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## **From security to attachment: Mary Ainsworth's contribution to attachment theory**

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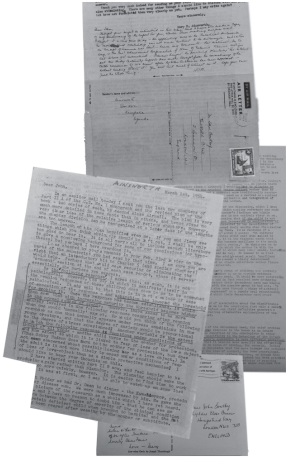


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# CHAPTER 4

## MEASURING ATTACHMENT: THE AINSWORTH SECURITY QUESTIONNAIRES REVISITED

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ABSTRACT

For more than two decades, starting in 1936, Mary Ainsworth studied the concept of security and attempted to measure security through the use of questionnaires. She kept improving on these questionnaires, trying different versions with different groups of young adults, even when already working with John Bowlby. In the present paper, we present this little-known research and report a replication in a Dutch sample. College students ( $N = 247$ , age  $M = 19.1$ ) were asked to complete both the pioneer questionnaire measuring security designed by Ainsworth and a present-day questionnaire measuring attachment style, the ECR-RS (Fraley, Heffernan, Vicary, & Brumbaugh, 2011). It proved possible to construct a reliable and valid security measure on the basis of Ainsworth's original items.

Mary Ainsworth's (1913-1999) famous Strange Situation Procedure (Ainsworth & Wittig, 1969) was by no means her first attempt to try and measure secure attachment. From the moment Ainsworth was introduced to the concept of security by William Blatz at the University of Toronto in the early 1930s, the subject fascinated her, and Ainsworth's later interest in attachment clearly has its roots in Blatz's teachings (Van der Horst, 2011; Van Rosmalen, Van der Horst & Van der Veer, 2015).

Blatz lectured on his security theory for years but published little (e.g., Blatz, 1934; 1940; 1944). It was only towards the end of his life that he provided a comprehensive account of the theory in his book *Human Security*, which was published posthumously (Blatz, 1966). Blatz defined security as "the state of mind of an individual who is willing to accept the consequences of the choice of his behaviour [...] or knows or feels that someone or something other than himself will accept the consequences of his behaviour" (Blatz, 1940, p. 182). Children start off having to depend on their parents. This state Blatz called *immature dependent security*. As children grow older and begin to feel certain the parent is going to be there for them no matter what, the dependence becomes *secure* and they will feel comfortable to go and explore the environment- i.e., to use the parent as a *secure base*. Ideally, this exploration will result in development towards a state of *independent security*, although Blatz admitted that independent security can never be reached completely and in his later writings he stated that a combination of independent security and *mature dependent security* on friends and/or a partner is the highest achievable goal. Those who do not feel sufficiently secure or lack adequate skills may avoid the inevitable frustrations which exploration of the environment brings and, thus, may not learn to become secure and relatively independent persons. Rather, they remain *immaturely dependent* or rely on defence mechanisms (which Blatz called *epduty agents*) in order to deal with their feelings of insecurity. Because these defence mechanisms may not work in every situation, such individuals may develop mental or social problems. According to Blatz, security is important in different spheres of a person's life: parent-child relations (*familial intimacies*), interpersonal relations outside the family (*extra-familial intimacies*), adjustment to work or school (*vocation*), leisure-time activities (*avocations*) and religion or other beliefs (*philosophy of life*) (cf. Blatz, 1944, 1966).

Blatz's theory had quite a few elements in common with attachment theory as developed by John Bowlby and Mary Ainsworth in the late 1950s and early 1960s. First, in Blatz's theory, young children are emotionally dependent on their parents and need to feel secure that they have their support whatever happens. Second, and on that basis, they will then feel confident to explore the environment, face and overcome challenges, and, thereby, acquire new knowledge. A solid emotional bond in infancy thus forms the basis for later emotional and cognitive achievements, just like in attachment theory. Of course, there are differences as well. For example, Blatz had no evolutionary perspective and was more focused on the outcome of the attachment process, i.e., a healthily

adapted adult, than on the study of this process itself in parent-infant interactions. Nevertheless, one can see that Ainsworth's interest in the notion of secure attachment and its importance for social and cognitive development has its origins in Blatz's theorizing and Ainsworth herself claimed that much of what she learned from Blatz was "absorbed into attachment theory and research, and gained widespread acceptance and use" (Ainsworth, 2010, p. 52).

