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**The narrative assessment of attachment: validity of
the Secure Base Script Test for middle childhood.**

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Abstract

Psouni and Apetroaia (2010) have recently introduced the *Secure Base Script Test, SBST*, for middle childhood. Based on Waters and Rodrigues-Doolabh's (2004) *Narrative Script Assessment* for assessing secure base script knowledge in adults, Psouni and Apetroaia's method is a narrative task in which children create short narratives by making use of four prompt word outlines that loosely suggest prototypical storylines implying secure base interactions with parents and peers. Transcribed narratives are scored on a 7-point scale to reflect the relative degree of scripted knowledge of secure base interactions children have used to organize their narratives. A major advantage of the method is the ease with which it can be administered and scored, making it suitable for the testing of large subject samples. An additional advantage is the method's ability to directly tap into attachment related representations at the level of specific cognitive architectures (Waters & Waters, 2004). Though initial studies using the SBST show good internal consistency and strong inter-rater reliability, the instruments' convergent and discriminant validity has not been established. The present study aimed at (1) establishing convergent validity of the SBST by assessing whether the SBST was linked to a modified version of the *Security Scale*, a questionnaire method developed for use with children in middle childhood, and (2) establishing discriminant validity for the SBST by assessing whether verbal creativity confounded children's secure base script knowledge as a source of secure base narrative in children's stories. We found no association between the SBST and the modified version of the Security Scale. A post hoc analysis of children's Security Scale data revealed that children who deliberated more over their responses to the instrument's items were more negative in their appraisals of attachment relationships than those who responded without significant deliberation. We examined whether this finding supported the idea that children who responded without deliberation may have done so in order to defensively exclude attachment-related material when responding to the instrument's items. We found only marginal support for this possibility however. Verbal creativity did not appear to influence raters' perception of subjects' scriptedness. This result however is tempered by concerns regarding the validity of one of the two methods used to score verbal creativity.

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Attachment in early childhood – an overview

A central aspect of healthy human functioning is our use of a reliable and trustworthy other as a base of security so that we may explore our environment with confidence and build resources important for our continued physical and psychological health. Of primary relevance to the evolution of this use of another as a ‘secure base’ is a history of interpersonal interaction between ourselves and those others who have proven themselves reliable, trustworthy and available when, in times of distress, we have sought their closeness and protection. Significantly, the use of another as secure base, or alternatively, as a ‘safe haven’ when threatened, has considerable survival value for our species, and they are behaviours which have deep evolutionary roots. Such *attachment* behaviours are fundamental therefore to the healthy functioning of all human beings of all ages.

The development of attachment behaviours

Bowlby (1988) conceptualized infants as containing within their genetic make-up the building blocks of a very specific repertoire of behaviours whose goal is to guide them into the seeking and maintaining of physical and psychological proximity with their primary caregivers. Although non-discriminative and reflex-like at birth, such attachment behaviours become, according to Bowlby’s theory, increasingly discriminative as the developing infant begins to make intentional use of mental representations representing his best strategies for maintaining proximity to primary caregivers (or *primary attachment figures*¹). Bowlby called these representations *internal working models* in order to convey the child’s need to constantly update them in order to take account of behavioural changes caused by the development of increasingly complex cognitive and motor skills (1988). One particularly significant period of motor and cognitive development for the child in this respect occurs at about 7½ to 12 months of age where a number of important competencies, including

¹ The terms ‘primary caregivers’ and ‘primary attachment figures’ are used here interchangeably.

self-locomotion and object permanence, confer upon the infant the ability to plan and execute attachment behaviours even when the primary caregivers are out of sight. Indeed, it is at this stage in the infants development that his *attachment behavioural system*, a term used by Bowlby to illustrate the infants use of environmental feedback in his planning and maintaining of proximity to his primary caregivers², can be said to reach a degree of maturity whereby attachment behaviours are described as *goal corrected*. Of the goal corrected attachment behaviours it is the infant's use of his caregivers as *secure base* and *safe haven* which are the most clearly discerned, as well as the most investigated.

I. The infants use of the caregiver as a secure base. According to an evolutionary perspective, attachment behaviours have been selected because they have survival value. Indeed, the attachment behavioural system confers upon children the ability to maximize short and long-term survival by allowing them to create a balance between exploration and protection seeking (Broberg et al., 2008). It is to this end that the infant is conceptualized as using his primary caregiver as a secure base³. Thus, whilst exploring his environment the infant will seek to maintain both physical and psychological proximity to his primary caregiver, using his internal working models of attachment as a basis for detecting discrepancies. Should a discrepancy arise, e.g. the caregiver is not in a physical location or state of psychological availability the infant's representations have predicted, then the infant will experience a sense of anxiety, activating his attachment system and motivating him to look for (or go to) the caregiver. Significantly, it is only when both physical and psychological proximity to the primary caregiver is achieved that the infant's attachment system is deactivated and exploratory interests reactivated⁴.

II. The infant's use of the caregiver as a safe haven. For Bowlby a major evolutionary function of the infant's attachment system was the protection of the child from environmental threats. Following her extensive observational studies, Ainsworth

² Here the infant's attachment behaviours can be likened to the functioning of a thermostat in that proximity to the primary caregivers is maintained through the monitoring of the environment and the making of corrections when discrepancies arise.

³ The term secure base was coined by Mary Ainsworth.

⁴ Whereas it is the experience of anxiety that activates the infants attachment system, it is the positive affective state the infant experiences on re-union with his caregiver that reactivates his 'exploratory system'.

described the infant's use of his caregiver as a safe haven, that is, the activation of his attachment system when perceiving an environmental threat (or physical pain), and his subsequent attempt to seek his caregiver's immediate proximity⁵. As with secure base behaviours, the infants' exploratory system is only reactivated once his attachment system has been deactivated through the attainment of physical and psychological proximity to the primary caregiver.

Caregiver responsiveness and the infant's organization of attachment strategies

The strategies an infant develops regarding the maintenance of proximity to his primary caregivers, or when experiencing threat or pain, is powerfully influenced by the responsiveness of his primary caregivers to his proximity seeking (Bowlby, 1988; Broberg et al., 2008). Differences in infants' organization of attachment needs as an adaptive response to different patterns of caregiver responsiveness have been categorized using observational research methods, most notably the *Strange Situation*, a structured observational method developed by Mary Ainsworth (see Section 1.3. for a description of this method). The three categories originally described by Ainsworth, as well as a fourth category, that of disorganized attachment⁶, are described below. Note that the pattern of responsiveness shown by each of an infant's caregivers will give rise to an *attachment strategy* in the infant that is specific to each relationship:

- Secure (B-attachment). Following a short separation, the infant makes use of his primary caregiver as a secure base or safe haven when the caregiver returns, either by simply turning and acknowledging the caregiver, as if to say 'nice to see you again', or by going to the caregiver in a state of distress in order to receive comfort, and thus deactivate his attachment system. That the infant has developed this attachment strategy is a result of his caregiver being responsive to his attachment signals. Such a responsive relationship with the caregiver provides the infant with a high degree of felt security and promotes the infants' optimal utilization of his exploratory system.
- Avoidant (A-attachment). Following a short separation, the infant does not

⁵ Note that in situations of threat both the infants attachment behavioural system and fight or flight behavioural system are activated, the effect being one of mutual reinforcement.

