

Links Between Attachment Profiles and Adjustment Outcomes in Preadolescence

by

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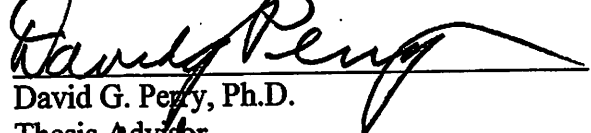
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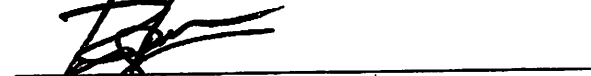
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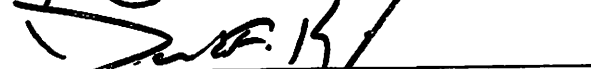
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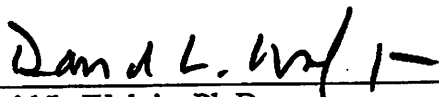
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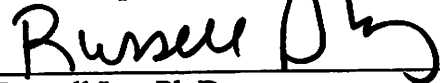
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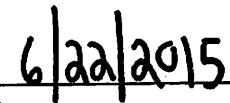

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Abstract

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The current study examined the possibility of using cluster analysis to classify attachment styles in middle childhood. Attachment classifications were measured by looking at child coping strategies and perceived maternal behavior. The attachment classification was then tested for construct validity by examining whether it can predict adjustment outcomes in interpretable patterns. The adjustment outcomes examined were a self-reported global self-worth scale and peer-reported internalizing and externalizing behaviors measured using a Peer Nomination Inventory. The current study had 199 third through eighth graders and provided evidence for the cluster analysis approach and also showed that the disorganized attachment was associated with the most adverse adjustment outcomes. That is, results showed that disorganized attachment was linked with the lowest levels of global self-worth and the highest rates of internalizing and externalizing behaviors and was significantly different from the securely attached cluster on each measure. The implications and possible underlying causes are discussed.

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Introduction

A child's attachment to his or her caregiver is one of the most pivotal milestones in psychological development. Mary Ainsworth (1978) defined attachment as an enduring affectionate tie that unites one person to another over time and across space. The quality of a child's attachment to his or her caregiver has lifelong implications for the individual's emotional well-being, friendships, romantic relationships, and parenting. The most widely accepted classification system in infancy and early childhood comprises four attachment styles: secure, avoidant, preoccupied, and disorganized. While the importance of attachment styles in infancy and early childhood is well-established, researchers still struggle when it comes to classifying preadolescent children into attachment categories.

Approximately two thirds of the child population in the US fall into the secure attachment group. Secure attachment occurs when the caregiver is attentive, comforting, and is seen as a reliable source of support. Due to the caregivers' consistent availability, the child develops confidence to freely explore the environment, always knowing that the caregiver will be there for comfort in case of a frightening situation. But when this consistency is lacking, and the caregiver is perceived as unavailable, unhelpful, or even hurtful, an avoidant, preoccupied, or disorganized attachment may develop (Yunger, Corby, & Perry, 2005).

When a child lacks confidence in his or her parents' willingness to provide care, an avoidant attachment is likely to develop. This attachment profile is made up of

children who frequently feel rejected by the caregiver and therefore start to avoid contact. The caregivers in this group can be described as neglectful, harassing, and unsupportive, leading the child to become compulsively self-reliant. A second type of insecure attachment is preoccupied attachment. Unlike what is seen in secure attachment profiles, children with preoccupied attachment crave attention from their caregivers to the point that they become overly reliant and co-dependent. Caregivers of preoccupied children are described as inconsistent and overprotective, leading to the child's confusion and development of clingy behaviors. The final type of insecure attachment is disorganized attachment. This is frequently a consequence of abusive or frightening parenting which leads the child to be torn between fearing the parents and needing comfort from them (Main & Solomon, 1990). This attachment profile is hard to capture since it is characterized by erratic behavior, but the defining characteristic tends to be a "freezing" behavior when stressed and when reunited with the caregiver after separation. Crittenden (2001) believes this freezing behavior is actually a useful mechanism which allows the child to select the best response for the situation. The lack of organized coping strategy for caregiver interactions leads the child to display contradictory behaviors, such as seeking caregiver proximity intermingled with displays of high avoidance (Main & Solomon, 1986, 1990).

The attachment classification system was originally formulated and studied with infants and toddlers and then further supported in research with adolescents and adults. There has been little work on the in-between period of middle childhood. While the definitions of the secure, avoidant, or preoccupied attachment profiles are relatively clear and well-defined, researchers still struggle to define and measure disorganized

attachment, especially in the post-infancy years (Main, Kaplan, & Cassidy, 1985). By not being able to distinguish the disorganized attachment profile, it ends up being clumped into one of the two insecure categories. While some infants with disorganized attachment do eventually adopt a distinct coping style, it nevertheless is important not to ignore the children who retain the disorganized attachment profile through to middle childhood. Disorganized attachment, in fact, has been linked with the most adverse outcomes, such as poor joint attention (Claussen, Mundy, Mallik, & Willoughby, 2002), executive function deficits and ADHD (Thorell, Rydell, & Bohlin, 2012), lower self-esteem (Lecompte, Moss, Cyr, & Pascuzzo, 2014), aggression (Corby, 2006), and even higher likelihood of various forms of psychopathology in adulthood (Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997). Given these negative outcomes, it is vital to find what distinguishes disorganized attachment from the other types of insecure profiles and doing so is one purpose of the current study.

Current Study

Previous attachment research has most commonly focused on either young children or adults, leaving many questions about the preadolescent age group. While current research can identify attachment in infancy, one should not expect to see strong continuity in attachment style from infancy to middle childhood (Lewis, Feiring, & Rosenthal, 2000). Attachment continuity cannot be assumed due to the contextual changes in children's lives, such as parental divorce, that happen during middle childhood. Given the lack of continuity in attachment, more research needs to be conducted in middle childhood instead of assuming that attachment profiles discovered in infancy will carry over through other life stages.

In fact, it was not until 1996 that scales for measuring avoidant and preoccupied attachment styles in middle childhood were even created. Prior to that, researchers focused on testing the basic sense of security between mother and child and how this can predict future adjustment without distinguishing between the different types of insecure attachments in middle childhood (Kerns, Kelpac, & Cole, 1996). Given the important differences between the insecure attachment profiles, Finnegan, Hodges, and Perry (1996) created new measures that specifically captured avoidant and preoccupied attachment during preadolescence. Those measures are used in this study and are further described below. The current goal is to take assessment of attachment classification in older children one step further by also distinguishing the disorganized attachment profile from other attachment classifications in a sample of preadolescents.

This study aims to shed light on the understudied middle childhood age group while also resolving a past methodological issue by using cluster analysis. By performing k-Means cluster analysis on a sample of preadolescent children who have reported on multiple aspects of their relationship with their mother, this study aims to capture and distinguish all four attachment profiles, including the frequently neglected disorganized attachment style. Cluster analysis is a person-centered approach that can be used to reveal structure and associations in complex multivariate data that can be missed with other statistical methods (Burns & Burns, 2009). Clustering is an unsupervised classification technique that separates a sample into homogeneous classes (Burns & Burns, 2009; Huang et al., 2014). It does this by maximizing the similarity within a cluster while maximizing dissimilarity between the clusters.

Cluster analysis is different from factor analysis because it reduces the amount of cases by grouping them into classes, while factor analysis reduces variables by grouping them into factors. While hierarchical cluster analysis is used to determine the optimum number of clusters, k-Means cluster analysis is used when there are a pre-determined number of clusters. Once the number of clusters is decided, k-Means cluster analysis works by placing every case in the sample in the cluster that it best fits. The current study plans to use a four cluster system due to the four theoretical attachment profiles. The cluster analysis will place participants into attachment profiles depending on their scores on the following seven self-report scales: three child coping strategy scales (preoccupied, avoidant, and indecisive) and four perceived maternal behavior scales (harassment, fear induction, overprotectiveness, and reliable support). These scales are described in the next section.

While our study has chosen to use self-report scales to measure attachment, there is no established gold standard when it comes to measuring attachment in middle childhood and preadolescence. The Child Attachment Interview is one method that is quickly gaining popularity and attempts to bridge the “measurement gap” in middle childhood research. It is a semi-structured interview with a coding system adopted from the Adult Attachment Interview and Strange Situation. While there is evidence that it could be a promising measure that is valid and reliable (Shmueli-Goetz, Target, Fonagy, & Datta, 2008), one primary disadvantage is that the administration and scoring require in-depth training which makes this a very expensive procedure (Feeney & Noller, 47-48). Further, the Child Attachment Interview has had difficulties establishing a consistent pattern of results for preoccupied attachment and has a tendency to mislabel preoccupied

attached children as secure due to their emotional openness and coherence of speech (Shmueli-Goetz, Target, Fonagy, & Datta, 2008). We believe that the self-report scales used in this study will be able to overcome some of the disadvantages seen in the Child Attachment Interview by providing a simpler and more economical alternative to the interview procedure and using preoccupied and avoidant scales have been proven effective and reliable in previous work.

Once we verified that the four attachment profiles apply to preadolescent children through the use of k-Means cluster analysis, we used ANOVAs to examine the construct validity by seeing if the clusters are associated with children's adjustment in predictable ways. The adjustment measures will include self-reported self-esteem and peer-reported internalizing and externalizing. We hope that by combining both self-reported and peer reported measures, we will get a clearer, less biased picture of attachment and subsequent adjustment.