#### MEASURING SECURITY

Blatz's theory of security was based on observation and clinical practice, and instruments to test the validity of his ideas did not exist. He therefore encouraged his graduate students to develop such instruments. As it happens, Ainsworth (then Salter) was the first to develop an instrument to measure Blatz's concepts (cf. Ainsworth & Ainsworth, 1958; Blatz, 1966). In 1936 she began her dissertation research on measuring security in the familial and extra-familial spheres in young adults (i.e., students) with Blatz as her supervisor. To measure insecure and secure feelings, Ainsworth developed an extensive questionnaire, here called the Ainsworth Security Questionnaire (ASQ), and compared its outcome to brief autobiographies supplied by the students. This allowed her to check whether the outcome of the questionnaires made clinical sense. A trial run with 64 randomly ordered questions was done on two groups totalling 250 students, and a revised version was submitted to a third group consisting of 136 third-year psychology students who were taking a personality course. All items were statements describing feelings or attitudes. It proved surprisingly difficult to develop a questionnaire that reliably measured Blatz's supposed categories and with each new sample Ainsworth found that items had to be removed and replaced by others.

One of the problems Ainsworth faced as her research progressed was that a global scale score from very secure to very insecure does not take into account the different patterns of behaviour originating from the different ways in which a person can be secure or insecure according to Blatz. As work went on, however, the validity of the total score did not appear to matter, because clear patterns of scores emerged. Ainsworth then selected the autobiographies of the eight subjects who's patterns most clearly emerged, and "was enormously impressed by the congruence of the score patterning and the autobiographical material" (Ainsworth, 1988, p. 9). The results of Ainsworth's first questionnaire research are summarized in her dissertation (Salter, 1939), which was published one year later (Salter, 1940). Her conclusion was that a reliable and valid instrument measuring security could be developed and that the results found with such an instrument confirmed Blatz's ideas about security and social adjustment.

As mentioned before, Ainsworth was the first, but by no means the only one to try and measure security under the guidance of Blatz. After the Second World War research continued and Ainsworth worked together with Blatz supervising quite a few

PhD theses and MA theses (Leonard Ainsworth's, amongst others) developing scales to assess security in a diversity of areas (Ainsworth & Ainsworth, 1958; Blatz, 1966). Ainsworth later complained that "others of Blatz's team in Toronto went on with security research, but I was unhappy that none made use of my tests, but rather went on to construct their own either for children or for infants – along lines that did not really fit with my interpretation of Blatz's security theory" (Ainsworth, 1988, p. 9).

#### COMBINING ATTACHMENT AND SECURITY RESEARCH

In 1950, Mary Salter married Leonard Ainsworth and the couple left Toronto for London, where Leonard would finish his PhD. Despite finding herself in a totally new scientific environment, Ainsworth did not abandon her questionnaire work while working as a research associate at the Tavistock Clinic with John Bowlby from 1950 to 1953. On the contrary, she continued developing and refining items to measure Blatz's concept and even administered security questionnaires to London students.

However, the results of this new questionnaire research were published with some delay. After their time in London the Ainsworths spent two years in Africa before moving to the USA in 1956 and it was not until 1958 that Ainsworth and her husband published *Measuring security in personal adjustment* (Ainsworth & Ainsworth, 1958). The book was published when Mary Ainsworth worked at Johns Hopkins University, and Blatz himself stood for the introduction. Ainsworth and Ainsworth reported on the development of four tests (familial, extra-familial, avocational and philosophical) which had known many previous versions, some originally designed by other members of the Blatz team, and were meant to measure (in)security in important areas of life in young adults. The first versions of the familial and extra-familial tests designed by Mary Ainsworth (Salter, 1939) had measured a single continuum of insecurity-security, but even then there had been some attempt to describe the means by which the person attempted to maintain security. This time five subtests were specifically developed for, respectively, independent security, mature dependent security, immature dependent security, deputy agents, and insecurity. Four different versions of the questionnaire were tested on samples of college students and high school students.

The authors described the on-going process of deleting items, replacing items and adding new items. The constant problem seems to have been that items of different subtests correlated positively when they, according to the theory, should correlate negatively and vice versa. For example, items measuring independent security should correlate negatively with items measuring mature dependent security. Another problem was that the pattern of answering varied widely between the samples. For example, the London students endorsed many more independent security items than the students from Canadian samples. The authors suggested that "it may well be that the Canadian culture offers less encouragement to an independent secure adjustment... than the English culture" (Ainsworth & Ainsworth, 1958, p. 43).

