

**A TEST OF BARTHOLOMEW'S FOUR-CATEGORY MODEL OF
ATTACHMENT IN A CLINICAL SAMPLE OF ADOLESCENTS**

by

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B.A., University of Western Ontario, 1988

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A Test of Bartholomew's Four-Category Model of Attachment

in a Clinical Sample of Adolescents

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ABSTRACT

Despite the fact that Bowlby's interest in attachment stemmed from his wish to further understand psychopathology, it has been only recently that researchers have assessed attachment representations in clinical samples. The present study examined the reliability and validity of attachment representations, as defined by Bartholomew (1990), in a clinical sample of adolescents. Attachment representations were assessed using a revised version of the Family Attachment Interview (Bartholomew & Horowitz, 1991), and interviews were coded using the four-category attachment framework developed by Bartholomew (1990). Adolescents also completed the Jesness Inventory (Jesness, 1983) and the Ontario Child Health Study Scales (Boyle, Offord, Racine, Sanford, Szatmari, & Fleming, 1993), and were administered the WISC-III (Wechsler, 1993). Although there was high agreement between the coders' ratings of the four attachment patterns, there was only moderate agreement on the categorical ratings. Attachment was not associated with IQ scores as assessed by the WISC-III, with one exception; security was positively associated with scores on the Verbal Comprehension subscale. As expected, the self-model dimension was associated with measures of anxiety; however, contrary to expectations, the other-model dimension was not associated with measures of avoidance. Exploratory analyses indicated that, to some extent, severity of psychological distress suppressed the associations between attachment and measures of avoidance. Discussion of future work concentrated on two issues: the continued need to address measurement issues

in clinical samples, and the usefulness of the attachment framework in understanding adolescent development and psychopathology.

DEDICATION

To the memory of

Janet Stuart Meikle Downie Steele Boytel

May 19 1894 to January 20 1996

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CHAPTER I

INTRODUCTION

Bowlby (1982) defined attachment as the instinct to form relational bonds with others, and the development of strategies to seek and maintain proximity to these attachment figures when distressed, ill, or afraid. These strategies are internalized into working models of attachment that help to guide interpretation of and reactions to social situations throughout life. Bowlby proposed that attachment theory could provide a useful framework to understand psychopathology (Bowlby, 1973; 1980, 1988). Despite the fact that several authors have discussed the importance of attachment in the context of psychopathology, and have encouraged the examination of attachment in clinical samples (e.g., Aber & Allen, 1987; Allen, Aber, & Leadbeater, 1990; Holland, Moretti, Verlaan, & Peterson, 1993), only recently have researchers examined attachment representations in adolescent and adult clinical samples (e.g., Adam, Sheldon-Keller, & West, 1996; Allen, Hauser, & Borman-Spurrell, 1996; Fonagy, Leigh, Steele, Steele, Target, & Gerber, 1996; Rosenstein & Horowitz, 1996). Furthermore, despite the prevalence of adult attachment research, researchers have paid little attention to basic measurement issues. With the exception of Griffin and Bartholomew (1994a, 1994b), no studies have formally assessed the construct validity of attachment measures. Four studies that have examined the discriminant validity of attachment measures are limited by reliance on categorical measures of attachment (Bakersmans-Kranenburg & van IJzendoorn, 1993; Crowell et al., 1993; Rosenstein & Horowitz, 1996; Sagi, et al., 1994). The present study, therefore, examined the reliability, construct validity, and discriminant validity of continuous and categorical attachment measures in a clinical sample of adolescents.

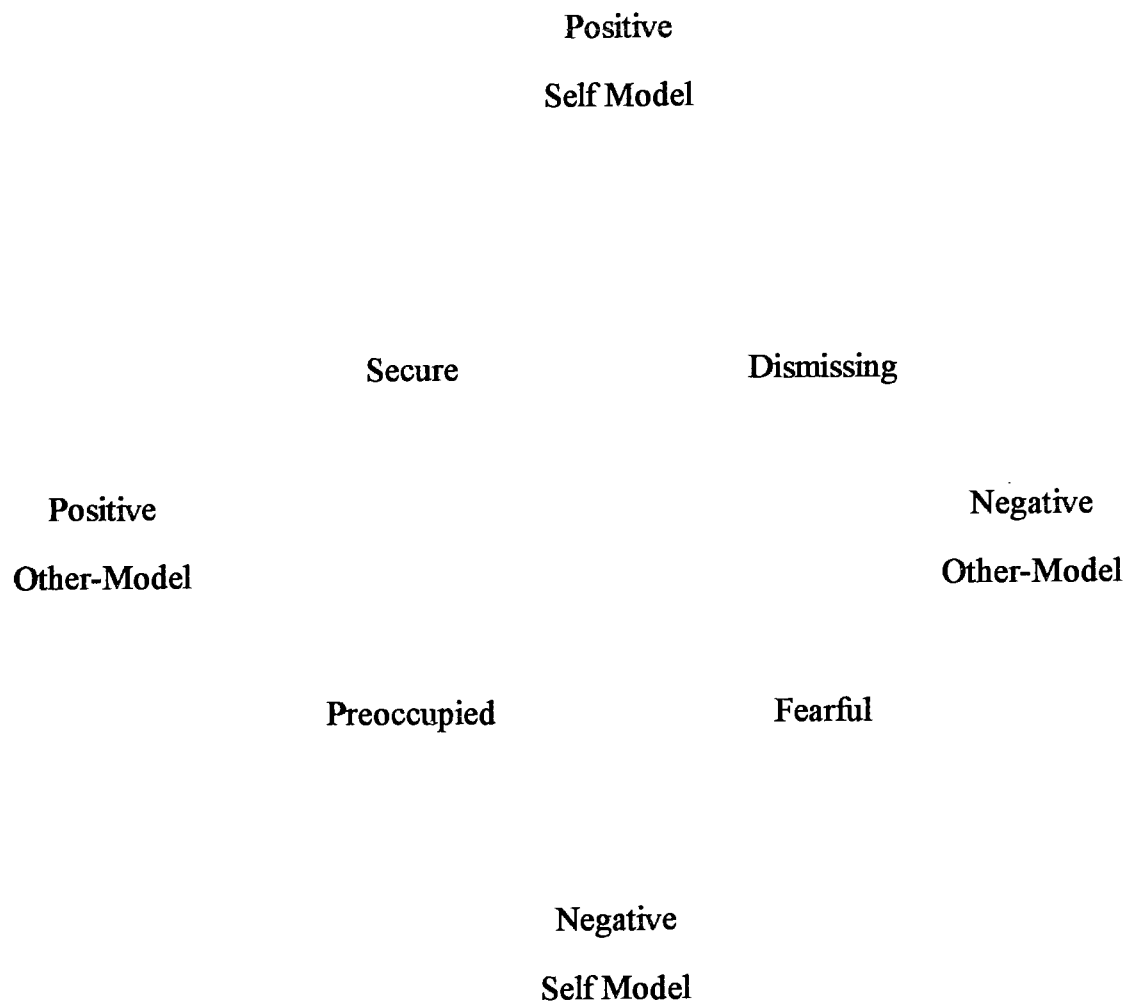
Measurement of Adult Attachment

In the past decade, several interview and self-report measures have been developed to assess adult attachment representations. First, Main and her colleagues developed the Adult Attachment Interview (AAI; Main, Kaplan, & Cassidy, 1985). They proposed that parents' internal representations of their families of origin could be assessed by asking them to describe relationships with caregivers during childhood, changes in relationships with caregivers since childhood, the influence of relationships with caregivers on current functioning, and hopes for their own children's future. The coding system for the AAI was originally designed to yield three attachment categories (secure, preoccupied, and dismissing) which were based primarily on internal coherence and consistency of interview responses. Recently, researchers using the AAI have proposed two additional categories: unresolved and cannot classify (Main & Goldwyn, 1994). Individuals are categorized as unresolved when their interviews are characterized by disorganization and incoherence when discussing the loss of attachment figures or other traumatic childhood experiences (Main & Goldwyn, 1994). Individuals are categorized as cannot classify when they are judged to be mixtures of secure, preoccupied, or dismissing or when there is inadequate information to classify them into one particular category (Main & Goldwyn, 1994).

Social and personality theorists have expanded the definition of attachment representations to include representations of friendships and romantic relationships. To assess these representations, several self-report measures have been developed (e.g., Collins & Read, 1990; Hazan & Shaver, 1987; Simpson, 1990). These measures yield a variety of attachment dimensions (e.g., anxiety, avoidance) as well as attachment categories (e.g., secure, ambivalent, and avoidant).

Building upon both Main's (Main et al., 1985) and Hazan and Shaver's (1987) models, Bartholomew developed and validated an expanded model of individual differences in attachment representations in adulthood (Bartholomew, 1990; Bartholomew & Horowitz, 1991). She defined four prototypic attachment patterns (secure, fearful, preoccupied, and dismissing) in terms of the intersection of two underlying dimensions of internal working models - positivity of models of the self and positivity of models of hypothetical others (see Figure 1). The self-model dimension reflects an internalized sense of self-worth, and is associated with the degree of anxiety and dependency experienced in close relationships. The other-model dimension reflects the belief that others are available and supportive, and is associated with the tendency to seek out or avoid closeness in relationships. The underlying dimensions of the self- and other-model are strongly related to the dimensions of anxiety and closeness as defined by Collins and Read (Griffin & Bartholomew, 1994b).

The secure pattern (positive self- and other-model) is characterized by a capacity for intimacy while maintaining personal autonomy. The fearful pattern (negative self- and other-model) is characterized by an avoidance of intimacy due to anxiety concerning loss and rejection in close relationships. The preoccupied pattern (negative self- and positive other-model) is also characterized by anxiety in close relationships; but rather than avoidance of intimacy preoccupation is associated with the active pursuit of closeness and reassurance from others. Finally, the dismissing pattern (positive self- and negative other-model) is characterized by high self-esteem and a defensive maintenance of independence and distance in close relationships.



Self-model = (Secure + Dismissing) - (Preoccupied + Fearful)

Other-model = (Secure + Preoccupied) - (Dismissing + Fearful)

Figure 1. Four-category model of adult attachment.

Bartholomew has developed both self-report and interview measures to assess the four patterns. Their measurement properties have been examined in several studies. Bartholomew and Horowitz (1991) demonstrated a positive association between self-report and interview measures, as well as a positive association between interview measures of family and peer representations. Bartholomew and Shaver (in press) demonstrated positive and consistent associations between several methods of assessing attachment. Griffin and Bartholomew (1994a) tested the construct validity of the model and found that the self- and other-model dimensions were associated with theoretically related variables of anxiety and avoidance. Scharfe and Bartholomew (1994, 1996) demonstrated that the patterns were stable over 2 years. In summary, interview and self-report methods developed by Bartholomew (Bartholomew & Horowitz, 1991) have proven to be reliable and valid measures of attachment representations in young adults.

Attachment in Adolescence

Bowlby's initial writings on attachment theory emphasized that attachment relationships were important across the lifespan (Bowlby, 1973, 1980, 1982). With one exception, the development of attachment measures has followed a path similar to lifespan development. Ainsworth and her colleagues initiated the empirical work in attachment with their comprehensive examination of individual differences in the quality of parent-infant dyads (Ainsworth, Blehar, Waters, & Wall, 1978). Other researchers have extended this work by exploring attachment in toddlers, school age children, and young adults (e.g., Bartholomew & Horowitz, 1991; Elicker, Englund, & Sroufe, 1992; Grossman & Grossman, 1991; Hazan & Shaver, 1987; LaFreniere & Sroufe, 1985; Waters, Wippman, & Sroufe, 1979). The only developmental stage that has not been studied extensively is adolescence.

Attachment may provide a framework to understand some changes that occur during adolescence. Previous research has attested to the benefits of security across childhood and adulthood (e.g., Bartholomew & Horowitz, 1991; Elicker, et al., 1992; LaFreniere & Sroufe, 1985; Simpson, 1990; Ward & Carlson, 1995; Waters, et al., 1979). During adolescence, attachment security may help to mitigate the stress that may be associated with the many interpersonal, cognitive, and biological changes. For example, adolescence is a time when individuals are encouraged to gain autonomy from their caregivers and develop a sense of identity. By definition, secure adolescents are comfortable when exploring new environments and situations. Consequently, secure adolescents may be more successful at becoming autonomous, and, perhaps, find the stress of this transition less disruptive than their insecure peers (cf. Petersen, Sarigiani, & Kennedy, 1991; Rice, Herman, & Petersen, 1993). Adolescence is also an important time for the development of intimate, sexual relationships; but no studies have explored the influence of attachment patterns on the transition from the platonic friendships in childhood to friendships and romantic relationships in adulthood. Although secure individuals are typically found to have more satisfying relationships than insecure individuals (e.g., Park & Waters, 1989; Senchak & Leonard, 1992), the benefits of attachment security during adolescents' interpersonal transitions have yet to be tested.

Adolescence may also be a time of change in attachment representations. Adolescents are required to construct more sophisticated ways of interacting with others (more egalitarian, reciprocal, and symmetrical), and they may find that these new relationships are catalysts that cause re-evaluation of existing representations (Buhrmester, 1990; Buhrmester & Furman, 1987). For example, a supportive peer group may help adolescents to change their existing attachment representations. In

addition, the development of abstract cognitive abilities in adolescence (Piaget, 1967), may also encourage individuals to evaluate their attachment related expectations. For example, the development of perspective-taking may help adolescents in single parent families to appreciate their parent's dedication, and, consequently, forgive their parents for any past neglectful behaviours (cf. Main et al., 1985).

Although relatively few studies have examined adolescent attachment, there are two distinct areas of research in adolescent attachment. One area of research, loosely based on the work of Bowlby and Ainsworth, has examined the quality or security of parent-adolescent relationships, and not individual differences in adolescent attachment behaviour (e.g., Greenberg, Siegel, & Leitch, 1983; Kenny, 1987; Richman & Flaherty, 1987). In a comprehensive review and analysis of this research, Rice (1990) summarized the investigation of adolescent attachment (see also Kenny & Rice (1995) for a review of attachment in late adolescence). Researchers have developed several self-report measures to assess the quality of the parent-youth attachment relationships (e.g., Greenberg, et. al., 1983; Kenny, 1987; Richman & Flaherty, 1987). Research using these measures has consistently demonstrated a positive association between quality of attachment and adolescents' social competence, self-esteem, identity, and emotional adjustment.

However, this work is limited in two ways. First, these measures do not directly assess individual differences in attachment representations; rather, these measures assess the quality or security of attachment relationships. Clearly, adolescents have internal representations of attachment that go beyond the security of a particular attachment relationship. And second, researchers have not examined the validity of the measures. For example, Rice (1990) questions whether these measures of attachment can be distinguished from measures of dependency, cohesion, and

enmeshment. Therefore, further research is necessary to assess the validity of these attachment measures.

