The Adult Attachment Interview: coherence & validation in adolescents

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Chapter 5

Summary and Discussion

Introduction

The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996; Main, Goldwyn, & Hesse, 2003) was developed in the early 1980s to measure an adult's overall state of mind with respect to attachment. Since then it has been applied in many studies in the field of attachment (Hesse, 1999). This thesis aimed to shed light on some of the potentials and limitations of the AAI. First, we examined whether the concept of coherence in attachment interviews was defined differently by attachment experts, linguists, and non-experts. When there are no differences, the AAI may become more accessible for non-attachment experts when using a measure for coherence. Second, we addressed the question whether the AAI is a valid instrument for measuring attachment representation in adolescents. Finally, we tested whether the AAI has the potential of differentiating adolescents who responded differently in a physiological sense to two attachment relevant situations: the AAI and an adolescent-mother conflict interaction task (construct validity). In the current chapter the results of the three studies are summarized and discussed. Finally, implications for further research are described.

The concept of coherence in attachment interviews: summary and limitations

Our study on coherence in attachment interviews showed that attachment experts constitute a distinct group when asked to define coherence: attachment experts emphasize quality and manner more than all other groups, linguists emphasize quantity and relevance more than attachment experts, and higher educated non-experts value relevance more than attachment experts. Attachment experts may have emphasized quality more because Grice (1975) as well as Main et al. (2003) heavily emphasized this maxim. In contrast, the maxims of quantity and especially relevance have received the most attention in the field of linguistics. Non-experts may have given less weight to quality and manner because these maxims may be the most difficult to comprehend for outsiders. Another possible reason for the differences between attachment experts and linguists is that the concept of coherence might refer to an underlying psychological component for attachment experts, while this is not the case for linguists.

A limitation of this study is that participants were asked what they *thought* would be the characteristics of the ideally coherent interview. This may not be identical to observing what maxims they would actually rely on when assessing coherence of a

specific interview transcript. However, differences among coders in the interpretation of (parts of) an actual interview transcript would confound their scores with their definition of what is vital for coherence.

A second limitation pertains to the sample size of the study; the group sizes ranged from 6 for linguists to 9 for the attachment experts and lower educated non-experts. Future studies are necessary to draw more definite conclusions. However, the various analytical strategies all pointed into the same direction: expertise in attachment theory is critical for defining coherence in attachment interviews.

The AAI as a rich but labor-intensive research tool

Because coherence (as measured with the CQS) is not defined similarly by attachment experts and linguists or non-experts, it seems that the CQS cannot be applied to attachment interviews without training in attachment theory and research. Therefore, the CQS does not appear to provide the opportunity to make scoring of the AAI more accessible to non-attachment experts from other fields than the behavioral sciences. Nevertheless, it may be possible that psychologists and clinicians are able to apply their psychological knowledge to the assessment of coherence in attachment interviews without specific training in coding attachment interviews; training in Grice's criteria (1975) may be sufficient for this group. Further research should address this question.

Because linguistic knowledge is not sufficient to be able to apply the concept of coherence in attachment interviews, the requirements for a computer program capable of coding AAIs seem far beyond the current state of art in computerized text analysis. Some programs have already been developed (see Appelman, 2000; Buchheim & Mergenthaler, 2000) but on the basis of our findings it is doubtful whether the automatic coding of the AAI will ever be successful. This is of course unfortunate because of the time-consuming nature of the coding process. However, the transcribing process can be made easier with the computer program called *Dragon NaturallySpeaking* (2007) that is able to recognize speech. For this program it is necessary that the speaker articulates clearly and states the places where interpunction is needed. Consequently, AAI recordings need to be dictated to the computer. Nevertheless, researchers using this program will need approximately half the time which is usually necessary to transcribe and check AAI recordings. Although coding AAIs will remain an activity that takes a lot of human effort, the transcribing process can thus be made easier with a computer program.

