Running head: MEASURING ATTACHMENT FROM MIDDLE CHILDHOOD

Attachment anxiety and avoidance in middle childhood and early adolescence:

The development of a child version of the Experiences in Close Relationships Scale-Revised.

Abstract

The investigation of attachment processes during middle childhood and early adolescence has been hampered by a relative lack of measures for this age group differentiating between two fundamental attachment dimensions, that is, anxiety and avoidance. The aim of this study is to develop and validate a child version of the Experiences in Close Relationships Scale-Revised (referred to as the ECR-RC), a self-report questionnaire measuring attachment anxiety and avoidance. Two studies were conducted to examine the internal structure (Study 1, *N* = 514 and Study 2, *N* = 296) and construct and predictive validity (Study 2) of the ECR-RC. The ECR-RC appears to be a promising instrument to measure the two attachment dimensions in middle childhood and early adolescence.

Keywords: attachment measurement, children and early adolescents, factorial structure, validity

The quality of attachment relations is considered to be an important determinant of psychosocial development (Green & Goldwyn, 2002; Greenberg, 1999). Although attachment theory is a life-span theory (Ainsworth, 1989; Bowlby, 1969/1982, 1973, 1979), attachment research has mainly been conducted in infancy, early childhood (e.g., Ainsworth, Blehar, Waters, & Wall, 1978) or in the period of late adolescence and adulthood (e.g., Rholes, Simpson, Campbell, & Grich, 2001), at the expense of research in middle childhood and early adolescence. Moreover, the limited body of research on attachment during the latter age period typically relies on broad assessments of attachment security (versus insecurity) without distinguishing between two fundamental and qualitatively different dimensions of attachment that have been distinguished in early childhood and adulthood, that is, anxiety and avoidance. This state of affairs is partly due to the relative lack of instruments directly tapping into attachment anxiety and avoidance in middle childhood and early adolescence (Kerns, Tomich, Aspelmeier, & Contreras, 2000; Thompson & Raikes, 2003). Therefore, the aim of this study is to adapt and validate a version of the Experiences in Close Relationships Scale - Revised (ECR-R) scale, which is one of the most frequently used measures of attachment anxiety and avoidance in adults, for use with middle childhood children and early adolescents.

Attachment theory

Bowlby's attachment theory (1969/1982, 1979) is one of the most prominent and well-established frameworks to conceptualize the relationship between parents and their children (Mikulincer, Shaver, & Pereg, 2003). An attachment style can be defined as a pattern of relational expectations, emotions, and behaviors that results from early experiences with caregivers and that affects interpersonal behavior and development throughout the lifespan (Fraley & Shaver, 2000; Shaver & Mikulincer, 2002). Initial research on attachment in children as well as adults conceptualized attachment categorically, thereby distinguishing between secure, anxious, and avoidant attachment styles (Ainsworth et al., 1978; Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). Although early

attachment research already addressed the dimensions underlying these attachment categories (e.g., Ainsworth et al., 1978), recent research is characterized by a more explicit focus on the dimensions behind attachment quality. In this continuous-dimensional approach, it is assumed that individual differences in attachment can be most parsimoniously represented along two fundamental dimensions (e.g., Brennan, Clark, & Shaver, 1998), that is, attachment anxiety and attachment avoidance. Whereas attachment anxiety refers to preoccupation with social support, jealousy, fear and vigilance concerning abandonment and rejection, attachment avoidance involves avoidance of intimacy, discomfort with closeness, and self-reliance. By crossing these two dimensions, four attachment orientations can be distinguished: secure attachment (low on both dimensions), preoccupied attachment (high on anxiety and low on avoidance), dismissing-avoidant attachment (low on anxiety and high on avoidance), and fearful-avoidant attachment (high on both dimensions). Bartholomew and Horowitz (1991) argue that each attachment orientation is associated with a distinct pattern of personal and interpersonal adjustment. Whereas securely attached individuals have mostly warm interpersonal contacts and high levels of self-confidence, preoccupied individuals are lower in self-confidence and tend to display extreme emotional expressiveness in relationships. Individuals with a fearful avoidant orientation are rather low in self-confidence and tend to assume a subservient role in close relationships, whereas those with a dismissing orientation are high on self-confidence, yet refrain from engaging in emotional expressiveness or self-disclosure (Bartholomew & Horowitz, 1991).

Research in samples of both young children and adults has shown that attachment styles and their underlying dimensions are meaningfully and differentially related to a range of aspects of psychosocial functioning, including social adjustment, well-being, self-worth, emotion regulation, and psychopathology (Mikulincer & Shaver, 2007). To validate the child version of the ECR-R developed in this study, we will focus on associations between the attachment dimensions and both strategies of

emotion regulation and depressive symptoms, as these represent conceptually important and frequently studied outcomes of attachment.

Bowlby (1969/1982, 1973) postulated that early interactions with attachment figures form a critical context for the development of emotion regulation processes, which are in turn essential for psychosocial adjustment or, conversely, for the development of psychopathology. Shaver and Mikulincer (2002) have proposed a model describing in greater detail how the attachment dimensions of anxiety and avoidance are related to different strategies of emotion regulation. According to this model, anxious attachment would be mainly associated with hyperactivating strategies of emotion regulation, which consist of hypervigilant screening of the environment for threats and availability of the attachment figure (Mikulincer & Shaver, 2007). In contrast, attachment avoidance would be primarily related to the use of deactivating strategies of emotion regulation. Deactivation consists of suppressing emotion-related thoughts, aiming attention away from emotion-related action tendencies, and masking expressions of emotion.

The notion that anxious and avoidant attachment are associated with different emotion regulation strategies has been around for quite some time and would be applicable to both adults and younger children and adolescents. For example, Cassidy (1994) already noted that there is a heightening of emotion (i.e., hyperactivation) in ambivalent (i.e.,anxiously attached) children and minimization of emotion (i.e., deactivation) in avoidantly attached children. Cross-sectional and longitudinal studies, in both children and adults, have indeed found that attachment anxiety and avoidance are differentially associated with strategies of emotion regulation, in ways predicted by the model of Shaver and Mikulincer (e.g., Braungart & Stifter, 1991; Mikulincer & Shaver, 2007; Vogel & Wei, 2005).

The maladaptive emotion regulation processes associated with attachment anxiety and avoidance in turn increase the vulnerability for psychopathology and for depressive feelings in

particular. Cross-sectional and longitudinal studies, with adults (Mikulincer & Shaver, 2007) as well as with children and adolescents (e.g., Brumariu & Kerns, 2010), support a relationship between both attachment anxiety and attachment avoidance and depressive symptoms, although associations with avoidant attachment are typically less pronounced.