A preadolescent sample is of special interest because previous studies have focused mainly on young children and on much older participants. We know that middle childhood is a time of great importance in psychological development so we wish to study to see if previous attachment findings also hold true for this sample of children.

Purpose of Current Study

The first purpose of this study was to use the k-Means cluster analysis, a novel approach to studying attachment, to capture all four attachment profiles in the understudied preadolescent population. The second purpose was to probe for construct validity by investigating whether these attachment profiles can predict a child's adjustment outcomes.

Hypotheses. The first hypothesis is that we will find that the four-cluster solution is a good fit for the data. We expected the secure cluster to comprise children who score high on reliable support and low on parental harassment and overprotectiveness. In other words, these children should view the mother as being reliably supportive while rarely intrusive or preventing them from trying new things. We also expected the preoccupied and avoidant scales to predict the preoccupied and avoidant attachment profiles. In addition to loading highly on the preoccupied scale, we expected members of the preoccupied cluster to have the most negative loading on the avoidant scale; they should also have high scores on overprotectiveness and low scores on reliable support. Thus, it is hypothesized that preoccupied children will be dependent on the mother while at the same time unable to be calmed by her. Avoidant children are expected to have the highest scores on the avoidant scale and lowest on the preoccupied scale; they should also score high on harassment and low on reliable support. We hypothesized that these children will not approach the mother in times of distress and will not use her as a secure base for exploration. Lastly and most importantly, we expected to see the disorganized attachment cluster to be very high in fear induction, harassment, and indecision and to have the lowest loading for reliable support. The mother would be perceived as an unpredictable source of confusion and fear.

Once the clusters are identified and their profiles established, we attempted to develop construct validity by examining whether the attachment profiles are associated with children's psychological adjustment. In accordance with the recent research findings and meta analyses, we hypothesized that the disorganized attachment cluster will have the lowest global self-worth (Groh, Roisman, van Ijzendoorn, Bakermans-Kranenburg, &

Fearon, 2012), the most reported internalizing behaviors (Lecompte, Moss, Cyr, & Pascuzzo, 2014), and the most externalizing behaviors (Seibert & Kerns, 2015). We also expected to see preoccupied children score low on self-esteem and internalizing and we expected the avoidant children to be somewhat high on externalizing. The secure group should have the highest self-esteem and lowest internalizing and externalizing.

Method

Participants

The sample consisted of 199 third to eighth grade students (105 females, 94 males) who attended Alexander D. Henderson University School, a university research school in South Florida. Most of the children came from middle class families, and the racial breakdown was as follows; 46% Caucasian, 24% African-American, 23.6% Hispanic, 3.5% Asian, and the rest were of mixed racial descent. The sample was made up of 38 third graders, 44 fourth graders, 36 fifth graders, 39 sixth graders, 19 seventh graders, and 23 eighth graders. The age range was between 8.2 and 14.3 years ($M= 11.0$ years, $SD= 1.64$ years). Written parental consent forms were obtained from all participants, who represented 70% of children in their grades. Children also signed a child assent form.

Measures

Measures of Attachment

The children were given questionnaires that assessed child coping strategies and perceived maternal behavior as indicators of attachment. All seven measures of attachment were developed for this project and will represent the independent variables for the current proposed study. The Questionnaires and answer keys can all be found in Appendixes A-H.

Child coping strategies. The three variables of interest here are preoccupied coping, avoidant coping, and indecision, each containing 10 items. Each one of the ten items had a 1-4 scoring scale, with the child choosing one of the two options and then selecting either “very true for me” or “sort of true for me.”

Preoccupied coping. The preoccupied coping measure is intended to identify children who have a strong need for their mother in stressful and novel situations, have problems separating from her, and continue to show distress upon reunion (Finnegan, Hodges, & Perry, 1996). This excessive need for the mother leads to the child lacking age-appropriate autonomy. Each item gave the child a scenario in which they could choose between a preoccupied reaction and a non-preoccupied reaction. The item with the highest item-total correlation in this scale asks the child, “Your mother comes home after being away a few days. Some kids would be not be upset with her for having gone away, but other kids would be upset with her for having gone away. Which is more like you?” This item exemplifies the continued distress upon a mother’s return that many

preoccupied children display. This scale was internally consistent with a Cronbach's alpha of .72.

Avoidant coping. The avoidant coping scale aims to identify children who lack affection towards their mother, do not use her as a secure base for exploration, and also refuse to seek her when upset. The item with the highest item-total correlation in this scale states, "You and your mother are visiting a new shopping center to see what it is like. Your mother suggests that the two of you explore the center together. Some kids would only want to explore on their own but other kids wouldn't mind exploring it with their mother. Which is more like you?" This item captures how avoidant attached children do not use their mothers a secure base for exploration, because the avoidant attached children would mind having to explore with their mother instead of by themselves. While this behavior might seem normative for older children, it is important to note that other items in this avoidant coping scale also test more non-normative behaviors, such as children who wouldn't care if their mother was gone for a few days and would not greet her upon her return. This particular item was chosen as an example simply because it has the highest item-total correlation, This scale was internally consistent, with a Cronbach's alpha of .81.

Indecision. The indecision measure was designed to tap a feature of disorganized attachment by identifying children who are unsure of how to respond to the parent during attachment-related situations, such as stress or when the child is scared of something. Disorganized children have trouble deciding whether to approach or avoid their mother, and some may display freezing behavior. As mentioned earlier, the mothers of children in this attachment style may be inconsistent or even abusive, which leads to the child being

confused as to how to respond. The item with the highest item-total correlation in this scale asks, “You and your mother have been apart for a few days. When you get back together your mother says that, if you’d like to, maybe she and you could do something together. Some kids would have a hard time deciding whether to do something with their mother but other kids would have an easy time deciding whether to do something with their mother. Which is more like you?” This scale was internally consistent, with a Cronbach’s alpha of .71.

Perceived maternal behavior. The next four scales are used to measure day to day maternal behaviors as perceived by the child. Children were given questionnaires that tested the degree to which the children perceive their mother to exhibit certain behaviors. The four main behaviors that we are interested in are the mother’s provision of reliable support (e.g. sensitivity, availability, and responsiveness), harassment, fear induction, and overprotectiveness. All measures are on a 4-point scale, with higher scores indicating higher amounts of the given behavior.

Reliable support. The reliable support measure is sometimes known as felt security. It was originally developed by Kerns, Klepac, and Cole (1996) and the shorter 10 item scale developed by Younger et al. (2005) is used here. This measure examines the child’s perception of the mother as consistently available and supportive in times of distress. This scale captures the underlying mechanism for attachment security. As mentioned earlier, without reliable, consistent support from the caregiver, a secure attachment will not develop, and attachment will instead take on the profile of a preoccupied, avoidant, or disorganized style. Each item describes a child who is secure and insecure, and the children have to choose the one that describes them and then select

“very true for me” or “sort of true for me.” Higher scores indicate greater reliable support. The item with the highest item-total correlation in this scale asked “Some kids feel like their mom really understand them, but other kids feel like their mom does not understand them. Which is more like you?” This reliable support measure was internally consistent, with a Cronbach’s alpha of .83.

Harassment. The harassment measure contained eight items and tapped the degree to which children see their mothers as intrusive, abrasive, and aversive. These harassing behaviors are especially influential in preadolescent parent-child attachment because they tend to lead to avoidant reactions from the child. Avoidance is used as a coping mechanism to escape the mother’s harassment. The item with the highest item-total correlation in this scale states, “Some mothers come into their kid’s room when the kid doesn’t want them to but other moms don’t come into their kid’s room unless the kid wants them to. Which is more like you?” That item was reverse scored and exemplifies the intrusive parental behaviors that many avoidant attached children experience. This scale was internally consistent, with a Cronbach’s alpha of .85.

Fear induction. The fear induction measure was composed of four items that evaluated the extent to which the child viewed the mother as exhibiting frightening behavior. Previous research has shown that infants and children who are afraid of their mother’s behavior have higher tendencies of disorganized attachment (Lyons-Ruth, Repacholi, McLeod, & Silva, 1991; Moss, Parent, Gosselin, Rousseau, & St-Laurent, 2005). The item with the highest item-total correlation in this scale states, “Some mothers do things that make their child feel afraid but other mothers do not do things that make

their child afraid. Which is more like you?” The fear induction measure was internally consistent, with a Cronbach’s alpha of .80.

Overprotectiveness. Lastly, the overprotectiveness measure contained 12 items and assessed the extent to which children viewed their mother as displaying overprotective behavior. The questions assessed whether the children view their mother as restraining them from doing what they want to do out of fear of their getting hurt or sick, for example. Yunger et al. (2005) showed that overprotective parenting is associated with preoccupied parent-child attachment. The item with the highest item-total correlation in this scale states, “Some mothers let their child take chances and try new things but other mothers don’t let their child take chances and try new things. Which is more like you?” The overprotectiveness scale was internally consistent, with a Cronbach’s alpha of .79.

Measures of Adjustment

The three measures of adjustment that we used are global self-worth, internalizing problems, and externalizing problems. All of these measures have been used effectively in previous studies.

Global self-worth. Global self-worth, also known as self-esteem, is one’s own overall evaluation of the self. In the current study, Harter’s (1981) Global Self-Worth Scale will be used. It comprises six items which are scored from 1 to 4, with higher scores indicating higher self-esteem. The item with the highest item-total correlation in this scale asked to what degree the child is happy with themselves. The Global Self-Worth Scale was internally consistent, with a Cronbach’s alpha was .76.