An easily applicable measure has recently become available to assess script-like representations of secure base experiences (Waters & Waters, 2006). Secure base scripts are based on childhood experiences (Waters & Waters, 2006) and may be seen as part of mental representations or as stepping stones to attachment representations (Bakermans-Kranenburg, 2006). It is hypothesized that individuals who experienced secure base support in infancy and childhood have knowledge of and easy access to secure base scripts (Waters & Waters, 2006). The task consists of a prompt-word outline: participants need to formulate a story based on a story title and 12-14 words (suggesting a setting, some actors, key content, and activities). A score is given based on the extent to which the participant's story is organized around the secure base script (Waters & Waters, 2006). Research has shown that script-like representations are substantially associated with AAI coherence scores (Coppola, Vaughn, Cassibba, & Constantini, 2006; Dykas, Woodhouse, Cassidy, & Waters, 2006; Waters & Rodrigues-Doolabh, 2001). In addition, results concerning the association of secure base scripts with maternal sensitivity (Coppola et al., 2006), infant attachment classifications (Tini, Corcoran, Rodrigues-Doolabh, & Waters, 2003), and AQS-security scores (Bost et al., 2006; Verissimo & Salvaterra, 2006) are promising. A remarkable difference between the method using secure base scripts and the AAI pertains to coherence. Whereas coherence is central in Main et al.'s (2003) coding system for the AAI, the secure base script method does not assess coherence as it focuses on content. In addition, preoccupied individuals cannot be distinguished from dismissing individuals with the prompt-word outlines. Finally, unresolved loss or trauma cannot be coded with this measure. Therefore, although prompt-word outlines are easy to apply in research (Waters & Waters, 2006), we expect that the AAI will remain the gold standard for assessing attachment representations.

Our study on coherence points to a potential of the AAI that has not been examined yet. At this moment the coding system of the AAI includes a 9-point rating scale for coherence, but does not distinguish the various aspects of coherence as is the case in the CQS. An additional 9-point rating scale for each of Grice's maxims would make it possible to test whether violations of different aspects of coherence are associated with specific types of parental insensitivity.

The validity of the AAI in adolescents: summary and limitations

We demonstrated the construct validity of the AAI in adolescents: (1) during a conflict interaction task secure adolescents displayed more autonomy than dismissing

adolescents and mothers of secure adolescents showed more relatedness than mothers of insecure adolescents, (2) dismissing individuals invested less in others than secure and preoccupied adolescents, (3) secure adolescents reported more relational support than insecure adolescents, and (4) temperament and intelligence were unrelated to attachment classification.

The effect sizes we found for adolescents' exhibiting autonomy behaviors and emotional investment in others were small to medium according to Cohen's (1988) criteria. This may be not too surprising because both variables are expected to be influenced by other factors as well, e.g., adolescents' exhibiting autonomy behavior may also depend on mothers' interactive behavior (see Chapter 2) and adolescents' current mood.

In contrast to our expectations, maternal sensitivity when solving difficult puzzles (Tangram) was not associated with adolescent attachment classification. This may be the consequence of the task we used to measure sensitivity: it might not have been ecologically valid. Future research on mothers' sensitivity towards their adolescent children might include problem-solving situations which are regularly encountered by these dyads, for example helping with a difficult homework task.

While most AAI studies are conducted in the lab, we administered the AAI in the homes of the adolescents. We conducted home visits because we preferred to observe mother-adolescent interactive behaviors in the natural setting. In addition, the families, who lived all over the Netherlands, were hypothesized to be more willing to participate in the study when they did not have to travel for hours to the lab. Because of the home setting, the adolescents might have had more difficulty to think and talk objectively about their relationship with their parents. This may partially explain why more adolescents in the current sample were classified dismissing than in the normative distribution. However, the AAI was conducted in a separate room to ensure that they would feel as free as possible in the home setting to talk about their (childhood) relationship with their parents.

A second limitation of this study pertains to the coding procedure of the FIT. Interactive behavior of each member of the dyad was scored by one coder. Therefore, we cannot rule out the possibility that the coder was influenced by the scores given to the adolescent when coding mother behavior and vice versa. This procedure evidently excludes the possibility to use mother scores to predict adolescent scores or adolescent scores to predict mother scores – which we did not do in our study. It should be noted that also in other studies using the autonomy-relatedness coding system coders assigned scores to both members of the dyad (e.g., Allen et al., 2003).

Because the AAI is administered with adolescents in many studies, a psychometric study on this issue was necessary. The present study shows that the AAI is not only a valid instrument to measure attachment representations in adults, but also in adolescents.

Physiological reactivity during the AAI and during a conflict interaction task: summary and limitations

Attachment theory suggests that internal working models of attachment influence emotion regulation in childhood as well as in adolescence and adulthood (Cassidy, 1994; Main, Kaplan, & Cassidy, 1985). We revealed that dismissing participants were less stressed during the AAI than secure adolescents, whereas during a mother-adolescent conflict interaction task (FIT; Allen et al., 2003; Kobak, Sudler, & Gamble, 1991; Strodtbeck, 1951) they were more stressed than their secure counterparts, at least as indicated by IBI reactivity. These contrasting findings may be explained by the rather different demands these tasks place on the participants. During the AAI adolescents were asked to produce childhood memories and evaluate them. It seems that dismissing adolescents are less open to this task than secure adolescents, and are able to cope with it in a somewhat superficial manner. However, during the FIT the stakes may felt to be higher because real-life issues are discussed and their mothers may also be more demanding and provocative than an unknown interviewer. Therefore, dismissing adolescents may have less opportunity to use defensive processes effectively during the FIT and feel more stressed than secure individuals.

