Psychometric Properties of the

Adolescent Story Stem Profile

Susannah Price

D.Clin.Psy. Thesis (Volume 1) 2016

University College London

UCL Doctorate in Clinical Psychology

Thesis declaration form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

Name:

Date:

Overview

This thesis is presented in three parts; the literature review, empirical paper and critical appraisal. The literature review summarises the contribution that narrative measures of attachment have made to our understanding of the attachment representations of children who have experienced maltreatment. The indicators of insecure and disorganised attachment representations are discussed, with reference to a number of methodological considerations of the studies included in the review.

The empirical paper describes a cross-sectional study that explores the psychometric properties of the Adolescent Story Stem Profile (ASSP). The ASSP is an online narrative measure of attachment representations, adapted from story stem techniques used with younger children. Participants were 253 young people attending mainstream secondary schools in the greater London area, and 32 adolescents in foster- or residential-care. Factor analysis of the data collected revealed a four-factor model of the ASSP, which demonstrated promising clinical utility as a screening tool for the identification of difficulties in attachment relationships during adolescence.

Finally, the critical appraisal discusses the methodological issues that affected this study with reference to the ideological underpinnings of the measure, and reflections from the researcher on completing the study.

TABLE OF CONTENTS

List of Tables

Part 1: Literature Review

Part 2: Empirical Paper

List of Figures

Part 1: Literature Review

Part 2: Empirical Paper

ACKNOWLEDGEMENTS

Firstly, I would like to express my gratitude to all the students who participated in this project, and to all the teaching staff who made this possible. The dedication and care that teachers show to their students never fails to amaze me, and this was especially true for the teachers I encountered in the completion of this project. It was a pleasure working with you all.

I would also like to thank my supervisors, Pasco Fearon and Saul Hillman, for their support and advice throughout the project. In particular, I would like to thank Saul for his time and attention, and for remaining positive and optimistic through the various challenges that arose in this process.

I am dedicating this work to my friends and family. It would have been much harder to go through this process without the support of all of you. To my parents, Toby and Tricia; the more I learn about developmental psychology, through teaching and clinical experience, the more I appreciate my good fortune to be born to not just one, but two, wonderful parents. Thank you for your infinite love, support and encouragement.

Finally to my wonderful fiancé Ed, thank you doesn't begin to cover it. I could not have done this without you.

PART 1: LITERATURE REVIEW

Abstract

Aims: Child maltreatment is a known risk factor for insecure or disorganized attachment in infancy as measured using behavioural procedures like the Strange Situation, but it is unclear how these experiences become represented in a child's developing internal working model of attachment among older children. Narrative measures provide a valuable set of tools for exploring how maltreatment experiences affect internal working models of attachment, and how such models of attachment might be modified by intervention. This review sought to explore how narrative tools have been used in understanding the attachment representations of children who have experience maltreatment.

Method: A systematic search was conducted using three academic databases to identify studies which used narrative measures of attachment with children who had been maltreated and/or had "looked-after" status, and compared this group with a control sample. A total of 13 studies were included in the review.

Results: Differences between the maltreated and non-maltreated groups were reviewed in relation to parent and self-representations, global attachment classifications, and specific narrative themes such as coherence and avoidance.

Conclusions: The narrative responses of maltreated children showed more indicators of insecure or disorganised attachment representations when compared to non-maltreated children. These findings are discussed in reference to a number of methodological considerations of the studies included in the review.

Introduction

Attachment can be defined as the emotional bond that exists between a child and his or her primary caregiver. First proposed by Bowlby in 1958, it is considered to be an innate, biologically driven process which has evolved in humans to elicit care-giving behaviour from adults towards infants when the infant feels threatened. It has been suggested that over time, the nature of the interactions between the infant and their caregiver becomes internalised by the infant in the form of internal representations, or "internal working models" of attachment (IWM; Bowlby, 1958); a template for understanding the self in relation to others and for how the infant may expect their attachment figures to behave towards them. The IWM is thought to be largely unconscious, and guides how the infant directs their attention, remembers, interprets and makes predictions about close interpersonal interactions (Berry, Danquah & Wallin, 2014). As a child grows, the nature of their experiences in social interactions is become assimilated by the IWM, and in the absence of extreme environmental changes, these internal representations are likely to remain relatively stable from infancy to childhood, and into adolescence (Thompson, 2008).

Ainsworth and colleagues developed the first major empirical foundation for studying attachment in humans using an experimental paradigm known as the "Strange Situation Procedure" (SSP; Ainsworth, Blehar, Waters & Wall, 1978). During the SSP, an infant and their caregiver are placed in situations aimed to activate the infant's attachment system, such as the parent leaving the infant alone in a room and then returning. The infant's behaviour during separation and reunion is then observed and measured. Systematic evaluation of the behaviour of multiple parent-infant dyads enabled Ainsworth and colleagues to categorise the quality of the infants' relationship with their caregiver into three key attachment patterns; secure, avoidant and resistant. Later work identified a further attachment style, disorganised attachment, typified by fragmented or fearful behaviour in response to

contact with the caregiver (Main & Solomon, 1986). In the general population, 55-66% of children are rated as having secure attachment relationships with their caregivers, 20-30% are rated as having insecure-avoidant attachment relationships, 5-15% are rated as having an insecure-resistant attachment, and between 10-40% are rated as having a disorganised attachment relationship (Lyons-Ruth & Jacobvitz, 2008). These attachment styles have been shown to have implications for future interpersonal relationships, vulnerability to emotion regulation difficulties and other psychopathology (Lyons-Ruth & Jacobvitz, 2008).

The quality of caregiving is highly influential in determining a child's attachment to their caregiver, and it has been consistently shown that a caregiver's sensitivity has a direct impact on an infant's attachment pattern (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003; De Wolff & van Ijzendoorn, 1997). Sensitive, attuned and responsive caregiving results in the child developing a secure attachment style to their primary caregiver. With this style of caregiving, the infant is thought experience their caregiver as responsive and consistently available, and this will be reflected in their internal representations. They are also thought to internalise a representation of themselves as being worthy of care and attention.

In contrast inconsistent, insensitive or rejecting caregiving can lead to a child develop a representation of their caregiver as being rejecting, and themselves as being unworthy of comfort or care (Bretherton, 1985). Through the experience of limited or rejecting responses to their attachment behaviour, the infant learns to minimise their behavioural expressions of negative emotions, and this pattern of limited behavioural response typifies an insecure-avoidant attachment pattern. In contrast, an insecure-resistant attachment pattern is associated with an escalation of behavioural expression of negative emotions in order to gain attention from their caregiver, and is thought to result from caregiving typified by inconsistent responses to attempts to seek security (Main, 1990). Disorganized attachment is thought to

result from frightening or intrusive behaviour from the caregiver, such that they are perceived as threatening by the infant (Main, 1990). In this situation, the attachment system is thought to be activated in response to the caregiver's behaviour. This causes the infant to experience two conflicting impulses; to withdraw from the parent as the source of threat, and simultaneously to approach them to seek comfort (Hesse & Main, 2006).

Child Maltreatment

Child maltreatment is an obvious example of a time when a parent's behaviour will be seen a source of fear for a child, and it is unsurprising that it strongly associated with the development of insecure and disorganised attachment (Cicchetti & Barnett, 1991; Cyr, Euser, Bakermans-Kranenburg & van Ijzendoorn, 2010; van Ijzendoorn, Schuengel & Bakermans-Kranenburg, 1999). Maltreatment can be defined as physical, emotional and sexual abuse, and/or neglect (Jutte et al., 2015). The scale of this problem is large; In the UK over 56,000 children were known to social services in 2014, and it is estimated that only one in every nine children who have suffered maltreatment become known to social services (NSPCC, 2016). The experience of maltreatment in childhood is associated with a range of negative outcomes, including poor academic performance, antisocial behaviour and mental health difficulties (Romano, Babchishin, Marquis & Frechette, 2015), and recent studies have demonstrated that attachment plays a mediating role the development of negative outcomes following maltreatment (Lowell, Renk & Adgate, 2014; Oshri, Sutton, Clay-Warner & Miller, 2015).

Insecure and disorganised and attachment patterns can be found in "low-risk" samples, with 15% of infants displaying disorganised behaviour in the strange situation (van Ijzendoorn et al., 1999). However, the rate is elevated to 80–90% or higher in samples of maltreated infants, toddlers, and pre-schoolers (Barnett, Ganiban, & Cicchetti, 1999; Carlson, Cicchetti, Barnett & Braunwald, 1989;

Cicchetti, Rogosch, & Toth, 2006; Lyons-Ruth, Repacholi, McLeod & Silva, 1991). In extreme cases, the experience of maltreatment is also associated with the development of attachment disorders such as Reactive Attachment Disorder (RAD), associated with withdrawn or hypervigilant responses to social interaction, and Disinhibited Social Engagement Disorder (DSED), associated with indiscriminate social behaviour (American Psychiatric Association, 2013).

Children known to social services due to maltreatment are often exposed to a number of risk factors in addition to maltreatment and it can be difficult to determine the impact of the abuse over and above other risk factors. A meta-analysis by Cyr and colleagues (2010) indicated that maltreated children were less secure and more disorganized than other high-risk children. However, children exposed to five socioeconomic risks were not significantly less likely to be disorganized than maltreated children, suggesting that cumulative risk factors might be equally capable of producing disorganized attachment as maltreatment. It is currently unclear what the causative factors associated with multiple deprivations might be for disorganized attachment, but higher incidents of maltreatment may be part of the picture. Despite the similarity in attachment classifications, it is not clear whether maltreatment and cumulative socioeconomic risk have a differential affect at the level of internal representations. Better understanding of this phenomenon could have implications for interventions to improve outcomes for children who have had these experiences.

Looked-After Children (LAC)

Following the experience of maltreatment, many children will go on to enter the care system. Whilst this may provide better care, it also exposes some children to major changes in care, and disruptions in the continuity of care. In the UK, children who are in the care of the state are commonly referred to as looked-after children (LAC). There are numerous reason as to why a child may become looked-

after, including parental ill-health or disability, parental absence, or the child being at risk due to abuse or neglect. The LAC population includes a variety of types of care; including foster care, adoptive care and institutional care.

Although not all children who become looked-after have prior experience of maltreatment, all experience loss of or separation from their primary caregiver, often in traumatic circumstances. The impact of removal from parents' care on relationships and other areas of functioning has been of interest to researchers since the early days of Bowlby's pioneering work (Kobak, 1999). There is evidence to suggest that adopted and fostered children are more likely to have disorganized attachments than non-LAC populations, and it has been shown that for adopted children these rates reduce over time (van den Dries, Juffer, van Ijzendoorn & Bakermans-Kranenburg, 2009). One proposed mechanism for determining the continuity or change of attachment patterns is the extent to which environmental change is assimilated into the individual's internal working model (Cicchetti & Thompson, 2000). It is likely that changes in attachment patterns following adoption would be associated with changes in their attachment representations. The ability to assess attachment representations among children in care is potentially very important for understanding the process and mechanisms of change in this context and for clinical assessments aimed at establishing the child's security in a placement over time.

Narrative Measures of Attachment

It has been proposed that individual differences in attachment organisation, as measured behaviourally in the SSP, can be conceptualised as individual differences in the mental representation of attachment experiences. Main, Kaplan and Cassidy (1985) argue that different forms of attachment organisation relate to different types of internal working models, which guide not only the infant's behaviour and emotions in relation to their attachment relationships, but also their attention, memory and

cognitions. Although these representational processes cannot be measured directly, Main et al. (1985) proposed that their influence could be seen, for example in the different ways in which infants responded to their caregivers following an extended period of absence (reported by Heinecke & Westheimer, 1966; Robertson & Robertson, 1971), demonstrating both that the infants were able to "represent" their caregivers without direct contact, and that these representations were subject to alteration following environmental change.

Expanding on this, Main et al. (1985) aimed to assess the mental representations of attachment of parents and their 6 year old children using semi-projective narrative techniques, by asking the children to describe pictures of separation-related scenarios. It was found that certain features of these descriptions, such as emotional openness, were predictive of both secure attachment in infancy and contemporary evaluations of attachment behaviour at reunion with their caregivers. A number of research groups adapted the technique used by Main and colleagues using dolls or toys to represent scenarios rather than pictures to elicit internal representations of attachment. The toys were arranged in stipulated ways in order to introduce a particular attachment-related problem or conflict to be resolved (so-called "story stems"), and children were invited to complete the story by showing or telling what would happen next.

One such research group is the MacArthur Network; who combined three similar measures developed independently (the Attachment Story Completion Task; Bretherton, Ridgeway & Cassidy, 1990, the Attachment Doll Interview; Oppenheim, 1997; and Buchsbaum & Emde, 1990). The measures used by these three research groups formed the basis of the MacArthur Story Stem Battery (MSSB; Bretherton, Oppenheim, Buchsbaum & Emde, & the MacArthur Narrative Working Group, 1990), which is made up of 15 story stems in total. The standard coding system was developed by Robinson, Mantz-Simmons, Macfie, & the MacArthur Narrative

Working Group (1992) and consisted of a broad category of subscales, including scores for narrative content (e.g. parent and child representations); overarching themes such as narrative coherence or avoidance of the dilemma presented, and the child's behaviour with the interviewer.

Story Stem Assessment Profile (SSAP; Hodges, Hillman, Steele & Stufkens, 2015) is composed of eight story stems included in the MSSB, and an additional five story stems. It was developed based on the principal researchers' clinical experience in assessing children who had been abused and was designed for use with children aged between four and eight years old. Coding is based on 38 subscales, which combine to give 4 composite scales; security, insecurity, defensive-avoidance and disorganisation.

Another commonly used story stem measure is the Manchester Child Attachment Story Task (MCAST; Green, Stanley, Smith & Goldwyn, 2000), which includes 5 story stems of attachment-related distress scenarios, such as being lost in a crowd. Green et al. (2000) claim that the MCAST is distinct from the MSSB in a number of ways; including focusing solely on the child and a caregiver rather than a family, encouraging the child to identify with the doll figures, and including stories designed to activate the attachment system by eliciting a degree of anxiety in the child. The MCAST coding is based on two measures of attachment at different ages; the narrative content is evaluated with reference to attachment behaviours, such as those as seen in the SSP, and the structure of the narratives are evaluated with reference to features of the Adult Attachment Interview (AAI; George, Kaplan & Main 1985), such as coherence.

Although coding methods vary between the different batteries and measures, all draw on the core concepts of attachment organisation (security/insecurity) and disorganisation. These include coding how parents and children are represented, as well as other broader thematic codes. Attachment security is associated with

narratives that are coherent, have more “positive” representations of parents/carers (i.e. parents who are warm and affectionate, and help the child with any difficulties), and in which the child has openly sought to resolve the dilemma presented in the story stem. In contrast, the narratives of children who are thought to have insecure attachments typically have more “negative” representations of parental figures that are less warm and available, and the child figures may be more helpless or incompetent at resolving problems. Disorganized narrative are coded as such on the basis of features such as parent and child figures depicted as frightening and unpredictable or frightened and helpless, poor narrative coherence, catastrophic themes (such as the stories ending in death or destruction), avoidance of the dilemma inherent in the story stem, or controlling behaviour towards the examiner. Although the measures do allow for a children’s responses to be classified (for example as secure/insecure), the data collected can be evaluated with reference to a number of different scales, with indices of security of attachment providing dimensional rather than categorical variables.

Despite story-stem measures being used widely in research and clinical contexts, relatively few studies have demonstrated their reliability or validity of these as measures of attachment using specific coding systems. Some researchers have used story-stem techniques to explore different themes present in the narratives of children classified as secure or insecure using behavioural measures of attachment, finding that, for example, the narratives of securely classified children show positive story resolution (Solomon, George & deJong, 1995) or warm affectionate parental figures (Cassidy, 1988) whereas those children classified as insecure or disorganised provided narratives in which the importance of the parental relationship was denied (Cassidy, 1988) or themes of uncontrolled danger were present (Solomon et al., 1995). There is also evidence that children’s differential narrative responses to story stems are related to differences in externalised and internalised

behavioural difficulties (see Warren, 2003, for a review). Whilst this goes some way to demonstrating that narrative responses can provide some insight into how attachment types might be organised, it is not possible to conclude from these findings that the specific coding systems applied are a valid or reliable measure of attachment representations.

Of the standardised coding systems for the measures described above, validity of the ASCT has been shown in the significant correlations between ASCT security ratings at 37 months old and SSP classification at 18 months, Attachment Q-sort classification at 25 months and 37 months, and separation-reunion behaviour at 37 months (Bretherton, Ridgeway & Cassidy, 1990). Whilst this is convincing evidence of construct validity, this finding has not be replicated subsequently. Goldwyn, Stanley, Smith and Green (2000) explored the construct validity of the MCAST, and showed significant associations between MCAST ratings of security, insecurity and disorganisation and ratings of the Separation Anxiety Test. Children classified as disorganised using the MCAST scoring codes were also significantly more likely to have mothers rated as "unresolved" using the AAI, and higher teacher-rated behavioural problems using the Child Behaviour Checklist (CBCL; Achenbach & Edelbrock, 1981). No significant association was found between MCAST classifications of secure/insecure and maternal AAI classifications or teacher-rated behavioural difficulties. The coding structure of the MCAST has been found to have high inter-rater reliability (Green et al., 2000).

Due to the lack of available data it is not possible to evaluate which of the measures presented above provides the best measure of internal representations of attachment. Despite this, narrative measures are widely used as a way of exploring a child's internal world. Due to the play element and the lack of direct questioning about personal attachment experiences, narrative measures provide an opportunity to engage children who may not comply with other methods of assessment. The

play element also places less reliance on linguistic skills than would be necessary to complete a purely verbal task, and there is evidence that children from middle class backgrounds are likely to have a sufficient level of ability at approximately 3 years of age. However it should be noted that a certain level of linguistic competence is required, and this should be considered when using these paradigms with populations who have delayed language skills, such as those who have been maltreated (Holmberg, Robinson, Corbitt-Price & Weiner, 2007), and particularly when comparing narratives across groups who are known to have different levels of verbal or linguistic functioning.

These narrative tools provide a useful way to explore how the experience of maltreatment affects a child's representations of their parents, themselves, or other children, and how these representations might change when being cared for by other adults, such as foster or adoptive parents. These can provide useful insights in terms of understanding the emotional impact of maltreatment and how best to overcome the challenges these children might face in interpersonal relationships. The current paper aims to systemically review those studies which have used a story stem paradigm to evaluate the narratives of children who have been maltreated and/or looked-after, and determine what these measure can tell us about the impact of these experiences at the level of internal representations of relationships.

Questions:

- How do the internal representations of children who have experienced maltreatment differ from those who have not?
- How do these internal representations change once a child has been placed with non-related caregivers?

Method

Inclusion Criteria

The criteria for studies to be included in the review were as follows:

- Study population: Children who had experienced maltreatment (defined as physical, emotional and sexual abuse, and/or neglect). This included, but was not limited to, those who could be considered to be "looked after children (LAC)", in that they were living with non-family members in foster care or adoption placements.
- Measure: Studies that were included in the review were those that used a narrative measure of attachment and reported characteristics of the child's internal representations that were inferred from story stem based assessment measures.
- Design: Only studies which included a control or comparison group were included in the review.

Exclusion Criteria

- Limited details given about the target or control groups, the study methodology, or the data analysis process
- The journal article or book chapter is not available in English
- The study did not distinguish between participants who were known to have experienced maltreatment and those who were at "high-risk" of maltreatment

Search Strategy

The search strategy was designed to identify studies which had used narrative techniques to assess the attachment representations of children who had been maltreated. Systematic searches of the existing literature were conducted using the PsycINFO, Medline and Web of Science databases. The search involved searching whole texts of papers published before September 2015 using search terms

described below. The search was not restricted to peer reviewed articles, to allow for “grey literature” in the form of book chapters, to be included where appropriate.

In order to identify appropriate search terms a number of papers known to be relevant were first reviewed. Terms relating to the measures included the names of specific measures and their abbreviations, as well as more general terms to allow for the exploration of unknown measures. The systematic search was conducted using three groups of terms; terms relating to forms of maltreatment, foster- or adoptive-care (Maltreatment; neglect; “high risk”; maltreating; “child abuse”; “Sexual abuse”; Abuse; "foster care"; "foster famil*"; "foster child*"; adoption; "adoptive famil*"; institutionali*; "adopt*"); terms relating to narrative measures ("narrative technique*; "narrative assessment*"; "Story stem"; "attachment narrative*"; "narrative measure*"; "MacArthur Story Stem"; "MSSB"; "Story Stem Assessment Profile"; "SSAP"; "Manchester Child Attachment Story Task"; "MCAST"; "Attachment Doll Play Assessment" OR "ADPA"); and terms relating to attachment and/or internal representations (attachment OR "mental representations" OR "internal working model*" OR "attachment security" AND "attachment representation*"). Each term within the group was combined with the “OR” Boolean command, and the three groups were combined together using the “AND” Boolean command. A summary of these groups of terms can be seen in Table 1.

Table 1

Summary of Search Terms

Search Term Category	Search terms	Combined with
Maltreatment/LAC	Maltreatment; neglect; “high risk”; maltreating; “child abuse”; “Sexual abuse”; Abuse; "foster care"; "foster famil*"; "foster child*"; adoption; "adoptive famil*"; institutionali*; "adopt*"	OR; AND
Narrative measure	"narrative technique*; "narrative assessment*"; "Story stem"; "attachment narrative*"; "narrative measure*"; "MacArthur Story Stem"; "MSSB"; "Story Stem Assessment Profile"; "SSAP"; "Manchester Child Attachment Story Task"; "MCAST"; "Attachment Doll Play Assessment"; "ADPA"	OR; AND
Attachment	attachment; "mental representations"; "internal working model*"; "attachment security"; "attachment representation*"	OR; AND

Data Collection

The search strategy described above returned a total of 138 studies. These were exported to EndNote and duplicates were removed, leaving a total of 92 studies which were screened for relevance against the inclusion and exclusion criteria. Following the screening of first the abstracts, at total of 52 studies were excluded. Reasons for exclusion included; no control/comparison group included in the study or lack of data distinguishing groups; the study did not use a narrative assessment technique; the study was not available in English; the clinical sample included children at “high risk” of maltreatment, but did not specify whether maltreatment had taken place. Full texts of the remaining 40 studies were obtained

and reviewed, and a further 27 were excluded due to lack of sufficient data regarding the clinical and/or control group, or the data being presented as a case study analysis. Finally a number of studies included data which had been reported in multiple articles or book chapters. In these cases, the study which included the most detail about the research process were included in the review, and others were excluded to avoid duplication. Reference lists of reviews and influential papers were examined, however these yielded no additional papers for inclusion.

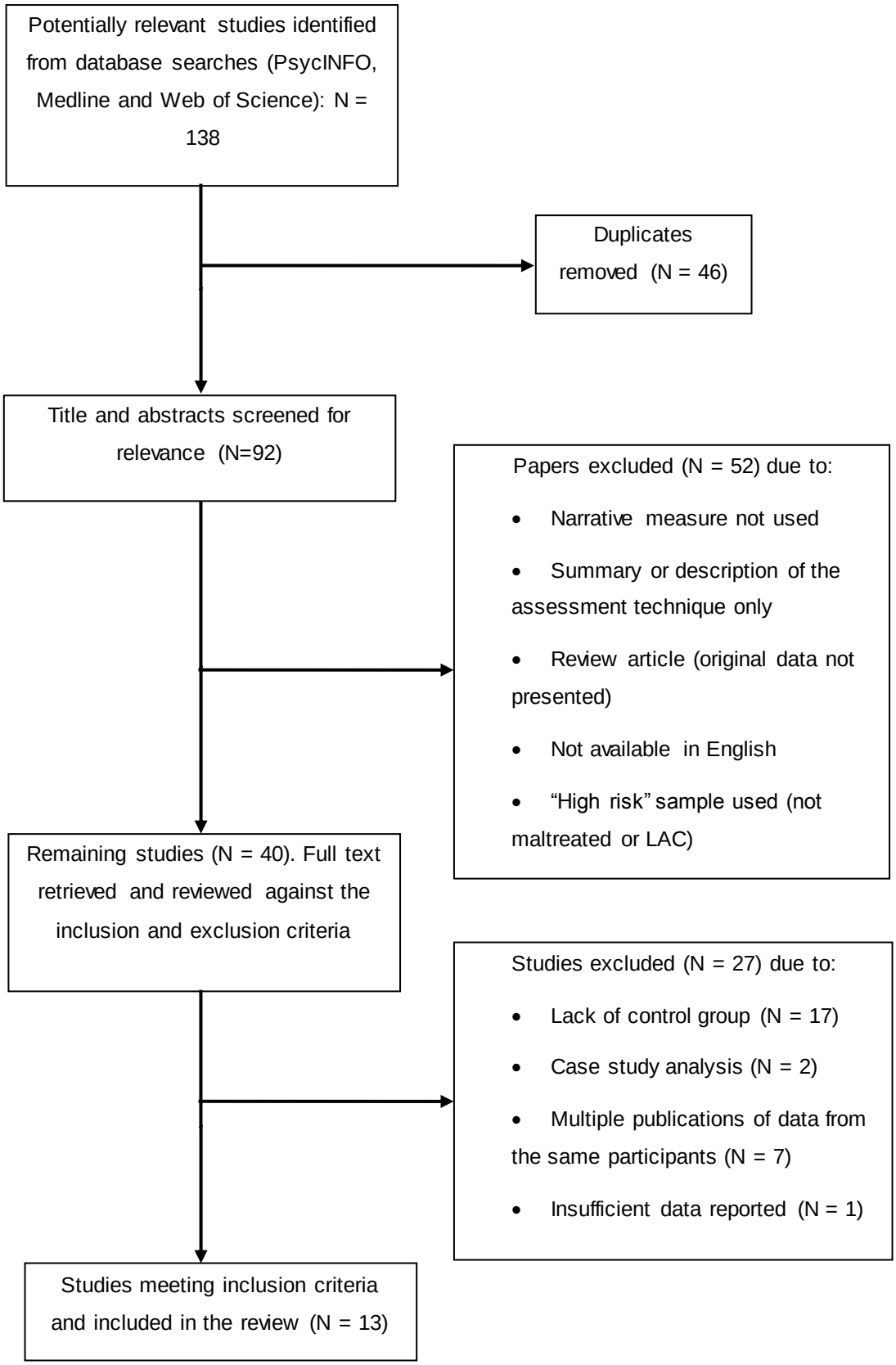

Figure 1: Flow chart illustrating study selection process

Results

Evaluation of the Studies

A total of 13 studies met inclusion criteria for the study. These are listed in Table 2 below.