Continuity And Change In Attachment During Middle Childhood And Early Adolescence

During middle childhood and early adolescence, attachment-related processes are quite dynamic and important. At the surface level, attachment relationships seem to change quite a bit compared to early childhood. Children at this age have an increasing number of social roles and begin to spend more time with peers (Fraley & Davis, 1997). Amidst these social changes, the original main attachment figures (mostly the parents) typically retain their importance, yet there is a changing balance between attachment and exploratory behavior (Allen, 2008). Compared to early childhood, children in middle childhood and early adolescence rely relatively less on their parents for emotional support and increasingly use their parents as a secure base from which to explore the broader interpersonal environment (including peer groups). Also, whereas physical closeness is very important in early childhood, psychological (instead of physical) availability becomes relatively more important during middle childhood and early adolescence (Bowlby, 1969/1982; Kerns et al., 2000).

In spite of these changes in attachment relationships, it has also been argued and found that there is a lot of continuity between early attachment patterns and attachment during middle childhood and beyond. Bowlby (1973), for instance, endorses a continuous view on attachment by arguing that attachment patterns, built on experiences within one's family of origin during early childhood, are fairly stable from infancy to adulthood. Based on this argument, Fraley (2002) more recently proposed a prototype perspective on attachment, which holds that representations of early attachment experiences are retained over time and continue to shape interpersonal dynamics throughout the life span.

Research using both interviews and self-report measures is increasingly providing support for this prototype hypothesis (e.g., Crawford et al., 2006; Waters, Hamilton, & Weinfield, 2000).

Specifically with regard to the distinction between anxiety and avoidance, it has been argued that anxiety and avoidance represent fundamental and essential features of the quality of attachment relationships that are vital and active throughout the lifespan (Shaver & Mikulincer, 2007). In support of this lifespan perspective on attachment, Ainsworth's initial research showed the validity of distinguishing between anxious-avoidant and anxious-ambivalent attachment in infancy, adolescence and adulthood (Ainsworth, Blehar, Waters, & Wall, 1978). This lifespan perspective on anxiety and avoidance has also been adopted by scholars from object-relational thought. Blatt and colleagues (e.g., Blatt & Levy, 2003), for instance, argue that attachment anxiety and avoidance represent deviations from two fundamental developmental lines characterizing human development across the lifespan, that is, interpersonal relatedness (i.e., developing trusting and mutual relationships) and self-definition (i.e., developing a clear sense of who one is). Whereas attachment anxiety involves a lack of trust in other people's availability and, as such, mainly reflects impairments in the relatedness developmental line, attachment avoidance involves an excessive emphasis on self-reliance and individuality and, as such, represents a derivative way of dealing with the developmental task of self-definition. Anxiety and avoidance are thus viewed as impairments in two fundamental developmental lines and would therefore affect individuals' well-being throughout the lifespan.

In sum, although at least some aspects of children's attachment relationships change across time, attachment relationships involve a number of functions and dynamics that are quite fundamental and that remain vital and active throughout the lifespan. Specifically, anxiety and avoidance are considered fundamental orientations and dynamics that characterize the quality of attachment relationships throughout the lifespan. Our goal was to assess these relatively more fundamental features of attachment in middle childhood and early adolescence rather than surface-level features

and manifestations that are specifically characteristic of attachment during this life phase. Such an assessment is, in our view, important and useful for future research addressing continuity and change in the fundamental attachment dynamics of anxiety and avoidance. Because the ECR-R represents a measure tapping into anxiety and avoidance in a way that is not bound to specific developmental periods or relationships, it was deemed an appropriate measure for our research goals.

Measurement of Attachment in Middle Childhood and Early Adolescence

Although a number of measures have been developed to assess aspects of attachment in middle childhood and early adolescence, there is a relative dearth of adequate instruments to specifically measure attachment anxiety and avoidance in this age period (Dwyer, 2005). The most prominent measures available to assess attachment security or insecurity in middle childhood and early adolescence are (a) the Attachment Security Scale (ASS; Kerns, Klepac, & Cole, 1996), (b) the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991), and (c) the Preoccupied and Avoidance Coping Questionnaire (PACQ; Finnegan, Hodges, & Perry, 1996). The Attachment Security Scale assesses children's perceptions of security in specific parent-child relationships. However, this questionnaire only provides a unidimensional assessment of attachment without differentiating between the dimensions of anxiety and avoidance. The Relationship Questionnaire, which has been adapted for use in middle to late childhood by Roelofs, Meesters, ter Huurne, Bamelis, and Muris (2006), is a vignette-based measure tapping into the four attachment styles defined by attachment anxiety and avoidance. A limitation of this questionnaire is that it consists of responses to single items, so that the internal consistency of the obtained scores cannot be determined. Apart from this psychometric argument, the Relationship Questionnaire does not directly tap into the dimensions underlying the four attachment styles. The Preoccupied and Avoidance Coping Questionnaire captures children's preoccupied (over-dependency on the attachment figure) and avoidant (denial of distress and affection in relation to the attachment figure) styles of coping to attachment-related experiences. One problem

with this questionnaire is that its items have a rather age-specific content (Karavasilis, Doyle, & Markiewicz, 2003; Kerns et al., 2000). As a consequence, this questionnaire cannot be used with adolescents, which hampers the usefulness of the PACQ in longitudinal research on the development of attachment from middle childhood to adolescence. Another problem with the PACQ is that it taps into two specific attachment styles without providing a direct assessment of the broader attachment dimensions underlying the attachment styles, that is, anxiety and avoidance. Herein we argue that many of the limitations associated with these measures could be overcome with the Experiences in Close Relationships Scale-Revised (ECR-R; Fraley, Waller, & Brennan, 2000).

The Experiences in Close Relationships Scale

The ECR was originally developed by Brennan et al. (1998) on the basis of a large-scale factor-analysis of virtually all self-report adult romantic attachment measures at that time. A principal components analysis of more than 60 subscales produced two major factors that could be clearly interpreted as attachment anxiety and avoidance. Subsequently, two 18-item scales were constructed by selecting items with the highest absolute-value correlations with one of the two higher-order factors. Subsequently, Fraley et al. (2000) developed the ECR-R to further improve the psychometric properties of the ECR. They re-analyzed the complete pool of 323 items collected by Brennan et al. (1998) using a combination of classical psychometric techniques, such as factor analysis, and item response theory analysis (IRT). This innovative combination of techniques was used to overcome limitations of classical test theory (see Fraley et al., 2000 for a review) and to create scales that contain a substantially higher degree of information than the original ECR scales, without increasing the number of scale items. For each scale, 18 items were chosen with the highest discrimination values. Although there is a substantial overlap in items between the ECR and the ECR-R, the ECR-R differs from the ECR in that its items' discrimination values are more evenly distributed across the entire trait ranges of anxiety and avoidance. More specifically, Fraley et al. (2000) demonstrated that the ECR-R provided more precise

estimates of latent attachment at both low and high ends of the anxiety and avoidance continua. Because the ECR-R is considered to have stronger psychometric properties compared to the ECR, we chose to work with this questionnaire in the current research.