Our findings concerning physiological reactivity during the AAI differ from what has been found by Dozier and Kobak (1992) and Roisman, Tsai, and Chiang (2004). While these researchers included adults in their studies we administered the AAI with adolescents. The results we found may be a consequence of the transitional life stage (becoming less dependent on their parents) of the adolescents and of their developing cognitive functioning (less mature frontal cortex).

We have found no differences in physiological reactivity during the AAI for the resolved and unresolved adolescents possibly as a result of how we measured physiological reactivity concerning loss and abuse experiences. Rather than examining stress reactivity during the loss, abuse, and other trauma questions of the AAI, researchers should to try and connect the moment of breakdown in speech during the AAI with the recordings of physiological reactivity in further studies. A second limitation is that during the baseline periods adolescents completed a questionnaire, whereas they answered interview questions or were involved in a

discussion during the two target tasks. Further research should use tasks that are more similar in activity during baseline and experiment, because speaking versus completing a questionnaire may differentially influence physiological activity (e.g., Berntson et al., 1997). Finally, the various ethnicities represented in the current sample may have interfered with detecting potential differences in SCL reactivity as opposed to IBI reactivity. Although we controlled for possible associations between SCL and country of origin, a more specific measure for ethnicity may be needed as even adolescents from the same country vary widely in skin color.

Attachment research using physiological measures provides an excellent opportunity to test hypotheses concerning emotion regulation. The present results indicate that the AAI has the potential of differentiating between persons with divergent emotion regulation patterns during the AAI and during the FIT.

Applications of the AAI

Adoption and Twin samples

It is important to note that the sample of adolescents in our studies is special because of their adoptive status. This may have influenced the distribution of attachment classifications in the current sample. However, in several respects the adolescents were not too different from other adolescent samples. The participants were adopted at a very early age (before 6 months, at 10 weeks on average) and were not selected for special needs. Their IQ scores did not differ from that of the norm for 14-15 year olds. Moreover, although they had less optimal scores for inhibiting autonomy-relatedness compared to a high school sample (Allen & Hauser, 1996), they exhibited more optimal autonomy behaviors compared to an academic low risk group (Boykin-McElhaney & Allen, 2001).

The use of adoption samples provides an excellent chance to draw conclusions regarding the influence of genes and environment on attachment representations. Our study on the validity of the AAI shows that the environment may be an important factor in the development of attachment representations: even though there was no genetic bond between the adoptive mothers and their adolescent children, adolescents' AAI classifications were associated with mothers' relatedness during conflict situations. A substantive next step in studies using the AAI would be to administer this interview with adoptive parents. This would provide a unique opportunity to relate adopted children's attachment representation with their parents' attachment representation, and to test the intergenerational transmission hypothesis in a biologically unrelated sample of parent-adolescent dyads. When siblings of the adoptive children would also

be included in such a study, a more complete picture may be derived of the influences of genes, shared, and unshared environment on attachment representations.

In a similar vein, a study of Caspers et al. (Caspers, Yucuis, Troutman, Arndt, & Langbehn, 2007) points to the importance of shared environment: Genetically unrelated siblings (one of them the biological child, the other the adopted child of the same parents) showed 61% concordance in attachment representations when the autonomous non-autonomous distinction was used. The influences of genes and environment may also be examined in twin studies (Rutter, 2006). If monozygotic twins are more similar than dizygotic twins or non-twin siblings, the influence of genes is highlighted. A study of Bokhorst and colleagues (2003) on infant attachment security revealed that 52% of the variance in security versus insecurity was explained by shared environment and 48% was explained by unique environment and measurement error. This is in line with what has been found by others (e.g., Ricciuti, 1992), with the exception of research by Finkel and Matheny (2000). However, they used a procedure to measure attachment which was only moderately associated with the Strange Situation Procedure (SSP; Ainsworth, Blehar, Waters, & Wall, 1978). It should be noted that the influence of genetics and the (shared and non-shared) environment may change over time (e.g., Plomin, 1999; Rutter, 2006). A first study by Constantino et al. (2006) showed that for non-twin siblings the concordance in attachment representation was as strong as that for monozygotic twins. In contrast, Torgersen, Grova, and Sommerstad (2007) reported a tendency for monozygotic twins to be more similar than dizygotic twins. With one exception, the first studies on the AAI in adoptive and twin samples thus point to the importance of (shared) environment for the development of attachment representations. More carefully designed behavioral genetic studies on the AAI are necessary to get more insight in the strength of shared environmental, non-shared environmental and genetical influences on attachment representation in adolescence.

