



REPORT

Longitudinal associations between attachment representations coded in the adult attachment interview in late adolescence and perceptions of romantic relationship adjustment in adulthood

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Abstract

Increasingly, researchers have operationalized Adult Attachment Interview (AAI)-derived attachment representations as reflecting individual differences in secure base script knowledge (AAI_{sbs}) – the degree to which individuals show awareness of the temporal-causal schema that summarizes the basic features of seeking and receiving effective support from caregivers when in distress. In a series of pre-registered analyses, we used AAI transcripts recently recoded for AAI_{sbs} and leveraged a new follow-up assessment of the NICHD Study of Early Child Care and Youth Development cohort at around age 30 years (479 currently partnered participants; 59% female; 82% White/non-Hispanic) to assess and compare the links between AAI_{sbs} and traditional AAI coding measures at around age 18 years and self-reported romantic relationship quality in adulthood. Higher AAI_{sbs} predicted better dyadic adjustment scores in adulthood ($r = 0.17$) and this association remained significant controlling for other AAI-derived coding measures, as well

as sociodemographic and cognitive functioning covariates. Findings extend previous evidence pointing to the predictive significance of AAI_{sbs} for multiple adult functioning domains.

KEYWORDS

adult attachment interview, coherence, romantic relationships, secure base script knowledge

1 | INTRODUCTION

The Adult Attachment Interview (AAI; George et al., 1985) is one of the most widely used assessments of post-childhood attachment representations by developmental psychologists when evaluating the core premises of attachment theory. One of these core hypotheses is that the quality of early care shapes the development and consolidation of later constructed mental representations of attachment (Bowlby, 1973). These representations come to influence the quality of relationships with close others across the lifespan, including romantic relationship quality (Collins & Sroufe, 1999; Crowell & Waters, 1994). In this paper, we present a set of pre-registered analyses that collectively address the predictive significance of attachment representations coded via the AAI in late adolescence for romantic relationship adjustment in adulthood.

1.1 | Using the adult attachment interview to assess individual differences in attachment representations

Individual differences in attachment representations coded via the AAI have been assessed using multiple methods. The traditional coding system, developed by Main and Goldwyn (1998), heavily relies on assessing the *coherence* of discourse during the AAI. The novelty of such an approach – that is, the focus on *how* participants speak about their early caregiving experiences, irrespective of what they say occurred – allowed researchers using the AAI to “surprise the unconscious”, to use Main and colleagues’ words (George et al., 1985; Main et al., 1985). As such, the AAI propelled researchers’ ability to observe and evaluate the coherence and consistency of participants’ explicit recollections of difficult childhood experiences, and/or the defenses they used to block such recollections.

Discussing questions regarding the quality of relationships one had with their parents and how these relationships influence who they are today, during the AAI, the interviewee’s discourse is evaluated based on Grice’s conversational maxims (Grice, 1975, 1989). The four maxims are quantity (i.e., the length and the depth of the content), quality (i.e., the internal consistency and thus apparent truthfulness of the information), relation (i.e., the relevance of the communicated content to the conversation), and manner (i.e., the clarity of the content). Stronger adherence to Grice’s maxims, and thus higher narrative coherence (AAI_{coh}), is coded in interviews with a discourse that entails descriptions of experiences and relationships with childhood caregivers in an internally consistent but not emotionally overwrought manner (e.g., Roisman, 2009). Such interviews are classified categorically as secure/autonomous. Lower AAI_{coh} is coded in interviews that are traditionally classified as insecure-dismissing or insecure-preoccupied; whereas the first is reflected in the idealization of caregivers and/or insistence on lack of memory of childhood events, the latter is indicated by heightened expressions of

anger when discussing negative experiences with caregivers and/or difficulty in focusing on and describing such experiences (i.e., passivity).