The authors were reasonably satisfied with their fourth version of the questionnaire, although they still made a substantial number of suggestions to improve it. Reliability of the subtests, for example, did not seem high enough. When used together, however, they thought the items provided a satisfactory general measure of (in)security and, thus, were useful to identify insecure or overly defensive persons. They mentioned that in a limited number of cases results of the questionnaire were compared with findings from the Rorschach and the Thematic Apperception Test but no details were provided (Ainsworth & Ainsworth, p. ix). Mary Ainsworth even planned doing a factor analysis on the data (letter to Mary Northway, dated June 26, 1956), which at the time would have had to be done by hand, but in the book this was just mentioned as a desire for the future (Ainsworth & Ainsworth, 1958, p. 83).

Even though the authors may have been satisfied, not much use seems to have been made of their two decades of work. Apart from a study by Leonard Ainsworth himself, using the scales to establish that insecurity was correlated significantly with rigidity in problem solving (Ainsworth, 1958), in the period from 1958 to 2014 only four studies (Potanin, 1959; Powell & Jourard, 1963; Frank, Pirsch & Wright 1990; Juang, Lerner & McKinney, 1999) and one unpublished PhD thesis (Montgomery, 1974) were found using the Ainsworth questionnaires. Ainsworth's correspondence shows that her involvement continued for at least several more years after the book was published (e.g., letter to Hilde Himmelweit, dated 12 January 1961) and she received a couple of requests for a copy of the questionnaires in the late 1950s and early 1960s. These, however, do not appear to have resulted in any publications and it seems safe to assume that this type of self-report security research did not develop any further.

#### REBIRTH OF SELF-REPORT QUESTIONNAIRES MEASURING SECURITY / ATTACHMENT

Because of the demise of the Blatzian questionnaire work, the 1980s are usually seen as the decade in which, for the first time, tests emerged to examine attachment in older children and adults (as opposed to examining attachment in infants). In 1985, George, Kaplan and Main created the Adult Attachment Interview, based on the attachment categories of Ainsworth's Strange Situation Procedure. Much easier and quicker to process were the self-report questionnaires that started to emerge around the same time (Crowell, Fraley & Shaver, 2008), like Hazan and Shaver's Love-Experience questionnaire (Hazan & Shaver, 1987), the Inventory of Parent and Peer Attachment (Armsden and Greenberg, 1987), the Reciprocal Attachment Questionnaire for Adults and the Avoidant Attachment Questionnaire for Adults (West, Sheldon & Reiffer, 1987), the Berkeley Leiden Adult Attachment Questionnaire (Main, Hesse & Van IJzendoorn, 1991), the Attachment History Questionnaire (Pottharst and Kessler, 1990), the Relationship Questionnaire (Bartholomew and Horowitz, 1991), and the Relationship Styles Questionnaire (Griffin and Bartholomew, 1994). Many of these



authors referred to Ainsworth's Strange Situation Procedure (SSP) but her security questionnaires were never mentioned.

As the number of questionnaires attempting to measure security or attachment steadily increased, Brennan et al (1998) decided to collect the non-redundant items from all existing self-report attachment measures and carry out a factor analysis. Anxiety and avoidance turned out to be the two major factors underlying all these measures. They then designed an anxiety and an avoidance scale, each comprising 18 items, which together formed the Experiences in Close Relationships inventory (the ECR). Today the ECR, together with the ECR-R (Fraley, Waller & Brennan, 2000) is one of the most frequently used questionnaires to measure adult attachment. In 2011, Fraley, Heffernan, Vicary, and Brumbaugh designed a short version of the ECR, the ECR-RS, consisting of nine items that can be applied to any type of relationship in order to assess attachment dimensions in multiple contexts.

## THE PRESENT STUDY

Ainsworth and Ainsworth (1958, p. 84) concluded that "the most essential step towards validation is to repeat the same study with a new population in order to check the reliability of the inter-correlations upon which the present case for validity rests". In this study we followed their advice and administered the ASQ to a group of Dutch students, testing validity through factor analysis and other statistical means. In addition, we asked our respondents to complete the ECR-RS (Fraley et al., 2011), in order to be able to compare the Ainsworth scales to a present-day set of scales measuring attachment style. The substantial overlap in concepts of security in adults and attachment style in adults justifies the comparison of these measures.