Narrative Measures and Coding Strategy

Three studies used the MSSB, one used a computerised version of six story stems from the MSSB, five used the ASCT, and two used the SSAP. As such the majority of the studies included story stems that were associated with the MacArthur Working Group. The remaining two studies used the MCAST. Five of the studies originated from the same research group (Macfie, Toth and colleagues). The studies included for the review were found to have used data from different samples as verified by differences in the sample characteristics and measures used, however the high proportion of studies originating from the same research group could have introduced bias into the studies reviewed.

Although most of the studies used the standardised coding systems for the measures, a number used various adaptations. For example, Minnis et al. (2006) used an online adaptation of 6 story stems taken from the MSSB, to form the Computerised MSSB (CMSSB). Narrative responses were coded on three 12-point scales; avoidance, coherence and intentionality (expressed as the thoughts, feelings or motives of characters in the story). Minnis et al. (2006) demonstrated discriminant validity of the CMSSB by the significant differences found between the ratings of LAC participants from the control group. Other forms of validity were not demonstrated. Similarly, Macfie, Cicchetti and Toth (2001) used the ASCT and devised a new coding system to explore themes associated with dissociation in the participants' narratives. Twelve codes taken from existing coding systems (Narrative Coding Manual; Robinson, et al., 1996; Narrative Emotion Coding; Warren, Mantz-

Simmons & Emde, 1993) were used to evidence elements of dissociation, defined as disruptions in memory, perception and identity, inconsistent parenting, and difficulty coping with loss. Macfie et al. (2001) demonstrated the convergent validity of this coding system using comparisons with scores on the Child Dissociative Checklist (Putnam, Helmers & Trickett, 1993) and discriminant validity was demonstrated using behavioural symptoms as assessed by the Child Behaviour Checklist Teacher's Report Form (Achenbach, 1991).

Language/Cultural Adaptations

Most of the studies took place in the USA or the UK, however four of the studies took place in countries where English was not the first language, and varying levels of detail were provided about the adaptations made by these research groups.

Based in Chile, Fresno, Spencer, Ramos and Pierrehumbert (2014) used a Spanish adaptation of the ASCT, and an adapted coding system previously used by the same research group (Fresno & Spencer, 2011; Pierrehumbert et al., 2009), which was demonstrated to have moderate inter-rater reliability across for ASCT scales; security, insecurity, disorganisation and hyper-activation (kappa ≥ .69). Validity statistics were not reported. Torres, Maia, Verissimo, Fernandes and Silva, (2012) also used the ASCT, translated into Portuguese, and assessed this using an adapted coding system developed by Maia, Ferreira, Silva, Fernandes and Verissimo (2009). Reliability and validity statistics for this coding system were not reported by the authors.

Roman, Palacios, Moreno and Lopez (2012) reported on the narratives of children adopted from Russia to Spain, and compared these to Spanish children who were either adopted locally, or living with their birth family. The SSAP was translated into Spanish, and narratives were coded using the original SSAP coding technique by two researchers who had received accredited training for use of the

SSAP. Román et al., (2012) reported high inter-rater reliability (kappa ≥ .86) on the four key scales of security, insecurity, avoidance and disorganisation. The authors did not report on the cultural differences between their samples, although verbal ability was taken into account (see below). The study by Vorria et al. (2006) took place in Greece, and it is assumed that story stems were translated into Greek. However, no reference is made to any adaptations made to the measure to account for language or cultural differences. Caution should be applied in drawing comparisons with other papers included in this review, due to the language and cultural differences which might impact both on the narratives of the children in these study and their interpretation by researchers.

Sample Characteristics

Seven of the studies explored the effects of maltreatment on attachment representations, and used non-maltreated controls matched on demographics such as age, gender and socioeconomic status (SES). The remaining six studies explored the impact of LAC status on attachment representations, and included children who were in institutions, adopted or in foster care. There was a greater variety of control samples used in the LAC studies, including alternative LAC populations (e.g. early versus late adopted samples), as well as non-LAC control groups.

A total of 454 maltreated and 285 looked-after children participated in the studies included for the review. The total number of control participants was 516. The average sample size across the studies was 57 participants in the maltreated/LAC sample, and 40 participants in the control sample. In the maltreated/LAC samples there was a large range of sample sizes from 17 participants (Minnis et al., 2006) to 98 participants (Román et al., 2012), and a moderately large range of control sample sizes, from 17 (Minnis et al., 2006) to 72 (Torres et al., 2012).

Previous research has demonstrated that age (Oppenheim, Koren-Karie & Sagi-Schwartz, 2007) and gender (von Klitzing, Kelsay, Emde, Robinson & Schmitz, 2000) can affect the narratives produced by children during story-stem tasks, and the studies included were reviewed in relation to how they had controlled for these variables.

Age of participants.

MSSB validation studies have validated the measure from the preschool period into middle childhood (approximately 3 to 7 years of age), and the MCAST has been validated for use with 4 to 8.5 year olds. Seven studies (Fresno et al., 2014; Hodges, Steele, Hillman, Henderson & Kaniuk, 2005; Minnis et al., 2009; Román et al., 2012; Stronach, Toth, Rogosch, Oshri & Manly, 2011; Toth, Cicchetti, Macfie, Maughan & Vanmeenen, 2000; Toth, Maughan, Manly, Spagnola & Cicchetti, 2002) only reported mean ages for the samples, and did not report the age range for participants, therefore it is not possible to comment on the ages of the oldest or youngest participants in these studies. Of the remaining studies, three only included participants in the preschool/early childhood period (up to six years of age). Three studies included participants who were older than the age at which the measures have been validated; Minnis et al., (2006) included participants up to 9 years old; Torres et al., (2012) included children up to 8 years old and Kocovska et al.'s (2012) sample included children up to 12 years of age.

The studies were then examined in relation to whether participants the maltreatment/LAC groups differed in age from those in the control groups. Five studies reported that the groups included in their study were matched on age, but did not include details of the relevant statistical analysis (Fresno et al., 2014; Vorria et al., 2006; Minnis et al., 2009; Kocovska et al., 2012; Hodges et al., 2005). Seven studies did support this statement with statistical analysis and of these four included age as a covariate in statistical analysis of differences between groups on narrative

scores (Minnis et al., 2006; Román et al., 2012; Stronach et al., 2011; Toth et al., 2000), whilst three did not (Macfie et al., 2001; Toth, Cicchetti, Macfie, & Emde, 1997; Toth et al., 2002). Torres et al (2012) reported that the LAC and control groups different significantly in age, however they reported that narrative scores were independent of age and age was not included as a covariate in further statistical analysis.

Gender of sample population.

Seven of the studies showed that the maltreated/LAC sample did not differ significantly in gender frequencies from the control sample (Macfie et al., 2001; Minnis et al., 2009; Stronach et al., 2011; Torres et al., 2012; Toth et al., 1997; Toth et al., 2000; Toth et al., 2002), and a further three reported that the groups were equivalent on gender frequencies but did not demonstrate this with statistical analysis (Fresno et al., 2014; Kocovska et al., 2012; Vorria et al., 2006;). Two studies reported significant group differences in gender ratios; Minnis et al (2006) found that narrative scores were not associated with gender and therefore did not make further adjustment for this difference whereas Román et al (2006) found a significant effect of gender and controlled for this in subsequent analysis of narrative scores. Hodges et al. (2005) did not include details of differences in gender frequencies between the two groups included in their study.

Controls for Verbal and Cognitive Ability

It has been noted that narrative measures require a certain level of linguistic competence. There is a known association between maltreatment and poor academic performance, and it is important to ensure that any differences between the maltreated/LAC and control groups were not due to differences in their linguistic or cognitive ability. Seven studies did not find significant differences between the index group and the control group in verbal and/or cognitive ability; (Macfie et al., 2001; Minnis et al., 2006; Román et al., 2006; Stronach et al., 2011; Toth et al.,

1997; Toth et al., 2000; Vorria et al., 2006). Two studies found differences in cognitive ability between the groups using the WPPSI (Torres et al., 2012; Toth et al., 2002), however in both cognitive ability was found to be independent of scores on the narrative responses, and therefore was not taken into account in analysing differences within the narratives between the groups. Two studies found differences in cognitive ability using the WASI (Kocovska et al., 2012), and the MSCA (Vorria et al., 2006), but did not adjust subsequent analyses to account for these. Two studies did not report verbal or cognitive ability (Fresno et al., 2014; Hodges et al., 2005), and therefore it is not possible to conclude that any differences found between the groups in these studies did not result from differences in cognitive or verbal skills.

Table 2

Summary of Studies Included in the Review

Author (date)	Measure*	Target population studied (sample size, mean age in years)	Control population (sample size, mean age in years)	Focus/ Outcome	Key Findings
Sample: Maltreatment					
Macfie, Cicchetti & Toth (2001) - USA	ASCT (5 story stems)	Sexual abuse, physical abuse, neglect (n=45, 4.8 years at follow-up)	SES- and age-matched (n=33, 4.9 years at follow-up)	Longitudinal study of the development of dissociation; attachment classification; type of maltreatment	The maltreated sample showed significantly higher levels of dissociation than the non-maltreated sample, and this increased significantly over time.
Toth et al. (2000) - USA	ASCT (5 story stems)	Sexual abuse, physical abuse, neglect (n=56, 4.7 years at follow-up)	SES- and age-matched (n=37, 4.9 years at follow-up)	Longitudinal study of parent and self-representations; type of maltreatment	The narratives of maltreated children appear to become more negative in the pre-school period (between 3.7 to 4.7 years).
Fresno et al. (2014) – Chile	ASCT (5 story stems)	Sexual abuse (n=18, 5.5 years)	Age, sex and SES-matched (n=48, 6.0 years)	Attachment classification; type of maltreatment	The narratives of children who have experienced sexual abuse were significantly more likely to include attachment strategies associated with hyperactivation and disorganization.

Author (date)	Measure*	Target population studied (sample size, mean age in years)	Control population (sample size, mean age in years)	Focus/ Outcome	Key Findings
Toth et al. (1997) - USA	MSSB (10 story stems)	Neglect, physical abuse, sexual abuse (n=80, 5.0 years)	Matched on SES, age, gender, race, family income and education level, receptive vocab (n=27, 5.0)	Parent and self-representations, type of maltreatment	Narratives of maltreated children contained more negative maternal and self-representations, maltreated children were more controlling and demonstrated a less positive relationship with the examiner.
Stronach et al. (2011) - USA	MSSB (11 story stems)	Neglect, physical abuse, sexual abuse (n=93, 4.0 years)	SES and age matched controls (n=31, 4.0 years)	Parent representations, type of maltreatment	Maltreated children had significantly lower rates of secure attachment and higher rates of disorganized attachment than did non-maltreated children.
Minnis et al. (2009) - UK	MCAST (4 story stems)	Children meeting diagnostic criteria for RAD (n=38, 6.6 years)	Age and gender matched controls (n=39, 6.4 years)	Attachment classification	Children diagnosed with RAD had a greater risk of having an insecure attachment pattern, and were significantly more likely to show evidence of disorganization in their narratives.
Toth et al. (2002) - USA	MSSB & ASCT (11 story stems)	Maltreatment (n=86, 4.0 years at baseline)	SES and age matched controls (n=35, 4.0 years at baseline)	Effect of interventions; parent and self-representations	At baseline no difference was found between maltreated and non-maltreated samples. One treatment group demonstrated significant decrease in representations of the maltreating mother and negative self.

Author (date)	Measure*	Target population studied (sample size, mean age in years)	Control population (sample size, mean age in years)	Focus/ Outcome	Key Findings
Sample: LAC (foster care/adoption)					
Torres et al. (2012) - Portugal	ASCT (5 story stems)	Institutionalised children (n=19, 5.8 years)	Children from low (n=16, 5.7 years) and high educational (n= 56, 6.4 years) family backgrounds	Attachment classifications	Institutionalised children showed significantly lower security scores than both control groups. Security of attachment was found to mediate the relationship between institutionalization and aggressive behaviour.
Vorria et al. (2006) - Greece	ASCT (5 story stems)	Adopted children (n=61, 4.2 years), follow up from prior study	Children attending a low-quality nursery full time (n=39, 4.2 years)	Avoidance, coherence, story resolution	Adopted children had lower score than the comparison children for story resolution, narrative coherence, prosocial themes and higher score on avoidance. No significant difference was found for atypical or negative themes.
Minnis et al. (2006) - UK	C-MSSB (6 story stems)	Children in foster care (n=17, 7.5 years)	SES matched (n=17, 9.0 years)	Narrative coherence, intentionality and avoidance	The narratives of fostered children showed lower intentionality, higher avoidance and were less coherent than control children.
Kocovska et al. (2012) - UK	MCAST (4 story stems)	Adopted children (n=34, 9.4 years)	Age and gender matched controls (n=32, 8.7 years)	Attachment classification	A significantly higher proportion of adopted children were rated as disorganised attachment classifications and a significantly more control children were rated as have secure attachment classifications.

Author (date)	Measure*	Target population studied (sample size, mean age in years)	Control population (sample size, mean age in years)	Focus/ Outcome	Key Findings
Hodges et al. (2005) - UK	SSAP (13 story stems)	Late adopted (n=63, 6.3 years)	Infancy adopted (n=48, 5.8)	Attachment classifications, avoidance, parent and child representations.	The late-placed sample showed more evidence of avoidance and disorganisation, more negative and fewer positive carer representations and more catastrophic themes.
Román et al. (2012) - Spain	SSAP (13 story stems)	Internationally (n=40, 6.3 years) and locally (n=58, 6.5) adopted children	Typical controls (n=58, 6. years)	Attachment classifications	The narratives of adopted and institutionalised children show more evidence of insecurity, avoidance and disorganisation and less security. No significant differences were found between the narratives of adopted and institutionalised groups.

*ASCT – Attachment Story Completion Task; MCAST – Manchester Child Attachment Story Task; MSSB – MacArthur Story Stem Battery; C-MSSB – Computerised MacArthur Story Stem Battery; SSAP – Story Stem Assessment Profile.

Summary of Findings

There was a high level of heterogeneity in the studies included for the review, in terms of the measures and coding systems used, the populations sampled and the focus of the study. In order to amalgamate the results in a meaningful way, the 13 studies were first categorised by the target population researched, and divided into two broad categories which were considered to represent qualitatively different experiences of maltreatment and its possible impacts. Seven of the studies included for the review researched the narratives of children with known maltreatment histories, who were residing in the care of their parents at the time of the study. The remaining six studies explored the narratives of children who had been removed from their families and could therefore be considered to be LAC. These two categories were then sub-divided on the basis of common features of the narratives that had been reported, as detailed below.

Maltreatment Studies

The seven maltreatment studies are considered below in relation to the following narrative features and sample characteristics ; (1) Parental representations, (2) Self/child representations, (3) Attachment classification, (4) Types of abuse experienced. A number of studies were included in multiple categories.

Parent representations.

Four of the reviewed studies explored how parents and/or the parent-child relationship was represented in the narratives of maltreated children. There were some inconsistencies between the findings, however it is possible that these are due to the different average ages of children participating in the studies. The evidence shows the following:

- The two studies that included younger participants (under five years old) suggested indicated that at this age, there are no apparent differences in representations of parents between children who have been maltreated and those who have not (Toth et al., 2000; Toth et al., 2002).
- The same studies suggest that around five years of age differences between the parental representations of maltreated children and non-maltreated children become more apparent, with maltreated children showing more representations of negative parents and fewer representations of disciplining parents (Toth et al., 1997; Toth et al., 2000)
- It is unclear whether there is a difference the level of positive parental representations of maltreated children when compared to those of non-maltreated children, with two studies reporting significantly fewer positive representations of parents in the narratives of the maltreated sample (Stronach et al., 2011; Toth et al., 2002) and two studies reporting no differences between the groups in the level of positive representations of parents (Toth et al., 1997; Toth et al., 2000).
- The only intervention study included in the review (Toth et al., 2002) found that psychotherapeutic intervention only was shown to reduce the negative/maladaptive parental representations for the maltreated children, whereas no differences were found for maltreated children receiving psychoeducational home visits or community standard treatment.

Self/child representations.

Three of the four studies listed above also reported the self-representations that were present in the narratives of maltreated children, and compared these to the narratives of non-maltreated control groups. These were inconsistent in how the self-representations of children who have been maltreated differ from those who

have not been maltreated, and how these differences might change over time. The findings of these studies are summarised below:

- One study found that no differences exist between the narratives of maltreated and non-maltreated children at three to four years of age (Toth et al., 2002), whilst another found that that fewer positive self-representations are present in their narratives of maltreated children at this age (Toth et al., 2000).
- In contrast, Toth et al (1997) and Toth et al. (2000) found that narratives of older maltreated children (over 5 years old) contained more negative self-representations than those of non-maltreated children, Toth et al (2000) also reported an increase in grandiose self-representation for maltreated children from baseline. Neither study reported difference in the level of positive representations between maltreated and non-maltreated groups at this age.
- In the intervention study, Toth et al. (2002) found a significant increase in positive self-representations and a decrease in negative and false self-representations following psychotherapy-based interventions (Toth et al., 2002).

Attachment classification.

Three studies used the narratives of maltreated children to draw conclusions about their attachment classifications, or to explore themes of security and disorganization within the narratives. Macfie, Cicchetti and Toth (2001), Minnis et al. (2009) and Fresno et al. (2014) all reported a higher level of indicators of disorganized attachment in the narratives of children who had been abused when compared to the narratives of children who had not experienced maltreatment.

Type of maltreatment.

Five studies attempted to discern differences between the narratives of children who had experienced different forms of maltreatment; physical abuse, sexual abuse, emotional/psychological abuse and neglect. This presented clear methodological challenges for the researchers, largely due to the co-occurrence of multiple types of maltreatment for many children. Three studies (Macfie et al., 2001; Toth et al., 1997 and Toth et al., 2000) dealt with this using a hierarchical system proposed by Barnett, Manly and Cicchetti (1993), in which children who had only experienced neglect comprised one group, children who had experienced physical abuse and/or neglect comprised a second group, and a third group was made up of any children who had experienced sexual abuse, with or without any other forms of abuse being present. All participants included in the study by Fresno et al. (2014) had experienced sexual abuse, and Fresno and colleagues attempted to explore the differential impact of experiencing sexual abuse only, compared to experiencing sexual abuse combined with another form of abuse. Similarly, Stronach et al. (2011) divided their maltreated sample into those who had experienced neglect and/or emotional abuse, and those who had additionally experienced physical and/or sexual abuse.

To summarise, the five studies comparing the narratives of those who had experienced neglect or emotional abuse with those who had been physically and/or sexually abused, found the following:

- Two studies (Fresno et al., 2014; Stronach et al., 2011), found no differences between these subgroups and none of the five studies reported a difference between the neglected subgroup and the control samples.
- It was indicated by three studies (Macfie et al., 2001; Toth et al., 1997; Toth et al., 2000) that physical abuse had a greater impact on narrative responses than neglect, particularly in samples with a higher average age, suggesting

the possibility that physical abuse is more likely to lead a child to develop negative representations of themselves and their caregivers than other forms of maltreatment.

- Like Stronach et al (2011) and Fresno et al. (2014), Toth and colleagues (2000) found no differences in comparing the self or other representations among sexually abused children with those of non-maltreated controls. However, Toth et al (2000) did find that sexually abused children were more controlling with the examiner than non-maltreated counterparts.
- Toth et al. (1997) found that the non-maltreated controls were scored as having significantly less evidence of controlling behaviour, and significantly more positive relationship with the examiner than both the physically and sexually abused subgroups.

LAC Studies

A total of six studies used narrative measures to explore the attachment narratives of children who had been removed from their parents' care. These children were in either adoptive, foster care or institutional care settings at the time of participating in these studies. Within these six studies there was a great deal of heterogeneity in the measures used, focus of study, age at adoption, age of participation and so on. As such, these results will be discussed in relation to areas of analysis which were common to a number of studies.

Attachment classification.

Three of the six studies used narrative measures to investigate themes consistent with SSP attachment classification on two indices; security/insecurity, and organization/disorganization. Some of these were coded as continuous variables, allowing narratives to receive a score for each, and two of the researchers used these rating as categorical variables. Román et al. (2012), Torres et al. (2012) and Kocovska et al. (2012) all demonstrated that the LAC samples (adopted and

institutionalised) scored lower on measures of security, and higher on measures of disorganisation than the non-LAC control samples.

Avoidance, coherence and other narrative themes.

Two studies compared the narratives of adopted children with non-LAC control samples, and found that the adopted children showed a higher level of avoidance and lower levels of coherence (Minnis et al., 2006; Vorria et al., 2006) within their narratives. Hodges et al. (2005) reported similar findings comparing children adopted later in childhood with those adopted in early infancy; with the narratives of late-adopted children showing higher levels of avoidance and disorganization than those of the early-adopted control group.

Discussion

Many studies have attempted to explore the impact of maltreatment on children's attachment relationships, and one method of doing so is using narrative story-stem measures. These measures aim to explore attachment representations, rather than attachment behaviour and have the benefit of yielding rich data, whilst also being more engaging than some other measures of attachment. This study aimed to review how these measures have been used in assessing the attachment representations of young children who have experienced maltreated.

Overall, the findings of this review indicate that narrative responses of children who have experienced maltreatment contained more indicators of insecurity and disorganisation when compared to the control samples, in keeping with previous research (e.g. Cicchetti & Barnett, 1991). Within the studies of looked-after children, this was expressed in the participants' avoidance of the dilemmas inherent in the story stems, and in the poor narrative coherence of their responses. For the children who had experienced maltreatment but remained with their parents, differences were also found in the increased number of negative representations of parents and

children within their narratives, and these differences were more likely to be found in older children who had experienced maltreatment. Despite these broad similarities, it was not possible to draw more detailed conclusions about the nature of maltreated children's attachment representations, largely due to methodological limitations of the studies reviewed. These limitations will be discussed further below.

Within the studies exploring the effects of maltreatment, attempts were made by some researchers to differentiate between different types of abuse experienced. The findings of these studies were inconsistent. There was some indication that the experience of physical abuse was associated with more negative (insecure/disorganised) representations, when compared to other forms of abuse. However, methodological issues make it difficult to draw conclusions about these findings. Firstly, there is a high co-occurrence of different types of abuse, and it is not always possible to determine which form/s of abuse a child will have been exposed to. The attempts made by researchers to group participants on this basis meant that those in the "physically abused" subgroup were more likely to have been exposed to multiple forms of abuse, and the differences in the narratives may be due to the cumulative effect of these experiences. Additionally, as the maltreated samples were subdivided into different categories in order to explore this issue, the sample size of the sub-groups were very small, and it is possible that the studies may not have had enough statistical power to detect an effect.

A number of other methodological concerns arose during the review. Firstly, five of the thirteen studies included in the review were completed by the same research group (Toth, Macfie and colleagues). These studies were found to represent unique data (for example they used different measures, and the sample characteristics differed) but it is possible that this introduced bias into the findings. Three of the studies reported including participants who were older than the age for which the measures were designed to be used with, thus raising questions about the

validity of the findings, and the suitability of these measures for use with these participants. A further seven studies did not report on the participants' age-range, and it so it is possible that these researchers also included participants who were outside of the recommended age-range.