An alternative approach to coding AAI narratives is the AAI Q-set (Kobak, 1993), wherein participants are given scaled scores on both dismissing and preoccupied states of mind dimensions. Such an approach is especially important given recent factor-analytic and taxometric evidence (e.g., Raby et al., 2022), and recommendations by Haydon et al. (2012), indicating that AAI narratives vary along two key dimensions (i.e., dismissing and preoccupied). In contrast to AAI_{coh} , which does not differentiate between the AAI insecure types (i.e., dismissing and preoccupied, both of which by definition entail low AAI_{coh} scores), AAI Q-set scores help disambiguate what aspects of low levels of coherence (i.e., insecure states of mind) might account for its correlates (i.e., higher levels of dismissing discourse, higher levels of preoccupied discourse, or both). The AAI Q-set consists of 100 cards that describe attachment-related states of mind and inferred parental experiences. Coders sort cards into a forced normal distribution from least to most characteristic of each individual's AAI narrative, which are then correlated with prototypic sorts that reflect theoretically relevant attachment state of mind dimensions (i.e., dismissing and preoccupied).

Most recently, a method for coding individual differences in attachment representations during the AAI was developed to evaluate the interviewees' knowledge of the secure base script (AAI_{sbs} ; Waters & Facompré, 2021; Waters et al., 2017). Based on theoretical and empirical work suggesting that attachment representations may also include cognitive scripts, the AAI_{sbs} is designed to assess the extent to which individuals have access to and knowledge of the secure base script, a cognitive script summarizing the sequence of events involved in secure base support following experiences of distress (Waters & Roisman, 2019; Waters & Waters, 2006). These events include seeking comfort from a caregiver at times of distress, being effectively soothed by the caregiver, and returning to exploration. A scripted attachment representation that lacks the expectation that a caregiver's instrumental and emotional support is available at times of need decreases the likelihood of constructing elaborated knowledge of the secure base script. Importantly, the AAI_{sbs} is an approach to coding that is not only more efficient than the standard coding system (Waters, 2021) but has also shown moderate and significant associations with AAI_{coh} ($r_s = 0.42-0.64$; Nivison et al., 2023; Waters et al., 2013; Waters et al., 2017).

1.2 | Adult attachment representations and romantic relationship quality

A number of studies have assessed the associations between AAI_{coh} and the quality of romantic relationships, though relatively few longitudinally. Specifically, high AAI_{coh} scores of 157 engaged couples were significantly associated with concurrent marital satisfaction ($r = 0.12$) and conflict behaviour ($r = -0.23$; Treboux et al., 2004). Individuals from the same sample who were classified as securely attached in the AAI (i.e., high AAI_{coh} scores) exhibited significantly more behaviours that indicated care seeking and caregiving with their romantic partners during conflict compared to those classified as insecurely attached in the AAI (i.e., AAI_{coh} scores) ($r_s = 0.41-0.43$; Crowell et al., 2002). Two studies prospectively assessed the associations between AAI_{coh} and aspects of romantic relationship quality. Roisman et al. (2001) reported that AAI_{coh} assessed in a sample of 170 late adolescents from the Minnesota Longitudinal Study of Risk and Adaptation (MLSR; Sroufe et al., 2005) significantly predicted process and negative affect dimensions of observer-rated romantic couples' interactions at ages 20/21 ($r = 0.38$ and $r = -0.26$, respectively). In the same sample, however, a composite score of AAI_{coh} assessments conducted at ages 19 and 26 years did not significantly correlate with a composite self-reported relationship quality score comprised of assessments at three time points between the ages 20 to 29 ($r = 0.14$). In another study, secure attachment representations (i.e., high coherence scores) in 115 dating couples between the ages of 18 and 25 predicted self-reported romantic relationship functioning and observers' ratings of interpersonal relationship functioning during a laboratory conflict resolution task 1 year later ($b_s = 0.14-0.26$; Holland & Roisman, 2010).