Although recent studies have found similar distributions of attachment categories in infants, toddlers, young children, college students, and parents (van IJzendoorn & Bakermans-Kranenburg, 1996), there are few published studies reporting on the measurement or distribution of distinct attachment patterns in adolescents. In a second area of research, researchers have made some advances toward assessing individual differences in young adults (e.g., Collins & Read, 1990; Bartholomew & Horowitz, 1991; Kobak & Sceery, 1988). It is possible that these measures would provide valid assessments of attachment for young adolescents; however, the validity of these measures in samples younger than 18 years has not been examined. Since adolescence is such an important period of development in the lifespan, the next logical step for developmentalists is to explore individual differences in adolescent attachment. However, before the influence of and change in adolescent attachment representations can be examined, reliable and valid assessments of adolescent attachment are necessary.

Clinical Samples

In a recent meta-analysis of the AAI examining attachment representations in clinical samples, van IJzendoorn and Bakermans-Kranenburg (1996) reported an overrepresentation of insecure patterns. These studies assessed attachment representations (using the AAI) of parents whose children were diagnosed with a psychological disturbance or attachment categories of children whose parent was diagnosed with a psychological disturbance. Theoretically, evidence of high rates of insecure attachment of parents or children of individuals with psychological disorders supports the hypothesis that there would be an overrepresentation of insecure

attachment in clinical groups. However, it is necessary for researchers to directly assess the degree of insecurity in individuals diagnosed with psychological disorders as well as the possible associations between attachment representations and psychopathology.

Three recent studies have directly assessed attachment (using the AAI) in clinical samples (Adam et al., 1996; Fonagy et al., 1996; Rosenstein & Horowitz, 1996). Fonagy and his colleagues reported that nonpsychotic inpatients were more likely to be classified as insecure than participants in a case-matched control group (Fonagy et al., 1996). Using the three-group classification, 78% of nonpsychotic inpatients were rated as insecure (either preoccupied or dismissing), whereas only 38% of the controls were rated as insecure (89% and 41%, respectively, with the four-group classification¹). Using the three-group classification, inpatients were most likely to be classified as preoccupied (60%). And using the four-group classification, inpatients were most likely to be classified as unresolved (76%).

Rosenstein and Horowitz (1996) assessed attachment representations using the AAI in a sample of 59 adolescents hospitalized in a psychiatric ward. Consistent with expectations, the adolescents were predominantly insecure; using the three-group classification 97% were insecure, and using the four-group classification 98% were insecure. In addition, females were more likely than males to be classified as preoccupied, and males were more likely than females to be classified as dismissing. Furthermore, dismissing attachment was associated with the diagnosis of conduct disorder and substance abuse disorder, whereas preoccupied attachment was associated with depression.

Adam et al. (1996) assessed attachment representations of adolescents with histories of suicidal ideation and/or suicidal behaviour and a clinical comparison group

of adolescents with no suicidal ideation. They found that adolescents with histories of suicidal thoughts or behaviours were more likely to be classified as preoccupied (with a secondary classification of unresolved-disorganized), and less likely to be classified as dismissing than the comparison group.

In summary, these three recent articles have paved the way to understanding the association between attachment and psychopathology. Each study reported an overrepresentation of insecure patterns. However, none of these studies systematically examined the reliability of the AAI categories. Although the AAI is well validated in middle-class samples of parents, attachment representations may be more difficult to assess in clinical samples.

There are several reasons why attachment representations may be more difficult to assess in clinical samples. First, incoherency of attachment interviews may make it more difficult to reliably code attachment patterns. By definition, insecure individuals have developed models that are not coherent, and clinical samples are likely to be predominantly insecure. A related issue is that individuals in clinical samples may not have consolidated their representations into one predominant attachment pattern. It may be more difficult to code individuals who are mixtures of attachment patterns rather than individuals who are characterized by one predominant pattern. In fact, Main and Goldwyn's (1994) classification system designates these mixtures as cannot classify (as cited in Rosenstein & Horowitz, 1996). Fonagy et al. (1996) predict that if their coders had been trained to classify using this recent category at least 10% of their clinical sample would have been classified as cannot classify. And Allen et al. (1996) reported that 26% of their participants were coded as cannot classify. Finally, individuals in clinical samples are more likely to report interpersonal distress and this heightened distress may reduce coders' reliability. For

example, if distress is misinterpreted as high emotional expressivity and an *approach* orientation (both characteristic of the preoccupied prototype), a predominantly fearful, but distressed, individual may be judged to be preoccupied.

Construct Validity

None of the studies examining attachment representations in clinical samples have included an in-depth examination of reliability and validity of the measures. In several recent papers, the researchers report the inter-rater reliability of the AAI across categories but do not provide enough information to determine the agreement for each category (e.g., Allen, et al., 1996; Fonagy et al., 1996; Rosenstein & Horowitz, 1996). Furthermore, Main et al. (1985) validated the AAI by demonstrating the correspondence between parents' attachment representations and the attachment behaviour of their children. Further research is necessary to determine if the AAI will provide reliable and valid assessments of attachment representations in clinical samples.

Bartholomew (1990; Bartholomew & Horowitz, 1991) proposed a two dimensional model of attachment. The self-model dimension was proposed to be associated with the degree of self worth or self acceptance; it is also associated with the degree of anxiety experienced in close relationships. The other-model dimension was proposed to be associated with the tendency to seek out or avoid support from others. Griffin and Bartholomew (1994a, 1994b) examined the construct validity of the two dimensions hypothesized to underlie the four attachment patterns in three samples of college students. They demonstrated that latent attachment variables were related to theoretically relevant outcome variables. Results from several analyses indicated that the self-model dimension was highly associated with measures of distress, self esteem, self acceptance, and neuroticism, and the other-model dimension

was highly associated with measures of interpersonal warmth and sociability, and moderately associated with extroversion and agreeableness (Griffin & Bartholomew, 1994a, 1994b). To date, the construct validity of the four-category model has not been tested in non-college samples.

Discriminant Validity

It has been argued that the quality and coherence of participants' family stories may be influenced by cognitive abilities (Bakermans-Kranenburg & Van IJzendoorn 1993; Sagi et al., 1994). Both Main (Adult Attachment Interview, AAI; Main, et al., 1985) and Bartholomew (Bartholomew & Horowitz, 1991) developed interviews to assess attachment representations in the family of origin. The interviews are designed to assess both participants' characteristic experiences and feelings in their family relationships, as well as the internal coherence and consistency of their relationship accounts. Judgments of attachment representations are based on trained coders' interpretations of the participants' state of mind regarding their family relationships. Thus the coders assess both the content and structure of participants' attachment representations including the coherence, openness, and comprehensiveness of the presentation of childhood experiences. One alternative hypothesis is that individuals' attachment patterns are merely a reflection of their cognitive abilities. Using Bartholomew's four category model of attachment, I will review the issues concerning attachment representations and cognitive abilities.

Attachment security is associated with a sense of personal worthiness, and a high degree of trust that others will be responsive and loving. Secure individuals openly and coherently discuss positive and negative childhood experiences, and they have insights about the effects their family experiences have had on their personality. Bowlby and others propose that secure individuals present their childhood

experiences in a coherent, thoughtful way because they have worked through their experiences and are able to present them openly. Or perhaps, secure individuals have highly developed verbal skills, and, therefore, they have the essential vocabulary to coherently describe their childhood experiences. Furthermore, secure individuals may have highly developed organizational skills that allow them to organize childhood experiences into a coherent, thoughtful story. Both alternative hypotheses are supported by research demonstrating that children living in high risk environments are less vulnerable if their cognitive abilities are well developed (Rutter, 1983; Werner & Smith, 1982). Although researchers have found that infants and children with low cognitive abilities can develop secure attachment relationships (Goldberg, 1988; Shapiro, Sherman, Calamari, & Koch, 1987), it may be that adolescents and adults with low cognitive abilities are less likely to maintain secure representations.

In contrast, individuals with insecure or anxious attachment representations do not present their childhood stories in a coherent, thoughtful manner. However, individuals differ in the form of their attachment insecurity, and these different patterns of insecurity are characterized by different content and structure of attachment interviews.

The anxious-ambivalent (or preoccupied) attachment pattern is characterized by intense preoccupation with the availability of significant others. Preoccupied individuals' high emotional arousal and involvement in their family relationships makes it difficult for them to coherently describe their family relations. Alternatively, the high anxiety characteristic of preoccupied individuals could be caused by poor logical, organizational, or concentration abilities which subsequently affect their ability to coherently describe their family relationships.

Avoidant attachment is characterized by a defensive avoidance of close contact under conditions of threat. Bartholomew (1990; Bartholomew & Horowitz, 1991) has identified two distinct forms of avoidant attachment: dismissing-avoidance and fearful-avoidance. Dismissing individuals devalue attachment relationships. They typically describe their childhoods as fine or normal, but are unable to provide concrete positive experiences; therefore, a characteristic of dismissing attachment is idealization of attachment-related childhood experiences. Their idealization may stem from well developed language and organizational skills which allow them to create a story that distances themselves from difficult memories of their childhood experiences. Another predominant characteristic of dismissing individuals is their insistence on not remembering unpleasant childhood memories, presumably in an attempt to distance themselves from these attachment experiences. However, there are two alternative explanations for dismissing individuals' lack of childhood memories. First, insistence on not remembering childhood events may be a symptom of dismissing individuals' unwillingness to participate in psychological assessment procedures. Or dismissing individuals may have poorer memory than nondismissing individuals for all childhood events, and this cognitive, rather than emotional, characteristic in part determines their attachment classification.

Although the fearful-avoidant pattern shares an avoidant orientation with the dismissing pattern, the fearful pattern is defined in terms of a negative perception of the self, and a lack of trust that significant others will be available and responsive when needed. Fearful individuals, similar to preoccupied individuals, are characterized by high emotional arousal in their family relationships, but their anxiety results in a tendency to avoid relationships to reduce the risk of loss and rejection. Similar to preoccupied individuals, and in contrast to dismissing individuals, fearful

individuals could be hypothesized to have poorly developed organizational skills which subsequently affect their ability to work through childhood experiences and present them in a thoughtful, coherent way.

To date, four studies have examined the association between attachment categories as measured by the AAI and cognitive abilities (Bakermans-Kranenburg and Van IJzendoorn, 1993; Crowell et al., 1993; Rosenstein & Horowitz, 1996; Sagi et al., 1994). Bakermans-Kranenburg and Van IJzendoorn (1993) assessed the Performance and Verbal IQ of 83 mothers using the Groninger Intelligence Test (GIT). The GIT is comparable to the Wechsler Adult Intelligence Scale (Luteijin & Van der Ploeg, 1982 as cited in Bakermans-Kranenburg & Van IJzendoorn, 1993). There were no differences in intelligence scores for women in different attachment categories. Rosenstein and Horowitz (1996) assessed 59 adolescents in a private psychiatric hospital, and also found no differences in WISC-R Verbal, Performance, and Full Scale scores for adolescents in different attachment categories. However, two studies have reported significant associations between attachment categories and cognitive abilities. Sagi et al. (1994) reported that in their sample of 59 Israeli students there were no differences in three intelligence-related scores (general knowledge, verbal comprehension, solution of shapes), but mathematical logic scores were significantly higher for dismissing participants than secure and preoccupied participants. Sagi et al. (1994) suggested that this finding demonstrates that dismissing individuals do not have poor cognitive abilities as compared to, in particular, secure individuals, but in fact dismissing individuals perform quite well on some tests of cognitive ability. However, the authors did not address the possibility that dismissing individuals may be using their well developed cognitive skills to successfully intellectualize a rather emotional and rejecting childhood. This

alternative is very different from the proposition that dismissing individuals are defensively repressing these difficult experiences.

Finally, Crowell et al. (1993) found that secure women had higher IQ scores than insecure women as measured with the Henmon-Nelson Test of Mental Abilities. As well, dismissing women had higher IQ scores than preoccupied women. Examination of the data indicates that the secure and dismissing group means ($n=38$) were not different and that these means were higher than the means of the preoccupied and unresolved groups ($n=12$). However, the small sample size warrants some caution: There was insufficient power to detect small or moderate differences among the 4 groups.

For the most part, previous studies have found few differences in the cognitive abilities of participants in different attachment categories (see also van IJzendoorn, Dijkstra, & Bus, 1995). However, there are several limitations of these studies. Three of the four studies were conducted using middle class or upper-middle class samples with a restricted range of intelligence scores (Bakermans-Kranenburg & Van IJzendoorn, 1993; Crowell et al., 1993; Sagi et al., 1994). Furthermore, none of the previous studies had sufficient statistical power to detect small to moderate differences between attachment categories. For example, Rosenstein and Horowitz (1996) had only 2 secure participants, and, therefore, they could only detect extremely large differences between the secure and insecure groups. Due to these limitations, there is a need to replicate the findings using continuous attachment ratings in a sample with a broad range of cognitive abilities. And finally, no study has examined the association between cognitive abilities and attachment categories as defined by Bartholomew (1990).

Hypotheses

The present study explored the reliability, construct validity, and discriminant validity of Bartholomew's four category model in a clinical sample of adolescents.

The hypotheses were as follows:

1. Consistent with previous research examining attachment representations in clinical samples, I expected an overrepresentation of insecure patterns.

2. I expected interview codings to be reliable. Consistent with the model proposed by Bartholomew (1990), I expected coders' ratings of each attachment pattern to be highly associated. I expected ratings of opposing attachment patterns (secure and fearful, as well as preoccupied and dismissing) to be negatively related, and ratings of adjacent attachment patterns to be uncorrelated (e.g., secure ratings would not be significantly related to preoccupied ratings).

3. Consistent with previous findings and theoretical descriptions of attachment representations, I did not expect to find associations between attachment patterns and WISC-III Scale and Factor scores. Specifically, I did not expect security or dismissingness to be positively associated with the WISC-III scores, and I did not expect fearfulness or preoccupiedness to be negatively associated with the WISC-III scores.

For each of the above hypotheses, I tested the mean differences among attachment categories to compare my results to previous studies. In the present study I would need 52 participants per group to have enough power to detect a medium effect size. In contrast, with continuous measures, only 28 participants are needed to detect a large effect, 85 participants are needed to detect a medium effect, and 783 participants are needed to detect a small effect (all at $p < .05$; Cohen, 1988). My sample size of 120 provided enough power to detect at least a medium effect using

continuous measures. Therefore, I also tested each hypothesis using continuous attachment ratings. Exploratory analyses of the subtests were completed only when I found significant associations between attachment and the WISC-III scores.