Across the studies, sample sizes were relatively small, reducing the statistical power of the studies, and variations in the methods of data coding and analysis precluded meta-analytic synthesis of the findings. Although eleven of the thirteen studies included for the review used measures that are associated with the MacArthur Working Group (the MSSB, the ASCT, and the SSAP), there was a large variety in the how the researchers analysed the narratives responses and what features were coded, such as narrative themes, parent/child representations, attachment classifications and child behaviour. Additionally, there were discrepancies between the studies in terms of the level of detail written up, with many authors reporting minimal details or simply reporting attachment classification rather than findings such as the parent or child representations. This is despite the advantage of narrative measures in providing the ability to assess attachment in a more qualitative way, compared to other measures which give categorical classifications.

There were a number of specific adaptions made to the measures, again complicating comparisons between the studies. Two studies specifically adapted the coding systems due to the specific focus of the studies; Minnis et al (2006) in the development of a computerised-MSSB, and Macfie et al (2001) in an adaptation of the ASCT to explore "narrative dissociation". Another form of adaptation was the language in which the measure was used. Four studies adapted the measures for use in different languages and provided varying levels of details about the adaptations made to the measures in order to do so.

Three studies provided statistics demonstrating inter-rater reliability of the adaptations, however none demonstrated the validity of the adapted scales. Vorria et al. (2006) provided no details as to whether any adaptations were made, despite the study taking place in Greece, and as such it is unclear how the administration and coding would have been affected in this study. Cross-cultural differences in the proportion of infants with secure, insecure and disorganised attachment patterns have been widely reported (van Ijzendoorn, 1990) and are thought to be related to different cultural norms in caregiving behaviour. It is likely that these would also lead to cross-cultural differences in attachment representations, thus raising questions as to whether the findings of the adapted measures could be compared directly with those completed with English-speaking participants in the USA and the UK.

Román et al (2012) reported their use of a Spanish adaption of the SSAP to compare the narratives of children who had been locally adopted in Spain and those who had been internationally adopted from Russia. Román et al demonstrated that the linguistic competence of the Russian sample used in this study was equivalent to that of the local sample, and used this in subsequent analysis. However, the Russian children would have unique cultural experience, as well as being exposed to an extreme change in culture, which may well have impacted on their attachment representations. As such, it is not possible conclude that any differences found between the groups were due to different adoption experiences over and above the any cultural differences, and make it difficult to draw any wider conclusions about the impact of adoption on internal representations more generally.

It is recognised that the coding of narrative measures could be affected by the language abilities of the participants (Holmberg et al., 2007) and that impaired academic performance is associated with both the experience of maltreatment (Romano et al., 2015) and insecure/disorganised attachment (Cicchetti & Barnett, 1991). As such, it was important for the studies included in the review to control for

verbal and cognitive ability as a potential confounding variable. Seven studies measured verbal ability and demonstrated no significant group differences. Four studies showed that the maltreatment/LAC samples and control samples did differ significantly on verbal ability, however only two of these used adjusted statistical analysis accordingly, and a further two studies did not measure the verbal or cognitive ability of their samples. As such it is not possible to conclude that any differences found are not due to differences in language ability in these studies.

In summary, the findings of the studies reviewed indicate that narratives measures are able to detect differences in the internal representations of maltreated children, as would be predicted by previous research. However, failure to control for potentially confounding variables such as age, gender, language and cognitive ability, limit the conclusions that can be drawn from these studies. It would be helpful to have larger scale systematic work looking at the sensitivity of these tools to identify children who have been maltreated, including controls for a broader range of covariates. The review raises important theoretical issues about what these tools measure and what they are able to tell us about the clinical implications for children who have been maltreated or are in care. There is some indication in Toth et al. (2002) that work which targets negative internal representations of maltreated children can reduce these representations, however it is not clear what impact this would have on their relationship with others or their emotional wellbeing. It would be important for future studies to determine the clinical significance of these findings over and above the nature, severity and/or chronicity of the maltreatment.

References

Achenbach, T. M. (1991). *Manual for the teacher's report form and 1991 profile*. Burlington, VT: University of Vermont, Department of Psychiatry

Ainsworth, M. D. S., Blehar, M. C, Waters, E. & Wall, S. (1978). *Patterns of attachment: a psychological study of the strange situation*. Hillsdale, NJ: Erlbaum Associates.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th Ed.). Washington, DC: American Psychiatric Association.

Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin, 129*, 195–215.

Barnett, D., Ganiban, J., & Cicchetti, D. (1999). Maltreatment, negative expressivity, and the development of type D attachments from 12 to 24 months of age. *Monographs of the Society for Research in Child Development, 64*, 97–118.

Barnett, D., Manly, J. T., & Cicchetti, D. (1993). Defining child maltreatment: The interface between policy and research. In D. Cicchetti & S. L. Toth (Eds.) *Child abuse, child development, and social policy: Vol. 8. Advances in applied developmental psychology* (pp. 7–73). Norwood, NJ: Ablex.

Berry, K., Danquah, A. N. & Wallin, D. (2014). Attachment Theory and Practice - the Basics: Introduction. In A. N. Danquah & K. Berry (Eds.) *Attachment theory in adult mental health: A guide to clinical practice.* Oxon, UK. Routledge.

Bowlby, J. (1958). The Nature of the Child's Tie to His Mother. *International Journal of Psychoanalysis, 39*, 350-373

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. In I. Bretherton & E. Waters (Eds.) Growing points of attachment theory and research.

Monographs of the Society for Research in Child Development, 50 (1-2, Serial No. 209), 66-104

Bretherton, I., Oppenheim, D, Buchsbaum, H, Emde, R., & the MacArthur Narrative Group. (1990). *The MacArthur Story Stem Battery*. Unpublished manuscript, University of Wisconsin-Madison.

Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship. In M. T. Greenberg, D. Cicchetti, & M. Cummings (Eds.) *Attachment in the preschool years* (pp. 273–308). Chicago: University of Chicago Press

Buchsbaum, H., & Emde, R. N. (1990). Play narratives in 36-month-old children: Early moral development and family relationships. *Psychoanalytic Study of the Child, 40,* 129-155.

Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized/ disoriented attachment relationships in maltreated infants. *Developmental Psychology, 25*, 525–531.

Cicchetti, D. & Barnett, D. (1991). Attachment organization in preschool aged maltreated children. *Developmental Psychopathology, 3,* 397–411

Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology, 18*, 623–650.

Cicchetti, D. & Thompson, R. A. (2000). The Legacy of Early Attachments. *Child Development, 71* (1), 145-152

Cyr, C., Euser, E. M., Bakermans –Kranenburg, M. J. & van Ijzendoorn, M. H. (2010). Attachment security and disorganization in maltreating and high-risk families: A series of meta-analyses. *Development and Psychopathology, 22*, 87–108

De Wolff, M. S., & Van Ijzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant-attachment. *Child Development, 68*, 571–591

Fresno, A., & Spencer, R. (2011). Efecto del maltrato físico en la calidad de las representaciones de apego infantil en Chile: Resultados preliminares [Effect of physical abuse on the quality of infant attachment representations in Chile: Preliminary results]. *Terapia Psicológica, 29*, 191–196. doi:10.4067/S0718-48082011000200006

Fresno, A., Spencer, R., Ramos, N., Pierrehumbert, B. (2014). The effect of sexual abuse on children's attachment representations in Chile. *Journal of Child Sexual Abuse: Research, Treatment, & Program Innovations for Victims, Survivors, & Offenders, 23* (2): 128-145.

Freud, A. (1946). *The psycho-analytic treatment of children*. London: Imago

George, C., Kaplan, N., & Main, M. (1985). *Adult Attachment Interview protocol* (2nd ed). Unpublished manuscript, University of California at Berkeley.

Green, J., Stanley, C., Smith, V., & Goldwyn, R. (2000). A new method of evaluating attachment representations in the young school age children: The Manchester Child Attachment Story Task (MCAST). *Attachment and Human Development, 2,* 48–70.

Hesse, E., & Main, M. (2006). Frightened, threatening, and dissociative parental behavior in low-risk samples: Description, discussion, and interpretations. *Development and Psychopathology, 18*, 309–343

Hodges, J., Hillman, S., Steele, M., & Stufkens, M. (2015). *The Story Stem Assessment Profile (SSAP) Coding Manual*. Unpublished Document.

Hodges, J., Steele, M., Hillman, S., Henderson, K., & Kaniuk, J. (2005). Change and continuity in mental representations of attachment after adoption. In D. M

Brodzinsky & J. Palacios (Eds). *Psychological issues in adoption: Research and practice.* (pp. 93-116) Westport, CN: Praeger.

Holmberg, J., Robinson, J., Corbitt-Price, J. and Weiner, P. (2007). Using narratives to assess competencies and risks in young children: Experiences with high risk and normal populations. *Infant Mental Health Journal, 28* (6), 647–666

Jutte, S., Bentley H., Tallis, D., Mayes, J., Jetha, N., O'Hagan, O., Brookes, H. & McConnell, N. (2015). *How safe are our children? The most comprehensive overview of child protection in the UK.* London: NSPCC.

Kobak, R. R. (1999). The emotional dynamics of disruptions in attachment relationships: Implications for theory, research and clinical intervention. In J. Cassidy & P. R. Shaver (Eds), *Handbook of attachment:* (pp. 21–43). New York: Guilford Press

Kocovska, E., Puckering, C., Follan, M., Smillie, M., Gorski, C., Barnes, J., Young, D., Lidstone, E., Pritchett, R., Hockaday, H., Minnis, H. (2012). Neurodevelopmental problems in maltreated children referred with indiscriminate friendliness. *Research in Developmental Disabilities 33* (5): 1560-1565.

Lowell, A., Renk, K., & Adgate, A. H. (2014). The role of attachment in the relationship between child maltreatment and later emotional and behavioral functioning. *Child Abuse & Neglect, 38,* 1436–1449

Lyons-Ruth, K., & Jacobvitz, D. (2008). Attachment disorganization: Genetic factors, parenting contexts, and developmental transformation from infancy to adulthood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment* (2nd ed., pp. 666–697). New York: Guilford Press

Lyons-Ruth, K., Repacholi, B., McLeod, S., & Silva, E. (1991). Disorganized attachment behavior in infancy: Short-term stability, maternal and infant

correlates, and risk-related subtypes. *Development and Psychopathology, 3*, 377–396

Macfie, J., Cicchetti, D., Toth, S. L. (2001). The development of dissociation in maltreated preschool-aged children. *Development and Psychopathology 13* (2), 233-254.

Maia, J., Ferreira, B., Silva, F., Fernandes, M., & Veríssimo, M. (2009). *Adaptação portuguesa do Attachment Story Completion Task - Manual de aplicação e cotação:* Dimensão Contínua de Segurança. Manuscrito não-publicado, Instituto Superior de Psicologia Aplicada, Lisboa, Portugal.

Main, M. (1990). Cross-cultural studies of attachment organization: Recent studies, changing methodologies, and the concept of conditional strategies. *Human Development, 33*, 48-61.

Main, M. & Solomon, J. (1986). Discovery of a new, insecure disorganised/ disoriented attachment pattern. In T. B. Brazelton & M. Yogman (Eds.), *Affective development in infancy* (pp. 95-124). New York: Basic Books.

Main, M., Kaplan, K. & Cassidy, J. (1985). Security in infancy, childhood, and adulthood; a move to the level of representation. In I. Bretherton & E. Waters (Eds.) *Growing Points of Attachment Theory and Research. Monographs of the Society for Research in Child Development, 50*(1-2,Serial No. 209),66-104

Minnis, H., Green, J., O'Connor, T. G., Liew, A., Glaser, D., Taylor, E., Follan, M., Young, D., Barnes, J., Gillberg, C., Pelosi, A., Arthur, J., Burston, A., Connolly, B., Sadiq, F. (2009). An exploratory study of the association between reactive attachment disorder and attachment narratives in early school-age children. *Journal of Child Psychology and Psychiatry 50* (8): 931-942.

Minnis, H., Millward, R., Sinclair, C., Kennedy, E., Greig, A., Towlson, K., Read, W., Hill, J. (2006). The Computerized MacArthur Story Stem Battery-A pilot study

of a novel medium for assessing children's representations of relationships. *International Journal of Methods in Psychiatric Research 15* (4): 207-214.

National Society for the Prevention of Cruelty to Children (NSPCC) (2016). Downloaded from https://www.nspcc.org.uk/services-and-resources/research-and-resources/statistics/

Oppenheim, D. (1997). The attachment doll play interview for pre-schoolers. *International Journal of Behavioural Development, 20*, 681-697.

Oppenheim, D., Koren-Karie, N., & Sagi-Schwartz, A. (2007). Emotion Dialogues between Mothers and Children at 4.5 and 7.5 Years: Relations with Children's Attachment at 1 Year. *Child Development, 78* (1), 38–52. Retrieved from http://www.jstor.org/stable/4139212

Oshri, A., Sutton, T. E., Clay-Warner, J., Miller, J.D. (2015). Child maltreatment types and risk behaviors: Associations with attachment style and emotion regulation dimensions. *Personality and Individual Differences, 73*, 127–133

Pierrehumbert, B., Santelices, M., Ibáñez, M., Alberdi, M., Ongari, B., Roskam, I., et al. (2009). Gender and attachment representations in the preschool years: Comparisons between five countries. *Journal of Cross-Cultural Psychology, 40* (4), 543-566.

Putnam, F. W., Helmers, K., & Trickett, P. K. (1993). Development, reliability, and validity of a child dissociation scale. *Child Abuse and Neglect, 17*, 731–741

Robinson, J., Mantz–Simmons, L., & Macfie, J., & the MacArthur Narrative Group (1996). *The Narrative Coding Manual, Rochester version*. Unpublished manuscript.

Román, M., Palacios, J., Moreno, C. & Lopez, A. (2012). Attachment representations in internationally adopted children. *Attachment & Human Development 14*(6), 585-600.

Romano, E., Babchishin, L., Marquis, R., & Fréchette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence & Abuse, 16*(4), 418-437.

Solomon, J., George, C., & de Jong, A. (1995). Children classified as controlling at age six: Evidence of disorganized representational strategies and aggression at home and at school. *Development and Psychopathology, 7*, 447-463.

Stronach, E. P., Toth, S. L., Rogosch, F., Oshri, A., Manly, J. T. (2011). Child maltreatment, attachment security, and internal representations of mother and mother-child relationships. *Child Maltreatment 16* (2), 137-145.

Thompson, R. A. (2008). Early Attachment and later development: familiar questions, new answers. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment* (2nd ed., pp. 348-365). New York: The Guildford Press.

Torres, N., Maia, J., Verissimo, M., Fernandes, M., Silva, F. (2012). Attachment security representations in institutionalized children and children living with their families: Links to problem behaviour. *Clinical Psychology & Psychotherapy 19* (1), 25-36.

Toth, S. L., Cicchetti, D., Macfie, J., Emde, R. N. (1997). Representations of self and other in the narratives of neglected, physically abused, and sexually abused preschoolers. *Development and Psychopathology 9* (4): 781-796.

Toth, S. L., Cicchetti, D., Macfie, J., Maughan, A. & Vanmeenen, K. (2000). Narrative representations of caregivers and self in maltreated pre-schoolers. *Attachment & Human Development 2* (3), 271-305.

Toth, S. L., Maughan, A., Manly, J. T., Spagnola, M. & Cicchetti, D. (2002). The relative efficacy of two interventions in altering maltreated preschool children's representational models: Implications for attachment theory. *Development and Psychopathology 14* (4), 877-908.

van den Dries, L., Juffer, F., van Ijzendoorn, M. H., Bakermans-Kranenburg, M.J. (2009). Fostering security? A meta-analysis of attachment in adopted children. *Children and Youth Services Review, 31*, 410–421.

Van Ijzendoorn, M. H. (1990). Developments in cross-cultural research on attachment: Some methodological notes. *Human Development, 33*, 3-9

Van Ijzendoorn, M. H., Schuengel, C., & Bakermans-Kranenburg, M. J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology, 2*, 225-250

von Klitzing, K., Kelsay, K.,Emde, R. N.,Robinson, J., Schmitz, S. (2000). Gender-Specific Characteristics of 5-Year-Olds' Play Narratives and Associations with Behavior Ratings. *Journal of the American Academy of Child & Adolescent Psychiatry, 39* (8), pp.1017-1023

Vorria, P., Papaligoura, Z., Sarafidou, J., Kopakaki, M., Dunn, J., Van Ijzendoorn, M. H., Kontopoulou, A. (2006). The development of adopted children after institutional care: A follow-up study. *Journal of Child Psychology and Psychiatry 47*(12): 1246-1253.

Warren, S. L. (2003). Narratives in risk and clinical populations. In R. N. Emde, D. P. Wolf & D. Oppenhiem (Eds.) *Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent-child narratives* (pp. 222-239). New York: Oxford University Press.

Warren, S. L., Mantz-Simmons, L. & Emde, R. N. (1993). *Narrative emotion coding*. Unpublished manuscript.

Winnicott, D. W. (1958). *Collected papers: Through paediatrics to psycho-analysis*. New York: Basic Books.

PART 2: EMPIRICAL PAPER

Abstract

Aims: Our understanding of adolescent attachment representations is limited, largely due to the lack measures which exist to assess attachment in this developmental period. The current study aimed to explore the psychometric properties and clinical utility of the Adolescent Story Stem Profile (ASSP); an online measure of internal representations, adapted from narrative story-stem techniques.

Methods: A community sample of 253 adolescents in mainstream secondary schools completed the ASSP, and their responses were used to assess the ASSP's ability to predict self- and teacher-rated difficulties as measured by the SDQ and CGAS. Responses of a clinical sample of 32 adolescents in residential or foster care were compared to those of an age- and gender-matched subset of the community sample.

Results: The factor structure of the ASSP was analysed using principal component analysis, revealing a four-factor model. These factors were found to predict responses on two of the five SDQ subscales, but not the total SDQ difficulties or the CGAS. Scores on two of the four factors were found to differ significantly in the clinical sample when compared to the subset of the community sample.

Conclusions: The ASSP shows promising results in its ability to measure the attachment representations of adolescents, however improvements could be made. This are discussed with reference to the limitations of the study, and suggestions for future work are made.

Introduction

Attachment is widely recognised to be an important developmental and clinical phenomenon and large volume of research has shown that insecure attachment can have implications for a range of outcomes, such as the quality of social relationships (Berlin, Cassidy & Appleyard, 2008) and risk for mental health difficulties (Carlson, 1998). In clinical practice, there is a lack of measures that can be used routinely to assess attachment, particularly in the adolescent period (Allen, 2008; Scott, Briskman, Woolgar, Humayun, & O'Connor, 2011; Venta, Shmueli-Goetz and Sharp, 2014). This paper presents a study examining the reliability and validity of a new instrument designed to assess attachment representations in adolescence. In the sections below, we review the nature and developmental profile of attachment from infancy into adulthood, and discuss the challenges of assessing attachment in the adolescent period. We then provide an overviewing of existing measures and outline the new tool that forms the basis of this report before summarising the aims and objectives of the study.

Developmental profile of attachment

First proposed by Bowlby, attachment is defined as a "lasting psychological connectedness between human beings" (Bowlby, 1969), and the nature of this connectedness is conceptualised differently at different life stages. In infancy and early childhood, attachment describes the quality of a child's relationship with his caregivers. At this age, the attachment system is activated in response to threat, and causes the infant to behave in ways which elicit comfort and protection from caregivers, for example crying and seeking proximity. Over repeated interactions, the caregiver's responses to these behaviours become internalised by the infant in the form of attachment representations in the internal working model (IWM; Bowlby, 1969). This is a cognitive template or schema which organises and makes sense of an individual's relational experiences, defined as "a set of conscious and/or

unconscious rules for the organisation of… information regarding attachment-related experiences, feelings and ideations." (Main, Kaplan & Cassidy, 1985).

If caregivers are consistently attuned and responsive to the infant's attachment cues, the infant is likely to develop a secure attachment to the caregiver. A securely attached infant is thought to represent their caregiver as being warm and available, and themselves as being worthy of care (Bowlby, 1973). However, if caregivers are not consistently attuned and responsive to the infant at times of distress, the infant is likely to form an insecure-avoidant or insecure-resistant attachment to their caregiver, demonstrated behaviourally by, for example, lack of distress at separation (avoidant) or inability to take comfort from their caregiver when reunifying following a brief period of separation (resistant) (Ainsworth, Blehar, Waters & Wall, 1978). A fourth category, disorganised attachment, describes contradictory behaviour in the infant, such as simultaneously avoiding and reaching for the caregiver, and is thought to result from frightening behaviour from the caregiver, such as maltreatment (Main & Solomon, 1986).

Throughout development, decreases in dependence on caregivers leads to increasingly more separation, and a reduction of the intensity and frequency of overt attachment behaviours. There is also an increase in the number and complexity of social relationships throughout development. There is evidence that different types of relationship serve different functions, but only parental relationships are thought to retain the unique qualities of an attachment relationship in childhood. For example by middle-childhood, it has been shown that children will often choose peers as playmates over parents, but in situations in which the attachment system is likely to be activated (such as feeling sick, scared or sad), children consistently prefer their parents to peers (Kerns, Tomich & Kim, 2006), indicating the specific qualities of an attachment relationship. By adulthood, attachment theory suggests that the IWM of caregivers will have generalized to other people in the adult's social networks

(Bowlby, 1973). Assessment of the key components of attachment relationships (proximity seeking, safe haven, separation distress and secure base) in adulthood suggests that for adults in long-term romantic relationships, romantic partners predominate parental figures in the attachment hierarchy (Zeifman & Hazan, 2008).

Measurement of attachment representations

In infancy, it is not possible to access attachment representations directly, and instead the behavioural expressions of attachment representations are measured systematically using observational experimental procedures such as the Strange Situation Paradigm (SSP; Ainsworth et al., 1978). In this paradigm, the infant is placed in situations design to activate the attachment system (such as separation from the primary caregiver) and the intensity and frequency of overt attachment behaviours like proximity seeking, contact maintenance, avoidance and resistance are observed and measured. From childhood onwards, the development of increasingly sophisticated cognitive and linguistic skills enables researchers to directly explore individual's attachment representations and the IWM. In adulthood, the gold-standard measure of attachment, the Adult Attachment Interview. (AAI; George Kaplan & Main, 1985), aims to capture "states of mind in relation to attachment" by asking respondents to reflect on their early attachment experiences with their parents.

Responses to the AAI can be classified into distinct categories based on the quality of the narratives provided. For example, a classification of "autonomous", (related to the infant classification of secure) denotes a response that shows high levels of narrative coherence and attentional flexibility, whereby respondents are able to shift between descriptions and evaluations of their attachment experiences (Hesse, 1996). These transcripts also typically show clear ability to recall early memories of childhood attachment experiences, and suggest a valuing of the importance of attachment relationships. The AAI classifications also include

preoccupied, dismissing and unresolved/disorganised (Main, Goldwyn & Hesse, 1985/1991), mapping on broadly to the SSP classification of insecure-resistant, insecure-avoidant and disorganised, respectively. One important way of capturing the differences in narrative or thinking style between autonomous and non-autonomous adult attachment interviews is the extent to which the narratives demonstrate what is referred to as reflective function (RF; Fonagy, Steele, Steele, Moran & Higgitt, 1991). This is the ability to make sense of our own and others' emotional and mental states, and infer beliefs, feelings and intentions from others' actions, also known as mentalization (Fonagy, Gergely, Jurist & Target, 2004; Bateman & Fonagy, 2010).

Narrative responses have also been used to assess the attachment representations of children. So called "story-stem" techniques such as the Story Stem Assessment Profile (SSAP; Hodges, Hillman, Stufkens & Steele, 2015), the MacArthur Story Stem Battery (MSSB; Bretherton, Oppenheim, Buchsbaum & Emde, & the MacArthur Narrative Working Group, 1990), Manchester Child Attachment Story Task (MCAST; Green, Stanley, Smith & Goldwyn, 2000) use toys or dolls to represent a family scenario, and a dilemma (or "story stem") is introduced. Children are invited to respond by showing or telling what happens next. Analysis of the children's responses have shown it is possible to identify indices of security, insecurity and disorganisation within the content of the narratives and through assessment of the child's behaviour with the examiner. Coding schemes vary between the different measures, but all demonstrate some index of security; evidenced by, for example, representations of parents who are warm and affectionate, children who have realistic mastery of the problem, and the child engages with the task. Insecurity is typically indicated by more negative representations of parental figures and child figures who are more helpless or incompetent at resolving problems. Indicators of disorganisation include poor

coherence within the narratives, catastrophic themes of violence or death, avoidance of the dilemma inherent in the story stem, or controlling behaviour towards the examiner.