To date, two studies have assessed the associations between AAI_{sbs} and romantic relationship functioning. In a sample of 60 females from the Crowell et al. (2002) study sample described above, Waters and colleagues reported

that AAI_{sbs} concurrently predicted caregiving and care-seeking behaviour with a romantic partner during a lab-based conflict discussion task (Waters et al., 2013). In addition, AAI_{sbs} assessed in 178 late adolescents from the MLSRA longitudinally predicted the observed quality of interaction with romantic partners ($r = 0.27$), self-reported romantic relationship satisfaction ($r = 0.24$), and an interview-based assessment of the effectiveness of engagement in romantic relationships ($r = 0.23$; Waters et al., 2018). Of note, a secure base script knowledge coding system was also recently developed for the Current Relationship Interview (CRI; Nivison et al., 2022)—a semi-structured interview modelled after the AAI that is designed to assess attachment in an ongoing romantic relationship. The CRI was administered to 116 adults from the MLSRA, and this coding system was associated with the same romantic relationship quality markers reported by Waters et al. (2018).

2 | CURRENT STUDY

The pre-registered analyses presented here (see https://osf.io/bxez6/?view_only=8c9a041e135b4a03a060eb21ec35de70) are the second set in a programmatic line of research designed to investigate the antecedents and sequelae of AAI_{sbs} in the NICHD Study of Early Child Care and Youth Development (SECCYD; NICHD Early Child Care Research Network, 2005; see Nivison et al., 2023). This study likewise extends previous work on the links between attachment representations of early caregiving experiences coded via the AAI and romantic relationship quality in adulthood. The main goal in the current study was to examine the predictive significance of AAI_{coh} and AAI_{sbs} at age 18 years for relationship adjustment in romantically partnered adults between the ages of 26 and 31 years ($M_{age} = 28.60$). Based on previous empirical findings, we predicted that higher AAI_{coh} and AAI_{sbs} scores at age 18 would be associated with greater self-reported romantic relationship adjustment. We also aimed to compare the magnitude of these associations and evaluate the sociocultural generalizability of these associations. Given limited prior evidence, these questions were exploratory in nature. In addition, in the SECCYD, the AAI Q-set was used to code dismissing and preoccupied states of mind (e.g., Roisman, 2007) to disambiguate whether any associations between AAI_{coh} and romantic relationship adjustment at around age 30 years were driven by dismissing states of mind, preoccupied states of mind, or both. Accordingly, in supplementary analyses, we assessed the predictive significance of AAI prototypic dismissing and preoccupied states of mind on romantic relationship adjustment in adulthood and compared them to AAI_{sbs} .

3 | METHOD

3.1 | Participants

Participants were drawn from the NICHD Study of Early Child and Youth Development (SECCYD). The SECCYD is an ongoing longitudinal investigation that has followed (initially) 1364 target participants and their families sampled from 10 sites across the United States from birth to around age 30 years (for detailed information, see Bleil et al., 2023; Booth-LaForce & Roisman, 2014; NICHD Early Child Care Research Network, 2005). The present study comprises a subsample of participants who completed an Adult Attachment Interview (AAI; George et al., 1985) at the age of 18 years ($n = 857$ at age 18 years) who also participated between ages 26 and 31 years in the most recent follow-up assessments and were at that most recent assessment romantically partnered. Thus, participants were included in analyses if the following two criteria were met: (1) data were available for the AAI at age 18 years, and (2) item-level data were obtained for the adult self-report assessment of romantic relationship quality (i.e., the Dyadic Adjustment Scale) at ages 26–31. The current analytic sample comprised 479 participants (59% female; 82% White/non-Hispanic), of whom 36% were married, 12% were engaged, 42% were in a committed relationship, and 10% were in a casual relationship. For a full description of participants' characteristics, see Table 1.

TABLE 1 Bivariate associations among all study variables (N = 479).

