantitative score of academic competence or achievement in at least one academic subject. (see Appendix B for complete breakdown of inclusion and exclusions criteria alongside full-text articles that were excluded based on the aforementioned criteria.)

To assess the eligibility of articles retrieved, titles were initially screened to include those that were broadly related to the topic of this review. All remaining articles were then screened for eligibility by examination of the articles' abstract alongside the above stated inclusion and exclusion criteria. If abstracts were found to not provide enough information to allow for an informed decision to be made, full text articles were then read in full to do this. In a majority of cases this involved closer examination of definitions and measures of emotion recognition to ensure that the author's definition encompassed recognition of the emotions of others (as opposed to recognition of one's own emotions). Where full text was not available publications were accessed via inter-library loan.

## 1.3 Results

### Descriptive Results.

#### *1.3.1.1 Sample characteristics.*

Throughout the articles included, none of the research took place in the United Kingdom. However, research did take place in a number of other countries, including America, Greece, Spain, Italy, Croatia and Australia, with one study in each of these countries. Two of the studies selected a sample with a consideration of socio-economic status, although this was not specifically analysed. Gender was considered in the analysis of all of the studies. Only one study specifically stated the exclusion of participants with

special educational needs. As part of the inclusion criteria all studies only reported on participants aged between 5 and 17 years of age.

#### *1.3.1.2 Study design.*

Overall there was only one study which used a longitudinal design (Izard, Fine, Schultz, Mostow, Ackerman & Youngstorm, 2001). Further studies were correlational in design and explored relationships between identified variables in their selected population (Agnoli, Mancini, Pozzoli, Baldaro, Russo, Surcinelli. 2012; Downey, Mountstephen, Lloyd, Hansen & Stough, 2008; Mestre, Guil, Lopes, Salovey, Gil-Olarte, 2006; Mohoric & Takšić, 2016; Vassiou, Mouratidis, Andreou & Kafetsios, 2016). All but one of the studies (Downey et al, 2008) that were included in the current review collected data from participants that the researchers had recruited for their study. Downey et al's (2008) study involved teachers recruiting participants to take part in the research. Please see below for the data extraction table listing all studies and their characteristics.

Table 1

*Data extraction table listing all studies and their characteristics.*

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| Mestre, Guil, Salovey, Gil-Olarte (2006) | 147 High School Students across two academic years<br>Ages 14-17 Years<br>50.4% Female<br>Spain | Correlational<br><br>Multiple Regression Analysis Used | **DV:** Academic achievement – measured using teacher reported academic adaption including average academic achievement.<br>**IV:** Emotional Intelligence -Ability emotion recognition skills measured using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Version 2.0) | Significant positive relationship between Strategic Emotion Intelligence and Academic Adaption.<br>Strategic EI remained significantly associated with teacher rating of academic adaption for boys but not for girls when controlling for IQ and Big 5 Personality Traits.<br>[F (8, 36)= 4.71, p<.01; ß= .37, p<.01] and conflict and hostility [F(7, 41)= 2.31; ß= -.39, p<.05] after controlling for IQ and the Big Five.<br><br>Strategic EI also correlated negatively with teacher ratings of conflict and hostility. When controlling for IQ and Big 5 Personality Traits, Strategic EI remained significantly associated with academic adaption and conflict and hostility |

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| | | | | ratings. As well as friendship nominations for girls. . [F(7,28)= .50; ß= .49, p<.05] |
| Agnoli, Mancini, Pozzoli, Baldaro, Russo and Surcinelli (2012) | 352 school aged children aged 8-11<br>Recruited from Primary state schools in the city of Bologna Italy | Correlational<br><br>Multilevel Analyses | **DV:** Academic achievement – termed scholastic achievement and measured through end of year grades in Language and Maths<br>**IV:** Emotional Intelligence -Ability emotion recognition skills measured using Emotional Facial Recognition Task with pictures selected from the Karolinska Face System (KDEF; Ludqvist, Flykt & Ohman, 1998) | Positive correlation identified between language and math performance. Both positively related to emotion recognition ability (cognitive ability and trait emotion intelligence). ($p < .001$)<br>Emotion recognition ability (cognitive ability and trait EI) predicted final scores in language performance after controlling for class membership and demographic variables.<br>Positive associations of children's ability to recognise emotions and trait EI with language performance: Specified by the moderating role played by cognitive ability. Simple slopes computations showed that emotion recognition ability was associated with better language performance in those with low and medium cognitive ability. However, ability to recognise |

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| | | | | emotions did not affect language performance of those with high cognitive ability.Language performance in pupils with low (*b* = .02, *SE* = .003, *t* = 6.38, *p* < .001) and medium (*b* = .01, *SE* = .003, *t* = 3.16, *p* = .002) cognitive ability.Maths performance in students with medium (*b* = .01, *SE* = .004, *t* = 2.29, *p* = .02) or low (*b* = .02, *SE* = .004, *t* = 5.05, *p* < .001) cognitive ability. |
| Izard, Fine, Schultz, Mostow, Ackerman & Youngstrom (2001) | 102 children aged 5 and 72 children followed up at age 9.<br>Recruited from economically disadvantaged families<br>51% female<br>75% African American, 18% European American, 6% Latin American and 2% Other ethnic identities<br>United States of America | Longitudinal correlational study<br><br>Hierarchical regressions<br><br>Path analysis | **DV:** Academic achievement –<br>At age 5, the Peabody Picture Vocabulary Test (L.M. Dunn & Dunn, 1981) was used.<br>At age 9, academic competence was measured through skills in reading, arithmetic and motivation to succeed academically scholastic achievement and measured through end of year grades in Language and Maths<br>**IV:** Emotional Knowledge -Ability emotion recognition skills measured using an 18 item | The statistics for the overall models and predictive efficacy of emotion knowledge in predicting academic competence (and social behaviour) showed the combined effect of the predictor variables (gender, intelligence, temperament and emotion knowledge) accounted for a sig portion (13-23%) variance in three outcome measures – social skills, behaviour problems and academic competence. This was |

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| | | | emotion recognition task and an emotion labelling task using cross culturally validated facial expressions of interest, joy, surprise, fear, shame, disgust, contempt, sadness and anger (Izard, 1971). | after removal of variance explained by verbal ability and temperament.<br>Pre-School Verbal Ability correlated significantly with Emotion Knowledge and Academic Competence. ($p < .01$)<br>Regression equations were carried out to investigate whether Emotion Knowledge serves as a mediator of behavioural outcomes. Findings indicate (a) Verbal ability relates significantly to emotion knowledge and academic competence and (b) emotion knowledge was found to account for significant variance in academic competence after variability due to verbal ability was removed.<br>The significant result found relating verbal ability to academic competence was reduced to a non-sig level by the mediator (emotion knowledge).<br>However, additional path analysis showed that emotion knowledge does mediate the effect of verbal ability on academic competence. |

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| Downey, Mountstephen, Lloyd, Hansen & Stough (2008) | 209 Secondary School Students from two High Schools in Victoria<br>Mean age 13.81 Males and 13.97 Females<br>86 Males & 123 Females<br>50% Oceanian ethnic background, 32% Asian, 14% European, 2% North African/Middle Eastern, 1% as Sub-Saharan African and 1% People of the Americas Australia | MANOVA<br><br>Regression Analyses | **DV:** Academic Success – Measured through academic records detailing GPA, with students split into 3 levels of ability according to percentiles.<br>**IV:** Emotional Intelligence -Ability emotion recognition skills measured using the Adolescent SUEIT (Luebbers, Downey & Stough, 2007) a modification of the SUEIT (Palmer & Stough, 2001), this included subscale dedicated to reporting on ability to identifying and understanding emotions of others. | Academic success was found to be associated with total levels of Emotion Intelligence.<br>Understanding Emotions was highest in more successful students ($80^{th}$ percentile group) and the middle group (20-$80^{th}$ percentile) scored higher than the lower ($20^{th}$ percentile) group.<br>Significant positive relationships observed between Understanding Emotions and Art and Geography grades. The Understanding Emotions subscale predicted scores for Art and Geography ($p < .01$) and Science ($p < .05$).<br>Girls scored higher than boys on Emotion Recognition and Expression, Understanding Emotions and Total EI. |
| Mohoric & Takšić (2016) | 493 children from 6 elementary schools across 4 regions<br>220 females and 236 males, 37 did not indicate gender<br>Mean age 12.61<br>Croatia | ANOVA<br><br>Hierarchical Regression Analyses | **DV:** Academic Success – Measured through student self-reported GPA at the end of the last school year, previous grades from half-term of current school year in Language, Maths, English Language as well as number of negative grades and unauthorised absences. | Understanding emotions accounted for an additional 9.2% (girls) and 5.8% variance in GPA after controlling for grade level, non-verbal intelligence and personality traits.<br>Findings indicate that girls are slightly better than boys at understanding emotions. Girls also scored higher GPA and more altruistic and pro-social behaviours. Boys showed more aggressive behaviour than girls. |

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| | | | **IV:** Emotional Understanding -Ability emotion recognition skills measured using the TEU from the Mayer-Salovey model of emotional intelligence. A multiple choices test with theoretically defined correct answers based on Roseman's (1991) structural model of emotions. In addition, the vocabulary of emotions test (VET, Taksic, Harambasic & Velemir, 2004) was used. Participants are presented with a target word and asked to recognise from a number of adjectives which one is closest to the target word. | Low but sig correlation found between Emotional Understanding and aggressive behaviour and prosocial behaviour ($p < .01$). Those with reduced EU report more aggressive behaviours. A better understanding of emotions also contributes to more pro-social and altruistic behaviour |
| Vassiou, Mouratidis, Andreou & Kafetsios (2016) | 949 students from 20 secondary schools across 4 classes<br>45.9% male<br>Northern Greece | ANOVA | **DV:** Academic Achievement – Measured through student reported grades in Greek language and Maths at the end of the first trimester.<br>**IV:** Emotional Perception -Ability emotion recognition skills measured using a task derived from Ekman and Friesen's (1972) classic test of | Emotion Perception ability was not associated with any outcomes relating to improved grades.<br>At class level, achievement goals and affect were moderated by Emotion Perception ability.<br>Mastery approach goals were more strongly |

| Study | Population Characteristics | Design and Analysis | Relevant Measures | Key findings relating to review question |
|---|---|---|---|---|
| | | | emotions. Consisting of 18 facial emotion expressions, students were required to identify which emotion best corresponded to each facial expression from 6 possible choices. | related to positive affect when students exhibited high (compared to low) EP ability.<br>Females shown to have higher levels of master approach to goals, emotion perception ability and grades |

#### *1.3.1.3 Measures and analysis.*

The conceptualisation of 'emotional intelligence' (EI) can take a number of forms and it appears that throughout the literature this is also the case for terms relating to emotion recognition abilities. As the AEI model refers to the individual's capacity to "accurately perceive emotions…" (Mayer, Salovey & Caruso, 2004) and makes no direct reference to self-perceptions in the way in which TEI does, this was considered a key component for this review's definition of emotion recognition. Across the six studies in the current review the terms emotion knowledge (Izard et al, 2001), emotion recognition and expression (Downey et al, 2008), emotion perception ability (Vassiou et al, 2016) and emotion understanding (Mohoric & Takšić, 2016) were used in relation to this. The term EI was used by Agnoli et al (2012) and appears to use both measures of AEI and TEI, whereas Mestre et al (2006) also uses the term EI, however appears to relate this only to AEI. Due to measures used, all six studies were considered to have a shared view of emotion recognition despite their use of different terms.

In order to measure academic achievement, articles by Agnoli, Mancini, Pozzoli, Baldaro, Russo and Surcinelli (2012) and Downey, Mountstephen, Lloyd, Hansen & Stough (2008) measured academic success through academic records which indicated grade point averages (GPA) or numerical data which was then used to calculate GPA, primarily relating to language based subjects and Maths. In studies by Mohoric & Takšić (2016) and Vassiou, Mouratidis, Andreou & Kafetsios (2016) this information was obtained through student reported GPA or grade scores in these areas. Studies by Izard, Fine, Schultz, Mostow, Ackerman & Youngstrom (2001) and Mestre, Guil, Salovey, Gil-

Olarte (2006) used teacher based reports rather than grades to measure success. Izard et al (2001) considered this in relation to teacher views of academic adaption including academic subject performance whilst Vassiou et al's (2016) measure referred to teacher views of academic competence and considered skills in reading, arithmetic and motivation to succeed academically.

For the variable, emotion recognition (here referring to one's ability to recognise the emotions of others) a number of various measures were used throughout the selected reviewed articles. Five studies used maximum performance tests whereby participants were required to identify photographs of emotions relating to scenarios. These included the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey, Caruso & Sitarenios, 2003), Test of Emotional Understanding (TEU) (Mohoric, 2012), a task derived from Ekman, Friesen and Ellsworth's (1972) classic test of emotions, a task derived from the Karolinska Directed Emotional Face System (Lundqvist, Flykt, & Öhman, 1998) and a task which used expressions from Izard's (1971) selection of cross culturally validated expressions. A final study used a self-report questionnaire, the Adolescent SUEIT, to explore participant's ability to identify emotions of others.

It is important to note that many of the papers also applied additional measures relevant to their research questions. These included measures of TEI (ability to recognise one's own emotions), non-verbal reasoning ability, Big Five Personality Traits, achievement goals, achievement self-efficacy, positive and negative affect, teacher's self-motivation, social behaviour and skills, behavioural styles, emotion cognition, management and vocabulary.

Across the articles the analyses selected were appropriate for the research questions that had been asked and method of data collection. Four of the studies used regression analyses in order to analyse predictor variables and associated correlations. One of these

studies extended their investigation using path analyses to examine mediating variables. One study investigated potential differences existing between groups using analysis of variance, whilst the other applied a multivariate analysis of variance procedure in order to do this.

#### *1.3.1.4 Quality assessment of studies.*

To assess the quality and relevance of these papers, the Critical Appraisal Skills Programme Cohort Study checklist (CASP) (CASP, 2017). This was adapted to be in line with the question "Does Emotion Recognition Support Academic Achievement" and as not all papers in the current review were cohort studies. The final checklist produced a potential score of 10 (with 'Yes' = 1 point and 'No' = 0 points) for questions relating clarity, recruitment, confounding factors and results (including practical implications and applicability). According to the CASP checklist, articles included were considered to be of sufficient to good quality, scoring between 6-10 points in relation to criteria. Further information can be found in Appendix C.

### 1.3.2 The relationship between emotion recognition and academic achievement.

In terms of a direct relationship between emotion recognition skills and academic achievement, findings in five of the six articles reviewed suggest a relationship between emotion recognition skills and academic achievement reported by teachers/schools (Izard et al, 2001; Agnoli et al, 2012; Downey et al, 2008; Mestre et al, 2006) and students themselves (Mohoric & Takšić, 2016). Of these five papers, four authors (Izard et al, 2001; Agnoli et al, 2012; Mestre et al, 2006; Mohoric & Takšić, 2016) reported significant positive correlations between emotion recognition skills and academic achievement. However, correlation coefficients showed these relationships to not exceed moderate levels (with papers not obtaining above r= 0.43). In addition, after applying controlling for IQ and Big 5 personality traits, Mestre et al (2006) found associations between emotion

recognition of others and academic adaption were no longer significant and were not the only authors to report a somewhat different relationship. Agnoli et al (2012) did report a relationship between emotion recognition ability and (Maths and Language) achievement. Although, this was only found for children with low and medium levels of cognitive ability, with these skills not being found to affect performance for those with high levels of cognitive ability.

Main effects were also found by Downey et al (2008) acknowledging stronger emotion recognition skills in higher academically achieving groups. Furthermore, two papers (Mohoric & Takšic, 2016; Izard et al, 2001) applied regression analyses and established that emotion recognition abilities were significant predictors of academic achievement outcomes. In addition to this, findings by the only study which was longitudinal in design (Izard et al, 2001) suggest that emotion recognition ability at pre-school (age 5) may have a long lasting impacting, contributing significantly to the prediction of academic achievement at age 9. The above findings reporting that emotion recognition abilities significantly predict academic achievement outcomes, were also found to persist even after controlling for gender, verbal ability and temperament (Izard et al, 2001), class membership, demographic variables (Agnoli et al, 2012) in addition to grade level, personality traits and non-verbal intelligence (Mohoric and Takšić, 2016). Although findings are somewhat mixed, it can therefore be deduced that a majority of the literature suggests that emotion recognition ability is related to academic achievement and may have incremental validity over and above other factors in predicting achievement.

It was identified by three out of six authors that academic performance was higher in girls than boys, in terms of achieving significantly higher GPA/grades (Mohoric & Takšić, 2016; Vassiou et al, 2016) and teacher reported academic adaption (Mestre et al, 2006). Whilst Izard et al (2001) acknowledged that gender (amongst other variables) accounted for a significant portion of variance in outcome measures (including academic

competence) they did not report individual findings related to each predictor variable. Overall no papers reported boys to have higher levels of academic achievement or emotion recognition skills. However, Mestre et al (2006) went on to identify that the ability to recognise and use emotions correlated with teacher ratings of academic adaption for boys only and furthermore this association was no longer significant after controlling for IQ and personality factors. In addition, five papers (Downey et al, 2008; Mestre et al, 2006; Mohoric & Takšić, 2016; Vassiou et al, 2016) investigated gender differences regarding emotion recognition abilities. Significant differences were found between boys and girls, highlighting girls obtained higher scores than boys on a variety of emotion intelligence skills including: emotion understanding, recognition (or perception), expression, self-perceived emotional intelligence and overall total emotion intelligence (Downey et al, 2008; Mestre et al, 2006). Mohoric and Takšić (2016) similarly identified significant gender differences for emotional understanding in addition to emotion vocabulary skills, with girls scoring higher than boys in both of these areas.

Despite the small number of papers retrieved for this review, there appears to be emerging gender differences, i.e. girls seem to have higher levels of emotion recognition skills and academic achievement whilst boys tend to be lower in these domains. It is therefore difficult to interpret to what extent the relationship between emotion recognition skills and academic achievement is able to be explained by gender effects. Authors were also not in agreement on this issue. For example, Mohoric and Takšić (2016) stated that due to adolescence being differential period of major social and emotional change for boys and girls, it was crucial analyses should be conducted separately whilst other researchers such as Agnoli et al (2012) felt it unnecessary to consider the impact of gender in their analyses. Izard et al (2001) found that the relationship between emotion recognition and academic achievement persists even when gender (verbal ability and temperament) was controlled for. However, Mohoric and Takšić (2016) produced results to suggest that

understanding emotions accounted for different levels of variance in GPA for boys (5%) and girls (9%) after controlling for grade level, fluid intelligence and personality factors. Although the worth of these findings by Mohoric and Takšić (2016) is perhaps reduced as this was only highlighted as a significant predictor in relation to one of their emotion recognition measures (emotion vocabulary rather than emotion recognition of faces). The paper suggests that this measure may play to strengths of individuals who are more verbally able which could explain the strong effect on academic performance, however the authors do not explore this finding any further. Therefore, in light of all findings reviewed it may be important to consider that emotion recognition skills may contribute to school success uniquely across gender.

However, not all authors are in agreement surrounding the contribution of emotion recognition skills in supporting academic achievement. Research conducted by Vassiou, Mouratidis, Andreou & Kafetsios (2016) which investigated relationships between students' achievement goals, emotion perception and academic performance was the only article to report that emotion recognition ability did not have a direct relationship with academic achievement. It was highlighted by the researchers that one potential explanation for this could be due to emotion skills being less required in a Greek education system, categorised by predominantly consisting of standardised tests and rote learning. Indeed this is the only paper whereby a Greek population was sampled. They also consider that high-school is a period of education where additional factors may be able to better predict school performance, however a number of additional papers in the search also recruited a high school aged population with contrasting results. Although findings by Vassiou et al (2016) report a lack of a direct relationship between emotion recognition abilities and academic outcomes, they do suggest that emotion recognition abilities may impact emotional state and achievement goals related to school performance which in turn has the potential to impact academic outcomes. Emotion recognition abilities were found to

moderate relationships between achievement goals and grades. A test of simple slopes indicated that mastery-approach goals were more strongly related to positive affect when students had higher levels of emotion recognition abilities. Performance-avoidance goals were also negatively associated with negative affect among students with lower emotion recognition abilities and positively associated with negative affect in students with higher emotion recognition abilities. The test of simple slopes also showed that performance-approach goals were positively related to negative affect in those with low emotion recognition abilities. Therefore emotion recognition abilities may protect students from experiencing negative emotions if they apply these types of goals.

Throughout the reviewed articles, all authors had varying research questions and in some cases findings were reported in relation to what can be referred to as both 'trait' and 'ability' emotional intelligences, alongside other variables. Additional variables included cognitive ability, mastery and performance goals, affect, emotion control, behaviour, personality, peer friendship nomination and verbal ability. These varying definitions, measures and variables may account for some of the aforementioned conflicting results that were reported throughout the literature. When looking across the articles, it emerged that a number of papers shared similar themes regarding emotion regulation, interpersonal behaviour, personality and cognitive abilities that may impact emotion recognition skills and academic achievement. These will now be discussed in more depth.

### 1.3.3 Emotion regulation and interpersonal behaviour.

A number of papers included in this review (Izard et al, 2001; Downey et al, 2008; Mestre, 2006; Mohoric & Takšić, 2016) additionally explored emotion management (regulation) and interpersonal behaviour alongside emotion recognition and academic outcomes. Many of the AEI measures used in these studies considered emotion regulation abilities as a component. All authors justified their decision to consider emotion regulation

drawing upon previous literature that suggests the ability to perceive emotions may influence ones emotional reactions and that these could in turn influence future cognitions and actions.

Across these papers, findings by Izard et al (2001) and Mohoric & Takšić (2016) identified that there was indeed a relationship between emotion recognition skills and those relating to emotional regulation. This was identified at the pre-school level by Izard et al (2001). Findings highlighted that pre-school temperament scales (with high scores suggesting behavioural difficulties) were shown to correlate negatively with positive behaviour outcomes and positively with negative behaviour outcomes at age 9. In addition to this, emotion recognition abilities of pre-schoolers correlated negatively with two negative behaviour outcomes (hyperactivity and internalising) at age 9. Although Izard et al (2001) tested these relationships over time and suggest that temperament and emotion recognition abilities at pre-school may have long term effects on social behaviour (and academic achievement), it is important to acknowledge that 29% of participants were unable to be followed up due to attrition. However, Mohoric & Takšić (2012) produced additional findings which lend some support to the notion that there is a relationship between emotion recognition skills and behaviour that persists as children develop into adolescence (age 10-15). Although it is acknowledged that age may impact behaviour (with a reduction in positive and increase in negative behaviours identified in older children), overall their findings indicated that adolescents with lower levels of emotion recognition skills reported higher levels of aggression and those with higher levels of emotion recognition skills reported higher levels of pro-social and altruistic behaviour. Although emotion recognition was not found to be a significant predictor of pro-social behaviour, it was a significant (although weak) predictor of aggressive behaviour for both boys and girls and remained significant even after controlling non-verbal intelligence and personality traits. However, these results were not consistent across genders for both

emotion intelligence measures used, despite the authors claiming both of these measures assess the same branch of emotional intelligence (emotion recognition). In addition to this, the measures used were designed for those aged 17+.

Both Izard et al (2001) and Mohoric and Takšić (2016) focused primarily on the relationships between emotion recognition abilities and emotion regulation, alluding that emotion recognition skills may hold a specific role in the social and academic functioning of school-aged children. It was suggested that incorrect appraisal of emotions may contribute to negative behaviours which could damage the development of social relationships with both teachers and peers thus potentially impacting academic progress. The suggestion that the quality of social interactions may impact academic achievement is somewhat supported by findings by Mestre et al (2006). Although Mestre et al (2006) did not specifically identify a relationship between emotion recognition abilities and emotion regulation, significant correlations were reported between emotion regulation and academic achievement. Emotion regulation skills also correlated positively with friendship nominations (for girls) and negatively with conflict and hostility (for boys). However, these results were obtained prior to controlling for IQ and personality factors and once more contrasting results were found between girls and boys. Unlike the authors already mentioned, Downey et al (2008) did not comment on the potential impact of social relationships on academic achievement. However, they did identify a relationship between academic achievement and emotion regulation skills, although these were somewhat contradictory to Mestre's (2006) findings. Downey et al (2008) found that whilst the highest academically achieving did report significantly higher emotion regulation than the lowest academically achieving, it was the middle academically achieving group that reported the highest levels of emotion regulation. Positive relationships were also observed between emotion regulation and Maths and Science and was also the only discrete skill associated with increased overall grade. After regression analyses emotion regulation was

also found to predict Maths, Science and a small but significant (2%) amount of variability in GPA.

Once more, some gender differences emerged throughout the literature. Mohoric and Takšić (2016) found that girls are more altruistic, agreeable and pro-social than boys. Vassiou et al (2016) also reported females scored higher in tests of emotion perception ability than boys. Izard et al (2001) identified similar slopes for boys and girls (indicating that gender accounted for a non-significant amount of variance in outcome measures). This was with the exception of 'Hyperactivity', for which boys obtained a significantly higher mean than girls. However, gender was dropped from the final regression analyses and no further information was reported on differences in emotion recognition abilities.

Interestingly, findings by Mestre et al (2006) suggest that different types of emotional skills may have a varying impact on school experiences and academic achievement for girls and boys. Results from their study showed that emotion understanding and management (regulation) correlated positively with teacher ratings of academic adaption for both boys and girls. In addition to this, after controlling for IQ and personality traits, emotion regulation remained significantly associated with teacher ratings of academic adaption for boys only. These findings suggest that strong emotion perception skills and ability to understand and manage emotions may play more vital roles in ensuring academic success for boys. After controlling for IQ and personality factors, for boys, emotion understanding and management was significantly associated with teacher ratings of conflict and hostility. However, for girls, these skills were found to correlate positively with friendship nominations only. These results suggest how emotion understanding and management abilities may impact social interactions and the importance of the quality of these for school success, however girls and boys may use these in different ways. Whilst this is an interesting finding, given the limited statistical power, testing the statistical significance of differences in the obtained correlations would provide no additional

information. It is also important to note that for this study, teachers shared academic adaption of their students using a self-report measure. Although grades were reported in this measure, additional qualitative questions were asked and answers may have been influenced due to the relationships and existing opinions teachers held with their students.

### 1.3.4 Cognitive ability and task demand.

An additional theme identified was that of cognitive ability and this was explored in three papers (Mestre et al, 2006; Izard et al 2001; Agnoli et al, 2012). Although each of these papers applied a different measure to assess cognitive ability (likely due to participant age and the country in which the studies took place), cognitive ability was broadly related to intelligence in some way through IQ (Mestre et al, 2006), non-verbal (Agnoli, 2012) or verbal ability tests (Izard et al, 2001).

Izard et al (2001) reported that verbal ability scores significantly positively correlated with emotion recognition abilities and academic competence ratings provided by teachers. In addition to this, at the level of individual predictors, pre-school verbal ability was found to contribute significantly to the prediction of behaviour problems, academic achievement and modestly to behaviour outcomes at age 9. Interestingly, path analysis showed that emotion recognition serves as a mediator of the effects of verbal ability on academic competence. Izard et al (2001) make compelling arguments for the importance of verbal abilities in supporting academic outcomes via teacher-student rapport, educational exchanges and expectations of students, however this may not be the only cognitive ability that requires some consideration. Agnoli et al (2012) produced findings showing that emotion recognition interacted with cognitive ability, as measured by non-verbal intelligence measures, in explaining and predicting academic performance (in Maths and Language). Furthermore, findings by Mestre et al (2006) reported significant positive correlations between IQ and academic achievement and through regression analyses,

associations between emotion recognition ability and academic achievement were no longer significant when IQ (and other personality factors) were controlled for. These results further support the importance cognitive ability is likely to hold in contributing to academic performance. However, there are weaknesses identified in the methodologies applied by both Mestre et al (2006) and Izard et al (2001) in that academic achievement/competence scores were obtained via teacher reports. For example, Mestre et al's (2006) findings indicated that teachers scored children with higher IQ scores as having higher levels of academic achievement However, due to the nature of teacher reports, it is impossible to rule out the impact of pre-existing perceptions and relationships teachers had with their students.

Agnoli et al (2012) reported additional findings to suggest that whilst cognitive ability has a moderating role for Language grades, this was not the case for Maths grades. Simple slopes computations further revealed that emotion recognition ability was associated with increased Language grades only for those children with low and medium levels of cognitive ability and did not affect the grades of those children with high levels of cognitive ability. Additionally emotion recognition ability improved maths performance of those with low and medium cognitive ability and those with high cognitive ability showed good performance in Maths regardless of emotion recognition skills. Agnoli et al (2012) were not the only authors to report variances in emotion recognition skills in different subjects. Although Downey et al (2008) did not investigate cognitive abilities directly, their findings acknowledged differing correlations between types of emotion skills and grades across a range of subjects. In particular they highlighted that emotion recognition skills only correlated with Geography, Art and Science grades (accounting for between 4-12% of the variability in these grades). They found no positive relationship between emotion recognition skills and achievement in History, P.E, English or Maths. Therefore contrasting the results obtained by Agnoli et al (2012).