Narrative measures have been shown to be related to a variety of clinical phenomena. For example, associations have been found between MCAST ratings of disorganised attachment and mothers' unresolved AAI classification (Goldwyn, Green, Stanley & Smith, 2000) and ratings on the MSSB have been shown to predict behaviour problems (von Klitzing, Kelsay, Emde, Robinson & Schmitz, 2000; Warren, Oppenheim & Emde, 1996) and levels of anxiety (Warren, Emde & Sroufe, 2000). One particular clinical group in which narrative measures have been used extensively is with children who have experienced maltreatment. For example, it has been found using the MSSB that the narratives of maltreated children indicate more negative adult- and self-representations (e.g. McCrone, Egeland, Kalkoske, & Carlson, 1994; MacFie, Toth, Rogosch, Robinson, Emde, & Cicchetti, 1999; Toth, MacFie, Cicchetti, & Emde, 1997), and lack of acknowledgement of or resolution to the dilemma present in the story stem (Buchsbaum, Toth, Clyman, Cicchetti, & Emde, 1992) when compared to non-maltreated children.

The SSAP was adapted from the MSSB, specifically for use with children who have experienced abuse or maltreated. It has been used extensively in longitudinal studies of attachment representations, comparing the narrative responses of children adopted in early infancy (who had not suffered maltreatment) with those of children adopted later in childhood. It was found that the narratives of the late-adopted group showed more negative representations of children and adults, included more disastrous or chaotic themes, and had higher levels of indicators of disorganised attachment (Hodges & Steele, 2000; Hodges, Steele, Hillman, Henderson, & Kaniuk, 2003, 2005; Steele et al., 2008). When changes in these children's attachment representations were tracked over a two year period it was

found that maltreated children's narratives showed increasingly more indicators of positive representations, which were also related to the attachment organisation of the adoptive parents. However, the indicators of insecure or disorganised attachments remained the same, suggesting an enduring effect of earlier maltreatment experiences.

Measuring attachment in adolescence

Adolescence is a life stage characterised by changes and transitions, and this is reflected in the changes that take place in attachment relationships during this period. The key attachment task of this period is thought to be to negotiate the separation from parents in order to become independent and autonomous (Sroufe, 2005), without breaking bonds with parents completely (Allen, 2008). Attempts to strike the balance between dependence on and autonomy from parents are likely to contribute to the high level of conflict seen in this period (Resnick et al., 1997), and during this stage there is a normative rise in non-aggressive delinquent behaviour (Bongers, Koot, van der Ende & Verhulst, 2003). Despite this, most adolescents are able to negotiate the changes in their relationships without significant and lasting negative consequences (Cicchetti & Rogosch, 2002), and conflict between teenagers and parents at this age is not thought to be an indication of attachment insecurity. Although virtually all teenagers will experience increases in their independence, how and when this takes place, and how the individual and those around them react to these changes, is likely to have an impact on the nature of the individual's attachment and their internal representations.

However, our knowledge of adolescent internal representations is relatively limited, largely due to a notable "measurement gap" that has been recognised in measures of attachment at this age (Allen, 2008, Scott et al., 2011). Crowell, Fraley and Shaver (2008) review measures of attachment relationships in adolescence and adulthood, and note the large variety of measures that have been used. These vary

in a number of ways, such as the interpretation of attachment and the focus of the measurement tool (perceptions of attachment, internal representations, secure base behaviour); how these are explored using behavioural, questionnaire or interview techniques; whether they are specific to a particular relationship or more general attachment patterns; and so on. However, very few of these measures are developed specifically for late childhood or adolescence and the adolescent-specific measures which are available interpret attachment in a variety of ways, often indirectly assessing attachment security through proxy measures on indices such as separation anxiety and family functioning. As a result, our knowledge of adolescent internal representations and how they relate to attachment classifications is relatively limited when compared with other developmental stages.

The changes in cognitive skills such as perspective taking and abstract reasoning from late childhood to adolescence (Piaget, 1952) render measures developed for younger-aged children inappropriate for use with adolescents. As such there is a tendency for researchers to rely on adult measures of attachment when working with this population (Kobak, Cassidy, Lyons-Ruth & Ziv, 2006). Recently, researchers have questioned the developmental appropriateness of using adult measures of attachment with adolescent populations. For example, a recent review raises doubts about the validity of using the AAI with this population, finding that a disproportionate number of adolescents are classified as “dismissing”, even when they had previously been classified as secure (Warmuth & Cummings; 2015). Rather than indicating that a higher incidence of insecure attachment patterns, the authors conclude that this finding is due to attachment security being represented and expressed differently at this age. Additionally, although the AAI might be possible to use with older adolescents (from approximately 15 years) it does not tend to be used with younger teenagers. The lack of age-appropriate measures of adolescent attachment representations poses challenges in assessing the validity of

newly developed modes of assessing attachment during the adolescent developmental period.

One measure which has been proposed to fill this noted measurement gap is the CAI (Shmueli-Goetz, Target, Fonagy & Datta, 2008). Informed by the AAI, the CAI directly asks the young person to reflect on their current personal attachment experiences in order to access their internal representations. Responses are coded on a number of scales indicating security (such as emotional openness, resolution of conflict, coherence) and insecurity (preoccupied anger, idealization, dismissal), and scores on these scales allow the rater to determine the young person's attachment classification with a specific caregiver as secure, insecure-dismissing, insecure-preoccupied or insecure-disorganised. Although initially developed for use in middle childhood (ages xx to 12), convincing evidence has been shown for the reliability and validity of the CAI when used to explore the internal representations of adolescent populations (Venta, Shmueli-Goetz and Sharp, 2014),

However, some of the findings within this study were somewhat unexpected. As noted by Venta et al. (2014), classifications of disorganised attachment using the CAI did not correlate with self-report measures of attachment, suggesting that these two measures might capture different aspects of disorganised attachment. It has been recognised that disorganised attachment has not been explored in detail in this age-group (Allen, 2008), and further research using a variety of measures could be useful for understanding the changes taking place during adolescence in terms of secure/insecure and organised/disorganised attachment representations.

The Adolescent Story Stem Profile (ASSP)

An alternative approach is to adapt narrative measures of attachment representations used in childhood to be used with adolescents. The ASSP (Hillman, Tesarova & Gonzalez, 2011) is an online, video-based measure adapted from the SSAP for use with adolescents. In completing the ASSP, individuals are asked to

watch eight videos portraying ambiguous social situations, which provide an age-appropriate equivalent of the story stems used in the SSAP. The participant is then asked to complete the story stem by answering questions about the reactions of characters in the videos to the events depicted. The videos portray a range of scenarios designed to elicit a variety of reactions in the young people watching them.

Similarly to the SSAP, the ASSP has been designed to be applicable for use with clinical adolescent populations who may have attachment difficulties, such as children removed from their parents' care. For this population, the transition from dependence to autonomy is prematurely forced and the precise impact of this on the adolescents' internal representations is unknown. This is further complicated by the likelihood that this population will have experienced physical, emotional and/or sexual abuse and neglect from their caregivers, which is associated with the development of disorganised attachment patterns and may subsequently develop disorganized attachment styles as a result.

As a narrative approach, the ASSP does not ask direct personal questions, which could potentially cause some adolescents, particularly those with features of disorganised attachment, to disengage. The ASSP further increases the likelihood of engagement by being computer-based and interactive. This also has the additional benefit of being easy to administer and score, making it practical to use in clinical settings and with clinical populations.

Aims of the current study

In light of the fact that we know very little about how attachment is represented in adolescence, in part to the limited of measures that have been developed to measure this construct, this paper reports on an exploratory study of the ASSP a semi-projective measure of adolescent narratives. The study aimed to examine whether the ASSP presents a valid measure of attachment constructs in adolescent

by exploring the psychometric properties of the ASSP with both a clinical and a normative community sample of 11 to 18 year old British children adolescents. The factor structure of the ASSP will be explored with reference to the age and sex of the participants. To test the clinical utility of the ASSP, the relationship between responses on the ASSP and self- and teacher-reported strengths and difficulties will be analysed.

It was predicted that the ASSP would reflect constructs associated with attachment security, insecurity (avoidance and preoccupation) and disorganisation, and that these factors would discriminate between a community based sample and a clinical sample, with the latter group providing responses that could be considered to be consistent with disorganised or insecure attachment. As semi-projective tools have not been used previously with this age group, it is unclear how constructs such as security/insecurity would be represented. However it is likely that they would have similarities with CAI indices of security and insecurity when used with adolescents. As such, security is likely to be associated with emotional openness and effective conflict resolution, whereas insecurity is likely to be associated with preoccupation, idealization or dismissal of attachment figures.

Method

Participants

A total of 107 male and 146 female school children aged 11 to 19 years (M = 14.3, SD = 1.6) attending mainstream secondary schools participated in the study. A further group of 11 male and 21 female children who were in foster or residential care aged 12 to 19 years (M = 14.8, SD = 1.8) made up the clinical sample of the study. The school children were drawn from a range of year groups from early to late-adolescence.

Community sample

The schools that were invited to take part were chosen in order to obtain a sample of students from a range of backgrounds. All schools were large secondary schools (total number of pupils ranging from 1077 to 1468). All schools were either comprehensives (N=2), academy converters (N=3) or new academies. Four of the six schools were co-education, one was a boys' school and one was a girls' school. The proportion of students receiving free school meals can be used as a broad indicator of the socio-economic background of the students attending a school, with a higher than average proportion of students receiving free school meals indicating lower socio-economic status. The national average of secondary school students receiving free school meals is 13.9%. The percentage of students receiving free school meals in the schools that participated in the study ranged from 9.5% to 43.0%. The proportion of students from minority ethnic backgrounds within the schools also appeared to differ greatly between the schools. Specific data relating to ethnic background was not available for all schools, however some indication is given by the proportion of students for whom English was an additional language, which ranged from 4% to 44%, compared to a national average of 19.4%. For more details about demographic data for each school, please refer to Table 1, below.

Table 1

Demographic Details of Schools Participating in the Study

School	Type	Last Ofsted Inspection	Ofsted Rating	School size	Female (%)	FSM (%)	SEN /SA+ (%)	ESL (%)
A	Academy converter	2009*	1	1332	4.6	9.5	5.0	44
B	Comprehensive	2012	1	1251	51.7	21.4	6.9	5
C	Academy converter	2012	3	1077	48.6	29.6	12.9	12
D	Academy	2010	1	1118	47.2	43.0	6.4	41
E	Academy converter	2014	2	1234	99.4	36.1	8.2	28
F	Comprehensive	2010	2	1468	47.5	10.1	4.0	4

FSM – Free School Meals; SEN/SA+ - Special Educational Needs/ School Action Plus; ESL – English as a Second Language

A total of 44 students (4 female) from School A participated in the study. The sample was drawn from classes in Years 9, 8, 10 and 12, with a mean age of 14.23 years (SD = 1.62). Data collection from School B took place on 4 separate dates, and 79 students (47 female) from years 9 and 10 participated. The average age of participants from School B was 14.54 years (SD = .57). A total of 21 A-level students (13 female) with an average age of 16.81 years (SD = 1.03) from School C took part in the study. In School D, data was collected from 32 students (18 female) in years 9 and 10, with average age of 13.29 years (SD = .46). A total of 13 students (all male) from a year 7 class in School E participated in the study, with an average age of 11.85 years (SD = .38). Finally, 64 students (all female) in School F participated in the study. This sample was drawn from classes in years 7, 8, 10, 12 and 13, and had an average age of 14.21 years (SD = 2.03).

In order to meet inclusion criteria the participants were required to have sufficient English language skills to complete the task independently (equivalent of 7 year old reading level), and to not have any significant additional learning needs or sensory loss. Teaching staff were consulted to ensure that students met these criteria.

Clinical sample

Recruitment for the clinical population took place across six sites that are involved with assessments and care for adolescents in both foster and residential care. A large proportion of this sample (n=11) came from Bournemouth Local Authority, who were part of a wider collaborative study with the Anna Freud Centre and Five Rivers Care Ltd. Following ethical approval, the Project Lead in Bournemouth Local Authority approached the prospective carers in the sample and an electronic link was provided for the young people to complete the online tool unsupported. Resources were available for the clinical sample meaning that young people were provided with a £15 voucher on completion of the task. In addition to this subsample, further participants (n=21) were drawn from clinicians working with adolescents in care. In these services the clinicians requested that the young people complete the task for the wider study. In all cases, the task was carried out independently, and facilitated by the lead clinician within the teams. Overall coordination and facilitation was provided by Saul Hillman at the Anna Freud Centre.

Statistical Power

The sample size required for factor analysis can be calculated using a participant to variable ratio, suggested to be 3:1 (MacCallum, Widaman, Zhang & Hong, 1999). As a total of 65 close-ended questions from the ASSP were included for analysis, it was calculated that a minimum 195 participants was required to meet this standard. In order to determine sample size required for discriminant validity analysis, power analysis for this study was informed by prior work using SSAP in a

similar manner in a population of younger children, which found large effect sizes ($d \geq 0.8$) in each of the four key constructs; security, insecurity, defensive-avoidance and disorganisation. Assuming equal group sizes and specifying alpha = 5% and desired power = 80%, Cohen (1992) was used to determine a required sample size of 52 (26 individuals per group) for comparisons between the clinical and control samples.

Design

The study is a cross-sectional study, investigating factor structure and criterion validity of the ASSP.

Procedure

Recruitment took place within six Local Education Authority (LEA) schools within the greater London area. Schools were approached through personal connections, and were invited to participate in the study. Students completed the questionnaires within lesson times. All required access to personal computers and headphones in order complete the ASSP, with between 15 and 25 students taking part simultaneously. The students were asked to complete the SDQ on paper on the same day of testing. CGAS scores were completed by a member of the teaching staff either on the day of testing or within four weeks of the testing date, depending on the availability of the teaching staff.

Ethical Issues

The UCL Research Ethics Committee (Appendix A) granted approval for the data collection of the community sample. An opt-out parental consent procedure was approved, and schools were provided with an information sheet and consent form to give to parents of the students taking part. Across the six schools, parents of three students chose to withdraw their consent. Teachers were asked on the day of testing to consent *in loco parentis* for those students whose parents had not

withdrawn consent. Prior to administering the questionnaire, students were provided with written and verbal information about the study and were given an opportunity to ask questions. The students were clearly told that their participation was voluntary. Two students across the six schools chose not to participate in the study at this point. During the administration of the questionnaires, the researcher and at least one member of teaching staff were available to support the students. (See Appendix B for all consent forms and information sheets)

Ethical approval for the clinical sample was granted by the UCL Research Ethics Committee as part of a separate study.

Measures

The Adolescent Story Stem Profile (ASSP; Hillman, Tesarova and Gonzalez, 2011)

This is an adaptation of the SSAP designed for use with older children and adolescents to explore attachment, peer relations and self-esteem. It is operated online using the tiddlyspace software (Osmosoft, 2011). Unlike the SSAP, which uses toys and dolls to illustrate story stems, the ASSP uses videos to tell the beginning of a story, which the participants are then asked to complete. These scenarios have been adapted from those used in the SSAP to be more relevant to the target age group in the way in which they are worded and depicted. They present common social situations which are likely to elicit a strong emotional response from the young person. The nature of this response is dependent on how the young person relates to his/her peers and/or parents, thus providing insight into their internal representations.

Participants were asked to view 8 brief video vignettes of ambiguous social scenarios in which the central character was gender-matched to the participant. The participants were then asked to respond to a series of questions regarding the

characters' emotional and behavioural reactions to the events presented. The majority of questions were presented in a multiple choice format, with some additional open-ended responses, recorded as free text. The questions had been designed to elicit information about the way in which the young person interprets the scenario, and to provide insight into how they perceive themselves and others. Summaries of the eight individual stories are listed in Table 2 below. Please see Appendix C for a full list of the scenarios and questions.

Table 2

Summary of the ASSP Stories

Story	Summary
1	Liam suddenly walked out of the room and went up to his bedroom.
2	Liam is given a certificate at school and goes home with it.
3	Liam gets suspended from school and then comes home.
4	Liam's friends come round to his house. His Mum is feeling unwell.
5	Liam approaches his friends John and Jamie, asking them whether they would like to do something together. While John agrees, Jamie says they are busy doing something else.
6	Liam is talking to his friend Ruby. Liam's friend Jamie invites Liam to a party, but not Ruby.
7	Liam's friends came round and he went out with them. At the end, something has happened to Liam.
8	Liam has just heard his parents having an argument.

Of the 76 multiple choice questions, 65 related to one of 8 conceptually-derived categories. Responses to five of these categories represented ordinal data,

scored on either 4- or 5-point likert scales. These categories were; emotion regulation, peer communication, peer awareness, parent communication and parent awareness. The emotion regulation questions related to the extent that protagonist felt better or worse at the end of each story, and this type of question was included in three of the eight stories. The parent and peer communication and awareness questions related to the extent that the protagonist talked about their feelings with parents or peers ("communication"), and to what extent were the parents/peers aware of the protagonist's feelings ("awareness"). Each story varied as to whether these questions were asked in relation to parents and/or peers, as determined by the context of the story and the characters that were included. Questions about parent communication and awareness were included in stories 1, 2, 7 and 8, and questions about peer communication and awareness were included in stories 2, 3, 5, 6 and 7. These categories of questions were combined into three scales across the relevant stories; Emotion regulation, Peer awareness and communication, and Parent awareness and communication. Further details of how these scales were analysed are included in the results section below.

A further three categories of questions required the participants to give nominal responses, these were attachment, mentalization and affect questions. Six of the eight ASSP stories contained global "Attachment" question devised to ascertain the protagonist's feeling regarding one or more figures in the respective narratives. These 'attachment' figures included parental and/or peer figures, depending on the characters present in the story stem, and the questions were conceptually derived to determine how the young person managed the relationship conflict within the story. Participants were required to choose one of seven possible responses. These responses were developed from the attachment coding in the SSAP, adapted to the way in which attachment is conceptualisation and understood in adolescence.

On this scale, a "secure/organised" response reflected a capacity for the young person to manage a relationship conflict in an organised and coherent fashion (i.e. thinking about how his/her parents/peers were feeling). A "preoccupied self" response reflected a difficulty in containing their own internalised feelings about particular situations (e.g. not being able to stop feeling upset about what he/she had done). A "preoccupied other" response contrastingly reflected the problem in managing feelings towards others (e.g. not being able to stop feeling angry with his/her parents for what had happened). A more "self-excluding" response reflected the need for the young person to remove themselves from particular relationship conflicts (e.g. wishing to go to his/her room away from his/her family). A "dismissing" response reflected the need to demonstrate a lack of engagement with particular relationship figures in the respective stories (e.g. not wanting to be at school as he/she didn't like it). A more "avoidant" response reflected a defensive position when confronted with the conflict in the narrative (e.g. forgetting about what had happened). Finally, a "disorganised" response reflected a more confused, ambivalent and incongruent state in relation to the conflicts (e.g. demonstrating enjoyment of watching their parents fighting).

For scoring and coding purposes, this scale was divided into the eight subscales, each of which received a score of "1" if the participant selected this option, or "0" if they did not. A mean score for each of the subscales was then calculated for each participant, on each of the eight attachment subscales.

A further global question asked in each of the eight stories focused on the mentalizing capacity of the young person. In these "Mentalization" questions, the young person was asked what the protagonist may have made of the respective situations, and the six possible responses were designed to indicate how they were able to think about their own and others' thoughts and feelings. The participants were required to select one of six possible responses. On this scale, a "reflective"

response demonstrated a robust capacity to think of others' intentions, thoughts and feelings (e.g. wishing that he/she had behaved differently in response to the conflict). An "avoidant" mentalizing response reflected a lack of mentalizing (e.g. forgetting about the conflict and getting on with other things). A "self mentalizing" response reflected directing blame towards himself/herself (e.g. feeling angry about what he/she had done). An "other mentalizing" response conversely reflected directing negative affect towards others in the respective stories (e.g. feeling annoyed with his peers). An "excessive mentalizing" response reflected a preoccupation with or an extreme level of affect in relation to the particular conflict (e.g. not being able to stop thinking about what had happened). Finally, an "under-mentalizing" response indicated an impotence or inability to do anything in relation to the conflicts (e.g. feeling as if there was nothing else he or she could do).

A similar scoring procedure was applied to the mentalization scale and subscales as described for the attachment scale above. Dichotomised scores were calculated for each participant to show whether a response within a subscale was present or absent ("1" or "0" respectively). An average score for each subscale was calculated across all eight stories for each participant.

In the final category of affect questions, the participants were asked what the protagonist, the peers and/or the parents were feeling in the scenario. Participants were able to select up to 3 responses. The responses were coded into one of four response categories; positive (e.g. happy, excited), neutral (e.g. confused, not bothered), negative internal (e.g. worried) and negative external (e.g. angry). As participants were able to pick up to 3 responses, it was possible for participants' responses to a single question to fall into multiple categories. These categories were used to create an Affective response scale, with 12 subscales (Positive, Neutral, Negative Internal and Negative External for each of type of character; Peer, Protagonist and Parent).

A further 11 multiple choice questions did not fit into any of these conceptual categories and/or were unique to a specific story, and therefore they were not included in the analysis of this project. The eight open answer questions were not analysed in this project.

This resulted in 28 variables included for analysis, comprised of the following scales; parent communication and awareness, peer communication and awareness, emotion regulation, attachment (8 subscales), mentalisation (6 subscales) and affect (12 subscales).

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997)

The SDQ is a brief questionnaire which uses behavioural data to highlight areas in which children may be functioning more poorly than expected for their age. The questions can be broken down into five component scales; conduct problems, hyperactivity/inattention, emotional symptoms, peer relationship problems, and pro-social behaviour. The reliability and validity of the SDQ has been demonstrated in numerous studies (e.g. Goodman, 2001), and is a widely used clinical screening tool in Child and Adolescent Mental Health Services (CAMHS) in the UK. The SDQ was included to provide comparison data for the ASSP in terms of internalising and externalising difficulties. Each of the participants in schools completed this measure on paper at the time of completing the ASSP. Participants in the clinical sample did not complete the SDQ.

The Children's Global Assessment Scale (C-GAS; Schaffer et al., 1983)

The C-GAS provides a brief measure of global functioning to be completed by professionals working with children and young people aged four to 16 years old. Scores range from one to 100, and are grouped into deciles for descriptive purposes, ranging from "100 – 91: Doing very well" to "10 – 1: Extremely Impaired – so impaired that constant supervision is required for safety". Like the SDQ, the

CGAS is a widely used screening measure in CAMHS, and has demonstrated good reliability and validity in previous studies (Rey, Starling, Wever, Dossetor & Plapp, 1995; Shaffer et al., 1983). Teachers coordinating the data collection were asked to nominate an appropriate member of staff who knew each young person well to complete the C-GAS. The C-GAS was collected for the community sample only.

Demographic Data

Prior to completing the ASSP, students were asked to complete a number of questions relating to demographic data using the online tiddlyspace software platform that was used for the ASSP. These questions included; age, number of brothers and sisters, family composition and ethnic background.

Statistical Analysis

Data were analysed using SPSS for Windows, version 22, and the data analysis was divided into two sections. In the first section, the psychometric properties of the ASSP scales were explored in the normative sample. Firstly, means were calculated for each participant in each of the scales described above. The factor structure of the ASSP scales was explored using a principal component analysis of the entire community sample.

Age and gender differences in these scales were explored using T-tests and correlation analyses. Convergent validity of these scales was explored using multiple regression analyses, to determine whether the ASSP factors could predict responses to the CGAS and SDQ scales.

In the second section, the normative data were compared with the clinical sample. A subset of the normative participants was selected from the larger sample, to be the closest match possible on the demographic data collected (age, gender, ethnicity and number of siblings). Differences between these two groups on the ASSP factors were explored using t-test analyses. A ROC curve was computed to

examine the sensitivity and specificity of the ASSP for discriminating clinical from control cases.

Results

Psychometric properties ASSP in the of community sample

Summary of the ASSP Scales

In order to compare the results across participants an average (mean) response was calculated for each of the subscales. The Peer and Parent Communication and Awareness, Emotion Regulation, Attachment, Mentalization and Affective categorical scales are discussed separately below.

Peer Communication and Awareness, Parent Communication and Awareness, and Emotion Regulation

Table 3 below shows the average responses to the scales with ordinal responses. The responses on peer and parent awareness and communication scales were scored on a 4-point Likert scale from 0 (“Not at all”) to 3 (“A lot”). A mean response for each of the four sub-scales was calculated for each participant. Pearson correlation analyses of these means showed a significant positive correlation between parent communication and parent awareness ($r = .54$, $p < .001$), and between peer communication and awareness ($r = .61$, $p < .001$), and so these scales were combined to form two composite scales; a Parent Communication and Awareness scale, and a Peer Communication and Awareness scale.

Reponses to the emotion regulation questions (“How did the protagonist feel at the end?”) were scored on a 5-point Likert scale from 0 (“much worse”) to 4 (“much better”). As above, a mean score was calculated for each participant based on the responses to the three emotion regulation questions. These scores were then used to calculate a mean response across all participants.