Variable	1	2	3	4	5	6	7	8	9	10
1. AAI _{sbs}	-									
2. AAI _{coh}	0.37**	-								
3. AAI _{dis}	-0.36**	-0.83**	-							
4. AAI _{pre}	-0.23**	-0.40**	0.07	-						
5. DAS/age ~ 30	0.17**	0.09	-0.07	-0.11*	-					
6. Sex	0.11*	0.16**	-0.23**	0.13**	0.07	-				
7. Ethnicity	0.18*	0.16**	-0.12**	-0.12**	0.17**	0.00	-			
8. I/N ratio	0.06	0.54**	-0.11*	-0.14**	0.06	-0.01	0.22**	-		
9. Maternal education	0.09*	0.22**	-0.21**	-0.12*	0.05	-0.03	0.21*	0.54**	-	
10. Cog fun	0.14**	0.46**	-0.25**	-0.11**	0.04	-0.07	0.32**	0.38**	0.46**	-
Mean	4.19	5.10	-0.05	-0.24	120.79	-	-	4.12	14.75	106.93
SD	1.92	1.42	0.40	0.23	14.56	-	-	2.94	2.44	9.73
%	-	-	-	-	-	59 ^a	82 ^b	-	-	-

Abbreviations: AAI_{coh}, AAI coherence of mind; AAI_{dis}, dismissing coded via the AAI Q-set; AAI_{pre}, preoccupied coded via the AAI Q-set; AAI_{sbs}, secure base script knowledge measured in the Adult Attachment Interview; Cog Fun, cognitive functioning; cognitive functioning; composite of the standard scores of the Woodcock-Johnson; DAS/age ~ 30, Total Dyadic Adjustment Scale score at around age 30; family income-to-needs ratio, composite family income-to-needs ratio; I/N ratio, family income-to-needs ratio; maternal education, total number of years of mother education; sex, male coded as 1, female coded as 2; ethnicity, white/non-Hispanic coded as 1, other coded as 0.

^aPercent Female.

^bPercent White/Non-Hispanic.

* $p < 0.05$; ** $p < 0.01$.

3.2 | Measures

3.2.1 | Adult attachment measures

Adult attachment interview

The Adult Attachment Interview (AAI; George et al., 1985) was administered at age 18 years. The AAI was originally developed to study the intergenerational transmission of attachment and is a semi-structured, 20-question interview protocol that is approximately 1–1.5 h long. The interview asks participants to describe their early relationships with their parents, revisit salient separation episodes, explore instances of perceived childhood rejection, recall encounters with loss, describe aspects of their current relationship with parents, and discuss salient changes that may have occurred from childhood to maturity.

AAI traditional coding

The AAI Classification System was also used by trained and reliable AAI coders to categorize participants' transcripts into one of three primary attachment classifications (secure/autonomous, insecure-dismissing, or insecure-preoccupied) according to the criteria outlined by Main and Goldwyn (1998). These categories were not used in the current study. Overall narrative coherence (AAI_{coh}) of each transcript is rated along a 9-point scale, "coherence of mind." In addition, we also used the AAI Q-set (Kobak, 1993) to scale participants on dismissing and preoccupied states of mind. The AAI Q-set consists of 100 cards describing attachment-related states of mind and inferred parental experiences. Reliability for AAIs of the SECCYD subsample was computed for 178 (21% of total) cases. For the two-way secure/insecure classification, agreement was 95%, $\kappa = 0.89$, $p < 0.001$. The ICC for coherence of mind was 0.85. The percentage of the 178 reliability cases for which reliability was 0.60 or higher (after Spearman-Brown correction) for the Q-set coding was 90%.