⁶ This category has been established more recently (Broberg et al., 2008).

make use of his primary caregiver as a secure base or safe haven when the caregiver returns. Instead the infant ignores the caregiver and distracts himself from his attachment needs by focusing on his exploratory behaviours. Some infants may attempt to make use of their caregivers, but only in the capacity of seeking help with some instrumental need. Common to all infants however is a failure to express negative affect. Infants who develop this attachment strategy do so in order to avoid further rejection by a caregiver who has consistently rejected their attachment behaviours.

- **Ambivalent (C-attachment).** The ambivalent infant responds to a separation from his primary caregiver by expressing a high degree of negative affect, often kicking the door through which the caregiver has exited the test room. On the caregivers return the child's negative affective state remains high, and although he seeks the caregiver's comfort, he also strikes the caregiver and cannot be consoled. His attachment system remains therefore in a high state of activation. That the infant has developed this attachment strategy is a result of inconsistency in the responsiveness of his caregiver, causing the infant to become preoccupied with attachment.
- **Disorganized (D-attachment).** Following a short separation, the infant's response to his primary caregiver's return cannot be clearly classified into categories A, B or C. Rather, the infants' behaviours tend to reflect one of the following scenarios: the infant goes to the caregiver in order to receive comfort, but then stops and moves as far away from the caregiver as he can; the infant covers his eyes, as if to hide from the caregiver; the infant puts his fingers in his mouth and looks with confusion at the caregiver; the infant sits in a state of high distress with his back turned to the caregiver and makes no attempt to seek support; the infant 'freezes', standing still and motionless like a statue; the infant goes to the caregiver but then falls on the floor and lies motionless as if unable to move; the infant 'stills', disappearing into himself, as if dissociated from environment around him. Such behaviours have been interpreted as evidence of the infant not being able to organize an attachment strategy. Common amongst caregivers of infants who display such

disorganized behaviours are *frightening* or *frightened* caregiving, or alternatively, *helplessness* in the caregiver roll.

Attachment in middle childhood

Whilst a child's social world is to a large degree shaped by family members during early childhood, in middle childhood (8-12 years) children are more actively engaged in building their own social environments (Kerns, 2008). As a consequence, children in middle childhood spend greater amounts of time away from primary caregivers. A significant task therefore for children in middle childhood is to manage attachment needs when primary caregivers are not immediately present. Kerns has described the developmental and behavioural changes that occur during middle childhood which allow children to meet these goals (2008):

Cognitive development. Cognitive development accords greater higher order cognitive competencies. According to Kerns, cognitive development in middle childhood accords capacities such as “advances in meta-cognition, memory, and cognitive flexibility; greater self-awareness and enhanced understanding of others; and a greater capacity to regulate emotions” (2008, p367).

Maturation of the attachment behavioural system. Bowlby conceptualized the final stage of maturation of the attachment behavioural system as one in which the child's position in the relationship is one of less overt dependence and greater personal autonomy. In *goal-corrected partnership*, the child has a greater ability to “understand a parent's desire, communications, and decisions” (Kerns, 2008, p367), and as a result make greater use of negotiation when making his own attachment plans. Bowlby has also suggested that the set goal of the attachment behavioural system changes from *proximity* in early childhood to caregiver *availability* in middle childhood (1987; cited in Kerns, 2008).

Children's use of peers (and others) as 'stand-in' attachment figures. According to Kerns and co-workers, children in middle childhood do not make use of peers (or teachers) as primary attachment figures (Kerns, 2008; Siebert & Kerns, 2009; Kerns

et al, 2006). Siebert and Kerns however found that children in middle childhood do make use of peers as ‘stand-in’ attachment figures in contexts where primary caregivers are not immediately available, e.g. at school (2009). According to the authors, older children were more likely than younger children to nominate peers as their first choice ‘stand-in’ attachment figure. Siebert and Kerns concluded that middle childhood can be conceptualized as a period in which children begin to “partially withdraw their investments with their primary caregivers and instead invest in getting along with their peer group and securing their cooperation and protection [in] preparation for adolescence and the development of peer attachments” (2009, p347). Thus, although children in middle childhood still nominate their parents as their primary attachment figures, as they approach adolescence they increasingly make use of peers as ‘stand-in’ attachment figures in preparation for later diversification of attachment networks during adolescence.

Significantly, children’s attachment security will impact their ability to make use of peers as ‘stand-in’ attachment figures. According to Kerns, children with secure attachments are more likely to seek support from others, have greater quality in their friendships and higher competence in their peer interactions (2008). Significantly, Contreras, Kerns and colleagues found the link between attachment security and peer competence to be mediated by children’s constructive coping (2000; cited in Kerns, 2008). Also, Ziv and colleagues, in their study of children’s social information processing in middle childhood, found that children’s expectation of others as emotionally and instrumentally available was the major characteristic distinguishing those who were securely attached from those who had insecure-ambivalent attachments (2004; cited in Kerns, 2008). Thus, children who are securely attached may be better equipped to both create supportive peer relationships and make use of those relationships in the event they need a ‘stand-in’ attachment figure.

The measurement of attachment

There is an abundance of available methods in which one can make a quantitative evaluation of individual differences in attachment security (Broberg et al., 2008). However, although there are sufficient methods to assess attachment over childhood’s

entire developmental range, not all methods are equal in terms of their scientific rigour or validity (Broberg et al., 2008). Equally noteworthy is the fact that some methods' operationalisation of attachment is not comparable with that of others. Significant in this regard are methods which measure attachment according to responses given to direct questioning about attachment relationships. Such methods contrast with methods which seek to measure attachment outside of the subject's conscious awareness. Below is an overview of the most important methods that are used to measure attachment security. Since the present study is concerned with attachment in middle childhood, mention is also given to those methods that have gained, or are gaining, prominence as procedures for measuring attachment security in children aged 8-12 years.

Behavioural observation methods. Undoubtedly, the most well-known as well as rigorously tested and validated method for measuring attachment is the behavioural observation method created by Mary Ainsworth called the *Strange Situation*, which is used for measuring attachment in infants age 1-2 years. Involving a series of brief (3 minutes) coordinated separations in which primary caregivers leave their infants in a room alone (or in the company of a stranger), individual differences in infant attachment are categorized according to how infants respond when re-united with caregivers (see Section 1.1 for a detailed description of the four attachment categories).

Although the Strange Situation is ubiquitous amongst behavioural observation methods, a number of other methods exist, which have shown significant promise regarding their reliability and validity. These include Waters and Deans *Attachment Q-sort* method (AQS, 1985), which involves naturalistic observations of infants and toddlers (1-4 years) in interaction with their caregivers in their own homes, and Main & Cassidy's *6th year reunion procedure* (1988) for 5-7 year olds, which involves 1-hour parent-child separations followed by the observation of child behaviour upon reunion with the parent.