4. I used structural equation modeling to establish that (a) the underlying dimensions of the self- and other-models as well as the latent variables of anxiety and avoidance were measured reliably, and (b) the self- and other-models were associated with anxiety and avoidance, respectively.

The attachment ratings were used to compute scores for the underlying self- and other-model dimensions (see Figure 1 on page 4). The four attachment patterns are defined in terms of the positivity of models of the self and other. The secure pattern is defined by a positive self- and other-model, the preoccupied by a negative self-model and positive other-model, dismissing by a positive self-model and negative other-model, and the fearful by a negative self- and other-model. To compute the self-model dimension, the sum of the fearful and preoccupied ratings were subtracted from the sum of the secure and dismissing ratings. To compute the other-model dimension, the sum of the dismissing and fearful ratings were subtracted from the sum of the secure and preoccupied ratings (see Griffin & Bartholomew, 1994b).

The two coders' attachment ratings were used to assess the self- and other-model latent variables. The theoretical construct of anxiety was measured by two scales in the Ontario Child Health Study Scales (overanxious disorder, separation anxiety; Boyle, Offord, Racine, Sanford, Szatmari, & Fleming, 1993) and two scales in the Jesness Inventory (social anxiety, self confidence; Jesness, 1962). The construct of avoidance was measured by three scales in the Jesness (trust, interpersonal distance, and sociability). The self-model dimension was hypothesized to be associated with measures of anxiety and not with measures of avoidance, and

the other-model dimension was hypothesized to be associated with measures of avoidance and not with measures of anxiety.

The LISREL program provided significance tests to evaluate the fit of the data to the model. The chi-square statistic measures the discrepancy between the sample correlation matrix and the fitted correlation matrix. It is a reasonable index of fit if the sample size is sufficiently large. In the current study, the chi-square has limited power to detect a poorly fitting model and, therefore, I examined additional sample indices that are either independent of sample size or take sample size into consideration (Jöreskog & Sörbom, 1993). The Jöreskog-Sörbom Adjusted Goodness of Fit Index (AGFI) measures fit independent of sample size. It is an index comparing the fit of the observed data to the hypothesized model and no model at all (Jöreskog & Sörbom, 1993). Values greater than .90 indicate a good fit and values greater than .95 indicate an excellent fit. I also used Steiger's (1990) Root Mean Square Residual (RMR) which measures the discrepancy between the hypothesized data (i.e. the proposed model) and the observed data (i.e. the input correlation matrix; Byrne, 1989). Values less than .10 indicate a good fit and values less than .05 indicate an excellent fit. Finally, I used a single sample cross validation index (ECVI) which takes into account the number of parameters (possible paths) when assessing the fit. If the ECVI for the model is less than the ECVI for the saturated model (i.e. model with all possible paths) then the data fits the model well (Jöreskog & Sörbom, 1993).

CHAPTER II

METHOD

Participants

The present study examined the attachment representations of 120 adolescents at a residential treatment center. The sample included 43 females and 77 males with a mean age of 13.6 ($SD = 1.3$; range, 10 to 17 years).

All adolescents were referred to the center by a mental health professional after being identified as having significant behavioural problems. Approximately 85% of previous admissions were diagnosed with conduct disorder (Holland, et al., 1993), and 91% of a subsample of the present sample ($n=65$) were diagnosed with conduct disorder (Lessard, 1994).

The sample consisted of adolescents from two residential units. Adolescents from the first unit ($n=107$) were typically in residence for 4 weeks. During their stay, a team of health careworkers evaluated the adolescent's caregiving and school environments and psychological functioning. Following extensive evaluation, a team of psychiatrists, psychologists, social workers, and teachers proposed a careplan for each adolescent which included care situations and strategies (Holland et al., 1993). Adolescents in the second group ($n=13$) were typically in residence for 13 weeks. The purpose of this program was to work with the youth, their family, and the community to help the youth function in the home and community (Moore, Holland, & Moretti, 1996).

All data for this study were collected as part of an established assessment procedure by the staff in the Psychology Department from November 1993 to February 1995. The following measures were completed: a semi-structured

psychological interview, the Wechsler Intelligence Scale for Children-III (WISC-III; Wechsler, 1993), the Jesness Inventory (Jesness, 1962), and the Ontario Child Health Study Scales (OCHS; Boyle et al., 1993).

To be included in the study, adolescents participated in the intake interview and agreed to have the interview taped and coded. Seventy-nine percent of the eligible adolescents who were interviewed by psychologists in the Psychology Department from November 1993 to February 1995 agreed to participate. Of the 120 adolescents, 89 adolescents were administered the WISC-III, 115 completed the Jesness Inventory, 119 completed the OCHS scales, and 114 completed both the Jesness Inventory and the OCHS scales.

To determine if there were any differences on psychological and cognitive variables between the adolescents in the present study and adolescents typically referred to the center, I compared scores on the Jesness scales, the OCHS scales, and the IQ scale scores between two groups (using a p value of .10). The first group consisted of the adolescents in the current study ($n=120$), and the second group consisted of adolescents tested in the psychology department before November 1993 (n 's ranged from 232 to 386 depending on the variable); most of the adolescents in the second group were administered the WISC-R. There were no differences between the 2 groups on the Jesness scales, the OCHS scales, or the IQ scales.

Materials

Attachment Measure

Each adolescent was administered a semi-structured interview lasting 1-2 hours. The original intake interview was revised to include attachment related questions from the Family Attachment Interview (FAI; Bartholomew & Horowitz,

1991). Participants were asked to describe their family history, structure, and relationships, and their feelings about the importance of family relationships. In the context of their relationship with their caregivers, participants were asked to describe their reactions to various situations (e.g., separations, loss), feelings in the relationship (e.g., trust, rejection, love), and changes since childhood (e.g., "adolescent" rebellion).

The FAI was designed to assess both participants' characteristic experiences and feelings in their family relationships, as well as the internal coherence and consistency of their relationship accounts. Thus the interview provided information regarding both the content and structure of participants' attachment representations. Interviews were coded using the attachment framework proposed by Bartholomew (1990). This framework has been well validated (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994b; Scharfe & Bartholomew, 1994). Each interview was coded by two independent coders who had previously demonstrated acceptable levels of reliability. The final ratings were computed by averaging the ratings of the two coders.

Each participant's degree of correspondence to each of four prototypic attachment patterns (secure, fearful, preoccupied, and dismissing) was rated on a scale ranging from 1 (no correspondence with the prototype) to 9 (excellent fit with the prototype). The secure pattern is characterized by a capacity for intimacy while maintaining personal autonomy. The fearful pattern is characterized by an avoidance of intimacy due to anxiety concerning loss and rejection in close relationships. The preoccupied pattern is characterized by anxiety in close relationships and active pursuit of closeness and reassurance from others. Finally, the dismissing pattern is

characterized by high self-esteem and a defensive maintenance of independence and distance in close relationships.

In addition, the degree of correspondence to 25 theoretically relevant constructs were rated on 9-point scales. Using information from the interview, coders assessed the adolescent's experience with each caregiver (mother or mother figure and father or father figure) on 11 dimensions. Unless otherwise specified, a high score is indicative of a high degree of the measured dimension. *Acceptance* assessed whether the parent was supportive, trusted in times of trouble, and actively loving. The *rejection* scale assessed the extent to which the caregiver actively rejected and/or avoided the adolescent. The *neglect* scale assessed the extent to which the parent was inattentive, uninvolved, or inaccessible to the adolescent. The *consistency* scale assessed the consistency or predictability of the parent's behaviour toward the adolescent. The *expressiveness* scale assessed the degree of emotional expressiveness of the parent. The *push to achievement* scale assessed the tendency of the parent to push the adolescent to achieve some particular status or position. The *role reversal* scale assessed the extent to which the caregiver's psychological and/or physical well-being was a concern and/or responsibility of the adolescent. The *proximity seeking* scale assessed the tendency to approach and seek out proximity to the parent when distressed, ill, or afraid. The *dominance* scale assessed whether the adolescent or the parent were dominant in the relationship. A moderate score was reflective of the normal parent-adolescent power differential, a high score indicated the parent was dominant, and a low score indicated the adolescent was dominant. The *closeness* scale assessed the current closeness of the adolescent-caregiver relationship. The *quality* scale assessed the overall quality of the adolescent-caregiver relationship from birth (or first meeting) until the present time.

Ten scales assessed characteristics of the adolescents. The *separation anxiety* scale assessed the degree of anxiety felt when separated or when thinking about separating from caregivers. The *rebellion* scale assessed the degree of rebellious behaviour toward caregivers. The *caregiving* scale assessed the amount of care given to family and friends. The *positive expression* scale assessed the adolescents' expression of positive emotions. The *expression of anger* scale assessed the adolescents' expression of anger. The *crying frequency* scale assessed how often the youth reported crying. The *situation when crying* scale assessed whether the youth cried alone (low score) or in the presence of others (high score). The *emotional dependence* scale assessed the degree to which youths were emotionally dependent on their caregivers. The *trust* scale assessed the adolescents' degree of trust in interpersonal relationships. And the *self confidence* scale assessed the degree to which the adolescents felt positively about themselves.

Four scales measured the quality of the discourse during the interview. The *anger* scale assessed the degree of anger expressed toward the caregiver during the interview. The *idealization* scale assessed the degree of discrepancy between the adolescents' perception of their caregivers and the coder's inference about the actual caregiving experience of the adolescents. The *elaboration* scale assessed the amount of detail (information and feelings) disclosed during the interview. And the *coherence* scale assessed the internal consistency of the story.

Intellectual Functioning

Eighty-nine adolescents were administered the WISC-III as part of the assessment procedure. The scores on the WISC-III subtests are summed to give Verbal, Performance, and Full Scale IQ scores. The Verbal scale includes subtests which assess general verbal ability. There are 5 subtests in the Verbal IQ score:

Information, Similarities, Arithmetic, Vocabulary, and Comprehension. The average score on the Verbal scale was 87.67 ($SD = 13.76$) with a range from 46 to 122. The Performance scale includes subtests which assess nonverbal organizational skills. There are 5 subtests in the Performance IQ score: Picture Completion, Coding, Picture Arrangement, Block Design, and Object Assembly. The average score on the Performance scale was 94.69 ($SD = 15.63$) with a range from 55 to 127.

Twelve adolescents had significant discrepancies between the Verbal and the Performance scales, and, therefore, according to standard procedure, the Full Scale score was not reported. The average score on the Full scale was 89.66 ($SD = 13.72$) with a range from 59 to 113.

Four WISC-III factors have been identified in previous work: Verbal Comprehension (Information, Similarities, Vocabulary, and Comprehension), Perceptual Organization (Picture Completion, Picture Arrangement, Block Design, and Object Assembly), Freedom from Distractibility (Digit Span and Arithmetic), and Processing Speed (Coding and Symbol Search; Wechsler, 1991). There is considerable debate concerning the validity of the Freedom from Distractibility and Processing Speed factors, but both the Verbal Comprehension and Perceptual Organization factors are well accepted (Kaufman, 1994; Sattler, 1988). Using the existing data, the factor scores for Verbal Comprehension, Perceptual Organization, and Freedom from Distractibility were available; the symbol search subtest was not administered, and, therefore, the Processing Speed factor was not available. The average score on the Verbal Comprehension factor was 88.47 ($SD = 14.05$) with a range from 50 to 122. The average score on the Perceptual Organization factor was 97.60 ($SD = 15.52$) with a range from 60 to 128. The average score on the Freedom from Distractibility factor was 87.67 ($SD = 12.25$) with a range from 58 to 121.

For all data analyses, I used Full Scale, Verbal, and Performance IQ scores, as well as the Verbal comprehension, Perceptual Organization, and Freedom from Distractibility factor scores. There were several reasons for my decision. Although there is little difference between the subtests in the Verbal and Performance IQ scales and subtests which make up the corresponding factor scores, the factors are purer measures of verbal and nonverbal abilities than the Scale scores (Kaufman, 1994). These purer measures of cognitive ability may increase the likelihood of distinguishing the relative strengths and weaknesses of adolescents in the different attachment groups. However, the Scale scores were used in previous work examining the association between attachment and cognitive abilities (e.g., Rosenstein & Horowitz, 1996), and, therefore, I used the Scale scores to enable comparisons with previous findings.

Twelve adolescents were not administered the WISC-III due to previous, recent testing. There were no difference in their previous WISC scores and the WISC-III scores of the 89 adolescents administered the WISC-III during the data collection. To ensure that the administration of the WISC-III was somewhat consistent for all adolescents, I did not include the WISC data from the 12 adolescents who were not tested at the treatment center.

Psychological Functioning

The *Ontario Child Health Study Scales* (OCHS; Boyle, et al, 1993) is a 162 item questionnaire that relies on the reports of the youth for the assessment of problem behaviour. One hundred and four items are used to assess the presence and severity of symptoms. Responses are scored on a 3-point scale (0 never or not true, 1 sometimes or somewhat true, 2 often or very true). Revisions and additions to the Child Behavior Checklist (Achenbach & Edelbrock, 1981) ensured that the OCHS

measured six disorders according to DSM-III-R: overanxious disorder, separation anxiety disorder, depression, conduct disorder, oppositional defiant disorder, and attention-deficit hyperactivity disorder. I examined the scale items and found two scales -- overanxious disorder and separation anxiety disorder -- which clearly measured attachment related anxiety. Alphas for overanxious disorder and separation anxiety in the current sample were .81 and .76, respectively.

The *Jesness Inventory* (Jesness, 1962) is a 155 item personality measure designed for use with delinquent adolescents. The original scoring, as proposed by Jesness, resulted in 11 scales: social maladjustment, value orientation, immaturity, autism, alienation, manifest aggression, withdrawal-depression, social anxiety, repression, denial, and the asocial index.

There are several problems with the 11 scales proposed from the Jesness Inventory. These scales resulted from an incoherent combination of factor analysis, cluster analysis, and discriminant function analysis. Although several researchers have used the Jesness to differentiate between clinical groups (Bradley & Karwacki, 1990; Graham, 1981; Kuncze & Hemphill, 1983; Martin, 1981), other researchers have criticized the validity of the Jesness scales and proposed different factor structures (Carbonell, 1983; Martin & Fischer, 1983; Putnins, 1980; Shark & Handal, 1977; Wunderlich, 1985).

Using data from 182 cases, I conducted a factor analysis of the Jesness and was not able to confirm the original factor structure. However, the results suggested a three factor structure somewhat similar to the factor structure proposed by Wunderlich (1985). In a similar sample, Wunderlich (1985) proposed that three second-order factors (Mistrust, Social Pessimism, and Hypersensitivity) were necessary and sufficient to differentiate patterns of delinquency. The three factors in

my solution accounted for 24 % of the variance. The first factor seemed to measure distrust of authority coupled with high self confidence. The second factor seemed to measure a passive acceptance of unsatisfying relationships and low self-esteem. And the third factor seemed to reflect general distress, anxiety, and self doubt.