Our hypotheses are the following. First, we suggest that Ainsworth developed a pool of items sufficiently rich to create a reliable security measure. Second, we expect that this security measure will be associated with the ECR-RS in predictable ways. Third, we explore the validity of the security measure against criteria such as Ainsworth's measures for social confidence and for friendship, and (changes in the) composition of family of origin.

## METHODS

***Procedure.*** In accordance with Ainsworth's procedure, we asked students to complete a set of questionnaires during a class. All were first year students enrolled in a Child Development course at the University of Leiden, the Netherlands. They completed the ASQ on familial and extra-familial relationships (cf. Ainsworth & Ainsworth, 1958) and the short versions of the ECR, the ECR-RS (Fraley et al., 2011) about relationships with mother, with father, with a best friend and with a (present or past) romantic partner. They also filled out a brief questionnaire on background

variables such as age, gender, and family composition. The ASQ and ECR-RS were translated into Dutch and translated back into English to double-check. Completion of the questionnaires took 30-45 minutes.

**Sample.** The total number of students was 247, with only few males ( $n = 15$ ), which mirrored the actual gender distribution in this discipline. We decided to include only females ( $N = 232$ ). Mean age of the students was 19.1 years ( $SD = 2.31$ ), with 27% missing data for age. In 44% of the cases, respondents were the eldest child in their family, nine of 232 subjects did not have a sibling. Three respondents had lost their mother, and six respondents had lost their father through death. Parents were divorced in 21% of the cases. Two-thirds of the students still lived with their parents, which is not uncommon in the Netherlands where housing is expensive and most universities do not have a campus with dormitories. Of the students 41% were currently involved in a romantic relationship.

### ***Questionnaires.***

**Ainsworth Security Scales.** In order to optimise the comparison between the ASQ and the ECR-RS we decided to focus on the Ainsworth scales pertaining to the parents (the familial scale), and tried to reconstruct her scales for Independent Security, Immature Dependent Security, Insecurity, and Deputy Agents security. In Ainsworth's original study (Salter, 1939), students were asked to only check the items that they felt applied to them and leave other items blank, because Ainsworth "felt strongly that forced choices introduced distortions" (Ainsworth, 1988, p. 8). In accordance with Ainsworth's 1958 study, however, we asked the students to choose between the following answers to each item: *true*, *false*, *cannot say*. The latter alternative was recoded to fall in-between *true* and *false*, in accordance with the way in which Ainsworth dealt with this issue in one of her analyses (Ainsworth & Ainsworth, 1958, p. 64). With *cannot say* considered missing, reliabilities were not higher. Cronbach's alpha reliabilities for the ASQ subscales were too low: .23, .51, .63, and .50 for Independent Security, Immature Dependent Security, Insecurity, and Deputy Agents security, respectively. Improving the scales by deleting badly fitting items did not result in substantially higher reliabilities. We then decided to create a scale based on all Ainsworth items pertaining to the parents without taking into account her ideas about subscales. After studying the items Ainsworth had proposed to delete because they did not seem to work we left out items 24, 28, 31, 32 and 35. Additionally, we decided to leave out the deputy agent items. Ainsworth had not included deputy agent items in her first version of the familial scale (Salter, 1939; 1940) and when they were introduced in the second and subsequent versions the scale proved to be consistently problematic.

**Ainsworth social confidence and friendship scales.** As mentioned above, our respondents also completed Ainsworth's extra-familial scale, a set of items assessing respondents' functioning outside the family. Ainsworth's extra-familial scales measure feelings of security in interpersonal relations outside the family in general, excluding

special reference to “heterosexual relations” (Ainsworth & Ainsworth, 1958, p. viii). A factor analysis on Ainsworth’s extra-familial items yielded 4 factors according to the scree test, but only the first two factors were alpha reliable. The first factor consisted of 11 items pertaining to feelings of social competence and showed a high Cronbach’s alpha reliability of .88. The second factor consisted of seven items addressing satisfaction with friendship relationships, with a reliability of .73.