Doll-play story completion methods. The preschool years represent a developmental period in which the different methods used for measuring attachment lack the psychometric properties of those of methods used with younger children (Broberg et

al., 2008). One exception however may be Green and colleagues *Manchester Child Attachment Story Task* (MCAST, 2000), which, although not as rigorously tested as the Strange Situation, has shown significant promise as a method for measuring attachment in children age 4½-8½ years (Broberg et al., 2008). Unlike behavioural observation methods, in which individual differences in attachment are measured in terms of behavioural differences, MCAST seeks to distinguish individual differences in attachment security at the level of representation by eliciting from children verbal descriptions of attachment behaviour in the form of story-endings that are created within a series of doll-play contexts whose themes are attachment specific.

Questionnaires. The use of questionnaires as a method for measuring attachment presents something of an anomaly within attachment research since subjects make a conscious appraisal of the quality of their attachment relationships. Nevertheless, a distinct advantage of these methods is their ease of use. Though this is tempered by questionnaire methods commonly showing little or no association with other measures of attachment security (Broberg et al., 2008). Despite this potential limitation, these methods have been utilized widely in attachment research, and continue to be recommended (Broberg et al., 2008).

One questionnaire method which has gained prominence in attachment research is the *Security Scale* (Kerns et al., 1996), which has been developed for use with children in middle childhood. The questionnaire, which is based upon 15 items, provides a 'security score' regarding how children view each of their primary attachment figures in terms of responsiveness, availability, open communicativeness and reliability. Despite its popularity, attachment measures using the Security Scale have not correlated consistently with other measures of attachment security (Broberg et al., 2008, Kerns et al., 2008; Kerns et al., 2007).

Narrative methods. In contrast to questionnaires, narrative methods of attachment assessment tap attachment-related material without subjects' active awareness (Broberg et al., 2008). Without question, the narrative method which is most well known, as well as rigorously tested and validated, is the *Adult Attachment Interview*, AAI, developed by George, Kaplan, and Main (1984/1996). Here, attachment security

is measured as a function of how interviewees speak about their childhood relationships to primary caregivers, rather than what they speak about.

There are several narrative methods available for measuring individual differences in attachment in children in middle childhood, as well as in early adolescence⁷. The *Attachment Interview for Children and Adolescents*, AICA (Ammaniti et al., 2000) for children age 9-14 years, the *Child Attachment Interview*, CAI (Target et al., 2003) for children age 8-13 years, and the *Friends and Family Interview*, FFI (Steele & Steele, 2005) for children aged 11-13 years, are three methods that are gaining prominence.

An additional method, and one which has particular relevance to the present study, is Waters & Rodrigues-Doolabh's *Narrative Script Assessment* for assessing Secure Base Script knowledge in adults (2004). Waters & Rodrigues-Doolabh's method is based on the belief that a component of the attachment related representational systems described by Bowlby as internal working models is scripted knowledge of secure base interactions⁸ (Waters & Waters, 2004). Significantly, Waters and Waters point out that the Adult Attachment Interview does not directly tap into attachment related representations, but rather, makes a broad measure of the coherence of those representations. One of the major driving forces behind the development of their method therefore is a desire to more closely characterize specific modes of attachment representation "in terms of specific cognitive architectures" (Waters & Waters, 2006, p187). To this end, the authors believe that those individuals who have a history of secure base support will have scripts that are "consistent and coherent ... complete, well consolidated, and readily accessible" (Waters & Waters, 2004, p188). In comparison, those individuals who do not have a consistent history of secure base interactions are proposed to lack the ability to retrieve scripted knowledge of these interactions to varying degrees, presumably because the more inconsistent and incomplete the scripted knowledge is, the more difficult it is to readily access that knowledge (Waters & Waters, 2004). In order to characterize this hypothesized difference in the degree of consolidation of scripted knowledge of secure base

⁷ Note that the AAI in its standard form may be used with older adolescents (Broberg et al., 2008)

⁸ Fivush defines secure base scripts as stable representations over time "specifying the temporal and causal connections among a series of actions and beliefs that unfold across a familiar event" (2006, p284).

interactions, Waters and Waters have developed a narrative production task in which they make use of prompt word outlines (of 12–14 words) that loosely suggest prototypical storylines implying secure base interactions. In the task, subjects are free to make use of the words in any way they like in order to create verbal narratives based on the words they see and the story titles given. Transcribed narratives are then scored according to their ‘scriptedness’, which is the relative degree of secure base script subjects are judged to have used. According to the authors, subject scores correlate highly with both AAI coherence scores and Strange Situation classifications for subject’s own children (Waters & Waters, 2004). Additionally, the method shows good test-retest reliability (Broberg et al., 2008). There is therefore good evidence that scripted knowledge of secure base interactions is a component of an individual’s attachment related representations.

The Secure Base Script Test for middle childhood: A new narrative method for measuring attachment in children aged 8-12 years

According to Kerns there is currently no dominant conceptual or methodological approach to measuring attachment in middle childhood (2008). Questionnaires, such as the Security Scale, although simple to use and score, may be limited by the fact that subjects’ responses are based on making a conscious appraisal of attachment-related events. Narrative methods, such as the CAI, AICA, and FFI are promising but extremely resource demanding for both investigators and participants. An additional ‘limitation’ of these narrative methods is the fact that they do not characterize a specific mode of attachment representation, but rather, makes a broad measure of the coherence of mental representations. Without an established method therefore, the measurement of attachment in middle childhood risks being overlooked by researchers (Broberg et al., 2008).

Considering all of the above, a method of attachment measurement for children in middle childhood ought to (1) measure attachment without involving subjects’ making a conscious appraisal of their attachment-related material, and (2) be relatively quick and easy to use and score, thus making possible the testing of large subject samples. In an attempt to meet these requirements, Psouni and Apetroaia

(2010) have recently introduced the *Secure Base Script Test*, SBST, for middle childhood, a method inspired by Waters & Rodrigues-Doolabh's (2004) *Narrative Script Assessment* for assessing Secure Base Script knowledge in adults. Similar to Waters & Rodrigues-Doolabh's method, the SBST also employs prompt word outlines that loosely suggest prototypical storylines implying secure base interactions. In order to suit the age group being tested, Psouni and Apetroaia's (2010) method employs five outlines with themes for middle childhood: one neutral outline (*Robins birthday*) that is used as a warm-up to aid children's grasping of the word prompt method, and four secure base outlines, two implying two unique child-parent interactions (*Robins math test*, *Robins accident*) and two implying two unique child-best friend interactions (*Robins moves away*, *Robin has trouble in school*).

The results of Psouni and Apetroaia's study using the SBST with Swedish school children are promising, with the method showing good internal consistency and strong inter-rater reliability. The authors also found a significant association with Kerns Security Scale.