AAI_{sbs}

AAIs were coded using a recently developed system based on the extent to which an individual's narrative provides evidence of access to and elaborated knowledge of the secure base script (AAI_{sbs}; Waters & Facompré, 2021; Waters et al., 2017). The AAI_{sbs} coding system focuses only on the first six questions of the AAI (up to and including the upset question) and is rated on a 9-point scale for the extent to which the narratives produced in the interview follow, or imply, the secure base script. The AAI_{sbs} coding system evaluates two types of content: (1) explicit or implied secure base expectations (e.g., caregiver responsiveness, availability, and provision of effective comfort) and (2) recall of specific autobiographical memories that follow the secure base script (i.e., secure base scenes). Individuals receiving the highest score produce AAI narratives containing multiple specific event memories that follow the secure base script along with numerous positive secure base script consistent expectations. Those receiving the lowest score produce AAIs with content that is in direct contradiction with the themes of the secure base script (e.g., harsh/abusive parenting or role reversal).

SECCYD AAI transcripts were coded for this analysis by a team of two coders with one expert coder coding a subset of reliability cases. This team of coders was not involved in the original coding of the AAIs for traditional scales. The team began with coding 80 randomly chosen calibration cases. ICCs for the first 80 transcripts for AAI_{sbs} ranged from 0.83–0.91. (Coder 1 [MDN] and Coder 2 [OD], ICC = 0.83; Coder 1 and Expert Coder [TW], ICC = 0.88; Coder 2 and Expert Coder = 0.91). The remaining sample ($n = 777$) was coded by Coders 1 and 2 with 33% of reliability cases overlapping. Coders 1 and 2 demonstrated moderately high reliability (ICC = 0.88, $n = 259$). The Expert Coder also coded 60% of these reliability cases ($n = 156$). Coder 1 and Coder 2 demonstrated high reliability with the Expert Coder (ICC = 0.96, 0.91, respectively). Overall, the full sample ($n = 857$) was coded by Coder 1 and Coder 2 with ~40% cases ($n = 339$) overlapping for reliability. For the full reliability sample (including the first 80 calibration cases) Coder 1 and Coder 2 demonstrated moderately high reliability (ICC = 0.86). For the full sample,

~28% of cases ($n = 236$) were coded by the Expert Coder. Coders 1 and 2 demonstrated moderately high reliability with the Expert Coder (ICC = 0.93, 0.91, respectively, $n = 236$).

3.3 | Romantic relationship adjustment and covariate variables

3.3.1 | Romantic relationship adjustment

At a single time point between ages 26 and 31, all individuals who reported being romantically partnered were administered the Dyadic Adjustment Scale (DAS; Spanier, 1976) to measure the level of adjustment in their romantic relationships, with higher scores indicating a better couples' relationship quality. The DAS consists of 32 items, which are often summed to produce a total dyadic adjustment score that was used as the primary outcome variable for this study. Thirty questions regarding romantic relationship-related agreements/disagreements and feelings about the future of the relationship are scored on a Likert scale (0–5, 0–6, or 0–7 scale), and two questions are answered by “yes” or “no” and are scored as 0 or 1. Sample items are “In general, how often do you think that things between you and your partner are going well?” and “Do you and your mate engage in outside interests together?” The DAS has shown convergent validity with other relationship satisfaction and functioning measurements (e.g., Spanier, 1976; Villeneuve et al., 2015), and a meta-analysis on DAS validity reported scores of good internal consistency with a mean of 0.92 from a pool of 403 studies (Graham et al., 2006). The alpha coefficient for the complete-case analytic sample was 0.91.

3.3.2 | Covariates

Consistent with previous research using SECCYD participants who were administered the AAI at age 18 years (e.g., Nivison et al., 2023), covariates in the current study included: child ethnicity, operationalized as 1 = White/non-Hispanic, 0 = other; child sex, operationalized as 1 = male, 2 = female; maternal years of education, operationalized as the number of years of education mother had completed at the time of the child's birth; and socio-economic status operationalized as family income-to-needs (i.e., family income divided by the year-specific poverty threshold for the appropriate family size; a mean score of assessments at 1, 6, 15, 24, 36, and 54 months; grades 1, 3, 4, 5; and 6, and age 15 years). Cognitive functioning was also measured via the Woodcock-Johnson Psycho-Educational Battery-Revised (WJ-R; Woodcock, 1990; Woodcock et al., 1990; scores available at 54 months, grades 1, 3, and 5, and age 15). Note that a slightly different sub-set of scales was used at each time point. As such, we averaged the standard scores for all available sub-scales at each time point and created a reliable composite from 54 months through age 15 years. These covariates are consistent with prior analyses examining AAI_{sbs} in the SECCYD (i.e., Nivison et al., 2023).