Through reviewing the literature it appears that cognitive ability may play a key role to the contribution of academic success. This is a reasonable assumption considering that individuals with a higher level of cognitive ability may have a firmer understanding of the instruction given surrounding the subject they are learning. However, the above findings also indicate that cognitive ability alone may not ensure academic success and that emotion recognition skills may mediate or moderate the impact cognitive ability has on learning performance. In addition to this, the type of task may also be a factor that contributes to the extent emotion recognition skills may support academic achievement in different subject areas.

## 1.4 Discussion.

The systematic search conducted for this review initially identified a large collection of articles, however this number was substantially reduced after application of inclusion and exclusion criteria. The six articles that were discussed reflect the current state of the literature, published since 2000 with regard to the review question: Does emotion recognition support academic achievement? Whilst emotion recognition abilities were largely assessed through the use of maximum performance tests using photograph recognition tasks (in all but one of the studies), it is important to note that all papers included in the review utilised self-report measures from either school staff or young people themselves in order to gather academic achievement information (e.g. GPA or grades). Given the nature of the information being collected the reliability of student reported achievement data could be somewhat weakened due to student's potentially wanting to appear to the researcher as though they are higher achieving. Many of the papers included in this review also included a range of other factors in their research, and as a result this has been examined and synthesised according to similar themes that arose.

There was little variability across the literature surrounding the relationships between these variables, with five of the studies reporting a significant relationship between emotion recognition abilities and academic achievement. Although one of the articles reviewed reported no direct relationship, the authors did report that emotion recognition abilities may impact the emotional state of an individual and moderate relationships between achievement goals and grades. These relationships were identified across multiple contexts, cultures and countries with findings frequently reporting associations between strengths in these skills and increased grades both when self-report and teacher report measures have been implemented and additional controls applied. Although there is strength in the fact that this review data was collected across a number of countries and cultures, five out of six of these are member countries of the Organisation for Economic Cooperation and Development, all of which have democratic governments and highly developed/emerging economies. Therefore findings may not be applicable to countries with differing governmental systems/economies. It is also important to acknowledge that these countries, the educational systems within them and the importance they place on emotion recognition skills may still vary. This may have accounted for differences in measures applied and the strengths of the relationships that were identified and such factors should be considered in more depth.

One of the key themes that arose in relation to emotion recognition skills and academic achievement was that of emotion regulation and interpersonal behaviour. This is perhaps unsurprising given that the papers selected for review adopted measures to assess levels of ability emotional intelligence (AEI) and in line with the AEI model as proposed by Mayer, Salovey and Caruso (2004), these skills are considered to facilitate the regulation of emotions and support intellectual growth. Throughout the literature, emotion recognition skills were suggested to potentially support educational outcomes through their role in strengthening the quality of a child's social interaction and contribution to a child's

ability to develop peer and teacher relationships. This supports previously discussed findings highlighted by Côté et al (2011) that suggest accurate appraisal of emotions is associated with increased pro-social behaviour. As schools are social environments, it is important to consider that the relationships within them and the perceived quality of these may impact the levels of motivation and engagement a child experiences when at school. One paper (Izard et al 2001) suggested that the inability to detect emotional cues could degrade social relationships and is consistent with findings showing such deficits can contribute to social withdrawal (Schultz, Izard, Ackerman & Youngstrom, 2001). Associations between relationships, motivation and achievement may also provide some explanation as to why the only paper that investigated motivation and goals highlighted that emotion recognition abilities moderates relationships between achievement goals and grades (in addition to negative and positive affect).

Overall there was also a strong consensus throughout the literature that cognitive abilities, as measured through IQ (or non-verbal/verbal reasoning tests), were related to increased emotion recognition skills. Whilst some findings indicated that emotion recognition may serve as a mediator of the effects of these non-verbal/verbal abilities on academic achievement, other authors produced findings to suggest that relationships between emotion recognition and academic achievement were no longer significant after controlling for the effects of IQ. Additionally, emotion recognitions skills were found to be associated with improved academic performance only in children with low and medium levels of cognitive ability and those with higher levels of cognitive ability performed well regardless of their level of emotion recognition skills. Such findings are consistent with literature that has identified that IQ explains a high proportion of the variance of academic achievement (Neisser et al, 1996) and indicate a need to consider the predictive validity of emotion recognition measures applied in such research above IQ in predicting academic achievement.

Alongside individual cognitive ability, some authors examined associations between emotion recognition skills and grades in different subjects (rather than overall GPA). Reported findings contrasted each other, emotion recognition skills were found to be associated with Language and Maths in some papers however this was not replicated across the breadth of the literature. Additionally Art, Geography and Science were uniquely found to correlate with emotion recognition skills. It was suggested that relationships between emotion recognition skills and Art and Geography could be due to positive relationships between socio-emotional development and academic achievement. However, explanations between emotion recognitions skills and different subjects is only speculative and such an explanation assumes that social and emotional skills will consistently differ across subjects.

Interestingly, gender appeared to be a key factor highlighted in many of the papers in relation to academic achievement, emotion recognition abilities and emotion regulation skills. Girls were found to have higher GPA and emotion recognition skills compared to boys. Acknowledged gender differences in emotion recognition abilities are also in line with findings by McClure (2000), showing females may be more sensitive in their ability to recognise the emotions of others. From the information available it could be deduced that girls obtain higher grades due to increased levels of emotion recognition skills. Although papers acknowledge that these differences exist there is little explanation as to why this may occur. This further highlights potential necessity in taking gender into account when studying emotion skills and how, in educational settings, boys may need additional support to develop these skills.

Overall the research designs used were beneficial in helping to answer the review question, however they do have a number of limitations. Firstly, only one study was longitudinal in design. As individuals are likely to spend a majority of

their childhood/adolescence attending a variety of educational settings, longitudinal data would provide a more in depth understanding of the causal dynamics among variables. This is also important to consider as during both the pre-school years and adolescence, the brain undergoes an extensive process of synaptic pruning and changes relating to their social identities. Many of the studies were also cross-sectional in their design, with correlational relationships identified not being sufficient to assume causal inferences between emotion recognition abilities and academic achievement. Therefore, results should be interpreted with caution. Despite this, many authors concluded that emotion recognition skills do contribute to academic achievement yet failed to explore how to improve these in school age children. Further experimental research is needed in order to explore way to improve emotion recognition skills and increase academic achievement outcomes in order to further understanding of the nature of this relationship.

### 1.4.1 Overview of limitations of the current review.

There are a number of limitations to this review. For example, although the PRISMA process employed has strengths in its systematic nature it also involves “scanning” a large number of article titles. Whilst search terms applied were appropriately widened and restricted to allow for retrieval of papers that would be as relevant as possible, a large number of articles were screened nonetheless. Articles were discarded at this stage of the process by title alone and it is possible that relevant articles may have been removed due to titles not adequately reflecting content. Human error may also have contributed to relevant papers being unnecessarily excluded. In an attempt to overcome this, throughout later stages in the process all significant articles cited within papers retrieved were examined against inclusion and exclusion criteria in order to identify if they were suitable for review.

Alongside this there are potential difficulties with definitions surrounding the term "emotion recognition" which could have impacted articles retrieved. Firstly, this term can imply either the recognition of the emotions of others or the recognition of one's own emotions. Therefore the terms used in the search of the literature were adjusted to ensure that only papers which considered emotion recognition as an ability, in line with Mayer, Salovey and Caruso's (2004) definition were sought. However, not all authors may adopt this theory of emotional intelligence and this may have also impacted the types of papers retrieved.

Additionally, as part of the inclusion criteria, all articles were required to be peer-reviewed (non-peer reviewed articles were excluded in order for a manageable number to be retrieved within the time constraints and word count limit of this theses). Whilst this ensured articles included met necessary criteria to be published in peer-reviewed journals this also leaves them vulnerable to publication bias. Findings by Dubben and Beck-Bornholdt (2005) suggest that research which produces significant results if more likely to be published (and within higher quality journals). Therefore conclusions drawn solely from published research should be done so with caution. This may also provide explanation as to why only one of the articles reviewed found a non-significant result regarding the direct relationship between emotion recognition skills and academic achievement but also highlighted other significant factors. Incorporation of unpublished articles may have produced a more varied set of results and contributed to a different conclusion.

### 1.4.2 Conclusion.

The aim of this systematic literature review was to identify literature that could answer the question: Does emotion recognition support academic achievement? For school age children up to the age of 17 there appears to be a clear positive

relationship between emotion recognition skills and academic outcomes as measured by grades/GPA. This was found across a range of countries/cultures. It appears that both emotion recognition skills and academic achievement may be higher in girls than in boys and the role of the skills in educational settings may be moderated by other factors including cognitive ability in addition to motivation and achievement goals. Although this review supported the hypothesis that strengths in emotion recognition skills are associated with increased levels of academic achievement, no articles were identified that investigated improving emotion recognition skills and achievement for school age children. Future research should aim to identify interventions or strategies that can develop emotion recognition skills in school age children further. Additionally, those within educational settings should remain mindful of the relationship between emotion recognition and academic achievement when considering how to increase academic achievement within school. This has implications for EPs when recommending potential interventions that may support children and young people, especially those who may experience difficulties with emotion recognition and/or their behaviour.

# Chapter 2 Could a Brief Emotion Recognition Training Intervention Reduce Negative Behaviour Outcomes in an Adolescent with Social, Emotional and Behavioural Needs?

## 2.1 Introduction

### 2.1.1 Conduct difficulties.

The best available estimates concerning the prevalence of mental disorders amongst children and young people can be drawn from data obtained from the last Office for National Statistics survey on child and adolescent mental health (Green, McGinnity, Meltzer, Ford & Goodman, 2005). Their figures indicate that one in ten children aged between 5 and 16 has a mental disorder and of these 5.8% experience Conduct Disorder (CD) with rates of the disorder rising sharply between mid to late adolescence. CD is a psychiatric condition emerging in childhood or adolescence and is marked by an increase in repetitive antisocial and aggressive behaviour in which appropriate societal norms are violated (American Psychiatric Association, 2013). Research spanning a period of 25 years has further highlighted that conduct problems have increased in male and female young people from a range of social classes and family backgrounds (Collishaw, Maughan, Goodman & Pickles, 2004). Anti-social behaviour during childhood and adolescence has been found to be associated with a range of negative outcomes during adulthood. This includes future anti-social behaviour (resulting in arrests, convictions and prison sentences) (Huesmann, Eron & Dubow, 2002), substance use and dependency, in addition to increased risk of developing physical and mental health problems (Bardone et al, 1998;

Fombonne, Simmons, Ford, Meltzer & Goodman, 2001). Therefore the societal impact of conduct difficulties is particularly vast as individuals who exhibit symptoms of the disorder are likely to experience deficits that impact social, educational and healthcare settings. The financial cost of raising a child with conduct difficulties to adulthood is estimated to be 10 times the amount comparable to that of raising a child without such needs (Friedli & Parsonage. 2007). Without early intervention, children with CD symptoms are more likely to follow a developmental trajectory of escalating academic difficulty, delinquency, substance misuse and violence (Frick, Ray, Thornton & Kahn, 2014). Therefore, it is important that interventions and strategies that can support young people who exhibit antisocial behaviours are investigated.

### 2.1.2 Interventions for those with conduct difficulties.

The use of psychosocial therapies is often at the core of treatment for conduct difficulties and have been found to be both clinically and cost effective. For those up to the age of 11 these have been most effective through modifying parenting practices (Murphy & Fonagy, 2012). For example, evidence based training programmes such as Parent-Child Interaction Therapy (Eyberg & Robinson, 1982), The Incredible Years Parent Training (Webster-Stratton, Reid & Hammond, 2004) and the Positive Parenting Programme (Sanders & Dadds, 1993) have been found to be effective in reducing symptoms associated with CD. A common theme amongst these interventions is that they are based upon social learning theories surrounding attachment and parent-child relationships, aiming to reinforce pro-social skill development through more structured, attuned parenting (Pearl, 2009). Despite the reported efficacy of such treatments, the maintenance of these improvements are unclear. The demands placed upon families participating in these are also likely to be high and contribute to dropout, particularly amongst more high-risk or vulnerable groups. Research has also highlighted that parents of children who have

increased conduct difficulties may be less likely to be willing to participate in training programmes (Loney, Hunterburg, Counts-Allan & Schmeelk, 2007). Alongside this, positive changes as a result of these types of interventions have been found to not consistently generalise to behaviours within the child's school setting or reduce negative social interactions with peers (Taylor & Biglan, 1998). However, parenting programmes which incorporate an element of child focused training (compared to parent training alone) have been found to result in more significant improvements in conflict management and problem solving (Webster-Stratton & Hammons, 1997). Further interventions that target these social and cognitive problem-solving skills of the individual, such as child-based Cognitive Behavioural Therapy (CBT), have been implemented to address deficits young people with conduct difficulties may have in interpreting and responding to social cues. In a recent meta-analyses, such interventions have been found to be effective compared to behaviour and family therapies alone (Fossum, Handegård, Adolfsen, Vis & Wynn, 2016). However, these interventions may be limited in that they are likely to only be suitable for older children who have the cognitive capacity to engage in such programmes (Holmbeck, Greenley & Franks, 2003) and again, may place a significant demand on the individual as CBT requires a longer term commitment to attend to and engage in the programme. Child-focussed interventions designed to teach social problem solving, emotional management and attention to social cues have also been found to be effective in reducing conduct difficulties (Dodge & Godwin, 2013). However, these programmes may not take into account callous and unemotional traits that individuals with significant conduct difficulties may have (Fanti, 2013).

### 2.1.3 The importance of emotional intelligence.

According to the Emotional Intelligence (EI) model put forward by Mayer, Salovey & Caruso (2004), the recognition of emotions refers to a cognitive ability which can be

developed and refers to the individual's capacity to perceive, access and generate emotions in order to assist thoughts and develop emotional knowledge to support emotion regulation. Emotion recognition abilities have been found to be observable from an early age (Tracy & Robins, 2008) and proficiency in these skills have been reported to improve over time (Rump et al., 2009). In addition to this, the trajectory of emotion recognition skills appears to be emotion dependent, for example the recognition of happiness occurs earlier on in emotion recognition development than emotions such as fear and surprise (Herba & Phillips 2004). Typically developing infants have the ability to discriminate between sadness, anger and happiness expressed via facial and vocal expressions (Haviland & Lelwica, 1987). By the age of four, typically developing children have high levels of accuracy in the naming of facial expressions including happiness, sadness and anger with the ability to accurately recognise fear and surprise also beginning to emerge (Widen & Russell, 2003). Although the speed, accuracy and overall ability to recognise even subtle facial expressions of emotions develops throughout childhood and adolescence (De Sonneville et al., 2002), it is thought that this reaches close to adult levels by the age of 10 (Mondloch, Geldart, Maurer & Le Grand, 2003).

During social situations, an individual is likely to engage in an interaction that involves perceiving facial expressions of emotion that can rapidly change, with emotion recognition playing a crucial role in monitoring the intentions and reactions of the person they are interacting with. It is imperative that facial expression cues are able to be processed quickly and accurately in order for an adequate response to be applied to maintain normal social functioning in addition to the maintenance of social relationships. Research suggests that this emotional development appears to be closely tied to children's ability to establish and maintain social relationships with others during both their school years and throughout their adult life. Impairments in emotion recognition abilities have been found to predict a range of functional outcomes in children and young people. In a

typically-developing population of children, reduced skills in this area have been found to be negatively associated with academic competence, pro-social behaviour, social adjustment and peer acceptance (Izard et al, 2001, Leppanen & Hietanen, 2001). In contrast, those children who have reduced emotion recognition skills have been found to be more likely to be socially withdrawn (Strand, Cerna, & Downs, 2008) and rejected by their peers (Ladd, 1990). Furthermore, a large body of research has suggested that deficits in the ability to recognise and interpret emotional information during social interactions is associated with impaired social emotional functioning and is at the core of disorders such as social anxiety (Easter et al, 2005), Autism (Harms et al, 2010) and Schizophrenia (Kohler et al, 2010). In addition to this, individuals who exhibit inappropriate and anti-social behaviours have also been found to have deficits in emotion recognition skills (Marsh & Blair, 2008). Research has further explored the relevance of emotion recognition and the way in which this can impact the behavioural expression of emotions, with the ability to correctly infer facial expressions being considered key in guiding an individual's regulation of emotional states (Montagne et al, 2005). Alongside this, emotion recognition accuracy has also been found to be associated with more pro-social behaviours (Côté et al., 2011).

### 2.1.4 Linking emotion recognition and anti-social behaviour.

One attempt to explain the link between deficits in emotion recognition skills and anti-social behaviours has been put forward by Blair (2005) in the form of The Integrated Emotion System theory (IES). This suggests that typically developing children experience distress cues (e.g. facial expression of fear or sadness) as being aversive and learn to avoid engaging in behaviour that may elicit these cues. However, individuals with increased levels of callous-unemotional traits, which is common in those with conduct difficulties (Kahn, Frick, Youngstrom, Findling & Youngstrom, 2012), may experience difficulties in

recognising these social cues. This means they are less likely to learn to inhibit anti-social and aggressive behaviour. This theory has received some support from research surrounding emotion recognition deficits in those with conduct difficulties, suggesting deficits lie in their ability to process and experience these negative emotions (Blair, Colledge, Murray & Mitchell, 2001; Marsh & Blair, 2008). However, there is somewhat a lack of consensus surrounding whether this is solely related to one negative emotion expression or a more global difficulty. Whilst findings report specific difficulties relating to disgusted (Sato, Uono, Matsuura & Toichi, 2009), sad (Hastings, Tangney & Stuewig, 2008), fearful (Montagne et al, 2005) and angry faces (Schönenberg, Mayer, Christian, Louis & Jusyte, 2015) a meta-analyses conducted by Dawel, O'Kearney, McKone and Palermo (2012) suggests these may be more global. Further findings by Short, Sonuga-Barke, Adams, and Fairchild (2016) indicating that compared to individuals without CD, those with CD experience difficulties in recognising anger and sadness in addition to surprise and happiness. Additional findings by Short et al (2016) also suggest that CD may interact in terms of its effects on vigilance and engagement towards facial emotional expressions. It was found that those with CD had longer reaction times to emotion expressions, were less vigilant and showed increased disengagement from these faces compared to control groups in the study.

### 2.1.5 The current study, rationale and aims.

Common challenges experienced by all children during education can be exaggerated for those with externalising behaviour difficulties and redirection of this behaviour is vital for social and academic development (Liu, 2004). In terms of educational outcomes, conduct difficulties in adolescence have been found to be associated with these young people leaving school earlier and achieving fewer qualifications (Fergusson, Horwood & Ridder, 2005). Whilst National Institute for Health and Care Excellence (NICE) guidelines

emphasise the importance of supporting young people with such difficulties and suggest early intervention as being key in achieving better outcomes, there appears to be less clarity surrounding the efficacy of specific interventions (NICE, 2013). This is particularly important considering that those who exhibit antisocial behaviour (in line with CD) may not always respond to interventions that are currently available and furthermore, interventions are also less effective for those aged 12 and over (Murphy & Fonnagy, 2012).

Due to research findings consistently documenting deficits in emotion recognition are associated with conduct difficlties in addition to psychopathology (Leist & Dadds, 2009), emotion recognition training has been developed for use with antisocial and clinical samples. For example, Dadds, Cauchi, Wimalaweera, Hawes, and Brennan (2012) delivered an emotion recognition programme to children and adolescents with diagnoses of CD and Oppositional Defiance Disorder (ODD). It was found that although the training did not improve empathy or emotion recognition skills compared to those undergoing treatment as usual, for those with high levels of CU traits there was a reduction in conduct problems due to an indirect effect of increased affective empathy skills. However, null results regarding the efficacy of the emotion recognition programme may have been obtained as analyses were applied at group level (combining those with CD and ODD). Hubble, Bowen, Moore and van Goozen (2015) investigated the effects of emotion recognition training on a population of young offenders. Results indicated that those who received the programme showed improved skills in their recognition of fear, sadness and anger compared to those who did not receive the programme, although did not demonstrate improvements in recognition of disgust or happiness. In addition to these findings, it was reported that whilst re-offending rates 6 months later did not improve, those who had taken part in the programme committed less severe offences. However, many of these studies relating to emotion recognition have relied on simplistic measures or stimuli, employing

either self-report measures of empathy, or predominantly using static facial expressions presented at full intensity (100%).

The current research fits within a larger study, which aims to improve the emotion recognition skills of forty adolescents experiencing conduct difficulties and investigate potential transfer effects relating to negative behaviour. It attempts to address gaps in previous interventions, employing the use of self-report measures (in addition to parent views), using facial expressions that increase in intensity and involved collaborating with the developers of the Training of Affect Recognition (TAR) intervention programme (Frommann, Streit, & Wölwer, 2003). Originally the TAR intervention programme was developed in order to address the needs of adults with Schizophrenia and aimed to improve emotion recognition of six emotions, not just anger, sadness and fear. Previous research suggests that the TAR intervention programme is effective in improving emotion recognition of faces (Frommann, Streit & Wölwer, 2003; Wölwer et al., 2005), theory of mind function and executive function skills (Wölwer & Frommann, 2011). Additionally, this research has also demonstrated the feasibility of applying the programme over a relatively short period of time when used with those with schizophrenia who demonstrate a history of violence, therefore suggesting it may be beneficial those with conduct difficulties who experience deficits in emotion recognition (Wölwer et al., 2005).

The primary aim of the current study is to use a single-case experimental design in order to explore the feasiblility of applying the brief version of the TAR intervention with an adolescent who experiences conduct difficulties. It will also investigate whether the intervention enahnces the development of their emotion recognition skills and explore whether there are potential transfer effects of the programme, including reduced externalising behaviour incidences. Additionally, the study will gather the adolescent's views regarding their participation in the intervention. Hypothesis one is that the adolescent participating in the TAR intervention will display increased levels of emotion

recognition ability. Hypothesis two is that the adolescent participating in the intervention will report reduced externalising behaviour incidences at school.

## 2.2 Method

### 2.2.1 Design.

The current research adopted a single case experimental design (A-B-A) as such designs have been identified as being appropriate for the needs of the special education field (Horner et al, 2005). This methodology was used to investigate the effects of the Training of Affect Recognition (TAR) intervention programme (Frommann, Streit, & Wölwer, 2003) for a participant who took part in the Training of Affect Recognition Intervention. Single case experimental designs are typically used to test an experimental intervention on a single individual with the essence of the design being that individual participants serve as their own control. This design also involves repeated measurements, allowing any process of change to be closely monitored. The study involved four time points; pre-intervention time point (1), intervention time point (2), post-intervention time point (3) and a 3 month follow-up time point (4). Emotion recognition skills were assessed at time point 1, 3 and 4. Behaviour was reported at time points 1, 2, 3 and 4 by school staff and at time points 1 and 4 by the parent/carer and the participant themselves. A key assumption of this design is that they are based on adequate causal analysis of the problem, providing further understanding of potential cues/reinforces which could be contributing to problem behaviour (Morgan & Morgan, 2001). Behavioural data was collected throughout the entire study time period from the participant's school, parents and the participant was also requested to report behaviour data at time point 1 and 4.

### 2.2.2 Participants.

The participant was recruited via contacting mainstream primary and secondary schools, pupil referral units and youth offending services in the South of the UK as part of a larger study investigating the impact of the TAR programme. These settings were contacted through telephone and email communications and staff members were requested to distribute information and consent forms to parents and young people who met specified inclusion criteria and exclusion criteria: an estimated IQ score below 70, visual/hearing impairment, presence of a neurodevelopmental disorder (e.g. Autism) or Psychosis.

Two youth offending services, 10 mainstream schools in addition to three special schools were approached. In one special school the researchers went into the school itself during a parent information day (for current pupils) and approached parents and young people directly. From the 76 consent forms distributed across these settings, four were returned from two special educational settings, one from a mainstream school and one from a youth offending service.

Three participants were randomly allocated to the Training of Affect Recognition (TAR) intervention group and one was allocated to the waiting group. However, for the purpose of this thesis the outcomes of one participant was investigated using a single case experimental design. Although a larger study is going forward to look at the relevance of the TAR intervention on a group level, the aims of this thesis were to investigate the impact of this intervention on a single case.

The participant in the current research analysis was male and 13 years old. The participant was selected as he obtained threshold scores on initial screening identifying needs relating to conduct difficulties as measured by The Schedule of Affective Disorders and Schizophrenia for School-Age Children – Present and Lifetime version (K-SADS-PL; Kaufman et al., 1997) and scored within the average range after completion of an IQ test.

This particular participant was also selected as he was the first intervention group participant to be recruited, this therefore allowed sufficient time for completion of the intervention and necessary follow up period within the time constraints for this piece of thesis. The participant attended the same special school for secondary school aged children and had an Education Health and Care Plan (EHCP). The school supports children identified as having a significant level of Social, Emotional and Behavioural needs with associated learning difficulties, psychological or psychiatric needs. Children who attend this school have also been excluded from or are unable to attend mainstream educational settings full time. Whilst the participant attended a setting that allowed him to receive highly differentiated, educational instruction from trained staff who are aware of his needs, the participant was not taking part in any additional targeted interventions. Given the nature of this school, it had a significantly smaller population of students compared to average mainstream settings, with a capacity of below 50 pupils and was for boys only. The number of pupils eligible for free school meals in these settings was also higher than both the regional and national average (at 65.5%).

### 2.2.3 Measures.

#### *2.2.3.1 Questionnaires and interviews.*

**Schedule of Affective Disorders and Schizophrenia for School-Age Children**: The participant was assessed for the presence of Conduct Disorder (CD) via The Schedule of Affective Disorders and Schizophrenia for School-Age Children – Present and Lifetime version (K-SADS-PL; Kaufman et al., 1997) as an initial screening tool in order to identify whether presence of challenging behaviour/behavioural needs of the participants met threshold levels for participation in the intervention. The K-SADS-PL (Appendix D) is a widely-used semi-structured interview for generating research diagnoses based upon criteria within the DSM-IV (APA, 1994). It was used in order to assess participants for

presence of Conduct Disorder (CD) amongst other disorders including those in relation to exclusion criteria (Autism) and was administered to the parent/carer and participant both pre and post. These interviews were conducted with the participant and their parent/caregiver separately. The data obtained was combined across the respondents, and a symptom was considered present if it was endorsed by either participant or parent/caregiver, as suggested by Kaufman et al. (1997). Available reliability and validity data ranges from acceptable to excellent (Birmaher et al., 2006; Goldstein et al., 2005; Kim, Miklowitz, Biuckians, & Mullen, 2007). Inter-rater reliability has been found to be excellent across all diagnoses and test-retest reliability has also been found to be excellent across mood disorders, ODD, CD and anxiety disorders (Kaufman et al, 1997).

**Wechsler Abbreviated Scale of Intelligence**: Participants' IQ was assessed using the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999) to ensure that the participant would be able to access questions asked of them during the intervention process. In order to ensure a valid yet efficient reliable estimate of full-scale IW, the two subtest version of the WASI was administered. Within this test participants' vocabulary knowledge was assessed using the Vocabulary subtest, requiring participants to describe words they are presented with. For each of the 42 items, participants receive a score (0, 1, or 2) depending on how well they described the word in relation to definitions in the WASI instruction manual. Additionally, the Matrix Reasoning subtest was administered and assesses participants' nonverbal reasoning ability. This requires participants to complete grid patterns by selecting the correct response from five possible options.

**Inventory of Callous-Unemotional traits:** Ratings of callous-unemotional traits were assessed using the 24-item self-report version of The Inventory of Callous-Unemotional traits (ICU; Frick, 2003) (Appendix E) as a self-report and parent report measure to gather further information relating to challenging behaviour/behavioural needs. This data was also collected from parents using the parent-report version of the ICU (Frick,

2003). The ICU is a 24-item self-report measure with items scored on a four-point scale (0 = 'not at all true', 1 = 'somewhat true', 2 = 'very true' and 3 = 'definitely true'). The questionnaire was developed to provide a more thorough assessment of the callous and unemotional traits associated with psychopathy (including reduced empathy, guilt, and emotion expression). The reliability and construct validity of this measures has been supported across a variety of samples and using a number of translations (Fanti, Frick & Georgiou**,** 2009; Kimonis et al. 2008; Roose, Bijttebier, Decoene, Claes & Frick, 2010).

**Interpersonal Reactivity Index**: The Interpersonal Reactivity Index (IRI; Davis, 1983) (Appendix F) measures four different dimensions of dispositional empathy.However, as recommended by Konrath (2013), only two subscales were used as the research was interested in gaining self-report data surrounding only emotional and cognitive empathy of the participant. These were assessed using the Perspective-Taking and Empathic Concern subscales of the Interpersonal Reactivity Index (IRI; Davis, 1983). The IRI consists of 28-items with each subscale consisting of 7 questions which are answered on a 5-point scale (ranging from A= "Does not describe me well" to E= "Describes me very well"). Although the IRI was originally validated on college student populations it is widely used across many populations, including by medical professionals (Konrath, 2013). It has also been found to have good internal consistency with Cronbach's alpha coefficients range from .70 to .78 (Davis, 1980).