Peer Nomination Inventory (PNI) Scale. The PNI is a simple procedure that asks children to check all of the names of classmates who exhibit various behaviors, such as children who tease others. Children are asked to check the names of all same-sex peers who are similar to the person described in the question. While only same-sex nominations were used, same-sex and other-sex peer nominations have been shown to yield very similar results (Finnegan, Hodges, & Perry, 1998).

We chose to use the PNI because it is a very powerful approach and has many advantages. First, peer report tends to be less biased than experimenter or teacher observation because peers know each other well and see each other in situations that adults would not have the opportunity to, such as play time or outside of class. In addition, peer reports are based on the ratings of everyone in the classroom, and having ratings from many responders is more reliable than having just one observer. Peer nomination has been shown to be very effective at assessing social functioning and provide unique data from parent and self-reports, while at the same time correlating with teacher ratings (Perry-Parrish, Waasdorp, & Bradshaw, 2012). Furthermore, while it is possible to give peers a peer-report measure based on rating scales, the Peer Nomination Inventory takes less time and provides reliable and valid information.

The current study uses a 40-item PNI adapted from Wiggins and Winder's (1961) designed for use with preadolescents. The child's score for each item is calculated by dividing the number of nominations they received for the item by the total number of nominations possible. Therefore, each participant gets a score of 0-100% for each item. Item scores are averaged across the items assessing the behavioral construct. This study focused on internalizing and externalizing behaviors.

Internalizing behaviors. Children with internalizing behaviors show signs of crying easily, anxiety, social withdrawal, and tend to submit to attacker's demands (Hodges & Perry, 1999). This study uses a 14-item internalizing scale (Corby, 2006) which taps self-derogation, social withdrawal, sadness, anxiety, and helplessness. This scale was internally consistent, with a Cronbach alpha of .91.

Externalizing behaviors. This is assessed with a nine-item scale that assesses aggression, disruptiveness, dishonesty, and argumentativeness (Corby, 2006; Perry & Hodges, 1999). Externalizing also included reverse-scored items assessing prosocial behavior. This scale was internally consistent, with a Cronbach's alpha of .95.

Procedure

A female researcher administered all three instruments to each child individually. Items were read aloud to each child in a private room in the school library. All three instruments were completed in a single session, lasting approximately one hour.

Results

Overview

The data analysis was conducted by first using SPSS to run a k-Means cluster analysis on the attachment measures of 199 children. A four cluster solution was examined because it followed the traditional 4 profile theoretical framework, but two, three, five, six, and seven cluster solutions were also explored. The seven independent variables that were used for the cluster analysis are the preoccupied, avoidant, indecision, harassment, fear induction, overprotectiveness, and reliable support self-report scales.

Once we identified the attachment clusters in the sample, we then ran a sex (2) by age (2) by attachment profile (4) ANOVA (assuming a 4 cluster solution). The ages were split up into younger and older groups, with the younger group comprising the third through fifth graders and the older group comprising the sixth through eighth graders. The dependent variables for these analyses were global self-worth, internalizing, and externalizing.

Cluster Analysis

SPSS was used to run several k-Means cluster analyses on the seven standardized measures: preoccupied, avoidant, indecision, harassment, fear induction, overprotectiveness, and reliable support self-report scales. Prior to running the analyses, each attachment measure was standardized within each age \times sex group. This was done to remove age and sex differences. The finalized cluster solutions for the 3, 4, and 5 cluster variations can be found in Appendix I.

The four-cluster solution was chosen because it corresponds to the theoretically accepted four profile model and was interpretable in this way. This solution can be seen in Figure 1a in Appendix I. The secure cluster ($n = 68$) comprised children who scored high on reliable support ($M = 3.77, SD = .29$) and low on parental harassment ($M = 1.44, SD = .35$) and overprotectiveness ($M = 1.70, SD = .36$). While one might expect the secure cluster to be larger, it is important to remember the age of the given sample. Studies that have found two of three participants to be secure were only looking at very young children or adults, but middle childhood is marked with higher parent-child conflict, therefore possibly leading to lower rates of secure attachment during this time span.

A preoccupied group ($n = 61$) scored high on preoccupied coping ($M = 2.51, SD = .50$) and maternal overprotectiveness ($M = 2.33, SD = .47$) and low on avoidant coping ($M = 1.42, SD = .32$). An avoidant group ($n = 48$) scored high on avoidant coping ($M = 2.19, SD = .60$) and low on preoccupied coping ($M = 1.75, SD = .47$). Lastly, a disorganized cluster ($n = 22$) scored very high on indecision ($M = 1.91, SD = .39$), harassment ($M = 2.87, SD = .62$), fear induction ($M = 2.77, SD = .63$), and maternal overprotectiveness ($M = 2.50, SD = .70$), while also scoring very low on reliable support ($M = 2.77, SD = .68$). The cluster analysis results accord with previous research by showing that disorganized attachment is the least secure.

Since the cluster analysis looks at all 199 participants as a whole, we also decided to investigate whether there were differences among the attachment classifications between the younger and older children. A chi-square test of independence indicated that there were no significant differences in attachment between the elementary and middle school children ($\chi^2(3, N=199) = 2.96, p = n.s$), with 33.9% of the younger children and

34.6% of the older children being securely attached. The rest of the attachment classifications are broken down by age group on Table 3.

Adjustment Variables

The second stage of the study looked at how the 4 attachment clusters predicted the three adjustment variables: self-reported global self-worth and peer nominated internalizing and externalizing. Each of the adjustment variables was analyzed in a 4 (attachment classification) \times 2 (sex) \times 2 (age) ANOVA.

Global self-worth. As mentioned above, the Harter's Global Self-Worth Scale was used for this measure and comprised 6 items scored from 1 to 4, with higher scores indicating higher self-esteem. A 4 \times 2 \times 2 ANOVA was conducted to evaluate the differences in global self-worth among the four attachment classifications. The ANOVA showed a significant main effect for the attachment classification ($F(3, 198) = 10.714, p < .00001, \eta_p^2 = .149$) and no significant differences by gender or age group.

The secure cluster ($M = 3.654, SD = .063$) had the highest global self-worth scores, and Tukey post hoc tests indicated that it was significantly different from all three other attachment classifications. It was very different from the avoidant cluster ($p < .001$) and the disorganized cluster ($p < .00001$) and moderately different ($p < .05$) from the preoccupied cluster.

The disorganized cluster ($M = 3.004, SD = .115$) had the lowest global self-worth scores, and it was significantly different from every cluster except the avoidant cluster. It was significantly different ($p < .01$) from the preoccupied cluster ($M = 3.415, SD = .067$) and secure cluster ($M = 3.654, SD = .063$), while the avoidant cluster ($M = 3.251, SD =$

.075) was only significantly different from the secure cluster. The results for this are displayed in Figure 1.

Internalizing. A $4 \times 2 \times 2$ ANOVA was conducted to evaluate how the attachment classifications predict peer-reported internalizing behaviors. The ANOVA showed significant main effects for the attachment classification ($F(3, 198) = 3.417, p < .05, \eta_p^2 = .053$) as well as for gender ($F(1, 198) = 5.385, p < .05, \eta_p^2 = .029$). Males were viewed as having more internalizing behaviors ($M = .141, SD = .011$) than females ($M = .106, SD = .010$). This gender difference remained consistent across all attachment classifications.

The secure cluster ($M = .098, SD = .011$) had the lowest level of internalizing behaviors, and post hoc tests revealed that it was significantly lower ($p < .05$) from the disorganized cluster ($M = .168, SD = .021$). The avoidant cluster ($M = .125, SD = .013$) and the preoccupied cluster ($M = .103, SD = .012$) were not significantly different from any other cluster. Figure 2 displays the differences in internalizing behavior among the attachment classifications.

Externalizing. A $4 \times 2 \times 2$ ANOVA was conducted to evaluate differences in externalizing behavior among the four attachment classifications. The ANOVA revealed significant main effects for the attachment classification ($F(3, 198) = 3.603, p < .05, \eta_p^2 = .056$), gender ($F(1, 198) = 12.591, p < .001, \eta_p^2 = .064$), and age ($F(1, 198) = 13.838, p < .001, \eta_p^2 = .070$).

Post hoc tests showed that the avoidant cluster ($M = .226, SD = .021$) had the highest level of peer reported externalizing and that this level was significantly different ($p < .05$) from that of the secure cluster ($M = .149, SD = .018$). The preoccupied cluster

($M = .148$, $SD = .019$) and the disorganized cluster ($M = .209$, $SD = .033$) were also both very high and were not significantly different from any other cluster. Males had significantly more externalizing behavior ($M = .225$, $SD = .017$) than females ($M = .141$, $SD = .016$) across all attachment classifications. Older children also showed more externalizing behavior ($M = .227$, $SD = .019$) than younger children ($M = .139$, $SD = .015$). This can be seen on Figure 3.

The ANOVA also showed a significant interaction between attachment classification and age group in predicting externalizing behavior ($F(3, 198) = 3.210$, $p < .05$, $\eta_p^2 = .050$). Pairwise comparisons showed that within clusters, the age difference was significant ($p < .001$) only in the disorganized cluster, with older children having a much higher rate of externalizing ($M = .327$, $SD = .053$) than younger children ($M = .092$, $SD = .039$).

When pairwise comparisons were done between clusters in younger children, only the disorganized and avoidant clusters significantly differed ($p < .05$), with avoidant attachment having a higher level of externalizing behavior ($M = .192$, $SD = .027$). On the other hand, disorganized attachment during that same age span had the lowest reported externalizing behavior ($M = .092$, $SD = .039$).