The ECR-R is one of the best validated and most frequently used self-report measures of adult romantic attachment dimensions currently available (Sibley, Fischer, & Liu, 2005). In samples of adolescents and adults, it has been shown that the ECR-R has a stable two-factor structure representing attachment-related anxiety and avoidance, and that both subscales show high internal consistency (e.g., Sibley & Liu, 2004; Sibley et al., 2005). Further, the construct validity of the ECR-R was evidenced by correlational findings supporting theoretically expected associations between the ECR-R and other attachment measures such as the Relationship Questionnaire (e.g., Dewitte, De Houwer, & Buysse, 2008). The predictive validity of the ECR-R was supported by theoretically plausible associations between the attachment dimensions and assessments of both depressive symptoms and strategies of emotion regulation (e.g., Wei, Vogel, Ku, & Zakalik, 2005).

The Present studies

The aim of this research is to evaluate the validity and reliability of an age-appropriate version of the ECR-R for use with middle childhood children and early adolescents, which will be referred to as the ECR-RC. Whereas the ECR-R was originally developed to measure self-report of romantic attachment anxiety and avoidance, it has been applied to other types of relationships (e.g., people with whom one feels close, Lo et al., 2009). For the purpose of this study we applied the questionnaire to the parent-child relationship. This approach of applying a theory-based measure to the parent-child context, rather than using a measure developed specifically for the assessment of parent-child relationships, can be considered a top down approach. An advantage of such an approach is that it allows researchers to examine consistency of attachment dynamics across relationships. A problem with the approach of using a measure that was designed specifically for the parent-child relationship

would be that it becomes more difficult to interpret consistency in attachment between relationships. For instance, when comparing attachment scores from a measure specifically developed for parent-child relationships and scores from a measure specifically developed for romantic relationships, the differences between the measures can be driven either by the different type of relationships or by the different type of items used to measure attachment in the two measures. The advantage of the ECR-R is that it is a generic measure of attachment, the items of which can be applied to different types of relationships, thus yielding a fair and balanced comparison of scores between different types of relationships.

A first specific aim of the current study is to examine the internal structure of the ECR-RC in a sample of children and early adolescents between 8 and 14 years of age. We conduct exploratory and confirmatory factor analyses on the ECR-RC in two independent samples (Study 1 and Study 2) and we expect a two-factor solution representing attachment anxiety and avoidance. A second aim is to examine the construct validity of the ECR-RC (Study 2) by relating it to the other measures of attachment available in the literature on middle childhood and early adolescence. Although there is no single attachment scale in middle childhood that can be considered as a gold standard, we believe important information about the meaning and validity of the ECR-RC can be derived from its nomological network of associations with the alternative attachment measurements. We expect both the ECR-RC anxiety and avoidance dimensions to relate negatively to attachment security as measured with the Attachment Security Scale and with the secure attachment vignette of the Relationship Questionnaire. We further expect that both ECR-RC dimensions will relate positively to the fearful-avoidant vignette of the Relationship Questionnaire, as the latter represents a combination of high anxiety and high avoidance. We also expect a number of differential associations, with the ECR-RC anxiety scale being particularly strongly related to preoccupied attachment (as measured by both the Relationship Questionnaire and the PACQ) and with the ECR-RC avoidant scale being specifically

related to the dismissing-avoidant vignette of the Relationship Questionnaire and with the avoidant coping scale from the PACQ.[1] Third, in Study 2 we also aimed to examine the predictive validity of the child version of the ECR-R and we hypothesize that anxious attachment will show a positive association with depressive symptoms and hyperactivating emotion regulation strategies, while avoidant attachment will show a positive relationship with depressive symptoms and deactivating emotion regulation strategies.

Study 1

Method

Participants and Procedure

Participants were 514 children (196 boys; 317 girls; 1 participant who failed to denote his/her gender) with a mean age of 12.64 years (*SD* = 1.14; range = 10 to 14 years). Participants were from three elementary and three secondary schools. All families had a middle-class background. Regarding level of education, 41.2% of the children in the secondary schools were following the academic track (i.e., are preparing for college or university studies), whereas the remaining participants were preparing for technical proficiencies. In terms of family structure, 75.5% of the participants came from intact families whereas the remaining participants were from divorced families or families where one of the parents has deceased.

Ethical approval for this study was granted by the organizing university's Institutional Review Board (IRB). A letter was sent to the direction and teachers of the schools and to the parents of the children explaining the nature of the study and asking parents' permission to have their children participate. We used passive parental consent instead of active parental consent in order to maximize the participation rate. Under passive consent, parents return the form only if they do not wish their child to participate. The students themselves were also provided with a passive consent form. Of the possible participants, 514 children had parental permission and were themselves willing to participate,

that is, a response rate of 80.82%. The participating children completed the questionnaires during class periods and in the presence of a research assistant who provided some explanation on the questionnaire format and items. Participation in the study was voluntary and anonymity was guaranteed.

Measure

The Experiences in Close Relationships Scale-Revised Child version (ECR-RC). A committee of researchers familiar with research in middle childhood simplified the items of the ECR-R so as to better reflect the developmental and reading level of middle childhood and early adolescent children. The original ECR-R items (e.g., “I feel comfortable sharing my private thoughts and feelings with my partner” and “I don't feel comfortable opening up to romantic partners”) were modified to be more comprehensible for children (“I find it easy to tell my mother what I think and how I feel” and “It's not easy for me to tell my mother a lot about myself”, respectively) by simplification of item wording, removal of double negatives, and by slightly changing the content to be more relevant for children and for the parent-child relationship in particular. This adapted version of the questionnaire was presented to a focus group of middle childhood children. Children indicated that they understood the large majority of items and made a few suggestions to improve the clarity and meaning of some items. Further corrections were made on the basis of this focus group and the resulting version of the questionnaire was used in this study (see Table 1 for the items) The 36 items are rated on a 7-point scale ranging from “1 = strongly disagree” to “7 = strongly agree” with a neutral midpoint (“4 = agree/disagree”). In this study, participants were asked to rate the items twice, once for their mother and once for their father. The following instructions were given to the participants: “Below are a number of statements about your mother/father. Please indicate to which degree you agree with these statements, thereby picturing your mother/father as vividly as possible.” Information about the internal structure of the child version of the ECR-R is provided in the Results section.