Table 3

Community Sample Mean Scores of the Peer Communication and Awareness, Parent Communication and Awareness and Emotion Regulation Scales, Split by Gender and Age

	Total sample	Gender		Age (years)		
		Female	Male	11 to 13	14 to 15	16 to 19
Scale	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*
Peer Communication and Awareness	1.0397 *.48376*	.9996 *.47867*	1.0945 *.48754*	.9491 *.48947*	1.0598 *.47366*	1.1595 *.47501*
Parent Communication and Awareness	.7101 *.52014*	.6917 *.55390*	.7354 *.47157*	.5630 *.41485*	.7650 *.56408*	.8175 *.51311*
Emotion Regulation	1.4242 *.55860*	1.4361 *.58665*	1.4081 *.52016*	1.3355 *.60511*	1.5079 *.49817*	1.3043 *.58405*

As shown in Table 3, the mean response to the peer communication and awareness questions (e.g. “how much did the friends know what the protagonist was feeling?”) across all ages and genders was approximately 1 (indicating “Not much”). The mean responses to the questions regarding communication with parents, and parental awareness of the protagonist’s feelings for participants were between 0 (indicating “Not at all”) and1 (“Not much”), suggesting that participants believed the protagonists communicated with parents slightly less than peers. In response to the emotional regulation questions, the mean responses of approximately 1.4 would suggest that participants were most likely to respond that the protagonist felt “worse” (a score of 1), or “the same” (a score of 2) at the end of the stories.

Attachment

For each participant, dichotomised scores were calculated for each of the seven attachment sub-scales indicating whether each attachment response type

was present or not. A mean of each of these sub-scales was then calculated for each participant. The mean and standard deviation across all participants is summarised in Table 4.

Table 4

Community Sample Mean Scores of the Attachment Sub-scales, Split by Gender and Age

	Total sample	Gender		Age (years)		
		Female	Male	11 to 13	14 to 15	16 to 19
Attachment sub-scale	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*
Self-excluding	.223	.197	.257	.211	.249	.175
	.188	*.195*	*.172*	*.188*	*.183*	*.194*
Dismissing other	.110	.108	.113	.121	.118	.067
	.151	*.162*	*.135*	*.147*	*.161*	*.121*
Avoidant	.099	.092	.108	.101	.101	.084
	.161	*.138*	*.188*	*.155*	*.165*	*.162*
Preoccupied other	.093	.098	.086	.107	.076	.121
	.137	*.145*	*.127*	*.144*	*.120*	*.164*
Preoccupied self	.110	.157	.044	.146	.091	.102
	.174	*.197*	*.106*	*.196*	*.153*	*.184*
Secure/organised	.319	.306	.336	.282	.323	.362
	.208	*.198*	*.220*	*.206*	*.195*	*.235*
Disorganised	.018	.016	.021	.028	.018	.004
	.082	*.058*	*.107*	*.076*	*.098*	*.025*

As can be seen in Table 4, across all participants the most common response was the “Secure” option, and this was the case for both male and female participants. The next highest score for male participants was the “Self-excluding” responses, whereas for female participants the next most common responses were “Self-excluding” and “Preoccupied self”. The least common response was the “Disorganised” response.

Mentalization

A similar process was used to calculate scores for each of the mentalization sub-scales. Responses to each of the mentalization questions were transformed into dichotomised scores for each of the 6 sub-scales, and mean of these sub-scales was then calculated for each participant. The mean and standard deviation across all participants is summarised in Table 5 below.

Table 5

Community Sample Mean Scores of the Mentalization Sub-scales, Split by Gender and Age

	Total sample	Gender		Age (years)		
		Female	Male	11 to 13	14 to 15	16 to 19
Mentalization sub-scale	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*
Avoidant	.263	.205	.342	.252	.297	.190
	.220	*.201*	*.222*	*.211*	*.227*	*.206*
Self	.095	.098	.090	.108	.082	.104
	.140	*.145*	*.135*	*.134*	*.145*	*.137*
Other	.163	.171	.151	.204	.132	.176
	.166	*.159*	*.175*	*.180*	*.151*	*.167*
Excessive	.121	.134	.102	.125	.113	.135
	.154	*.155*	*.152*	*.150*	*.155*	*.165*
Reflective	.192	.206	.173	.155	.211	.209
	.189	*.180*	*.200*	*.182*	*.199*	*.166*
Under-mentalizing	.161	.180	.135	.159	.159	.165
	.160	*.160*	*.156*	*.160*	*.166*	*.139*

As shown in Table 5, the most common response in male participants of all ages was the “Avoidant” option (indicating, for example, that the protagonist “just forgot about the whole thing”), and the least common response was the “Self mentalizing” response (indicating that the protagonist blamed him/herself). These responses appear to differ for male and female participants, with female participants’ most common response being either “avoidant” or “reflective” (usually indicating good reflective function or desire for reparative action).

Affect Scales

In order to analyse the responses for the protagonist, parent and peer emotions, a mean score was calculated for each participant to demonstrate how often, on average they indicated that protagonists’, parents’ and peers’ would experience positive, neutral or negative emotions. A mean response was then calculated across all participants. These are summarised in Table 6 below.

As can be seen in Table 6, the most common emotional valence for the protagonist across the 8 stories was internalised negative emotions (such as worry). Participants tended to report that parents would experience externalised and internalised negative emotions, whereas peers were reported as having more neutral emotions (such as confusion or indifference).

Table 6

Community Sample Mean Scores of the Affect Sub-scales, Split by Gender and Age

Affect sub-scale		Total sample	Gender		Age (years)		
			Female	Male	11 to 13	14 to 15	16 to 19
Valence	Character	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*
Positive	Protagonist	.250	.269	.224	.242	.255	.256
		.112	*.110*	*.109*	*.124*	*.108*	*.099*
	Parent	.145	.109	.195	.132	.153	.150
		.147	*.135*	*.150*	*.138*	*.148*	*.163*
	Peer	.270	.248	.299	.271	.283	.234
		.166	*.158*	*.172*	*.166*	*.159*	*.182*
Neutral	Protagonist	.454	.443	.469	.446	.458	.460
		.181	*.182*	*.180*	*.179*	*.182*	*.187*
	Parent	.339	.360	.310	.358	.328	.341
		.186	*.187*	*.181*	*.196*	*.185*	*.173*
	Peer	.570	.592	.541	.551	.562	.618
		.204	*.195*	*.214*	*.212*	*.204*	*.188*
Negative Internal	Protagonist	.516	.533	.492	.530	.489	.561
		.164	*.151*	*.179*	*.172*	*.158*	*.159*
	Parent	.516	.514	.519	.506	.509	.551
		.213	*.213*	*.214*	*.233*	*.203*	*.211*
	Peer	.366	.342	.400	.408	.343	.358
		.184	*.164*	*.205*	*.184*	*.180*	*.191*
Negative External	Protagonist	.336	.295	.392	.363	.329	.309
		.186	*.165*	*.197*	*.204*	*.183*	*.152*
	Parent	.558	.550	.568	.583	.532	.582
		.185	*.191*	*.176*	*.171*	*.186*	*.192*
	Peer	.377	.366	.393	.421	.367	.335
		.201	*.193*	*.212*	*.207*	*.206*	*.167*

Factor Structure of the ASSP in the community sample

Exploratory principal component analysis (PCA) with oblique rotation (oblimin) was conducted on the 28 subscales of the ASSP. The Kaiser-Meyer-Olkin measure demonstrated that this initial model did not reach criteria for sampling adequacy (KMO = .2). The PCA was re-calculated with those items with low loadings (under .4) removed. These were 4 attachment subscales; secure, dismissing other,

preoccupied other and avoidant; excessive other-focussed mentalization, and parent neutral affect). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for this analysis (KMO = .5), and Bartlett's test of sphericity indicated that the correlations were sufficiently large enough for PCA (χ^2 (231) = 1201.0, p <.001).

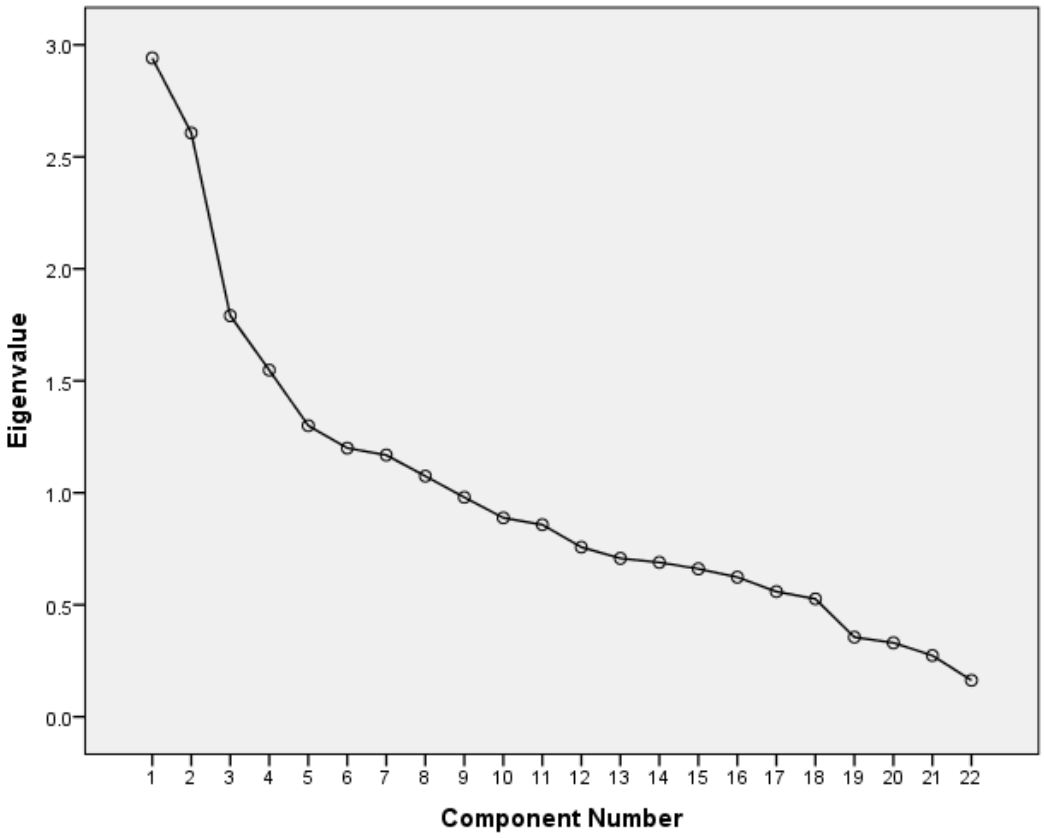

Figure 1: Scree plot showing eigenvalues for each component of the PCA

Figure 1 shows the scree plot of the eigenvalues for each component in this PCA. A common method of determining the number of factors to use in a factor analysis is by looking for a clear change in the slope of the curve, sometimes referred to as the elbow point (Tabachnik & Fidell, 2013). Using the scree plot above, it was determined that a four-factor model was indicated. The PCA was calculated with four factors extracted and oblique rotation (oblimin) applied. This returned a meaningful four-factor model of the remaining 22 items.

Table 7 shows the items and factor loadings for the four factors. Only items with a loading of ≥ .40 were reported (Stevens, 1992). Examination of the content of items loading on Factor 1 indicated that this factor represents communication with parents and peers, and was labelled “emotional openness”. The items that loaded onto Factor 2 represented negative external emotions of all 3 characters and parental negative internal affect, and was therefore given the label “negative affect”. The items that loaded onto Factor 3 included avoidant mentalizing, excluding self-attachment, lack of preoccupation and lack of protagonist negative internalized affect, as such representing an avoidance of the dilemma inherent in the story presented. This factor was labelled “avoidance”. The items that loaded onto Factor 4 included peer and protagonist neutral affect, and a lack of excessive self-mentalizing and disorganised attachment, and was therefore labelled “indifference”.

Table 7

Eigenvalues and Item Loadings for the Four ASSP Factors

Factor	Items	Factor Loadings
Emotional Openness (Eigenvalue = 2.941)		
	Parent communication and awareness	.757
	Peer communication and awareness	.718
	Parent positive affect	.608
	Emotion regulation	.417
	Reflective mentalization	.402
Negative Affect (Eigenvalue = 2.607)		
	Peer negative externalised affect	.675
	Protagonist negative externalised affect	.673
	Parent negative internalised affect	.578
	Parent negative externalised affect	.524
	Peer positive affect	.500
	Peer negative internalised affect	.467
Avoidance (Eigenvalue = 1.791)		
	Avoidant mentalization	.830
	Preoccupied self attachment	-.622
	Self-excluding attachment	.606
	Protagonist negative internalised affect	-.446
Indifference (Eigenvalue = 1.548)		
	Protagonist neutral affect	.624
	Peer neutral affect	.610
	Self mentalization	-.543
	Disorganised attachment	-.481

Psychometric properties of the ASSP factors

Based on the items, scores for each of these factors were calculated for each participant. A Shapiro-Wilk test was used to test for normality of the four factors. The emotional openness and indifference factors were found to deviate significantly from the normal distribution ($p<.001$). This led to the removal of one outlier in the indifference factor, and subsequent Shapiro-Wilk analysis indicated that this factor no longer deviated significantly from the normal distribution ($p = .083$). Transformation of the emotional openness factor did not amend the distribution of the data to normality ($p<.001$). From examining histogram of the data, the untransformed data looked normally distributed, with a high degree of symmetry and the majority of data points clustered around the mean. As such, and due to the size of the sample (Norman, 2010), it was determined that it was appropriate to use parametric tests for all four factors in subsequent analyses.

Cronbach's alpha analysis of the four factors demonstrated acceptable internal consistency for the emotional openness (5 items, $\alpha=.595$), negative affect (6 items, $\alpha=.640$) and avoidance factors (4 items, $\alpha=.596$), and poor internal consistency for the indifference factor (4 items, $\alpha=.398$).

Pearson correlation analyses on the four factors revealed two significant correlations between the factors. The avoidance factor had a significant weak positive correlation with the emotional openness factor ($r = .164$, $p = .009$) and a significant weak negative correlation with negative affect factor ($r = .160$, $p = .011$).

Table 8 below summarises the average score across participants for each of the ASSP factors, split by gender. In order to further explore any effects of gender on the factors, independent samples t-test analysis of the four factors was completed. This revealed that females scored significantly lower than males on the negative affect (t (251) = -2.997, $p = .003$) and defensive avoidance (t (251) = -5.803, $p<.001$) factors. No significant gender differences were found for the

emotional openness (*t* (251) = -.996, p=.320), or indifference factors (*t* (251) = .051, p=.960).

Table 8

Mean Score for the ASSP Factors, Split by Gender

	Female	Male	Total
ASSP Factors	M	M	M
	SD	*SD*	*SD*
Emotional Openness	3.443	3.606	3.512
	1.356	*1.198*	*1.292*
Negative Affect	2.315	2.57	2.423
	0.64	*0.707*	*0.68*
Avoidance	-0.288	0.063	-0.14
	0.509	*0.424*	*0.505*
Indifference	0.921	0.919	0.92
	0.345	*0.373*	*0.356*

To determine any effects of age, Pearson correlation analysis was run on all factors. A weak negative correlation was found between age and negative affect score (*r* = -.137, p=.030) and a weak positive correlation was found between age and indifference (*r* = .125, p= .49). No significant effects of age were found for any other factors, as demonstrated in Table 9, below.

Table 9

Correlations between ASSP Factors and Age

ASSP Factors	Pearson Correlation	Significance
Emotional Openness	0.104	0.1
Negative Affect	-.137*	.030*
Avoidance	0.004	0.953
Indifference	.125*	.049*

*p<.05

Convergent validity

Multiple regression analyses were conducted in order to explore whether the ASSP factors were significantly associated with teachers' assessments of overall functioning, as indicated by the CGAS scores, and self-reported difficulties as measured by the SDQ. Using the enter method it was found that the ASSP factors did not explain a significant amount of the variance in the CGAS score ($F (4, 235) = .728$, $p = .574$, $R^2 = .012$, R^2Adjusted = -.005), and this remained the case after controlling for age and gender ($F (6, 233) = 1.067$, $p = .383$, $R^2 = .027$, R^2Adjusted = -.002). Similarly, the ASSP factors were not found to explain a significant amount of the variance in the SDQ total difficulties score ($F (4, 235) = .351$, $p = .843$, $R^2 = .006$, R^2Adjusted = -.011) and again, this remained non-significant after controlling for age and gender ($F (6, 237) = 1.1182$, $p = .317$, $R^2 = .029$, R^2Adjusted = .004).

Further multiple regression analyses were conducted on the sub-scales of the SDQ to determine whether ASSP factors could predict any specific forms of difficulties as self-reported by the participants. Using the enter method it was found that the ASSP factors did not explain a significant amount of the variance in the SDQ scores on the conduct problems sub-scale ($F (4, 239) = 1.244$, $p = .293$, $R^2 = .020$, R^2Adjusted = .004), hyperactivity/inattention ($F (4, 239) = .997$, $p = .410$, $R^2 = .016$, R^2Adjusted = .000), or peer problem subscales ($F (4, 239) = .486$, $p = .746$, $R^2 = .008$, R^2Adjusted = -.009). These models remained non-significant when controlling for age and gender. For further details of these analyses, please refer to Appendix D.

ASSP factors were found explain significant amount of variance in scores on two subscales of the SDQ. The four ASSP factors alone predicted 5% of the variance in SDQ emotional difficulties scores ($F (4, 239) = 2.805$, $p = .026$, $R^2 = .045$, R^2 Adjusted = .029), and this increased to 13% when age and gender were included in the model ($F (6, 237) = 5.623$, $p < .001$, $R^2 = .125$, R^2Adjusted = .102). The

analysis showed that when age and gender were not included, avoidance factor scores significantly predicted emotional symptoms score (β = -.218, t (243) = -3.326, p=.001), indicating that higher scores on the avoidance factor predicted lower levels of self-reported emotional symptoms. No other factors were significantly found to predict SDQ emotional symptoms score, as summarised in Table 10.

Table 10

Unstandardised and Standardised Coefficients of Regression Analysis for the SDQ Emotional Difficulties Scale

	Model					
ASSP Factor	ASSP Factors			ASSP Factors, Age and Gender		
	B	SE B	β	B	SE B	β
Emotional Openness	0.054	0.12	0.029	0.005	0.116	0.002
	t(244) = .447, p=.655			t(244) = .040, p=.968		
Negative Affect	-0.112	0.227	-0.032	0.183	0.228	0.052
	t(244) = -.492, p=.623			t(244) = .803, p=.423		
Avoidance	-1.028	0.309	-0.218	-0.551	0.322	-0.117
	t(244) = -3.326, p=.001*			t(244) = -1.714, p=.088		
Indifference	0.016	0.431	0.002	-0.297	0.42	-0.044
	t(244) = .038, p=.970			t(244) = -.706, p=.481		

***p<.05**

The ASSP factors alone did not significantly predict scores on the prosocial behaviour subscale of the SDQ (F (4, 239) = 1.604, p=.174, R^2 = .026, R^2 Adjusted = .010). However, when age and gender were included in the model the ASSP factors were found to significantly predict 12% of the variance in prosocial behaviour scores (F (7, 237) = 6.214, p<.001, R^2 = .155, R^2Adjusted = .130). The analysis showed that none of the four ASSP factors were significantly found to independently predict SDQ prosocial behaviour scores, as summarised in Table 11.

Table 11

Unstandardised and Standardised Coefficients of Regression Analysis for the SDQ Prosocial Behaviour Scale

	Model		
ASSP Factors	ASSP Factors, Age and Gender		
	B	SE B	β
Emotional Openness	.100	.092	.069
	t(244) = .051, p=.278		
Negative Affect	.261	.181	.094
	t(244) = 1.880, p=.150		
Defensive avoidance	-.085	.256	-.023
	t(244) = -.570, p=741		
Indifference	-.252	.334	-.047
	t(244) = 2.846, p=451		

Comparison with Clinical Data

The clinical sample (N=32) was age- and gender-matched with participants from the community sample. Using the items listed above, scores for the five ASSP factors were calculated for the clinical sample. The means for each factor for both the clinical sample and the age-and-gender matched subset of the community sample are listed in Table 12.

Table 12

Mean Scores for the ASSP Factors in the Clinical and Community Sub-samples, Split by Gender

	Normative			Clinical		
	Female	Male	Total	Female	Male	Total
ASSP Factors	M SD	M SD	M SD	M SD	M SD	M SD
Emotional Openness	3.391 *1.453*	3.974 *1.401*	3.591 *1.440*	3.268 *1.272*	3.342 *1.089*	3.293 *1.195*
Negative Affect	2.333 *0.761*	2.407 *0.696*	2.358 *0.729*	2.246 *0.557*	2.843 *0.801*	2.451 *0.701*
Defensive avoidance	-0.108 *0.493*	-0.013 *0.470*	-0.076 *0.480*	-0.479 *0.394*	-0.274 *0.417*	-0.409 *0.408*
Indifference	0.969 *0.320*	1.070 *0.429*	1.004 *0.357*	0.593 *0.340*	0.920 *0.265*	0.706 *0.349*

Independent T-test analyses showed a significant difference between the two samples on the defensive avoidance factor (t (62) = -2.994, p=.004), with the clinical sample scoring significantly lower than the age- and gender-matched community sub-sample. Significant differences between the two samples were also found for the indifference factor (t (62) = 3.372, p = .001), with the community sub-sample scoring higher than the clinical sample on this factor. No other significant differences were found between the two groups on any of the ASSP factors.

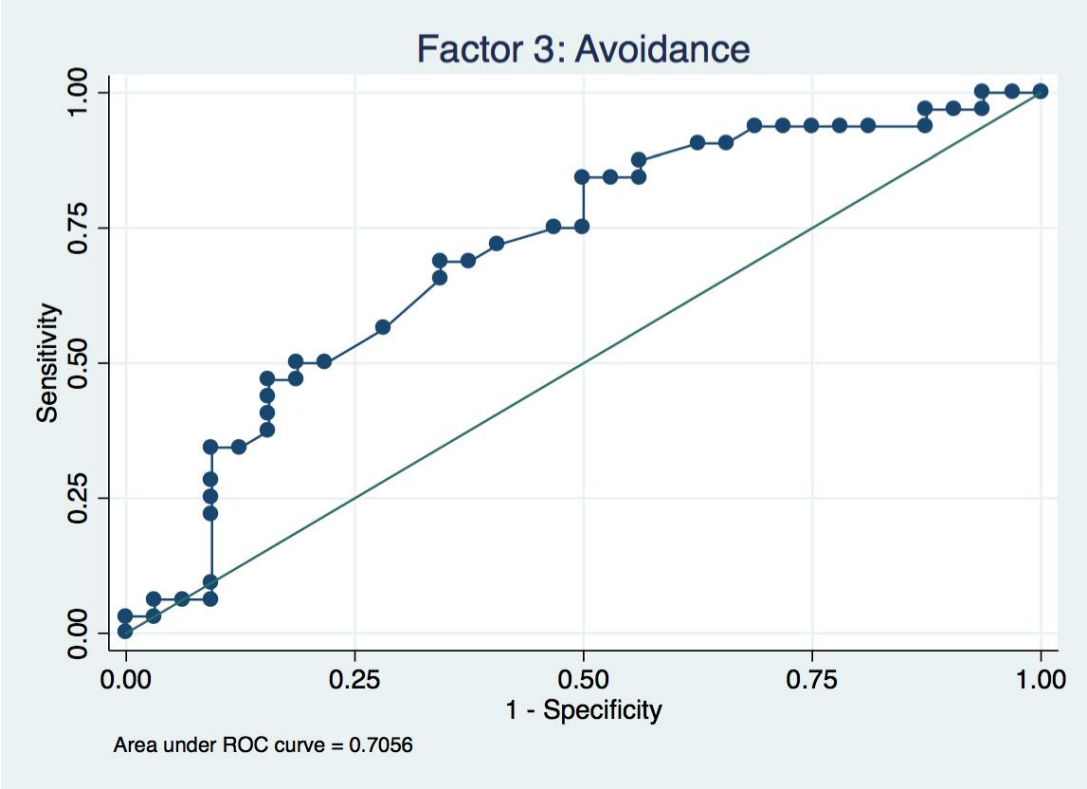

Figure 2: ROC curve analysis for Factor 3: Avoidance.