In older children, disorganized children no longer were significantly different from avoidant ones, but did have the highest levels of externalizing of all the attachment classifications ($M = .327$, $SD = .052$). Disorganized and avoidant attachment ($M = .260$, $SD = .033$) were significantly higher than both the secure cluster ($M = .172$, $SD = .027$) and the preoccupied cluster ($M = .149$, $SD = .029$).

Discussion

Cluster Analysis

The first goal of this study was to establish whether k-Means cluster analysis could be used as a method of identifying the four attachment classifications in middle childhood. We feel that we accomplished this goal; we managed to capture all four attachment profiles, including disorganized attachment, which many previous studies have had difficulty distinguishing.

Although we ran multiple k-Means cluster solutions with differing numbers of clusters, the four cluster solution provided the most meaningful results and fit in best with the current theoretical attachment framework. As expected, the secure group had the most cases, followed by preoccupied, avoidant, and disorganized; similar to previous research, the disorganized cluster contained fewest cases. The disorganized cluster was also found to have the lowest level of reliable support and highest levels of indecision, harassment, fear induction, and maternal overprotectiveness, making it the most problematic and incoherent attachment style. This verifies the effectiveness of our indecision scale as an index of disorganized attachment and further highlights the importance of distinguishing disorganized attachment from the other insecure attachment styles.

Previous studies have sometimes combined disorganized and avoidant attachment styles into one, but k-Means cluster analysis in this study points out some key differences between the two groups. For one, avoidant attachment was highest in the avoidant scale and the lowest in the preoccupied scale, while preoccupied attachment had the opposite

loadings. Disorganized attachment, on the other hand, had positive loadings on both the avoidant and preoccupied scales, indicating a lack of an organized coping mechanism. Furthermore, disorganized attachment showed much higher levels of fear induction and maternal harassment than the avoidant attachment cluster, while at the same time showing greater amounts of maternal overprotectiveness. The parents of disorganized children appear to be extremely abrasive and induce fear, but at the same time try to shelter the child, probably creating confusion and expectations of low reliable support.

The preoccupied cluster also showed some level of maternal overprotectiveness, but without harassment and fear induction, leading to less approach indecision and more reliable support. Children in this cluster most likely have parents who are warm and non-intrusive but do not allow enough exploration to develop normal, adaptive levels of autonomy. The secure cluster is the lowest on maternal overprotectiveness and highest in reliable support, while also being the lowest on indecision, harassment, and fear induction. This cluster is defined by a parenting relationship that provides a secure base for exploration but at the same time provides a safe haven in times of need.

Overall, all four clusters mapped onto characteristics that are theoretically expected for the attachment classifications. All of the clusters had approximately the correct sample proportions; the indecision scale proved to be effective; and the disorganized attachment cluster was clearly distinguishable from all the others. These findings encouraged us to continue on and try to establish construct validity with the adjustment outcome measures.

Adjustment Outcomes

The second goal of this study was to establish construct validity for the clusters by measuring whether the clusters could predict self- and peer-reported adjustment outcomes. We measured reports of global self-worth, internalizing, and externalizing. We formed our hypotheses on past research. Each adjustment variable is discussed in turn.

Global self-worth. Global self-worth was most likely the most predictable and easiest to interpret adjustment outcome in our study. The securely attached cluster was significantly higher than all other clusters. Furthermore, as predicted, the disorganized cluster had the lowest amount of global self-worth, much like what was found in previous work (Lecompte, Moss, Cyr, & Pascuzzo 2014). This most likely occurs due to the inconsistent and frequently abusive parenting styles commonly seen in disorganized attachment, which has been shown to lead to negative self-views (Goodyer, 2001). The child has extremely limited opportunities for outside exploration due to the parent's levels of overprotective behaviors, but unlike what is seen in preoccupied attachment, disorganized attachment is also marked with harassment and very little reliable support. Overall, a child with disorganized attachment is in a parent-child dyad with very little comfort and support while also lacking communication, leading to feelings of low self-worth.

Internalizing. The results for internalizing behaviors followed a similar pattern: the secure cluster had the smallest number of internalizing problems while the disorganized cluster showed the highest. Low self-esteem has long been known to be associated with depressive symptoms, anxiety, and social withdrawal, and is known to be one of the leading causes of internalizing behaviors (Olivia, Parra, & Reina, 2014) so the

low global self-worth scores of the disorganized cluster naturally linked to internalizing problems in our sample as well. In fact, a recent meta-analysis by Groh et al. (2012) found that disorganized attachment serves as a risk factor for the development of internalizing behaviors, more so than other insecure forms of attachment.

There are many possible causes for this, one of them being the abnormally high levels of stress seen in the environments of disorganized parent-child relationships. Children in this attachment cluster have a higher likelihood of experiencing parental divorce or separation, parental hospitalization, and parental death (Lecompte et al., 2014) on top of the inconsistent and aggressive parenting style already in place. Since the parent of a disorganized attached child is often perceived as being unable to help or protect the child, the child develops feelings of helplessness and vulnerability in times of stress, leading to direct effects on internalizing behaviors (Liu & Wang, 2015; Moss, Rousseau, Parent, St-Laurent, & Saintonge, 1998).

Furthermore, both disorganized attachment and internalizing behaviors have been linked to underdeveloped emotional regulation. Disorganized children have difficulties early in life when it comes to regulating emotions or dealing with stress, which may very well manifest in internalization over time. It is difficult to conclude that disorganized attachment directly leads to internalizing behavior, since previous studies have shown that the emotional regulation problems seen in both disorganized attachment and internalizing are linked to the similarly negative rearing environment, including poorer parenting and maternal depression (Graham & Easterbrooks, 2000).

While the cluster results for internalizing behaviors were expected and congruent with previous work, the significant gender difference in the sample was surprising.

Numerous previous studies have shown that internalizing behavior is higher in females than males, but our study found the opposite (Olivia, Parra, & Reina, 2014). It is difficult to pinpoint the cause of this. One possible explanation could be that many previous studies that have looked into internalizing behaviors have always used self-report measures; therefore our use of the peer-report measure could have led to different results. For instance, it could be likely that peers notice boys who are withdrawn or cry easily more often than girls due to gender norms. Girls are frequently expected to be more emotional and therefore a boy who is crying could be very salient and lead to higher internalizing scores on the PNI.

Externalizing. The results for the peer-reported externalizing behaviors were arguably the most difficult to interpret. We will start this discussion with main effects. It is important to note that while the avoidant attachment cluster had the highest mean of reported externalizing behaviors, the disorganized and avoidant clusters were not significantly different from each other, but were significantly higher from both secure and preoccupied. Therefore, it is safe to say that disorganized and avoidant children had the largest number of reported externalizing behaviors. This corresponds to numerous previous studies, which have frequently found avoidant and disorganized attachment to be linked to later externalizing problems. Another main effect that was expected was the gender difference. Our study found that males have higher rates of externalizing behavior than females regardless of age or attachment.

The picture becomes more complicated when the interaction between attachment and age group was examined. We originally hypothesized that younger children would have higher rates of externalizing, since children's externalizing behavior usually

decreases with age as their cognitive and emotional regulation abilities develop. Our sample showed the opposite of this, with externalizing behaviors increasing across the four attachment clusters over time. Post hoc tests revealed that older children in the disorganized attachment cluster were significantly higher in externalizing behaviors than younger children in the same cluster. Another interesting observation was that disorganized children in the younger group had the lowest mean for externalizing, while the older group had the highest. This could be linked to how parent-child conflict increases over this age period (Vuchinich, Angelelli, & Gatherum, 1996). Fear of parents during youth causes inhibition, but with age this inhibition wanes and turns into aggression and externalizing behaviors.

Externalizing behaviors, such as aggression and delinquency, have long-term consequences and greatly increase over time in the disorganized cluster. This could be due to children with disorganized attachment having lower emotional regulation abilities, therefore hindering their ability to find alternative methods of expressing their problems. It could also be caused by the fact that disorganized attachment leaves children without an organized coping mechanism to deal with the stresses of their unstable environment. This finding highlights the importance of distinguishing the disorganized group from the other insecure attachment classifications.

Future Directions

This study offers a novel way of examining attachment classification in middle childhood. We believe that we have established construct validity with our k-Means cluster classifications, but further research and analyses are needed for confirmation. One recommendation for future studies would be running analyses using R to confirm whether

4 is in fact the most appropriate number of clusters to use. R would allow researchers to run an analysis, very similar to a skree plot, to establish at which point the addition of more clusters would no longer provide useful information.

Another possibility that should be looked at for future studies could be examining explicit and implicit self-esteem separately. Our current study used a self-report measure of explicit global self-worth but past studies have found mixed results depending on whether explicit or implicit measures of self-esteem are used. In fact, the correlation between implicit and explicit self-esteem is still very unclear and could be dependent on attachment style; therefore, a study that uses both could be beneficial and shed some further light on the subject.

Lastly, we believe that the high rates of externalization that increase with age are of great interest. The causes behind it are still unclear, and could be linked to emotional regulation, rates of parent-child conflict, or an interaction between the two. Future studies could implement emotional regulation tasks and possibly look at externalizing behaviors in attachment styles over the period of a few years to find the underlying cause. This could provide a very important link for future early intervention for behavioral problems in preadolescents.

Conclusion

Our study aimed to use a person-centered approach in classifying attachment styles in the under-studied middle childhood age group. Through the use of k-Means cluster analysis, we were able to distinguish all four attachment classifications, including the often elusive disorganized attachment group. We established construct validity of our

attachment clusters by showing that they predicted global self-worth and peer-reported internalizing and externalizing behaviors in predictable manners.