**Youth Self Report of Behaviour**: In order to collect additional self-report behavioural information, including externalising behaviour and conduct problems, the participant was asked to complete the Youth Self Report of Behaviour (YSR; (Achenbach, 1991) (Appendix G). This asks participants to rate 119 statements on a three-point scale (not true, sometimes true or often true) to describe their emotions and behaviour in the last 6 months. Achenbach (1991) reports the YSR (and corresponding CBCL) to be supported by

extensive reliability and validity evidence. Measures for the YSR have been found to be 'acceptable' for test-retest reliability (Pearson's r 0.79 and internal consistency (Cronbach's Alpha 0.83). Inter-rater reliability correlations between the YSR and CBCL were also found to be moderate to high (0.49).

**Child Behaviour Checklist**: As an additional measure to collect data on emotional and behavioural difficulties of participants, parents/caregivers were asked to complete the school-age version of the Child Behaviour Checklist (CBCL/6-18; Achenbach & Rescorla. 2001) (Appendix H). The CBCL/6-18 consists of 118 statements to record information and ratings of positive behaviours, academic functioning (school aged version only), social competence and common behaviour problems with responses also recorded on a three-point scale (not true, sometimes true or often true). A review of the literature by Lowe (1998) found the CBCL and its supplements to be reliable and valid in assessing conduct difficulties and to be highly sensitive to CD.

**Griffith Empathy Measure Parent Report**: Parents/caregivers were also requested to complete the Griffith Empathy Measure Parent Report (GEM-PR; Dadds et al, 2008) (Appendix I) to gather information surrounding participants' levels of dispositional empathy. This is a 23-item measure requiring the respondent to answer each item on a scale (strongly disagree, disagree, neither agree nor disagree, agree or strongly agree) reflecting on their child's empathic responses to various hypothetical situations. This measure has also been found to show convergence with child ratings and to have good reliability and validity across gender and age (Dadds et al, 2008).

**Brief Qualitative Interview Schedule:** The participant was also requested to answer six brief questions lasting approximately 15 minutes (see Appendix J for interview schedule). These questions intended to gain a brief overview of participant views surrounding their experiences of being involved in the study and the intervention itself and

aid in answering the research question "Could a brief emotion recognition training intervention reduce negative behaviour outcomes in an adolescent with social, emotional and behavioural needs?" and identify whether these responses were in line with other data obtained. Questions were designed to not be leading in any way, identify areas they felt particularly positive or negative about and provide opportunity for them to share whether they felt involvement had changed things for them in any way. Due to the nature of the present study and length of responses these were not analysed using a specific method of analysis to draw out themes/concepts but directly recorded and relayed in the results section.

**School Behaviour Data:** School behaviour data was gathered throughout the entire study period (time point 1 to 4). This was obtained via behaviour logs that are recorded by school staff on the school's computer system on a daily basis. The records describe all significantly challenging behaviour incidences that occur by the member of school staff who observes the incidents. The researcher collated and organised this data according to behaviours associated with conduct difficulties (aggressive, deceitful, destructive or rule violating behaviours). One point was scored for each type of behaviour observed within a single reported incident.

Table 2

*Summary of measures completed by child, parent/caregiver or school staff at various time points*

| Measure | Completed by | Time Point |
|---|---|---|
| The Schedule of Affective Disorders and Schizophrenia for School-Age Children – Present and Lifetime version (K-SADS-PL; Kaufman et al., 1997). | Child and Parent/Caregiver | 1 and 4 |
| Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999) | Child | 1 |
| Inventory of Callous-Unemotional traits (ICU; Frick, 2003). | Child and Parent/Caregiver | 1 and 4 |
| Interpersonal Reactivity Index (IRI; Davis, 1993). | Child | 1 and 4 |
| Youth Self Report of Behaviour (YSR) (Achenbach, 1991). | Child | 1 and 4 |

| Measure | Completed by | Time Point |
|---|---|---|
| Child Behaviour Checklist (CBCL/6-18; Achenbach & Rescorla. 2001) | Child and Parent/Caregiver | 1 and 4 |
| Griffith Empathy Measure Parent Report (GEM-PR; Dadds et al, 2008) | Parent/Caregiver | 1 and 4 |
| Brief Qualitative Interview | Child | 4 |
| School Behaviour Data | School Staff | 1 - 4 |

#### *2.2.3.2 Pre-intervention and post-intervention emotion recognition tasks.*

**Facial Affect Recognition.** Facial affect recognition was assessed through the use of two tasks. The first of which was a multiple-choice labelling tasks that consisted of 24 pictures from the Pictures of Facial Affect (PFA; Ekman & Friesen, 1975) and required participants to identify the six basic emotions including anger, fear, disgust, surprise, happiness and sadness. The recognition of primary emotions was also assessed using The NimStim MacArthur Network Face Stimuli Set (Tottenham et al., 2009)**.** Images of actors' faces used in the set were combined to create one male and one female face for the task, using a morphing algorithm in MATLAB (Mathworks, 2012; see Adams, Gray, Garner, & Graf, 2010). Emotional expressions were combined with neutral faces in varying proportions to create facial expressions that differed in intensity. Facial expressions of

anger, fear, disgust, surprise and sadness were created at 18.75%, 37.50%. 56.25% and 75% levels of intensity. As identified in Short et al's (2016) study, happy faces are more easily discriminated, therefore happy faces were created with intensities of 12.50%, 25%, 37.50%, and 50% in an effort to avoid ceiling effects (see Figure 2). 50 images were used in this task (6 emotions x 4 intensities x 2 genders, plus one male and one female neutral face) and to remove non-facial features (e.g. hair), an oval mask was also applied to each face (see Figure 2).

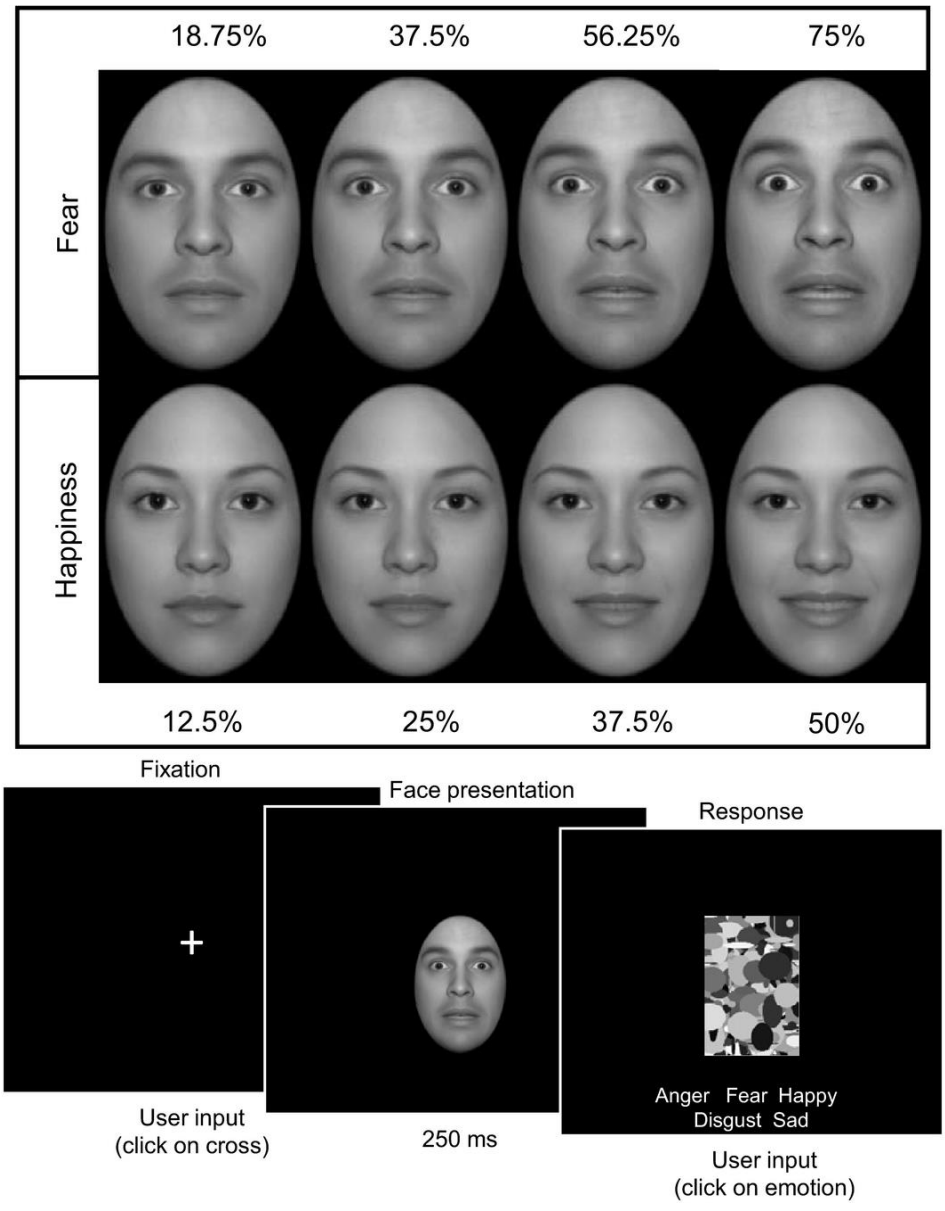

Figure 2. *Examples of stimuli presented at different levels of intensity (top), including a representation of a trial sequence (bottom). Reproduced from Short et al. (2016).*

Paricipants were required to use a mouse to click on a fixation cross to initiate a trial, after clicking this a face depicting a primary emotion would appear. The images appeared for 250 milliseconds, before being hidden to prevent the participant seeing this again. The participant was then required to use the mouse to click on the correct emotion label provided on the screen (see Figure 2 above). Each emotion was presented three times and each neutral face presented six times across the duration of the task, which consisted of a total of 156 trials (in four blocks of 39 trials, in randomised order). The dependent variable of this task was the number of correct emotions being identified and measured by accuracy percentage.

#### *2.2.3.3 Training of affect recognition (TAR) intervention.*

The emotion recognition training used in the study was the Training of Affect Recognition (TAR; Frommann , Streit & Wölwer, 2003) intervention. This is a manualised programme of 10 highly structured sessions carried out twice a week. These consist of computer-based and pen and paper tasks and homework activities whereby the individual is asked to focus on a specific emotion they observe in context outside of the session, when and where they notice it and its specific features. However, the programme is flexible and, due to time constraints, in the present study the 10 sessions were delivered to the participant in two, two hour blocks once a week for two weeks. Homework tasks were also removed from the programme due to time demands already placed on the participant as a result of their involvement. The TAR intervention comprises both restitution and

compensation methods in order to improve facial emotion recognition performance and consists of computer-based and pen and paper tasks completed individually. Key principles applied in the training programme include feature abstraction, overlearning, errorless learning and immediate positive (verbal) feedback. These principles are combined with alternative, compensatory cognitive strategies including self-instruction, verbalisation and association generation using contextual and situational cues.

The first block of sessions successively introduces the six primary emotions, separating these expressions into action units (the protypical facial components of each emotion). After the introduction of these emotions, participants were required to complete a task to improve the speed of their judgements. This involved masking facial expressions with white noise that gradually fades and identifying the emotion expressed as quickly as possible. The second block of sessions served to increase the judgement confidence of participants and reduce latency. In this session participants were taught to recognise emotions at a lower intensity and rank the intensity of the expressions. Matching tasks were used alongside non-verbal processing tasks to improve holistic recogntion or automatic processing of the emotion. At the end of the session, tasks employing situative-cognitive cues were used to teach partiicpants how to match emotional expressions observed with appropriate cognitions/situations.

### 2.2.4 Procedure.

To assess participant suitability for the study, the participant and their parents/carer were interviewed, the interview consisted of the K-SADS-PL in addition to the WASI. The ICU, CBCL and GEM questionnaires were completed by parents/carers lasting between 1-2 hours. Full participation in the study occurred following the K-SADS-PL interview unless there was disclosure relating to previously mentioned exclusion criteria. This interview took place with the parent

and child simultaneously in separate, quiet rooms where possible. Upon completion of these measures the participant and their parent/caregiver were paid £10 as a thank you for their time taking part.

The participant then took part in pre-intervention stage at the University a week later, whereby emotion recognition tasks were completed prior to participation in the TAR intervention. The participant was also asked to complete questionnaires at this stage (IRI, ICU and YSR). Upon completion they were then paid £20 for taking part as a thank you. The adapted TAR intervention began a week later, with the programme being separated into 10 sessions, which were delivered in two, two hour blocks once a week at the university. Transportation was arranged for the participant to and from the university and sessions were held within the Psychology building, in a quiet, private laboratory where only the participant and the researcher were present. At the end of both blocks of sessions the participant was paid £20 as a thank you for taking part. It is important to note that due to school holidays there was a two week gap between block 1 and block 2.

After completion of the intervention the participant took part in a post-intervention stage around a week later, completing emotion recognition tasks again. This was to investigate direct effects of the intervention. They were then paid £20 for completion of these tasks. Three months later the participant and their parents/caregiver completed the K-SADS-P, CBCL, YSR, IRI and ICU in order to assess for transfer effects (whether the intervention reduced challenging behaviour), in addition to a final completion of the emotion recognition and empathy accuracy tasks and the brief interview regarding their experience of the intervention (see Appendix) and paid £10 for their time.

Participant behaviour data was then gathered from the school's daily behaviour logs (recorded on a daily basis by all school staff that the participant came into contact with), This was gathered from the two weeks during the baseline phase (time point 1), throughout the intervention (time point 2), after the intervention had taken place (time point 3) and up to the end of the study (time point 4) before being collated and organised by the researcher

### 2.2.5 Ethical considerations.

Ethical approval was gained from Southampton University's Ethics Committee, followed by approval from the Research Governance Office (ERGO number: 30082.A1 28.0.4.18). Parental consent and child assent was also gained from each participant prior to taking part in the study. Due to the vulnerability of the recruited population the researchers ensured that young people and their parent/caregiver were able to get in touch with the researchers at any point throughout the study. See Appendix K for related ethical documents.

### 2.2.6 Data analysis strategy.

Visual analysis was selected for the present study as this is considered to be the hallmark for interpreting effects of an intervention during studies that adopt a single case experimental design (SCED) (Kennedy, 2005). The independent variable in such studies is typically one exploring the effects of an intervention designed to reduce negative behaviours or increase those that are pro-social (Horner et al, 2005) and was therefore deemed appropriate. Visual analysis involves the graphing of participant data for all conditions of the study, with this being measured continuously during baseline, intervention and subsequent conditions to allow for the formative evaluation of individual participant performance (Land & Gast, 2014). This performance is visually displayed on a

graph in order to assess trend, level and stability of the data with the way in which this is displayed being selected based upon the hypotheses and research questions being asked. Quantitative analysis methods were considered for the present study, such as the Reliable Change Index (Jacobson, Follette & Revenstorf, 1984) however this was deemed inappropriate as this typically measures change for an individual in relation to a specific, normed psychometric instrument.

All data was inputted into SPSS or excel spreadsheets. The emotion recognition accuracy percentages obtained by participants during the emotion recognition tasks were calculated in addition to misidentification percentages for each emotion. There were then measured across time points where the relevant tasks were completed and displayed in a graph or table. A within and between-condition visual analysis was carried out to investigate negative behaviour incidences of participants across various time points: pre-intervention, during intervention, post-intervention and at follow-up (where possible). School reported behaviour was separated into (weekly) time points, behaviour incidences reported by teachers were coded according to DSM-V criteria for CD and totals calculated for them to be visually displayed and analysed.

Questionnaire data from both participants and parents/carers was also collected and scored according to instructions accompanying each measure and percentages or t-scores (where appropriate) where calculated and information was displayed in a table.

## 2.3 Results

### 2.3.1 Participants' emotion recognition skills.

The first aim of this study was to identify whether a brief delivery of the TAR intervention programme (Frommann, Streit, & Wölwer, 2003) can enhance the development of emotion recognition skills in an adolescent who experiences conduct

difficulties. Emotion recognition skills were assessed through the use of two tasks and these tasks were completed by the Intervention Participant (IP) at every time point. Figures 3 and 4 show the emotion recognition accuracy for the IP during emotion recognition tasks across each time point.

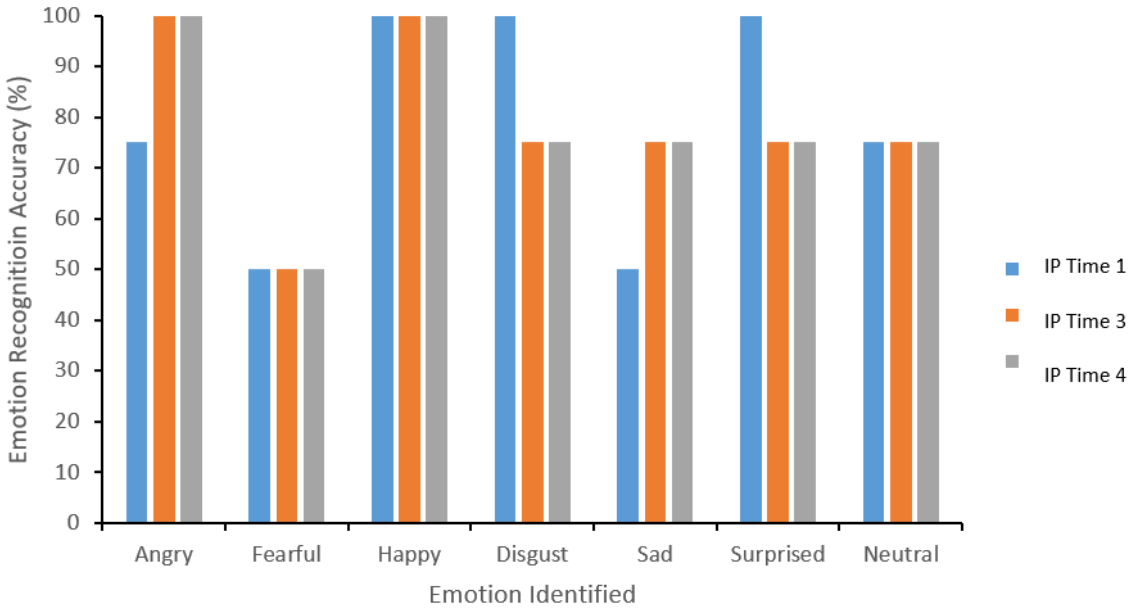


Figure 3 *Emotion recognition accuracy for IP during the PFA across time points*

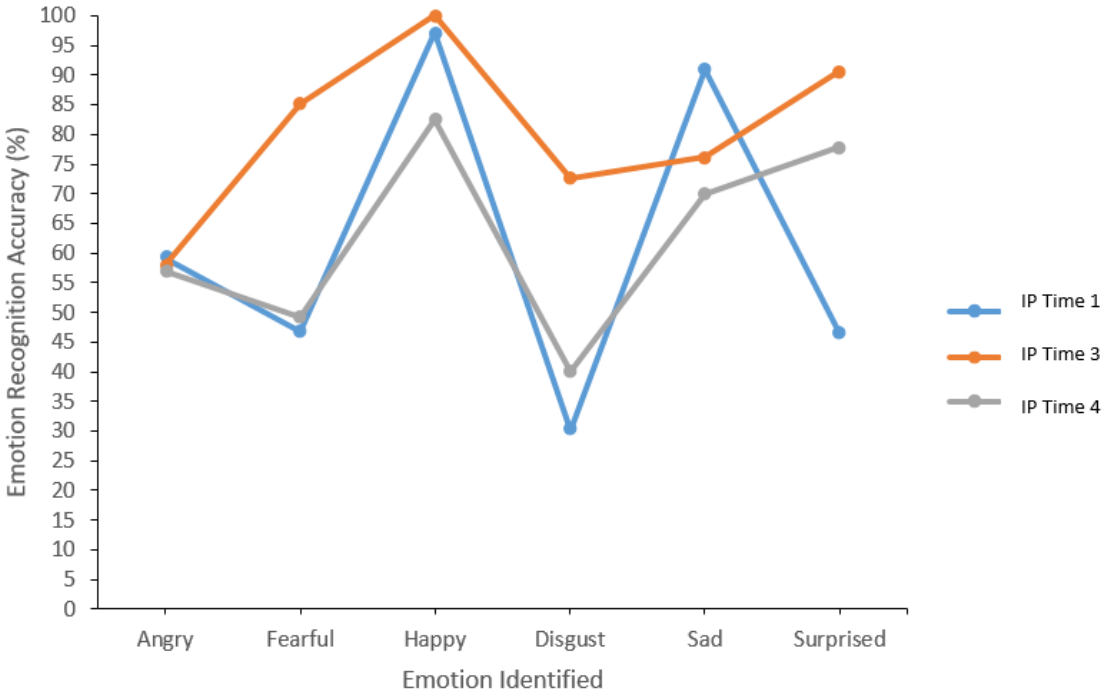


Figure 4

*Emotion recognition accuracy for IP during The NimStim MacArthur Network Face Stimuli Set (NMNFS) across time points*

As can be seen from Figure 3, as measured by the PFA, the IP obtained 100% accuracy in the recognition of happy, disgusted and surprised faces at Time 1. He was least accurate (50%) at recognising fearful and sad faces during this time point. Fearful faces appeared to be particularly challenging for the IP, accuracy remained at 50% with no gains made and accurate recognition of neutral faces also did not fall or improve, remaining at 75%. However, at Time 3 he improved in his ability in the recognition of anger and sadness, with gains of 25% for these emotions being maintained up to Time 4. Whilst the IP could detect happiness with an accuracy of 100% across all time points, for the emotions disgust and surprise, accuracy fell from 100% to 75% and this reduced level of recognition continued to Time 4. Visual analysis of Figure 4 provides somewhat contradictory findings as measured by the NMNFS. The graph highlights marked gains in the recognition abilities of fear (38%), disgust (43%) and surprise (44%) between Time 1 and 3. However, despite these vast improvements in recognition of these emotions immediately post-intervention, accuracy reduced to 49% (fear), 40% (disgust) and 78% (surprise) by Time 4. In addition

to this, the IP's ability to recognise angry and sad faces decreased between Time 1 and 3 and further still when measured at Time 4, with this ability not exceeding accuracy levels above 60%.

### 2.3.2 School reported negative behaviour incidences.

This study also sought to determine the potential transfer effects of the TAR intervention programme (Frommann, Streit, & Wölwer, 2003) in decreasing behaviours associated with conduct difficulties in an adolescent who has social, behavioural and emotional needs. The intervention was delivered at weeks 3 and 6. Across the four time points, incidences of negative behaviour as reported by class teachers were counted on a weekly basis for a total of 20 weeks and coded according to behaviours associated with CD (aggressive behaviour, deceitful behaviour, destructive behaviour and rule violating behaviour) (APA, 2013). The procedure used for data analysis involved visual inspection of graphed data. Kratochwill et al. (2010) identify key features that can be evaluated within and between time points including: level, trend, variability, immediacy of effect, and consistency of data patterns. Therefore these were considered in the visual analysis of the data obtained. Figure 5 displays the breakdown (percentage) of types of behaviour within overall negative reported behavioural incidences across time points 1, 2, 3 and 4 for the IP. Frequencies of teacher reported negative behaviour incidences for the IP across Time 1, 2, 3 and 4 are also displayed in Figure 6.

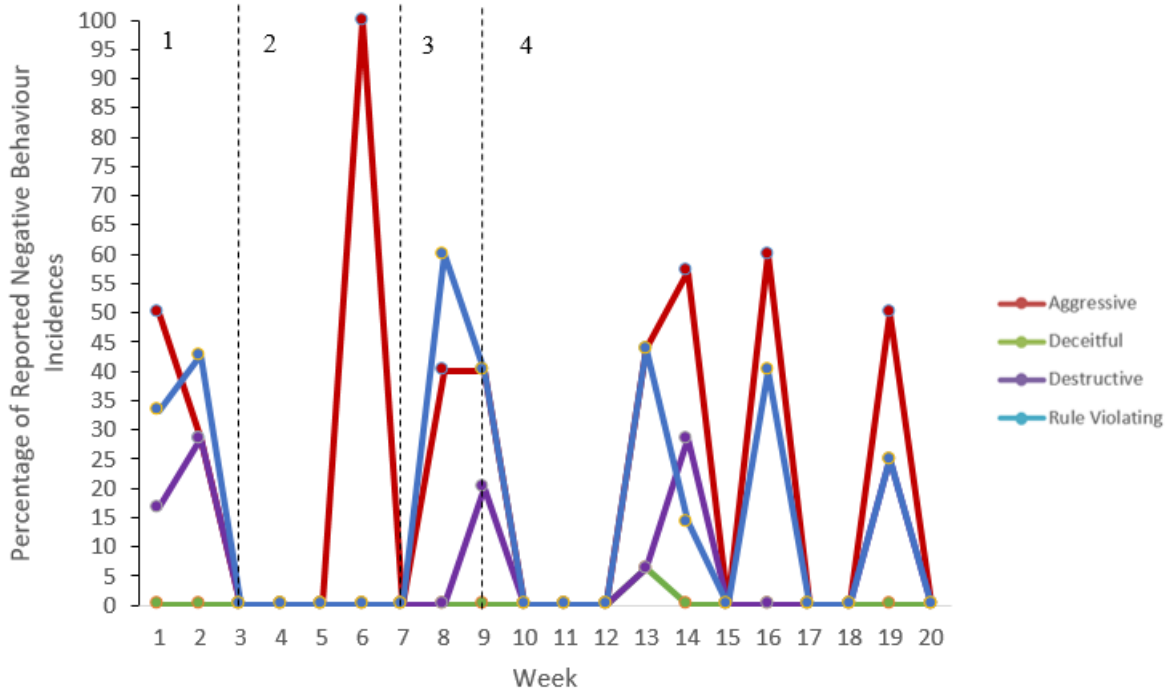


Figure 5 *Percentage breakdown of types of negative behaviour within overall negative reported behavioural incidences across time points 1, 2, 3 and 4 for the IP.*

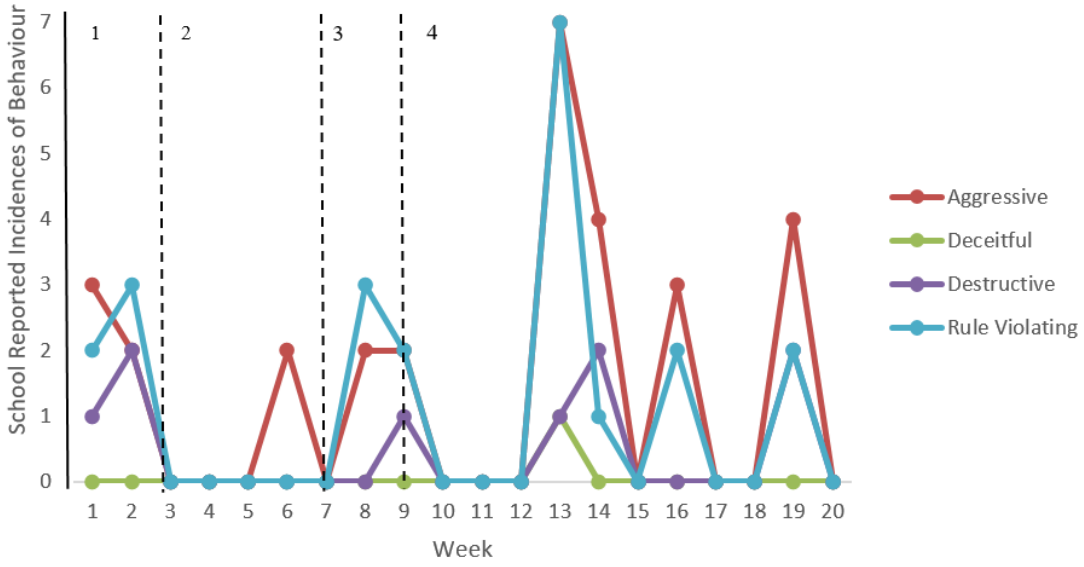


Figure 6 *Teacher reported negative behaviour incidences for the IP occurring at school at Time 1, 2, 3 and 4.*

Visual analysis involved evaluation of the trend, level and stability of the data as recommended by Lane and Gast (2014), in order to provide a foundation for visual analysis of negative behaviours within and between conditions at Time 1, 2, 3 and 4. During the pre-intervention baseline (Time 1), the mean level of negative behaviour incidences was 25%. When assessing stability of the data it was found that only two data points fell within 20% of the mean; however, despite this variability in the data, due to the trend of the behaviour reported and the needs of the participant the intervention was initiated.

Visual analysis of Figure 6 shows that during Time 1, although the IP was not reported to engage in any deceitful behaviour, reports of aggressive, destructive and rule breaking behaviour ranged between 1 and 3 reported observations per week, with aggression and rule breaking being reported most frequently. Horner, Swaminathan, Sugai and Smolkowski (2012) report that differences between baseline and intervention phases as measured by the aforementioned features outlined by Kratochwill et al (2010), indicates affect for the intervention. Tawney and Gast (1984) additionally report that an immediate and abrupt change in data levels at the introduction of the intervention is indicative of its efficacy. Further visual inspection of the graphed data shows that after the introduction of the intervention at Time 2, there continued to be no reported observations of deceitful behaviour and the IP experienced an immediate reduction in rule violating and destructive behaviours, with no negative behavioural incidences reported during these weeks. Although aggressive behaviour increased towards the end of Time 2, aggressive behaviour counts were reduced by at least one third until the end of the intervention period and the mean percentage of all reported negative behaviour incidences in Time 2 fell to 6%.