Results

Internal Structure of the ECR-RC

The internal structure of the ECR-RC was examined with exploratory and confirmatory factor analyses. First, a principal axis factor analysis (i.e., exploratory factor analysis) of the 36-item scale was conducted for maternal and paternal ratings separately. Although in both solutions six factors emerged with an eigenvalue larger than one (i.e., 12.30, 3.67, 1.60, 1.41, 1.16, and 1.10 for mothers; 14.49, 3.79, 1.55, 1.32, 1.10, and 1.03 for fathers), the scree-plot indicated a clear elbow after the first two factors in both solutions, explaining 44.36% and 50.76% of the variance for maternal and paternal ratings, respectively. The factors explained approximately half of the variance in attachment, which is similar to the percentage of explained variance in previous research with the ECR-R (e.g., Sibley & Liu, 2004). The percentage explained variance decreased steeply after the second component (i.e., 34.17, 10.19, 4.45, 3.91, 3.22, 3.04 for mother factor 1 to 6 respectively; 40.25, 10.52, 4.30, 3.67, 3.07, 2.86 for father factor 1 to 6 respectively), indicating that, although additional components may still add to the percentage of explained variance, a solution with more than 2 components may result in a relatively less parsimonious structure. In sum, in line with other studies (e.g., Sibley et al., 2005), our findings show that the first two factors capture a large deal of substantive variance while at the same time yielding a parsimonious solution. Given that we also anticipated a two-factor solution theoretically, two factors were extracted. The factor loadings obtained after oblique rotation (PROMAX) are provided in Table 1. The first factor is mainly defined by items assessing attachment anxiety. Of the 18 original anxiety-items, 17 had a loading > .30 on this factor in both the maternal and paternal solutions. The second factor is mainly defined by items assessing attachment avoidance. In the maternal solution, all of the original 18 avoidance-items had a loading > .30 on this factor. In the paternal solution, 17 items had loadings of .30 or higher. In the maternal solution, one item (item 19) loaded on the unintended

factor and one item (item 35) had a cross-loading. In the paternal solution, two items (item 6 and 9) did not have a substantial loading on either factor.

Next, a confirmatory factor analysis (CFA) was performed following the exact same procedures used by Sibley et al. (2005) who examined the factor structure of the ECR-R in young adults. Like in the Sibley et al. (2005) study, items assessing anxiety and avoidance were each parceled into six groups of three randomly selected items. Parceling is used when a scale contains diverse item content, including some that is related to the construct of interest plus additional nuances that make some items more highly intercorrelated than other items. Our choice for a parceling approach above an item-level CFA is informed by the current studies' sample sizes, which are not large enough to conduct an item-level CFA (Study 1, $N = 514$ and Study 2, $N = 296$). The number of parameters that has to be estimated in relation to the sample size would be out of proportion. According to Kline (2005), a desirable goal is to have the ratio of the number of cases to the number of free parameters be 20:1 or 10:1. For the current study, this would result in a minimum sample size of 770 participants.

Structural Equation Modeling (SEM) with latent variables was conducted using LISREL 8.7 (Jöreskog & Sörbom, 1996). As suggested by Hu and Bentler (1999), we used the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) as goodness of fit indices. Combined cutoff values of 0.95 for CFI and 0.06 for RMSEA indicate good fit. The hypothesized two-factor solution in which six parcels assessing anxiety loaded on one latent factor (all loadings ≥ .62, *p*s < .001, mean loading = .79 for mothers; all loadings ≥ .67, *p*s < .001, mean loading = .81 for fathers) and the six parcels assessing avoidance loaded on a second latent factor (all loadings ≥ .77, *p*s < .001, mean loading = .82 for mothers; all loadings ≥ .83, *p*s < .001, mean loading = .85 for fathers) provided adequate fit to the data, $\chi^2(53, n = 506) = 120.82$, CFI = .99, RMSEA = .05 and $\chi^2(53, n = 496) = 169.25$, CFI = .99, RMSEA = .07 for mothers and fathers respectively. An alternative single-factor solution in which parcels assessing anxiety and avoidance loaded on a single latent factor was also

estimated, $\chi^2(54, n = 506) = 1439.49$, CFI = .85, RMSEA = .23 for mothers and $\chi^2(54, n = 496) = 1490.41$, CFI = .87, RMSEA = .23 for the father-child relationship. This model provided a significantly poorer fit than the hypothesized two-factor solution, ($\Delta SBS\chi(1) = 154.56$, $p < .001$ for mothers; $\Delta SBS\chi(1) = 205.75$, $p < .001$ for fathers), thus supporting the distinction between attachment anxiety and avoidance in this study. We also examined whether the factor structure would be similar for boys and girls. A multigroup analysis was conducted comparing a constrained model (in which the loadings were set to be invariant across boys and girls) with an unconstrained model (in which these parameters were freely estimated across gender). No significant differences were found between the factor structure for boys and the structure for girls ($\Delta SBS\text{-}\chi^2(12) = 14.72$, $p > 0.05$).

Given the evidence obtained here for a distinction between attachment anxiety and avoidance, scale scores were computed for both constructs by averaging the 18 items intended to measure each construct. All item-total correlations were higher than .30, except for one anxiety item (Item 9, $r = .18$ for mother and $r = .19$ for father) and two avoidance items (Item 6, $r = .24$ for mother and $r = .29$ for father; Item 28, $r = .28$ for mother). Cronbach's alphas for attachment anxiety were .89 and .92 for maternal and paternal ratings, respectively. For avoidance, Cronbach's alphas were .93 and .94 for maternal and paternal ratings, respectively.

The correlation between anxious and avoidant attachment was significantly positive ($r = .56$ for mother-child attachment; $r = .61$ for father-child attachment), which is in line with previous research using the ECR (e.g., Conradi, Gerlsma, van Duijn, & de Jonge, 2006) and the ECR-R (e.g., Sibley et al., 2005). The mean scores of the anxious subscale were 2.20 ($SD = 0.96$) and 2.25 ($SD = 1.06$) for maternal and paternal ratings, respectively. The mean scores of the avoidant scale were 2.81 ($SD = 1.16$) and 3.07 ($SD = 1.34$) for maternal and paternal ratings, respectively. Finally, both anxiety and avoidance as reported concerning the mother-child relationship correlated positively with anxiety (.62, $p < .001$) and avoidance (.61, $p < .001$) as reported regarding the father-child relationship.

In sum, using exploratory and confirmatory factor analysis we obtained evidence for a two-factor structure in the ECR-RC, representing attachment anxiety and attachment avoidance. In both the maternal and paternal ratings, the scales for anxiety and avoidance showed high internal consistency.

Study 2

In Study 2 we aimed to replicate the two-factor structure of the ECR-RC in an independent sample with a somewhat broader age range (i.e., 8 to 13 years of age). In addition, construct and predictive validity of the ECR-RC scales were examined by relating the ECR-RC scales to other measures of attachment and to measures of emotion regulation and depressive symptoms. Because we included an elaborate battery of measures Study 2 focused only on the mother-child relationship. This decision was deemed justified by the strong correspondence between results obtained with the maternal and paternal ratings in Study 1.

Method

Participants and Procedure

Participants were 296 children (156 boys; 138 girls; 2 participants who failed to denote their gender) with a mean age of 10.66 years (*SD* = 0.92; range = 8 to 13 years) from nine elementary schools. All families had a middle-class background. In terms of family structure, 79.9% of the participants came from intact families whereas the remaining participants were from divorced families or families where one of the parents has deceased.

As in Study 1, ethical approval for this study was granted by the organizing university's IRB and parents' and children's permissions were obtained using passive consent forms. Of the possible participants, 80% voluntarily and anonymously completed a battery of questionnaires during class periods and in the presence of a research assistant.

Measures

ECR-RC. As in Study 1, participants filled out the ECR-RC to assess the attachment dimensions. In this study, participants were asked to rate the items for their mother only. Information about the internal structure and psychometric properties of the child version of the ECR-R is provided in the Results section.