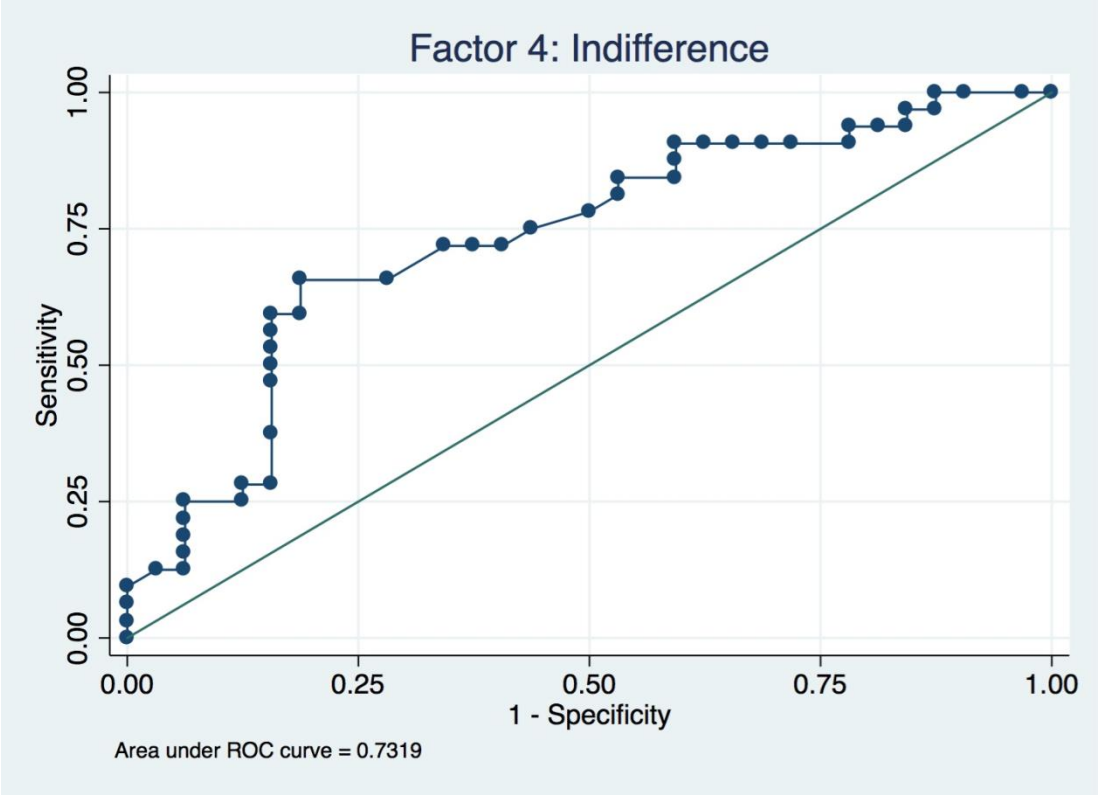

Figure 3: ROC curve analysis for Factor 4: Indifference.

In order to explore how well the factors discriminated between two groups, ROC curves were plotted for the avoidance and indifference factors (Figures 2 and 3 respectively). Separate logistic regression analyses (upon which the ROC curves are based) demonstrated that both avoidance (p=.007) and indifference (p=.004) scores statistically predicted group membership. When included in the same model, the indifference factors was still found to significantly predict group membership (p=.034), whereas the avoidance factor was not (p=.097), indicating some degree of overlap between the two factors. The ROC curves are shown above in Figure 2 and 3, and demonstrate a moderate to good degree of discrimination of clinical versus controls, with Area Under the Curve values of >.70. To illustrate, for the avoidance scale, setting a cut-point to achieve a sensitivity of .80 would be associated with a specificity of .50.

Discussion

This study aimed to explore whether the ASSP presents a viable method of systematically assessing the attachment representations of adolescents. To do so, the factor structure of the ASSP and its associated psychometric properties were analysed. Principal component analysis in the community sample revealed a four factor model of the ASSP, and two of these factors were shown to distinguish the clinical and community participants. In the sections below, the properties and clinical utility of the four factor model are discussed. Then, each of the four factors will be discussed in turn, with reference to their psychometric properties and conceptual nature, in light of previous research. The limitations of the study will then be outlined, and suggestions for future directions of research of the ASSP will be made on this basis.

Summary of the ASSP four factor model

The initial principal component analysis of the 28 ASSP items was found to not reach criteria for sampling adequacy, leading to the removal of a number of

items with low loadings, including four of the seven attachment sub-scales (secure, dismissing other, preoccupied other and avoidant). The attachment scale had been designed to capture responses that related to the four key attachment styles; secure, insecure-avoidant, insecure-resistant and disorganised, and removal of thse items compromised the face and content validity of the ASSP. The low loadings of these items suggest that they did not explain a substantial amount of the variance within the factors. In future versions of the ASSP it could be helpful to re-examine the attachment scale, and to amend it where necessary. It is possible that the high number of response options on this scale meant that the concepts were somewhat overlapping. If the number of possible responses were reduced, the remaining responses might be more able to capture more variance.

The internal consistency of the emotional openness, negative affect and avoidance factors was acceptable, at approximately 60% for each, although the internal consistency of the indifference factor was considered to be low, at approximately 40%, raising questions about the each of the factors measures a reliable constructs. It is likely that the low alpha on the indifference factor , and relatively low alphas on all factors is due at least in part to the small numbers of items on these factors. Future studies would benefit from demonstrating other forms of reliability, such as test-retest reliability, of the ASSP. Unfortunately this was beyond the scope of the current project due to the limited availability of participants.

Analysis of the clinical utility of the ASSP factors provided mixed results. Evidence for the convergent validity of ASSP was not convincing. Although the four ASSP factors were associated with scores on the SDQ emotional symptoms and prosocial behaviour scales, explaining 13% and 12% of the variance in the model respectively, when age and gender were also included in the analysis, more detailed analysis revealed that none of the ASSP factors were independently able to predict prosocial behaviour. The avoidance factor was found to independently predict lower

emotional symptom scores, but this effect was no longer significant once age and gender were introduced into the model. Furthermore, the ASSP factors did not predict self-reported difficulties on the three other SDQ scales or the SDQ total difficulties scores, or the teacher-reported functioning as measured by the CGAS. More promising was the finding that two of the four factors differed significantly in the community and clinical samples, and these two factors were found to have a moderate degree of discrimination of clinical versus control group status.

Inclusion of an alternative validated measure of adolescent attachment, such as the CAI, was beyond the scope of the current project. As such, it is not possible to make conclusions about the criterion validity of ASSP.

Description of the four factors

The first factor, named "emotional openness" included items that represented open communication with peers and parents, high levels of emotion regulation, positive parental affect (such as "supportive") and a good ability to reflect on their own and others' thoughts and feelings. This factor showed no effects of age or gender. It has good face validity, appearing to represent concepts that would be associated with security in attachment representations in younger children using measures such as the SSAP (Hodges et al., 2005) and in adolescents as demonstrated by the CAI (Venta et al., 2014). As such it might be expected to distinguish between the community and clinical samples, however this was not the case. It is worth noting that this scale included both the peer and parent communication and awareness scales, both of which had very low average scores across the community sample (1.04 and 0.71 out of 4 respectively), indicating that many participants reported that the protagonist was unlikely to speak to his parents or friends about his/her feelings, and that they were unlikely to know what his/her feelings were. Studies with younger children have demonstrated that secure attachment is associated with open communication with parents (e.g. Wareham &

Salmon, 2006), and it has been suggested that difficulties communicating about emotional states in adolescence is indicative of insecurity (Allen, 2008). However, participants in the study tended to respond that the protagonist was unlikely to communicate with peers or parents, a finding which is not unique to this study (e.g. Keijsers, & Poulin, 2013), and has been linked with an adolescent drive for autonomy and independence (Laursen & Collins, 2004).

The apparent lack of open communication in the current study seems to suggest a high level of insecurity in the attachment representations of the sample, however this might be misleading. Previous studies linking adolescent attachment security and communication of emotion between parents and adolescents emphasise the quality of the parent-child interaction, rather than the frequency of communication; in particularly noting the importance of maternal sensitivity (e.g. Allen et al., 2003; Berger, Jodl, Allen, McElhaney & Kuperminc, 2005). It is even possible that some of this communication on the part of the adolescent may not be conscious, and could be dependent on the ability of the mother to accurately perceive non-verbal behavioural cues (Becker-Stoll, Delius and Scheitenberger, 2001). As such, it is possible that despite a reduction in the extent to which adolescents actively communicate their emotions, in secure relationships their parents will be able to accurately perceive the cues that are present. Clearly these subtleties in the interactions between adolescents and their parents would be difficult to detect on a measure such as the ASSP.

Unlike the other three factors, the second factor, “negative affect” was made up entirely of the affect scales; including the internalised and externalised negative affect for parents and peers, and externalised negative affect for the protagonist. Seemingly incongruently, this scale also included the peer positive affect. However, when put in the context of the stories in which peers appear, this is perhaps not so surprising, as peers did not consistently appear as “positive” characters. For

example, stories 5 and 6 ("outside the crowd" and "inside the crowd" respectively), include two different peer characters. In these stories one peer is represented in a more positive or neutral light, whilst the second is shown to introduce conflict into the story by excluding either the protagonist or the first peer. It would make sense that positive affect (such as happiness or excitement) shown by this second peer would be seen negatively by the respondent, and would align with other characters in the story feeling angry or worried.

Females in the community sample were found to score lower than males on the negative affect factor, and it was found that scores on this factor decreased with age, which seems to suggest a less extreme emotional response to the scenarios with age. This is in keeping with the finding that from middle childhood and throughout adolescence, the ability to regulate emotions increases (Zeman, Cassano, Perry-Parrish & Stegall, 2006). In younger children, findings from the SSAP and other narrative measures of attachment show that those who have been maltreated have higher levels of negative representations than non-maltreated controls (e.g. Hodges et al., 2005). Whilst it might be predicted from this that the clinical sample would demonstrate a higher level of negative affect when compared with the community sample, no significant differences on this factor were found in the current study.

Whilst this seems to suggest that both the clinical and community sample had equivalent expectations about the emotional reactions of characters within the story stems to the events depicted, there are other possible explanations. Firstly, it may be that the relationship between scores on this factor and security in attachment representations is more complex. For example, it might be that a low score on this factor suggests a lack of emotional investment in relationships, whereas an extremely high score suggests an exaggeration or overestimation of emotional intensity. If this were the case, a high or low score could be taken to indicate lack of

security, when compared to a score in the mid-range. Such nuances may not be detected in comparing the means of the different groups. Alternatively, it may be that the various scenarios elicit different emotional responses in the two groups, and the subtle differences in these may be lost in the creation of a global scale. However, the lack of any items other than affect scales and equivalent scores in both the clinical and non-clinical groups raises questions about the face and content validity of this factor as a measure of attachment representations.

The third factor, "avoidance" included higher scores on avoidant mentalization and self-excluding attachment, and lack of protagonist negative affect and self-focussed preoccupation in attachment, suggesting an avoidance of the conflict that was present in the story stem and a minimisation of the impact this would have on the protagonist. In the community sample there was no effect of age, but male participants were found to score significantly higher than female participants on this avoidance factor. This is in keeping with the suggestion that in adults assessed using the AAI, females are more likely to be classified as preoccupied whereas males are more likely to be classified as avoidant. However, this suggestion has been disputed by meta-analysis of studies using the AAI (Bakermans-Kranenburg & van Ijzendoorn, 2009). It is widely accepted that males show a higher level of overt aggression than females, and that this increases during the adolescent period (e.g. Moffitt, Caspi, Rutter & Silva, 2001). One possible explanation for the higher degree of avoidance in males in this sample is that the need to avoid or minimise conflict situations is greater for males than females at this stage of development.

Correlation analyses found that high scores on the avoidance factor were associated with lower levels of emotional openness and higher levels of negative affect. Of all the factors, avoidance was the only factor found to independently predict any of the SDQ subscales, and it was shown that (at least when age and gender were not included in the model), higher scores on the avoidance factor were

associated with lower levels of self-reported emotional symptoms. This factor was found to significantly predict group membership between the clinical and control samples.

Conceptually, this factor has similarities with an avoidant attachment style, and could be compared to the SSAP scale of “defensive avoidance” or an AAI classification of “dismissing”. As such, this factor would be associated, conceptually, with insecurity in attachment representations, and one might predict that scores would be higher in the clinical sample than the community sample. However, the reverse was found to be true, with community controls scoring significantly higher than the clinical sample on this factor. When considered in light of the high level conflict in interpersonal relationships in adolescence (Resnick et al., 1997), it seems possible that a tendency to minimise or avoid conflict could serve a protective function. The suggestion that avoidance is normative at this age is in keeping with the finding that a high proportion of adolescents are found to be classified as dismissing on the AAI (Bakermans-Kranenburg & van Izjendoorn, 2009; Warmuth and Cummings, 2015). The lower average score on this factor in the clinical sample could reflect difficulties in regulating an emotional response to events, and an inability to adaptively avoid conflict.

The final factor, indifference, included peer and protagonist neutral affect (for example, “not bothered”), and a lack of disorganised attachment and self-focussed mentalization. The inclusion of both the self-focussed mentalization and disorganised attachment scales is interesting; as these represent a combination of self-blame and emotional confusion about the scenario respectively. As these were negatively weighted, participants found to score highly on these items would receive a low score for the indifference factor. Conceptually, this seems to make sense; one would expect that someone found to have a more disorganised attachment style

would have a more extreme (and therefore less indifferent) emotional response to interpersonal dilemmas.

No gender differences were found on this factor in the community sample, but correlation analyses showed that scores on this factor increased with age, suggesting that older participants felt that the characters' reactions were more emotionally moderate and less disorganised than younger participants. This factor was also found to significantly predict group membership with the clinical sample scoring lower on this factor, demonstrating that participants in the control sample determined that characters in the story stems would have a less extreme emotional reaction to the dilemmas depicted.

As demonstrated by the regression analyses, there is a degree of overlap between these two factors, and conceptually there is also similarity. One interpretation could be that the indifference factor may capture an ability to make sense of conflict situations (and therefore reduce the intensity of any emotional response), whereas the avoidance factor instead reflects a strategy for managing, or minimising the impact of the conflict presented. It is interesting that these two distinct, but thematically related, constructs were the two that were found to distinguish the children in care. When considered in light of the lack of significant differences between the clinical and control groups on the negative affect factor, it could be interpreted that whilst both groups predicted an equivalent negative emotional response from the peer and parent characters depicted, the control group identified that the protagonist would be less worried, upset or destabilized by the emotions that were aroused (leading to high scores on the indifference factor) and/or employ strategies to not be drawn into conflict (leading to higher scores on the avoidance factor). Further exploration of the ASSP would be useful to disentangle these concepts.

As indicated by the ROC Curve analyses, both the avoidance and indifference factors demonstrated a fair degree of sensitivity (71% and 73%, respectively). These results demonstrate that the ASSP shows some promise for use as a screening tool, particularly if the items could be revised and fine-tuned.

Limitations of the study

Although the findings presented above show the potential clinical utility of the ASSP, there were a number of limitations of the study. Firstly, construct validity was not explored, and as such it is uncertain whether the significant results described above are a true reflection of attachment representations, as intended, or whether they indicate another aspect of interpersonal functioning. It is important to note that as a narrative measure, the ASSP does not assess how participants would actually behave, or in fact, how participants believe they would behave in a given situation. Instead, the ASSP intends to explore how participants represent relationships generally. In future studies, the inclusion of other established measures of attachment, such as the CAI, would provide more substantial evidence of the validity of the ASSP. Inclusion of such a measure was not possible in the current study, due to the large sample size and practical constraints of the study.

The SDQ and CGAS were included as measures of convergent validity of the measure, to explore whether the ASSP factors would identify those participants who were experiencing general difficulties, as measured by teacher- and self-report. Of these, the ASSP factors only predicted scores on two scales of the SDQ, and notably these did not include the peer problems subscale, as might have been predicted. Whilst neither the SDQ nor the CGAS aim to capture attachment representations, the lack of an association is inconsistent with the robust association between attachment insecurity and psychopathology (Allen, 2008), and therefore this raises questions about validity of the ASSP in the current format. It is worth noting that a number of teachers completing the CGAS expressed some doubts

about the measure, stating for example, that they felt they knew some students better than others, or could only give a very broad assessment as they could only indicate the young person's functioning in the classroom. Comparisons with a more detailed measures of teacher- or parent-rated difficulties, such as the SDQ or the Child Behaviour Checklist, may be more useful in demonstrating the convergent validity of the ASSP.

Although the community sample was large enough to reach the statistical power needed, the reliance on opportunity sampling did lead to some limitations. Firstly, the gender ratio was uneven, with approximately three females for every two male participants. Secondly, the age distribution was also uneven, with most students who participated being drawn from years nine and ten (13 to 15 years old), with fewer participants falling into the older or younger age categories. This may have skewed analysis of any age and gender differences within the community sample, and restricts the conclusions that can be drawn in relation to how scores on the ASSP factors change over time.

Another limitation of the study is the lack of information about the clinical sample, other than their LAC status. For pragmatic reasons, no information was collected on a number of possible confounding factors including details about their experiences in care (such as age at which they were taken into care, number of placements, experiences that led them to being placed in care and so on) or their general level of wellbeing and/or functioning. It would have been useful to include the same measures as used with the community sample (the SDQ and CGAS) to allow comparisons on these measures, as well as including further demographic information about the clinical sample. As it stands, it is not possible to determine whether differences in the ASSP scores are due to attachment differences, as opposed to a range of alternative factors (such as level of education). Future studies would benefit from using an alternative clinical sampling technique, such as

identifying young people presenting to clinics with known attachment difficulties, and comparing their responses to the ASSP with those of a community sample.

Conclusions

This study demonstrates that the ASSP shows some promise as a measure of adolescent representations, particularly in the ability to discriminate clinical from non-clinical samples, although there are a number of limitations. It also raises questions about some interesting developmental characteristics, and suggests that some behaviours or response patterns that are typical in adolescence are associated with attachment insecurity at other ages, such as the tendency use of avoidance as a strategy to minimise conflict. This highlights the need for the development of attachment measures specialised for this age group, in order to better understand normative differences in attachment representations at this age, and how these relate more broadly to the concepts of security/insecurity and organisation/disorganisation.

The ASSP has a number of strengths which recommend it for future development. As an indirect measure which does not require reflection on or disclosure of personal attachment experiences, the ASSP minimises a potential barrier to engagement of young people with attachment difficulties. This potential for engagement is increased by the computer-based nature of the ASSP, which also allows for easy administration and scoring.

However, statistical analysis was unable to demonstrate convincing evidence of convergent validity using the SDQ and the CGAS, in turn raising questions about the construct validity of the tool. As such it is not possible to conclude that the ASSP in its current format provides a measure of adolescent attachment representations. It is possible that modification of tool to increase suitability for statistical analysis would overcome some of these limitations.

References

Ainsworth, M. D. S., Blehar, M. C, Waters, E. & Wall, S. (1978). *Patterns of attachment: a psychological study of the strange situation.* Hillsdale, NJ: Erlbaum Associates.

Allen, J. P. (2008). The Attachment System in Adolescence. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment* (2nd ed., pp. 419-435). New York: The Guildford Press.

Allen, J. P., McElhaney, K. B., Land, D. J., Kuperminc, G. P., Moore, C. W., O'Beirne–Kelly, H., & Kilmer, S. L. (2003). A secure base in adolescence: Markers of attachment security in the mother–adolescent relationship. *Child Development, 74* (1), 292-307.

Bateman, A., & Fonagy, P. (2010). Mentalization based treatment for borderline personality disorder. *World Psychiatry, 9* (1), 11-15.

Becker-Stoll, F., Delius, A., & Scheitenberger, S. (2001). Adolescents' nonverbal emotional expressions during negotiation of a disagreement with their mothers: An attachment approach. *International Journal of Behavioral Development, 25* (4), 344-353.

Berger, L. E., Jodl, K. M., Allen, J. P., McElhaney, K. B., & Kuperminc, G. P. (2005). When adolescents disagree with others about their symptoms: Differences in attachment organization as an explanation of discrepancies between adolescent, parent, and peer reports of behavior problems. *Development and psychopathology, 17* (2), 509-528.

Berlin, L. J., Cassidy, J. & Appleyard, K. (2008). The influence of early attachment on other relationships. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment* (2nd ed., pp. 333-347). New York: The Guildford Press.

Bongers, I. L., Koot, H. M., Van der Ende, J., & Verhulst, F. C. (2003). The normative development of child and adolescent problem behavior. *Journal of abnormal psychology, 112* (2), 179.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Loss*. New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety & Anger*. New York: Basic Books.

Bretherton, I., Oppenheim, D., Buchsbaum, H., Emde, R., & the MacArthur Narrative Group. (1990). *The MacArthur Story Stem Battery*. Unpublished manuscript, University of Wisconsin-Madison.

Buchsbaum, H. K., Toth, S. L., Clyman, R. B., Cicchetti, D., & Emde, R. N. (1992). The use of a narrative story stem technique with maltreated children: Implications for theory and practice. *Development and Psychopathology, 4* (4), 603-625.

Carlson, E. (1998). A prospective longitudinal study of attachment disorganization/disorientation. *Child Development, 69*, 1107-1128.

Cicchetti, D. & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Counselling and Clinical Psychology, 70* (1), 6-20.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112* (1), 155-159.

Crowell, J. A., Fraley, R.C. & Shaver, P. R. (2008) Measurement of Individual Differences in Adolescent and Adult Attachment. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment* (2nd ed., pp. 599-634). New York: The Guildford Press.

Del Giudice, M. (2008) Sex-biased ratio of avoidant/ambivalent attachment in middle childhood. *British Journal of Developmental Psychology. 26:*369–79.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (Eds.). (2004). *Affect regulation, mentalization and the development of the self*. Karnac books.

Fonagy, P., Steele, M., Steele, H., Moran, G. S., & Higgitt, A. C. (1991). The capacity for understanding mental states: The reflective self in parent and child and its significance for security of attachment. *Infant Mental Health Journal, 12*(3), 201-218.

George, C., Kaplan, N., & Main, M. (1985). *Adult Attachment Interview protocol* (2nd ed). Unpublished manuscript, University of California at Berkeley.

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry, 40* (11), 1337-1345.

Granot, D. & Mayseless, O. (2001) Attachment security and adjustment to school in middle childhood. *International Journal of Behavioral Development, 25*, 530–41.

Hesse, E. (1996). Discourse, memory, and the Adult Attachment Interview: A note with emphasis on the emerging cannot classify category. *Infant Mental Health Journal, 17* (1), 4-11.

Hillman, Tesarova and Gonzalez, (2014) *Adolescent Story Stem Profile.* Unpublished manuscript.

Hodges, J., & Steele, M. (2000). Effects of abuse on attachment representations: Narrative assessments of abused children. *Journal of Child Psychotherapy, 26* (3), 433-455.

Hodges, J., Hillman, S., Stufkens, M., & Steele, M. (2015). *The Story Stem Assessment Profile.* Unpublished Manual.

Hodges, J., Steele, M., Hillman, S., Henderson, K. &, Kaniuk, J. (2005). Change and Continuity in Mental Representations of Attachment after Adoption. In D. M

Brodzinsky & J. Palacios (Eds). *Psychological issues in adoption: Research and practice.* (pp. 93-116) Westport, CN: Praeger.

Hodges, J., Steele, M., Hillman, S., Henderson, K., & Kaniuk, J. (2003). Changes in Attachment Representations Over the First Year of Adoptive Placement: Narratives of Maltreated Children. *Clinical Child Psychology and Psychiatry 8* (3), 1359-1045

Keijsers, L., & Poulin, F. (2013). Developmental changes in parent–child communication throughout adolescence. *Developmental Psychology, 49* (12), 2301.

Kerns, K. A., Tomich, P. L., & Kim, P. (2006). Normative trends in children's perceptions of availability and utilization of attachment figures in middle childhood. *Social Development, 15* (1), 1-22.

Kobak, R., Cassidy, J., Lyons-Ruth, K., & Ziv, Y. (2006). Attachment, stress, and psychopathology: A developmental pathways model. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 1. Theory and method* (2nd ed., pp. 333–369). Hoboken, NJ: Wiley.

Laursen, B., & Collins, W. A. (2004). Parent-child communication during adolescence. *The Routledge handbook of family communication*, 333-348.

MacCallum, R. C., Widaman, K. F., Zhang, S. & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4* (1), 84-99.

Macfie, J., Toth, S. L., Rogosch, F. A., Robinson, J., Emde, R. N., & Cicchetti, D. (1999). Effect of maltreatment on preschoolers' narrative representations of responses to relieve distress and of role reversal. *Developmental Psychology, 35* (2), 460.

Main, M. & Solomon, J. (1986). Discovery of a new, insecure disorganised/ disoriented attachment patter. In T. B. Brazelton & M. Yogman (Eds.), *Affective development in Infancy* (pp. 95-124). New York: Basic Books.

Main, M., Goldwyn, R., & Hesse, E. (1985/91). *Adult attachment scoring and classification system*. Unpublished manuscript, University of California at Berkeley.

Main, M., Kaplan, K. & Cassidy, J. (1985). Security in infancy, childhood, and adulthood; a move to the level of representation. In I. Bretherton & E. Waters (Eds.) *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development, 50* (1-2, Serial No. 209), 66-104

McCrone, E. R., Egeland, B., Kalkoske, M., & Carlson, E. A. (1994). Relations between early maltreatment and mental representations of relationships assessed with projective storytelling in middle childhood. *Development and Psychopathology, 6* (01), 99-120.