Unfortunately Wunderlich (1985) did not list the items in his factors, and therefore, I cannot determine if the factor solutions are comparable. Furthermore, the Jesness data are dichotomous and, ideally, dichotomous data should be analyzed using tetrachoric correlations (Lindeman, Merenda, & Gold, 1980). The computer program (LIS-COM, Bengt-Muthen) designed to compute factor analysis using tetrachoric correlations is not available on campus. In conclusion, I was not confident in the factor solution, and I explored other ways to use the Jesness data.

Scale Construction. Examination of the 155 items in the Jesness Inventory indicated that there were a number of items measuring each of the following attachment related constructs: trust in others, anxiety or distress, interpersonal distance, self confidence, and sociability. Trust was defined as a feeling that significant others are responsive, helpful, and understanding if approached for help or support. Social anxiety was defined as nervousness, worrying, and fearfulness in social contexts. Interpersonal distance was defined as the creation of emotion distance in interpersonal relationships either by actively avoiding relationships or social situations, or by denying or detaching from emotions felt in relationships. Lack of social self confidence was defined as a feeling that you are not as skilled/successful as others, or that others are more skilled and/or more successful when interacting in social situations. And sociability was defined as an interest in being in the company of others, or a sense of satisfaction or happiness resulting from being in the company of others.

To develop scales measuring these constructs, I asked 5 expert attachment coders to independently rate the 155 items. Each coder was asked to rate each item as to the degree of association with the defined construct. If the coder believed that the item was associated with the defined construct, the coder rated the item on a 4-point scale ranging from 1 (a little like the defined construct) to 4 (almost exactly like the defined construct). Coders were also asked to indicate if items needed to be reverse coded. Scale items were retained if at least 3 coders gave a rating of 2 or more.

Using a larger data set ($n=457$) from the treatment center, I conducted reliability analyses on the groups of items generated by the coders. First, I calculated tetrachoric correlation matrices for each of the scales using the items generated by the coders. I used the correlation matrices, item means, and item standard deviations to calculate the alphas for each scale. I examined the initial reliability output and removed items with item-total correlations less than .10 (Traub, 1994). I removed items with the lowest item-total correlation, one at a time, and if necessary repeated the process until all items had item-total correlations above .10. Resulting items for each of the 5 scales are listed in Appendix A. The trust scale has 16 items with an alpha of .82. The social anxiety scale has 10 items with an alpha of .72. The self-confidence scale has 6 items with an alpha of .57. The sociability scale has 4 items with an alpha of .43. The interpersonal distance scale has 8 items with an alpha of .66. The reliabilities for the present sample ($n=115$) were as follows: trust, .82; social anxiety, .72; self confidence, .55; sociability, .48, and interpersonal distance, .68.

CHAPTER III

RESULTS

Interview attachment proportions and ratings

As expected, I found an overrepresentation of insecure patterns in this sample. Ninety-three percent of the adolescents were classified as predominantly insecure (see Table 1). Forty-three percent were fearful, 28% were preoccupied, 22% were dismissing, and 7% were secure. Consistent with previous research, there were gender differences in the observed proportions of the preoccupied and dismissing groups. Females were more likely than males to be classified as preoccupied ($z = 2.5$, $p < .05$), and males were more likely than females to be classified as dismissing ($z = 2.9$, $p < .01$).

The average ratings on the continuous attachment scales were consistent with the categorical data. The average rating on the security scale was 2.70; fearful was 4.14; preoccupied was 3.63; and dismissing was 3.13. The average rating on the secure scale was less than the fearful ($t(119) = -7.38$, $p < .001$), preoccupied ($t(119) = -4.73$, $p < .001$), and dismissing ($t(119) = -1.84$, $p < .10$) ratings. The average rating on the fearful scale was greater than the preoccupied ($t(119) = 1.92$, $p < .10$) and dismissing ($t(119) = 3.92$, $p < .001$) ratings, and the average rating on the preoccupied scale was greater than the dismissing rating ($t(119) = 1.88$, $p < .10$). In addition, the females' ratings on the preoccupied scale were greater than the males' ratings on the preoccupied scale ($t(118) = 3.78$, $p < .001$), and males' ratings on the dismissing scale were greater than females' ratings on the dismissing scale ($t(118) = 3.44$, $p < .001$).

Table 1

Proportions of Participants in Each Attachment Category for Total Sample and by Gender

	Total Sample (n=120)	Female (n=43)	Male (n=77)
Secure	7	5	8
Fearful	43	47	42
Preoccupied	28	42 ^a	21 ^b
Dismissing	22	7 ^a	30 ^b

Note. Females' and males' proportions with different superscripts are significantly different ($p < .05$).

Reliability of the attachment ratings

I examined the data several ways to test whether the interview attachment codings were reliable. Using the continuous ratings from both coders, I computed alphas and tested for mean differences. Standardized alphas were high for each attachment pattern (secure, .78; fearful, .78; preoccupied, .84; and dismissing, .84). There were no differences between the average ratings given by the two coders. In fact, in no case did the means differ by more than 0.18.

Using the categorical data, I examined the coders' agreement on predominant attachment category. Proportions of agreement for attachment categories were computed two ways. First, the overall proportion of agreement was calculated. In a 2 X 2 table, the overall proportion of agreement refers to agreement on the presence and absence of the category. Overall, the two coders agreed 86% of the time as to whether participants were or were not categorized in a particular attachment category. See Table 2. However, the overall proportion of agreement is influenced by *chance* agreement, which also is a function of the base rates of the categories (Fleiss, 1981). If the base rate of the category is relatively small, the overall proportion of agreement is likely to be inflated (Fleiss, 1981). Therefore, in this sample, the overall proportions of agreement for the secure, preoccupied, and dismissing categories are likely to be inflated. Kappa is the only measure of agreement that controls for the degree of chance agreement and, therefore, kappa was calculated to estimate the proportion of agreement controlling for the degree of chance agreement. Values between .40 and .75 indicate fair to good agreement beyond chance (Landis and Koch, 1977a, as cited in Fleiss, 1981).

Table 2

Proportions of Agreement for Each Attachment Category

	Overall agreement	Kappa
Secure	92%	.46
Fearful	80%	.59
Preoccupied	83%	.57
Dismissing	89%	.68
Average	86%	.59

The kappas were .46 for secure, .59 for fearful, .57 for preoccupied, and .68 for dismissing, therefore indicating fair to good agreement on each predominant attachment category.

I also examined the means of the four attachment ratings by attachment category (see Table 3). For each attachment group, the corresponding attachment rating was significantly higher than the non-corresponding ratings.

Consistent with the model proposed by Bartholomew (1990), I expected ratings of opposing attachment patterns (secure and fearful, as well as preoccupied and dismissing) to be negatively associated, and ratings of adjacent attachment patterns to be unrelated (e.g., secure and dismissing ratings). This hypothesis was only partially supported. As hypothesized, the association between preoccupied and dismissing ratings was negative ($r(119) = -.40, p < .001$); however, the correlation between the secure and fearful ratings was non-significant ($r(119) = -.08, ns$). There were also unexpected negative correlations between some attachment patterns adjacent to one another in the model (secure/dismissing, $r(119) = -.45, p < .001$; preoccupied/fearful, $r(119) = -.43, p < .001$; and fearful/dismissing, $r(119) = -.39, p < .001$). There was no relationship between secure and preoccupied ratings.

In summary, the continuous and categorical ratings were reliable. Although the alphas for the four continuous ratings were all high, coders were less likely to agree on the secure category as compared to the other three categories. As well, there were several unexpected correlations between attachment ratings that were not consistent with the theoretical model. This finding may be due to the distribution across the patterns and/or the particular nature of the sample.

Table 3

Means and Standard Deviations of Attachment Ratings by Group

	Attachment Group							
	Secure		Fearful		Preoccupied		Dismissing	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Continuous Ratings								
Secure	5.50 ^a	0.85	2.67 ^b	1.03	2.69 ^b	0.97	1.90 ^c	0.77
Fearful	2.94 ^a	0.82	5.70 ^b	0.80	2.93 ^a	1.01	2.96 ^a	0.97
Preoccupied	3.06 ^a	1.05	2.93 ^b	1.02	5.93 ^c	0.85	2.21 ^a	1.05
Dismissing	2.19 ^a	1.07	2.44 ^a	1.05	2.38 ^a	1.02	5.77 ^b	1.07

Note. Means (across rows) with different superscripts are significantly different ($p < .05$).

Family and Personal Characteristics.

In this section, I examined the associations between the attachment ratings and the family and personal characteristics of the adolescents. Since both sets of codings were rated by the same interview coders, these findings are presented for descriptive purposes only. I completed these analyses to get a sense of the adolescents' family backgrounds and personalities, and to compare the characteristics of adolescents with different attachment patterns to characteristics of college students with different attachment patterns. Using coders' ratings of family and personal characteristics, I examined whether adolescents with different attachment patterns were judged to have different caregiving environments and different personal characteristics. Table 4 shows the sample means, standard deviations, and alphas of the scales. Table 5 shows the means and standard deviations on each scale for adolescents classified in each of the four attachment groups. Table 6 shows the correlations between the continuous attachment ratings and the scales. As previously discussed, there is little power to detect small or moderate differences between the four groups. Therefore, I have highlighted any correlational results that supplement group results.

Secure adolescents reported better relationships with their mothers than insecure adolescents as indicated by moderate levels of maternal acceptance, proximity seeking, closeness, and quality. There were no group differences on the paternal scales, but security ratings were positively associated with proximity seeking and quality of relationship with fathers. Secure adolescents' attachment interviews were elaborative and coherent. They were judged to show moderate levels of separation anxiety, caregiving, dependence, trust, and self-confidence.

Table 4a

Means, Standard Deviations, and Alphas of Interview Ratings

Scale	<u>M</u>	<u>SD</u>	α
Mother			
Acceptance	4.10	1.21	.67
Rejection	4.56	1.73	.77
Neglect	3.73	1.62	.70
Consistency	4.34	1.02	.67
Expressiveness	5.98	1.30	.68
Push to achievement	1.71	1.11	.44
Role reversal	2.27	1.36	.66
Proximity seeking	3.94	1.64	.77
Dominance	5.31	1.34	.69
Closeness	3.82	1.52	.80
Quality of relationship	3.47	1.15	.83
Father			
Acceptance	3.44	1.39	.85
Rejection	4.94	1.94	.79
Neglect	4.70	2.06	.79
Consistency	4.33	1.00	.53

Table 4b

Scale	<u>M</u>	<u>SD</u>	α
Father continued			
Expressiveness	5.77	1.22	.52
Push to achievement	1.76	1.22	.50
Role reversal	1.58	1.26	.84
Proximity seeking	3.05	1.63	.80
Dominance	6.02	1.28	.76
Closeness	3.04	1.57	.88
Quality of relationship	2.96	1.27	.88
Adolescent Characteristics			
Separation Anxiety	5.56	1.53	.74
Rebellion	5.46	1.40	.61
Caregiving	4.60	1.55	.74
Positive Expression	4.07	1.24	.76
Expression of Anger	6.28	1.44	.77
Crying Frequency	3.81	1.61	.79
Situation when crying	3.57	1.65	.76
Dependence	5.62	1.43	.57
Trust	3.90	1.19	.63
Self confidence	4.44	1.20	.77

Table 4c

Scale	<u>M</u>	<u>SD</u>	α
Quality of Discourse			
Anger toward Mother	3.39	2.16	.85
Anger toward Father	3.66	2.35	.87
Idealization of Mother	3.08	1.59	.71
Idealization of Father	2.72	1.68	.81
Elaboration	5.75	1.67	.90
Coherence	4.45	0.93	.59

Table 5a

Means and Standard Deviations of Interview Ratings by Group

	Secure		Fearful		Preoccupied		Dismissive	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Mother								
Acceptance	5.19 ^a	1.51	3.98 ^b	1.27	4.26 ^b	1.07	3.77 ^b	0.96
Rejection	3.88	1.90	4.77	1.71	4.47	1.67	4.46	1.81
Neglect	2.75	1.36	3.91	1.65	3.69	1.52	3.75	1.73
Consistency	4.44	1.49	4.24	1.05	4.42	0.98	4.38	0.85
Expressiveness	6.38	1.41	5.91	1.19	6.21	1.41	5.66	1.32
Push to achievement	2.19	1.33	1.68	1.03	1.75	1.36	1.57	0.73
Role reversal	2.38 ^{ab}	0.95	2.27 ^a	1.43	2.74 ^a	1.52	1.54 ^b	0.64
Proximity seeking	4.75 ^a	1.87	3.63 ^b	1.05	5.16 ^a	1.69	2.66 ^c	1.24
Dominance	5.43 ^{ab}	1.43	5.72 ^a	1.26	5.18 ^{ab}	1.26	4.58 ^b	1.32
Closeness	4.81 ^a	1.77	3.67 ^a	1.20	4.67 ^b	1.74	2.80 ^c	0.97
Quality	4.38 ^a	1.75	3.28 ^b	1.06	3.66 ^{ab}	1.14	3.27 ^{ab}	0.98
Father								
Acceptance	4.08	1.43	3.20	1.58	3.52	1.20	3.68	1.15
Rejection	5.92 ^{ab}	1.72	5.30 ^a	2.12	4.89 ^{ab}	1.77	3.98 ^b	1.55
Neglect	5.58	1.99	4.57	2.16	4.92	1.98	4.35	1.99

Table 5b

	Secure		Fearful		Preoccupied		Dismissing	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Father continued								
Consistency	4.17 ^{ab}	0.68	4.23 ^a	1.15	4.18 ^{ab}	0.89	4.80 ^b	0.73
Expressiveness	5.41	1.46	5.76	1.22	5.96	1.22	5.63	1.18
Push to achievement	1.92	1.28	1.72	1.30	1.83	1.36	1.70	0.78
Role reversal	1.42 ^{ab}	0.49	1.40 ^a	0.80	2.16 ^b	1.92	1.15 ^a	0.40
Proximity seeking	2.92 ^{ab}	1.16	2.62 ^a	1.43	4.02 ^b	1.84	2.55 ^a	1.19
Dominance	5.58 ^{ab}	1.28	6.46 ^a	1.20	5.88 ^{ab}	1.26	5.43 ^b	1.26
Closeness	3.17	1.60	2.99	1.52	3.24	1.76	2.82	1.44
Quality	3.67	1.63	2.89	1.40	2.76	1.17	3.21	0.97
Adolescent Characteristics								
Separation Anxiety	5.63 ^a	0.64	6.03 ^a	1.18	6.29 ^a	1.25	3.69 ^b	1.07
Rebellion	5.50 ^{ab}	1.07	4.79 ^a	1.32	5.90 ^b	1.34	6.15 ^b	1.21
Caregiving	5.31 ^a	0.88	4.87 ^a	1.34	5.18 ^a	1.60	3.12 ^b	1.01
Positive Expression	5.44 ^a	0.90	3.75 ^b	1.03	4.63 ^a	1.25	3.52 ^b	1.13
Expression of Anger	6.06 ^{ab}	0.68	5.76 ^a	1.59	6.97 ^b	1.02	6.42 ^{ab}	1.41
Crying Frequency	4.31 ^a	0.80	4.12 ^a	1.47	4.50 ^a	1.62	2.21 ^b	0.78
Situation when crying	4.19 ^a	1.13	3.17 ^b	1.08	5.18 ^c	1.58	2.10 ^d	0.82

Table 5c

	Secure		Fearful		Preoccupied		Dismissing	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Adolescent Characteristics continued								
Dependence	5.50 ^a	0.71	6.04 ^a	1.02	6.50 ^b	1.04	3.69 ^c	0.8
Trust	5.50 ^a	1.04	3.68 ^b	0.97	4.47 ^c	1.17	3.08 ^d	0.81
Self Confidence	5.88 ^a	0.74	3.78 ^b	0.95	4.34 ^c	1.01	5.42 ^a	0.95
Quality of Discourse								
Anger toward mother	3.13	2.15	3.30	2.30	3.35	2.15	3.72	1.98
Anger toward father	3.42	2.04	3.59	2.53	3.77	2.19	3.73	2.39
Idealization of mother	2.56 ^{ab}	1.08	2.95 ^a	1.52	3.74 ^b	1.72	2.60 ^a	1.47
Idealization of father	2.25 ^{ab}	1.04	2.35 ^a	1.40	3.33 ^b	1.91	2.67 ^{ab}	1.82
Elaboration	7.06 ^a	0.62	5.36 ^b	1.48	6.99 ^a	1.27	4.50 ^c	1.38
Coherence	6.25 ^a	0.60	4.60 ^b	0.78	4.18 ^c	0.71	3.96 ^c	0.84

Note. Means with different superscripts are significantly different ($p < .05$).