However, by week 8 (post-intervention), aggression, rule violating and destructive behaviour returned to similar levels to those reported at Time 1 and mean percentage of negative behaviours increased to 13%. Although there was a reduction in reported behaviours at the beginning of Time 4, there was a sharp and sustained level of increased reported negative behaviours from week 13. Aggressive behaviour in particular was reported at higher levels than Time 1, 2 and 3. However, mean percentages of reported negative behaviour fell once more to 10% across the duration of Time 4.

### 2.3.3 Parent and child reported measures of behaviour and personality.

In addition to school reported behaviour data, the parent/carer and the participant themselves were requested to complete additional measures relating to the child's personality and behaviour at Time 1 and Time 4. This included the Inventory of Callous-Unemotional traits (ICU; Frick, 2003), as a measurement of callous and unemotional traits (including various subscales), the Interpersonal Reactivity Index (IRI; Davis, 1983) and Griffith Empathy Measure Parent Report (GEM-PR; Dadds et al, 2008) were used as a measure of empathy and the Youth Self Report of Behaviour (YSR; Achenbach, 1991) and the Child Behaviour Checklist (CBCL/6-18; Achenbach & Rescorla. 2001) were used as a measure of behaviours. Reported data was compared at these time points in order to further investigate changes to behaviour and/or personality traits after receiving the TAR intervention programme (Frommann, Streit, & Wölwer, 2003). The IP and their parent/carer completed these measures at Time 1 and Time 4.

Table 3

*Child reported questionnaire data for the IP at Time 1 and Time 4*

| Child Reported Measure | Time 1 | Time 4 |
|---|---|---|

| | IP | IP |
|---|---|---|
| ICU Callousness | 4 | 1 |
| ICU Unemotional | 6 | 7 |
| ICU Uncaring | 18 | 3 |
| ICU Total | 28 | 11 |
| IRI Concern | 12 | 19 |
| IRI Perspective Taking | 11 | 20 |
| YSR: Externalising Problems (T Score) | 56 | 59 |
| YSR: Internalising Problems (T Score) | 65 | 67 |

As can be seen from Table 2, between Time 1 and Time 4, the IP reported a decrease in overall levels of callous and unemotional traits. This was especially marked for the uncaring subscale, which decreased from 18 to 3 (out of 24). It is therefore perhaps not surprising that the IP also reported an increase in concern and perspective taking as measured by the IRI. T-Scores obtained for reported externalising behaviour problems were shown to be within the normal range for the IP participant, however these did increase slightly between Time 1 and Time 4. When looking to previously discussed data from Figure 6, teacher reports of negative (externalising) behaviour for the IP also appear to increase in the weeks running up to the end of Time 4 (when the YSR was completed). Internalising behaviour problems were also shown to increase for the IP and were considered to be within the clinical range at over one standard deviation above the mean.

Table 4

*Parent reported questionnaire data for the IP at Time 1 and Time 4*

| Parent Reported Measure | Time 1 | Time 4 |
|---|---|---|
| | IP | IP |
| ICU Callousness | 6 | 5 |
| ICU Unemotional | 7 | 10 |
| ICU Uncaring | 15 | 14 |
| ICU Total | 28 | 29 |
| GEM Total | 16 | 25 |
| CBCL: Externalising Problems (T Score) | 70 | 69 |
| CBCL: Internalising Problems (T score) | 77 | 82 |

Table 3 shows that the ICU scores reported by the parent/carer of the IP were similar to the IP's reported scores in Table 2, showing the same overall total and little variability in scores for each subscale at Time 1. However, at Time 4, although the IP reported a substantial reduction in traits measured by the ICU, his parent/carer felt the IP had remained relatively stable in these traits between Time 1 and Time 4. However, there was reported agreement relating to some measures. When comparing IRI scores in Table 2 and GEM scores in Table 3, the parent/carer of the IP and the IP themselves reported a significant increase in empathy. T-Scores calculated for externalising and Internalising

behaviour problems reported by the IP and their parent/carer were also similar in that individually they remained relatively stable across Time 1 and 4. However, the parent/carer of the IP reported both internalising and externalising behaviour problems relating to the CBCL to be within clinical range at Time 1 and Time 4. Although a marginal reduction in externalising problems was reported by the parent, this contrasted scores reported by the IP.

### 2.3.4 Qualitative information.

A brief interview was carried out to investigate the participant's experiences of being involved in the intervention. When being interviewed at Time 4 the participant eagerly discussed his involvement in the project and reported that he felt that circumstances at home were much better than when he was last spoken to at Time 1. He explained that he was getting on well with his family members and there had not been many problems recently. However, he also shared that his experiences at school had been more negative. He had recently been temporarily excluded due to physically assaulting a teacher, he described how this had occurred as there was an attempt to remove him from his lesson due to his destructive behaviour. It was added that he felt that this behaviour was a result of feeling as though adults at school were not listening to him regarding his experiences of being bullied by his peers. Regarding his experience of the intervention programme itself, it was shared that he felt "quite good" about being involved. He elaborated on this, sharing that the programme had made him think about other people in addition to himself and that he found it helpful to think about his life in a different way. He also added that he most enjoyed being asked what he thought regarding his recognition of emotions and how easy/difficult he found things.

## 2.4 Discussion

The current study aimed to investigate the development of emotion recognition skills through the TAR intervention programme (Frommann, Streit & Wölwer, 2003) with an individual showing conduct difficulties and explore potential transfer effects relating to behavioural outcomes. Initial visual analysis of the data obtained from both emotion recognition tasks showed that there were discrepancies in results obtained between emotion recognition tasks for the participant. This may have been due to the differences in each task (the Pictures of Facial Affect task involved 28 trials whilst The NimStim MacArthur Network Face Stimuli Set 156 and utilised differing morph strengths), however, across both measures relative strengths were found in recognition accuracy of happy and sad faces. These findings are consistent with previous literature reporting that the developmental trajectory of emotions may be emotion dependent, with the recognition of happy and sad faces typically occurring before other, perhaps more complex emotions (Herba & Phillips, 2004). Difficulties were also highlighted in the recognition of fearful and disgusted faces at baseline and when measured at final time points, once more aligning with previous literature that suggests emotion recognition impairments for those experiencing conduct difficulties may be more strongly related to recognition of negative affect (Blair et al, 2001; Marsh & Blair, 2008).

The first hypothesis was that the participant (IP) would improve in their emotion recognition skills. The intervention was shown to markedly improve the recognition accuracy of fear, disgust and surprise post-intervention, yet had a marginal impact on the IP's ability to recognise anger. However, once the intervention sessions were completed these improvements were shown to return closely to accuracy levels measured at baseline. Therefore these findings partially support the hypothesis that the TAR intervention contributes to the development of emotion recognition skills in an adolescent experiencing conduct difficulties. These findings also support previous research highlighting the

efficacy of the TAR intervention programme in improving emotion recognition of faces (Frommann, Streit & Wölwer, 2003; Wölwer et al., 2005).

Although findings highlight the potential efficacy of the intervention, it could also be interpreted that whilst the intervention improved recognition of negative affect, recognition accuracy was not sustained upon completion of the intervention. Haring and Eaton (1978) suggest that students advance through four stages when learning a new skill; acquisition, fluency, generalisation and adaption. Once speed and accuracy have been maintained, the individual can then begin to apply learning to new stimuli, generalising their skills before being able to adapt learnt information to solve novel problems. Implementation of the TAR intervention for the current study removed homework activities that encourage the young person to recognise emotions observed in real world contexts. Including these tasks may have developed generalisation and been valuable in furthering the participants' emotion skill recognition and maintaining skills acquired. Additionally for the IP, recognition of happiness and sadness marginally decreased after receiving the intervention. This is somewhat a surprising outcome considering research findings that suggest responses to cued targets are often faster and more accurate to those where no cues are provided (Handy, Kingstone, & Mangun, 1996) and the sensitivity to visual stimuli can improve through developing allocation of attention (Liu, Wolfgang & Smith, 2009). It was considered whether, as the TAR intervention teaches individuals to recognise specific areas of the face and how they indicate an emotion being experienced, the IP may have been paying attention (and in turn responding) to those cues which are shared across emotions. For example, sadness can be characterised by a pouting or stretched mouth as can fear and anger and this therefore this may have increased the likelihood of false responses.

The second hypothesis sought to see whether there were potential transfer effects as a result of taking part in the intervention which would impact behaviour reported by school

staff, parents/carers, and the participant themselves. School reported behaviour data reflected that there were a number of significant negative behaviour incidences occuring throughout the duration of the study for the IP. Information shared by the parent/carer of the participant also confirmed experiences of significant behaviour difficulties at home, with the IP being identified as exceeding the clinical range for externalising behaviour problems as measured by the CBCL both before and after the intervention took place. Despite this, the participant considered their externalising behaviour problems to be significantly lower than their parent/carer did with participant reported results falling below the clinical range. These discrepancies in reported behaviour data may have arisen due to the nature of the difficulties being explored. Alhough self-report measures were used, at times the researcher read questions to the participant. This may have contributed to a level of social desirability bias when answering in that the participant may have underreported their negative behaviours to the researcher.

Visual analysis of school reported data suggested that during the intervention period, negative behaviour incidences descreased upon introduction of the intervention and remained at lower levels compared to before the intervention took place. Thererfore the results of the present research appear to support previous findings suggesting the feasibility of implementing the intervention over a brief period of time (Wölwer et al., 2005) and its ability to improve emotion recognition and executive function skills (Wölwer & Frommann, 2011), as measured in the present study by the regulation of externalising behaviour. However, reported incidences of negative behaviour increased once more post-intervention and it could be considered once more that the way in which the intervention was implemented may have impacted the generalistation and maintenance of emotion recogntion skills, which may have in turn impacted displays of negative behaviour. It is therefore perhaps unsurprising that both school reported incidences of behaviour and emotion recognition accuracy for the IP returned to similar levels seen at baseline. This

may also explain why parent/carer reported behaviour data at the baseline and follow-up period reflected little change in severity of externalising behaviour difficulties.

It is important to consider other factors that may have contributed to only a brief reduction in challenging behaviour. One factor may be that the intervention took place around the school holidays. The run up to school holidays may be typically considered as a time where school structures/routines are more flexible and interspersed with more motivating learning activities, thus resulting in fewer instances where young people may be less motivated to follow staff instruction which in turn is likely to reduce school reported behaviour incidents. The assumption of the hypotheses in the present study was that by increasing emotion recogntion skills via the intervention, externalising behaviour would improve. Although the IP did experience an increase in emotion recognition skills and a reduction in externalising behaviour during and immediately post-intervention it is important to interpret these results with caution due to the lack of rigour associated with the single-case experimental (A-B-A) design.

An additional finding of note was in relation to feedback received from the participant. The IP engaged well throughout the duration of the study and made specific reference to his positive experience of being involved, emphasising the importance of being asked about his thoughts, feelings and opinons. Deci & Ryan (2000) developed Self-Determination Theory, postulating that human beings have three innate psychological needs; competence, autonomy and relatedness in order to facilitate intrinsic, self-motivational processes. It was considered that whilst the structure of the intervention itself was likely conducive to encouraging competence in emotion recognition skills, the process of being interviewed (as part of the wider study) and therfore acknowledgement of his feelings and choice to participate may have enhanced his intrinsic motivation to engage as this allows for a greater sense of autonomy.

Valuing the opportunity to be heard and have his feelings validated may have also contributed to improvements in emotion regulation during the intervention stage . This explanation is consistent with literature surrounding the role of vagal tone, which is the psycho-physiological regulatory ability to respond appropriately to stimuli and return to a normal resting state. An optimal resting vagal tone and appropriate reactivity to stimuli has been stated to underlie adaptive behavioural and emotional responses. Whilst it can be influenced by experiences and genetics, it can also be influenced by the environment (Geisler et al., 2013; Porges, 2011). The provision of nurturing environments, which offer appropriate sensory stimulation and secure attachments and/or relationships, can promote vagal tone development and establish more effective physiologial (Feldman et al., 2010). Given the young person's history with exclusion and ongoing teacher reports surrounding their negative conduct, it could be inferred that learning environments and relationships with adults in those environments may have not always been positve. Intervention sessions allowed the participant to experience a range of emotions they struggled to understand in a safe environment with a reduced level of threat. This took place alongside a nurturing adult who was developing a positive relationship with them and through the process of listening, naming and validating experiences this may have met any underlying needs for postiive relationships with adults.

### 2.4.1 Strengths and Limitations

Previous literature has consistently documented that deficits in emotion recognition are associated with antisocial behaviour and conduct difficulties. In addition, common challenges experienced by all children throughout their educational experience may be exaggerated for those with such behaviours and adaption of this behaviour is crucial for social and academic success. Efforts have gone into the development and application of emotion recognition interventions and training programmes in both clinical and antisocial

samples, however efficacy of such treatments has been mixed. Based upon previous literature highlighting the efficacy of the TAR intervention in improving emotion recognition skills and decreasing negative behaviour in adult individuals with schizophrenia, this study involved collaborating with the developers of the TAR programme in order to apply it to a population of adolescents experiencing behaviours associated with conduct difficulties. A further strength of the current study also lays in the triangulation of the collection of behaviour data, with this being obtained from school staff and parents in addition to the young people themselves and their views on their experiences of the intervention. To the researcher's knowledge, this is also the first study employing an experimental design to explore the impact of the TAR intervention on such a sample, providing a unique contribution to the literature.

The current study employed a single-subject design, which is considered to be a rigorous, scientific methodology used to define behaviour principles and has created a productive history of useful information for the special educational field (Horner et al, 2005). The single-subject design also provides a strong basis for confirming a functional relationship and assessing causal changes in student outcomes, which are a significant aspect of building evidence-based practices within special educational settings (Tankersley et al, 2008). Furthermore, as this research is also part of a wider project investigating similar aims with a larger sample size, thus using a single case experimental design provides an opportunity to address feasibility. In addition, whilst the single case experimental design tests the effects of an intervention by utilising the participant as their own control, the present study additionally included a matched waiting control participant. This allowed for examination of negative behaviour incidences occurring over the same time period within the same environment to further explore the impact of the TAR intervention.

However, a number of limitations are also noted. For example, despite advantages associated with single-subject research, focusing on one individual raises the issue of both internal and external validity and limits the generalisability of findings obtained from results obtained (Engel & Schutt, 2008). Nevertheless, regardless of concerns existing surrounding validity and generalisability of single-subject designs, many supporters of such designs regard these approaches as rigorous and scientific (Horner et al., 2005).

The implementation of the intervention may also present an additional limitation. As previously mentioned, the TAR intervention typically consists of computer-based tasks alongside homework activities to encourage the young person to recognise emotions observed in real world contexts (i.e. outside of where the intervention takes place). Due to time constraints, the current study removed homework activities from the intervention. Haring and Eaton (1978) suggest that students advance through four stages when learning a new skill; acquisition, fluency, generalisation and adaption. Once speed and accuracy have been maintained, the individual can then begin to apply learning to new stimuli, generalising their skills before being able to adapt learnt information to solve novel problems. Therefore including homework tasks may have been valuable in furthering the participants' emotion skill recognition and a more substantial and maintained improvement in emotion recognition (and in turn, behaviour) may have been observed. Additionally, the intervention sessions were intended to be carried out over two consecutive weeks, however due to personal circumstances of the individual and their parent/carer this was not possible. This highlights additional difficulties that may arise when carrying out the intervention with a vulnerable population, in one static location (in this case, a university rather than at the young person's home or school). As previously mentioned, it is also important to consider the impact school holidays may have on the impact of the intervention and behaviour overall. Alongside this, a number of measures were employed to collect data surrounding the behaviour of the participant and included schools, parents and the young

person. However, the participant was informed of the study aims that were outlined on the information sheet prior to consenting to participate which could have left answers to these measures vulnerable to demand characteristics.

As a result of these identified strengths and limitations, the current research has highlighted key points that will enable a clear future direction for the development and implementation of this intervention.

### 2.4.2 Future Directions

Based on the limitations outlined above, there a number of ways in which the current research could be taken forward. One of the ways in which external validity could be strengthened could be through repeatedly testing the intervention in order to address issues surrounding small sample size and the limited generalisability of results. This could also be carried out across a variety of settings with young people who may be experiencing conduct difficulties. For example, young people receiving support from Youth Offending Teams or children learning in Pupil Referral Units. In addition to replication of the current study it may also be beneficial to carry out this research with a larger sample size, whilst also utilising a control group.

Future research could also explore whether feelings of competence and autonomy in relation to participation in the intervention potential associated effects may moderate the engagement of the young person and its impact on outcomes. An additional limitation that could be addressed could be to reintroduce the application of homework tasks between intervention sessions in order to enhance accuracy, fluency and generalisability of skills learnt to enhance outcomes. Furthermore, if researchers encourage participants to discuss

areas of strength and difficulty throughout the intervention this may enhance feelings of relatedness and increase intrinsic motivation. These areas could then also be more effectively targeted through the use of homework tasks to further support the participant's feelings of competence by strengthening their emotion recognition accuracy and fluency.

### 2.4.3 Implications for Educational Psychologists

Findings from the present study support those of previous research indicating that young people with identified conduct difficulties are likely to experience significant needs relating to their emotional literacy skills. Therefore, the provision of support and interventions for these young people remains an incredibly important area for research and development and one in which EPs should continue to advocate for to contribute to positive social, emotional and academic outcomes. Due to the breadth of the emotional literacy field and number of interventions and programmes available, EPs should ensure they are aware of the efficacy of the interventions they are recommending. This research highlights that certain components of a programme may be crucial to intervention efficacy, such as promoting the use of 'homework tasks' or emotion recognition activities in varying contexts may be beneficial to support the ongoing development and generalisability of skills learnt throughout an intervention. EPs are likely to have increased involvement with young people with challenging behaviour and are often well placed within specialist schools where behaviour and social skills are a primary concern. Findings suggest that consideration of the vulnerability of such populations alongside their experiences and personal circumstances may also be important when considering the intervention recommended.

### 2.4.4 Conclusion

The participant was shown to experience difficulties in the recognition of facial expression of negative emotions. Upon taking part in the intervention, the participantshowed brief significant improvements in emotion recognition accuracy, specifically for the emotions fear, disgust and surprise however showed no improvement in his recognition of angry, happy or sad faces. Therefore findings lend support previous literature reporting the efficacy of the TAR intervention programme (Frommann, Streit, & Wölwer, 2003) and this study highlights its potential use in the development of emotion recognition skills within an adolescent population experiencing behaviours typically associated with CD. However, the intervention may need to be adjusted in order to maintain observed improvements. There also appears to be potential transfer effects relating to behaviour at school as a result of involvement in the intervention, with there being a reduction in school reported negative behaviours for the participant who took part in the intervention during and immediately after its implementation. However, conclusions drawn surrounding the impact of the TAR intervention programme (Frommann et al, 2003) on reducing externalising behaviour difficulties should be interpreted with caution due to limitations associated with a single-case experimental design. Further research should seek to replicate this study, utilising the full intervention programme, with adolescents experiencing similar behaviours across a variety of settings.

# Appendix A Search Strategy

The following search terms were used to identify relevant articles through registered databases including: PsychINFO, Web of Science, ERIC and IBSS.

| Search with OR | Search with OR |
|---|---|
| “emotion* recognition*” | “academic success” |
| | “academic achievement” |
| “'emotion* categori*” | “academic performance” |
| | “academic progress” |
| “emotion* identification” | “academic progress” |
| | “school success” |
| “emotion* perception*” | “school achievement” |
| | “school performance” |
| Search with AND | |
| | “school progress” |
| | “school outcome*” |
| | “education* success” |
| | “education* achievement” |

| | |
|---|---|
| | “education* performance” |
| | “education* progress” |
| | “education* outcome*” |
| | “scholastic success” |
| | “scholastic achievement” |
| | “scholastic performance” |
| | “scholastic progress” |
| | “scholastic outcome*” |

Filters applied for PsychINFO, Web of Science, ERIC:

- English
- Journal Articles
- Peer Reviewed
- 1998 onwards

Additional filters for ERIC included:

- Exclusion of all school-age ranges before age 4 and beyond aged 18.

# Appendix B Inclusion and Exclusion Criteria

| | Inclusion | Exclusion |
|---|---|---|
| Population | • Age range that falls within "school-age" across all countries (ages 4-18).<br>• All longitudinal studies must also ensure that follow-up data is collected from participants who are within this range. | • Any studies whereby mean age of participants fell outside of the 4-18 age bracket.<br>• School-age children with a diagnosis of Autism or any other neurological condition that impairs emotion recognition ability. |
| Outcome Variable | • Studies are required to measure actual academic achievement (relating to progress in at least one given subject or GPA) as the outcome measure. | • Studies focusing on psychological adaption or school adjustment only (e.g. coping).<br>• Studies focusing only on self-esteem/anxiety<br>• Studies focusing only on cognitive flexibility |
| Independent Variable | • Studies are required to include a measure of emotion recognition in relation to the ability to detect emotions of others/ability emotional intelligence | • Studies that focus only on emotion recognition in relation to the perception of the participant's own emotions or their self-efficacy regarding their emotion recognition skills/trait emotional intelligence |
| Methodology | • Research is required to be quantitative and is allowed to include a range of measures and designs. | • Qualitative research, unless academic attainment is measured. |
| Type of Paper | • Research from all countries is permitted, including participants from different cultures/ethnic | • Theses or dissertations |

| Inclusion | Exclusion |
|---|---|
| backgrounds and socio-economic status | • Papers not available in English |

| Excluded Articles | Reason for Exclusion |
|---|---|
| • Adeyemo (2003)<br>• Grinspan, Hemphill and Nowicki Jr (2003)<br>• Davis and Humphrey (2014)<br>• Duncombe, Havighurst, Hollan and Frankling (2013) | Does not include measure of academic achievement relating to attainment |
| • Qualter, Whiteley, Moreley and Dudiak (2009)<br>• Kumar, Mehta and Maheshwari (2013)<br>• Garcia-Fernandez, Inglés, Suria, Lagos-San Martin, Gonzalvez-Macia, Aparisi, Martínez-Monteagudo (2015)<br>• Lopez-Gonzalez and Xavier Oriol (2016)<br>• Inglés, Martínez-Monteagudo, Fuentes, Garcia-Fernandez, del Mar Molero, Suria-Martinez and Gázquez (2017)<br>• Malik and Shujja (2013) | Measures emotion recognition skills using a self-report measure relating to one's own emotional awareness (considered a Trait Emotional Intelligence rather than Ability Emotional Intelligence measure) |
| • Ahammed, Abdullah and Hassane (2011) | Mean age of participants outside of required age range |

# Appendix C CASP Checklist

| Study | Clear statement of aims of the research | Participants were recruited in an acceptable way | Valid measurements applied | Authors identified all important confounding factors | Confounding factors taken account of in design/analysis | Results clearly reported (readability/accessibility) | Results are precise (actual probability/CI reported) | Results applicable to local population | Results of study fit with other available evidence | Clear statement of implication of key findings | Total Rating (Out of 10) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mestre, Guil, Salovey, Gil-Olarte (2006) | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes | 7 |
| Agnoli, Mancini, Pozzoli, Baldaro, Russo and Surcinelli (2012) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 10 |
| Izard, Fine, Schultz, Mostow, Ackerman & | No | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes | 6 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Youngstrom (2001) | | | | | | | | | | | |
| Downey, Mountstephen, Lloyd, Hansen & Stough (2008) | Yes | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes | 8 |
| Mohoric & Takšić (2016) | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes | 7 |
| Vassiou, Mouratidis, Andreou & Kafetsios (2016) | Yes | Yes | Yes | No | No | Yes | Yes | Yes | No | Yes | 7 |

*Items excluded from the checklist if not applicable to more than 75% of studies included in this review

1-3 = Poor Quality 4-6 = Sufficient Quality 7-10 = Good Quality

# Appendix D The Schedule of Affective Disorders and Schizophrenia for School-Age Children – Present and Lifetime version (K-SADS-PL; Kaufman et al., 1997).

**1) MAJOR DEPRESSIVE EPISODE**

At least 1 from the following 3 symptoms present for more than half the time for a period of at least 2 weeks:

**(I) Depressed Mood**

*Everyone has good days and bad days, but in the past 6 months has there been a time when you've felt down, miserable or depressed for days on end? How long did this feeling last? Do you feel like this at the moment? Have you ever gone through a time in your life when you felt like this?*

*Did you feel (___) all the time, some of the time?*

*Did it come and go?*

*How often? Every day?*

*How long did it last?*

| | | |
|---|---|---|
| 0 | 0 | No information. |
| 1 | 1 | Not at all or less than once a week. |
| 2 | 2 | Subthreshold: Depressed mood at least 2-3 days/week, for much of the day. |
| 3 | 3 | Threshold: Depressed mood, more days than not (4-7 days/week), most of the day (at least 50% of awake time) |

**(II) Irritability and anger**

*Has there been a time when you've felt irritable or angry for most, or all of the time, for days on end? How long did this last? What about recently? Is there a reason why you felt angry*

*more than before?*

*What kinds of things made you feel angry?*

*Did you sometimes feel angry and/or irritable and didn't know why?*

*Did this happen often?*

*Did you lose your temper?*

*With your family? Your friends? Who else? At school?*

*What did you do? Did anybody say anything about it?*

*How much of the time did you feel angry or irritable?*

*All of the time? Lots of the time? Or just now and then?*

| | | |
|---|---|---|
| 0 | 0 | No information. |
| 1 | 1 | Not present. Not at all or less than once a week. |
| 2 | 2 | Subthreshold: Feels definitely more angry or irritable than called for by the situation, at least 2-3 times a week, for much of the day. |
| 3 | 3 | Threshold: Feels irritable/angry more days than not, (4-7 days/week), most of the day (at least 50% of awake time). |

**(III) Anhedonia, Lack of interest, Apathy, Boredom**

| | | |
|---|---|---|
| 0 | 0 | No information. |

**Boredom**:

*Do you do any activities after school or at weekends? What kind of things do you do for fun?*

*(Give examples: Sports, friends, favourite games, school subjects, family activities, TV, music, dancing, playing alone, reading, going out, etc.).*

*Has there ever been a time that you felt bored a lot of the time? When? Do you feel bored a lot now? Did you feel bored when you thought about doing the things you usually like to do for fun? (Give examples mentioned above). Did this stop you from doing those things? Did you (also) feel bored while you were doing things you used to enjoy?*

| | | |
|---|---|---|
| 1 | 1 | Not present. |
| 2 | 2 | Subthreshold: Several activities definitely less pleasurable or interesting. Or bored or apathetic at least 3 times a week during activities. |
| 3 | 3 | Threshold: Most activities much less pleasurable or interesting. Or bored or apathetic daily, or almost daily, at least 50% of the time. |

**Anhedonia:**

*Did you look forward to doing the things you used to enjoy? (Give examples) Did you try to get into them?*

*Did you have to push yourself to do your favourite activities?*

*Did they interest you? Did you get excited or enthusiastic about doing them? Why not? Did you have as much fun doing them as you used to before you began feeling (sad, etc.)?*

*If less fun, did you enjoy them a little less? Much less? Not at all?*

*Did you have as much fun as your friends?*

*How many things are much less fun now than they used to be (use concrete examples provided earlier by child)?*

*How many were as much fun? More fun?*

*Did you do____ less than you used to? How much less?*

**(IV) <u>Recurrent thoughts of death</u>**

*Sometimes when children get upset or feel bad, they think about death, or even feel that they'd be better off dead. Have you ever had these types of thoughts? When? Do you feel that way now? Was there ever another time you felt that way?*

| | | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Infrequent thoughts of death (e.g. less than once per month, vague, non-specific). |
| 3 | 3 | Threshold: Recurrent thoughts of death, “I would be better of dead” or “I wish I was dead”. |