*Experiences in Close Relationship, Relationship Structures (ECR-RS).* The students completed the brief 9-item version of the Experiences in Close Relationship questionnaire in its revised form focusing on Relationship Structures (Fraley et al., 2011). The ECR-RS is a self-report instrument designed to assess attachment style in a variety of close relationships. Here we report on the ECR-RS on mother and on father. Two scores, one for attachment-related avoidance and the other for attachment-related anxiety, were computed for attachment to mother and for attachment to father. Cronbach’s alpha reliability for Avoidance to mother was .86 and for Anxiety to mother .70. Their correlation was .38. For Avoidance and Anxiety to father reliabilities were .90 and .80, respectively. The ECR-RS scales for father correlated .57.

## RESULTS

*Ainsworth Security Questionnaire-Revised (ASQ-R).* Starting with 22 items of the ASQ we conducted a factor analysis using oblimin rotation. Two factors emerged according to the scree test, with eigenvalues of 4.4 (16 items) and 2.0 (6 items), and explaining 20% and 9% of the variance, respectively. Cronbach’s alpha reliability for the first factor amounted to .81, whereas reliability for the second factor was too low: .36. The items of the first factor were standardized, summed and the sum was divided by the number of items. The resulting scale showed a skewness of -1.61 ( $SE = .16$ ) and a kurtosis of 2.81 ( $SE = .32$ ). The scale was reversed and a log10 transformation improved skewness and kurtosis considerably: skewness was .88 ( $SE = .16$ ) and kurtosis .43 ( $SE = .32$ ). The resulting ASQ-R scale had a mean of 1.41 ( $SD = .12$ , min = 1.00, max = 1.60). Higher scores on the ASQ-R mean more attachment security. The ASQ-R is presented in the Appendix.

*Convergent validity with ECR-RS.* The ASQ-R correlated significantly with the two ECR-RS scales for avoidance and anxiety to mother, -.61 and -.32, respectively ( $p < .001$ ;  $n = 230$ ). The same was true for the ECR-RS to father: -.54 and -.39, respectively ( $p < .001$ ;  $n = 222$ ).

*Discriminant validity.* The ASQ-R was not associated with age, number of children in the family, birth order, parental loss, still living at home, or having a romantic partner (all  $p > .5$ ).

*Predictive validity.* The ASQ-R was associated with parental divorce, as respondents with divorced parents scored significantly lower on the ASQ-R security scale,  $t(228) =$

2.68,  $p = .008$ , with a medium effect size of  $d = .44$ . Furthermore, the ASQ-R was associated with Ainsworth's scales for social confidence and for friendship, again in the expected direction (see Table 1).

**Table 1: Correlations among security scales**

	<i>M</i>	<i>SD</i>	ASQ-R	ECR-RS Avoidance mother	ECR-RS Anxiety mother	ECR-RS Avoidance father	ECR-RS Anxiety father	Ainsworth Social Confidence
ASQ-R	1.41	.12						
ECR-RS Avoidance mother	.00	.76	-.61**					
ECR-RS Anxiety mother	.00	.79	-.32**	.38**				
ECR-RS Avoidance father	.00	.81	-.54**	.35**	.12			
ECR-RS Anxiety father	-.01	.83	-.39**	.13	.33**	.57**		
Ainsworth social confidence	.00	7.34	.24**	-.32**	-.16*	-.28**	-.18*	
Ainsworth Friendship	-.02	4.42	.17*	-.04	-.21**	-.16*	-.17*	.30**

Note: \* $p < .05$ , \*\* $p < .01$

## DISCUSSION

Using Ainsworth's familial scale items (Ainsworth & Ainsworth, 1958) we were able to create a reliable attachment style questionnaire with promising convergent, discriminant and predictive validity, the Ainsworth Security Scale - Revised (ASQ-R). The ASQ-R correlated negatively with the two ECR-RS scales, anxiety and avoidance, which supports its convergent validity. It was not associated with age, loss of a parent, or birth order, thus showing discriminant validity, but it was correlated in the expected direction with parental divorce, and with the Ainsworth measures for social confidence and friendship we extracted from the Ainsworth's extra-familial scale items.

We analysed the historical instrument developed by Ainsworth herself (but which is little known in the attachment community), and used present-day statistical analyses that were unavailable at the time Ainsworth worked on these questionnaires. We found that the original scales could not be replicated because alpha reliabilities were too low. When taking all scales together, however, and conducting a factor analysis on the 22 items considered most useful, a core set of 16 items turned out to fit into one scale, the ASQ-R, measuring security of attachment.