The Attachment Security Scale (ASS; Kerns et al., 1996; Dutch translation by Verschueren & Marcoen, 2002). The ASS is a 15-item measure of felt attachment security in specific parent-child relationships. Participants are asked to choose between one of two response options and, next, to indicate their level of agreement with that option (e.g., "Some kids need their mothers for a lot of things BUT other kids go to their mom when upset"). The ASS has good internal consistency, short-term test-retest reliability, and good construct and discriminant validity (Kerns et al., 1996). In this study, Cronbach's alpha for the attachment security scale was .76.

Preoccupied and Avoidant Coping Questionnaire (PACQ; Finnegan et al., 1996). The PACQ taps into children's preoccupied and avoidant coping styles within close relationships. The preoccupied scale consists of items indicating that a child would be highly distressed if the parent was not available (e.g., "When you come back in the movie, it is so dark 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 would be very upset until they found her. Which is more like you?"). Items on the avoidance scale indicate that the child would cope without relying on the parent (e.g., "One day you have a problem with a friend at school. When you get home, your mother can tell you are upset and starts talking to you about it. Some kids would feel comfortable talking to their mother about their feelings and problems, but other kids would just want their mothers to leave them alone. Which is more like you?"). For this study, a shortened version of the PACQ was used which consists of 20 items selected from the original 36-item form on the basis of the highest item-total correlations (Karavasilis et al., 2003). Evidence for scale

reliability and validity of this shortened version was provided by Yunger, Corby, and Perry (2005). In this study, Cronbach's alpha was .78 for both preoccupied and avoidant coping.

Relationship Questionnaire (Roelofs et al., 2006). For this study, children completed the Relationship Questionnaire for Children (RQ-C), which is an age-downward version of the widely used adult measure (RQ; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994). This self-report measure consists of 4 paragraphs, each describing a different attachment style (RQ fearful avoidance, RQ dismissing avoidance, RQ secure, and RQ preoccupied). Participants are asked to indicate how well each paragraph applies to their relationship with their primary attachment figure, using a 7-point scale varying from '*not at all*' to '*very much*'. There is evidence for the reliability and validity of the RQ-C in samples of children (Roelofs et al., 2006; Roelofs, Meesters, & Muris, 2008).

The Children's Depression Inventory (CDI; Kovacs, 1985; Dutch translation by Timbremont & Braet, 2002). The CDI is an adaptation of the Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961) and is a commonly used self-report measure of depressive symptoms in children aged from 7 to 17 years of age. The scale has 27 items dealing with sadness, self-blame, loss of appetite, insomnia, interpersonal relationships, and school adjustment. Respondents are asked to choose between one of three responses per item that best describes them (e.g., "I feel like crying every day"). Acceptable levels of internal consistency, test-retest reliability, and validity have been established (e.g., Saylor, Finch, Spirito, & Bennett, 1984). In the current study, Cronbach's alpha of the CDI was .88.

The Children's Sadness Management Scale (CSMS; Zeman, Shipman, & Penza-Clyve, 2001). The CSMS consists of 12 items that tap into three dimensions of sadness management: (a) inhibition (4 items), which refers to the deactivation of sadness expression (e.g., "I get sad inside but don't show it"), (b) dysregulated expression (3 items), defined as expressing sadness in nonconstructive, hyperactivating ways (e.g., "I whine/fuss about what's making me sad"), and (c) emotion regulation

coping (5 items), which involves attempts to actively cope with sadness experiences, for instance, through the use of strategies such as behavioral distraction (e.g., "When I'm sad, I do something totally different until I calm down"). In this study, we only used the scales for inhibition and dysregulated expression, because these emotion regulation strategies are most theoretically relevant for our research purpose. Research has shown moderate internal consistency for the three subscales and for the dysregulation scale in particular (e.g., Shipman, Zeman, Penza, & Champion, 2000). To increase the reliability of the latter scale, we added two additional items to the scale ('I can't forget my sad feelings' and 'I have little control over my sad feelings'). Construct validity has been established in relation to self- and other-report measures of sadness regulation and children's psychological and social functioning (Zeman et al., 2001). In this study, we considered the inhibition scale as a measure of deactivation of emotions and we considered the dysregulated expression scale as a measure of hyperactivation. Cronbach alpha was .55 for dysregulation and .71 for inhibition.[2]

Results

Internal Structure and Psychometrics of the ECR-RC

As in Study 1, the internal structure of the ECR-RC was examined with a combination of exploratory and confirmatory factor analyses. A principal components factor analysis of the 36-item scale was conducted. Although ten factors emerged with an eigenvalue larger than one (i.e., 8.31, 2.69, 1.98, 1.67, 1.42, 1.34, 1.21, 1.14, 1.10, and 1.02), the scree-plot indicated an elbow after the first two factors, explaining 30.56% of the variance. Similar to study 1, but now in a sample with a younger and broader age range, the factor structure could be clearly interpreted in terms of the distinction between anxiety and avoidance.

A confirmatory factor analysis (CFA) was performed following the exact same procedures as in Study 1. The hypothesized two-factor solution in which the six parcels assessing anxiety load on one latent factor (all loadings ≥ .53, *p*s < .001, mean loading = .70) and the six parcels assessing avoidance

load on a second latent factor (all loadings ≥ .55, *p*s < .001, mean loading = .71) provided an excellent fit to the data, $\chi^2(53, n = 291) = 109.73$, CFI = .98, RMSEA = .06. An alternative single-factor solution in which parcels assessing anxiety and avoidance loaded on a single latent factor was also estimated, $\chi^2(54, n = 291) = 458.00$, CFI = .88, RMSEA = .16. This model provided a significantly poorer fit than the hypothesized two-factor solution, ($\Delta SBS\chi(1) = 129.85$, $p < .001$), thus supporting the distinction between attachment anxiety and avoidance.

Using multigroup analyses we also examined whether the factor structure would be similar for boys and girls and for younger and older children. No significant differences were found between the factor structure for boys and the structure for girls ($\Delta SBS\text{-}\chi^2(12) = 14.92$, $p > 0.05$). A second multigroup analysis was conducted to examine whether children's age moderated the pattern of factor loadings comparing younger (8-11 years) to older children (11-13 years). Because the median age was 11 years, we used a cut-off of 11 years to split the sample into two age groups. No significant differences were found between the factor structure for younger children and the structure for older adolescents ($\Delta SBS\text{-}\chi^2(12) = 15.05$, $p > 0.05$).

When scale scores were computed for attachment anxiety and attachment avoidance, all item-total correlations were higher than .30, except for one anxiety item (Item 9, $r = .06$) and three avoidance items (Item 12, $r = .29$; Item 18, $r = .19$; Item 28, $r = .27$). Cronbach's alpha for attachment anxiety was .83 and Cronbach's alpha for avoidance was .85. The correlation between anxious and avoidant attachment was significantly positive, $r = .55$, $p < .001$. The mean scores of the subscales were 2.34 ($SD = 0.89$) and 2.66 ($SD = 0.97$) for anxious and avoidant attachment, respectively.