We found that, as expected, children from the disorganized cluster had the lowest amount of global self-worth and the highest reports of internalizing and externalizing behaviors. Furthermore, the disorganized cluster had the lowest reports of externalizing during 3rd, 4th, and 5th graders but then jumped to the highest levels in 6th, 7th, and 8th graders. This highlights the importance of identifying disorganized attachment; it has unique adjustment outcomes when compared to other attachment styles, and the negative behaviors seem only to increase with age; therefore, early identification would be crucial. We hope that as future studies confirm these results, more information can be gained on how to decrease the adverse adjustment outcomes for disorganized attachment.

Table 1: Means and standard deviations of measures by participant age and sex

Measure	Boys				Girls			
	Younger (<i>n</i> =56)		Older (= <i>n</i> =38)		Younger (<i>n</i> =62)		Older (<i>n</i> = 43)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Preoccupied	2.14	.58	1.83	.48	2.27	.61	2.01	.38
Avoidant	1.64	.55	2.00	.55	1.40	.38	1.86	.55
Indecision	1.59	.47	1.75	.43	1.45	.34	1.62	.50
Reliable Support	3.46	.53	3.56	.58	3.57	.48	3.144	.56
Harassment	1.83	.64	2.05	.68	1.77	.49	2.38	.82
Fear Induction	1.64	.71	1.59	.71	1.30	.56	1.68	.58
Overprotectiveness	2.11	.58	2.03	.53	2.05	.47	2.22	.61
Global self-worth	3.46	.54	3.49	.57	3.50	.48	3.24	.62
Internalizing	.14	.10	.11	.12	.09	.06	.14	.08
Externalizing	.19	.17	.22	.19	.10	.10	.17	.14

Note: Younger children were in third through fifth grades; older children were in sixth through eighth grades.

Table 2: Means and standard deviations of measures by attachment classification

Measure	Secure		Preoccupied		Avoidant		Disorganized	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Preoccupied	1.92	0.42	2.51	.50	1.75	.47	2.22	.45
Avoidant	1.50	0.40	1.42	.32	2.19	.60	1.88	.55
Indecision	1.34	0.28	1.48	.31	1.91	.51	1.91	.39
Reliable Support	3.77	.29	3.52	.37	3.04	.50	2.77	.68
Harassment	1.44	.35	1.99	.47	2.30	.69	2.87	.62
Fear Induction	1.20	.41	1.46	.49	1.52	.45	2.77	.63
Overprotectiveness	1.70	.36	2.33	.47	2.19	.55	2.50	.70
Global self-worth	3.67	.42	3.42	.47	3.28	.55	3.01	.74
Internalizing	.10	.14	.11	.07	.12	.12	.16	.10
Externalizing	.14	.12	.15	.14	.22	.19	.16	.19

Table 3: Crosstabulation of attachment classifications between age groups

Table 3: Crosstabulation of attachment classifications between age groups

	Cluster Number of Case				Total
	Disorganized	Avoidant	Secure	Preoccupied	
Younger Children	14	29	40	35	118

Note: Younger children were in third through fifth grades; older children were in sixth through eighth grades. No significant differences were found in attachment classification between the age groups.