The present study

The present study was concerned with replicating Psouni & Apetroaia's initial study by assessing attachment security in a cohort of Swedish school children using the SBST. We also sought to establish convergent validity using Kerns Security Scale, though we used a slightly modified form of the instrument (see Section 2 for a description of the modifications we have applied). In addition we sought to establish discriminant validity by investigating the level of association between children's SBST scores, or 'scriptedness', and a measure of their verbal creativity.

Creativity and children's performance on the Secure Base Script Test for middle childhood

One way of viewing creativity is as a "special arrangement of cognitive, motivational, personality and social characteristics that is present [to greater or lesser extent] in everyone" (Albert & Kormos, 2004, p278). Regarding the question of whether an individual's creativity is general (equal across life domains) or domain-specific,

Kaufman and colleagues have proposed a hierarchical model in which all forms of creativity share certain common requirements, but where different forms belong to specific domains which have their own unique set of requirements (2009). Seen in this way, creativity is a fundamentally universal quality comprised of many interacting factors which, for each individual, finds some degree of expression across life domains provided that a unique set of additional requirements has been met for each domain. Most importantly, creativity is associated with the production of novel and useful outcomes (Makel & Plucker, 2008). Of specific interest to the current study therefore is whether such creative production can enhance children's performance on the SBST in terms of the output variables examined. The fundamental point at issue is whether a child's aptitude for being verbally creative influences his or her narrative performance in a manner that amplifies the relative degree of secure base script expressed in the narratives. In order to affirm the discriminant validity of the SBST for middle childhood, it is necessary to exclude creativity as a potential confounding variable regarding children's production of secure base narratives.

Divergent thinking tasks have found prominence within psychometric approaches to creativity, the tests being developed by Guilford and later used by Torrence in his development of the Torrence Tests of Creative Thinking, TTCT (Makel & Plucker, 2008). Divergent thinking, which Guilford believed was the prime cognitive component of creativity, is defined as "the ability to produce many different ideas in response to a problem" (Albert & Kormos, 2004, p288). With relevance for the present study, any measure of divergent thinking must be made in the verbal domain. According to Silvia and colleagues, *Unusual Uses Tasks* have been found to perform better than other divergent thinking tasks at measuring verbal creativity (2009). In Unusual Uses Tasks, individuals are asked to name as many creative uses they can think of for ordinary everyday objects such as bricks, knives and cardboard boxes. Tasks are generally scored according to the four facets of divergent thinking that Guilford originally proposed: fluency (the ability to produce a large number of ideas), originality (the ability to produce unusual ideas), flexibility (the ability to produce a wide variety of ideas), and elaboration (the ability to develop ideas and produce many details).

Only one previous study has explored the influence of verbal creativity on children's narrative task performance in middle childhood. Albert and Kormos (2004) sought to examine the extent to which children's creativity influenced their narrative performance in an oral narrative task in which participants were asked to give a short story based on a picture they had been given. Measures used to assess children's narratives included the number of words (fluency) and the complex discourse structure of participant's output (complexity). The authors found only moderate effects, with verbal creativity (scored using fluency and originality) accounting for only 10-15% of the variance in the linguistic measures (Albert & Kormos, 2004). Significantly, creative fluency (the number of unusual use responses) was associated with the narrative fluency score (number of words), and originality (the number of unique unusual use responses) was associated with complexity (the number of narrative events). The authors concluded that the most important effect of creativity manifested itself in terms of *productivity* (Albert & Kormos, 2004).

With regard to the present study, Albert and Kormos' results suggest that it is through an increased productivity, specifically in terms of word number and event (or clause⁹) number that children's verbal creativity may most manifestly influence narrative performance. Thus, by increasing children's productivity, verbal creativity may also confound children's secure base script knowledge as a source of secure base narrative in children's stories. Whether this is a distinguishable effect however is another question entirely. It must be remembered that in Albert and Kormos's study, children's verbal creativity accounted for only 10-15% of the variance in the linguistic measures. Any 'elaborating' effect due to creativity may therefore be negligible. Indeed, this is our hypothesis, that should such an effect exist, it will be small in comparison to children's secure base script knowledge as a source of secure base narrative in their stories. Consequently we do not expect to find an association between children's 'scriptedness' scores and children's verbal creativity scores.

⁹ A clause is a "syntactic construction containing a subject and predicate and forming part of a sentence or constituting a whole simple sentence" (clause, n.d.).

Research questions and hypotheses

To summarize, the aim of this study was firstly to replicate Psouni and Apetroieia's (2010) initial study by assessing attachment security in a cohort of Swedish school children using the SBST. Secondly, it was to investigate the discriminant validity of the SBST by assessing whether verbal creativity confounded children's secure base script knowledge as a source of secure base narrative in children's stories. Our hypotheses were the following:

1. There is an association between children's Secure Base Script Test scores for 'scriptedness' and their Security Scale scores, but only when scoring on dichotomized variables.
2. There is an association between verbal creativity and children's narrative fluency scores (number of words), but no association between verbal creativity and children's scores for secure base scriptedness.

Participants

The sample was made up of 18 boys and 23 girls drawn from six different Swedish primary school classes at four schools in Southern Sweden. Sampling was made on the basis of children's own interest in taking part in the study as well as their being given permission to do so by their parents. The single criterion for participation was that children were between 8 and 12 years of age. Girls' mean age was 9.82 years (range 8.30 -11.20 years, SD = .80 years), whilst for boys the mean age was 9.78 years (range 8.80 – 10.80 years, SD = .65 years).

Materials

The participants were given a word prompt task developed expressly for children in middle childhood for the purpose of producing secure base script narratives (Psouni & Apetroaia, 2009a). In addition, the children completed a Swedish translation of the Security Scale (Kerns et al., 1996) in a modified form as a test for convergent validity as well as two Unusual Uses Tasks – uses for a cardboard box and uses for a brick – in order to make a measure of their verbal creative aptitude (Guilford, 1967).

Secure Base Script Test for middle childhood. The children created stories by making use of prompt words according to Secure Base Script Test for middle childhood (SBST: Psouni and Apetroaia, 2009a). The test asks children to create stories, “the best they can”, with the aid of five age-appropriate story outlines, each outline being composed of twelve prompt words. The first title, *Robin's birthday*, is used solely as a ‘warm-up’ to aid children in becoming fully acquainted with the word prompt procedure. The four remaining titles are attachment related and probe secure base interactions. Two of the story outlines concern child-parent interactions (*Robin's accident*, *Robin's math test*), whilst two titles concern children's peer relationships (*Robin moves away*, *Robin has trouble in school*). The twelve prompt words for each

outline are presented in three columns of four words each, the first column presenting the story premise as well as its principal characters. In the second column the prompt words then develop the storyline by introducing some form of crisis which is centered around the main character, Robin, with the remainder of the prompt words for the story outline suggesting that Robin interact with his parents (for the two child-parent story outlines) or his best friend (called *Alex*, in the two peer relationship story outlines) in order to reach an amicable resolution. In this way the story outlines invite the test subject to create stories with secure base related content. Story outlines were counterbalanced for order according to standard instructions for administration (Psouni & Apetroaia, 2009a).