**(V) <u>Suicidal Ideation</u>**

*Sometimes children who get upset or feel bad think about dying or even killing themselves. Have you ever had such thoughts?*

| | | |
|---|---|---|
| 0 | 0 | No information. |
| 1 | 1 | Not present. |

| | | | |
|---|---|---|---|
| *How would you do it?*<br><br>*Do you or did you have a plan?* | 2 | 2 | Subthreshold: Infrequent or vague thoughts of suicide (e.g. less than once a month). |
| | 3 | 3 | Threshold: Recurrent thoughts of suicide. |

| **(VI) <u>Suicidal Acts- Seriousness</u>** | **C** | **P** | |
|---|---|---|---|
| *Have you actually tried to kill yourself?*<br>*When? What did you do?*<br>*Any other things?*<br>*Did you really want to die*<br>*How close did you come to doing it Was anybody in the room? In the apartment?*<br>*Did you tell them in advance? How were you found?*<br>*Did you really want to die?*<br><br>*Did you ask for any help after you did it?* | 0 | 0 | No information |
| | 1 | 1 | No attempt. |
| | 2 | 2 | Subthreshold: Preparations with no actual intent to die (e.g., help pills in hand) or planned attempt but did not follow through or engage in self harm. |
| | 3 | 3 | Threshold: Definite suicidal intent. |

| **(VII) <u>Suicidal Acts- Medical Lethality</u>** | **C** | **P** | |
|---|---|---|---|
| *How close were you to dying after your (most serious suicidal act)?*<br>*What did you do when you tried to kill yourself?*<br><br>*What happened to you after you tried to kill yourself? Did you have to go to hospital or get medical attention?* | 0 | 0 | No information. |
| | 1 | 1 | No attempt or gesture with no intent to die (e.g., held pills in hand). |
| | 2 | 2 | Subthreshold: e.g., took 10 aspirins, mild gastritis, superficial cuts. |
| | 3 | 3 | Threshold: Medical intervention occurred or was indicated; or significant cut with bleeding, or |

| **(VIII) <u>Non-Suicidal Physical Self-Damaging Acts</u>** | **C** | **P** | |
|---|---|---|---|
| *Did you ever try to hurt yourself?*<br>*Have you ever burned yourself with matches/candles? Or scratched yourself with needles/ a knife? Your nails? Or put hot pennies or cigarettes on your skin?*<br>*Anything else? Why did you do it? How often?*<br><br>*Do you have many accidents? What kind? How often?* | 0 | 0 | No information |
| | 1 | 1 | Not present |
| | 2 | 2 | Subthreshold: Infrequent (1-3 times). Has never caused serious injury to self. |
| | 3 | 3 | Threshold: Frequent (4 or more times a year) or has caused serious injury to self (e.g. burn with scarring; cut required stitches, broken bone). |

**2) PSYCHOSIS**

**(I) Hallucinations**

*Has there ever been a time you heard, saw or smelled something that other people couldn't hear, see or smell? For example, have you ever heard someone call your name when there was no one around, or seen shadows or objects move? What kind of things did you hear? Did you ever hear music which other people could not (i.e. it wasn't really there)?*

*Did this only happen at night while you were trying to sleep, or did it happen in the daytime too? Could it have been a dream?*

*What did you see?*

**Note: If hallucinations possibly present, prior to scoring this item, assess the subject's conviction of the reality of the hallucinations with the probes below.**

*What did you think it was?*

*Did you think it was your imagination or was it real?*

*What did you do when you (heard, saw, etc.) it?*

*Were you sick with fever (e.g. 'flu) when they occurred?*

*Were you drinking alcohol or taking any drugs when it happened? Was this the only time it happened?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Suspected or likely |
| 3 | 3 | Threshold: Definitely present |

**(II) Delusions**

*Has there ever been a time your imagination played tricks on you? Did you believe in things that other people didn't believe in? Like what?*

*Have you ever thought that someone was following you, or listening to your conversations, when you couldn't see anyone? Or thought that someone was out to hurt you? Who? Why? Do you think you really were in danger (from a specific person)?*

*Have you ever felt that something bad was happening to your body? Did you believe it was rotting from the inside, or that something was very wrong with it?*

*Did you ever feel convinced that the world was coming to an end? How often did you think about ___?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Suspected or likely delusional |
| 3 | 3 | Threshold: Definite delusions |

**3) GENERALISED ANXIETY DISORDER**

**(I) Excessive Worries**

*Would you describe yourself as a worrier? Do you worry a lot about things that might have happened in the past or that might happen in the future?*

*What kind of things do you worry about?*

*Do you think you worry or worried more than other kids your age? Has anyone ever said you were a worrier? Do you know why they said that? Can you control your worries, maybe by doing something to take your mind off them (e.g. going out)?*

**Note: If the only worries the child brings up relates to the attachment figure or a simple phobia, do not score here. Only rate positively if the child worries about multiple things.**

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Frequently worries somewhat excessively (at least 3 times per week) about anticipated events or current behavior. |
| 3 | 3 | Threshold: Most days of the week is excessively worried about at least two different life circumstances or anticipated events or current behavior. |

**(II) Somatic Complaints**

*Do you worry a lot about your health?*

*Do you get a lot of headaches? Stomachaches?*

*Have a lot of aches and pains?*

*Do you worry that you might have a serious illness? Is there any clear reason for this (e.g. a medical diagnosis)?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasional worries/complaints that are more severe and more often than experienced by a typical child his/her age |
| 3 | 3 | Threshold: Frequent worries/complaints. Worries about health preoccupy child and cause distress. |

**4) <u>OBSESSIVE-COMPULSIVE DISORDER</u>**

**(I) <u>Obsessions</u>**

*Has there ever been a time when you were bothered by thoughts, "pictures" or words which kept coming into your head for no reason and that you couldn't stop or get rid of?*

*Like did you ever worry a lot about having germs on your hands, or worry that you might get ill from germs? Did you ever worry about doing things perfectly or about making things even or arranging things in a certain way? What about thoughts that something bad might happen, or that you did something terrible, even though you knew it wasn't true?*

*What about numbers that wouldn't go away?*

*Do these thoughts get in your way or stop you from doing things?*

*Any other types of thoughts that kept running around your mind? What about numbers that wouldn't go away? Do these thoughts get in the way of your life or stop you from doing things?*

**Note: Do not score obsessions item positively if ideas/thoughts are delusional, or relate to another Axis I disorder.**

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Suspected or likely. |
| 3 | 3 | Threshold: Definite obsessions, causes some effect on functioning or distress. |

**(II) <u>Compulsions</u>**

*Has there ever been a time when you found yourself having to do things over and over, or things which you could not resist repeating like touching things, or counting or washing your hands over and over again, or checking doors/locks or other things?*

*Were there things you always felt you had to do exactly the same way or in a special way?*

*Did you ever have trouble making it to school on time because it took too long to get ready in the morning?*

*Have other people ever commented about these habits?*

*Has there ever been a time when you were bothered by thoughts, "pictures" or words which kept coming into your head for no reason and that you couldn't stop or get rid of?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Suspected or likely. |
| 3 | 3 | Threshold: Definite compulsions, causes some effect on functioning or distress. |

**5) ATTENTION DEFICIT HYPERACTIVITY DISORDER**

**(I) Difficulty Sustaining Attention on Tasks or Play Activities**

*Has there ever been a time when you had a lot of trouble paying attention in school? Did it affect your school work? Did you get into trouble because of this?*

*When you were working on your homework, did your mind wander a lot of the time?*

*What about when you were playing games? Did you forget to go when it was your turn?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasionally has difficulty sustaining attention on tasks or play activities. Problems have only minimum effect on functioning. |
| 3 | 3 | Threshold: Often (4-7 days/week) has difficulty sustaining attention. Problem has significant effect on functioning. |

**(II) Easily Distracted**

*Was there ever a time when little distractions would make it very hard for you to keep your mind on what you were doing? Like if another kid asked the teacher a question while the class was working quietly, was it ever hard for you to keep your mind on your work? When there was an interruption, like when the phone rang, was it very hard to get back to what you were doing before the interruption? Were there times when you could keep your mind on what you are doing, and little noises and things didn't bother you? How often were they a problem?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasionally distractable. Problem has only minimal effect on functioning. |
| 3 | 3 | Threshold: Attention often disrupted by minor distractions other kids would be able to ignore. Problems has moderate to severe effect on functioning. |

**(III) Difficulty Remaining Seated**

*Was there ever a time when you got out of your seat a lot at school? Did this happen a lot or only once or twice? Did you get into trouble for this? Was it hard to stay in your seat at school? What about at dinnertime or at home?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasionally has difficulty remaining seated when required to do so. Problem has only minimal effect on functioning. |
| 3 | 3 | Threshold: Often (4-7 days/week) has difficulty remaining seated when required to do so. Problem has significant effect on functioning. |

**(IV) Impulsivity**

*Do you act before you think, or think before you act?*

*Has there ever been a time when these kinds of behaviours got you into trouble? Give some examples.*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasionally impulsive. Problem has only minimal effect on functioning. |
| 3 | 3 | Threshold: Often (4-7 days/week) impulsive. Problem has significant effect on functioning. |

**6) OPPOSITIONAL DEFIANT DISORDER**

**(I) Loses Temper**

*Has there ever been a time when you would get upset easily and lose your temper? Did it take much to make you mad, or did it happen even to little things? How often did you get really mad or annoyed and lose your temper? What were you like when you had a temper tantrum? What did you do? Shout and scream?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasional temper outbursts (less than 1 time weekly). |
| 3 | 3 | Threshold: Severe outbursts at least once a week. Outbursts more severe and more often than a typical child his/her age; causes impairment. |

**(II) Argues a Lot With Adults/ Authority Figures**

*Was there ever a time when you would argue a lot with adults? Your parents or teachers? What kinds of things did you argue with them about? Did you argue with them a lot? How bad did the fights get? Did you ever swear at them or hit them?*

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Occasionally argues with parents and/or teachers; less than once a week. |
| 3 | 3 | Threshold: Often argues with parents and/or teachers (at least once a week). Arguments more severe and more often than a typical child his/her age. |

| **(III) Disobeys Rules a Lot/ Defies or Refuses to Comply with Adult Requests** | **C** | **P** | |
|---|---|---|---|
| | 0 | 0 | No information |
| *Do you ever deliberately break the rules or disobey your parents at home? How about at school? How often does this happen – a lot of the time or hardly ever?*<br>*Do you think that your parents/teachers ask you to do things that you shouldn't have to do? Like what? Does this get you into trouble?*<br>*In addition ask the following for adolescents:*<br>*How often do you get away with things without getting into trouble or without getting caught?* | 1 | 1 | Not present |
| | 2 | 2 | Subthreshold: Occasionally actively defies or refuses adult requests or rules (less than once a week). |
| | 3 | 3 | Threshold: Often actively defies or refuses adult requests or rules (at least once a week). Disobedient more often than a typical child his/her age. |

**7) CONDUCT DISORDER**

| **(I) Lies** | **C** | **P** | |
|---|---|---|---|
| *Everybody lies. Some people tell lies to exaggerate, some people tell lies to get out of trouble.* | 0 | 0 | No information. |
| *Do you ever tell lies?*<br>*What type of lies do you tell?*<br>*Who do you lie to?*<br>*Have people ever called you a liar?*<br>*What's the worst lie you ever told?* | 1 | 1 | Not present. |
| | 2 | 2 | Subthreshold: Occasionally lies. Lies more often than a typical child his/her age. |
| *Did you lie to get other people to do things for you?*<br>*Did you lie to get out of paying people back money or some favour you owe them?*<br>*Has anyone ever called you a con?*<br>*Complained that you broke promises a lot?*<br>*How often did you lie?* | 3 | 3 | Threshold: Lies often, multiple times per week or more (to con or cheat). |

| **(II) Truant** | **C** | **P** | |
|---|---|---|---|
| *Has there even been a time when you skipped a whole day of school when your parents didn't know about it?* | 0 | 0 | No information. |
| *Did you ever go to school and leave early when you were not really supposed to? How about going in late?* | 1 | 1 | Not present. |
| *Did you sometimes miss or skip classes in the morning?*<br>*Did you get into trouble? How often?* | 2 | 2 | Subthreshold: Truant on one isolated incident. |
| **For adolescents:** *How old were you when you first started to skip school?* | 3 | 3 | Threshold: Truant on numerous occasions (e.g. 2 or more days or numerous partial days). |

| **(III) Initiates Physical Fights** | **C** | **P** | |
|---|---|---|---|
| *Has there ever been a time when you got into many fist fights?*<br>*Who usually started the fights?* | 0 | 0 | No information. |

| | | | |
|---|---|---|---|
| *What's the worst fight you ever got into? What happened? Did anyone get hurt?*<br>*Who did you usually fight with?*<br>*Have you ever hit a teacher? One of your parents? Another adult?*<br>*How often did you fight?*<br>*Have you ever tried or wanted to kill someone?* | 1 | 1 | Not present. |
| | 2 | 2 | Subthreshold: Fights with peers only. No fight has resulted in serious injury to peer (e.g. no medical intervention required). |
| | 3 | 3 | Threshold: Reports at least one physical fight involving an adult (e.g. teacher, parent) OR reports starting frequent fights, with one or more fights resulting in injury to a peer, or frequent fights not resulting in injury (at least 1-2 times per month). |

| **(IV) <u>Bullies, Threatens, or Intimidates Others</u>** | **C** | **P** | |
|---|---|---|---|
| *Do you ever try to bully kids or threaten kids to get them to do something you want them to do?*<br>*How often did you do these things:*<br>- *call names or make fun of other kids*<br>- *threaten to hurt other kids*<br>- *push*<br>- *trip*<br>- *come up from behind and slap or knock kids down*<br>- *knock items out of kids hands*<br>- *make other kids do things for you* | 0 | 0 | No information. |
| | 1 | 1 | Not present. |
| | 2 | 2 | Subthreshold: Occasionally bullies, threatens, or intimidates. |
| | 3 | 3 | Threshold: Bullies, threatens, or intimidates others on multiple occasions, daily, almost daily, or at least several times per week. |

| **(V) <u>Nonaggressive Stealing</u>** | **C** | **P** | |
|---|---|---|---|
| *In the past year, have you stolen anything?*<br>*What is the most expensive thing you stole?*<br>*What other things have you stolen? From whom? From which stores?*<br>*Have you stolen a toy from a store? Money from your mum? Anything else?*<br>*How often have you stolen things?*<br>**NOTE: ONLY COUNT THEFTS OF NON-TRIVIAL VALUE (e.g. £20 or more).** | 0 | 0 | No information. |
| | 1 | 1 | Not present. |
| | 2 | 2 | Subthreshold: Has stolen without confrontation of victim on only one occasion. |
| | 3 | 3 | Threshold: Has stolen without confrontation of victim on 2 or more occasions. |

**8) <u>AUTISM SPECTRUM DISORDER</u>**

| **(I) <u>Stereotyped or repetitive speech, motor movements, or use of objects</u>** | **C** | **P** | |
|---|---|---|---|
| | 0 | 0 | No information |
| | 1 | 1 | Not present |
| *Do you like to watch your hands while you wiggle your fingers?*<br>*Does rocking back and forth calm you down when you're upset?*<br>*Do people ever tell you to stay still and stop spinning? Do you ever 'flap' your hands when you're excited?* | 2 | 2 | Subthreshold: A few isolated incidents, rarely observed. |
| | 3 | 3 | Threshold: Occasional or more frequent occurrences. |

| **(II) <u>Insistence on sameness, Inflexible adherence to routines, Ritualized patterns of verbal or nonverbal behaviour</u>** | **C** | **P** | |
|---|---|---|---|
| | 0 | 0 | No information |
| *Do you get really upset when there is an unexpected change in* | 1 | 1 | Not present |

*your plans or the way you usually do things, like if there is a delay in the start of school, if dinner is a little earlier than usual, or if you have to drive home a different way than usual? What do you do if something like this happens and how long would you be upset?*

| C | P | |
|---|---|---|
| 2 | 2 | Subthreshold: Only mildly inflexible, or inflexibility not evident in early childhood. |
| 3 | 3 | Threshold: Significant and persistent rigid adherence to routines and rituals that elicit distress when interrupted. Pattern of behavior evident since early childhood. |

**(III) <u>Highly restricted, fixated interests that are abnormal in intensity or focus</u>**

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Unusual preoccupations that do not cause significant impairment or take excessive amounts of time. |
| 3 | 3 | Threshold: Definitely preoccupied with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus. Causes significant impairment in social functioning or limits participation in other activities. |

*Is there something special you are interested in that you really like to talk about, read about, or do? Maybe something like engines or the inside of computers? Tell me about it.*

**NOTE: RATE THIS AS POSITIVE IF IT IS INAPPROPRIATE FOR THE AGE AND CULTURE OF THE CHILD, AND IT IS EXAGGERATED. DO NOT SCORE PREOCCUPATION WITH VIDEOGAMES OR COMPUTER GAMES HERE.**

**(IV) <u>Deficits in nonverbal communicative behaviours used for social interaction</u>**

| C | P | |
|---|---|---|
| 0 | 0 | No information |
| 1 | 1 | Not present |
| 2 | 2 | Subthreshold: Subtle problems in one or more area, which is evident to family members and professionals but not to teachers or classmates. |
| 3 | 3 | Threshold: Problems with one or more aspects of non-verbal behaviours cause functional impairment. |

*Eye to Eye Gaze: Do you frequently have to remind your child to look at you or the person s/he is talking to?*

*Facial Expressions: Does your child show the typical range of facial expressions?*

*Can you see joy on his/her face when /she is happy?*

*Does s/he pout or look upset when s/he is sad?*

*Does s/he show less common facial expressions like surprise, interest, and guilt?*

*Gestures: As a toddler or preschooler, did your child use common gestures like pointing to show interest, clapping when happy, and nodding to indicate 'yes'?*

*Does he /she use gestures to help show how something works or while they are explaining something?*

*Indicate problematic areas of non-verbal behavior:*

*Gaze Expressions Gestures*

**9) <u>ALCOHOL USE</u> (0= No Information; 1= No; 2= Yes)**

*Do you drink alcohol or did you drink in the past? How much alcohol do you drink in a typical week? What do you drink – beer, wine or spirits? How often? Do you get drunk? Do you have a group of friends you usually drink with or do you*

**(I) <u>Use</u>**

| | |
|---|---|
| a. Drank two drinks in one week four or more times | 0 1 2 |

| | |
|---|---|
| b. Age of first regular use: _____ | |
| c. Current frequency of use (days per month): _____ | |
| d. Have you ever had 3 or more drinks in a single day? | 0 1 2 |
| **(II) <u>Problems related to alcohol</u>** | |
| *Has drinking ever caused you any problems at home? With your parents? With your schoolwork? With your teachers? With your friends? With a job?* | 0 1 2 |
| *Have you ever gotten in trouble (with the law) while drinking?* | |
| **(III) <u>Received treatment for alcohol problems?</u>** | 0 1 2 |

**10) <u>ALCOHOL USE DISORDER</u>**

| **(I) <u>Quantity</u>** | **C** | **P** | |
|---|---|---|---|
| *a. How many drinks do you usually have when you sit down to drink?* | 0 | 0 | No information |
| | 1 | 1 | 1 - 2 drinks |
| | 2 | 2 | 3 or more drinks |
| *b. What's the most you ever drank in a single day?* | **C** | **P** | |
| *When was that? How about in the last six months, what's the most you drank in a single day?* | 0 | 0 | No information |
| | 1 | 1 | 1 - 2 drinks |
| | 2 | 2 | 3 or more drinks |
| **(II) <u>Frequency</u>** | **C** | **P** | |
| *What's the most number of days in a given week that you had something to drink? Do you usually drink on Friday and Saturday night? In the week as well (e.g. after school)?* | 0 | 0 | No information |
| | 1 | 1 | 1 - 2 days |
| | 2 | 2 | 3 or more days |
| **(III) <u>Concern from Others about Drinking</u>** | **C** | **P** | |
| *Has anyone ever complained about your drinking?* | 0 | 0 | No information |
| *Friends? Parents? Teachers? Have you ever been worried about it at all? Have you ever tried to stop or cut down?* | 1 | 1 | No |
| | 2 | 2 | Yes |

**11) SUBSTANCE USE (0= No Information; 1= No; 2= Yes)**

**Prior to beginning this section, give the subject the list of drugs included on the next page. Remind child about the confidential nature of the interview prior to beginning probes (if appropriate).**

**(I) Drug Use**

*Let me know if you have used any of the drugs on this list before, even if you have only tried them once. Which ones have you ever used?*

| | C | P |
|---|---|---|
| a. Cannabis (Marijuana, pot, hash, THC) | 0 1 2 | 0 1 2 |
| b. Stimulants (Speed, uppers, amphetamines, dexedrine, diet pills, crystal meth) | 0 1 2 | 0 1 2 |
| c. Sedatives/Hypnotics/Anxiolytics (Barbiturates (sedatives, downers), Benzodiazepine, Quaalude (ludes), valium, librium, Xanax) | 0 1 2 | 0 1 2 |
| d. Cocaine (Coke, crack) | 0 1 2 | 0 1 2 |
| e. Opioids (Heroin, morphine, codeine, methadone, Demerol, percodam) | 0 1 2 | 0 1 2 |
| f. PCP (Angel dust) | 0 1 2 | 0 1 2 |
| g. Hallucinogens (LSD, acid, trips, other psychedelic drugs) | 0 1 2 | 0 1 2 |
| h. Solvents/Inhalants (Glue, tippex, petrol, chloroform, ether, paint thinner) | 0 1 2 | 0 1 2 |
| i. Other (Prescription drugs, nitrous oxide, ecstasy, MDMA, etc.) | 0 1 2 | 0 1 2 |

**(II) Frequency**

*In the past 6 months, what is the most you have ever used___? Everyday or almost every day for at least 1 week? Less? More? Was there a time when you used___ more than you do now?*

Code:

0 = No information

1 = Not present

2 = Less than once a month

3 = More than once a month

| | C | P |
|---|---|---|
| a. Cannabis | 0 1 2 3 | 0 1 2 3 |
| b. Stimulants | 0 1 2 3 | 0 1 2 3 |
| c. Sedatives/Hypnotics/Anxiolytics | 0 1 2 3 | 0 1 2 3 |
| d. Cocaine | 0 1 2 3 | 0 1 2 3 |
| e. Opioids | 0 1 2 3 | 0 1 2 3 |
| f. PCP | 0 1 2 3 | 0 1 2 3 |
| g. Hallucinogens (e.g. acid or LSD) | 0 1 2 3 | 0 1 2 3 |
| h. Solvents/Inhalants | 0 1 2 3 | 0 1 2 3 |
| i. Other | 0 1 2 3 | 0 1 2 3 |
| j. Polysubstance (multiple drugs at once) | 0 1 2 3 | 0 1 2 3 |

(III) Problems related to substance abuse

0 1 2

*Has your use of ___ ever caused you any problems at home? With your parents? With your schoolwork? With teachers (e.g. exclusion)? With friends? With the police?*

**12) POST-TRAUMATIC STRESS DISORDER**

**(I) Traumatic Event**

**Probe:** *I am going to ask you about a number of bad things that often happen to children your age, and I want you to tell me if any of these things have ever happened to you. Be sure to tell me if any of these things have ever happened, even if they only happened one time.*

| | | | |
|---|---|---|---|
| a. Car Accident<br><br>*Have you ever been in a bad car accident? What happened?*<br><br>*Were you hurt? Was anyone else in the car hurt?* | 0 1 2 | h. Terrorism Related Trauma<br><br>*Have you been involved in a terrorist attack? When and where?* | 0 1 2 |
| b. Other Accident<br><br>*Have you ever been in any other type of bad accidents? Like a bike accident? Other? What happened?*<br><br>*Were you hurt?* | 0 1 2 | i. War Zone Trauma<br><br>*Have you ever lived in a war zone?*<br><br>*Had your home attacked?*<br><br>*Witnessed the killing or sexual assault of others?*<br><br>*Seen everything around you set on fire?* | 0 1 2 |
| c. Fire<br><br>*Have you ever been in a serious fire?*<br><br>*Your house or school? Did you ever start a fire that got out of control?*<br><br>*Did anyone get hurt?* | 0 1 2 | j. Witness to Domestic Violence<br><br>*Did your parents ever get in really bad fights? Tell me about the worst fight you remember your parents having. What happened?*<br><br>**Child witness to explosive arguments involving threatened or actual harm to parent.** | 0 1 2 |
| d. Witness of a Disaster<br><br>*Have you ever been in a really bad storm, like a tornado or a hurricane?*<br><br>*Have you ever been caught in floods with waters that were deep enough to swim in?* | 0 1 2 | k. Physical Abuse<br><br>*When your parents got mad, did they hit you?*<br><br>*Have you ever been hit so that you had bruises or marks on your body, or were hurt in some way? What happened?* | 0 1 2 |
| e. Witness of a Violent Crime<br><br>*Have you ever witnessed a violent crime, like seeing somebody get robbed or shot?*<br><br>*Seen someone taken hostage?*<br><br>*Was anyone seriously hurt?* | 0 1 2 | l. Sexual Abuse<br><br>*Did anyone ever touch your private parts when they shouldn't have? Made you undress, touch you between the legs, make you get in bed with them, or play with their private parts?*<br><br>**Isolated or repeated incidents of genital** | 0 1 2 |
| f. Victim of Violent Crime<br><br>*Did anyone ever mug or attack you in another way? What happened? Were you badly hurt?*<br><br>**Child victim of seriously threatening or violent crime.** | 0 1 2 | m. Other<br><br>*Is there anything else that happened that was really bad or scary, that you want to tell me about?*<br><br>Please Specify_____ | 0 1 2 |

| | |
|---|---|
| g. Confronted with Traumatic News<br><br>*Have you ever gotten some really bad news unexpectedly? Like finding out someone you loved died suddenly or was seriously ill (e.g. cancer) and would never get better?*<br><br>**Learned about sudden, unexpected death of a loved one, or that loved one has life-threatening disease.** | 0 1 2 |

**(II) Screen Items**

| | |
|---|---|
| 1. Recurrent Thoughts or images of the Event<br><br>*Has there ever been a time when you kept seeing again and again?*<br><br>*How often did this happen? Did what happened keep coming into your mind? Did you think about it a lot?* | 0 1 2 |
| 2. Feelings of Detachment<br><br>*Is it harder for you to trust other people or interact with people?*<br><br>*Do you feel like being alone more often than before?*<br><br>*Like you just don't feel like being around people now that you used to like being around before? Do you feel alone even when you are with other people?* | 0 1 2 |
| 3. Efforts to Avoid Thoughts or Feelings Associated with the Trauma<br><br>*Are there places or things that remind you of ____? Do you try to avoid them? You said before that ___ sometimes reminds you of what happened. Do you try to avoid ___?* | 0 1 2 |
| 4. Nightmares<br><br>*Has there ever been a time when you had a lot of nightmares about ____? Did you ever dream about ___? How often? How did you feel when you woke up from one of your nightmares?* | 0 1 2 |
| 5. Hypervigilance<br><br>*Since ___ happened, are you a lot more careful? Do you feel like you always have to watch what's going on around you? Do you double check the doors or windows to make sure they are locked?* | 0 1 2 |
| 5. Irritability or Outbursts of Anger?<br><br>*After___ happened, did you feel angry or irritable a lot more than usual? Were you having a lot of temper tantrums?* | 0 1 2 |

# Appendix E Inventory of Callous-Unemotional traits (ICU; Frick, 2003)

ICU (PV)

ID: _____ Date completed: _____

Please read each statement and decide how well it describes your son or daughter. Mark your answer by circling the appropriate number (0-3) for each statement. Please fill in all of the questions.

| | | Not at all true | Somewhat true | Very true | Definitely true |
|---|---|---|---|---|---|
| 1 | Express his/her feelings openly. | 0 | 1 | 2 | 3 |
| 2 | Does not seem to know "right" from "wrong". | 0 | 1 | 2 | 3 |
| 3 | Is concerned about schoolwork. | 0 | 1 | 2 | 3 |
| 4 | Does not care who he/she hurts to get what he/she wants. | 0 | 1 | 2 | 3 |
| 5 | Feels bad or guilty when he/she has done something wrong. | 0 | 1 | 2 | 3 |
| 6 | Does not show emotions. | 0 | 1 | 2 | 3 |
| 7 | Does not care about being on time. | 0 | 1 | 2 | 3 |
| 8 | Is concerned about the feelings of others. | 0 | 1 | 2 | 3 |
| 9 | Does not care if he/she gets into trouble. | 0 | 1 | 2 | 3 |
| 10 | Does not let feelings control him/her. | 0 | 1 | 2 | 3 |
| 11 | Does not care about doing things well. | 0 | 1 | 2 | 3 |
| 12 | Seems very cold and uncaring. | 0 | 1 | 2 | 3 |
| 13 | Easily admits to being wrong. | 0 | 1 | 2 | 3 |
| 14 | It is easy to tell how he/she is feeling. | 0 | 1 | 2 | 3 |
| 15 | Always tries his/her best. | 0 | 1 | 2 | 3 |
| 16 | Apologises ("says he/she is sorry") to persons he/she has hurt. | 0 | 1 | 2 | 3 |
| 17 | Tries not to hurt others' feelings. | 0 | 1 | 2 | 3 |

| | | Not at all true | Somewhat true | Very true | Definitely true |
|---|---|---|---|---|---|
| 18 | Shows no remorse (guilt) when he/she has done something wrong. | 0 | 1 | 2 | 3 |
| 19 | Is very expressive and emotional. | 0 | 1 | 2 | 3 |
| 20 | Does not like to put the time into doing things well. | 0 | 1 | 2 | 3 |
| 21 | The feelings of others are unimportant to him/her. | 0 | 1 | 2 | 3 |
| 22 | Hides his/her feelings from others. | 0 | 1 | 2 | 3 |
| 23 | Works hard on everything. | 0 | 1 | 2 | 3 |
| 24 | Does things to make others feel good. | 0 | 1 | 2 | 3 |