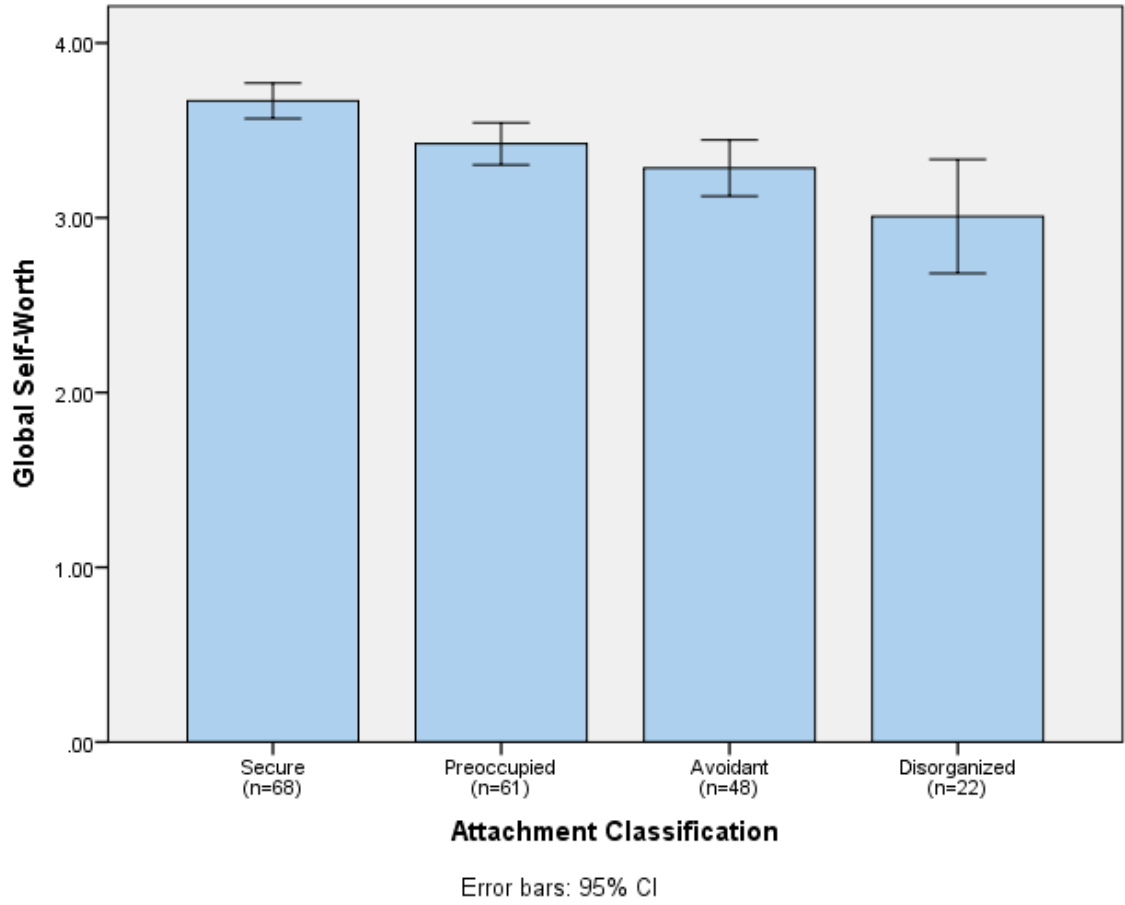


Figure 1: Attachment classification predicting global self-worth

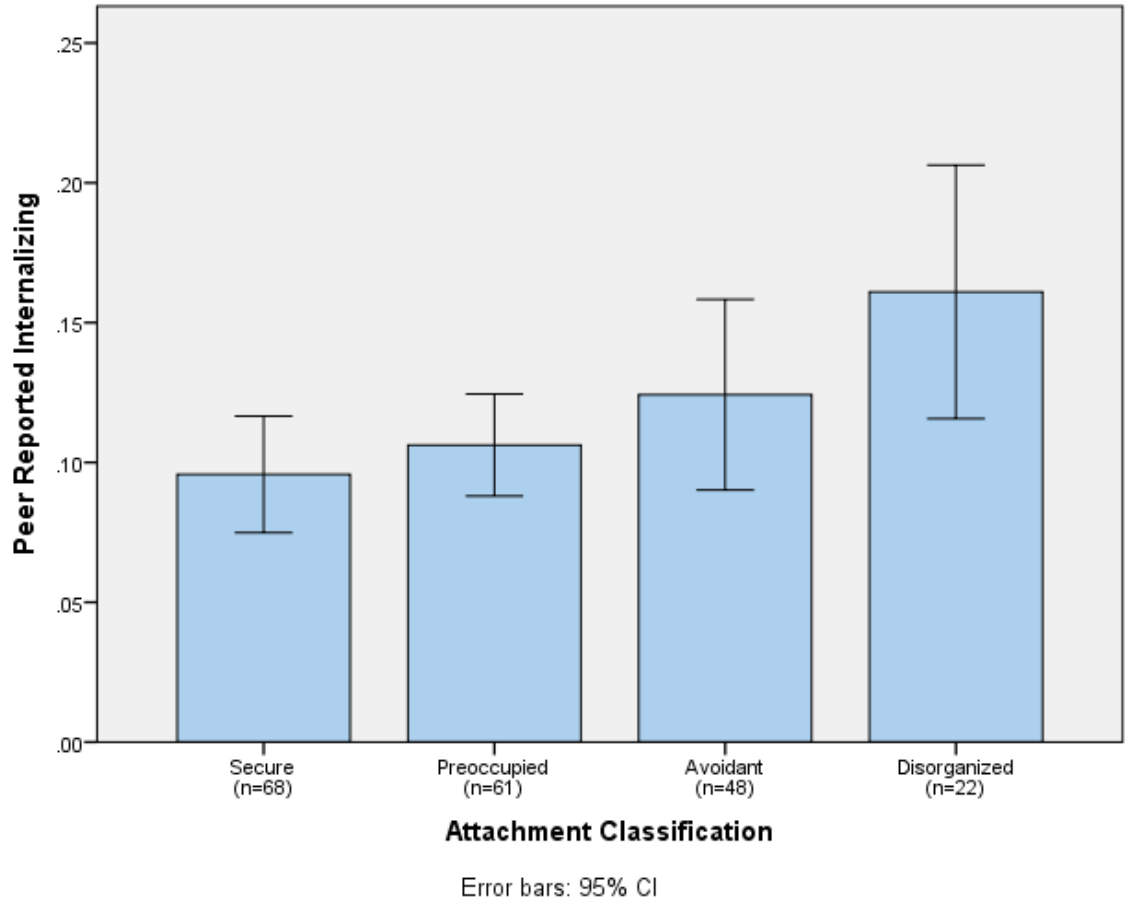


Figure 2: Attachment classification predicting internalizing behaviors

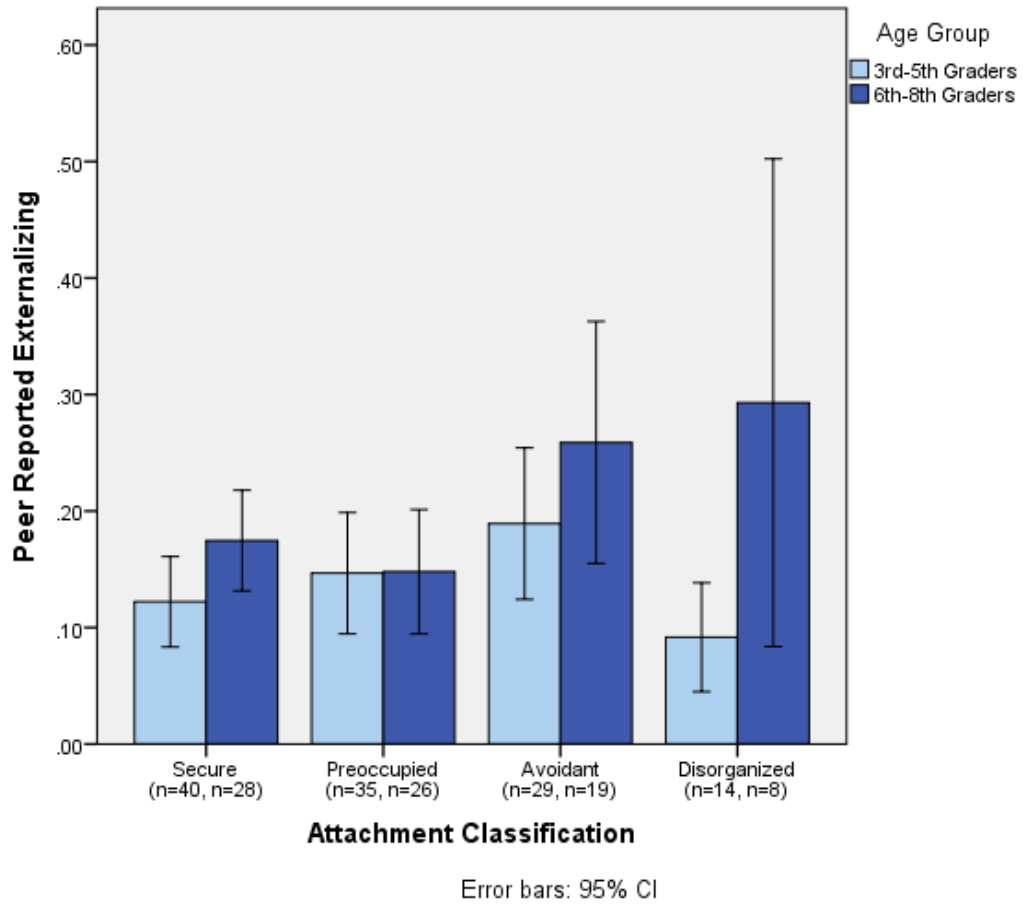


Figure 3: Attachment classification predicting externalizing behaviors

Appendices

Appendix A: “What Am I Like With My Mother”

This questionnaire contains measuring preoccupied coping, avoidant coping reliable support, indecision, compulsive coercion, compulsive caregiving, and fear.

Instructions to Child:

This questionnaire asks about what you are like with your mother – like how you act and feel around her. On this questionnaire, the items are set up on the same way that they were on the last questionnaire, only this time the questions are about you. Let’s try a practice question:

PRACTICE QUESTION

One day at school you get your test back from your teacher and you see that you scored a low grade on the test. When you get home, your mother can tell that you feel bad and she asks if you want to talk about it.

Some kids would want to talk to their mother about it

Other kids would want to be left alone.

BUT

Very true
for me

Sort of
true for me

Sort of Very true
true for me for me

“What Am I Like With My Mother”

1. One day something happens that upsets you. After talking with your mother about for a while, your mother says that she needs to stop talking with you because she has to go do something else.

Some kids would calm down after
Talking with their mother

BUT

Other kids would still be upset
and would try to get their mother
To talk some more with them.

2. Your mother has been away for a few days but is coming home later in the day.

Some kids wouldn't care that she is
Coming home

BUT

Other kids would look forward
to seeing her.

3. Your mother has been sick in the hospital. You can go visit her if you want to, but you don't have to.

Some kids would have an easy time
deciding whether to go visit their
mother

BUT

Other kids would have a hard
time deciding whether to go visit
her.

4. One of your teachers says something mean to you at school one day.

Some kids would let their mother
Know they were upset and would talk
to her about it

BUT

Other kids wouldn't let their
mother know why they were upset
and would not talk to her about it.

5. Your mother has been busy and hasn't been able to show you much attention lately.

Some kids would not be very upset
That their mother has been busy

BUT Other kids would be very upset
and would try to get their mother
to pay them more attention.

6. Your mother takes you to the doctor's office for a check-up. While you are sitting in the waiting room, she says she is going to run an errand and will be back to pick you up later.

Some kids would be glad that their
Mother left them alone to wait

BUT Other kids would prefer that
their mother wait with them.

7. Your mother says she is thinking about going to visit a relative for a week or two.

Some kids would be upset that she is
going away for so long and would try
to talk her out of going

BUT Other kids wouldn't be upset and
wouldn't try to talk her out of
going.

8. You and your mother have been apart from each other for a few days. When you get back together your mother says that, if you'd like to, maybe she and you could do something together.

Some kids would have a hard time
deciding whether to do something
with their mother

BUT Other kids would have an easy
time deciding whether to talk
with her about it or not.

9. One day you are feeling bad because a good friend of your has decided to drop you as a friend. Your mother hears about it and asks if you would like to talk with her about it.

Some kids would have a hard time deciding whether to talk with her about it or not

BUT

Other kids would have an easy time deciding whether to talk with her about it or not.

10. Let's say that you have a favorite pet, a cat or a dog, that suddenly gets very sick. You are sad about it.

Some kids would let their mother know they were feeling sad

BUT

Other kids would not let their mother know they were feeling sad.

11. You are at the movies with your mother and you have to go out to the bathroom. When you come back in, the theatre is so dark that you can't find your mother.

Some kids would calmly look for their Mother and not be too worried

BUT

Other kids would look for their mother and be very upset until they found her.

12. You and your mother are visiting a new shopping center to see what it is like. Your mother suggests that the two of you explore the center together.

Some kids would only want to explore It on their own

BUT

Other kids wouldn't mind exploring it with their mother.

13. Your mother comes home after being away for a few days.

Some kids would not be upset with her for having gone away

BUT

Other kids would be upset with her for having gone away.

14. You and your mother go to the movies together. When you go into the theater, you see that it is crowded and you can't find two seats together.

Some kids would be sorry they can't sit with their mother **BUT** Other kids would rather sit away from her anyway.

15. On the way home from school a bully stops you and threatens you. This makes you upset and afraid. When you get home you talk to your mother about it.

Some kids would stay close to their mother and talk about it for a long time **BUT** Other kids would talk to her for a short time and then get over it.

16. One day your mother says that because the two of you haven't been spending much time together, she'd like to spend a little time with you on the weekend. She asks you to think it over and let her know.

Some kids would have an easy time deciding whether to spend more time with their mother **BUT** Other kids would have a hard time deciding whether to spend more time with their mother.

17. One night at home something happens that scares you. Your mother is in the house and you could go get her if you wanted to.

Some kids would have an easy time deciding what to do in this situation **BUT** Other kids would have a difficult time deciding what to do in this situation.

18. One day you and your mother go to the zoo. Your mother says that because she has not seen you much lately, she would like the two of you to look at the animals together.

Some kids would rather look at the animals alone and meet up with their mother later

BUT

Other kids would be willing to look at the animals with their mother.

19. You have to go to the doctor for a check up and you are in the waiting room with your mother. Your mother wants to leave you at the doctor's office while she does some shopping.

Some kids would be upset and would try to make their mother stay

BUT

Other kids wouldn't be so upset and wouldn't try to make their mother stay.

20. Your mother comes home after being away for a week or two.

Some kids would stop what they are doing and run to greet her with a hug or a kiss

BUT

Other kids wouldn't stop what they are doing to greet her.

21. There is an after school sports team that you really want to join, but you realize that you don't know anyone on the team. You ask your mother to go to the tryouts with you. She says she can drive you there but can't stay there with you.

Some kids would go only if their mother could stay during the tryouts

BUT

Other kids would go even if she couldn't stay.

22. You're away from home for a few days, maybe at camp or visiting a relative. If you want to, you can call your mother.

Some kids would have a hard time deciding whether to call their mother

BUT

Other kids would have an easy time deciding whether to call their mother.

23. One day you are upset or afraid about something. You are wondering whether to talk it over with your mother.

Some kids would have an easy time deciding whether to talk it over with their mother

BUT

Other kids would have a hard time deciding whether to talk it over with their mother.

24. You and your mother are at a busy shopping mall in Miami, and suddenly you can't find your mother. You are upset, but a little later you find each other.