Stories were scored according to a 7-point scale (Psouni & Apetroaia, 2009b). Stories which obtained a score of “7” were (1) rich in secure base content, the description of parent’s/peer’s response to Robin’s crises exhibiting an interplay which is highly supportive and detailed, (2) rich in the descriptions of the character’s emotional states, and (3) distinct in their description of a positive resolution and return to a normal emotional state. Stories which obtained a score of “3” lacked secure base content almost entirely, and there was no elaboration of the interactions between Robin and his parents/peers, if indeed any interaction took place at all. Equally, there was a paucity of reference to character’s emotional states. Stories which obtained a score of “2” not only lacked secure base content, they were also disjointed, or alternatively, contained a certain degree of content which was odd. Stories which received a score of “1” in addition to lacking secure base content also contained ‘odd-content’, but here it was to a much greater degree than for a score of “2”. Scores from all four stories were averaged producing a total score reflecting each child’s ability to verbalize a secure base in their stories.

Security Scale (Modified). Children completed a Swedish translation of the Security Scale in a modified form (Kerns et al., 1996). Kerns’ and colleagues original scale consists of 15-items which together measure a number of attachment relevant variables: (1) the degree to which the child believes an attachment figure is responsive and available, (2) the child’s tendency to rely on the attachment figure in times of stress, and (3) the child’s reported ease and interest in communicating with the attachment figure (2000). Importantly, items in the Security Scale are rated on a 4-

point scale according to Harter's "Some kids ... other kids ..." format (1982). Thus statements read for example "Some kids find it easy to trust their mom BUT other kids are not sure if they can trust their mom". Children are then asked to indicate which statement they identify most strongly with, i.e. which is most characteristic of them, and to indicate the extent of that identification in terms of whether the statement is 'completely true' for them or whether it is 'sort of true' for them.

Kerns and colleagues original scale has been translated to Swedish by E. Psouni. We have subsequently modified the Swedish translation by substituting Harter's original "Some kids ... other kids ..." wording with the names Robin and Alex (for boys) and Rebecca and Alexandra (for girls). The reasoning behind this modification lies in the fact that the Security Scale in its present form has shown only weak convergent validity with other measures of child attachment (Broberg et al., 2008). One possible contributing factor for this could be that Harter's original wording fails to make it completely unambiguous that children should view the statements as if they themselves belonged to one of the two groups. We believe that by substituting the original wording with actual names we promote children's ability to make this important connection. An additional modification we have made is in regard of Kerns and colleagues original use of the instrument as a method for assessing children's attachment relationships with each parent separately. Since the child-parent story outlines in the word prompt method seek to elucidate secure base narratives involving both parents we modified Kerns and colleagues original procedure by creating statements that would yield responses for both parents together rather than each parent individually. Such a strategy was supported by the children's overwhelming use of the term 'mum and dad' in both child-parent narratives (*Robins math test* and *Robin's accident*). Indeed, 35 of the 41 participants in the present investigation used the expression 'mum and dad' in both narratives and, importantly, described coordinated parental behaviors even when describing parents individually, that is, either both parents were supportive or both parents were not. Significantly, Kerns has shown a significant relationship exists between children's Security Scale scores for both mothers and fathers ($r(73) = .65 p < .001$ at 3rd grade, $r(56) = .70 p < .001$ at 5th grade, $r(48) = .65 p < .001$ at 6th grade) (Kerns et al., 2000). Hence, statements in the modified version read for example "Robin finds it easy to trust his mum and dad BUT Alex isn't sure if he can trust his mum and dad", and "Rebecca thinks her mum and

dad interfere too much when she's doing her own things BUT Alexandra doesn't think her mum and dad interfere too much when she's doing her own things".

Each of the 15 items on the modified Security Scale was scored from 1 to 4 with higher scores representing greater parent-child attachment security. Item scores were summed so that the child received a score ranging from 15 to 60.

Divergent thinking. Children completed two unusual uses tasks – uses for a cardboard box and uses for a brick – in order to make a measure of their creative aptitude (Guilford, 1967). In accordance with Harrington's (1975) finding that asking participants to be creative expands the between person variance in creativity and increases the validity of the scores, children were first instructed to be "really inventive" and "really imaginative" before being asked to give as many uses they could think of for each of the two well-known objects. Children were given 15 minutes to complete each task. All responses were given orally.

Two scoring procedures were used to measure the children's creativity. First, a measure of *fluency* was made in which an average score was calculated by averaging each child's number of responses over the two tasks. Second, we made use of a somewhat modified version of a subjective scoring method developed by Silvia and colleagues, termed *Top 2 scoring* (2008). In Silvia and colleagues' method participants were asked to identify from their own responses the two they thought were the most creative for each task. All of the participant's Top 2 responses were then compiled alphabetically and rated on a 1-5 scale that ranged from "not at all creative" to "very creative". For the purpose of making distinctions regarding the creativity of each response, Silvia and colleagues utilized Guilford's definition of creative ideas as uncommon, remote, and clever (Wilson et al., 1953). Creativity scores for each participant's Top 2 responses were then averaged, first over the Top 2 scores for each task, and then over the two tasks.

Since children's task responses were given orally in our study, it was not possible for them to make a judgment regarding which responses for each task they thought were the two most creative. It was therefore determined that raters, making use of Guilford's definition of creative ideas, would choose each child's two most creative

responses for each task. Also of relevance here is the fact that we used only a single rater. According to Silvia and colleagues, the use of a single scorer produces a dependability level of 0.58, which is below the level of threshold for reliable scores (2008). Although this compromise demands that we question the legitimacy of our using the Top 2 scoring procedure as a measure of children's creative aptitude, it is worth pointing out that children's Top 2 scores correlated significantly in our study with scores of creative aptitude as measured using fluency ($r = .36, p < .05$).

Procedure

Children were tested individually in test-rooms at their respective schools. They carried out the word prompt task first, with story outlines counterbalanced for order. The children then completed the two unusual uses tasks, followed by our modified Security Scale. All three procedures were completed over a single testing session for each child, lasting between 35 and 50 minutes. Audio files for all stories as well as all responses from the unusual uses tasks were transcribed verbatim.

Transcribed material from the 41 participants' stories was scored according to Psouni and Apetroaia's instructions (2009b) by a reliable, fully trained rater. A senior, reliable rater (E. Psouni) scored 50% of all stories. Inter-rater reliability was .93 (*Robin's math test*), .89 (*Robin's accident*), .88 (*Robin has trouble in School*), and .92 (*Robin moves away*).

Descriptive statistics and preliminary analyses

The descriptive statistics for children's attachment scores (Security Scale), secure base scriptedness (SBST), narrative fluency scores and verbal creativity scores (Top2, fluency) are presented in Table 1.

Table 1. Descriptive statistics for children's attachment scores, secure base scriptedness, narrative fluency scores, and verbal creativity scores.