Further, preliminary analyses were conducted to examine differences in attachment anxiety and avoidance in terms of age, gender, and family structure. A multivariate analysis of variance was performed in which gender and family structure were entered as fixed factors and age was entered as a covariate for both attachment anxiety and attachment avoidance. No significant multivariate effects

were obtained for age (Wilk's Lambda = .99; $F(2,255) = 1.46$, $p > .05$), gender (Wilk's Lambda = .99; $F(2,255) = 1.68$, $p > .05$), nor family status (Wilk's Lambda = .98; $F(4,510) = 1.43$, $p > .05$).

Construct Validity

Raw correlations between the ECR-RC scales and the other attachment scales are provided in Table 2. To examine the unique associations of the ECR-RC dimensions and the other attachment variables, we also computed partial correlations controlling for the variance shared between the two attachment dimensions (see also Table 2). As expected, ECR-RC anxiety and avoidance showed a number of similar associations with other attachment constructs. Both ECR-RC dimensions were negatively related to the Attachment Security Scale and to the secure vignette from the Relationship Questionnaire, both in the raw and in the partial correlations. Also, both ECR-RC dimensions were related to the fearful-avoidant vignette of the RQ in the raw correlations. Unexpectedly, ECR-RC avoidance was no longer related to the RQ fearful-avoidant vignette in the partial correlations.

The ECR-RC also showed a number of differential associations with the other attachment measures. As expected, the ECR-RC anxiety dimension was positively related to the preoccupied vignette of the Relationship Questionnaire, both in the raw and partial correlations. Also, although the ECR-RC anxiety scale was not significantly related to the preoccupied scale of the Preoccupied and Avoidance Coping Questionnaire in the raw correlations, after partialling out the shared variance between the attachment dimensions, the correlation became significant. In contrast to the ECR-RC anxiety dimension, the ECR-RC avoidant dimension was unrelated or even slightly negatively related to the RQ and PACQ preoccupied scales after partialling out the variance shared with ECR-RC anxiety. In sum, as expected the RQ and PACQ preoccupied scales are uniquely related to ECR-RC anxious attachment, and not to ECR-RC avoidance.

Also in line with expectations, the ECR-RC avoidant scale showed a positive raw and partial correlation with the PACQ avoidant scale, whereas ECR-RC anxiety was not significantly related to the

PACQ avoidance scale in the partial correlations. Unexpectedly, although the ECR-RC avoidant scale was positively correlated with the dismissing avoidant scale of the RQ in the raw correlations, this association was no longer significant after controlling for the variance with ECR-RC anxiety.

Predictive Validity

As regards predictive validity, we examined associations between anxious and avoidant attachment and both depressive symptoms and strategies of emotion regulation. Anxious attachment was related to depressive symptoms (r = .56, p < .001), dysregulation (r = .24, p < .001), and suppression (r = .25, p < .001). Similarly, avoidant attachment was related to depressive symptoms (r = .43, p < .001), dysregulation (r = .15, p < .05), and suppression (r = .37, p < .001). In these raw correlations, the two attachment dimensions did not relate differentially to the two emotion regulation strategies. To examine the unique associations of the attachment dimensions with depressive symptoms and the emotion regulation strategies, we performed a set of regression analyses in which the variance between anxiety and avoidance was controlled for.

Hierarchical linear regression analyses were conducted with the attachment dimensions as dependent variables and with depressive symptoms and strategies of emotion regulation as independent variables, thereby controlling for the effects of a number of relevant background variables (i.e., gender, age, and family structure). To examine whether the association between anxiety and avoidance causes problems of multicollinearity, we inspected variation inflation factors (VIF), which should be below 10. The largest VIF-value is 1.45, suggesting that multicollinearity is not a problem in these data (Hair, Anderson, Tatham, & Black, 1995).

With a first hierarchical linear regression analysis we examined whether the two ECR-RC attachment dimensions would contribute independently to the prediction of depressive symptoms after controlling for the background variables. Both anxious (β = .47, p < .001) and avoidant attachment (β = .16, p < .05) were significantly related to depressive symptoms. To examine whether the attachment

scales are differentially associated with the emotion regulation strategies, a second set of regression analyses was performed. Attachment anxiety and avoidance were entered as predictors of emotional dysregulation in a first regression analysis and of emotional inhibition in a second regression analysis. As expected, anxious attachment was positively related to dysregulation (β = .22, p < .001) whereas avoidant attachment was unrelated to dysregulation (β = .01, p > .05). Also as expected, avoidant attachment was uniquely related to emotional inhibition (β = .30, p < .001) whereas anxious attachment was unrelated to deactivating strategies (β = .08, p > .05).[3]

Discussion

In middle childhood and early adolescence there is a scarcity of instruments assessing attachment anxiety and avoidance. In the current research, we introduced and validated a child version of the ECR-R, which is a frequently used and well-validated instrument for measuring the two fundamental dimensions of attachment identified in prominent models of attachment in adolescence and adulthood (Bartholomew & Horowitz, 1991; Brennan et al., 1998; Mikulincer & Shaver, 2007).

Exploratory and confirmatory factor analyses yielded two factors, representing attachment anxiety and attachment avoidance. In line with previous research using the ECR (e.g., Conradi, Gerlsma, van Duijn, & de Jonge, 2006) and in particular with research using the ECR-R, which tends to result in higher correlations between anxiety and avoidance than the original ECR (e.g., Sibley et al., 2005), the two dimensions were strongly correlated. Thus, individuals scoring low (respectively high) on avoidance tend to score low (respectively high) on anxiety. As such, this correlation suggests that interindividual differences between children in terms of attachment can be at least partly explained by a distinction between attachment security and attachment insecurity. If, however, attachment security (versus insecurity) would be the only factor determining individual differences in attachment, then the correlation between avoidance and anxiety would need to be more pronounced or would even be close to one. Nonetheless, this substantial correlation contradicts the assumption of orthogonality forwarded

in different models of attachment (e.g., Bartholomew, 1990; Brennan et al., 1998). It should be noted that, although Brennan et al. (1998) suppose that the two dimensions are in essence orthogonal or uncorrelated, Bowlby did not expect orthogonality between the working models of self and other (Bowbly, 1973). Moreover, this orthogonality claim did not receive much empirical support, even in research with the ECR (e.g., Conradi et al., 2006). Further, the strength of the association between anxiety and avoidance may also differ by type of relationship. For example, Conradi et al. (2006) hypothesize that the avoidance and anxiety components of the attachment system could become more closely knit in people with lasting relationships, including the child-mother relationship, which was the focus in our study.