Some kids would soon get over being upset

BUT

Other kids would stay worried that they might get separated again

25. You are sad because you just lost a pet. To cheer you up, your mother asks if you would like to do something fun with her.

Some kids would have a hard time deciding whether to do something with their mother

BUT

Other kids would have a hard time deciding whether to do something with their mother.

26. One day at school the teacher misunderstands something you did and scolds you for it. You become upset. When you get home, you try to talk to your mother about it, but she is busy and says she'll talk with you about it later.

Some kids would try to get her to talk about it right away

BUT Other kids would wait until their mother was ready to talk about it.

27. Your mother has been away for a few days, but she is coming home today. You are in your room but can hear her come into the house.

Some kids would have an easy time deciding whether to go greet her or not

BUT Other kid's would not be able to decide whether to go greet her or not.

28. You're upset about something that happened at school, and you are wondering whether to talk with your mother about it.

Some kids would have a hard time deciding whether to talk with their mother about it

BUT Other kids would have a hard time deciding whether to talk with their mother about it.

Appendix B: Key for “What Am I Like With My Mother”

- | | |
|------------|-------------|
| 1. Preoc | 15. Preocc* |
| 2. Avoid* | 16. Indec |
| 3. Idec | 17. Indec |
| 4. Avoid | 18. Avoid* |
| 5. Preocc | 19. Preocc* |
| 6. Avoid* | 20. Avoid |
| 7. Preoc* | 21. Indec* |
| 8. Indec* | 22. Indec |
| 9. Indec* | 23. Indec |
| 10. Avoid* | 24. Preocc |
| 11. Preocc | 25. Indec* |
| 12. Avoid* | 26. Preocc* |
| 13. Preocc | 27. Indec |
| 14. Avoid | 28. Indec* |

Preoccupied: 1, 5, 7*, 11, 13, 15*, 19*, 24, 26*
Avoidant: 2*, 4, 6*, 10*, 12*, 14, 18*, 20,
Indecision: 8*, 9*, 16, 17, 21*, 22, 23, 25*, 27, 28*

Appendix C: “About My Mother”

This questionnaire is the Perception-of-Parent Questionnaire and contains three scales measuring maternal harassment, overprotectiveness, and fear induction.

Instructions to Child:

This questionnaire contains some statements that describe different kinds of mother that children can have. As you can see from the top of your sheet where it says “About My Mother,” I am going to ask you some questions about your mother. There are no right or wrong answers to these questions. Different kids have different types of mothers. Also, remember that your answers will be completely private, and nobody except me and the research workers will see what you put down. First let me explain how the questions work. There is a sample question below marked PRACTICE QUESTION. I’ll read it aloud and you can follow along with me.
(researcher reads practice question.)

PRACTICE QUESTION

Some mothers don’t let their kids eat kids candy		BUT	Other mothers do let their eat candy
Very true for me	Sort of true for me		Sort of true for me Very true for me

This question talks about two kinds of mothers, and we want to know which kind of mother is more like yours.

1. So, what I want you to decide first is whether your mother is more like the mothers on the left side who don’t let their kids eat candy or is more like the mothers on the right side who don’t let their kids eat candy. Don’t mark anything yet, but first decide which kind of mother is more like yours and go to that side of the sentence.
2. Now, the second thing I want you to think about, now that you have decided which kind of mother is more like yours, is to decide whether that is only sort of true or very true. If it’s only sort of true, then circle “sort of true for me”: if it’s really true for you, then circle “very true for me”.
3. For each question, you only circle on statement. Sometimes it will be on one side of the page, and at other times it may be on the other side of the page. You don’t circle one on both sides, just the one side more like you.
4. OK, that one was just for practice. Now we have some more questions which I’m going to read aloud. For each one, just circle one statement, the one that goes with what is true for your mother, which she is most like.

“About My Mother”

- | | | |
|---|---------------------|---|
| 1. Some mothers get mad easily over little things | BUT | Other mothers don't get mad easily over little things. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |
| 2. Some mothers <u>don't</u> do things that frighten their kid | BUT | Other mothers <u>do</u> do things that frighten their kid. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |
| 3. Some mothers would be afraid to let their kid spend a weekend away from them | BUT | Other mothers wouldn't be afraid to let their kid spend a weekend away from them. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |
| 4. Some mothers respect their kid's privacy | BUT | Other mothers do not respect their kid's privacy. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |
| 5. Some mothers let their kids explore new places | BUT | Other mothers are afraid to let their kid explore new places. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |
| 6. Some mothers <u>aren't</u> always afraid their kid will get sick | BUT | Other mothers <u>are</u> always afraid their kid will get sick. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |
| 7. Some mothers do things that make kid feel afraid | BUT | Other mothers don't do things their that make their kid feel afraid. |
| Very true for me | Sort of true for me | Sort of true for me |
| Very true for me | Sort of true for me | Very true for me |

- | | |
|--|--|
| <p>8. Some mothers use threats to get their kid to behave</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers <u>don't</u> use threats to get their kid to behave.</p> <p>Sort of Very true
true for me for me</p> |
| <p>9. Some mothers let their kid take chances and try new things</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers <u>don't</u> let their kid take chances and try new things.</p> <p>Sort of Very true
true for me for me</p> |
| <p>10. Some mothers <u>aren't</u> always afraid their kid will get hurt</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Some mothers <u>are</u> always afraid their kid will get hurt.</p> <p>Sort of Very true
true for me for me</p> |
| <p>11. Some mothers leave their kid alone when their kid wants to be alone</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers bother their kid when when the kid wants to be alone.</p> <p>Sort of Very true
true for me for me</p> |
| <p>12. Some mothers baby their kids by not letting them try new things</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers <u>don't</u> baby their kids and <u>do</u> let them try new things.</p> <p>Sort of Very true
true for me for me</p> |
| <p>13. Some mothers do scary things to their kid</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers <u>don't</u> do scary things to their kid.</p> <p>Sort of Very true
true for me for me</p> |
| <p>14. Some mothers <u>don't</u> worry too much about their kid when they're not with the kid</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers <u>do</u> worry too much about their kid when they're not with the kid.</p> <p>Sort of Very true
true for me for me</p> |
| <p>15. Some mothers are nosy and ask embarrassing personal questions</p> <p style="text-align: right;">BUT</p> <p>Very true Sort of
for me true for me</p> | <p>Other mothers are not nosy and don't ask embarrassing personal questions.</p> <p>Sort of Very true
true for me for me</p> |

16. Some mothers let their kid try new and exciting things like climbing a tall tree and swimming out farther than usual **BUT** Other mothers don't let their kid try those kinds of new and exciting things.
- Very true for me Sort of true for me Sort of true for me Very true for me
17. When visiting new places (like a new mall)
- Some mothers worry that their kid might get lost **BUT** Other mothers don't worry that their kid might get lost.
- Very true for me Sort of true for me Sort of true for me Very true for me
18. Some mothers don't let their kid try exciting new things that older kids are allowed to do **BUT** Other mothers do let their kid try exciting new things that older kids are allowed to do.
- Very true for me Sort of true for me Sort of true for me Very true for me
19. Some mothers don't let their kid try exciting new things that older kids are allowed to do **BUT** Some mothers do let their kid try exciting new things that older kids are allowed to do.
- Very true for me Sort of true for me Sort of true for me Very true for me
20. Some mothers don't do things that scare their kid **BUT** Other mothers do do things that scare their kid.
- Very true for me Sort of true for me Sort of true for me Very true for me
21. Some mothers come into their kid's room when the kid doesn't want them to **BUT** Other mothers don't come into room their kid's room unless the kid wants them to.
- Very true for me Sort of true for me Sort of true for me Very true for me

22. Some mothers think lots of things dangerous for their kid to do **BUT** Other mothers don't there are too of things are too dangerous for their kid to do.
- Very true for me Sort of true for me Sort of true for me Very true for me
23. Some mothers don't butt into their kid's business **BUT** Other mothers are always butting into their kid's business.
- Very true for me Sort of true for me Sort of true for me Very true for me
24. You go camping with your family, and at the campground you meet some kids your age.
- Some mothers wouldn't want their kid to go off alone with their new friends to explore the campground **BUT** Other mothers would let their kid go off to explore with their new friends.
- Very true for me Sort of true for me Sort of true for me Very true for me

Appendix D: Key for “About My Mother”

1. HAR (Harassment)*	13. FI*
2. FI (Fear Induction)	14. OP
3. OP (Overprotectiveness)*	15. HAR*
4. HAR	16. OP
5. OP	17. OP*
6. OP	18. HAR
7. FI*	19. OP*
8. HAR*	20. FI
9. OP	21. HAR*
10. OP	22. OP*
11. HAR	23. HAR
12. OP*	24. OP*

*reverse scored

HAR: 1*, 4, 8*, 11, 15*, 18, 21*, 23

FI: 2, 7*, 13*, 20

OP: 3*, 5, 6, 9, 10, 12*, 14, 16, 17*, 19*, 22*, 24*

Appendix E: “What I Am Like”

This questionnaire contains the global self-worth scale.

Instructions to Child:

This questionnaire contains some statements that describe things about kids, such as who they are, what they like to do, and how they feel about various things. As you can see from the top of your sheet where it says “What I Am Like,” we are interested in what each of you is like, what kind of person you like. This is a survey, not a test. There are no right or wrong answers. Since kids are very different from one another, each of you may be putting down something different.

First let me explain how the questions work. There is a sample question below marked PRACTICE QUESTION. I’ll read it aloud and you can follow along with me. (Researcher reads practice question.)