Table 6a

Correlations Between Attachment Ratings and Interview Ratings

	Secure	Fearful	Preoccupied	Dismissing
Mother				
Acceptance	.28**	-.15	.10	-.16 ⁺
Rejection	-.16 ⁺	.25**	-.02	-.09
Neglect	-.18 ⁺	.05	.02	.06
Consistency	.00	-.08	-.03	.03
Expressiveness	.10	-.10	.23*	-.11
Push to achievement	.10	.04	.02	-.10
Role reversal	.08	-.08	.39***	-.25**
Proximity seeking	.22*	-.24**	.57***	-.41***
Dominance	.09	.34***	-.09	-.27**
Closeness	.27**	-.15	.40***	-.41***
Quality	.24**	-.20*	.09	-.09
Father				
Acceptance	.16	-.19	.02	.01
Rejection	.04	.17	.05	-.19*
Neglect	-.02	-.07	.07	.05

Table 6b

	Secure	Fearful	Preoccupied	Dismissing
Father continued				
Consistency	.05	-.02	-.14	.15
Expressiveness	-.09	.00	.09	-.08
Push to achievement	-.02	.05	.06	-.13
Role reversal	.10	-.21*	.36***	-.15
Proximity seeking	.16	-.32**	.45***	-.22*
Dominance	-.06	.35***	-.06	-.28**
Closeness	.16	-.07	.17+	-.20*
Quality	.24*	-.03	-.12	.04
Adolescent Characteristics				
Separation Anxiety	.19*	.28**	.49***	-.74***
Rebellion	-.18*	-.42***	.22*	.33***
Caregiving	.41***	.06	.40***	-.62***
Positive Expression	.47***	-.29**	.39***	-.34***
Expression of Anger	-.19*	-.36***	.36***	.17+
Crying Frequency	.09	.20*	.44***	-.58***
Situation when crying	.19*	-.22*	.72***	-.53***

Table 6c

	Secure	Fearful	Preoccupied	Dismissing
Adolescent Characteristics continued				
Dependence	.19*	.24**	.53***	-.78***
Trust	.55***	-.18+	.30**	-.46***
Self Confidence	.37***	-.59***	.17+	.45***
Quality of Discourse				
Anger toward Mother	-.10	-.04	.01	.16+
Anger toward Father	-.14	-.07	.07	.14
Idealization of Mother	-.12	-.07	.34***	-.20*
Idealization of Father	-.06	-.18+	.28**	-.09
Elaboration	.44***	-.26**	.59***	-.44***
Coherence	.75***	.09	-.10	-.37***

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

In summary, I found that security, as compared to insecurity, was associated with relatively better relationships with mothers, and a relatively positive view of self in relationships.

The fearful adolescents reported poor relationships with their mothers as indicated by low acceptance, proximity seeking, closeness, and quality. They also reported relatively high maternal role reversal and dominance. Fearfulness was also associated with maternal rejection. Fearful adolescents' fathers were also rated as rejecting and dominant, and consequently these adolescents did not tend to seek proximity with their fathers. Fearfulness was also negatively associated with paternal role-reversal. Fearful adolescents were judged to have moderate levels of maternal idealization, elaboration, and coherence. Fearfulness was negatively associated with paternal idealization. Fearful adolescents were judged to have moderate levels of separation anxiety, and low levels of rebellion, expression of positive emotions, trust, and self-confidence. Fearfulness was also negatively associated with expression of anger, and positively associated with crying frequency, crying alone, and dependence. In summary, fearfulness was associated with especially negative childhood experiences, as well as low self confidence coupled with a passive acceptance that others are untrustworthy and unresponsive.

The preoccupied adolescents reported low maternal acceptance, and moderate proximity seeking and closeness. Furthermore, preoccupied ratings were positively associated with maternal expressiveness and role-reversal. Preoccupied adolescents also reported relatively high paternal role-reversal and proximity seeking. Their attachment interviews were highly elaborative with high idealization of both parents and relatively low coherence. They were judged to have moderate levels of separation anxiety, rebellion, caregiving, trust, frequency of crying, and expression of

positive emotions, and relatively high levels of expression of anger, tendency to cry in the presence of others, and dependence. In summary, preoccupied adolescents were judged to have intense, conflictual relationships with both parents. In addition, they were extremely expressive, anxious, and rebellious.

The dismissing adolescents reported low levels of maternal acceptance, role-reversal, proximity seeking, and closeness. Dismissingness was negatively associated with maternal dominance. Dismissing adolescents reported low levels of paternal rejection and role-reversal, and moderate levels of paternal consistency and dominance. Their attachment interviews were neither elaborative nor coherent and they reported low levels of maternal idealization. They also reported low levels of separation anxiety, caregiving, expression of positive emotions, frequency of crying, dependence, and trust. They were judged to have moderate levels of self-confidence and relatively high levels of rebellion. Dismissingness was positively associated with expression of anger and self-confidence. In summary, the dismissing ratings were associated with poor maternal relationships, and a non-expressive, yet confident, rebellion from parents.

Cognitive Abilities

Corresponding WISC-III Scale and Factor scores were highly related. Subtests in the Verbal Scale Score are Information, Similarities, Vocabulary, Comprehension, and Arithmetic; the Verbal Comprehension Factor does not include the arithmetic subtest. Subtests in the Performance Scale Score are Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Coding; the Perceptual Organization Factor does not include the coding subtest. The corresponding correlations between the Scale and Factor scores were high (verbal, $r(88) = .98, p < .001$; nonverbal, $r(88) = .96, p < .001$).

Table 7

Mean WISC Scale and Factor Scores Across the Four Attachment Categories

	Secure	Fearful	Preoccupied	Dismissing
Scale Scores				
Full Scale	96.14	88.13	89.09	90.47
Verbal Scale	95.86	85.40	88.67	87.45
Performance Scale	97.43	95.00	95.11	92.60
Factor Scores				
Verbal Comprehension	96.71	85.94	89.63	88.20
Perceptual Organization	99.00	98.00	98.00	95.90
Freedom From Distractibility	89.57	87.74	87.58	87.00

Note. For Full Scale Scores sample sizes are as follows: secure 7, fearful 30, preoccupied 23, dismissing 17. For Verbal and Performance Scale Scores sample sizes are as follows: secure 7, fearful 35, preoccupied 27, and dismissing 20. For Verbal Comprehension the sample sizes are as follows: secure 7, fearful 33, preoccupied 27, dismissing 20. For Perceptual Organization the sample sizes are as follows: secure 7, fearful 34, preoccupied 27, dismissing 20. For Freedom from Distractibility the sample sizes are as follows: secure 7, fearful 31, preoccupied 26, dismissing 19.

To test whether there were mean differences in cognitive ability across the four attachment groups, I conducted ANOVAs using the WISC-III Scale and Factor scores. The F statistics were not significant. However, examination of the means in Table 7 indicates that the secure group scored consistently higher on the WISC-III scales. As previously discussed, there is insufficient power to detect small to moderate differences between the four attachment categories.

Correlations between continuous attachment ratings and cognitive abilities are presented in Table 8. With one exception, there were no significant associations between attachment ratings and cognitive abilities. The exception was a positive relationship between the Verbal Scale score and the security rating ($r(88) = .22, p < .05$). These correlations were not substantially different when I selected only those adolescents who had all WISC-III Scale and Factor scores ($n=76$).

To explore the positive association between security and the Verbal scale, I examined correlations between security ratings and the Verbal subscales (Information, Similarities, Arithmetic, Vocabulary, and Comprehension). Security was associated with Comprehension only ($r(87) = .38, p < .001$).

The Comprehension subtest assesses individuals' ability to provide socially appropriate responses to a variety of problems or tasks (Kaufman, 1994). The items range from simple, objective questions (e.g., Why do cars have seatbeats?) to more emotional events or socially sanctioned behaviours (e.g., Tell me some reasons why games have rules?). Kaufman (1994) proposed that comprehension scores may be influenced by three variables. First, he suggested that the development of good comprehension skills may be influenced by the home environment. In particular, children with good comprehension skills and children from good homes are typically "emotionally stable [with a] balanced attitude and orientation".

Table 8

Correlations Between Attachment Ratings and WISC-III Scale and Factor Scores

	Secure	Fearful	Preoccupied	Dismissing
Scale Scores				
Full Scale	.16	-.07	-.02	.05
Verbal Scale	.22*	-.14	.06	.01
Performance Scale	.05	.01	.01	-.02
Factor Scores				
Verbal Comprehension	.20+	-.17	.08	.03
Perceptual Organization	.01	.01	.01	-.01
Freedom From Distractibility	.14	.02	-.01	-.00

Note. For Full Scale Scores, the sample size was 77, and for Verbal and Performance Scale Scores, the sample size was 89. For Verbal Comprehension Factor Scores the sample size was 87, for Perceptual Organization Factor Scores the sample size was 88, and for Freedom from Distractibility the sample size was 83.

+ $p < .10$. * $p < .05$.

Second, he proposed that comprehension may be associated with social adjustment but warned testers to find *corroborating evidence*. Finally, he noted the possible association between elaboration and comprehension. In particular, he distinguished between children who spontaneously respond to questions and children who need excessive prompting. In summary, he proposed that an adequate social environment and the ability to spontaneously respond to the questions with some degree of elaboration was necessary for children to develop good comprehension skills.

Similarly, both an adequate social environment and a coherent and elaborative story of childhood are associated with security. Secure individuals are socially sensitive and willing and able to spontaneously elaborate about their childhood experiences; they may also be more likely than insecure individuals to elaborate on other topics during other types of assessments. Secure individuals are also likely to be sociable during the administration of interviews or other assessments. Therefore, it is not clear whether security and verbal comprehension are directly associated or are indirectly associated due to their mutual relationship with a third variable, such as elaboration or sociability.

To explore the association between security and comprehension, I examined correlations between comprehension, the interview ratings of elaboration and coherence, and the sociability scale from the Jesness. I found that comprehension was associated with elaboration ($r(87) = .35, p < .01$) and sociability ($r(87) = .31, p < .01$). To test whether the association between comprehension and security is due to their mutual association with elaboration, I partialled out the effects of elaboration. The partial correlation between comprehension and security controlling for elaboration was significant ($r(82) = .25, p < .01$). Although security is not significantly associated with sociability in this sample, I also computed a partial correlation between

comprehension and security controlling for sociability. This correlation was also significant ($r(82) = .36, p < .001$). Therefore, I conclude that the relationship between security and comprehension is not due to individual differences in the tendency to elaborate or to be sociable.

Model of attachment dimensions

Using the attachment ratings from each coder, I computed the self- and other-model dimensions. To test the measurement model, Pearson product-moment correlations among the four derived dimension variables were submitted to a Confirmatory Factor Analysis (CFA) program using the LISREL program.

A CFA of the attachment ratings verified the hypothesized two-dimensional underlying structure (see Figure 2). The latent variables of the self- and other-model are represented by circles. Each is measured by two methods (the coders' ratings) which are represented by the squares. The coders' ratings loaded highly on the appropriate dimensions, thus indicating that the latent variables were reliably measured by the observed variables. I also estimated the correlation between the two latent variables ($r = -.37$).

Overall, the model fit the data well. The chi-square was non-significant ($\chi^2(1, N = 114) = .98, p = .32$). The AGFI value of .96 indicated an excellent fit between the model and the data. The RMR estimate of .01 indicated an excellent fit. Finally, the ECVI for the model (.17) was less than the ECVI for the saturated model (.18).