# Appendix F Interpersonal Reactivity Index (IRI; Davis, 1993)

**IRI**

**ID:** _____ **Date completed** _____

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: 0, 1, 2, 3, or 4. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

| | | Does not describe me very well | | | | Describes me very well |
|---|---|---|---|---|---|---|
| 1 | I daydream and fantasise, fairly often, about things that might happen to me. | 0 | 1 | 2 | 3 | 4 |
| 2 | I often have tender, concerned feelings for people less fortunate than me. | 0 | 1 | 2 | 3 | 4 |
| 3 | I sometimes find it difficult to see things from the "other guy's" point of view | 0 | 1 | 2 | 3 | 4 |
| 4 | Sometimes I don't feel very sorry for other people when they are having problems | 0 | 1 | 2 | 3 | 4 |
| 5 | I really get involved with the feelings of the characters in a novel | 0 | 1 | 2 | 3 | 4 |
| 6 | In emergency situations, I feel apprehensive and ill-at-ease | 0 | 1 | 2 | 3 | 4 |
| 7 | I am usually objective when I watch a movie or play, and I don't often get completely caught up in it | 0 | 1 | 2 | 3 | 4 |
| 8 | I try to look at everybody's side of a disagreement before I make a decision | 0 | 1 | 2 | 3 | 4 |

| | | Does not describe me very well | | | | Describes me very well |
|---|---|---|---|---|---|---|
| 9 | When I see someone being taken advantage of, I feel kind of protective towards them | 0 | 1 | 2 | 3 | 4 |
| 10 | I sometimes feel helpless when I am in the middle of a very emotional situation | 0 | 1 | 2 | 3 | 4 |
| 11 | I sometimes try to understand my friends better by imagining how things look from their perspective | 0 | 1 | 2 | 3 | 4 |
| 12 | Becoming extremely involved in a good book or movie is somewhat rare for me | 0 | 1 | 2 | 3 | 4 |
| 13 | When I see someone get hurt, I tend to remain calm | 0 | 1 | 2 | 3 | 4 |
| 14 | Other people's misfortunes (bad luck) do not usually disturb me a great deal | 0 | 1 | 2 | 3 | 4 |
| 15 | If I'm sure I'm right about something, I don't waste much time listening to other people's arguments | 0 | 1 | 2 | 3 | 4 |
| 16 | After seeing a play or movie, I have felt as though I were one of the characters | 0 | 1 | 2 | 3 | 4 |
| 17 | Being in a tense emotional situation scares me | 0 | 1 | 2 | 3 | 4 |
| 18 | When I see someone being treated unfairly, I sometimes don't feel very much pity for them | 0 | 1 | 2 | 3 | 4 |

| | | Does not describe me very well | | | | Describes me very well |
|---|---|---|---|---|---|---|
| 19 | I am usually pretty effective in dealing with emergencies | 0 | 1 | 2 | 3 | 4 |
| 20 | I am often quite touched by things that I see happen | 0 | 1 | 2 | 3 | 4 |
| 21 | I believe that there are two sides to every question and try to look at them both | 0 | 1 | 2 | 3 | 4 |
| 22 | I would describe myself as a pretty soft-hearted person | 0 | 1 | 2 | 3 | 4 |
| 23 | When I watch a good movie, I can very easily put myself in the place of a leading character | 0 | 1 | 2 | 3 | 4 |
| 24 | I tend to lose control during emergencies | 0 | 1 | 2 | 3 | 4 |
| 25 | When I'm upset at someone, I usually try to "put myself in his shoes" for a while | 0 | 1 | 2 | 3 | 4 |
| 26 | When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me | 0 | 1 | 2 | 3 | 4 |
| 27 | When I see someone who badly needs help in an emergency, I go to pieces | 0 | 1 | 2 | 3 | 4 |
| 28 | Before criticising somebody, I try to imagine how I would feel if I were in their place | 0 | 1 | 2 | 3 | 4 |

# Appendix G Youth Self Report of Behaviour (YSR) (Achenbach, 1991).

YOUTH SELF-REPORT FOR AGES 11-18

| YOUR FULL NAME First | Middle | Last | PARENTS' USUAL TYPE OF WORK, even if not working now. (Please be specific – for example, auto mechanic, school teacher, homemaker, labourer, lathe operator, shoe salesman, army sergeant.) |
|---|---|---|---|
| YOUR GENDER: ☐ Boy ☐ Girl | YOUR AGE: | YOUR ETHNIC GROUP OR RACE: | FATHER'S TYPE OF WORK: _____ |
| TODAY'S DATE: Day ____ Mo. ___ Year ____ | YOUR BIRTHDATE: Day ____ Mo. ____ Year ____ | | MOTHER'S TYPE OF WORK: _____ |
| YEAR IN SCHOOL _____ NOT ATTENDING SCHOOL ☐ | IF YOU ARE WORKING, PLEASE STATE YOUR TYPE OF WORK: _____ _____ | | Please fill out this form to reflect your views, even if other people might not agree. Feel free to print additional comments beside each item and in the spaces provided on pages 2 and 4. *Be sure to answer all items.* |

| I. Please list the sports you most like to take part in. For example: swimming, football, skating, skate boarding, bike riding, fishing, etc. | Compared to others of the same age, about how much time do you spend in each? | | | | Compared to others of the same age, how well do you do each one? | | | |
|---|---|---|---|---|---|---|---|---|
| ☐ None | Less than average | Average | More than average | Don't know | Below average | Average | Above average | Don't know |
| a. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| II. Please list your favourite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, computers, signing, etc. (Do not include listening to radio or TV.) | Compared to others of the same age, about how much time do you spend in each? | | | | Compared to others of the same age, how well do you do each one? | | | |
|---|---|---|---|---|---|---|---|---|
| ☐ None | Less than average | Average | More than average | Don't know | Below average | Average | Above average | Don't know |
| a. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| III. Please list any organizations, clubs, teams, or groups you belong to. | Compared to others of the same age, how active are you in each? | | | |
|---|---|---|---|---|
| ☐ None | Less active | Average | More active | Don't know |
| a. _____ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ |

| IV. Please list any jobs or chores you have. For example: paper route, babysitting, making bed, working in store, etc. (Including both paid and unpaid jobs and chores.) | Compared to others of the same age, how well do you carry them out? | | | |
|---|---|---|---|---|
| ☐ None | Below average | Average | Above average | Don't know |
| a. _____ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ |

*Be sure you answered all items.*
*Then see other side.*

Page 1 of 4

*Please print. Be sure to answer all items.*

V. 1. About how many close friends do you have? (Do not include brothers & sisters)

☐ None ☐ 1 ☐ 2 or 3 ☐ 4 or more

2. About how many times a week do you do things with any friends outside of regular school hours? (Do not include brothers & sisters)

☐ Less than 1 ☐ 1 or 2 ☐ 3 or more

VI. Compared to others of your, how well do you:

| | Worse | Average | Better | |
|---|---|---|---|---|
| a. Get along with your brothers & sisters? | ☐ | ☐ | ☐ | ☐ I have no brothers or sisters |
| b. Get along with other kids? | ☐ | ☐ | ☐ | |
| c. Behave with your parents? | ☐ | ☐ | ☐ | |
| d. Play and work alone? | ☐ | ☐ | ☐ | |

VII. 1. Performance in academic subjects. ☐ I do not attend school because: _____

*Check a box for each subject that you take*

| | | | Failing | Below average | Average | Above average |
|---|---|---|---|---|---|---|
| Other academic subjects – for example: computer courses, foreign language, business. Do not include gym, shop, driver's ed., or other non-academic subjects. | a. | Reading, English, or Language Arts | ☐ | ☐ | ☐ | ☐ |
| | b. | History | ☐ | ☐ | ☐ | ☐ |
| | c. | Maths | ☐ | ☐ | ☐ | ☐ |
| | d. | Science | ☐ | ☐ | ☐ | ☐ |
| | e. | _____ | ☐ | ☐ | ☐ | ☐ |
| | f. | _____ | ☐ | ☐ | ☐ | ☐ |
| | g. | _____ | ☐ | ☐ | ☐ | ☐ |

Do you have any illness, disability, or handicap? ☐ No ☐ Yes – please describe:

Please describe any concerns or problems you have about school:

Please describe any other concerns you have:

Please describe the best things about yourself.

*Please be sure you answered all items.*

*Please print. Be sure to answer all items.*

Below is a list of items that describe kids. For each item that describes you *now or within the past 6 months*, please circle the *2* if the item is *very true or often true* of you. Circle the *1* if the item is *somewhat or sometimes true* of you. If the item is *not true* of you, circle the *0*. Please answer all items as well as you can, even if some do not seem to apply to you.

| 0 = Not true (as far as you know) | 1 = Somewhat or sometimes true | 2 = Very true or Often true |
|---|---|---|

| | | | | |
|---|---|---|---|---|
| 0 | 1 | 2 | 1. | I act too young for my age |
| 0 | 1 | 2 | 2. | I drink alcohol without my parents' approval (describe): _____ |
| 0 | 1 | 2 | 3. | I argue a lot |
| 0 | 1 | 2 | 4. | I fail to finish things that I start |
| 0 | 1 | 2 | 5. | There is very little that I enjoy |
| 0 | 1 | 2 | 6. | I like animals |
| 0 | 1 | 2 | 7. | I brag |
| 0 | 1 | 2 | 8. | I have trouble concentrating or paying attention |
| 0 | 1 | 2 | 9. | I can't get my mind off certain thoughts (describe): _____ |
| 0 | 1 | 2 | 10. | I have trouble sitting still |
| 0 | 1 | 2 | 11. | I'm too dependent on adults |
| 0 | 1 | 2 | 12. | I feel lonely |
| 0 | 1 | 2 | 13. | I feel confused or in a fog |
| 0 | 1 | 2 | 14. | I cry a lot |
| 0 | 1 | 2 | 15. | I am pretty honest |
| 0 | 1 | 2 | 16. | I am mean to others |
| 0 | 1 | 2 | 17. | I daydream a lot |
| 0 | 1 | 2 | 18. | I deliberately try to hurt or kill myself |
| 0 | 1 | 2 | 19. | I try to get a lot of attention |
| 0 | 1 | 2 | 20. | I destroy my own things |
| 0 | 1 | 2 | 21. | I destroy things belonging to others |
| 0 | 1 | 2 | 22. | I disobey my parents |
| 0 | 1 | 2 | 23. | I disobey at school |
| 0 | 1 | 2 | 24. | I don't eat as well as I should |
| 0 | 1 | 2 | 25. | I don't get along with other kids |
| 0 | 1 | 2 | 26. | I don't feel guilty after doing something I shouldn't |
| 0 | 1 | 2 | 27. | I am jealous of others |
| 0 | 1 | 2 | 28. | I break rules at home, school, or elsewhere |
| 0 | 1 | 2 | 29. | I am afraid of certain animals, situations, or places, other than school (describe): _____ |
| 0 | 1 | 2 | 30. | I am afraid of going to school |
| 0 | 1 | 2 | 31. | I am afraid I might think or do something bad |
| 0 | 1 | 2 | 32. | I feel that I have to be perfect |
| 0 | 1 | 2 | 33. | I feel that no one loves me |
| 0 | 1 | 2 | 34. | I feel that others are out to get me |
| 0 | 1 | 2 | 35. | I feel worthless or inferior |
| 0 | 1 | 2 | 36. | I accidentally get hurt a lot |
| 0 | 1 | 2 | 37. | I get in many fights |
| 0 | 1 | 2 | 38. | I get teased a lot |
| 0 | 1 | 2 | 39. | I hang around with kids who get in trouble |
| 0 | 1 | 2 | 40. | I hear sounds or voices that other people think aren't there (describe): _____ |
| 0 | 1 | 2 | 41. | I act without stopping to think |
| 0 | 1 | 2 | 42. | I would rather be alone than with others |
| 0 | 1 | 2 | 43. | I lie or cheat |
| 0 | 1 | 2 | 44. | I bite my fingernails |
| 0 | 1 | 2 | 45. | I am nervous or tense |
| 0 | 1 | 2 | 46. | Parts of my body twitch or make nervous movements (describe): _____ |
| 0 | 1 | 2 | 47. | I have nightmares |
| 0 | 1 | 2 | 48. | I am not liked by other kids |
| 0 | 1 | 2 | 49. | I can do certain things better than most kids |
| 0 | 1 | 2 | 50. | I am too fearful or anxious |
| 0 | 1 | 2 | 51. | I feel dizzy or lightheaded |
| 0 | 1 | 2 | 52. | I feel too guilty |
| 0 | 1 | 2 | 53. | I eat too much |
| 0 | 1 | 2 | 54. | I feel overtired without good reason |
| 0 | 1 | 2 | 55. | I am overweight |
| | | | 56. | Physical problems without known medical cause: |
| 0 | 1 | 2 | a. | Aches or pains (not stomach or headaches) |
| 0 | 1 | 2 | b. | Headaches |
| 0 | 1 | 2 | c. | Nausea, feel sick |
| 0 | 1 | 2 | d. | Problems with eyes (not if corrected by glasses) (describe): _____ |
| 0 | 1 | 2 | e. | Rashes or other skin problems |
| 0 | 1 | 2 | f. | Stomachaches |
| 0 | 1 | 2 | g. | Vomiting, throwing up |
| 0 | 1 | 2 | h. | Other (describe): _____ |

*Please be sure you answered all items. Then see other side.*

***Please print. Be sure to answer all items.***

| 0 = Not True (as far as you know) | 1 = Somewhat or Sometimes True | 2 = Very True or Often True |
|---|---|---|

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 57. | I physically attack people | 0 | 1 | 2 | 84. | I do things other people think are strange (describe): _____ |
| 0 | 1 | 2 | 58. | I pick my skin or other parts of my body (describe): _____ | 0 | 1 | 2 | 85. | I have thoughts that other people would think are strange (describe): _____ |
| 0 | 1 | 2 | 59. | I can be pretty friendly | | | | | |
| 0 | 1 | 2 | 60. | I like to try new things | 0 | 1 | 2 | 86. | I am stubborn |
| 0 | 1 | 2 | 61. | My school work is poor | 0 | 1 | 2 | 87. | My moods or feelings change suddenly |
| 0 | 1 | 2 | 62. | I am poorly coordinated or clumsy | 0 | 1 | 2 | 88. | I enjoy being with people |
| 0 | 1 | 2 | 63. | I would rather be with older kids than kids my own age | 0 | 1 | 2 | 89. | I am suspicious |
| 0 | 1 | 2 | 64. | I would rather be with younger kids than kids my own age | 0 | 1 | 2 | 90. | I swear or use dirty language |
| | | | | | 0 | 1 | 2 | 91. | I think about killing myself |
| 0 | 1 | 2 | 65. | I refuse to talk | 0 | 1 | 2 | 92. | I like to make others laugh |
| 0 | 1 | 2 | 66. | I repeat certain acts over and over (describe): _____ | 0 | 1 | 2 | 93. | I talk too much |
| | | | | | 0 | 1 | 2 | 94. | I tease others a lot |
| | | | | | 0 | 1 | 2 | 95. | I have a hot temper |
| 0 | 1 | 2 | 67. | I run away from home | | | | | |
| 0 | 1 | 2 | 68. | I scream a lot | 0 | 1 | 2 | 96. | I think about sex too much |
| | | | | | 0 | 1 | 2 | 97. | I threaten to hurt people |
| 0 | 1 | 2 | 69. | I am secretive or keep things to myself | | | | | |
| 0 | 1 | 2 | 70. | I see things that other people think aren't there (describe): _____ | 0 | 1 | 2 | 98. | I like to help others |
| | | | | | 0 | 1 | 2 | 99. | I smoke, chew, or sniff tobacco |
| | | | | | 0 | 1 | 2 | 100. | I have trouble sleeping (describe): _____ |
| 0 | 1 | 2 | 71. | I am self-conscious or easily embarrassed | | | | | |
| 0 | 1 | 2 | 72. | I set fires | 0 | 1 | 2 | 101. | I cut classes or skip school |
| 0 | 1 | 2 | 73. | I can work well with my hands | 0 | 1 | 2 | 102. | I don't have much energy |
| 0 | 1 | 2 | 74. | I show off or clown | 0 | 1 | 2 | 103. | I am unhappy, sad, or depressed |
| 0 | 1 | 2 | 75. | I am too shy or timid | 0 | 1 | 2 | 104. | I am louder than other kids |
| 0 | 1 | 2 | 76. | I sleep less than most kids | 0 | 1 | 2 | 105. | I use drugs for nonmedical purposes (don't include alcohol or tobacco) (describe): _____ |
| 0 | 1 | 2 | 77. | I sleep more than most kids during day and/or night (describe): _____ | | | | | |
| 0 | 1 | 2 | 78. | I am inattentive or easily distracted | 0 | 1 | 2 | 106. | I like to be fair to others |
| 0 | 1 | 2 | 79. | I have a speech problem (describe): _____ | 0 | 1 | 2 | 107. | I enjoy a good joke |
| 0 | 1 | 2 | 80. | I stand up for my rights | 0 | 1 | 2 | 108. | I like to take life easy |
| | | | | | 0 | 1 | 2 | 109. | I try to help other people when I can |
| 0 | 1 | 2 | 81. | I steal at home | | | | | |
| 0 | 1 | 2 | 82. | I steal from places other than home | 0 | 1 | 2 | 110. | I wish I were of the opposite sex |
| | | | | | 0 | 1 | 2 | 111. | I keep from getting involved with others |
| 0 | 1 | 2 | 83. | I store up too many things I don't need (describe): _____ | 0 | 1 | 2 | 112. | I worry a lot |

***Please be sure you answered all items.***

**Please write down anything else that describes your feelings, behaviour, or interests:**

# Appendix H Child Behaviour Checklist (CBCL/6-18; Achenbach & Rescorla. 2001)

CHILD BEHAVIOUR CHECKLIST FOR AGES 6-18

| CHILD'S FULL NAME: First | Middle | Last |
|---|---|---|
| CHILD'S GENDER: ☐ Boy ☐ Girl | CHILD'S AGE: | CHILD'S ETHNIC GROUP OR RACE: |
| TODAY'S DATE: Day ____ Mo. ____ Year ____ | CHILD'S BIRTHDATE: Day ____ Mo. ____ Year ____ | |
| YEAR IN SCHOOL ____ NOT ATTENDING SCHOOL ☐ | Please fill out this form to reflect your view of the child's behaviour even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. Be sure to answer all items. | |

PARENTS' USUAL TYPE OF WORK, even if not working now. (Please be specific – for example, auto mechanic, school teacher, homemaker, labourer, lathe operator, shoe salesman, army sergeant.)

FATHER'S TYPE OF WORK: _____

MOTHER'S TYPE OF WORK: _____

THIS FORM FILLED OUT BY: (print your full name)

_____

Your gender: ☐ Male ☐ Female

Your relation to the child:

☐ Biological Parent ☐ Step Parent ☐ Grandparent

☐ Adoptive Parent ☐ Foster Parent ☐ Other (specify)

**I. Please list the sports your child most likes to take part in. For example: swimming, football, skating, skate boarding, bike riding, fishing, etc.**

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

| ☐ None | Less than average | Average | More than average | Don't know | Below average | Average | Above average | Don't know |
|---|---|---|---|---|---|---|---|---|
| a. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**II. Please list your child's favourite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, computers, signing, etc. (Do not include listening to radio or TV.)**

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

| ☐ None | Less than average | Average | More than average | Don't know | Below average | Average | Above average | Don't know |
|---|---|---|---|---|---|---|---|---|
| a. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**III. Please list any organizations, clubs, teams, or groups your child belongs to.**

Compared to others of the same age, how active is he/she in each?

| ☐ None | Less active | Average | More active | Don't know |
|---|---|---|---|---|
| a. _____ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ |

**IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Including both paid and unpaid jobs and chores.)**

Compared to others of the same age, how well does he/she carry them out?

| ☐ None | Below average | Average | Above average | Don't know |
|---|---|---|---|---|
| a. _____ | ☐ | ☐ | ☐ | ☐ |
| b. _____ | ☐ | ☐ | ☐ | ☐ |
| c. _____ | ☐ | ☐ | ☐ | ☐ |

*Be sure you answered all items. Then see other side.*

Page 1 of 4

V. 1. About how many close friends does your child have? (Do not include brothers & sisters)

☐ None ☐ 1 ☐ 2 or 3 ☐ 4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours? (Do not include brothers & sisters)

☐ Less than 1 ☐ 1 or 2 ☐ 3 or more

VI. Compared to others of his/her age, how well does your child:

| | Worse | Average | Better | |
|---|---|---|---|---|
| a. Get along with his/her brothers & sisters? | ☐ | ☐ | ☐ | ☐ Has no brothers or sisters |
| b. Get along with other kids? | ☐ | ☐ | ☐ | |
| c. Behave with his/her parents? | ☐ | ☐ | ☐ | |
| d. Play and work alone? | ☐ | ☐ | ☐ | |

VII. 1. Performance in academic subjects.

Does not attend school because: _____

*Check a box for each subject that child takes*

| | | | Failing | Below average | Average | Above average |
|---|---|---|---|---|---|---|
| Other academic subjects – for example: computer courses, foreign language, business. Do not include gym, shop, driver's ed., or other non-academic subjects. | a. | Reading, English, or Language Arts | ☐ | ☐ | ☐ | ☐ |
| | b. | History | ☐ | ☐ | ☐ | ☐ |
| | c. | Maths | ☐ | ☐ | ☐ | ☐ |
| | d. | Science | ☐ | ☐ | ☐ | ☐ |
| | e. | _____ | ☐ | ☐ | ☐ | ☐ |
| | f. | _____ | ☐ | ☐ | ☐ | ☐ |
| | g. | _____ | ☐ | ☐ | ☐ | ☐ |

2. Does your child receive special education or remedial services or attend a special class or special school?

☐ No ☐ Yes – kind of services, class, or school:

3. Has your child repeated a year in school?

☐ No ☐ Yes – year and reasons:

4. Has your child had any academic or other problems in school? ☐ No ☐ Yes – please describe:

When did these problems start? _____

Have these problems ended? ☐ No ☐ Yes – when?

Does your child have any illness or disability (either physical or mental)? ☐ No ☐ Yes – please describe:

What concerns you most about your child?

Please describe the best things about your child.

*Please be sure you answered all items.*

Below is a list of items that describe children and youths. For each item that describes your child *now or within the past 6 months*, please circle the *2* if the item is *very true or often true* of your child. Circle the *1* if the item is *somewhat or sometimes true* of your child. If the item is *not true* of your child, circle the *0*. Please answer all items as well as you can, even if some do not seem to apply to your child.

| 0 = Not true (as far as you know) | 1 = Somewhat or sometimes true | 2 = Very true or Often true |
|---|---|---|

| | | | | |
|---|---|---|---|---|
| 0 | 1 | 2 | 1. | Acts too young for his/her age |
| 0 | 1 | 2 | 2. | Drinks alcohol without parents' approval (describe): _____ _____ |
| 0 | 1 | 2 | 3. | Argues a lot |
| 0 | 1 | 2 | 4. | Fails to finish things he/she starts |
| 0 | 1 | 2 | 5. | There is very little he/she enjoys |
| 0 | 1 | 2 | 6. | Bowel movements outside toilet |
| 0 | 1 | 2 | 7. | Bragging, boasting |
| 0 | 1 | 2 | 8. | Can't concentrate, can't pay attention for long |
| 0 | 1 | 2 | 9. | Can't get his/her mind off certain thoughts; obsessions (describe): _____ _____ |
| 0 | 1 | 2 | 10. | Can't sit still, restless, or hyperactive |
| 0 | 1 | 2 | 11. | Clings to adults or too dependent |
| 0 | 1 | 2 | 12. | Complains of loneliness |
| 0 | 1 | 2 | 13. | Confused or seems to be in a fog |
| 0 | 1 | 2 | 14. | Cries a lot |
| 0 | 1 | 2 | 15. | Cruel to animals |
| 0 | 1 | 2 | 16. | Cruelty, bullying, or meanness to others |
| 0 | 1 | 2 | 17. | Daydreams or gets lost in his/her thoughts |
| 0 | 1 | 2 | 18. | Deliberately harms self or attempts suicide |
| 0 | 1 | 2 | 19. | Demands a lot of attention |
| 0 | 1 | 2 | 20. | Destroys his/her things |
| 0 | 1 | 2 | 21. | Destroys things belonging to his/her family or others |
| 0 | 1 | 2 | 22. | Disobedient at home |
| 0 | 1 | 2 | 23. | Disobedient at school |
| 0 | 1 | 2 | 24. | Doesn't eat well |
| 0 | 1 | 2 | 25. | Doesn't get along with other kids |
| 0 | 1 | 2 | 26. | Doesn't seem to feel guilty after misbehaving |
| 0 | 1 | 2 | 27. | Easily jealous |
| 0 | 1 | 2 | 28. | Breaks rules at home, school, or elsewhere |
| 0 | 1 | 2 | 29. | Fears certain animals, situations, or places, other than school (describe): _____ _____ |
| 0 | 1 | 2 | 30. | Fears going to school |
| 0 | 1 | 2 | 31. | Fears he/she might think or do something bad |
| 0 | 1 | 2 | 32. | Feels he/she has to be perfect |
| 0 | 1 | 2 | 33. | Feels or complains that no one loves him/her |
| 0 | 1 | 2 | 34. | Feels others are out to get him/her |
| 0 | 1 | 2 | 35. | Feels worthless or inferior |
| 0 | 1 | 2 | 36. | Gets hurt a lot, accident-prone |
| 0 | 1 | 2 | 37. | Gets in many fights |
| 0 | 1 | 2 | 38. | Gets teased a lot |
| 0 | 1 | 2 | 39. | Hangs around with others who get in trouble |
| 0 | 1 | 2 | 40. | Hears sound or voices that aren't there (describe): _____ _____ |
| 0 | 1 | 2 | 41. | Impulsive or acts without thinking |
| 0 | 1 | 2 | 42. | Would rather be alone than with others |
| 0 | 1 | 2 | 43. | Lying or cheating |
| 0 | 1 | 2 | 44. | Bites fingernails |
| 0 | 1 | 2 | 45. | Nervous, highstrung, or tense |
| 0 | 1 | 2 | 46. | Nervous movements or twitching (describe): _____ _____ |
| 0 | 1 | 2 | 47. | Nightmares |
| 0 | 1 | 2 | 48. | Not liked by other kids |
| 0 | 1 | 2 | 49. | Constipated, doesn't move bowels |
| 0 | 1 | 2 | 50. | Too fearful or anxious |
| 0 | 1 | 2 | 51. | Feels dizzy or lightheaded |
| 0 | 1 | 2 | 52. | Feels too guilty |
| 0 | 1 | 2 | 53. | Overeating |
| 0 | 1 | 2 | 54. | Overtired without good reason |
| 0 | 1 | 2 | 55. | Overweight |
| | | | 56. | Physical problems ***without known medical cause:*** |
| 0 | 1 | 2 | a. | Aches or pains (*not* stomach or headaches) |
| 0 | 1 | 2 | b. | Headaches |
| 0 | 1 | 2 | c. | Nausea, feels sick |
| 0 | 1 | 2 | d. | Problems with eyes (*not* if corrected by glasses) (describe): _____ _____ |
| 0 | 1 | 2 | e. | Rashes or other skin problems |
| 0 | 1 | 2 | f. | Stomachaches |
| 0 | 1 | 2 | g. | Vomiting, throwing up |
| 0 | 1 | 2 | h. | Other (describe): _____ _____ |

***Please be sure you answered all items. Then see other side.***

***Please print. Be sure to answer all items.***

| 0 = Not True (as far as you know) | 1 = Somewhat or Sometimes True | 2 = Very True or Often True |
|---|---|---|

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 57. | Physically attacks other people | 0 | 1 | 2 | 84. | Strange behaviour (describe): _____ |
| 0 | 1 | 2 | 58. | Picks nose, skin, or other parts of body (describe): _____ | | | | | _____ |
| | | | | _____ | 0 | 1 | 2 | 85. | Strange ideas (describe): _____ |
| | | | | | | | | | _____ |
| 0 | 1 | 2 | 59. | Plays with own sex parts in public | 0 | 1 | 2 | 86. | Stubborn, sullen, or irritable |
| 0 | 1 | 2 | 60. | Plays with own sex parts too much | 0 | 1 | 2 | 87. | Sudden changes in mood or feelings |
| 0 | 1 | 2 | 61. | Poor school work | 0 | 1 | 2 | 88. | Sulks a lot |
| 0 | 1 | 2 | 62. | Poorly coordinated or clumsy | 0 | 1 | 2 | 89. | Suspicious |
| 0 | 1 | 2 | 63. | Prefers being with older kids | 0 | 1 | 2 | 90. | Swearing or obscene language |
| 0 | 1 | 2 | 64. | Prefers being with younger kids | 0 | 1 | 2 | 91. | Talks about killing self |
| 0 | 1 | 2 | 65. | Refuses to talk | 0 | 1 | 2 | 92. | Talks or walks in sleep (describe): _____ |
| 0 | 1 | 2 | 66. | Repeats certain acts over and over; compulsions (describe): _____ | | | | | _____ |
| | | | | _____ | 0 | 1 | 2 | 93. | Talks too much |
| | | | | | 0 | 1 | 2 | 94. | Teases a lot |
| 0 | 1 | 2 | 67. | Runs away from home | 0 | 1 | 2 | 95. | Temper tantrums or hot temper |
| 0 | 1 | 2 | 68. | Screams a lot | | | | | |
| | | | | | 0 | 1 | 2 | 96. | Thinks about sex too much |
| 0 | 1 | 2 | 69. | Secretive, keeps things to self | 0 | 1 | 2 | 97. | Threatens people |
| 0 | 1 | 2 | 70. | Sees things that aren't there (describe): | | | | | |
| | | | | _____ | 0 | 1 | 2 | 98. | Thumb-sucking |
| | | | | _____ | 0 | 1 | 2 | 99. | Smokes, chews, or sniffs tobacco |
| 0 | 1 | 2 | 71. | Self-conscious or easily embarrassed | 0 | 1 | 2 | 100. | Trouble sleeping (describe): _____ |
| 0 | 1 | 2 | 72. | Sets fires | | | | | _____ |
| | | | | | 0 | 1 | 2 | 101. | Truancy, skips school |
| 0 | 1 | 2 | 73. | Sexual problems (describe): _____ | | | | | |
| | | | | _____ | 0 | 1 | 2 | 102. | Underactive, slow moving, or lacks energy |
| 0 | 1 | 2 | 74. | Showing off or clowning | 0 | 1 | 2 | 103. | Unhappy, sad, or depressed |
| 0 | 1 | 2 | 75. | Too shy or timid | 0 | 1 | 2 | 104. | Unusually loud |
| 0 | 1 | 2 | 76. | Sleeps less than most kids | 0 | 1 | 2 | 105. | Uses drugs for nonmedical purposes (don't include alcohol or tobacco) (describe): |
| 0 | 1 | 2 | 77. | Sleeps more than most kids during day and/or night (describe): _____ | | | | | _____ |
| | | | | _____ | | | | | _____ |
| 0 | 1 | 2 | 78. | Inattentive or easily distracted | 0 | 1 | 2 | 106. | Vandalism |
| | | | | | 0 | 1 | 2 | 107. | Wets self during the day |
| 0 | 1 | 2 | 79. | Speech problem (describe): _____ | | | | | |
| | | | | _____ | 0 | 1 | 2 | 108. | Wets the bed |
| 0 | 1 | 2 | 80. | Stares blankly | 0 | 1 | 2 | 109. | Whining |
| 0 | 1 | 2 | 81. | Steals at home | 0 | 1 | 2 | 110. | Wishes to be of opposite sex |
| 0 | 1 | 2 | 82. | Steals outside the home | 0 | 1 | 2 | 111. | Withdrawn, doesn't get involved with others |
| 0 | 1 | 2 | 83. | Stores up too many things he/she doesn't need (describe): _____ | | | | | |
| | | | | _____ | 0 | 1 | 2 | 112. | Worries |
| | | | | _____ | | | | 113. | Please write in any problems your child has that were not listed above: |
| | | | | | 0 | 1 | 2 | | _____ |
| | | | | | 0 | 1 | 2 | | _____ |
| | | | | | 0 | 1 | 2 | | _____ |

***Please be sure you answered all items.***

# Appendix I Griffith Empathy Measure Parent Report (GEM-PR; Dadds et al, 2008)

**GEM**

ID: _____ Date completed: _____

**Please read each statement below and indicate the extent to which you agree or disagree. *Mark your answers by placing a cross on the appropriate point on the line.* Do not leave any statement unrated.**

Example: If you somewhat agree with the statement, you would place a cross as indicated below.