PRACTICE QUESTION

Some kids are good at
playing cards

BUT

Other kids aren’t good at
playing cards.

Very true
for me

Sort of
true for me

Sort of
true for me

Very true
for me

This question talks about two kinds of kids, and we want to know which kids are most like you. (The following instructions may be omitted for children who have already responded to a questionnaire using the same item format.)

1. So, what I want you to decide first is whether you are more like the kids on the left side who are good at playing cards or are you more like the kids on the right side who aren’t good at playing cards. Don’t mark anything yet, but first decide which kind of kid is most like you and go to that side of the sentence.
2. Now, the second thing I want you to think about, now that you have decided which kind of kid is most like you, is to decide whether that is only sort of true for you, or very true for you. If it’s only sort of true for you, then circle “sort of true for me”; if it’s very true for you, then circle “very true for me”.
3. For each question, you only circle on statement. Sometimes it will be on one side of the page, and at other times it may be on the other side of the page. You don’t circle one on both sides, just the one side more like you.
4. OK, that one was just for practice. Now we have some more questions which I’m going to read out aloud. For each one, just circle the statement, the one that goes with what is true for you, for what you most like. Remember that no one else at the school will see your answers, and it is very important that you answer each question honestly.

“What I Am Like”

1. Some kids are often unhappy with themselves

BUT

Other kids are pretty pleased with themselves.

Very true for me Sort of true for me

Sort of true for me Very true for me

2. Some kids don't like the way they're leading their life.

BUT

Other kids do like the way they're leading their life.

Very true for me Sort of true for me

Sort of true for me Very true for me

3. Some kids are happy with themselves as a person

BUT

Other kids are often not with themselves.

Very true for me Sort of true for me

Sort of true for me Very true for me

4. Some kids like the kind of person they are

BUT

Other kids often wish they were someone else.

Very true for me Sort of true for me

Sort of true for me Very true for me

5. Some kids are very happy being the way they are

BUT

Other kids wish they were different.

Very true for me Sort of true for me

Sort of true for me Very true for me

6. Some kids are not very happy with the way they do things

BUT

Other kids think the way they do things is fine.

Very true for me Sort of true for me

Sort of true for me Very true for me

Appendix F: Key for “What I Am Like”

1. GSW (global self-worth)
2. GSW
3. GSW *
4. GSW *
5. GSW *
6. GSW

* = reverse scored

Appendix G: “About My Classmates”

This is the Peer Nomination Inventory. It contains items measuring a wide range of social behaviors children exhibit in the peer group.

Instructions to child:

(First give the child a ruler, to help the child to keep track of the item he/she is working on.) Read the following to the child:

Here is a ruler that you can use to help you do this questionnaire. Don't turn over the page until I tell you to. We have been having boys and girls in school describe things they do. Now we want to know how many boys and girls here at Henderson do the same sorts of things. So we have written down lots of things that kids do. I want you to check which boys (girls) in your grade do these things.

Everything is private and we will not show anybody else what any of you has put down on your paper, and none of you will find out what other kids have put down. If you have any questions about what the item means, just ask me.

Ok, now turn over your paper. Across the top are the names of boys (girls) in your class. I will read them aloud, and I want you to read them loud with me, so that you are sure you know who each one is. (Read names.) There is a black line through your name on every page because you won't put any “X”s under your own name.

Now look down the side of the page. See Number 1. (Have them use the ruler for a guideline.) “He likes to play sports.” OK, now look across the names. Who likes to play sports? Put an “X” under his (her) name. Who else likes to play sports? Put an “X” under his (her) name too. Put an “X” under the name of every boy (girl) who likes to play sports. (Pause.) Through with that one? OK, we'll go on to the next one. Remember, for each item you can an “X” under as many names as you want to. (Read items one by one.)

“About My Classmates”
Girls Form

	Student Name									
1. She likes to play sports.										
2. She argues a lot.										
3. She is afraid to do things.										
4. She tries to get along with everyone.										
5. She plays by herself most of the time.										
6. She stands up for herself when someone tries to push her around.										
7. She’s always asking for help.										
8. She hits and pushes others around.										
9. She always plays with boys.										
10. She doesn’t let bullies pick on weaker kids.										
11. She gets picked on by other kids.										
12. She helps other kids solve their problems.										

13. She sometimes takes things that belong to someone else.										
14. She says bad things about herself.										
14. She says bad things about herself.										
15. She is brave.										
16. She makes fun of people.										
17. She is good to have in a group, because she shares things and gives other people a turn.										
18. She acts like a boy.										
19. She makes noise or bothers you in class.										
20. She doesn't talk much.										
21. She stands up for kids who get picked on by bullies.										
22. She gets hit and pushed by other kids.										
23. She is good at being a leader and taking charge of things.										
24. She can't do things by herself.										
25. Kids make fun of her.										
26. She'd rather play with boys than girls.										
27. When a kid is sad, she tried to make them feel better.										

28. When other kids are playing, she watches them but doesn't join in.										
29. She gives up easily.										
30. She's just plain mean.										
31. She tries hard to win games and contests.										
32. She seems unhappy and looks sad often.										
33. She always has to have her own way.										
34. She rescues kids who get picked on by bullies.										
35. She likes to do things that boys usually do.										
36. She doesn't follow rules.										
37. On the playground she just stands around.										
38. She tells lies.										
39. She puts herself down a lot.										
40. She is always friendly.										

Appendix H: Key for “About My Classmates”

1. Agentic	Agentic: 1, 6, 15, 23, 31
2. Argumentative	Argumentative: 2, 33
3. Anxious/depressed	Anxious/depressed: 3, 32
4. Communal	Communal: 4, 12, 17, 27, 40
5. Withdrawn	Withdrawn: 5, 20, 37
6. Agentic	Helplessness: 7, 24, 29
7. Helplessness	Aggressive: 8, 16, 30
8. Aggressive	Gender typing: 9, 18, 26, 35
9. Gender typing	Protective: 10, 21, 34
10. Protect	Victimized: 11, 22, 25
11. Victimized	Dishonest: 13, 38
12. Communal	Self-deprecating: 14, 39
13. Dishonest	Hovering: 28
14. Self-deprecating	Disruptive: 19, 36
15. Agentic	
16. Aggressive	
17. Communal	
18. Gender typing	
19. Disruptive	Internalizing w/o vic: 3, 32, 5, 20, 37, 7, 24, 29, 14, 39, 28
20. Withdrawn	Total internalizing: 3, 32, 5, 20, 37, 7, 24, 29, 14, 39,
21. Protective	28, 11, 22, 25
22. Victimized	Externalizing w/o agg: 2, 33, 13, 38, 19, 36
23. Agentic	Total externalizing: 2, 33, 13, 38, 19, 36, 8, 16, 30
24. Helpless	Prosocial: 1, 6, 15, 23, 31, 4, 12, 17, 27, 40, 10, 21, 34
25. Victimized	Gender typing (peer preference): 9, 26
26. Gender typing	Gender typing (behavior preference): 18, 35
27. Communal	
28. Hovering	
29. Helplessness	
30. Aggressive	
31. Agentic	
32. Anxious/depressed	
33. Argumentative	
34. Protective	
35. Gender typing	
36. Disruptive	
37. Withdrawn	
38. Dishonest	
39. Self-deprecating	
40. Communal	

Appendix I: 3,4, and 5 Cluster Solutions

	Final Cluster Centers			
	Cluster			
	Disorganized (n=22)	Avoidant (n=48)	Secure (n=68)	Preoccupied (n=61)
Preoccupied	.16789	-.66120	-.33107	.82880
Avoidant	.47683	1.00584	-.38608	-.53307
Reliable support	-1.13992	-.71650	.68567	.21057
Indecision	.82626	.73233	-.59430	-.21175
Harassment	1.40232	.48161	-.82805	.03835
Fear induction	1.94606	-.03609	-.50546	-.10999
Overprotective	.71036	.15234	-.72953	.43718

Appendix Table 1. The four cluster solution used for all adjustment outcome analyses. This corresponds to the theoretically accepted 4 profile model.

	Final Cluster Centers		
	Cluster		
	Secure (n=72)	Preoccupied (n=68)	Avoidant (n=59)
Preoccupied	-.48177	.83532	-.37482
Avoidant	-.24385	-.52400	.90151
Reliable support	.59967	.26600	-1.03838
Indecision	-.55465	-.14726	.84658
Harassment	-.69938	-.02022	.87679
Fear induction	-.47977	-.11714	.72049
Overprotective	-.66780	.37094	.38742

Appendix Figure 2A. Three cluster solution. This solution cannot distinguish disorganized attachment from other insecure attachment classifications.

Final Cluster Centers

	Cluster				
	Avoidant (n=38)	The Fifth Cluster (n=43)	Preoccupied (n=35)	Disorganized (n=17)	Secure (n=66)
Preoccupied	-.69059	.41013	.81931	-.01176	-.30104
Avoidant	1.31350	-.35425	-.56356	.63376	-.38984
Reliable support	-.75347	-.22111	.34049	-1.32309	.73811
Indecision	.89367	.16847	-.35045	.68959	-.61608
Harassment	.53616	.27434	-.14188	1.66482	-.84101
Fear induction	-.02187	.52673	-.39507	1.77709	-.57881
Overprotective	.02773	-.20749	.92738	1.33858	-.71736

Appendix Figure 2B. Five cluster solution. The fifth attachment profile could represent a different segment of disorganized attachment, but is hard to interpret. Overall, this does not correspond well current accept theoretical framework and not much is gained with adding an extra cluster, therefore it was not used further.

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