To test the measurement model of the avoidance and anxiety variables, Pearson product-moment correlations among the seven attachment-relevant personality variables were submitted to the CFA program. I tested whether 1) the variables social anxiety, self confidence, over-anxious and separation anxiety loaded

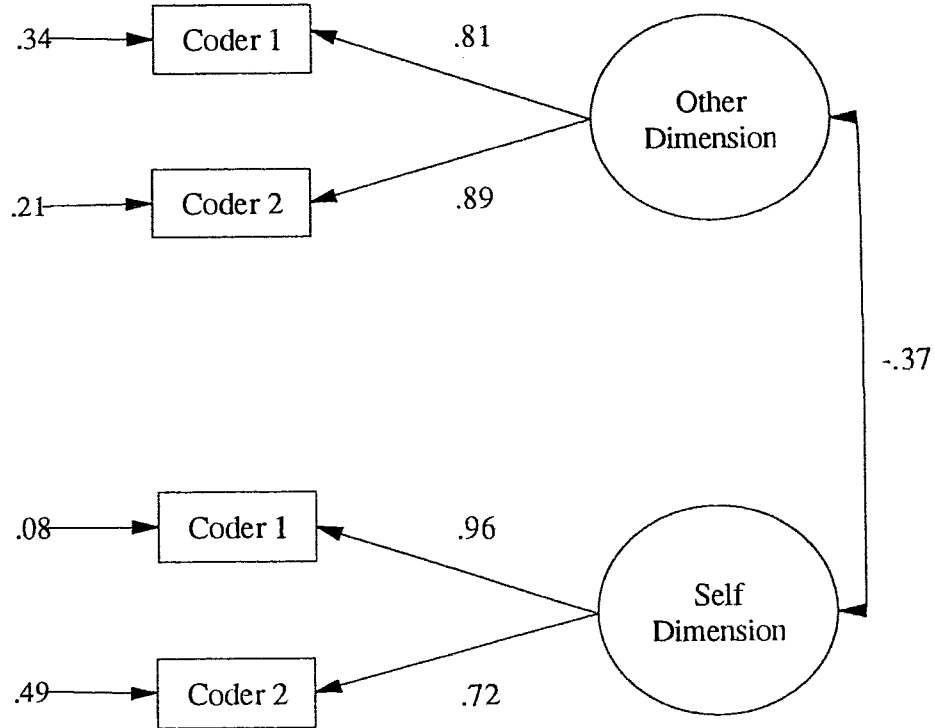


Figure 2. Structural model of self- and other-model dimensions.

on the latent variable of anxiety, and 2) trust, sociability, and interpersonal distance loaded on the latent variable of avoidance.

A CFA of the personality variables verified the hypothesized underlying structure (see Figure 3). The latent variables of anxiety and avoidance are represented by circles. The scales loaded moderately to highly on the appropriate latent variables, thus indicating that the latent variables were reliably measured by the observed variables. I also estimated the correlation between anxiety and avoidance ($r = .41$).

Overall, the model fit the data well. The chi-square statistic was non-significant ($X^2(13, N = 114) = 18.31, p = .15$), and the AGFI value of .91 indicated an excellent fit between the model and the data. The RMR estimate was .05, indicating excellent fit. Finally, the ECVI for the model (.43) is less than the ECVI for the saturated model (.50).

To test the model linking the attachment dimensions and the latent variables of anxiety and avoidance, I submitted the Pearson product-moment correlations among the four attachment dimensions and the seven attachment-relevant personality variables to the CFA program. See Table 9 for the input correlation matrix.

A CFA of the attachment dimensions and the personality variables is presented in Figure 4. The latent variables of the self-model, the other-model, anxiety, and avoidance are represented by circles. All measures of the latent variables loaded moderately to highly on the appropriate dimensions, indicating that the latent variables were reliably measured by the observed variables. The significant chi-square ($X^2(38, N = 114) = 53.79, p = .05$) indicated a somewhat poor fit of the data to the model. However, the other fit indices contradicted this finding. The AGFI value of .87 and the RMR estimate of .07 indicated a good fit. As well, the ECVI for the

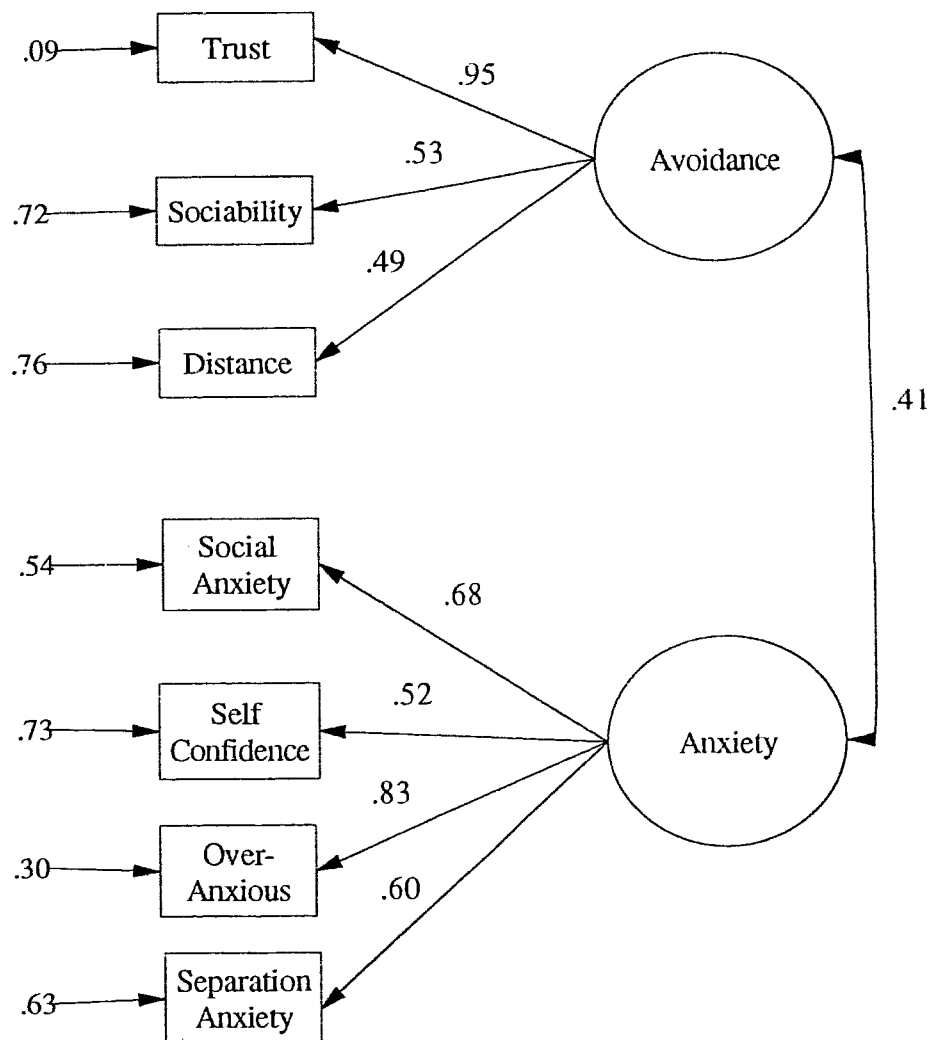


Figure 3. Structural model of the latent variables of anxiety and avoidance.

Table 9

Correlation Matrix used in Confirmatory Factor Analysis

	1	2	3	4	5	6	7	8	9	10	11
1. Other1	1.0										
2. Other2	.72	1.0									
3. Self1	-.29	-.32	1.0								
4. Self2	-.19	-.25	.69	1.0							
5. Trust	-.14	-.01	.01	-.06	1.0						
6. Sociable	-.02	.11	-.13	-.11	.50	1.0					
7. Interpersonal Distance	-.09	.01	.10	.01	.47	.22	1.0				
8. Social Anxiety	.04	.20	-.22	-.26	.36	.18	.11	1.0			
9. Self Confidence	-.01	-.08	-.10	-.20	.29	.19	.09	.35	1.0		
10. Separation Anxiety	.19	.24	-.37	-.43	.27	.33	.11	.55	.45	1.0	
11. Overanxious Disorder	.12	.11	-.38	-.45	.18	.13	.05	.42	.22	.54	1.0

model (.97) is less than the ECVI for the saturated model (1.17). Therefore, I conclude that the model fits moderately well.

The results are presented in Figure 4. The standardized parameter estimates support the hypothesized relationship between the self-model dimension and anxiety ($t(38) = -4.03, p < .05$). However, the hypothesized relationship between the other-model dimension and avoidance was not supported. As expected, the paths between anxiety and the other-model and between avoidance and the self-model were not significant.

To further explore the lack of association between avoidance and the other-model dimension, I examined the association between the four attachment ratings and the seven scales measuring avoidance. Few correlations between attachment patterns and the measures of avoidance were significant². However, security was negatively associated with distance ($r(114) = -.16, p < .10$), and dismissingness was positively associated with distance ($r(114) = .17, p < .10$). Females' and males' data were also analyzed separately. The correlations with the females' data were more consistent with the hypothesized association between the other-model and avoidance; however, none of the correlations reached significance.

There are several possible explanations for a lack of association between attachment and avoidance. First, all studies demonstrating an association between the other-model and interpersonal avoidance have been conducted with young adults. It is possible that individuals' ability to report their perceptions of others is a developmental task that children and young adolescents have not mastered. A related issue is that it may be more difficult to assess how one feels about relationships with others as compared to internal feelings of anxiety. The avoidance items measured feelings and motivations in the context of relating to others, and these adolescents

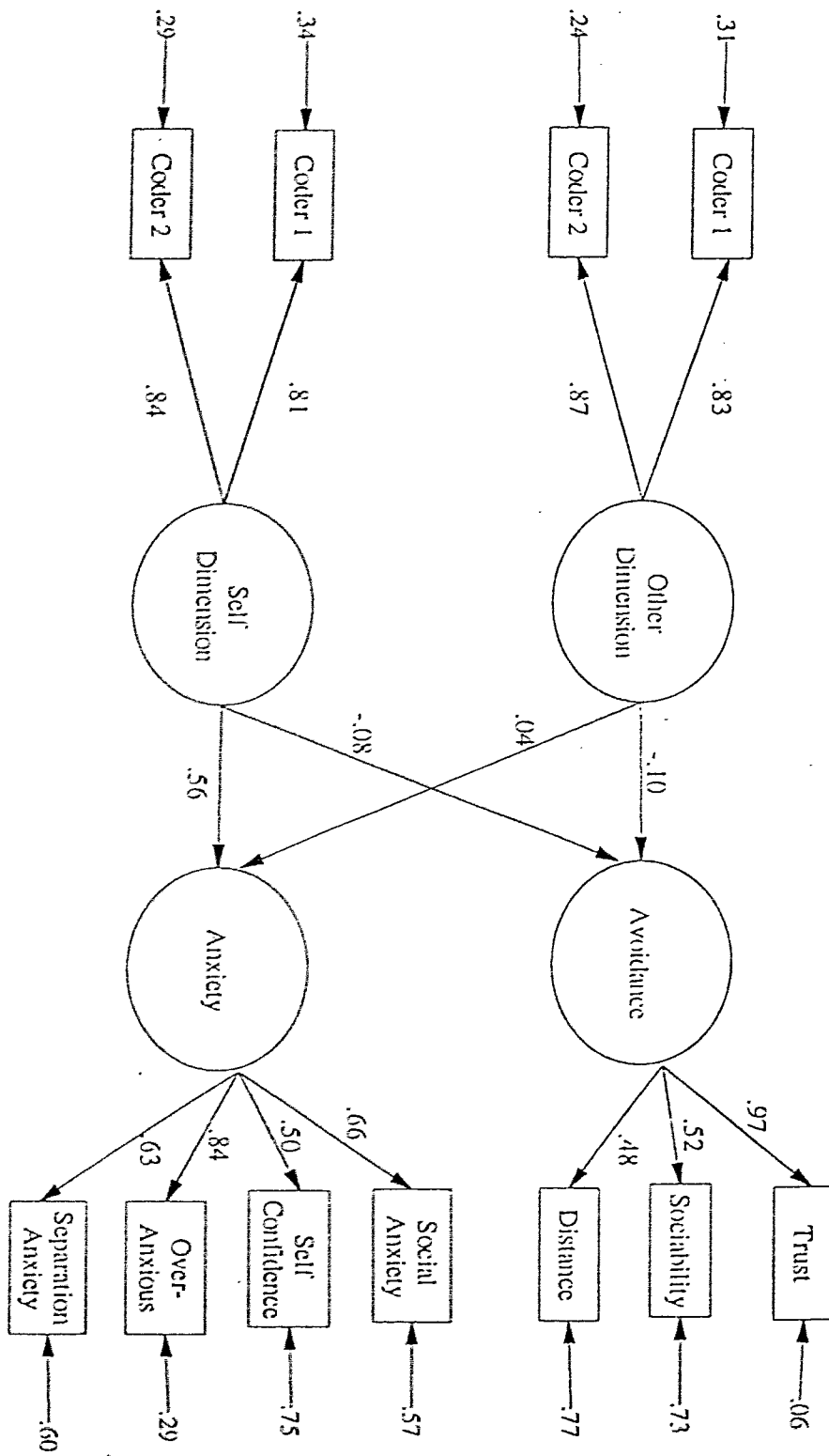


Figure 4. Structural model relating attachment dimensions to latent variables of anxiety and avoidance.

may have found this task more difficult than reporting on their internal feelings. And finally, high psychological distress may overwhelm individuals with their internal states, thus making it difficult to accurately perceive their interpersonal relationships with others. Therefore, age, cognitive abilities, or psychological distress may suppress the association between attachment ratings and measures of avoidance.

I calculated correlations between the attachment ratings and age, IQ scores, and severity of psychological symptoms³. Age was not associated with the four attachment ratings. As previously described, security was associated with Verbal IQ scores. Severity of symptoms was associated with fearfulness ($r(114) = .26, p < .01$), preoccupiedness ($r(114) = .24, p < .05$), and dismissingness ($r(114) = -.33, p < .001$).

The zero-order correlations between measures of attachment and avoidance were slightly different for the subsample of participants with WISC-III scores. Security was not associated with distance ($r(86) = -.15, p < .18$), and dismissingness was positively associated with distance ($r(86) = .24, p < .05$). To determine whether Verbal IQ was suppressing the relationship between attachment and measures of avoidance, I computed partial correlations between the attachment ratings and the 3 avoidance scales controlling for Verbal IQ. The partial order correlations were virtually identical to the zero order correlations.

Next, I correlated the attachment ratings and the avoidance scales controlling for severity of symptoms. The partial order correlations were somewhat more consistent with expectations than the zero order correlations. There was a negative association between security and interpersonal distance ($r(111) = -.14, p < .10$), a negative association between fearfulness and interpersonal distance ($r(111) = -.21, p < .05$), a positive association between preoccupiedness and trust ($r(111) = .13, p < .10$), a negative association between dismissingness and trust ($r(111) = -.20, p < .05$),

and a positive association between dismissingness and interpersonal distance ($r(111) = .27, p < .05$).

Although the sociability scale loaded moderately onto the latent variable of avoidance (path weight = .52), sociability was not associated with the four attachment ratings. Examination of the average sociability ratings indicated that secure and fearful adolescents tended to report low sociability, and preoccupied and dismissing adolescents tended to report high sociability ($t(111) = 1.7, p < .10$). To further explore this lack of expected association, I examined other items in the OCHS that may be associated with the tendency to seek out and socialize with others. In summary, security and fearfulness were positively associated with reporting that problems (as reported in the OCHS) caused difficulties in family relationships. Preoccupiedness was positively associated with reporting that problems caused difficulties in peer relationships. Dismissingness was negatively associated with reporting that problems caused difficulties in both family and peer relationships. Furthermore, dismissingness was positively associated with spending time with friends and reporting a greater number of friends. These findings suggest that secure and fearful adolescents were particularly concerned with family relationships, whereas preoccupied and dismissing adolescents were concerned with peer relationships. Examination of the avoidance items indicated that some items referred directly to behaviours with caregivers or authority figures and some did not. None of the items in the sociability or interpersonal distance scale directly referred to caregivers or authority figures. Therefore, there is no way to determine who adolescents were thinking of when they completed these scales. It may be that secure and fearful adolescents tended to think of family members, and preoccupied and dismissing adolescents tended to think of peers.