3.4 | Analytic strategy

To examine the strength of the longitudinal associations between the AAI derived coding scales (i.e., AAI_{sbs} and AAI_{coh}) in late adolescence and marital satisfaction in adulthood (Aim 1), we calculated zero-order correlations between them. We also compared the zero-order correlations between each measure of adult attachment and romantic relationship adjustment using the Steiger's Z comparison test (Steiger, 1980) to compare the strength of these associations (Aim 2a). To examine whether any AAI derived coding scale incrementally predicted romantic relationship adjustment compared to others (Aim 2b), we performed a hierarchical linear regression analysis in SPSS, version 29. In the initial step, we entered AAI_{coh} , followed by a second step where we added AAI_{sbs} , and five

demographic covariates (sex, ethnicity, maternal years of education, income-to-needs ratio, and cognitive functioning) were entered in the last step to determine the degree to which results obtained in the first two steps were robust to these covariates. Finally, to assess the sociocultural generalizability of the associations between AAI-derived coding measurements and romantic relationship quality, we assessed whether and to what extent these associations were moderated by sex, ethnicity, and income-to-needs ratio during the first 15 years of life (Aim 3). We conducted a series of eight regression analyses. Each model consisted of the following independent variables: an adult attachment measure (i.e., AAI_{sbs} , AAI_{coh}), a sociocultural moderator (i.e., sex, ethnicity, or income-to-needs ratio), and their respective interaction terms. To further probe significant interaction terms, we calculated simple slopes using the “emmeans” package (Russell, 2020) in R. Of note, we ran two models to assess the potential moderating effect of ethnicity on the links between AAI-derived measures and romantic relationship quality; in the first we contrasted White/non-Hispanic ($n = 392$) with others ($n = 87$), and in the second we contrasted White/non-Hispanic with Black ($n = 41$) participants (total $N = 433$), consistent with our prior research leveraging the SECCYD (Haltigan et al., 2019; Nivison et al., 2023). Given that (a) the traditional AAI coding scales of dismissing and preoccupied states of mind are coded, among other scales, based on AAI_{coh} and (b) the AAI coding scales of dismissing and preoccupied states of mind are associated with somewhat distinct romantic relationship outcomes (e.g., Roisman, 2007), we also assessed Aims 1–3 by comparing AAI prototypic dismissing (AAI_{dis}) and preoccupied (AAI_{pre}) states of mind.

3.5 | Missing data

Missing item-level values varied between 0.02% and 0.10% per item. We used “mice” (van Buuren & Groothuis-Oudshoorn, 2011) packages in R to conduct item-level data multiple imputation. We created five imputed datasets and used Rubin's rules (Rubin, 2004) to combine the multiple imputed estimates.

3.6 | Power

Estimating power in multivariate models can be complex due to the dependence on the population values of various parameters within the model. Making assumptions about parameters, especially for those other than the ones of primary interest, is difficult given the lack of theory or data. To address statistical power concerns in this study, we thus focus on evaluating the power to identify bivariate associations that serve as the foundational elements of multivariate analyses. In the current SECCYD analytic subsample of 479, and given an alpha level of 0.05, the statistical power to detect population correlations of 0.10, 0.20, and 0.30 is estimated to be 0.59, 0.99, and >0.99 , respectively, suggesting that this analytic subsample was adequate to identify the kinds of associations commonly observed in the developmental science literature.