Considering the substantial investment of Ainsworth and others from the Blatz team put into the design and redesign of these self-report questionnaires measuring security, it seems strange that the fruits of this hard labour - done without computers and statistical packages - disappeared completely. On closer scrutiny, however, and looking at the second wave of attempts that have been made to measure attachment style in adults by means of self-reports since the 1980s, it seems fair to say that designing such an instrument is not an easy task. Researchers have run into difficulties, and attempts to develop and validate the BLAAQ (Main, Hesse & Van IJzendoorn, 1991), for example, have stranded. Even after more than 10 years it appeared impossible to create a self-report measure for attachment in adulthood that survived validation against the widely accepted Berkeley AAI. Three quarters of a century after Ainsworth started work on her security questionnaires, controversy remains over the general suitability of self-report questionnaires for measuring security of attachment (cf. Steele, Cassidy & Fraley, 2002; Crowell, Fraley & Shaver, 2008; Booth-LaForce & Roisman, 2014).

The adult attachment style research, as mentioned earlier, (re)started in the 1980s and originates from two separate sources. Interview-based attachment research was started by Mary Main, a student of Ainsworth, who looked at attachment representations in parents in order to see how this influenced attachment patterns of these parents' children by developing the earlier mentioned AAI, a semi-structured interview (George, Kaplan, & Main, 1985). Hazan and Shaver (1987) began researching the connection between loneliness and insecure attachment by administering a brief self-report questionnaire. Both Main's AAI and Hazan and Shaver's Love-Experience

questionnaire were based on Ainsworth's categorical attachment patterns of infant attachment. This does not mean, however, that the two measures are interchangeable – interview-based attachment representations and questionnaire-based attachment style index different dimensions of the broad concept of attachment (Crowell, Fraley & Shaver, 2008). According to Bartholomew and Shaver (1998), when compared properly and when taking into account the differences, the measures would generally converge reasonably well. A meta-analysis by Roisman, Holland, Fortuna, Fraley, Clausell and Clarke (2007) however, showed that across 10 studies (combined  $N = 961$ ) on the convergence of the AAI with self-report measures for attachment style the association between style and representation was only minimal. Notwithstanding the still unresolved case of convergence, self-report tests are much easier and cheaper to administer and to process than, for instance, the laborious Adult Attachment Interview. In addition to this, numerous experimental studies have documented that self-report measures like the ECR tap into important domains of relational functioning (Mikulincer & Shaver, 2008). Even for research on attachment representations a self-report test like the ASQ-R might in some cases be the best choice as a first screening instrument in search for highly insecure individuals.

The ASQ-R does not differentiate between types of insecurity but assesses degree of (in)security, which takes us to another point of debate: should security or attachment style be measured in dimensions on a continuous scale, or should the results be categorized into types of attachment? Ainsworth herself mentioned at one point that she believed efforts should be directed towards fine-tuning pattern discrimination (Ainsworth, 1988). Once subjects would be divided into categories, Ainsworth felt research could be taken a step further in understanding the complexity of the individual's personality and its ties with the past. Other researchers feel that adult attachment is not so much a variable on which people differ in kind, but on which people differ in degree (cf. Fraley & Waller, 1998), and nuances may be lost when scores are forced into categories with artificial boundaries. Using taxometric analyses on the largest AAI dataset to date (the NICHD SECCYD study with  $N = 857$  participants) Booth-LaForce, Roisman and colleagues suggested that attachment representations should be considered mostly continuous instead of categorical, and that a continuous security dimension would not emerge from the AAI measure (Booth-LaForce & Roisman, 2014). In a rebuttal, Van IJzendoorn and Bakermans-Kranenburg (2014) argued that it is premature to derive conclusions about the nature of attachment representations, as attrition caused the NICHD SECCYD sample to represent typically developing late adolescents from predominantly white middle class backgrounds, possibly explaining the very small percentages of insecure-preoccupied and unresolved subjects (3% each). Furthermore, it was argued that the continuous or categorical nature of attachment cannot be derived from analyses within the domain of AAI data and that differential predictive validity of continuous versus categorical measures of attachment

should provide more conclusive evidence. However, the issue might remain undecided since the ‘true nature’ of a social phenomenon is not typically carved in stone, but tends to be dependent on measurement and on the pragmatic scientific goals to be reached (Van IJzendoorn & Bakermans-Kranenburg, 2014).