	N	M	SD	Range
Attachment scores				
Security Scale	41	50.32	7.45	33.00-60.00
Secure Base Scriptedness				
<i>Robins math test</i>	40	4.06	1.19	2.00-6.50
<i>Robins accident</i>	41	4.12	1.08	1.50-6.50
<i>Robin has trouble in school</i>	40	4.10	1.09	2.50-7.00
<i>Robin Moves Away</i>	41	4.29	1.16	1.50-6.50
Narrative Fluency scores				
<i>Robins math test</i>	40	122.28	81.12	37.00-441.00
<i>Robins accident</i>	41	127.44	66.23	49.00-324.00
<i>Robin has trouble in school</i>	40	98.30	58.49	35.00-326.00
<i>Robin Moves Away</i>	41	114.37	84.83	37.00-423.00
Verbal creativity scores				
<i>Brick - Top2(Fluency)</i>	41(41)	2.72(6.73)	.99(4.12)	1.00-5.00(2.00-23.00)
<i>Cardboard box - Top2(Fluency)</i>	41(41)	2.78(8.90)	.94(9.72)	1.00-4.50(3.00-64.00)

Because the secure base script test for middle childhood was used with children whose ages ranged from 8.3 years to 11.2 years, we examined whether age was related to their secure base script scores. Our results suggested that children's age was related significantly to children's secure base script scores for both *Robins math test* ($r = .33, p < 0.05$) and *Robin moves away* ($r = .39, p < 0.05$). Further, children's age was related significantly to children's Script Total scores, the calculated mean for all

secure base script scores for each child ($r = .33, p < 0.05$). We therefore decided to control for children's age in all subsequent analyses.

In addition to examining the relation between age and secure base scriptedness we also examined whether age was related to children's creativity scores. Our results indicated the relation between children's age and their creativity scores was not significant at the 0.05 level of significance ($r_{\text{Top2}} = -.289, p < .067, r_{\text{Fluency}} = -.100, p < .532$).

Finally, we performed tests for internal reliability for both the SBST and the Unusual Uses Tasks. For the secure base script test Chronbach alphas for the composite score of the two child-parent story outlines, the two child-best friend story outlines and for all four stories was .79, .59, and .84 respectively. For the divergent thinking tasks Chronbach alphas for a composite score for the two test objects was .72 (fluency) and .63 (Top2). All composite scores showed acceptable to good internal reliability and we therefore made use of all in subsequent hypothesis testing.

Relation of children's secure base script to attachment

We conducted two sets of analyses in order to ascertain whether there exists a relation between children's secure base scripts as measured by the SBST and attachment security as measured by Kerns' Security Scales. In our first analysis we examined whether children's SBST mean scores (Child-Parent and Child-Best Friend) were associated with their Security Scale scores, after controlling for child's age. We also performed this analysis using a Script Total score. No significant correlations were found (Table 2). This result is consistent with other studies in which questionnaire methods have not correlated consistently with narrative methods (Kerns et al., 2008; Kerns et al., 2007). This result also replicates Psouni & Apetroaia's finding.

In our second analysis we examined whether children's secure base mean scores (Child-Parent, Child-Best Friend, and Script Total) and their Security Scale scores were associated when scoring on dichotomized variables. In order to assign children's security classifications (Secure/Insecure) we set 48 as the cut-off score on the

Security Scale. This score was chosen so that the upper two thirds of our sample fell above this score. Kerns and colleagues have used the same procedure when dichotomizing their data, the choice of method reflecting Strange Situation findings which typically show that two thirds of children in middle-class samples are securely attached (1996). For children's secure base mean scores (Child-Parent, Child-Best Friend and Script Total), children with mean scores >4 (sufficient evidence of secure base scriptedness) were assigned as securely attached, whereas children with mean scores <4 (insufficient evidence of secure base scriptedness) were assigned as insecurely attached. The results of a Chi-square test for independence are shown in Table 3. No significant associations between children's secure base mean scores and Security Scale scores were found. This result contrasts with that of Psouni & Apetroaia, who found a significant association.

Table 2. Correlations between the Secure Base Script Test for middle childhood and the Security Scale, controlling for age.

		Partial correlations		
		Script Total ¹	Child-Parent ²	Child-Best Friend ³
Kerns' Security Scale	<i>partial</i> Pearson's <i>r</i>	-.09	-.10	-.05

¹arithmetic mean of scores for all stories for each child

²arithmetic mean of scores for *Robin's math test* and *Robin's accident*

³arithmetic mean of scores for *Robin has trouble in school* and *Robin moves away*

Table 3. Chi-square test for independence between the Secure Base Script Test for middle childhood and the Security Scale.

		Chi-square test for independence		
		Script Total	Child-Parent	Child-Best Friend
Kerns' Security Scale	Continuity correction ¹	.00	.45	.00
	Asymp. Sig. (2-tailed)	1.00	.50	1.00
	Phi	.05	.16	-.00

¹For 2*2 tables

Relation of children’s secure base script to creativity

We investigated two possibilities related to children’s oral narrative production. The first was whether children’s ability to generate creative uses for common objects (scored using *fluency* and *Top2 scoring*) was related to children’s narrative fluency scores (number of words in their SBST narratives). As can be seen in Table 4, significant associations were found for all composite measures of narrative fluency (Child-Parent, Child-Best Friend, and Script Total), but only when verbal creativity was scored using Top2 scoring. There were no associations when verbal creativity was scored using fluency (number of ideas). These results are consistent with Albert and Kormos’ (2004) previous finding, supporting the idea that children’s verbal creativity influences their oral narrative performance in terms of productivity.

The second possibility we investigated was whether children’s ability to generate creative uses for common objects was related to their secure base scriptedness (SBST scores). In Table 4 it can be seen that none of the composite measures of children’s secure base scriptedness were significantly related to children’s creativity scores. This suggests that although children’s verbal creativity influences their overall narrative productivity, it does not appear to reflect on the scores produced by the SBST for their secure base scriptedness.

Table 4. Correlations between secure base script test in middle childhood and Creativity.

		Correlations					
		SBST narratives		SBST narratives		SBST narratives	
		Total		Child-Parent		Best Friend	
		scripte	N	scripte	N	scripted	N
		dness	fluency	dness	fluency	ness	fluency
Creativity scores ¹	Fluency	-.02	.0	-.03	.0	-.04	.03
	Top2	.17	.42**	.14	.45**	.11	.37*

¹arithmetic mean of scores for *cardboard box* and *brick*

** $p < .01$, * $p < .05$

Relation of children's secure base script to attachment

Central to Bowlby's attachment theory is the idea that beyond infancy, attachment behaviours gradually become represented in the mind. Bowlby conceptualized such 'internal working models', as stable affect-laden structures. Surprisingly, the internal working model construct has remained largely unexplored since Bowlby first conceptualized it (Waters et al., 2002). Among contemporary attachment researchers however, most are in agreement that internal working models are multifaceted, "involving multiple modes of representation, each with its own architecture, operating characteristics, and impact on later affect, cognition, and behaviour (Waters & Waters, 2006, p187). Such a description conceptualizes the internal working model construct as a distinct and much broader construct than that of the secure base script. Bretherton however suggested secure base scripts might be the cognitive building blocks, or 'raw material' of internal working models (Bretherton, 1991; cited in Dykas et al., 2006). In order that we might test for this claim we hoped to find an association between secure base scripts and a measure that claims to tap internal working models.