In summary, I found that, as expected, the self-model dimension was associated with measures of anxiety. However, the other-model dimension was not associated with measures of avoidance. Exploratory analyses indicated that, to some extent, severity of psychological distress suppressed the associations between attachment and measures of avoidance. Furthermore there were some problems with the self-report assessments of avoidance.

CHAPTER IV

DISCUSSION

Despite the fact that Bowlby's initial interest in attachment stemmed from his wish to understand psychopathology, only a few studies in adult attachment have examined attachment in clinical samples (Fonagy et al., 1996; Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996). In addition, very few studies have examined measurement issues in clinical samples. For example, in a recent special issue of Journal of Consulting and Clinical Psychology, several researchers examined attachment using the AAI in adolescent and adult clinical samples, and yet none of the researchers questioned whether the AAI was a reliable tool to assess attachment representations in clinical samples. In fact, one study reported that 26% of their participants could not be classified (Allen et al., 1996); the authors did not interpret this finding as problematic, but did suggest that there may still be unidentified attachment categories. In the present study, I examined the reliability, construct validity, and discriminant validity of attachment representations, as defined by Bartholomew (1990), in a clinical sample of adolescents. I found that continuous and categorical attachment ratings were reliable. I also found support for the discriminant validity, and to a lesser degree the construct validity, of attachment patterns in this sample.

Reliability of Interview Attachment Ratings

Overall, the findings indicated that attachment patterns could be reliably measured in a clinical sample of adolescents. The inter-rater reliabilities of the attachment ratings (alphas ranging from .78 to .84) were similar to the reliabilities reported previously in college samples. For example, Bartholomew and Horowitz (1991) reported alphas ranging from .75 to .86 in a study of college students. There

were no mean differences between coders' continuous attachment ratings. And kappas indicated fair to good agreement beyond chance between coders' categorical ratings.

Consistent with previous work, there were gender differences in the proportion of individuals categorized as preoccupied and dismissing (e.g., Bartholomew & Horowitz, 1991; Rosenstein & Horowitz, 1996). Females were more likely to be preoccupied than males, whereas males were more likely to be dismissing than females. Once again, these results were consistent using both attachment categories and continuous ratings.

As expected, participants in this sample were predominantly insecure (93%). In addition, the average secure rating was lower than the three insecure ratings, and lower than security ratings reported in previous studies of non-clinical samples (see Bartholomew & Horowitz, 1991; Scharfe & Bartholomew, 1994). This finding is consistent with recent research. In a recent meta-analysis, Van IJzendoorn and Bakermans-Kranenburg (1996) reported that 91% of the research participants in clinical samples were insecure. In several other studies examining attachment in clinical samples, the proportions of insecurity ranged from 77% to 98%⁴: 89% of a sample of psychiatric inpatients (Fonagy et al., 1996), 98% of adolescents in a psychiatric hospital (Rosenstein & Horowitz, 1996); 93% of young adults who were hospitalized at 14 years of age for psychiatric problems (Allen et al., 1996); and 77% of adolescents with histories of severe suicidal ideation or behaviour (Adam et al., 1996).

In summary, the findings indicated that attachment representations can be reliably measured in this sample. The results also indicated that continuous measures were more reliable than categorical measures. In particular, the categorical reliability

for adolescents who were mixtures of two or more attachment patterns (28% of the sample⁵) was quite low ($k=.35$); however, the reliabilities of the continuous ratings for this subsample were good (alphas ranged from .72 to .80). Therefore, although these individuals could not be reliably categorized, the coders were able to reliably rate their attachment dimensions. Using Main's coding system, transcripts that do not fit into a particular category or seem to be a mixture of categories are coded as Cannot Classify (Adam, et al., 1996). Main argues, and I agree, that it is unreasonable to force these individuals into a category (Main & Goldwyn, 1994). However, I would recommend that researchers use continuous ratings of these individuals as an assessment of their attachment patterns, rather than reporting that their attachment patterns cannot be classified.

These results also highlight the limitations of categorical assessment of security in clinical samples. Although coders agreed on whether adolescents were secure or not (92% agreement), the coders' agreement was much lower when controlling for the low base rate of security and chance agreement: Kappa of .46 indicated only fair agreement. Furthermore, in clinical samples it will be time consuming for researchers to interview enough participants to find a substantial group of predominantly secure individuals. For example, given the distribution across attachment categories in the current sample, over 800 admissions would be necessary to find a substantial number of secure participants; at least 52 participants are needed per group for a medium effect size. Therefore, using categorical data, researchers rarely have enough power in clinical samples to test for differences between secure and insecure participants. For example, Rosenstein and Horowitz (1996) reported no differences in WISC-R scores between adolescents with different attachment categories. However, with only 2 secure adolescents, it was unlikely that they would

detect anything but extremely large differences. In fact, the average scores of the secure participants were at least 9 points higher than the average scores of the insecure participants on each of the three IQ scales. The assessment of participants' degree of security helps to overcome these limitations: the continuous ratings are more likely to be reliable than the categorical ratings, and there is more power to detect associations with security.

Family and Personal Characteristics

Individual differences in family and personality characteristics associated with the four attachment patterns were somewhat consistent with previous studies. These results are only descriptive due to the fact that the ratings were used, in part, to determine attachment ratings. Overall, the ratings of the family environment indicated poor to fair childhood experiences. The adolescents in this sample did not experience *good enough* (Winnicott, 1960) parenting. However, in comparison to the insecure adolescents, the secure adolescents had relatively positive caregiving environments. The parents of secure adolescents were judged to be moderately accepting, and the adolescents sometimes approached their parents when distressed. However, their parents were also judged to be moderately rejecting, neglecting, and somewhat inconsistent. These childhood experiences are not typical of the sensitive, responsive parenting reported by prototypically secure participants, and yet somehow these adolescents managed to develop a sense of security. It could be that other supportive caregivers (e.g., a teacher or coach) or peers provided them with comfort and security that they did not get at home. Or perhaps, the secure adolescents had some traits that protected them (e.g., good cognitive functioning) or helped them to deal with life adversities.

The childhood experiences of the fearful adolescents were characteristic of prototypically fearful individuals. They described their childhood experiences as characterized by rejection, parental dominance, and low proximity seeking. They did not typically idealize their parents. My impression from the interviews was that when fearful adolescents attempted to idealize their parents, their goal was to protect the parent (e.g., lying for them) rather than to psychologically distance themselves from their traumatic experiences. Perhaps fearful adolescents' fear of retribution from their parents was so high that they could not comfortably disclose their parents' abusive behaviour. Hence their idealization could be viewed as self-protective. Their scores also indicated a passive acceptance of the situation (e.g., low rebellion, crying alone) which is also characteristic of the prototypical fearful individual.

Preoccupied adolescents reported prototypical childhoods characterized by anger, anxiety, and role-reversal. Their childhood accounts were elaborate and incoherent. Although they were very disclosing about previous or current abuse from caregivers, the same caregivers were often described as their "best friend". They typically had a negative view of themselves, and tried to mitigate their low self-esteem by making their parents "pay attention to" them. An interesting area for future research would be the association between past sexual abuse and preoccupied attachment. For several of the preoccupied females there appeared to be a relationship between past sexual abuse and their current patterns. However, it may be that the more preoccupied adolescents were simply more willing than the less preoccupied adolescents to disclose this information in the interview.

In some ways, the dismissing adolescents reported similar childhood experiences as those reported by dismissing adults in previous studies. For example, they reported characteristically low acceptance and low involvement with their

parents. However, contrary to previous findings, the dismissing adolescents did not report high levels of rejection, push to achievement, or idealization relative to the non-dismissing adolescents. Since most adolescents in this sample experienced moderate to high levels of rejection, it is not too surprising that the rejection scores of the dismissing adolescents were not distinctive. As well, very few adolescents in this sample reported that their parents expected them to excel in school and, therefore, it is also not surprising that their push to achievement scores were also not distinctive. However, it is puzzling that the dismissing adolescents did not idealize their parents as is typical of dismissing adults from previous samples. In fact, several dismissing adolescents were brutally honest about their caregivers' abusive behaviour. Perhaps it is not necessary for these adolescents to idealize their parents to remain dismissing. In college samples, parents are expected to be somewhat positive, and a dismissing individual may tend to idealize to cope with others' expectations of their parents. These adolescents may perceive that there is no reason to present an ideal picture of their parents; however, they were likely to present an ideal picture of themselves. For example, some dismissing adolescents insisted that previous rejection made them stronger and more independent, rather than defensive and psychologically detached. Or possibly, idealization is more likely to occur when individuals are reconstructing the past. Although the participants in this sample were asked about their early childhood, most of the questions dealt with their current relationships with their caregivers. As adults reconstructing their past, these adolescents may be more likely to idealize their parents (cf. Ross & Conway, 1986).

Attachment Patterns and Cognitive Variables

Adolescents were administered the WISC-III to examine the discriminant validity of the attachment patterns. Consistent with previous research, I did not find

an association between attachment categories and cognitive abilities (Bakermans-Kranenburg and Van IJzendoorn, 1993; Crowell et al., 1993; Rosenstein & Horowitz, 1996; Sagi et al., 1994). However, continuous attachment ratings provided more power to test for associations than the categorical ratings. I found that only 1 of 24 correlations was significant: The Verbal Scale score was positively associated with the continuous rating of security. Therefore, with one exception, the findings support the discriminant validity of attachment: Attachment is not merely a reflection of individuals' cognitive ability.

Exploratory analyses revealed a positive association between the Verbal Comprehension scale and degree of security which remained when the effects of elaboration and sociability were partialled out. Nevertheless, the Verbal Comprehension subscale was taken out of the context of the WISC Scales, and perhaps the findings merely reflect the adolescents' willingness to discuss a variety of social situations with the test administrator and the attachment interviewer. Furthermore, this finding needs to be replicated in other samples using a variety of assessments of verbal comprehension. If the association between verbal comprehension and security proves to be a reliable finding, future longitudinal work is necessary to explore the causal nature of the association between attachment security and verbal comprehension. Perhaps individuals' degree of security influences their ability to accurately comprehend social situations. Or alternatively, greater comprehension skills influence individuals' ability to interact with others in a sensitive, responsive manner, and therefore they are more likely to develop secure relationships with others. Or, as is most likely the case, both degree of security and comprehension skills reciprocally influence each other during development. For example, children

who have been adequately parented (by parents or other caregivers) will have both a good sense of social norms and a sense of security.

Construct Validity

Using latent variable analysis, I tested the association between the self-model dimension and anxiety, and the other-model dimension and avoidance. The latent variables were reliably measured, and the self-model was significantly related to anxiety, but the other-model was not related to avoidance. Although previous studies have tested the validity of Bartholomew's model using ratings from the Peer Attachment Interview (Griffin & Bartholomew, 1994b), this is the first study to test the construct validity of ratings from the Family Attachment Interview. In addition, it is the first study to test the model in a clinical sample.

There was some support for the hypothesis that psychological distress may overwhelm individuals, thus making it difficult for them to accurately perceive their interpersonal relationships with others. Exploratory analyses demonstrated the severity of psychological symptoms suppressed the relationship between attachment and measures of avoidance (trust and interpersonal distance). Nevertheless, the hypothesized association between attachment and avoidance received only limited support. These findings raise several methodological and theoretical concerns.

First, all ratings of avoidance were high. In this sample of adolescents who had been abused and neglected, often by several consecutive caregivers, it is not surprising that I could not distinguish the adolescents on scales of avoidance. They were only reporting what was necessary for them to do -- avoid their abusive caregivers. Furthermore, some items in the Jesness Inventory refer specifically to caregivers or other authority figures while others do not (e.g., A lot of fathers don't seem to care if they hurt your feelings; Nobody seems to understand me or the way I

feel). This problem was particularly true for the sociability and distance scales. Perhaps the adolescents were thinking of their friends when answering the questions that did not make specific reference to adults. I would expect stronger results using scales that measured avoidance of caregivers only. In addition, since the Jesness items are rated on dichotomous scales it is difficult to obtain high reliability. Future research is necessary to examine the test-retest reliability of the Jesness scales, as well as the merit of other scales measuring avoidance.

Furthermore, it may not be reasonable to expect a sample of highly distressed individuals to report their internalized relationships with others using self-report measures (see also Fonagy et al., 1996; Horowitz et al., 1994). In fact, symptoms of psychological distress were key to understanding the associations between insecure attachment and measures of avoidance. These associations were clearer when the severity of psychological distress was partialled out.

Perhaps the above finding is indirectly related to findings reported in two recent studies that linked unresolved attachment and severe adolescent psychopathology (Adam et al., 1996; Allen et al., 1996). According to the AAI definition, participants are classified as unresolved if their interviews are characterized by unresolved mourning over the loss of an attachment figure or traumatic events (Main & Goldwyn, 1994). Many of the adolescents in the present sample fit this description. It may be that degree of unresolved mourning is associated with both high levels of distress and high levels of avoidance. Perhaps interventions to help these adolescents to resolve their trauma may help to decrease their psychological distress, and improve their ability to self-report the approach/avoidance strategies that they use in their relationships with others.

I also found a noteworthy gender difference on the associations between the other-model dimension and avoidance. Females' data were more consistent than males' data when testing the hypothesized association between the other-model dimension and avoidance. Unfortunately, with so few young women ($n=43$), I did not have the power to detect differences between the females' and males' correlations. In addition, the correlations between the other-model and avoidance for females, although moderate, did not reach significance. Nevertheless, this unexpected finding needs to be explored in further work. Perhaps the development of the other-model is more advanced in women, and hence the young adolescent women seem to have a more coherent sense of their relationships with others (cf. Chodorow, 1972).