The present study has some limitations. First of all, our sample is a rather homogenous one: all female college students, and mostly Caucasian, so replication in more diverse samples is badly needed. Secondly, most current self-report measures for adult attachment style seem to have two underlying dimensions: avoidance and anxiety. We too found a second dimension through factor analysis but this second factor turned out not to be reliable. This may be caused by the small number of items (6), although the ECR-RS also contains few items (3) for anxiety. Another reason may be that a sample of college students might typically show rather low levels of preoccupation not unlike the NICHD SECCYD sample discussed before, which would make it difficult to find a separate anxiety dimension. Thirdly, more independent validity tests are needed instead of data from one source only. Does the ASQ-R predict observed parental sensitivity, for instance, or quality of the partner relationship or infant attachment? Can it say something about peer nominations, or about stress reactivity as assessed by physiological measures (e.g. in the Trier Social Stress Test, see Gilissen, Bakermans-Kranenburg, van IJzendoorn & Linting, 2008)? And would the ASQ-R be more strongly associated with the AAI, in contrast to the ECR? These are important questions for future studies.

Ainsworth herself seems to have turned away from self-report questionnaires as a measure for security of attachment style (as she did from projective research) and she eventually preferred observations and in-depth interviews. When she started working with Bowlby at the Tavistock Clinic, she became “wholly enchanted with the notion of prospective research in the natural environment, relying on direct observation of behavior beginning in infancy, rather than upon retrospective inferences from paper-pencil tests for adults” (Ainsworth, 2010, p.51). Nevertheless, using today’s advanced statistical tools we managed to select the set of items from Ainsworth’s familial test needed to create a potentially useful security measure. Considering the costly and time consuming nature of attachment research based on observations and interviews and taking into account that the majority of existing self-report questionnaires focus on romantic relationships, the ASQ-R may be a welcome addition to the available screening instruments measuring security in the familial domain.

Having excavated Ainsworth’s questionnaire work of decades, we were able to conduct a unique historical-empirical study to examine whether those years of painstaking effort should be considered a dead-end road or a rich source from which to create a valuable instrument. It is possible that half a century after the security measures were abandoned, Ainsworth’s self-report questionnaires might at last prove to be a

secure base from which to explore adult attachment style if not attachment representations.

#### ACKNOWLEDGEMENTS

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## Appendix I: Ainsworth Security Questionnaire – Revised (English version)

Instructions: under every statement, tick the box which most applies to you.

1. I feel on very good terms with my parents, despite the fact that I no longer rely on them for help or advice.  
☐ true      ☐ false      ☐ cannot say
2. I feel so close to my parents that I feel that they will always be my closest friends.  
☐ true      ☐ false      ☐ cannot say
3. The nagging I get from my parents sometimes irritates me very much.  
☐ true      ☐ false      ☐ cannot say
4. I feel very much at home with my parents, more so than with anyone else that I have ever met.  
☐ true      ☐ false      ☐ cannot say
5. I am concerned that my relationship with my parents is not all that it might be.  
☐ true      ☐ false      ☐ cannot say
6. Although I don't get on very well with my parents, I don't let this bother me, and try to live my own life.  
☐ true      ☐ false      ☐ cannot say
7. It is a great comfort to me to realize that I can always count on my parents to help me out of a jam.  
☐ true      ☐ false      ☐ cannot say
8. I often get a troubled feeling from wondering if my parents might disapprove of what I am doing.  
☐ true      ☐ false      ☐ cannot say
9. My family are very kind to me, but I am sorry that I do not have a real warm relationship with them.  
☐ true      ☐ false      ☐ cannot say
10. It is a great comfort to me that my parents help me to make up my mind.  
☐ true      ☐ false      ☐ cannot say
11. I feel comfortably free to make my own arrangements with my friends without talking it over with my parents.  
☐ true      ☐ false      ☐ cannot say
12. I feel discouraged that it is so difficult to live up to what my parents expect of me.  
☐ true      ☐ false      ☐ cannot say
13. It is a great comfort to have my parents help me such a lot.  
☐ true      ☐ false      ☐ cannot say
14. I often feel a sense of regret that I have not had as happy a family life as other people have had.  
☐ true      ☐ false      ☐ cannot say
15. It bothers me that my parents do not allow me to be more on my own.  
☐ true      ☐ false      ☐ cannot say
16. One of the reasons that I get along so well with my parents is that I never feel held in by their disapproval.  
☐ true      ☐ false      ☐ cannot say