An additional explanation for the high correlation between the anxious and avoidant attachment dimensions in our samples of middle childhood children and early adolescents could involve children's cognitive abilities. As the meta-cognitive capacities of children are still under development, it is reasonable to assume that children show greater susceptibility to response bias than do older adolescents or adults (Soto, John, Gosling, & Potter, 2008). In developmental research on the structure of personality it has indeed been found that, perhaps as a consequence of this susceptibility to response bias, younger children are less likely to differentiate among dimensions (Soto et al., 2008). In line with this, in our data the associations between anxiety and avoidance seem to be even somewhat more pronounced than in samples of late adolescents and adults. Given that these are among the first studies on the distinction between anxiety and avoidance in this age period, it is unclear whether the strong association between anxiety and avoidance represents a substantive, developmental issue related to the structure of the attachment organization or whether it is an assessment issue related to children's cognitive capacities. In other words, it is unclear whether the attachment system per se is less differentiated in middle childhood and early adolescence or whether children's responses to attachment-related questions are less differentiated. Future research explicitly addressing the role of

response bias could shed a light on these alternative hypotheses. Whatever the outcome of such research, it is important to note that anxiety and avoidance were clearly distinct in the two samples studied here and that both dimensions showed a differential pattern of associations with variables included in Study 2 to address construct validity and predictive validity.

Construct validity was addressed by examining the correlations between attachment anxiety and avoidance as measured by the ECR-RC and the attachment dimensions as assessed by the Attachment Security Scale (ASS), the Relationship Questionnaire (RQ), and the Preoccupied and Avoidance Coping Questionnaire (PACQ). As expected, attachment anxiety and avoidance as measured by the ECR-RC show significant negative associations with each measure of secure attachment used in this study. Further in line with expectations, the ECR-RC attachment anxiety dimension showed unique associations with measures of preoccupied attachment and fearful avoidant attachment, both of which are indeed characterized by high anxiety (Brennan et al., 1998). In contrast and in line with expectations, the ECR-RC avoidance scale was uniquely related to the PACQ avoidance scale. Unexpectedly however, the association between the ECR-RC avoidant scale and the RQ dismissing avoidant scale was not significant after controlling for the variance with ECR-RC anxiety, which may be related to the low reliability of the RQ assessment of attachment styles. In addition, upon closer inspection the RQ dismissing avoidance vignette appears to tap into a relatively more confident and self-reliant type of avoidant attachment (e.g., “It is very important to me to feel independent and self-sufficient”) compared to the avoidance items of the ECR-RC (e.g., “I find it difficult to admit I need help from my mother”). With the exception of the latter unexpected findings, the findings were in line with expectations and, as such, attest to the construct validity of the ECR-RC.

As regards the predictive validity of the ECR-RC, both ECR-RC attachment dimensions were found to relate to depressive symptoms and emotion regulation strategies in theoretically expected ways, at least when the variance shared between anxiety and avoidance was controlled for. First, ECR-

RC attachment anxiety and avoidance explained independent variance in depressive symptoms. Interestingly, anxious attachment showed a stronger association with depressive symptoms than avoidant attachment ($t = 2.77$, $p < .01$), which is in line with research in late adolescent and adult samples (see the overview of Mikulincer & Shaver, 2007). One possible explanation for this finding is the specific linkage hypothesis, which states that children with an anxious attachment are more likely to have internalizing problems, while avoidantly attached children are more at risk to develop externalizing problems (Finnegan et al., 1996). Another possibility is that the associations between distinct attachment dimensions and depression depends on the specific aspects of depression that are investigated. In research with late adolescents and adults, it has been found for instance that anxious attachment is particularly strongly related to interpersonal aspects of depression (e.g., lack of support), while avoidant attachment is more strongly related to achievement-focused aspects of depression (e.g., perfectionism) (Mikulincer & Shaver, 2007). An interesting avenue for future research is to examine whether such specific and differentiated associations between attachment dimensions and qualitatively different symptoms of depression also occur in middle childhood and early adolescence, a life period characterized by increased sensitivity to depressive symptoms (e.g., Costello, Mustillo, Erkanli, Keeler, & Angold, 2003).

The second outcome variable used in Study 2 to examine predictive validity is emotion regulation. Shaver and Mikulincer (2002) describe in their model how the anxious and avoidant attachment dimensions are related to dysregulated and inhibited strategies of emotion regulation. According to this model, anxiously attached individuals would fear to be abandoned, but would at the same time see proximity seeking as a viable or maybe even as the only option to cope with emotional distress. Therefore, anxiously attached individuals would use hyperactivating strategies to elicit increased attention from others and to ensure others' availability. Instead, people who are avoidantly attached learned that attachment behavior leads to rejection or anger instead of closeness or love. As a

consequence, they use deactivating strategies, where stress will be dealt with by eliminating and suppressing negative emotions (Mikulincer & Shaver, 2007). The present results are in line with these theoretical assumptions, as ECR-RC anxiety shows a unique positive association with dysregulated emotion regulation strategies while ECR-RC avoidance shows a unique positive association with inhibiting strategies of emotion regulation.

Limitations

Several limitations to these studies can be noted. First, we exclusively relied on self-report measures of our key constructs, which may have invoked problems with defensive distortion or other forms of response bias. In addition, due to shared method variance some of the observed relations between variables may be overestimated. It would be worthwhile to examine whether interview-based measures of attachment 'states of mind' such as the Child Attachment Interview (Target, Fonagy, & Shmueli-Goetz, 2003) are related to scores on the ECR-RC. Much like in research with adults, children's self-report measures are assumed to capture conscious mental processes (Shaver & Mikulincer, 2002). However, although self-report measures are not intended to tap unconscious processes directly, social psychologists and others suggest that individual differences on self-report attachment measures would relate to measurable unconscious processes (Shaver & Mikulincer, 2002). Also, it may be important to use a multi-informant approach where information about external validity measures are obtained from alternative data sources such as parents, close friends, and teachers. Further, our choice to work with the ECR-R was based on the consideration that it has somewhat stronger psychometric properties compared to the ECR. However, we do realize that the strong correlations between anxiety and avoidance in the ECR-RC are a source of concern. Future research should further investigate this issue.

Second, caution is warranted in generalizing the present study's results to other populations because the current sample generally consisted of well-adjusted Dutch speaking Caucasian children.

The stability of the factor structure obtained here and the generalizability of the validity findings need to be further examined in samples with more heterogeneity in terms of educational level, culture, language, family structure, and other relevant background variables. Based on this research, a shorter version of the ECR-RC could also be developed by removing items that are redundant and items with low factor loadings.

Third, due to the cross-sectional nature of both studies we could not examine test-retest reliability. A longitudinal study would not only be useful to obtain estimates of test-retest reliability but also to provide a better and more conservative test of the predictive validity of the ECR-RC.

Finally, Fraley et al. (2000) formulated two interesting caveats in research with the ECR-R that may be examined further. First, they argue that the ECR-R could be improved by developing more items that are worded in the trait-opposite direction (i.e., reverse keyed). Also Mikulincer and Shaver (2007) argue that this shortage of reverse-scored items makes the anxiety scale more susceptible to response bias. A second yet related caveat is that more items are needed to measure the low ends of the anxiety and avoidance dimensions. Whereas most items tap into high levels of anxious and avoidant thoughts and behaviors, only few items tap into a lack of anxiety or avoidance or into feelings opposite to anxiety or avoidance (e.g., feelings and actions of reliance and closeness). One possible solution to overcome this limitation is to develop more discriminating items in the secure region of the two-dimensional space. Another possibility is to use the ECR-R in combination with a measure of felt security. These considerations could be taken into account in future work on the child version of the ECR-R.