Attachment and Conduct Disorder

Rosenstein and Horowitz (1996) reported that 78% of adolescents with conduct disorder in their sample tended to be classified as dismissing. Although the attachment representations in the present sample of youths, many of whom had conduct disorder⁶, were found to be predominantly avoidant (65%), there were more fearful adolescents (43%) than dismissing adolescents (22%). The results of the present study do not necessarily contradict Rosenstein and Horowitz (1996) for several reasons. First, Rosenstein and Horowitz's (1996) sample of adolescents with conduct disorder is very small ($n=19$), and thus their generalizations concerning the association between attachment and conduct disorder may be premature. In addition, Rosenstein and Horowitz (1996) used the AAI to categorize their participants. The AAI has only one avoidant category (dismissing) and Bartholomew's system has two avoidant categories (fearful and dismissing). To date, only one study has examined the correspondence of the AAI and Bartholomew's categories. In a small sample of women ($n=30$), Bartholomew and Shaver (in press) reported correspondence between

secure, preoccupied, and dismissing categories, but were unable to distinguish a AAI category that corresponded to Bartholomew's fearful category. Although the AAI does not have a category that corresponds to Bartholomew's fearful category, it is possible that fearful individuals would tend to be categorized into one of the AAI subcategories (e.g., E1 or E3) or the unresolved category. In the present sample, 13 adolescents who were fearful were also rated higher on dismissing than secure or preoccupied. Presumably, using the AAI system, they would be classified as dismissing, rather than secure or preoccupied, therefore increasing the proportion of dismissing adolescents from 22% to 33%. As well, the youths in Rosenstein and Horowitz's (1996) conduct disorder subsample are predominantly male (15 of 19, and all but one male was dismissing). In the present sample of 77 males, 23 were predominantly dismissing, 11 were fearful/dismissing mixtures, and 21 were predominantly fearful, yielding a proportion of 71% avoidant males. In summary, the results of both studies indicate that avoidant attachment is predominant in adolescents with conduct disorder. Differences between the two studies are likely due to differences in the samples, the gender balances, and the coding systems.

Although Rosenstein and Horowitz (1996) report that their sample of youths with conduct disorder was relatively homogeneous with respect to attachment, the results of the present study suggest that attachment patterns of adolescents with conduct disorder are heterogeneous. In fact, over the years, several researchers have proposed that the population of individuals with conduct disorder is heterogeneous. For example, Jenkins and his colleagues proposed a distinction between unsocialized and socialized adolescents with conduct disorder (Henn, Bardwell, & Jenkins, 1980). In addition, researchers have distinguished between childhood-onset and adolescent-onset conduct disorder (Hinshaw, Lahey, & Hart, 1993). Furthermore, Bowlby

(1944) also found that juvenile thieves had diverse personalities and family experiences. Perhaps, attachment theory will prove helpful to further understand the heterogeneity of conduct disorder.

The association, or lack of association, between attachment patterns and conduct disorder reinforces the distinction between behaviour and the underlying motivation for the behaviour. Adolescents diagnosed with conduct disorder may have different motivations for their behaviour depending on their attachment patterns. Dismissing youths are likely to be independent and self sufficient, and may be more likely than non-dismissing youths to engage in conduct disorder behaviours without peers. Fearful youths are likely to be shy and overly dependent, and, therefore, they may be likely to compliantly affiliate with delinquent peers. Their compliant association with these peers may lead to their illegal behaviours. In contrast, the preoccupied youths may be likely to seek out attention from peers; their delinquent acts could be perceived as their misdirected attempts to socialize outside the family. Of course, these are only hypotheses; only longitudinal research will allow researchers to explore the developmental paths that lead to individual differences in conduct disorder and attachment.

Strengths, Limitations, and Future Directions

There are several strengths of this study compared to previous studies. First, this study used interviews to examine individual differences in attachment, whereas much of the previous work in adolescent attachment has relied on self-report assessments of the quality or security of attachment relationships. However, a few recent studies have examined individual differences in adolescent attachment using the AAI. One limitation of the AAI system is that individuals are classified into attachment categories only. I used a coding system that included both categorical and

continuous assessments of attachment. The results of the present study indicated that continuous ratings were more reliable than categorical ratings. Finally, both the continuous ratings and the relatively large sample size provided sufficient power to detect associations between attachment and cognitive abilities.

There are also several limitations in this study that need to be addressed in future work. Due to the personal nature of the attachment interview, it is impossible to interview individuals without learning a great deal about their psychological and interpersonal problems. Therefore, it is impossible for attachment coders to be blind to the clinical status of participants, and coders' ratings may be biased by this knowledge. For example, if coders believe that individuals with conduct disorder are likely to be dismissing, coders may be more likely to rate individuals with conduct disorder as dismissing. However, if coders are well trained and interviews are rated by at least two coders, researchers can be confident that their attachment ratings are reliable.

Although the Jesness avoidance scales were reliable and the three avoidance scales were associated with each other, it is possible that associations between the other-model dimension and avoidance would be supported using different scales. Furthermore, I would suggest that caregivers (e.g., parents, teachers, or therapists) be asked to provide a report of the adolescents' strategies of approach and avoidance. These reports, from adolescents and their caregivers, will provide multiple indicators of the adolescents' behaviour with others. It may also be helpful to assess avoidance between adolescents and their caregivers using observational techniques. And finally, it is necessary to continue work to validate Bartholomew's method on other adolescent clinical and non-clinical samples.

There were several findings that lead to future research possibilities. Although the sample was predominantly insecure, the continuous ratings of security were reliable. Longitudinal work is necessary to determine if degree of security is associated with post-release outcomes. Perhaps, degree of security is associated with positive responses to therapy or the development of supportive intimate relationships in the future.

The association between security and verbal comprehension needs to be replicated in other clinical and non-clinical samples. This association may be unique to adolescents with conduct disorder, or it may generalize to other samples. If the finding is robust, there are several hypotheses to be tested. In particular, interventions that increase individuals' comprehension scores may prove beneficial in increasing attachment security. For example, it is possible that increasing skills associated with verbal comprehension may cause parallel increases in attachment security. Sensitive, responsive parents teach their children social skills in tandem with social sensitivity, and are likely to raise secure children; teaching these skills to insecure individuals may help to increase their degree of security. However, it is necessary to teach true comprehension. True comprehension (and true security) is not just parroting what is expected, but an internalized understanding of social norms. In addition, verbal comprehension reflects an internalized sense of social morals (e.g., test item: "Why should a promise be kept?"). A promising area for future research would be the examination of youths' moral judgment and the association with attachment. The current findings suggest that more mature moral judgment may be associated with higher levels of security. And finally, the results indicated that secure individuals were more likely to comprehend social norms and rules (e.g., test item: "Tell me some reasons why games have rules"). Perhaps, insecure individuals have

incorrect perceptions of social norms, and they may experience changes in security once they have internalized new and correct knowledge concerning social norms.

Unfortunately, due to the cross-sectional methodology used in the present study, it is not possible to determine the causal nature of the association between security and verbal comprehension. Does security influence the development of comprehension or does comprehension influence the development of security? Will the adolescents with good verbal comprehension skills become more secure over time? Perhaps, security provides individuals with a cognitive advantage (cf. Jacobsen, Edelstein, & Hofmann, 1994). For example, secure individuals may be more curious, and have a superior ability to accommodate and assimilate new information. Both these skills may help secure individuals to be more proactive in their social world than insecure individuals; consequently secure individuals may be more likely to maintain their degree of security. Furthermore, others may be more responsive to secure individuals, and perhaps, the behaviour of others toward secure individuals helps to maintain secure representations.

Finally, the examination of change in clinical samples may provide attachment researchers with more information concerning the mechanisms of change of attachment representations. There are several reasons to propose that adolescence may be a time when attachment representations are likely to change. Social and cognitive changes during adolescence may encourage individuals to evaluate their attachment expectations. For example, a supportive peer group may encourage a relatively insecure adolescent to develop a sense of security in that group. Or as Main et al. (1985) suggested, the onset of formal operational thought may allow individuals to work through difficult child experiences and possibly become more secure. Similarly, an avoidant adolescent may use new cognitive skills to *improve* their

avoidant strategies. Furthermore, adolescents in this sample experienced frequent, and often disruptive, changes (e.g., changes in caregivers and therapists), and, therefore, they may be likely to encounter events that encourage them to re-evaluate their attachment representations. They may experience events that foster increases in security (e.g., supportive therapeutic relationships) or insecurity (e.g., loss of attachment figures). Or perhaps, these adolescents may learn to forgive their parents and overcome the influence of their early childhood experiences (see Main et al., 1985). In conclusion, further examination of their transition into adulthood, and the subsequent effects on attachment representations may help to elucidate the mechanisms that help to maintain and change attachment representations across the lifespan.

Conclusions

In summary, the present study expanded the examination of attachment using Bartholomew's four-category model into a clinical sample of adolescents. The results indicated that both continuous and categorical assessments of attachment were reliable. There was some support for both the construct and discriminant validity of the four-category model. As expected, the self-model dimension was associated with measures of anxiety, however, contrary to expectations, the other-model dimension was not associated with measures of avoidance. With one exception, attachment patterns were not associated with cognitive abilities; security ratings were positively associated with scores on the Verbal Comprehension subtest. It is important to note that the security rating was associated with a scale assessing social knowledge and not a scale measuring vocabulary skills, indicating that attachment security is more than telling a good story.

These results provide support for the benefits of using continuous measures. In particular, despite the fact that the sample was predominantly insecure, the degree of security proved to be a reliable measure, and I would recommend that researchers obtain a rating of degree of security when examining attachment in clinical samples. Furthermore, when participants are found to be mixtures of two or more patterns, I would caution researchers from either forcing these individuals into categories, or coding them as cannot classify. Instead, I would suggest using continuous ratings; I believe that continuous ratings will expedite the exploration of different developmental paths that lead to mixtures, as well as the clinical implications for individuals who are mixtures. In conclusion, although it was Bowlby's wish to understand psychopathology using attachment theory, recent research efforts in this area may prove to be equally important for expanding our understanding of measurement issues in attachment.

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FOOTNOTES

- 1 The four-group classification includes the unresolved category.
- 2 The correlations between attachment ratings and measures of anxiety were as expected with one exception: there were no significant associations between security and measures of anxiety. Social anxiety was positively associated with fearfulness ($r(114) = .22, p < .05$) and negatively associated with dismissingness ($r(114) = -.35, p < .001$). Self confidence was negatively associated with fearfulness ($r(114) = .27, p < .01$) and positively associated with dismissingness ($r(114) = -.19, p < .05$). Symptoms of overanxious disorder were positively associated with fearfulness ($r(114) = .21, p < .05$) and preoccupiedness ($r(114) = .28, p < .01$) and negatively associated with dismissingness ($r(114) = -.39, p < .001$). Symptoms of separation anxiety were positively associated with fearfulness ($r(114) = .22, p < .05$) and preoccupiedness ($r(114) = .21, p < .05$) and negatively associated with dismissingness ($r(114) = -.35, p < .001$).
- 3 To measure severity of psychological symptoms, I summed the 6 scales from the OCHS (overanxious disorder, separation anxiety disorder, depression, conduct disorder, oppositional defiant disorder, and attention-deficit hyperactivity disorder).
- 4 Proportions reported are for all categories including the unresolved and/or cannot classify categories. For the 3-categories, if available, proportions are as follows: Fonagy et al. (1996) 78%; Rosenstein and Horowitz (1996) 97%; Allen et al. (1996) 84%.

5 Adolescents were classified as predominant if their highest rating was at least 2 more than the next highest rating. Adolescents were classified as mixes if they were not classified as predominant, and both coders agreed on the mixture of categories. This proportion (28%) includes cases where participants were judged to be a mixture of 2 or more attachment patterns by both coders. It does not include cases where the coders did not agree on the general profile of attachment codings.

6 Not all the adolescents in this sample would have been diagnosed with conduct disorder. Previous findings indicated that approximately 85% of the adolescents referred to this facility were diagnosed with conduct disorder. In addition, in a subsample of the present sample (n=65), 91% were diagnosed with conduct disorder (Lessard, 1994). Furthermore, all three insecure groups had equally high scores on the OCHS-conduct disorder scale (secure, 4.3; fearful, 6.8; preoccupied, 7.7; and dismissing, 7.2).

APPENDIX A

ATTACHMENT ANXIETY AND AVOIDANCE SCALES

Trust: The feeling that significant others are responsive, helpful, and understanding if approached for help or support. (high scores indicate low trust)

1. When you are in trouble it's best to keep quiet about it.
2. Most police will try to help you. (reverse scored)
3. If the police don't like you, they will try to get you for anything.
4. A person is better off if he doesn't trust people.
5. I get nervous when I ask someone to do me a favor.
6. A lot of fathers don't seem to care if they hurt your feelings.
7. When things go wrong, there isn't much you can do about it.
8. You can hardly ever believe what parents tell you.
9. It's hard for me to show people how I feel about them.
10. It is hard for me to talk to my family and parents about my troubles.
11. Talking over your troubles with another person is usually a waste of time.
12. Nobody seems to understand me or the way I feel.
13. Talking with my parents is just as easy as talking with others my own age.
(reverse scored)
14. When you are in trouble, nobody much cares about you.
15. The people who run things are usually against me.
16. I always hate it when I have to ask someone for a favor.

Sociable: An interest in being in the company of others, or a sense of satisfaction or happiness resulting from being in the company of others. (high score indicates low sociability).

1. Most people are really very nice. (reverse scored)
2. I like everyone I know. (reverse scored)
3. I would usually prefer to be alone than with others.
4. I feel alone even when there are other people around me.

Interpersonal Distance: The creation of emotion distance in interpersonal relationships either by actively avoiding relationships or social situations, or by denying or detaching from emotions felt in relationships. (high score indicates high distance)

1. A person is better off if he does not trust people.
2. Only a baby cries when he is hurt.
3. I don't care if people like me or not.
4. I don't mind it when I'm teased and made fun of.
5. I would usually prefer to be alone than with others.
6. I don't seem to care enough about what happens to me.
7. I never get angry at anybody.
8. Talking over your troubles with another person is usually a waste of time.

Self Confidence: The feeling that you are not as skilled/successful as others, or that others are more skilled and/or more successful when interacting in social situations. (high score indicates low self confidence)

1. I am smarter than most people I know. (reverse scored)
2. Others seem to do things easier than I can.
3. I don't think that I will ever be a success or amount to much.
4. I wish I wasn't so shy and self-conscious.
5. I am liked by everyone I know. (reverse scored)
6. I really think I have a better personality than most other people I know.
(reverse scored)

Anxiety: nervousness, worrying, and fears in social contexts. (high score indicates high social anxiety).

1. I worry too much about doing the right things.
2. I worry about what other people think of me.
3. I get nervous when I ask someone to do me a favor.
4. I notice my heart beats very fast when people keep asking me questions.
5. It is easy for me to talk to strangers. (reverse scored)
6. I don't care if people like me or not. (reverse scored)
7. I don't mind it when I'm teased and made fun of. (reverse scored)
8. I wish I wasn't so shy and self-conscious.
9. Having to talk in front of a group makes me afraid.
10. Whatever I do, I tend to worry about how well I'm doing.