Moffitt, T. E., Caspi, A., Rutter, M. & Silva, P. A. (2001). *Sex differences in antisocial behaviour: Conduct disorder, delinquency, and violence in the Dunedin Longitudinal Study.* Cambridge University Press.

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education, 15*(5), 625-632

Osmosoft(2011) Tiddlyspace [Computer software]. Retrieved 30th September 2014. Available from http://assp.tiddlyspace.com

Piaget, J. (1952). *The Origins of Intelligence*. NY: International United Press.

Resnick, M.D., Bearman P.S., Blum, R.W., Bauman, K.E., Harris, K.M., Jones, J., Tabor, J., Beuhring, T., Sieving, R.E., Shew, M., Ireland, M., Bearinger, L.H. & Udry, J.R. (1997). Protecting adolescents from harm. Findings from the

National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association, 278*, 823-832.

Rey, J. M., Starling, J., Wever, C., Dossetor, D. R., & Plapp, J. M. (1995). Inter-Rater Reliability of Global Assessment of Functioning in a Clinical Setting. *Journal of Child Psychology and Psychiatry, 36* (5), 787-792.

Scott, S., Briskman, J., Woolgar, M., Humayun, S., & O'Connor, T. G. (2011). Attachment in adolescence: Overlap with parenting and unique prediction of behavioural adjustment. *Journal of Child Psychology and Psychiatry, 52* (10), 1052-1062.

Shaffer, D., Gould, M. S., Brasic, J., Ambrosini, P., Fisher, P., Bird, H., & Aluwahlia, S. (1983). A children's global assessment scale (CGAS). *Archives of General Psychiatry, 40* (11), 1228-31.

Shmueli-Goetz, Y., Target, M., Fonagy, P., & Datta, A. (2008). The Child Attachment Interview: a psychometric study of reliability and discriminant validity. *Developmental Psychology, 44* (4), 939.

Spear, L. P. (2013). Adolescent neurodevelopment. *Journal of Adolescent Health, 52* (2), S7-S13.

Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development, 7* (4), 349-367.

Steele, M., Hodges, J., Kaniuk, J., Steele, H., Hillman, S., Asquith, K (2008). In Steele, H. & Steele, M. (Eds.), *Clinical Applications of the Adult Attachment Interview* (pp. 427-451). Guilford Press: New York.

Stevens, J. (1992). *Applied multivariate statistics for the social sciences*. Mahwah NY: Laurence Erlbaum Press.

Tabachnik, B. G. & Fidell, L. S. (2013). *Using Multivariate Statistics*, 6th Edition. Harlow, Essex: Pearson Education Limited.

Toth, S. L., Cicchetti, D., Macfie, J., & Emde, R. N. (1997). Representations of self and other in the narratives of neglected, physically abused, and sexually abused preschoolers. *Development and Psychopathology, 9* (4), 781-796.

Venta, A., Shmueli-Goetz, Y., & Sharp, C. (2014). Assessing attachment in adolescence: A psychometric study of the Child Attachment Interview. *Psychological Assessment, 26* (1), 238.

Wareham, P., & Salmon, K. (2006). Mother–child reminiscing about everyday experiences: Implications for psychological interventions in the preschool years. *Clinical Psychology Review, 26* (5), 535-554.

Warmuth, K. A., & Cummings, E. M. (2015). Examining developmental fit of the Adult Attachment Interview in adolescence. *Developmental Review, 36*, 200-218.

Warren, S. L., Emde, R. N., & Sroufe, L. A. (2000). Internal representations: Predicting anxiety from children's play narratives. *Journal of the American Academy of Child and Adolescent Psychiatry, 39* (1), 100-107.

Warren, S. L., Oppenheim, D., & Emde, R. N. (1996). Can emotions and themes in children's play predict behavior problems? *Journal of the American Academy of Child & Adolescent Psychiatry, 35* (10), 1331-1337.

Zeifamn, D. & Hazan, C. (2008) Pair bonds as attachments: Reevaluating the evidence. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment* (2nd ed., pp. 436-455). New York: The Guildford Press.

Zeman, J., Cassano, M., Perry-Parrish, C., & Stegall, S. (2006). Emotion regulation in children and adolescents. *Journal of Developmental & Behavioral Pediatrics, 27* (2), 155-168.

PART 3: CRITICAL APPRAISAL

Introduction

The following section is a critical appraisal of the planning and execution of the empirical research study that I undertook as part of my clinical psychology training. I will begin by describing what interested me in this particular research topic, and will then discuss the practical and theoretical challenges faced during the completion of the project, and the attempts made to overcome these. Finally I will reflect on the wider implications that completing the project has had on my understanding of emotional wellbeing and mental health of adolescents.

Background to the project

Having previously worked as a child protection worker, I was curious about the way in which children and young people who had experienced abusive or neglectful care made sense of these experiences, and was keen to work on a project that would allow me to explore this further. In particular, I was interested in the differences that exist in how different children seem to process their experiences and the impact this has on their subsequent relationships with their parents, their peers and the professionals trying to support them. I had personally witnessed the discrepancy between a professional's intentions and aims when working with a family, and the family's perception of the professional's attempts to help, and the negative impact this had on outcomes for the families. I was interested in exploring the risk and resilience factors associated with outcomes for children known to social services.

On learning about the ASSP, it appeared to be a possible tool for exploring this population in more the detail. I was aware that it was developed from a narrative measure which had been used to assess how maltreated and looked-after-children represented the social world, given their challenging experiences of early caregiving. In the initial stages of the project, I was surprised to learn how little is known about typical changes in attachment relationships during the transitional period of

adolescence, despite the large volume of attachment literature. The development of the ASSP provided a possible method of tracking these changes from late childhood and throughout adolescence.

The aim of the empirical paper was to determine what constituted a "typical" response to the scenarios presented in the ASSP, and how this might vary for teenagers who had experienced maltreatment of some form.

Reflections on the literature review

The aim of the literature review was to critically analyse and summarise the findings of the research using narrative measures in childhood, when directly comparing maltreated and non-maltreated populations. The main challenge in this process was in attempting to assimilate the findings of the various studies in the face of the heterogeneity of methodologies, coding strategies, statistical reporting and sampling of the different researchers. This was further complicated by the age of some of the studies; with older studies at times showing less scientific rigour, or using scientific conventions that have since changed. For example, a number of the studies reported findings of significant difference at the $p<.10$ level, as opposed to the now accepted level of $p<.05$.

In order to account for these differences, it was only possible to explore the broader findings of each of the studies, and more detailed analysis of the rich data provided by the measures, when reported, was beyond the scope of the current project. Although the studies reviewed do demonstrate that maltreated children are more likely than non-maltreated children to show fewer representations associated with security in their narratives, it is difficult to draw any conclusions about the detailed nature of these differences.

Reflections on the empirical paper

Recruitment and data collection

One benefit of using the ASSP was the ability to test large numbers of participants simultaneously, however this was not without its drawbacks. Due to the large number of participants needed to ensure statistical power, the only feasible way to recruit these participants was through secondary schools. This recruitment strategy presented with a number of challenges. Firstly, approaching schools to request participation relied on the good will and interest of teachers facilitating the project. In total approximately 20 schools were approached, and of these only 6 agreed to participate in the research. Those schools that were approached but chose not to participate did so on the basis of a number of factors, the most common being lack of time within the school's timetable or limited access to the computers required. In all but one of the schools that chose to participate, introductions were made through personal connections with members of the teaching staff, and often this person then took on responsibility to coordinate the data collection. Without these personal connections it seems unlikely that a sufficient number of participants to reach statistical power would have been recruited.

Once schools had agreed to allow students to take part, a new set of challenges arose. Due to the need to work around the schools' timetables and access to computers, availability of students had to be prioritised above any methodological sampling considerations, such as obtaining a representative sample in terms of demographic characteristics like ethnicity, age, gender and socio-economic status. Although a passive consent procedure had been agreed by the UCL Research Ethics Committee, some schools were concerned about how parents of younger students (Years 7 and 8) would respond to this, and felt more comfortable with me working with older students. The schools that offered

psychology as a taught subject were keen for me to work with the psychology students and to give them the experience of participating in research, and careful negotiation was required to ensure that the sample did not consist of psychology students only. Additionally, certain year groups were not available due to prioritising academic work, such as Year 11 students who were completing their GCSEs. These factors meant that the distribution of ages across the sample was highly uneven, with many more 14 and 15 year olds (Years 9 and 10) participating that older or younger students.

Other challenges that resulted from the data collection technique were those posed by reliance on the different schools' computer systems. Despite reassurances from the developers and "test runs" by teachers prior to scheduled data collection dates, at numerous schools we experienced technical difficulties which limited the number of students who could take part, and at times prevented the online database synching correctly. This led to the loss of large volumes of data, which was concerning in the face of the difficulties experienced in recruiting schools, and also disrupted attempts to ensure the demographics of the sample represented a spread of ages and genders. For example, of the six schools recruited, four were co-education, and two were single-sex; both of which provided a large number of participants across multiple year groups. In order to ensure balanced genders, one of these schools was an all-boys' school, and one was an all-girls' school. Unfortunately, however, due to technical difficulties there was a large loss of data from the participants at the all-boys' school, and as a result the final sample had more females that males (a ratio of approximately 3:2).

Joining an ongoing project

As I did not join the project from the conception of the ASSP, I learnt about the measure throughout the process. This was an interesting learning experience, and I was grateful for the time that my supervisors gave me in explaining the process of

developing and testing a new measure. I was, however, more involved in determining the coding strategy that was used, and the data analysis methods. Whilst I appreciated the opportunities for contributing in this way, it felt like a difficult balance at times, not having had knowledge of the conceptually driven codes prior to the analysis stage.

On a similar note, the collection of the clinical data took place separately to my involvement, as part of an ongoing longitudinal study. Therefore this data collection was outside my control or influence, and at times when this was delayed for various reasons, could feel quite anxiety-provoking. This also led to differences in the nature of the data collected, in particular resulting in the lack of the SDQ or CGAS in the clinical sample, limiting the ability to make comparisons between the different samples.

Reflections on coding and evaluation strategy

One of the challenges of the project was considering how best to code the data that was collected. Due to the combination of ordinal, categorical and freeform responses, it was decided early on that evaluation of all of these elements was beyond the scope of the current project. Rather than qualitatively evaluate the freeform answers, a decision was made to use quantitative methods to evaluate the responses of the community sample to the ordinal and categorical data. It was uncertain whether a factor analysis would be successful, due to the nature of the data collected (both ordinal and categorical), and the nature of the measure itself.

The structure of the ASSP had been designed to be similar to that of the SSAP, in the creating of parallel scenarios and equivalent dilemmas. Hopefully, this will allow for comparisons to be made between the two ages, enabling researchers to track changes from childhood through to adolescents. However, each of the scenarios used in the SSAP all present unique dilemmas, and are intended to elicit different emotional responses from participants. For example, the “outside the

crowd" story (depicting peer rejection) would presumably lead to very different feelings when compared to, for example, the "argument" story (in which the protagonist witnesses his/her parents arguing).

Although each of these stories was designed to activate the attachment system in some way, the variety of scenarios posed challenges in the analysis and interpretation of the data. A possible alternative to the factor analysis method used in the current study is the developing a score to measure how "accurate" each participant's response was to the different scenarios, by determining what an expected response might be and making comparisons with that. However, given the limited amount that is currently known about normative adolescent attachment representations, it was felt that the current study presented an opportunity to explore this further, and to allow the data to demonstrate the most typical response to each scenario.

One of the discussions which was held at various points throughout the project was that relating to the narrative nature of the measure, and how this could be incorporated into the coding strategy. For example, if a participant determined that in a specific story-stem the protagonist was feeling angry in reaction to the events presented, this could possibly change the interpretation of their subsequent responses, compared to if they determined that the protagonist was happy, or worried. This form of analysis would be closer to that used for the original story-stem measures on which the ASSP was based. However, it was felt that this form of analysis would be too complex for the current project. However future analysis of the data in this way could provide further insight into how the participants made sense of and interpreted the scenarios presented to them, and whether these differed for the typical and the clinical samples.

Reflections on the theoretical underpinnings of the ASSP

As an adaptation of narrative story-stem techniques used with children, the ASSP has its theoretical basis in psychoanalytic play therapy. These measures are based on the assumption that the stories children tell through their play reveal aspects of their inner world and experience that would otherwise be difficult to access (Wolf, 2003). This assumption, in turn, has its roots in more general psychoanalytic concepts; such as ideas of a dynamic unconscious "where mental forces compete for expression, [and which] helps to determine which ideas and feelings may reach consciousness" (Fonagy, & Target, 2003, p3). It is thought that mental disturbances result from the way in which previous experiences are interpreted and represented, consciously or unconsciously. The way in which the psychoanalytic patient communicates in treatment is seen to have multiple meanings, and the role of the analyst is to interpret these meanings and bring unconscious intrapsychic conflict into conscious awareness.

Many of these concepts are at odds with those underpinning psychometric research and the development of psychometric tests. Empirical research can be defined as "…the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomenon" (Cohen et al, 2011, p.4). With foundations in empirical psychological research, the key concepts associated with developing psychometric tests include ideas such as Popper's falsification and deduction. According to this philosophy, in order for a theory to be considered "scientific", it must be possible to generate a hypothesis that is able to be refuted, or falsified, and it is this philosophy that is the foundation for scientific research, including psychological research. In keeping with this stance, a psychometric test is seen a systematic method for comparing the behaviour of multiple people (Cronbach, 1960) and requires objective administration, scoring and interpretation. Whilst this approach aligns well with some schools of thought of

psychology, in particular operant-behavioural approaches which are underpinned by a philosophy of prediction and control, it is less consistent with forms of psychology or psychotherapy which rely on post-hoc explanatory methods, such as psychoanalysis.

It has long been a criticism that psychoanalysis and the traditional empirical research methods described above are incompatible. Freud refuted the idea that psychoanalysis is inherently unscientific, responding to critics by stating that "… it is plain that a science based on observation has no alternatives but to work out its findings piecemeal and solve its problems step by step" (Freud, 1925; reproduced in Gay, 1989, p. 37). Indeed, more recently there have been recent findings from empirical research which demonstrate the veracity of some long-held psychoanalytic theories, such as those demonstrating the neuroanatomical correlates of unconscious processing (e.g. Gainotti, 2012). Yet the criticism remains that many psychoanalytic concepts are unproven, and therefore unscientific.

As a consequence of this tension, the evidence base for psychoanalytic interventions is less robust than for other forms of talking therapy, such as cognitive behavioural therapy (CBT; Lemma, 2003, Fonagy & Target, 2003). However, it has also been recognised that "…because psychoanalysis claims to be a treatment for psychological problems and it seeks public funding for its provision… we have a responsibility to evaluate its effectiveness notwithstanding the limitations of the methodologies currently available to us" (Lemma, p34). In the context of current funding pressures for mental health services, and the emphasis on evidence-based treatment within the National Health Service, it has been recognised that if psychotherapy is to maintain its position as a mainstream form of talking therapy, it must take steps to demonstrate its value for patients.

In the current project, this tension between psychometric empirical research and the psychoanalytic traditions on which the ASSP is based was most apparent

when attempting to analyse the data collected. It has been argued that the strengths of psychoanalysis are in the complexity and depth of theorizing (Fonagy, 2003) and it was challenging to stay true to these strengths when exploring the nature and qualities of interpersonal relationships and internal representations across a large sample of young people. In attempting to find similarities within the sample by completing a factor analysis, we inevitably reduced the complexity and diminished the richness of the data collected. However, it is important to recognise the exploratory nature of the current project, and that it represents only one stage in the development of the ASSP. Within the cyclic research process, the work completed to date could be seen as the completion of one cycle, and as building a foundation on which to base future work.

Mental health provision in schools

One unexpected outcome of completing the project has been the increased interest I have developed in supporting young people's emotional wellbeing in schools, and how this can support the prevention and early intervention of mental health difficulties. In order to encourage the schools to participate, I offered to deliver some form of workshop or assembly related to clinical psychology, which was a successful strategy in generating interest and recruiting schools to the project. On one occasion a school which could not facilitate the data collection for the study requested for the workshop to be delivered separately, or for an alternative provider to be recommended, which highlighted the demand for such interventions in schools. The content of the workshop was determined by the schools, and I wrote and delivered presentations based on what the teachers identified as being useful for their students. Although these varied between schools, the most common form of the workshop was an hour long presentation outlining a typical cognitive-behavioural therapy (CBT) approach to managing stress/anxiety, including psychoeducation

about the body's physiological reaction to stressful situations, the CBT "hot-cross bun" formulation of anxiety and some anxiety-management strategies.

At times, this arrangement felt somewhat overwhelming, and I questioned the whether the task of creating and delivering these workshops was beyond my level of expertise and experience, a feeling which is common in "novice" therapists (Thériault, Gazzola & Richardson, 2005). However, ultimately, these workshops were enjoyable to deliver, and it was rewarding to have the opportunity to "give back" to the schools that had helped me. I collected brief feedback questionnaires from the teachers following the delivery of the workshops, and all reported that the content had met or exceeded their expectations. In addition, I learnt a great about the mental health and emotional wellbeing of teenagers who would not meet referral criteria for clinical services, and developed a richer understanding of the pressures placed on students and teachers of this age group, all of which benefitted my clinical work.

My discussions with teachers about the need for emotional support in schools, particularly around the provision of support for disorders such as depression and anxiety, provides anecdotal evidence of a phenomenon which is gaining increasing support in child and adolescent mental health provision. It is well-known that there is a high level of need for mental health support in childhood and adolescence, and it is estimated that 1 in 10 people under the age of 16 need support for mental health difficulties (Green et al., 2005). This equates to roughly 3 students in every classroom, or alternatively, 25 of the 253 students in the community sample of this project. Despite this need, access to mental health support is severely limited, with only 10% of teenagers in need thought to be accessing services (Pugh et al., 2006). Furthermore, mental health difficulties are known to have a profound impact on all areas of function for young people, and are associated with increased risk of

academic failure (Goodman, Joyce & Smith, 2011), and engaging risk-taking behaviour (Green et al., 2005).

In response to findings such as these, there has been a move to reform child and adolescent mental health services (CAMHS). A recent Department of Health report emphasised the need to for service reform to focus on "building resilience, promoting good mental health, prevention and early intervention" (DoH, 2015, p16), and this is also reflected in proposed models of mental health provision such as the Thrive model (Wolpert et al, 2014). This has led to an increasing drive to provide mental health support in community settings, such as schools, and the effectiveness of school-based interventions have already been demonstrated (e.g. Wong et al., 2014; Sclare et al., 2015). It is considered that interventions such as these provide an efficient and cost-effective way of increasing access to mental health support, and preventing mental health difficulties from becoming established in adolescence, and early adulthood by promoting resilience and coping.

On a personal level, my experiences in schools, talking to students and teachers in order to complete this study has sparked a great interest in the topics of early intervention and prevention. I was drawn to this project due to an interest in a specialist area of work with looked after children and young people, a group known to have higher rates of mental health difficulties than the general population (Meltzer et al, 2003), and I had considered that I would return to working with this population post-qualification. However, in completing the project I was surprised by how much I enjoyed the work in schools, and how passionate I have become about the profound impact that preventative work could have on the lives of young people experiencing emotional distress. I hope that these are ideas and interests that I will be able to take forward in my career once I have qualified.

References

Cohen, L., Manion, L., & Morrison, K. (2011). Research methods in education (7th Edition). London: Routledge.

Cronbach, L. (1990). Essentials of psychological testing, 5th ed. New York: Harper & Row

Department of Health & NHS England, (2015). Future in mind: promoting, protecting and improving our children and young people's mental health and wellbeing. Department of Health.

Fonagy, P. & Target, M. (2003). Psychoanalytic theories: Perspectives from developmental psychopathology. London: Whurr publishers.

Fonagy, P. (2003). The research agenda: the vital need for empirical research in child psychotherapy. Journal of child psychotherapy, 29(2), 129-136.

Gainotti, G. (2012). Unconscious processing of emotions and the right hemisphere. Neuropsychologia, 50(2), 205-218.

Gay, P. (Ed.). (1989). The Freud Reader. London: Vintage.

Goodman, A., Joyce, R., & Smith, J. P. (2011). The long shadow cast by childhood physical and mental problems on adult life. Proceedings of the National Academy of Sciences, 108(15), 6032-6037.

Green H, McGinnity A, Meltzer H, Ford T, Goodman R (2005). Mental health of children and young people in Great Britain, 2004. A survey carried out by the Office for National Statistics on behalf of the Department of Health and the Scottish Executive. Basingstoke: Palgrave Macmillan.

Lemma, A. (2003). Introduction to the practice of psychoanalytic psychotherapy (pp. 1-14). John Wiley & Sons, Ltd.

Meltzer, M., Gatward, R., Corbin, T., Goodman, R., & Ford, T. (2003). The mental health of young people looked after by local authorities in England. HM Stationery Office.

Pugh K, McHugh A, McKinstrie F. 2006. Two steps forward, one step back? 16-25 year-olds on their journey to adulthood (SOS: stressed out and struggling). London: YoungMinds.

Sclare, I., Michelson, D., Malpass, L., Coster, F., & Brown, J. (2015). Innovations in Practice: DISCOVER CBT workshops for 16–18-year-olds: development of an open-access intervention for anxiety and depression in inner-city youth. Child and Adolescent Mental Health, 20, (2),102–106

Thériault, A., Gazzola, N., & Richardson, B. (2009). Feelings of incompetence in novice therapists: Consequences, coping, and correctives. Canadian Journal of Counselling, 43(2), 105.

Wolf, D. P. (2003). Making meaning from emotional experience in early narratives. In R. N. Emde, D. P. Wolf & D. Oppenhiem (Eds.) Revealing the Inner Worlds of Young Children: The MacArthur Story Stem Battery and Parent-Child Narratives (pp. 222-239). New York: Oxford University Press.

Wolpert, M., Harris, R., Jones, M., Hodges, S., Fuggle, P., James, R., Wiener, A., McKenna, C., Law, D. & Fonagy, P. (2014). Thrive: The AFC-Tavistock Model for CAMHS.

Wong N, Kady L, Mewton L, Sunderland M, Andrews G. Preventing anxiety and depression in adolescents: A randomised controlled trial of two school based internet-delivered cognitive behavioural therapy programs. Internet Interventions. 2014;1(2):90-4.

APPENDICES

Appendix A: UCL Research Ethics Committee Approval

UCL RESEARCH ETHICS COMMITTEE
ACADEMIC SERVICES

Dr Saul Hillman
The Anna Freud Centre
UCL

20 November 2014

Dear Dr Hillman

Notification of Ethical Approval
Project ID 6239/001: Psychometric properties of the Adolescent Story Stem Profile

In my capacity as Chair of the UCL Research Ethics Committee (REC) I am pleased to confirm that your project has been approved by the UCL REC for the duration of the project i.e. **until September 2016.**

Approval is subject to the following conditions:

1. You must seek Chair's approval for proposed amendments to the research for which this approval has been given. Ethical approval is specific to this project and must not be treated as applicable to research of a similar nature. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing the 'Amendment Approval Request Form': http://ethics.grad.ucl.ac.uk/responsibilities.php

2. It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. Both non-serious and serious adverse events must be reported.

   Reporting Non-Serious Adverse Events
   For non-serious adverse events you will need to inform Helen Dougal, Ethics Committee Administrator [redacted] within ten days of an adverse incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Chair or Vice-Chair of the Ethics Committee will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

   Reporting Serious Adverse Events
   The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator immediately the incident occurs. Where the adverse incident is unexpected and serious, the Chair or Vice-Chair will decide whether the study should be terminated pending the opinion of an independent expert. The adverse event will be considered at the next Committee meeting and a decision will be made on the need to change the information leaflet and/or study protocol.

On completion of the research you must submit a brief report (a maximum of two sides of A4) of your findings/concluding comments to the Committee, which includes in particular issues relating to the ethical implications of the research.

With best wishes for the research.

Yours sincerely

[redacted]

Professor John Foreman
Chair of the UCL Research Ethics Committee

Cc:
Susannah Price & Professor Pasco Fearon, Applicants
Dr John King, CEHP Chair of Ethics

Appendix B: Parent and Student Information Sheets and Consent Forms

Parent Information Sheet

The Internal Representations of Adolescents

UCL
The Anna Freud Centre

Researcher Principle Investigators:
Susannah Price (UCL)
Dr Saul Hillman (The Anna Freud Centre)
Professor Pasco Fearon (UCL)

The Study's Purpose

This project aims to explore the attachment and internal needs of adolescents. We are interested in young adolescents' thoughts and feelings and wish to explore this through an interactive online video based task.

What does the study involve?

For your child, he/she is expected to be involved for about 45 minutes (depending on how quickly he/she goes through the online tasks). There is no other involvement expected from the participant. The online task is a series of short videos which the young person is asked questions about. There are a couple of additional short questionnaires that can be filled in online.