4 | RESULTS

4.1 | Preliminary analysis

At the request of a reviewer, we compared the predictor variable scores (i.e., AAI_{sbs} , AAI_{coh} , AAI_{dis} , and AAI_{pre}) between individuals who completed the AAI and took part in the set of adult assessments administered at around age 30 years (hereafter “romantic relationship subsample”; $n = 479$) and those who completed the AAI but reported not being in a romantic relationship at the time when the set of adult assessments were administered at around age 30 years (hereafter “nonromantic relationship subsample”; $n = 170$). The romantic relationship subsample had

significantly higher AAI_{coh} and lower AAI_{dis} scores compared to the nonromantic relationship subsample ($M_{diff} = 0.35$, $SE_{diff} = 0.13$; $t(647) = 2.76$, $p = 0.01$, $d = 0.25$; and $M_{diff} = -0.07$, $SE_{diff} = 0.04$; $t(647) = -1.99$, $p = 0.04$, $d = -0.18$, respectively). However, we found no significant differences in AAI_{sbs} and AAI_{pre} scores between these two subsamples ($M_{diff} = 0.32$, $SE_{diff} = 0.17$; $t(647) = 1.90$, $p = 0.06$, $d = 0.17$; and $M_{diff} = -0.03$, $SE_{diff} = 0.02$; $t(647) = -1.64$, $p = 0.10$, $d = -0.15$, respectively). In sum, though the primary, pre-registered emphasis of this analysis was assessing to what extent AAI measures predicted subsequent relationship adjustment among those in romantic relationship around age 30 years, these additional post hoc analyses suggest that those with low AAI_{coh} (and particularly those with lower AAI_{dis}) were less likely to be in a romantic relationship around the age of 30.

4.2 | Primary analyses

Aim 1. How strong are the longitudinal associations between attachment representations coded in the AAI in late adolescence and romantic relationship adjustment in adulthood?

We estimated zero-order correlations between attachment representations coded in the AAI in late adolescence and romantic relationship adjustment in adulthood (Table 1). The correlation between AAI_{sbs} at age 18 years and romantic relationship adjustment in adulthood was positive and significant with a small effect size ($r = 0.17$, $p < 0.001$), whereas the correlation between AAI_{coh} at age 18 and adult romantic relationship adjustment was less than Cohen's criterion for a small effect size (Cohen, 1992; $r = 0.09$, $p = 0.05$).

Aim 2a. Is the strength of the association between AAI_{coh} in late adolescence and romantic relationship adjustment in adulthood different than the strength of the association between AAI_{sbs} and romantic relationship adjustment?

We used the Steiger's Z comparison test to compare these associations. We found no significant difference between the two zero-order correlations ($Z = 1.57$, $p = 0.12$). This suggests that neither of the AAI derived coding scales is more strongly associated with adult romantic relationship adjustment relative to the other.

Aim 2b. Does one AAI derived coding scale incrementally predict romantic relationship adjustment compared to the other?

When entered as a sole predictor in the first step of a hierarchical linear regression (Table 2), AAI_{coh} did not significantly predict romantic relationship adjustment ($B = 0.90$, $SE_B = 0.47$, $\beta = 0.09$, $p = 0.05$). When entering AAI_{sbs} in the second step, AAI_{sbs} ($B = 1.20$, $SE_B = 0.37$, $\beta = 0.16$, $p < 0.001$), but not AAI_{coh} ($B = 0.30$, $SE_B = 0.50$, $\beta = 0.03$, $p = 0.54$), proved a significant predictor of romantic relationship adjustment. AAI_{sbs} remained a significant predictor of dyadic adjustment in adulthood above and beyond AAI_{coh} even after adding demographic covariates and cognitive functioning to the model in the third and final step ($B = 1.02$, $SE_B = 0.36$, $\beta = 0.14$, $p < 0.001$).

Aim 3. Does sociocultural background moderate the associations between AAI derived adult attachment representation scales in late adolescence and romantic relationship adjustment in adulthood?