Gene-environment interaction

To date, no studies with the AAI explored the possible differential susceptibility of individuals to their environments as a result of their genetic make-up. Van IJzendoorn and Bakermans-Kranenburg (2006) reported that maternal unresolved loss or trauma was associated with infant disorganization, but only in the presence of the DRD4 7-repeat polymorphism. It would be interesting to examine gene-environment interaction effects on unresolved attachment in adolescents and adults. Caspi et al. (2003) showed that 5-HTT (a functional serotonin transporter polymorphism) moderates the influence of stressful life experiences on depression: Only subjects with one or two short alleles of 5-HTT showed more depressive symptoms when they experienced

stressful life events. In search for a possible gene-interaction effect on unresolved loss or trauma, DRD4 and 5-HTT are important genes to investigate: participants with the DRD4 7-repeat allele or with one or two short alleles of 5-HTT may be more vulnerable to develop unresolved attachment as a consequence of loss or trauma. Since DNA is now being collected from the current adoption sample, we will be able to test this hypothesis in the future.

Physiological reactivity during conflict interaction

In our study on physiological responses during attachment relevant situations, we examined reactivity of the adolescents during conflict interaction with their mothers. Future research may focus on the concordance of physiological responses of mothers and adolescence during a conflict interaction task in relation to attachment representation. Zelenko and colleagues (2005) reported that heart rate changes during the SSP were more consistent in secure mother-infant dyads than in insecure-resistant dyads. This focus would give more insight into the importance of attachment representations for psychophysiological attunement of the mother-adolescent dyad.

During adolescence peers become especially important. Even though parents will remain attachment figures in the life of the adolescents, close friends and romantic partners may also become attachment figures (Allen & Land, 1999). The question is whether adolescents will show the same physiological patterns during conflict interactions with close friends as with their mothers. It may be that because of their attachment representation adolescents will indeed react in a similar way to friends and romantic partners as to their mothers. On the other hand, the physiological responses may depend more on the quality of the specific friendship/romantic relationship and the interactive behaviors shown by the friend/romantic partner than on the adolescent's overall mental representation of attachment. Adults with insecure representations of their childhood experiences showed more physiological reactivity during interactions with romantic partners than secure adults (Roisman, 2007). Future research should address this issue in adolescents.

The role of fathers

The study on the validity of the AAI did not assess sensitive responsiveness shown by fathers or father-adolescent conflict interactions. Findings concerning infants suggest that fathers' sensitivity is related to father-infant attachment although the strength of the association is weaker than for mothers (see for a meta-analysis Van IJzendoorn & De Wolff, 1997). It would be interesting to test whether fathers' sensitivity and autonomy-relatedness behaviors to their adolescent children are related to adolescent attachment. A first study in this area (Allen, Porter, McFarland, Boykin-McElhaney, &

Marsh, 2007) showed that paternal relatedness was moderately (r = .38) associated with adolescent attachment security. Since many family interactions involve father-adolescent contacts a stronger focus on this issue seems warranted.

Attachment and altruism

Finally, we found that secure and preoccupied adolescents emotionally invested more in others than dismissing individuals, which may be seen as an altruistic tendency. A next step would be to investigate whether secure individuals show more empathy, compassion, and altruistic helping behaviors toward strangers. For example, would they be more willingly to participate in voluntary activities or help a stranger who is in need? It would be expected that secure individuals are more open to other persons' needs and are more comfortable and better able to provide help, also in contacts with strangers (Bowlby, 1982; Gillath, Shaver, & Mikulincer, 2005). Van der Mark, Van IJzendoorn, and Bakermans-Kranenburg (2002) showed that secure children were more empathic to strangers than insecure children. Studies using self-report measures to assess adult attachment revealed that secure adults had greater compassion, were more willing to help, and participated more in altruistic activities (e.g., volunteering; Erez, 2007) (see Mikulincer & Shaver, 2007 for an overview). However as self-reported attachment and AAI classifications do not converge (for an overview see Crowell, Fraley, & Shaver, 1999), research using the AAI is needed.

Conclusion

Since its development in the early 1980s the AAI as coded with Main et al.'s coding system has been applied in more than 100 studies. Still, important questions remain concerning the potential and limitations of this instrument. The current thesis showed that although the AAI is not an easily accessible research tool, it appears to be a valid measure for assessing adolescents' attachment representations, and differentiates between adolescents with divergent physiological responses to attachment relevant situations.