There is no involvement expected for yourselves.

Who is involved?

A professional will arrange for your child to complete the task at school. The task can be filled in by the young person themselves though there will be someone at hand to help if needed. There is no preparation of any sort required for the session. The material is sent back electronically and anonymously.

The people involved in this study are Susannah Price, a trainee clinical psychologist studying at UCL, and the principle researcher, Dr Saul Hillman, at The Anna Freud Centre. *The Anna Freud Centre are only involved at the stages of seeking permission for the study and presentation of results (maintaining confidentiality at all times).*

Participation:

Although we hope that your child will help us in carrying out the project, you are under no obligation to do so and are free to withdraw from the study at any time for any unstated reason. Your decision on whether or not to take part will not affect you or your child in any way. If you do NOT wish your child to take part in this study, you should return the attached slip to your child's class teacher by [*DATE HERE*]. On the day, teachers will have responsibility for deciding whether participation in this study is appropriate for each student. Each student will have the final say whether or not they want to take part.

Confidentiality
All information collected will be strictly confidential. All online materials will be kept encrypted, securely and anonymously, identified by serial numbers.

Any information that leaves the researcher, if at all, will have the child's name and address removed, so that they cannot be recognised from it. Data will be stored on a password protected computer and all hard copies of related documents kept in a locked cupboard at a secure location within the Anna Freud Centre.

Publication of results will be based on statistical descriptions of groups, and not involve disclosure of any individual or identifiable information. If you would like, we would be happy to share with you the overall results of the project as they become clear to us.

Contract details
Please contact Susannah Price, Trainee Clinical Psychologist by emailing [redacted] or Dr Saul Hillman, Principle Investigator, The Anna Freud Centre, on [redacted] or by email on [redacted]

✂----------

Please return to class teacher if you DO NOT wish your son/daughter to be involved in this study.

Name of student: …….

I have read the information sheet and I do **NOT** wish my child to take part in this research. ☐

Signed: : …….

Information sheet for students

We would like to invite you to take part in this research project.

You should only take part if you want to. If you do not want to take part that is OK and you can continue with your normal school day. To help you decide whether you want to take part I will explain why the research is being done and what it will involve. I will read this to you and you can ask me if there is anything that is not clear or you would like more information.

Who am I?
I am a trainee clinical psychologist from UCL. My contact details are at the bottom of this sheet.

What is the project about?
We are interested in your feelings and thoughts and how you get on with other people. In order to find out about this we have created some videos of different stories and situations. We are interested in the different ways in which young people react to these videos and what this might mean about how you see the world around you.

Who is being invited to take part?
I am asking young people attending your school and some other schools to take part.

Are there any benefits of taking part?
Some young people find the questionnaires interesting. Helping in studies like this may help young people who have some problems in the future.

What will I be asked to do?
All we want you to do is open a link which will be given to you on the computer which will allow you to access to the online task. You will be asked to watch 8 short videos about a young person, their friends and their parents in various situations. We will then ask you a few questions about these situations, how you think the characters might feel and what they are likely to do. There are no right or wrong answers, we just want to know what you think.

There are a couple of other short questionnaires too. One of these will ask you to give some details about yourself. The second will ask you to read a list of statements and to decide how often each statement is true for you.

This is all done from the computer so you might be able to do this on your own. It won't take more than about 45 minutes and may be enjoyable too. A professional may be available to help you fill it in, though you might find it easy to do without any help. Your question responses will be sent back electronically and anonymously.

Do I have to do this?
No, it is OK if you don't want to take part today, or any other day. Your schooling will not be affected at all, but we do hope you will do it so we can learn more about young people.

Who gets to see what I write?
All information collected will be strictly confidential. This means we will replace your name with a number. All online material will be kept securely and anonymously, identified by serial numbers.

Do you want to know anything else?
Do you have any questions? You can also contact the researchers at the address at the bottom of this sheet. If you want to talk to anyone at school, please speak to your form tutor.

This study has been approved by the UCL Research Ethics Committee (project ID number): 6239/001

The researchers are Susannah Price, Trainee Clinical Psychologist, UCL, email: [redacted] and Dr Saul Hillman, Principle Investigator, The Anna Freud Centre, [redacted], email: [redacted]

Thank you for reading this information.

Participation Consent Form

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

This study has been approved by the UCL Research Ethics Committee (Project ID number): 6239/001

NOTES FOR PARTICIPANTS

1. You have been asked to take part in a research. The person organising that study must explain the project to you before you agree to take part.

2. Please ask the researcher any questions you have about this project, before you decide whether to participate.

3. If you decide, now or at any time, that you do not wish to be involved in the project, just tell us and we will halt your involvement.

4. You have been given an information sheet, which describes the research. This is for you to keep and refer to at any time. Please read it carefully.

5. By signing this form you agree that to participate, and that any information you give will be processed for the purposes of this research study. This information will be treated as strictly confidential.

6. If you have any complaints about the research or researcher, please discuss them with the Researcher. If these problems are not resolved, please discuss them with the Research Co-ordinator, Saul Hillman, The Anna Freud Centre, 12 Maresfield Gardens, London NW3 5SD. Tel: [redacted]. If you wish to complain about the conduct of the research, you may email the Chair of the UCL Committee for the Ethics of Non-NHS Human Research ([redacted]) or send a letter to: The Graduate School, North Cloisters, Wilkins Building, UCL, Gower Street, London WC1E 6BT.

CONSENT

I_____ agree that the research project named above has been explained to me to my satisfaction, and I agree to take part in the study. I have read the notes written above and the information sheet about the project, and understand what the research study involves.

SIGNED SIGNED (Researcher)

_____

DATE

_____

Appendix C: ASSP Stories and Questions

Story Summaries, Questions and Scales

No	Question	Scale
Story 1: Liam suddenly walked out of the room and went up to his bedroom.		
1a	How do you think Liam was feeling when in the room with his parents?	Affect Question
1b	How did Liam's parents feel?	Affect Question
1c	Why did Liam leave the room?	Attachment
1d	What do you think happened?	Open Question*
1e	How do you think Liam was feeling when he was in his own room?	Emotion Regulation
1f	When Liam was in his room, what did his parents do?	Other*
1g	Did Liam talk to his parents?	Parent Communication
1h	How much did his parents know that he was upset?	Parent Awareness
1i	What do you think Liam made of the whole situation?	Mentalization
Story 2: Liam is given a certificate at school and goes home with it.		
2a	How do you think Liam was feeling when given the certificate?	Affect Question
2b	How do you think Liam's friends might have acted?	Affect Question
2c	Did Liam talk to his friends about what he had done?	Peer Communication
2d	How much did Liam's friends know what he was feeling?	Peer Awareness
2e	How did Liam's mother feel?	Affect Question
2f	Did Liam talk to his parents about what happened at school?	Parent Communication
2g	How much did Liam's parents know how he was feeling?	Parent Awareness
2h	How do you think Liam was feeling about the whole thing?	Mentalization
Story 3: Liam gets suspended from school and then comes home.		
3a	How do you think Liam was feeling when he was given the suspension?	Affect Question
3b	How do you think Liam's friends might have acted?	Affect Question
3c	Did Liam talk to his friends about the suspension?	Peer Communication
3d	How much did Liam's friends know what he was feeling?	Peer Awareness
3e	When Liam got home, who did he talk to about the suspension?	Communication*
3f	How did Liam's mother feel upon finding out?	Affect Question
3g	How did Liam's father feel on finding out?	Affect Question
3h	How much did Liam's parents know what he was feeling?	Parent Awareness
3i	What actions do you think Liam's parents took?	Open Question*
3j	How was Liam feeling about being suspended?	Attachment
3k	What do you think Liam made of the whole situation?	Mentalization

Story 4: Liam's friends come round to his house. His Mum is feeling unwell.		
4a	How do you think Liam was feeling at the door?	Affect Question
4b	What did Liam do?	Story Resolution*
4c	What do you think Liam did next?	Story Resolution*
4d	How did Liam's Mum feel?	Affect Question
4e	How did Liam's friends feel?	Affect Question
4f	What do you think Liam was feeling about the whole thing in the end?	Mentalization
Story 5: Liam approaches his friends John and Jamie, asking them whether they would like to do something together. While John agrees, Jamie says they are busy doing something else.		
5a	How did Liam feel?	Affect Question
5b	How did John (the friend that wanted Liam to join them) feel?	Affect Question
5c	How did Jamie (the friend that didn't want Liam to join them) feel?	Affect Question
5d	How do you think Liam felt after the conversation?	Emotion Regulation
5e	What do you think Liam did?	Story Resolution*
5f	What did Liam do next?	Story Resolution*
5g	Did Liam talk to anyone after this happened?	Communication *
5h	How much did the others know what Liam was feeling?	Peer Awareness
5i	Did Liam show the others how he was feeling?	Peer Communication
5j	What do you think Liam felt about the situation?	Attachment
5k	What do you think happened in the end in the story?	Open Question*
5l	What do you think Liam made of the whole situation?	Mentalization
Story 6: Liam is talking to his friend Ruby. Liam's friend Jamie invites Liam to a party, but not Ruby.		
6a	How did Liam (the one who was invited) feel after the conversation?	Affect Question
6b	How did Ruby (the one who was not invited) feel?	Affect Question
6c	How did Jamie (the one who invited his friend) feel?	Affect Question
6d	What did Liam do?	Story Resolution*
6e	What do you think happened next?	Story Resolution*
6f	Did Liam talk to anyone after this happened?	Communication*
6g	How much did the others know how Liam was feeling?	Peer Awareness
6h	Did Liam show the others how he was feeling?	Peer Communication
6i	What do you think Liam felt about the situation?	Attachment
6j	What do you think happened in the end?	Open Question*
6k	What do you think Liam made of the whole situation?	Mentalization

Story 7: Liam's friends came round and he went out with them. At the end, something has happened to Liam.		
7a	How do you think Liam was feeling when he went out? (	Affect Question
7b	How did his parents feel?	Affect Question
7c	Where do you think Liam went in the end?	Open Question*
7d	What do you think happened to Liam?	Open Question*
7e	How do you think Liam was feeling at the end?	Affect Question
7f	How do you think Liam's friends were feeling at the end?	Affect Question
7g	What did Liam's friends do?	Other*
7h	Did Liam's friends know what he was feeling?	Peer Awareness
7i	Did Liam talk to his friends?	Peer Communication
7j	Did Liam's parents know what happened?	Parent Awareness
7k	Did Liam talk to his parents?	Parent Communication
7l	How did Liam's parents feel when they found out?	Affect Question
7m	Why do you think Liam went out to wherever he went?	Other*
7n	What happened in the end?	Open Question*
7o	What do you think Liam made of the whole situation?	Mentalization
7p	What do you think Liam was feeling about what happened?	Attachment
Story 8: Liam has just heard his parents having an argument.		
8a	How do you think Liam was feeling when in the room with his parents?	Affect Question
8b	How did Liam's Mum feel?	Affect Question
8c	How did Liam's Dad feel?	Affect Question
8d	What did Liam do?	Story Resolution*
8e	Did his parents know how Liam was feeling?	Parent Awareness
8f	Did Liam talk to his parents about what he felt?	Parent Communication
8g	Did his Mum talk to Liam about the argument?	Parent Communication
8h	Did his Dad talk to Liam about the argument?	Parent Communication
8i	Did Liam talk to his friends about what he felt?	Peer Communication
8j	What happened about the argument in the end?	Other*
8k	What do you think Liam was feeling about what happened?	Attachment
8k	How did Liam feel in the end?	Emotion Regulation
8l	What did Liam make of the whole thing?	Mentalization
8m	What happened with the argument in the end?	Open Question*

* Not analysed in the current study

Affect Question Response Categories

Positive	Neutral	Negative	
		Internal	External
Happy	Not bothered	Ashamed	Angry
Funny	Confused	Guilty	Disgusted
Excited	Surprised	Sorry	Bothered
Proud	Uncertain	Frightened	Envious
Supportive	Backed off	Worried	Jealous
Understanding		Sad	Aggressive
Praising		Upset	Bullying
		Troubled	Teasing
			Frustrated

Mentalization Question Response Categories

Story	Avoidant	Self-mentalizing	Other-mentalizing	Excessive	Reflective	Under-mentalizing
1	He just forgot about the whole thing	He just felt it was his own fault	He just felt really annoyed with his parents	He just couldn't t stop thinking about what happened	He just wished he had talked to them about the problem	He felt there was nothing else he could do
2	He just got on with it - it was no big deal!	He wished he had done better - it was not good enough	He thought others in his class were not so clever so it was no big deal.	He couldn't stop feeling happy and telling everyone	He was clever and worked hard for it	He was lucky and it wasn't that difficult
3	He just forgot about the whole thing	He just felt it was his own fault	He just felt angry with his teachers / the school	He just couldn't stop thinking about what happened	He just wished he had behaved differently	He felt there was nothing else he could do
4	He just forgot about what had happened	He blamed himself for the whole thing	He was thinking his Mum didn't care about him	He was frustrated and just couldn't stop thinking about what happened	He felt he came up with a good solution	He felt there was nothing else he could do
5	He just forgot about the whole thing	He was angry with himself - it was his fault	He felt angry with the boy(s)	He just couldn't stop thinking about what happened	He just wished he had tried harder to convince the boys to let him join in	There was nothing else he could do about it
6	He just forgot about the whole thing	He was angry with himself - it was his fault	He felt angry with his friend Jamie	He just couldn't stop thinking about what happened	He just wished he had tried harder to get his friend to invite Ruby	There was nothing else he could do about it
7	He just forgot about the whole thing	He just felt angry that it was his own fault	He just felt really angry with his friends	He just couldn't stop thinking about what happened	He just wished he had been more careful	There was nothing else he could do about it
8	He just forgot about it	He regretted and blamed himself for all of it	He couldn't stop feeling bad for his parents arguing	He hated his Mum and/or Dad	He was sorry and wanted to help make things better	There was nothing else he could do about it

Attachment Question Response Categories

Story	Excluding self	Dismissing other	Avoidant	Preoccupied other	Preoccupied self	Secure/ organised	Disorganised
1	He wanted to be in his room and do other things	He did not want to be with his parents	He did not have anything to say	He just couldn't bear to be in the same room as his family	He regretted what he had done and couldn't stop thinking about it	He needed to calm down as he was upset	He was frightened of his parents
3	He got to be at home so it was okay	He didn't like school	He was unlucky that it was him	He wanted to get suspended as he has always hated school	He wanted to get suspended so he could be at home more	He regretted what he had done and worried about his parents' reaction	He blamed his parents for being suspended
5	He wanted to do something different anyway	He didn't want to go out with them	He could have forgotten about it	He felt the other boys(s) were so horrible he would have to get his own back	He couldn't stop feeling upset that this happened to him	He could have expressed how he was feeling about it	He actually hated both of these boys
6	He wanted to do something different anyway	He didn't want to go out with them	He could have forgotten about it	He felt the boy Jamie was so horrible he would have to get his own back	He couldn't stop feeling upset that this happened to him	He could have expressed how he was feeling about it	He actually hates his friend Ruby
7	He just wanted to go out and have some fun	He didn't want to stay in with his parents	He just forgot about it	He felt so angry with his friends and/or parents for what happened	He couldn't stop feeling upset that this happens to him	He was thinking about how others would be feeling about what had happened	He was frightened of his friends
8	He just wanted to get on with other things	He didn't want to stay in with his parents arguing	He just forgot about it	He felt so angry with his parents for arguing	He was upset that his parents didn't care about him	He was thinking about how his parents would be feeling about what had happened	He loved his parents arguing

Appendix D: Multiple Regression Analyses

Regression: CGAS Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: CGAS score

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.111[a]	.012	-.005	11.416
2	.164[b]	.027	.002	11.380

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	379.355	4	94.839	.728	.574[b]
	Residual	30625.045	235	130.319		
	Total	31004.400	239			
2	Regression	828.843	6	138.141	1.067	.383[c]
	Residual	30175.557	233	129.509		
	Total	31004.400	239			

a. Dependent Variable: CGAS score

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	92.872	3.744		24.807	.000
	Factor1	-.281	.584	-.032	-.481	.631
	Factor2	-1.665	1.113	-.099	-1.496	.136
	Factor3	-.137	1.519	-.006	-.090	.928
	Factor4	-.732	2.100	-.023	-.349	.728
2	(Constant)	80.775	7.496		10.776	.000
	Factor1	-.427	.588	-.048	-.726	.469
	Factor2	-1.419	1.157	-.085	-1.227	.221
	Factor3	-.143	1.633	-.006	-.087	.931
	Factor4	-1.257	2.124	-.039	-.592	.554
	Age (years)	.854	.460	.124	1.855	.065
	Gender	.644	1.646	.028	.392	.696

a. Dependent Variable: CGAS score

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	.121[b]	1.825	.069	.118	.942
	Gender	.012[b]	.171	.865	.011	.829

a. Dependent Variable: CGAS score

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3

Regression: SDQ Total Difficulties Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: total difficulties

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.076[a]	.006	-.011	5.511
2	.170[b]	.029	.004	5.470

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.605	4	10.651	.351	.843[b]
	Residual	7259.506	239	30.375		
	Total	7302.111	243			
2	Regression	212.087	6	35.348	1.182	.317[c]
	Residual	7090.023	237	29.916		
	Total	7302.111	243			

a. Dependent Variable: total difficulties

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.311	1.803		6.829	.000
	Factor1	-.111	.282	-.026	-.395	.693
	Factor2	.303	.534	.038	.568	.570
	Factor3	-.510	.726	-.047	-.703	.483
	Factor4	-.428	1.012	-.028	-.423	.673
2	(Constant)	5.602	3.594		1.559	.120
	Factor1	-.197	.282	-.046	-.699	.485
	Factor2	.593	.552	.073	1.074	.284
	Factor3	-.191	.780	-.018	-.245	.807
	Factor4	-.827	1.019	-.053	-.812	.417
	Age (years)	.485	.221	.146	2.196	.029
	Gender	-.521	.787	-.047	-.661	.509

a. Dependent Variable: total difficulties

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	.151[b]	2.289	.023	.147	.944
	Gender	-.065[b]	-.912	.363	-.059	.821

a. Dependent Variable: total difficulties

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3

Regression: SDQ Emotional Symptoms Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: emotional symptoms

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.212[a]	.045	.029	2.347
2	.353[b]	.125	.102	2.256

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.783	4	15.446	2.805	.026[b]
	Residual	1316.163	239	5.507		
	Total	1377.947	243			
2	Regression	171.718	6	28.620	5.623	.000[c]
	Residual	1206.228	237	5.090		
	Total	1377.947	243			

a. Dependent Variable: emotional symptoms

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.620	.768		4.716	.000
	Factor1	.054	.120	.029	.447	.655
	Factor2	-.112	.227	-.032	-.492	.623
	Factor3	-1.028	.309	-.218	-3.326	.001
	Factor4	.016	.431	.002	.038	.970
2	(Constant)	.174	1.482		.118	.906
	Factor1	.005	.116	.002	.040	.968
	Factor2	.183	.228	.052	.803	.423
	Factor3	-.551	.322	-.117	-1.714	.088
	Factor4	-.297	.420	-.044	-.706	.481
	Age (years)	.259	.091	.179	2.847	.005
	Gender	-1.079	.325	-.224	-3.323	.001

a. Dependent Variable: emotional symptoms

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	.203[b]	3.183	.002	.202	.944
	Gender	-.246[b]	-3.620	.000	-.228	.821

a. Dependent Variable: emotional symptoms

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3

Regression: SDQ Conduct Problems Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: conduct problems

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.143[a]	.020	.004	1.640
2	.174[b]	.030	.006	1.639

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.390	4	3.347	1.244	.293[b]
	Residual	643.049	239	2.691		
	Total	656.439	243			
2	Regression	19.863	6	3.311	1.233	.290[c]
	Residual	636.575	237	2.686		

Total	656.439	243			

a. Dependent Variable: conduct problems

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.768	.537		5.160	.000
	Factor1	-.155	.084	-.121	-1.844	.066
	Factor2	.191	.159	.079	1.205	.230
	Factor3	.172	.216	.053	.795	.427
	Factor4	-.291	.301	-.063	-.967	.334
2	(Constant)	3.060	1.077		2.841	.005
	Factor1	-.149	.085	-.117	-1.762	.079
	Factor2	.121	.165	.050	.733	.465
	Factor3	.035	.234	.011	.148	.883
	Factor4	-.232	.305	-.050	-.759	.449
	Age (years)	-.025	.066	-.025	-.380	.705
	Gender	.343	.236	.103	1.452	.148

a. Dependent Variable: conduct problems

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	-.036[b]	-.549	.584	-.036	.944
	Gender	.106[b]	1.508	.133	.097	.821

a. Dependent Variable: conduct problems

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3

Regression: SDQ Hyperactivity/Inattention Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: hyperactivity/inattention

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.128[a]	.016	.000	2.365
2	.151[b]	.023	-.002	2.367

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.304	4	5.576	.997	.410[u]
	Residual	1336.593	239	5.592		

	Total	1358.898	243			
2	Regression	31.172	6	5.195	.927	.476[c]
	Residual	1327.726	237	5.602		
	Total	1358.898	243			

a. Dependent Variable: hyperactivity/inattention

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.286	.774		4.248	.000
	Factor1	.088	.121	.048	.732	.465
	Factor2	.218	.229	.063	.953	.341
	Factor3	.466	.311	.099	1.498	.135
	Factor4	-.046	.434	-.007	-.106	.916
2	(Constant)	1.755	1.555		1.128	.260
	Factor1	.071	.122	.039	.582	.561
	Factor2	.219	.239	.063	.917	.360
	Factor3	.399	.338	.085	1.183	.238
	Factor4	-.089	.441	-.013	-.202	.840
	Age (years)	.106	.096	.074	1.110	.268
	Gender	.244	.341	.051	.716	.475

a. Dependent Variable: hyperactivity/inattention

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	.068[b]	1.036	.301	.067	.944
	Gender	.042[b]	.592	.554	.038	.821

a. Dependent Variable: hyperactivity/inattention

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3

Regression SDQ Peer Problems Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: peer problems

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.090[a]	.008	-.009	1.724
2	.163[b]	.027	.002	1.715

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.781	4	1.445	.486	.746[u]
	Residual	710.268	239	2.972		
	Total	716.049	243			
2	Regression	18.982	6	3.164	1.076	.378[c]
	Residual	697.067	237	2.941		
	Total	716.049	243			

a. Dependent Variable: peer problems

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.637	.564		4.677	.000
	Factor1	-.099	.088	-.074	-1.121	.263
	Factor2	.006	.167	.002	.033	.974
	Factor3	-.120	.227	-.035	-.530	.597
	Factor4	-.107	.317	-.022	-.338	.736
2	(Constant)	.614	1.127		.545	.587
	Factor1	-.124	.088	-.093	-1.401	.163
	Factor2	.070	.173	.028	.402	.688
	Factor3	-.074	.245	-.022	-.302	.763
	Factor4	-.210	.319	-.043	-.658	.511
	Age (years)	.145	.069	.139	2.088	.038
	Gender	-.028	.247	-.008	-.114	.910

a. Dependent Variable: peer problems

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	.140[b]	2.120	.035	.136	.944
	Gender	-.025[b]	-.353	.724	-.023	.821

a. Dependent Variable: peer problems

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3

Regression: SDQ Prosocial Score

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Factor4, Factor1, Factor2, Factor3[b]	.	Enter
2	Age (years), Gender[b]	.	Enter

a. Dependent Variable: prosocial

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.162[a]	.026	.010	1.872
2	.339[b]	.115	.093	1.792

a. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.475	4	5.619	1.604	.174[b]
	Residual	837.341	239	3.504		
	Total	859.816	243			
2	Regression	98.980	6	16.497	5.139	.000[c]
	Residual	760.836	237	3.210		
	Total	859.816	243			

a. Dependent Variable: prosocial

b. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3

c. Predictors: (Constant), Factor4, Factor1, Factor2, Factor3, Age (years), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.131	.612		11.647	.000
	Factor1	.092	.096	.063	.966	.335
	Factor2	.073	.181	.026	.400	.689
	Factor3	-.545	.246	-.146	-2.211	.028
	Factor4	-.149	.344	-.028	-.433	.666
2	(Constant)	8.403	1.177		7.137	.000
	Factor1	.100	.092	.069	1.087	.278
	Factor2	.261	.181	.094	1.443	.150
	Factor3	-.085	.256	-.023	-.331	.741
	Factor4	-.252	.334	-.047	-.756	.451
	Age (years)	-.075	.072	-.065	-1.034	.302
	Gender	-1.253	.258	-.330	-4.858	.000

a. Dependent Variable: prosocial

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Age (years)	-.030[b]	-.458	.647	-.030	.944
	Gender	-.322[b]	-4.770	.000	-.295	.821

a. Dependent Variable: prosocial

b. Predictors in the Model: (Constant), Factor4, Factor1, Factor2, Factor3