Strongly disagree — Strongly agree

O O O O O X O O O
-4 -3 -2 -1 0 1 2 3 4

| | Strongly disagree — Strongly agree |
|---|---|
| 1. It makes her/him sad to see another child who can't find anyone to play with. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 2. She/He treats dogs and cats as though they have feelings like people. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 3. She/He reacts badly when he/she sees people kiss and hug in public. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 4. She/He feels sorry for another child who is upset. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 5. She/He becomes sad when other children around him/her are sad. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 6. She/He doesn't understand why other people cry out of happiness. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 7. She/He gets upset when he/she sees another child being punished for being naughty. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 8. She/He seems to react to the moods of people around him/her. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 9. She/He gets upset when another person is acting upset. | O O O O O O O O O<br>-4 -3 -2 -1 0 1 2 3 4 |

| | |
|---|---|
| 10. She/He likes to watch other people open presents, even when he/she doesn't get one themselves. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 11. Seeing another child who is crying makes her/him cry or get upset. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 12. She/He gets upset when he/she sees another child being hurt. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 13. When I get sad she/he doesn't seem to notice. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 14. Seeing another child laugh makes her/him laugh. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 15. Sad movies or TV shows make her/him sad. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 16. She/He becomes nervous when other children around him/her are nervous. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 17. It's hard for her/him to understand why someone else gets upset. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 18. She/He gets upset when he/she sees an animal being hurt. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 19. She/He feels sad for other people who are physically disabled (e.g., in a wheelchair). | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 20. She/He rarely understands why other people cry. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 21. She/He would eat the last cookie in the cookie jar, even when he/she knows that someone else wants it. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 22. She/He acts happy when another person is acting happy. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |
| 23. She/He can continue to feel okay even if people around are upset. | O__O__O__O__O__O__O__O__O<br>-4 -3 -2 -1 0 1 2 3 4 |

***Please make sure that you have answered all questions. Thank you!***

# Appendix J Brief Qualitative Interview

## Qualitative Interview Schedule:

### (Version 1.0, 26/04/2018)

Interview Schedule

(P = Prompt)

Thank you for agreeing to take part in this research project. I've come to talk to you today about the intervention that you took part in at the university and ask you some questions about how things are for you at the moment. The aim of this interview is to gather information surrounding your experiences of taking part in the intervention and whether you think it did anything for your behaviour.

All data will be anonymised to maintain confidentiality and any identifiable characteristics from interview transcript will be removed or changed to protect your identity. The raw data will only be shared between the researchers involved in the project (Nikki Samos, Guy Alison, Hedwig Eisenbarth and Hanna Kovshoff). I will comply with the Data Protection Act (1998) and University policy when handling your data. This involves storage of the anonymised transcript until the end of the project on a password protected computer. The information will be also be stored on an encrypted password-protected USB stick, which will remain confidential. All of your data will be destroyed, without your legal rights being affected.

Do you have any questions about the interview?

1. Opening Question: How are you today and how things at school at the moment?

2. Could you tell me about your experience of taking part in the intervention?

3. What parts of the intervention did you like?
   P – Why/how? What was helpful? How have you found it helpful?

4. What parts of the intervention did you not like?
   P - Why/how? What would have been more helpful? What was unhelpful?

5. Do you think the intervention influenced your behaviour at home/school/with your friends?
   P – Why/how?

6. Do you think the intervention changed anything else for you at home/school or/with your friends?
   P – Why/how?

Thank you very much for talking to me today, do you have anything you would like to add or ask about? Any questions or concerns?

# Appendix K Ethical Information

## K.1 Parent Information Sheet

## Parent Information Sheet: (Version 2.0, 26/04/2018)

**Study Title:** *Training of Emotion Recognition in Children and Teenagers*

**Researchers:** Nikki Samos, Guy Allison, Hedwig Eisenbarth and Graeme Fairchild
**ERGO Study ID number:** 30082

**Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.**

**What is the research about?**

We are interested in finding out whether emotion recognition can be improved in children and teenagers. We are also interested in seeing whether improving emotion recognition has any positive effects on young people's behaviour. To do this, we are inviting your child to take part in a study that involves teaching them to get better at recognising other people's facial expressions. We will meet up with your child to ask them questions about their typical moods and behaviours. If you agree to take part, we will ask you the same questions and ask you to fill in some questionnaires (for example, about your child's personality). If your fit the inclusion criteria for the study, we will invite them to take part in the study at their school.

At the school, we will ask your child to complete some computer tasks to see how good they are at recognising facial expressions. We will also ask them to complete a few questionnaires. Some of the volunteers will then be invited to take part in an emotion training programme at their school. The other volunteers will be in the waiting group and will receive the training at a later date. This training programme will be made up of 2 sessions, each lasting around 2 hours, which will be scheduled over a period of 2 weeks. One week after completing the training, we will invite your child to complete a similar set of computer tasks and questionnaires at their school, to check if the training has worked. To see if the emotion recognition training has improved your child's behaviour, we would like to interview both you and your child again three-months later. Your child will also be asked to complete computer tasks one final time to see how good they are at recognising emotions. Information recorded by your child's school about their behaviour whilst they are at school will also be collected.

**Why has your child been chosen?**

We are recruiting children and teenagers aged between 10 and 18 years through schools, colleges, pupil referral units, education centres, the Southampton Youth Offending Service, and the Hampshire Youth Offending Team. It is up to you and your child to decide whether or not to take part. If you do, you will be given this information sheet to keep and asked to sign a consent form. If your child is aged below 16, you will also have to give consent for them to

take part. You and your child are still free to stop taking part at any time and without giving a reason. You can also choose to opt out of any part of the study.

**What will happen to me if I take part?**

We would first like to meet up with you and your child to explain what the study involves and find out whether your child fits the inclusion criteria for the study. We will ask your child some questions about your child's typical moods and behaviours and their life experiences. We would also like to ask you the same questions in a separate room. This should take about 1 ¼ hours and you and your child would be paid for your time (£10 each). If your child fits the inclusion criteria, and they still wish to take part, we will invite them to take part in the next part of the study at their school.

The next part of the study will take place at your child's school on a separate day. The tasks will be explained to your child and we will answer any questions they may have. We will ask your child to look at photographs of other people's facial expressions and to identify the emotion they think the person is feeling. We will also ask your child to watch some video-clips and tell us which emotion the person in the clip is feeling, as well as how they feel when watching the clip. We will also ask them to fill in a few questionnaires. This will all take around 2 hours.

Following this, some of the volunteers will be asked to take part in an emotion training programme, whilst some volunteers will complete the intervention at a later stage (waiting list group). The training will be split into 2 sessions lasting around 2 hours each. These sessions will take place at your child's school. The first half of the intervention will teach your child how to recognise the basic emotions (happiness, anger, surprise, fear, disgust, and sadness). The second half of the intervention will aim to make them more confident in their judgements, help them to recognise emotions that are less intense, and teach them how to interpret social situations. All of these sessions will be led by a researcher and your child will be asked to complete paper and computer-based tasks, as well as thinking about what they've learnt between sessions.

Following the intervention, or the waiting period, we will ask your child to complete the same computer tasks and questionnaires that they completed before the intervention. This will last around 2 hours. We will also interview you and your child again 3 months later and ask your child if they would like to complete the same computer tasks they completed before the intervention for a final time. Both of you will receive £10 for this.

**Are there any benefits in my taking part?**

We will pay you for your time (£20 for your child and you for the two interviews) and cover your travel expenses if necessary. In addition, you will have helped us to understand whether emotion recognition can be improved in teenagers, and test whether this has any positive effects on young people's behaviour. We also hope that taking part in the intervention might benefit you directly – it might help your child to control their temper or get on better with the people in your life.

**Are there any risks involved?**

There are no known risks or side effects of the emotion training programme. However, sometimes interventions can cause unexpected and unintended negative effects on young people's behaviours and feelings. Although this is unlikely to happen with this intervention, if you or your family are finding that it is having a negative impact on you, we will stop the intervention and offer follow up support for you and your family. If you or your child feel uncomfortable or upset, you can stop taking part in the study at any time.

There is a small possibility that you or your child may become upset during the home interview or when filling in questionnaires about potentially sensitive topics (for example, we will be asking you whether anything traumatic has happened to your child in the last year, like being in a car accident). We will also ask you about topics such as bullying or other sources of psychological or physical harm. Please note that you and your child will be able to take breaks or leave out questions if needed. However, we can put you in touch with organisations that can offer support, such as 'No Limits', after the interview or the study is over.

**Will information about me be kept confidential?**

Yes. If you and your child decide to take part in the study, we will take the following steps to ensure confidentiality. Your identities will be protected by changing your names to a subject code during data collection and analysis. Your personal details will only be kept if you agree to this. We can assure you that any information you give us will be treated as confidential, not shared with your child, and you can leave questions out if you are not comfortable with them. If the study is written up for publication, the paper(s) will not include names or any other identifying details.

The only time when we might have to talk to people outside of the research team is: if you tell us something that makes us concerned about your child's safety or well-being, or the safety of another member of your family. In this instance, we may be duty bound to refer you onto someone who may be able to help, such as your GP. We will not pass on this information to anyone else without talking to you first.

**What happens if I change my mind?**

You and your child are free to stop taking part in the study at any time, without explaining why. If you don't object, we may use the data that we have collected up to that point.

**What happens if something goes wrong?**

If you have a concern or complaint regarding any aspect of this study, you can contact the Research Governance Office at Southampton University on 02380 595058 or rgoinfo@soton.ac.uk who will be happy to help you.

**Where can I get more information?**

Thank you for taking the time to read this information sheet. If you would like to talk to an independent person regarding your involvement in this research we would recommend you speak with your family, friends, or teachers.

If you would like more information or you have any questions, please feel free to contact Guy by e-mail or telephone (Guy Allison: ga6g12@soton.ac.uk)

Thanks for reading this – Nikki Samos, Guy Allison, Hedwig Eisenbarth and Graeme Fairchild.

## K.2 Parent Consent Form

# CONSENT FORM – Parent Version (Version 2.0: 26/04/2018)

**Study title:** *Training of Emotion Recognition in Children and Teenagers*

**Researchers:** Nikki Samos, Guy Allison, Hedwig Eisenbarth, and Graeme Fairchild
**ERGO Study ID number:** 30082

We are interested in finding out whether we can improve children and teenagers' ability to recognise others' feelings. We are also interested in seeing whether improving their ability to recognise emotions has any positive effects on their behaviour. We will give you a description of the study and its aims, and ask you and your child to take part in a short interview, which will involve questions about your child's mood and behaviour, at your home. In total, the interview is expected to take around 1 ¼ hours and we will pay you and your child **£10** each.

If your child fits the inclusion criteria for the study, we will invite them to complete some computer tasks measuring emotion recognition and fill in a few questionnaires at their school. This session is expected to last around 2 hours. Following this, some of the volunteers will take part in the emotion training programme, whereas some volunteers will be asked to join a waiting list to receive the emotion training programme at a later stage. The emotion training programme will take place at your child's school. This will involve two sessions, each lasting around 2 hours, about a week apart.

At the end of the programme, we will invite your child to complete the same computer tasks and fill in some questionnaires at their school once again. We will also collect recorded information about your child's behaviour whilst they are at school. Lastly, we want to see whether the emotion training programme has any lasting positive effects, so we'd like to interview all young people and parents 3 months later and ask your child to complete the same computer tasks once more - you will be paid **£10** each.

To give consent to participate in the study, please initial the boxes below to show that you agree with each of the statements, and sign and date this form.

I have read and understood the information sheet **(26/04/2018 /Version no 2.0)** and have had the opportunity to ask questions about the study.

I agree to take part in this research project and agree for my data to be used for the purpose of this study.

I agree to be contacted to be interviewed again three months after your child has completed the emotion training programme. ☐

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected. ☐

I am happy to be contacted regarding other research projects in the Developmental Brain-Behaviour Laboratory. I therefore consent to the research team retaining my personal details on a database, kept separately from the research data detailed above. **Yes/No**

The 'validity' of my consent is conditional upon the researchers complying with the Data Protection Act and I understand that I can request my details be removed at any time.

Name of parent/carer (print name)…….

Signature of parent……..

Date……

## K.3 Participant Information Sheet

UNIVERSITY OF Southampton

# Participant Information Sheet – 10-15 years:

## (Version 2.0, 26/04/2018)

**Study Title:** *Training of Emotion Recognition in Children and Teenagers*

**Researchers:** Guy Allison, Nikki Samos,Hedwig Eisenbarth, and Graeme Fairchild
**ERGO Study ID number:** 30082

**Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.**

**What is the research about?**

We are interested in finding out whether emotion recognition can be improved in children and teenagers. We are also interested in seeing whether improving emotion recognition has any positive effects on young people's behaviour. To do this, we are inviting you to take part in a study that involves teaching you to get better at recognising other people's facial expressions. We will meet up with you to ask you questions about your normal moods and behaviours. We will also ask your parent or carer the same questions and ask them to fill in some questionnaires (for example, about your behaviour). One of your teachers will also be asked to complete a questionnaire about your behaviour and your school will be asked to share information they keep about your behaviour whilst you're at school. If you meet the requirements of the study, we will invite you to take part in the study at your school.

At school, we will ask you to complete some computer tasks to see how good you are at recognising facial expressions. We will also ask you to complete a few questionnaires. Some of the volunteers will then be invited to take part in an emotion training programme at their school. The other volunteers will take part in the training programme three months later. This training programme will be made up of 2 sessions, each lasting around 2 hours, which will take place over a period of 2 weeks. One week after completing the training, we will invite you to complete a similar set of computer tasks and questionnaires at your school, to check if the training has worked. To see if the emotion

recognition training has improved your behaviour, we would like to interview you and your parent or carer again three-months later, interview you to ask you some questions about your opinions and experiences of the intervention and if you would like to complete the computer tasks once more. Volunteers who did not complete the training programme earlier will take part in the training after this interview.

**Why have I been chosen?**

We are recruiting children and teenagers aged between 10 and 18 years through schools, colleges, pupil referral units, education centres, the Southampton Youth Offending Service, and the Hampshire Youth Offending Team. It is up to you to decide whether or not to take part. As you are younger than 16 years, your parent or carer will have to give permission for you to take part in the study. You will also have to give permission if you want to take part in the study. You are still free to stop taking part at any time and without giving a reason. You can also choose to miss out any part of the study if you do not want to do it.

**What will happen to me if I take part?**

We would first like to meet up with you and your parent or carer to explain what the study involves and find out whether you will be able to take part in the study. We will ask you some questions about your normal moods and behaviours. We would also like to ask your parent or carer the same questions in a separate room. This should take about 1 ¼ hours and you and your parent/carer would be paid for your time (£10 each). If you fit the requirements of the study and you still wish to take part, we will invite you to take part in the next part of the study at your school.

The next part of the study will take place at your school on a separate day. The tasks will be explained to you and we will answer any questions you may have. We will ask you to look at photographs of other people's facial expressions and select the emotion you think the person is feeling. We will also ask you to watch some video-clips and tell us which emotion the person in the video-clip is feeling, as well as how you feel when watching the video-clip. We will also ask you to fill in a few questionnaires.  This will all take around 2 hours.

Following this, some of the volunteers will be asked to take part in an emotion training programme, whilst some volunteers will complete the intervention three-months later (waiting list group). The training will be split into 2 sessions lasting around 2 hours each. These sessions will take place at your school over two weeks. Volunteers in the waiting-list group will not take part in the training at this point. The first half of the intervention will teach you how to recognise the basic emotions (happiness, anger, surprise, fear, disgust, and sadness). The second half of the intervention will aim to make you more confident in your judgements, help you to recognise emotions that are less intense, and teach you how to interpret social situations. All of these sessions will be led by a researcher and you will be asked to complete paper and computer-based tasks, as well as thinking about what you've learnt between sessions.

Following the intervention, or the waiting period, we will ask you to complete the same computer tasks and questionnaires that you completed before the intervention. This will last around 2 hours. We will also interview you and your parent/carer again 3 months later and interview you to ask you some questions about your opinions and experiences of the intervention. We will also ask you to complete the computer tasks from before the intervention once more. Both of you will receive £10 for this. Volunteers in the waiting-list group will then take part in the training programme after this interview.

**Are there any benefits in my taking part?**

We will pay you for your time (£20 for you and your parent or care for the two interviews) and cover your travel expenses if necessary. You will have helped us to understand whether emotion recognition can be improved in young people, and test whether this has any positive effects on young people's behaviour. We also hope that taking part in the study might benefit you directly – it might help you to control your temper or get on better with the people in your life.

**Are there any risks involved?**

There are no known risks or side effects of the emotion training programme. However, sometimes interventions can cause unexpected and unintended negative effects on young people's behaviours and feelings. Although this is unlikely to happen with this intervention, if you or your family are finding that

it is having a negative impact on you, we will stop the training programme and offer follow up support for you and your family. If you feel uncomfortable or upset, you can stop taking part in the study at any time.

There is a small possibility that you or your parent or carer may become upset during the home interview or when filling in questionnaires about potentially sensitive topics (for example, we will be asking you whether anything upsetting has happened to you in the last year, like being in a car accident). We will also ask your parent/carer about topics such as bullying. Please note that you and your parent or carer will be able to take breaks or leave out questions if needed. However, we can put you in touch with organisations that can offer support, such as 'No Limits', after the interview or the study is over.

**Will information about me be kept confidential?**

Yes. If you decide to take part in the study, we will take the following steps to ensure confidentiality. Your identity will be protected by changing your name to a subject code during data collection and analysis. Your personal details will only be kept if you agree to this. Any information you give us will be treated as confidential, not shown to your parent or carer or teachers, and you can leave questions out if you are not comfortable with them. If the study is written up for publication, the paper(s) will not include names or any other identifying details.

The only time when we might have to talk to people outside of the research team is: if you tell us something that makes us concerned about your safety or well-being, or the safety of another member of your family. In this instance, we may be duty bound to refer you onto someone who may be able to help, such as your GP. We will not pass on this information to anyone else without talking to you first.

**What happens if I change my mind?**

You are free to stop taking part in the study at any time, without explaining why. If you give us permission, we may use the data that we have collected up to that point.

**What happens if something goes wrong?**

If you have a concern or complaint regarding any aspect of this study, you can contact the Research Governance Office at Southampton University on 02380 595058 or rgoinfo@soton.ac.uk who will be happy to help you.

**Where can I get more information?**

Thank you for taking the time to read this information sheet. If you would like to talk to an independent person regarding your involvement in this research we would recommend you speak with your family, friends, or teachers.

If you would like more information, you have any questions, or you would like to take part in the study, please feel free to contact Guy by e-mail or telephone (Guy Allison: ga6g12@soton.ac.uk; 02380 596652 / 07474 273346).

Thanks for reading this – Guy Allison, Nikki Samos, Hedwig Eisenbarth, and Graeme Fairchild.

## K.4 Participant Consent Form

# CONSENT FORM (Version 2.0: 6/04/2018)

**Study title:** *Training of Emotion Recognition in Children and Teenagers*

**Researchers:** Guy Allison, Nikki Samos, Hedwig Eisenbarth, and Graeme Fairchild
**ERGO Study ID number:** 30082

We are interested in finding out whether we can improve children and teenagers' ability to recognise others' feelings. We are also interested in seeing whether improving their ability to recognise emotions has any positive effects on their behaviour. We will give you a description of the study and its aims, and ask you and your parent or carer to take part in a short interview at your home. In total, the interview is expected to take around 1 ¼ hours and we will pay you and your parent/carer **£10** each.

If you fit the inclusion criteria for the study, we will ask you to complete some computer tasks measuring emotion recognition and fill in a few questionnaires at your school. This session is expected to last around 2 hours. Following this, some of the volunteers will take part in the emotion training programme, whereas some volunteers will be asked to join a waiting list to receive the emotion training programme at a later stage. The emotion training programme will take place at your school. This will involve two sessions, each lasting around 2 hours, about a week apart.

At the end of the programme, we will ask you to complete some computer tasks and fill in some questionnaires at your school once again. We will also collect information from your school about your behaviour whilst you are at school. Lastly, we want to see whether the emotion training programme has any lasting positive effects, so we'd like to interview all young people and parents 3 months later and ask participants to complete some computer tasks once more - you will be paid **£10** each.

To give consent to participate in the study, please initial the boxes below to show that you agree with each of the statements, and sign and date this form.

I have read and understood the information sheet **(26/04/2018 /Version no 2.0)** and have had the opportunity to ask questions about the study. ☐

☐

I agree to take part in this research project and agree for my data to be used for the purpose of this study.

I agree to be contacted to be interviewed again three months after emotion training programme. ☐

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected.

I am happy to be contacted regarding other research projects in the Developmental Brain-Behaviour Laboratory. I therefore consent to the research team retaining my personal details on a database, kept separately from the research data detailed above.
The 'validity' of my consent is conditional upon the researchers complying with the Data Protection Act and I understand that I can request my details be removed at any time.

**Yes/No**

- If participant is age 16 or over, please could they sign below to give consent:

Name of participant (print name)……

Signature of participant……

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Date……
……

- If participant is under the age of 16, consent is required from their parent/carer, please could they sign below:

Name of parent/carer (print name)……

Signature of parent……

Date……

- The teenage participant should sign below to indicate their willingness to take part:

Name of participant (print name)……

Signature of participant……

Date……

# List of References

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. University of Vermont. Research Center for Children, Youth, & Families, Burlington.

Achenbach, T.M. (1991). *Manual for the child behavior checklist and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.

Adams, W. J., Gray, K. L., Garner, M., & Graf, E. W. (2010). High-level face adaptation without awareness. *Psychological Science*, *21,* 205-210. doi: 10.1177/0956797609359508

Adler, N. E., & Ostrove, J. M. (1999). Socioeconomic status and health: what we know and what we don't. *Annals of the New York academy of Sciences, 896*(1), 3-15.

Agnoli, S., Mancini, G., Pozzoli, T., Baldaro, B., Russo, P. M., Surcinelli, P. (2012). The interaction between emotional intelligence and cognitive ability in predicting scholastic performance in school-aged children. *Personality and Individual Differences, 53,* 660–665. doi:10.1016/j.paid.2012.05.020

Aka, B., & Gencoz, T. (2014). Perceived Parenting Styles, Emotion Recognition and Regulation in Relation to Psychological Well-being. *Procedia - Social and Behavioral Sciences, 159,* 529-533.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders, Fifth Edition*. Arlington, VA: American Psychiatric Association.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.).* Washington, DC: American Psychiatric Association.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders, Fifth Edition*. Arlington, VA: American Psychiatric Association.

Asher, S. R., & Coie, J. D. (1990). *Peer rejection in childhood.* New York, NY: Cambridge University Press.

Ashton, P. T., & Webb, R. B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement.* New York: Longman.

Bardone, A. M., Moffitt, T. E., Caspi, A., Dickson, N., Stanton, W. R., & Silva, P. A. (1998). Adult physical health outcomes of adolescent girls with conduct disorder, depression, and anxiety. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 594-601.

Baum, A., Garofalo, J. P., & Yali, A. M. (1999). Socioeconomic Status and Chronic Stress. Does Stress Account for SES Effects on Health? *Annals of the New York Academy of Sciences, 896*, 131-44.

Birmaher, B., Ehmann, M., Axelson, D. A., Goldstein, B, I., Monk, K., Kalas C., …Brent DA (2009) Schedule for affective disorders and schizophrenia for school-age children (K-SADS-PL) for the assessment of preschool children–a preliminary psychometric study. *Journal of Psychiatric Research, 43*, 680-686.

Blair, R. J. R., (2005). Applying a cognitive neuroscience perspective to the disorder of psychopathy. *Development and Psychopathology*, *17,* 865-891. doi:10.1017/S0954579405050418

Blair, R. J. R., Colledge, E., Murray, L., & Mitchell, D. G. V. (2001). A Selective Impairment in the Processing of Sad and Fearful Expressions in Children with Psychopathic Tendencies. *Journal of Abnormal Child Psychology*, *29,* 491-498. doi:10.1023/A:1012225108281

Bowen, K. L., Morgan, J. E., Moore, S. C., & van Goozen, S. H. M. (2014). Young Offenders' Emotion Recognition Dysfunction Across Emotion Intensities: Explaining Variation Using Psychopathic Traits, Conduct Disorder and Offense

Severity. *Journal of Psychopathology and Behavioral Assessment, 36,* 60-73. doi: 10.1007/s10862-013-9368-z

Boyatzis, C. J., Chazan, E., & Ting, C. Z. (1993). Preschool children's decoding of facial emotions. *Journal of Genetic Psychology, 154,* 375-382

Brannick, M. T., Wahi , M. M., Arce, M., & Johnson, H. A. (2009). Comparison of trait and ability measures of emotional intelligence in medical students. *Medical Education, 43,* 1062– 1068.

Bynner, J., & Parsons, S. (2002). Social exclusion and the transition from school to work: The case of young people not in education, employment or training. *Journal of Vocational Behavior, 60,* 289-309.

Christle, C., Nelson, C. M., & Jolivette, K. (2004). School characteristics related to the use of suspension. *Education & Treatment of Children, 27*(4), 509-526.

Collishaw, S., Maughan, B., Goodman, R., & Pickles, A. (2004). Time trends in adolescent mental health. *Journal of Child Psychology and Psychiatry, 45*(8), 1350-62.

Côté, S., Kraus, M. W., Cheng, B. H., Oveis, C., van der Löwe, I., Lian, H., & Keltner, D. (2011). Social power facilitates the effect of prosocial orientation on empathic accuracy. *Journal of Personality and Social Psychology, 101,* 217–232.