We used a modified version of the Security Scale in order to measure children's attachment security. The modifications we made involved making two changes. The first involved replacing Harter's (1982) "Some kids ... other kids ..." format with actual names since we speculated it might aid children's identification with one of the two statements. The second modification involved testing for both parents together (rather than separately) in order to make the Security Scale more consistent with the SBST, which also includes both parents together in child-parent story outlines. Despite these modifications, neither of our analyses yielded an association between children's security scores and their secure base script scores. Although this result replicates Psouni & Apetroaia's finding when using continuous data, it fails to replicate their finding when scoring on dichotomized variables, which is perhaps unexpected in light of the changes we made to the instrument. Bearing in mind that

sample size is critical to avoiding low power in non-parametric tests, we believe that the most likely explanation for this discrepancy is our much smaller sample size (41 subjects) compared with that of Psouni & Apetroaia's (104 subjects). We cannot discount however that the discrepancy may also be due to the modifications we have made. Indeed, we have not calculated alpha coefficients for related items on our modified version of the Security Scale, and are unable therefore to report on its internal reliability.

Despite our failure to yield an association between children's security scores and their secure base script scores, this result is not unexpected and is consistent with other studies in which questionnaire methods have not correlated consistently with narrative methods (Kerns et al., 2008; Kerns et al., 2007). As stated earlier, the Security Scale taps children's internal working models by asking children to make a conscious appraisal of the quality of their attachment relationships. The Secure Base Script Test for middle childhood however is believed to tap scripted knowledge of children's secure base interactions at the procedural level, that is, without the subject's active or conscious appraisal. Several authors have suggested that narrative methods and questionnaires tap different facets of the attachment construct (Kerns et al., 2008; Waters et al., 2002). In this way, these methods are viewed as being equally valid for their purposes, despite being incompatible with each another. However, we believe there are theoretical and empirical grounds for questioning the validity of using subjects' active appraisal of the quality of their attachment relationships as a basis for measuring their attachment security. Specifically, we believe questionnaire methods may be vulnerable to fundamental differences in how secure and insecure populations consciously process attachment related material.

During the testing phase of this study, whilst administering the Security Scale, we made the informal observation that children who took a greater length of time to provide a response to each of the instrument's items, often gave responses that received lower scores, i.e. they were more negative in their appraisals of child-parent relationships. In order to investigate this further, we performed a post hoc analysis of children's Security Scale data. All testing with children had been audio recorded and we therefore hypothesized that there would be a negative association between the time each test took and children's Security Scale scores. After controlling for

children's age¹⁰, the results of our post hoc analyses revealed a moderate negative association (partial $r=-.41$, $p<.05$), thus confirming our hypothesis. While this is an interesting result, it was necessary to evaluate each of the audio recordings in order to corroborate that children with longer test times also took longer time to respond to the Security Scale's items. We therefore assessed each recording in terms of the extent to which children delayed their responses, noting also to what degree they verbalized their deliberations. Our assessments corroborated our initial findings, with longer test sessions being characterized by children delaying their responses longer and verbalizing their deliberations to a greater extent than the children in the shorter test sessions. Our post hoc analysis therefore confirmed our initial impressions, that children who took longer to provide a response to each of the instrument's items were more negative in their appraisals of child-parent relationships.

One way of understanding this effect is by making a distinction between those children who take time to deliberate over the items on the Security scale, from those who (perhaps) do not. For example, some children may be giving responses without appropriately evaluating their actual relationships to parents. They may be giving the 'right' responses. That is, responses that reflect what parent-child relationships are supposed to be like. Alternatively, children who are evaluating their relationships maybe are increasing the chances they will find some aspect of their relationships they are less satisfied with. They may be giving their negative experience too much weight when measuring their responses.

Another way of understanding this effect however, is in terms of different ways children may consciously process attachment-related information. For example, Bowlby (1980) theorized that children who had suffered either a temporary or permanent loss of the primary attachment figure were capable of selectively excluding attachment related material from their conscious processing, sometimes permanently. Bowlby called this process *defensive exclusion*. Significantly, children with insecure-avoidant attachments are believed to conceal their attachment related distress in similar ways, specifically, by shifting their focus of attention away from attachment-related issues (Fraley et al., 1998). These children therefore, if tested with the Security

¹⁰ We also found a moderate negative association between the time testing took and children's age ($r=-.40$, $p<.05$).

Scale, might be anticipated to avoid identifying with statements which risk activating attachment distress. Statements like ‘Robin finds it easy to trust his mum and dad, but Alex isn’t sure if he can trust his mum and dad’ might provoke an insecure-avoidant child to identify with Robin, even though Alex’s statement might more accurately portray the true dynamics of his relationship with his parents. Importantly, the use of such defensive strategies is thought to become increasingly automatic as children get older (Fraley et al., 1998). Children who defensively exclude attachment-relevant information might therefore be expected to answer the statements in the Security Scale quickly, and without conscious reflection.

In order to examine whether there were indications that children in our sample have used defensive strategies when responding to statements in the Security Scale, we first categorized participants according to the assigned attachment classifications for their dichotomized scores (see Figure 1. Note that the children who took the longest to provide a response to each of the Security Scales items are represented in the Security Scale insecure group, I(Kerns), whilst the children who took the least time to provide a response to each of the Security Scales items are represented in the Security Scale secure group S(Kerns)).

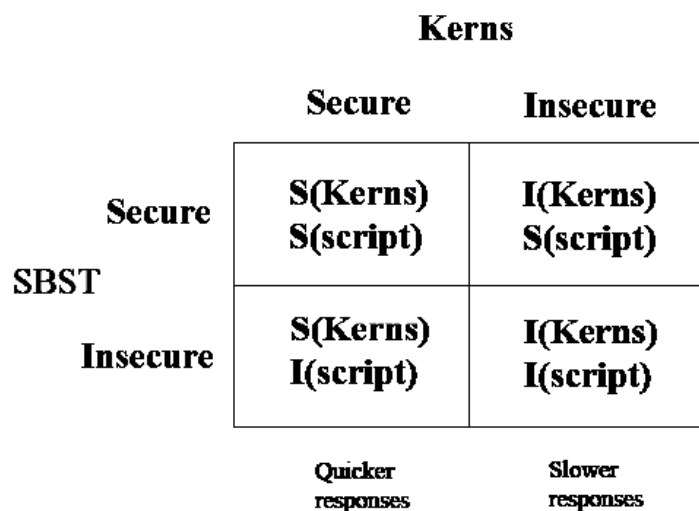


Figure 1.