Conclusion

The current studies were the first to provide evidence for the usefulness of the ECR-RC, an instrument for measuring anxious and avoidant attachment in middle childhood children and early adolescents. In our view, the ECR-RC has a number of important advantages over extant measures of

attachment in middle childhood and early adolescence, as it (a) explicitly distinguishes between anxiety and avoidance instead of providing an overall assessment of attachment insecurity, (b) has a clear and interpretable factor structure and scales with strong internal consistency, and (c) is similar to the ECR-R used for adolescents and adults, so that it is useful in longitudinal research examining development in attachment from middle childhood to late adolescents and adulthood. For these reasons, it is our hope that future research will further address the validity of the ECR-RC (e.g., with the Inventory of Parent and Peer Attachment; Armsden & Greenberg, 1987 as well as with interview-based measures of attachment) and demonstrate its usefulness as an assessment tool in future developmental and clinical research on attachment.

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Footnote

[1]The Inventory of Parent and Peer Attachment (IPPA) would be a useful questionnaire to further investigate the psychometric properties of the ECR-RC. The IPPA (Armsden & Greenberg, 1987) is not designed to differentiate between attachment avoidance and anxiety, but instead taps into a continuum of secure versus insecure attachment. We figured that the IPPA is largely redundant with the ASS in terms of what they intend to measure and in terms of empirical correspondence. For this, reason, we included only one of these scales in our questionnaire.

[2]As the internal consistency of the Dysregulation scale was only borderline acceptable, the possibility exists that the relationships obtained with this scale are less reliable. Therefore, we repeated our analyses using factor scores for Dysregulation, which at least somewhat reduces the impact of error variance. The results of the analyses with the use of factor scores were virtually the same as with the unweighted mean score for dysregulation. Again, a significant and unique effect of attachment anxiety on dysregulation was obtained ($\beta = .24$, $p < .001$).

[3]Because some items had a relatively low factor loading, we also did some analyses with a shortened version of the ECR-RC, which included only items that have a loading of minimal .40 on one factor and less than .40 on the other factor (See Table 1). As a result the two scales (Anxiety and Avoidance) are reduced to 15 and 17 items respectively. The correlation between both reduced scales was .54 in Study 1 and .53 in Study 2 ($p < .001$), which is highly comparable to the correlation obtained with the full version of the scales. Moreover, the results regarding predictive validity with the shortened version of the questionnaire were virtually identical to those obtained with the full 36-item version.

Table 1

Results of the Rotated (Promax) Factor Analysis on the ECR-RC (N = 514)

ECR-RC items		Mother		Father	
		F1	F2	F1	F2
1	I'm afraid my mother will stop loving me	.61	-.06	.65	.06
3	I'm worried that my mother might want to leave me	.74	-.05	.69	.05
5	I'm worried that my mother doesn't really love me	.81	-.08	.84	-.02
7	I'm worried that my mother doesn't love me as much as I love her	.83	-.08	.79	-.10
9	I wish my mother would love me just as much as I love her	.33	-.20	.29	-.21
11	I worry a lot about my relationship with my mother	.43	.22	.64	.14
13	When I don't see my mother, I worry she may stop thinking about me	.66	-.09	.72	-.15
15	When I show my mother I love her, I'm afraid she doesn't love me as just as much	.73	-.02	.83	-.06
17	I do not often worry that my mother would abandon me	-.47	-.11	-.38	-.20
19	The things my mother says and does make me unsure about myself	.27	.30	.48	.17
21	I do not worry that my mother would abandon me	-.48	-.03	-.32	-.15
23	I feel that my mother does not want to get as close to me as I'd like	.54	.04	.60	-.01
25	I sometimes think my mother has changed her feelings about me without any reason	.72	-.03	.77	.04
27	I'm afraid that I want to feel too close to my mother and she does not like it	.66	.04	.74	-.06
29	I'm afraid my mother wouldn't love me any more if she found out how I really feel and what I really think	.47	.24	.63	.06
31	I get angry because my mother doesn't give me enough love and support	.41	.24	.66	.06
33	I'm afraid my mother thinks less of me than she does of other children	.43	.29	.57	.22
35	I think my mother only pays attention to me when I make a fuss	.34	.34	.54	.16
2	I don’t like telling my mother how I feel deep down inside	.03	.58	.09	.61
4	I find it easy to tell my mother what I think and how I feel	.03	-.70	.06	-.84
6	I find it difficult to admit I need help from my mother	.19	.32	.28	.25
8	I am very comfortable feeling close to my mother	.12	-.78	-.05	-.72
10	It's not easy for me to tell my mother a lot about myself	.04	.50	.13	.43
12	I prefer not to get too close to my mother	-.02	.70	.06	.68
14	I don't feel comfortable when my mother cuddles up to me too much	-.03	.56	.15	.44
16	Feeling close to my mother comes easily to me	-.12	-.61	-.10	-.70
18	It's not difficult for me to feel close to my mother	-.17	-.46	-.09	-.54
20	I usually talk to my mother about my problems and worries	.12	-.79	.24	-.92
22	When I feel bad, it helps to talk to my mother	.10	-.83	.10	-.91
24	I tell my mother nearly everything	.19	-.87	.16	-.92
26	I talk things through with my mother	.03	-.72	.09	-.83
28	I get nervous when my mother wants me to share really close moments	.02	.50	.25	.31
30	I find it easy to ask my mother for help	-.05	-.70	-.01	-.82
32	I find it easy to rely on my mother	-.10	-.64	-.12	-.72
34	I find it easy to show my mother I love her	.05	-.74	-.06	-.74
36	I feel that my mother understands me well	-.14	-.69	-.09	-.73

Note: F1 = Factor 1: Anxious attachment; F2 = Factor 2: Avoidant attachment.

Table 2

Correlations Between the ECR-RC Subscale Scores and Other Attachment Questionnaires

	ECR-RC anxiety	ECR-RC avoidance	ECR-RC anxiety	ECR-RC avoidance
	Raw correlations		Partial correlations	
ASS Secure	-.67***	-.70***	-.44***	-.49***
RQ Fearful avoidance	.39***	.35***	.28***	.05
RQ Dismissing avoidance	.23***	.21***	.14*	.12
RQ Secure	-.33***	-.32***	-.25***	-.14*
RQ Preoccupied	.46***	.32***	.31***	.04
PACQ Preoccupied	.09	-.13*	.17*	-.21**
PACQ Avoidance	.24***	.60***	-.09	.54***

Security Scale; RQ = Relationship Questionnaire; PACQ = Preoccupied and Avoidant Coping Questionnaire.*$p < .05$, ** $p < .01$, *** $p < .001$.