Critical Appraisal Skills Programme. (2017). CASP Qualitative Research Checklist [online]. Retrieved from http://www.casp-uk.net/casp-tools-checklists

Critical Appraisal Skills Programme. (2017). CASP Qualitative Research Checklist [online]. Retrieved from http://www.casp-uk.net/casp-tools-checklists

Dadds M. R., Hunter, K., Hawes, D. J., Frost, A. D., Vassallo, S., Bunn, P., …El Masry, Y. (2008). *Child Psychiatry and Human Development, 39*(2), 111.

Dadds, M. R., Cauchi, A. J., Wimalaweera, S., Hawes, D. J., & Brennan, J. (2012). Outcomes, moderators, and mediators of empathic-emotion recognition training for complex conduct problems in childhood. *Psychiatry Research*, *199*, 201-207. doi: 10.1016/j.psychres.2012.04.033

Dadds, M. R., Hunter, K., Hawes, D. J., Frost, A. D. J., Vassallo, S., Bunn, P., … Masry, Y. E. (2008). A measure of cognitive and affective empathy in children using parent ratings. *Child Psychiatry and Human Development*, *39*(2), 111-122. doi:10.1007/s10578-007-0075-4

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalogue of Selected Documents in Psychology, 10,* 85.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*, 113-126.

Dawel, A., O'Kearney, R., McKone, E., & Palermo, R. (2012). Not just fear and sadness: Meta-analytic evidence of pervasive emotion recognition deficits for facial and vocal expressions in psychopathy. *Neuroscience and Biobehavioral Reviews, 36,* 2288-2304.

De Sonneville, L. M. J., Verschoor, C. A., Njiokiktjien, C., Op het Veld, V., Toorenaar, N., & Vranken, M. (2002). Facial identity and facial emotions: Speed, accuracy, and processing strategies in children and adults. *Journal of Clinical and Experimental Neuropsychology, 24*(2), 200-13.

Deci, E. L. & Ryan, R. M. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist, 55*(1), 68-78.

Department for Education (2017) *GCSE new grading scale: factsheets*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/706496/GCSE_Factsheet_employerFEHE_May_2018_.pdf

Department for Education (DFE), (2010). Social and emotional aspects of learning (SEAL) programme in secondary schools: national evaluation. Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/181718/DFE-RR049.pdf

Department for Education (DfE), (2014). Closing the gap with the new primary national curriculum. Retrieved online https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/349288/closing-the-gap-with-the-new-primary-national-curriculum.pdf

Derdikman-Eiron, R., Indredavik, M. S., Bratberg, G. H., Taraldsen, G., Bakken, I. J., & Colton, M. (2011). Gender differences in subjective well-being, self-esteem and psychosocial functioning in adolescents symptoms of anxiety and depression: Findings from the Nord- Trøndelag health study. *Scandinavian Journal of Psychology, 52,* 261–267.

Dodge, K. A., Godwin, J., & The Conduct Problems Prevention Research Group. (2013). Social-information-processing patterns mediate the impact of preventive intervention on adolescent antisocial behavior. *Psychological Science, 24*(4), 456-65. doi:10.1177/0956797612457394

Downey, L. A., Mountstephen, J., Lloyd, J., Hansen, K., & Stough, C. (2008). Emotional intelligence and scholastic achievement in Australian adolescents. *Australian Journal of Psychology, 60,* 10-17.

Dubben, H. H., & Beck-Bornholdt, H. P. (2005). Systematic review of publication bias in studies on publication bias. *BMJ, 331,* 433-434.

Dunlap, G., Strain, P., Fox, L., Carta, J., Conroy, M., Smith, B., …Sowell, C., (2006) Prevention and intervention with young children's challenging behavior: Perspectives regarding current knowledge. *Behavioral Disorders, 32*(1): 29–45.

Durand, K., Gallay, M., Seigneuric, A., Robichon, F., & Baudouin, J. (2007). The development of facial emotion recognition: The role of configural information. *Journal of experimental child psychology, 97,* 14-27.

Easter, J., McClure E. B., Monk, C. S., Dhanani, M., Hodgdon, H., Leibenluft, E., Charney, D., Pine, S., Ernst, M. (2005). Emotion recognition deficits in pediatric anxiety disorders: implications for amygdala research. *Journal of Child and Adolescent Psychopharmacology, 15,* 563-70.

Eisenberg, N., & Spinrad, T. (2004). Emotion-related regulation: Sharpening the definition. *Child Development, 75,* 334–339.

Ekman, P. (2016). What Scientists Who Study Emotion Agree About. *Perspectives on Psychological Science, 11*(1), 31-34.

Ekman, P., & Friesen, W. V. (1975). *Pictures of facial affect*. Palo Alto, CA: Consulting Psychologists Press.

Ekman, P., Friesen, W. V., & Ellsworth, P. (1972). *Emotion in human face: Guidelines for research and an integration of findings.* New York, NY: Pergamon Press.

Engel, R. J., & Schutt, R. K. (2008). *The Practice of Research in Social Work.* Thousand Oaks, CA: Sage.

Epstein, J. L., & Sheldon, S. B. (2002). Present and accounted for: Improving student attendance through family and community involvement. *Journal of Educational Research, 95,* 308-318.

Eyberg, S. M., & Robinson, E. A. (1982). Parent-child interaction therapy: Effects on family functioning. *Journal of Clinical Child Psychology, 11,* 130-137.

Fairchild, G., van Goozen, S. H. M., Calder, A. J., Stollery, S. J., & Goodyer, I. M. (2009). Deficits in facial expression recognition in male adolescents with early-onset or adolescence-onset conduct disorder. *Journal of Child Psychology and Psychiatry, 50*(5), 627-636. doi:10.1111/j.1469-7610.2008.02020.x

Fanti K. A. (2013). Individual, social, and behavioral factors associated with co-occurring conduct problems and callous-unemotional traits. *Journal of Abnormal Child Psychology, 41*(5), 811-824. doi:10.1007/s10802-013-9726-z 23408037

Fanti, K., Frick, P. J., & Georgiou, S. (2009). Linking callous-unemotional traits to instrumental and non-instrumental forms of aggression. *Journal of Psychopathology and Behavioral Assessment, 31,* 285-298. doi:10.1007/s10862-008-9111-3

Feldman, R., Singer, M. & Zagoory, O. (2010). Touch attenuates infants' physiological reactivity to stress. Developmental Science, 13(2), 271–278.

Fergusson, D. M., Horwood, L. J., & Ridder, E. M. (2005). Show me the child at seven: The consequences of conduct problems in childhood for psychosocial functioning in adulthood. *Journal of Child Psychology & Psychiatry, 46,* 837-849. doi:10.1111/j.1469-7610.2004.00387.x

Filozof, E. M., Albertin, H. K., Jones, C. R., Steme, S. S., Myers, L., & McDermott, R. J. (1998). Relationship of adolescent self-esteem to selected academic variables. *The Journal of School Health, 68*(2), 68-72.

Fombonne, E., Simmons, H., Ford, T., Meltzer, H., & Goodman, R. (2001). Prevalence of pervasive developmental disorders in the British Nationwide Survey of Child Mental Health. *Journal of the American Academy of Child Adolescent Psychiatry, 40,* 820-827.

Fossum, S., Handegård, B. H., Adolfsen, F., Vis, S. A., & Wynn R. (2016). A meta-analysis of long-term outpatient treatment effects for children and adolescents with conduct problems. *Journal of Child and Family Studies, 25*(1), 15-29.

Frick, P. J. (2003). *The Inventory of Callous-Unemotional Traits*. Unpublished rating scale. The University of New Orleans.

Frick, P. J., Ray, J. V., Thornton, L. C., & Kahn, R. E. (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,* 1–57.

Friedli, L., & Parsonage, M. (2007). Building an economic case for mental health promotion. *Journal of Public Mental Health, 6,* 14-23.

Frojd, S.A., Nissinen, E.S., Pelknen, M.U.I., Marttunen, M.J., Koivisto, A.M. & Kaltiala Heinom R. (2008). Depression and School Performance in Middle Adolescent Boys and Girls. *Journal of Adolescence, 31*(4), 485-498.

Frommann, N., Streit, M., Wolwer, W. (2003). Remediation of facial affect recognition impairments in patients with schizophrenia: a new training program. *Psychiatry Research, 117,* 281-284. doi:10.1016/S0165-1781(03)00039-8

Geisler, F., Kubiak, T., Siewert, K. & Weber, H. (2013). Cardiac vagal tone is associated with social engagement and self-regulation. Biological Psychology, 93(2), 279–286.

Goldstein, T, R., Birmaher, B., Axelson, D., Ryan, N. D., Strober, M. A., Gill, M. K., … Bridge, J. A. (2005). History of suicide attempts in pediatric bipolar disorder: Factors associated with increased risk. *Bipolar Disorders, 7,* 525-535.

Green, H., McGinnity, A., Meltzer, H., Ford, T., & Goodman, R. (2005). *Mental health of children and young people in Great Britain, 2004*. London: Palgrave MacMillan.

Hall, J. (1979). Gender, gender roles, and nonverbal communication skills. In R. Rosenthal (Ed.), *Skill In Nonverbal Communication*. Cambridge, Mass: Oelgeschlager, Gunn, & Hain.

Hallfors, D., Vevea, J. L., Iritani, B., Cho, H., Khatapoush, S., & Saxe, L. (2002). Truancy, grade point average, and sexual activity: A meta-analysis of risk indicators for youth substance use. *Journal of School Health, 72,* 205–211

Handy, T. C., Kingstone, A., & Mangun, G. R. (1996). Spatial distribution of visual attention: Perceptual sensitivity and response latency. *Perception and Psychophysics*, 58, 613–627.

Haring, N. G., & Eaton, M. D. (1978). Systematic instructional procedures: An instructional hierarchy. In Haring, N. G., Lovitt, T. C., Eaton, M. D., & Hansen, C. L. (Eds.), *The fourth R: Research in the classroom* (pp. 23-40). Columbus, OH: Charles E. Merrill.

Harms, M. B., Martin, A., Wallace, G. L. (2010). Facial emotion recognition in autism spectrum disorders: a review of behavioral and neuroimaging studies. *Neuropsychology Review, 20*(3), 290-322. doi:10.1007/s11065-010-9138-6.

Hastings, M. E., Tangney, J. P., & Stuewig, J. (2008). Psychopathy and identification of facial expressions of emotion. *Personality and Individual Differences, 44*(7), 1474-1483. doi:10.1016/j.paid.2008.01.004

Haviland, J. M., & Lelwica, M. (1987). The induced affect response: Ten-week-old infants' responses to three emotion expressions. *Developmental Psychology, 23,* 97–104.

Hemphill S., & Hargreaves J. (2009). The impact of school suspensions: A student wellbeing issue. *ACHPER Healthy Lifestyles Journal, 56*(3/4): 5-11.

Herba, C., & Phillips, M. (2004). Annotation: Development of facial expression recognition from childhood to adolescence: Behavioural and neurological perspectives. *Journal of Child Psychology and Psychiatry, 45*(7), 1185-1198.

Holmbeck, G. N., Greenley, R. N., & Franks, E. A. (2003). Developmental issues and considerations in research and practice. In: Kazdin AE, Weisz JR, editors. *Evidence-based psychotherapies for children and adolescents* (pp. 21-41). New York, NY: The Guildford Press.

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S. & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 65-79.

Horner, R. H., Swaminathan, H., Sugai, G. & Smolkowski, K. (2012). Considerations for the systematic analysis and use of single-case research. *Education and Treatment of Children, 35*(2), 269-90.

Hubble, K., Bowen, K. L., Moore, S. C., & van Goozen, S. H. M. (2015). Improving Negative Emotion Recognition in Young Offenders Reduces Subsequent Crime. *PLoS ONE, 10*(6), e0132035. doi: 10.1371/journal.pone.0132035

Huesmann, L. R., Eron, L. D., & Dubow, E. F. (2002). Childhood predictors of adult criminality: are all risk factors reflected in childhood aggressiveness? *Criminal Behaviour and Mental Health, 12*(3), 185-208.

Izard, C. (1971). *The face of emotion.* New York, NY: Appleton-Century-Crofts.

Izard, C., & Ackerman, B. (1997). Emotions and Self Concepts across the Lifespan. In K.W. Shaic & M. P. Lawson (Eds.), *Annual Review of Gerontology and Geriatrics: Focus on Emotion and Adult Development (Vol. 17, 1-2).* New York, NY: Stringer.

Izard, C., Fine, S., Schultz, D., Mostow, A. J., Ackerman, B., & Youngstrom, E. (2001). Emotion knowledge as a predictor of social behavior and academic competence in children at risk. *Psychological Science, 12,* 18–23.

Jacobson, N. S., Follette, W. C., & Revenstorf, D. (1984). Toward a standard definition of clinically significant change. Behavior Therapy, 17, 308 –311

Jones, G. (2002). *The Youth Divide*. York: Joseph Rowntree Foundation/ York Publishing Services.

Kahn, R. E., Frick, P. J., Youngstrom, E., Findling, R. L., & Youngstrom, J. K. (2012). The Effects of Including a Callous Unemotional Specifier for the Diagnosis of Conduct Disorder. *Journal of Child Psychology and Psychiatry, 53*, 271-282. doi:10.1111/j.1469-7610.2011.02463.x

Kats-gold., I., Besser A., & Priel., B. (2007). The role of simple emotion recognition skills among school aged boys at risk of ADHD. *Journal of Abnormal Child Psychology, 35,* 363–378.

Kaufman, J., Birmaher, B., Brent, D., Rao, U., Flynn, C., Moreci, P., ...Ryan, N. (1997). Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL): Initial reliability and validity data. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(7), 980-988.

Kee, K. S., Green, M. F., Mintz, J., & Brekke, J. S. (2003). Is Emotion Processing a Predictor of Functional Outcome in Schizophrenia? *Schizophrenia Bulletin, 29*(3), 487-497.

Kim, E. Y., Miklowitz, D. J., Biuckians, A., & Mullen, K. (2007). Life stress and the course of early-onset bipolar disorder. *Journal of Affective Disorders, 99,* 37-44.

Kimonis, E. R., Frick, P. J., Skeem, J. L., Marsee, M. A., Cruise, K., Munoz, L. C.,... Morris, A. S. (2008). Assessing callous-unemotional traits in adolescent offenders: Validation of the Inventory of Callous Unemotional Traits. *International Journal of Law and Psychiatry, 31*, 241-252. doi:10.1016/j.ijlp.2008.04.002

Kohler, C.G., Walker, J.B., Martin, E. A., Healey, K. M., Moberg, P. J. (2010). Facial emotion perception in schizophrenia: a meta-analytic review. *Schizophr Bull*. 36, 1009–1019

Konrath, S. (2013) *A critical analysis of the Interpersonal Reactivity Index*. MedEdPORTAL Directory and Repository of Educational Assessment Measures (DREAM).

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M & Shadish, W. R. (2010). Single-case designs technical documentation [online]. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/wwc_scd.pdf.

Ladd, G. (1990) Having Friends, Keeping Friends, Making Friends, and Being Liked by Peers in the Classroom: Predictors of Children's Early School Adjustment? *Child Development, 61*(4), 1081-1100.

Lane, J. D., & Gast, D. L. (2014). Visual analysis in single case experimental design studies: Brief review and guidelines. *Neuropsychological Rehabilitation: An International Journal, 24,* 445-463. doi:10.1080/09602011.2013.815636

Leist, T., & Dadds, M. R. (2009). Adolescents' Ability to Read Different Emotional Faces Relates to their History of Maltreatment and Type of Psychopathology. *Clinical Child Psychology & Psychology, 14,* 237-250. doi: 10.1177/1359104508100887

Leppanen, J. M., & Hietanen, J. K. (2001). Emotional recognition and social adjustment in school-age girls and boys. *Scandinavian Journal of Psychology, 42,* 429-435.

Lindsey, E. W., & Colwell, M. J. (2003). Preschoolers' emotional competence: Links to pretend and physical play. *Child Study Journal, 33*(1), 39-52.

Liu, C. C., Wolfgang, B. J., & Smith, P. L. (2009). Attentional mechanisms in simple visual detection: A speed-accuracy trade-off analysis. *Journal of Experimental Psychology: Human Perception and Performance*, 35, 1329–1345.

Liu, J. (2004). Childhood externalizing behavior: theory and implications. *Journal of Child and Adolescent Psychiatric Nursing, 17*(3), 93-103.

Loney, B. R., Hunterburg, A., Counts-Allan, C., & Schmeelk, K. M. (2007). A preliminary examination of the intergenerational continuity of maternal psychopathic features. *Aggressive Behavior, 33*(1), 14-25. doi:10.1002/ab.20163

Lowe, L. A. (1998). Using the Child Behavior Checklist in assessing conduct disorder: Issues of reliability and validity. *Research on Social Work Practice, 8*(3), 286-301.

Lundqvist, D., Flykt, A., & Öhman, A. (1998). *The Karolinska Directed Emotional Faces – KDEF* [CD-ROM]. Stockholm: Karolinska Institute, Department of Clinical Neuroscience, Psychology Section.

Marsh, A. A., & Blair, R. J. (2008). Deficits in facial affect recognition among antisocial populations: a meta-analysis. *Neuroscience and Biobehavioral Reviews, 32,* 454 – 465. doi:10.1016/j.neubiorev.2007.08.003

Marsh, A. A., Kozak, M., & Ambady, N. (2007) Accurate identification of fear facial expressions predicts prosocial behavior. *Emotion, 7*(2), 239-251.

Massey, O., Boroughs, M, & Armstrong, K. (2007). School violence interventions in the safe schools/healthy students initiative. *Journal of School Violence, 6*(2), 57–74.

Mathworks. (2012). *MATLAB and statistics toolbox 8.1*. Natik, MA: The Mathworks, Inc.

Matthews, G., Zeidner, M., & Roberts, R. D. (2007). *Emotional intelligence: Knowns and unknowns*. Oxford, England: Oxford University Press.

Mayer, J. D., & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence, 17,* 433–442.

Mayer, J. D., Caruso, D. R., Salovey, P. (2016). The Ability Model of Emotional Intelligence: Principles and Updates. *Emotion Review, 8* (4), 290–300.

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59,* 507–536.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional intelligence: Theory, findings, and implications. *Psychological Inquiry, 60,* 197– 215.

Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2003). Measuring emotional intelligence with the MSCEIT V2.0. *Emotion, 3,* 97-105.

Mayer, J. D., Salovey, P., Caruso, D., & Sitarenios, G. (2001). Emotional intelligence as a standard intelligence. *Emotion, 1,* 232-242.

McClure, E. B. (2000). A meta-analytic review of sex differences in facial expression processing and their development in infants, children, and adolescents. *Psychological Bulletin, 126*(3), 424-453.

Mestre, J. M., Guil, R., Lopes, P. N., Salovey, P., & Gil-Olarte, P. (2006). Emotional intelligence and social and academic adaptation to school. *Psicothema, 18*, 112–117.

Michail, S. (2011). Understanding school responses to students' challenging behaviour: A review of literature. *Improving Schools, 14*(2), 156–171. doi:10.1177/1365480211407764

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *Journal of Clinical Epidemiol, 62*(10), 1006-1012. doi:10.1016/j.jclinepi.2009.06.005

Mohoric, T. (2012). *Understanding of emotions as a component of emotional intelligence in early adolescence.* (Unpublished doctoral dissertation). University of Zagreb: Faculty of Humanities and Social Sciences.

Mohoric, T., & Takšić, V. (2016). Emotional understanding as a predictor of socio-emotional functioning and school achievement in adolescence. *Psihologija, 49,* 357-374. 10.2298/PSI1604357M.

Mondloch, C. J., Geldart, S., Maurer, D., & Le Grand, R. (2003). Developmental changes in face processing skills. *Journal of Experimental Child Psychology, 86,* 67-84.

Montagne, B., van Honk, J., Kessels, R. P. C., Frigerio, E., Burt, M., van Zandvoort, M. J. E., et al. (2005). Reduced efficiency in recognising fear in subjects scoring high on psychopathic personality characteristics. *Personality and Individual and Differences, 38,* 5-11.

Morgan, D. L., & Morgan, R. K. (2001). Single-participant research design: Bringing science to managed care. *American Psychologist, 56,* 119-127.

Morrissey, T. W., Hutchison, L., & Winsler, A. (2014). Family income, school attendance, and academic achievement in elementary school. *Developmental Psychology, 50*(3): 741-753.

Murphy, M., & Fonagy, P. (2012). *Mental health problems in children and young people,* In: Annual report of the Chief Medical Officer 2012. London: Department of Health.

National Institute for Health and Care Excellence, Social Care Institute for Excellence. (2013). *Antisocial behaviour and conduct disorders in children and young people: Recognition and management*. Retrieved from https://www.nice.org.uk/guidance/cg158/chapter/Introduction

Neisser, U., Boodoo, G., Bouchard, T. J., Boykin, A. W., Brody, N., Ceci, S.J., Urbina, S. (1996). Intelligence: Knowns and Unknowns. *American Psychologist, 51*(2), 77-101.

Nickerson, A., & Spears, W. (2007). Influences on authoritarian and educational/therapeutic approaches to school violence prevention. *Journal of School Violence, 6*(4), 3–31.

OECD. (2017). OECD Handbook for Internationally Comparative Education Statistics: concepts, standards, definitions and classifications. Retrieved from

https://www.oecd-ilibrary.org/docserver/9789264279889-en.pdf?expires=1528618466&id=id&accname=guest&checksum=726D981EF33724F8CAE6FB782C1629F7

Ofsted (2015) *Common inspection framework: education, skills and early years from September 2015.* Retrieved from https://www.gov.uk/government/publications/common-inspection-framework-education-skills-and-early-years-from-september-2015

Pearl, E. S. (2009). Parent management training for reducing oppositional and aggressive behavior in preschoolers. *Aggression and Violent Behavior, 14*, 295-305. doi:10.1016/j.avb.2009.03.007

Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, *15*, 425–448.

Petrides, K. V., Pita, R., Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, *98*(2), 273-289

Pinquart, M., & Sorensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being in later life: A meta-analysis. *Psychology and Aging, 15,* 187-224.

Porges, S.W. (2011). The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation (Norton Series on Interpersonal Neurobiology). New York: W.W. Norton & Co.

Rana, R. A., & Mahmood, N. (2010). The relationship between test anxiety and academic achievement. *Bulletin of Education and Research, 32,* 63-74.

Rausch, M. K., & Skiba, R. (2004). *Unplanned outcomes: Suspensions and expulsions in Indiana.* Bloomington, IN: Indiana University, Center for Evaluation and Education Policy.

Roose, A., Bijttebier, P., Decoene, S., Claes, L., & Frick, P. J. (2010). Assessing the affective features of psychopathy in adolescence: A further validation of the Inventory of Callous and Unemotional Traits. *Assessment, 17,* 44 -57. doi:10.1177/1073191109344153

Rotter, N. G., & Rotter, G. S. (1988). Sex differences in the encoding and decoding of negative facial emotions. *Journal of Nonverbal Behavior, 12,* 139-148.

Sanders, M. R., & Dadds, M. R. (1993). *Behavioral Family Intervention*. New York, NY: Pergamon Press.

Sato, W., Uono, S., Matsuura, N., & Toichi, M. (2009). Misrecognition of facial expressions in delinquents. *Child Adolescent Psychiatry and Mental Health, 3*(1), 27. doi:10.1186/1753-2000-3-27

Scherer, K. R. (2007). Component Models of Emotion Can Inform the Quest for Emotional Competence. In G . Matthews, M. Zeidner, and R. D. Roberts (Eds.), *The Science of Emotional Intelligence: Knowns and Unknowns*. (pp. 101–126). New York, NY: Oxford University Press

Schönenberg, M., Mayer, S. V., Christian, S., Louis, K., & Jusyte, A. (2015). Facial affect recognition in violent and nonviolent antisocial behavior subtypes. *Journal of Personality Disorders, 30*(5), 708-719. doi:10.1521/pedi_2015_29_217

Schultz, D., Izard, C. E., Ackerman, B. P., & Youngstrom, E. A. (2001). Emotion knowledge in economically-disadvantaged children: Self-regulatory antecedents

and relations to social maladjustment. *Development and Psychopathology,* 13, 53–67.

Schvaneveldt, P., Miller, C., Berry, H., & Lee, T. (2001). Academic Goals, Achievement, and Age at First Sexual Intercourse: Longitudinal, Bidirectional Influences. *Adolescence, 36,* 767-787.

Short, R. M. L., Sonuga-Barke, E. J. S., Adams, W. J., & Fairchild, G. (2016). Does comorbid anxiety counteract emotion recognition deficits in conduct disorder? *Journal of Child Psychology and Psychiatry, 57,* 917-926. doi: 10.1111/jcpp.12544

Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: The role of perceived control in children's engagement and school achievement. *Journal of Educational Psychology, 82,* 22–32.

Soken, N. H., & Pick, A. D. (1992). Intermodal perception of happy and angry expressive behaviors by seven-month-old infants. *Child Development, 63*(4), 787-795.

Strand, P. S., Cerna, S., & Downs, A. (2008). Shyness and emotion processing skills in preschoolers: A 6-month longitudinal study. *Infant and Child Development, 17*(2), 109-120.

Surcinelli, P., Codispoti, M., Montebarocci, O., Rossi, N., Baldaro, B. (2006). Facial emotion recognition in trait anxiety. *Anxiety Disorders, 20,* 110-117

Tankersley, M., Harjusola-Webb, S. & Landrum, T. J. (2008). Using single-subject research to establish the evidence base of special education. *Intervention in School & Clinic, 44*(2), 83-90.

Tanner-Smith, E. E., & Wilson, S. J. (2013) A meta-analysis of the effect of dropout prevention programs on school absenteeism. Prevention science, 14(5), 468-478. *doi*:*10.1007*/*s11121-012-0330-1*.

Tawney, J. W. & Gast, D. L. (1984). *Single-subject research in special education.* Columbus, OH: Merrill.

Taylor, T. K., & Biglan, A. (1998). Behavioral family interventions for improving child-rearing: A review for clinicians and policy makers. *Clinical Child and Family Psychology Review, 1,* 41-60.

Thomas, L. A., De Bellis, M. D., Graham, R., & LaBar, K. S. (2007). Development of emotional facial recognition in late childhood and adolescence. *Developmental Science, 10*(5), 547–558.

Tottenham, N., Tanaka, J.W., Leon, A.C., McCarry, T., Nurse, M., Hare, T.A., & Nelson, C. (2009). The NimStim set of facial expressions: Judgments from untrained research participants. *Psychiatry Research, 168,* 242–249. doi:10.1016/j.psychres.2008.05.006

Tracy, J. L., & Robins, R. W. (2008). *The automaticity of emotion recognition. Emotion, 8,* 81-95.

Valiente, C., Lemery-Chalfant, K., Swanson, J., & Reiser, M. (2008). Prediction of children's academic competence from their effortful control, relationships, and classroom participation. *Journal of Educational Psychology, 100,* 67–77.

Vassiou, A., Mouratidis, A., Andreou, E., & Kafetsios, K. (2016). Students' achievement goals, emotion perception ability and affect and performance in the classroom: a multilevel examination. Educational Psychology, 36, 879-897.

Webster-Stratton, C., Reid, M.J., and Hammond, M. (2004). Treating children with early onset conduct problems: Intervention outcomes for parent, child, and teacher training. Journal of Clinical Child and Adolescent Psychology, 33, 105-124.

Wechsler, D. (1999). *Wechsler Abbreviated Scale of Intelligence (WASI)*. San Antonio, TX: The Psychological Corporation.

Widen, S. C., & Russell, J. A. (2003). A closer look at preschoolers' freely produced labels for facial expressions. *Developmental Psychology, 39,* 114–128.

Windle, M., & Windle, R. (1996). Coping strategies, drinking motives, and stressful life events among middle adolescents: Associations with emotional and behavioral problems and with academic functioning. *Journal of Abnormal Psychology, 105,* 551-560.

Wolwer, W., & Frommann, N. (2011). Social-Cognitive Remediation in Schizophrenia: Generalization of Effects of the Training of Affect Recognition (TAR). *Schizophrenia Bulletin, 37,* S63-S70. doi:10.1093/schbul/sbr071

Wolwer, W., Frommann, N., Halfmann, S., Piaszeck, A., Streit, M., & Gaebel, W. (2005). Remediation of impairments in facial affect recognition in schizophrenia: Efficacy and specificity of a new training program. *Schizophrenia Research, 80,* 295-303. doi:10.1016/j.schres.2005.07.018

Yoo, S. H., Matsumoto, D., & LeRoux, J. A. (2006). The influence of emotion recognition and emotion regulation on intercultural adjustment. *International Journal of Intercultural Relations, 30,* 345– 363.

Young-Browne, G., Rosenfeld, H. M., & Horowitz, F. D. (1977). Infant discrimination of facial expressions. *Child Development, 48,* 555–562.

Zeidner, M., Matthews, G., & Roberts, R. D. (2009). *What We Know about Emotional Intelligence: How It Affects Learning, Work, Relationships, and Our Mental Health*. Cambridge, MA: MIT Press.