Bowlby’s theory would predict that children who defensively exclude attachment-related material would be classified as secure when making a conscious appraisal of their attachment relationships (e.g. the Security Scale), but insecure when their

attachment security was measured outside of their conscious awareness (e.g. SBST). If a significant number of children in our sample had used defensive strategies then we would expect the S(Kerns)I(script) group (see Figure 1.) to be overrepresented by participants with the shortest test sessions (characterized by the quickest responses), compared to the S(Kerns)S(script) group. However, the S(Kerns)S(script) group (mean test time 4.57 minutes) differed in only minor ways to the S(Kerns)I(script) group (mean test time 4.67 minutes), the tendency to respond quickly being only marginally more common in the S(Kerns)I(script) group.

Thus, there is only marginal support for the idea that children classified as insecure using the SBST, but who are classified as secure using the Security Scale, are responding to items on the Security Scale more quickly, i.e. more automatically, than other children in the sample. Consequently, there are only minor indications that children who are responding to items on the Security Scale quickly are using defensive processes as defined by Bowlby's theory.

In summary, secure base scripts may be the cognitive building blocks of internal working models. In order that we might test for this, we hoped to find an association between the Secure Base Script Test for middle childhood and a modified version of the Security Scale, a measure that claims to tap internal working models. We found no association. Similar findings in which questionnaire methods have not correlated consistently with narrative methods have been reported in other studies however. Although these two methods have been described as tapping different aspects of the attachment construct, we have argued that questionnaire methods such as the Security Scale may be vulnerable to fundamental differences in how secure and insecure populations consciously process attachment related material. Indeed, a post hoc analysis of our data revealed that children who deliberated more over their responses to the Security Scale's items were more negative in their appraisals of child-parent relationships than those who responded without significant deliberation. We examined whether this finding supported the idea that children who responded without deliberation, may have done so in order to defensively exclude attachment-related material when responding to the instrument's items. We found only marginal support for this possibility however.

Relation of children's secure base script to creativity

Children's oral narrative production is influenced by numerous factors, amongst them, cognitive and creative development (Geist & Aldridge, 2002); knowledge of narrative structure (John & Lui, 2003); vocabulary knowledge (Munroe et al., 2008); and children's allocation of attentional resources (Skehan & Foster, 1999). In order to establish discriminant validity for the Secure Base Script Test for middle childhood, it is essential to exclude factors that might potentially confound with children's secure base script knowledge as a source of secure base narrative in their stories. No other studies have sought to establish discriminant validity for the SBST. There are related studies, however, where discriminant validity has been established for the narrative assessment of the secure base script construct. For example, Roderigues-Doolabh (2000) examined discriminant validity in Waters & Roderigues-Doolabh's (2004) *Narrative Script Assessment* for secure base script knowledge in adults and found no relation between mothers' secure base scriptedness and mother's IQ. On the other hand, Dykas and colleagues (2006), did find an association between verbal knowledge and secure base scriptedness in adolescent's secure base narratives.

In our study we have examined whether children's verbal creativity is related to the production of secure base narrative in children's stories. We hypothesized that there would be no relation between children's creativity and their secure base scriptedness. Our results confirmed this hypothesis, the lack of an association suggesting children's verbal creativity does not confound children's secure base script knowledge as a source of secure base narrative in children's stories.

We also examined whether children's verbal creativity was related to their secure script narrative *productivity*, that is, the length of narrative children produced overall, since such an association has been reported elsewhere (Albert and Kormos, 2004). This hypothesis was confirmed. In contrast to Albert and Kormos' (2004) findings however, there was no link narrative length and *fluency* (number of ideas) as a measure of children's verbal creativity. Rather, it was only when we scored verbal creativity using Silvia and colleagues (2008) *Top 2 scoring* method that an association was observed. Nevertheless, this association is consistent with Albert and Kormos's

earlier finding, and it supports the idea that verbal creativity influences children's oral secure base script narratives in terms of productivity (length of narrative). Importantly, although verbal creativity may influence children's narratives in terms of overall narrative length, the perceived content of secure base scriptedness in the narratives does not appear to be similarly influenced. This is an important result, suggesting one of two possibilities: either creativity does not confound children's secure base script knowledge as a source of secure base narrative in children's stories, or, creativity does confound, but its effect is virtually imperceptible to the raters' perception of subjects' scriptedness. In other words, it is the elaboration of children's secure base scripts, as well as children's ability to access them and make use of them in organizing their narratives that is being captured in the SBST-score, rather than any elaborative effect their creativity might have on their narrating.

Although these results are an important step towards establishing discriminant validity for the Secure Base Script Test for middle childhood, they are tempered somewhat by issues of validity concerning the *Top 2 scoring* measure as used in this study. According to Silvia and colleagues (2008) three independent raters should be used to score children's creative responses in order to achieve an acceptable level of 'dependability' for the measure. However, a single scorer was used here. Also, the measure has only been validated when participants themselves select the 'top two' most creative ideas from their creativity test responses, but it was the researcher that made this choice in the present study. These factors suggest caution when interpreting results based on the Top 2 scoring measure. Despite this limitation, the fact that the two creativity measures used in this study (*frequency* and *Top 2 scoring*) correlated moderately with one another ($r=.36, p<.05$), suggests they are at least in part measuring the same creativity construct. Importantly, neither measure correlated significantly with children's secure base script mean scores.

In summary, there are many factors influencing children's oral narrative production. In order to establish discriminant validity for the Secure Base Script Test for middle childhood, we examined whether verbal creativity confounded children's secure base script knowledge as a source of secure base narrative in children's stories. Although we found verbal creativity influenced children's narratives in terms of overall productivity, verbal creativity did not appear to influence raters' perception of

subjects' scriptedness. This result however is tempered by concerns regarding the validity of one of the two methods used to score verbal creativity.

Limitations of this study and future work

The aim of this study has been to establish convergent and discriminant validity for the Secure Base Script Test for middle childhood. We have only partly met this aim. A major limiting factor has been our use of the Security Scale in our assessment of convergent validity for the SBST. Future studies ought not focus on methods which rely on participant's conscious appraisals of attachment relationships. Narrative methods such as the *Child Attachment Interview*, CAI (Target et al., 2003), or Steele and Steele's (2005) *Friends and Family Interview (FFI)* might be more appropriate choices, since these interviews assess processes that are generally thought to be outside of conscious awareness.

A second limiting factor of this study has been our use of only a single rater when measuring children's verbal creativity with Silvia and colleagues (2008) *Top 2 scoring* method. Future studies ought employ at least three independent raters, which is the number that should be used if an acceptable level of 'dependability' is to be achieved. If this is not possible, verbal creativity can alternatively be scored using flexibility scoring, which involves counting the different categories of uses children think of in the Unusual Uses Tasks.

In addition to verbal creativity, there are also other factors influencing children's oral narrative production that may potentially confound children's secure base script knowledge as a source of secure base narrative in their stories. Future studies should focus on excluding these factors as potential confounding variables.

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