In a series of eight linear regression analyses, each consisting of an adult attachment measure (i.e., AAI_{sbs} , AAI_{coh}), a sociocultural moderator (i.e., sex, ethnicity [both White/non-Hispanic versus Others and White/non-Hispanic versus Blacks], or income-to-needs ratio), and their respective interaction terms, all interaction terms (Tables 3 and 4) were non-significant, except for $AAI_{sbs} \times$ Ethnicity [White/non-Hispanic vs. Black participants]

TABLE 2 Hierarchical linear regression of AAI-derived attachment representation coding scales predicting romantic relationship adjustment at around age 30, controlling for demographic covariates and cognitive functioning ($N = 479$).

Variable	<i>B</i>	<i>SE_B</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Step 1						0.00
AAI _{coh}	0.90	0.47	0.09	1.92	0.05	
Step 2						0.03
AAI _{coh}	0.30	0.50	0.03	0.61	0.54	
AAI _{sbs}	1.20	0.37	0.16	3.26	0.00*	
Step 3						0.05
AAI _{coh}	0.11	0.52	0.01	0.22	0.82	
AAI _{sbs}	1.02	0.36	0.14	2.78	0.00*	
Sex	1.59	1.36	0.05	1.17	0.24	
Ethnicity	5.69	1.82	0.15	3.13	0.00*	
Income-to-needs ratio	0.14	0.27	0.03	0.52	0.60	
Maternal education	0.06	0.34	0.01	0.17	0.86	
Cognitive functioning	-0.06	0.08	-0.04	-0.80	0.42	

Abbreviations: AAI_{coh}, AAI coherence of mind; Sex, male coded as 1, female coded as 2; AAI_{sbs}, secure base script knowledge measured in the AAI; cognitive functioning, composite of the standard scores of the Woodcock-Johnson; Ethnicity, white/non-Hispanic coded as 1, other coded as 0; Family income-to-needs ratio, composite family income-to-needs ratio; Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered; Maternal education, total number of years of mother education.

* $p < 0.01$.

($B = -3.98$, $SE_B = 1.68$, $\beta = -0.62$, $p = 0.02$; Table 3). Testing simple slopes for each level of the moderator, we found that the associations between AAI_{sbs} and the quality of romantic relationships at around age 30 were significant for both White/non-Hispanic ($n = 392$) and Black participants ($n = 41$), albeit to a different degree (Figure 1). Whereas an increase of one point on the AAI_{sbs} scale was associated with an increase of one point on the DAS total score in White/non-Hispanic individuals ($B = 1.02$, $SE_B = 0.92$, $\beta = 0.67$, $p = 0.006$; $r = 0.15$, $p = 0.002$), the same increase on the AAI_{sbs} scale was associated with nearly a five-fold DAS total score increase in Black individuals ($B = 5.00$, $SE_B = 0.92$, $\beta = 0.05$, $p = 0.002$; $r = 0.33$, $p = 0.04$). Of note, in post hoc, non-preregistered analyses, we examined whether any of the interaction effects reported above were robust to the other interaction effects. When entering all predictors into separate models (i.e., each model entailing an attachment measure, sociocultural covariates and their interaction terms with the attachment measures, and a cognitive functioning covariate), we found similar results to the ones we describe above. That is, the interaction effect we found to significantly predict romantic relationship quality at age 30 (i.e., AAI_{sbs} \times Ethnicity [White/non-Hispanic vs. Black participants]) remained a significant predictor when controlling for the other interaction effects (see Tables 5 and 6).

4.3 | Supplemental analyses

We also assessed Aims 1–3 by comparing AAI_{dis} and AAI_{pre} (instead of AAI_{coh}) to AAI_{sbs} in predicting marital satisfaction in adulthood. In summary, the zero-order correlation between AAI_{pre} at age 18 and adult romantic relationship adjustment was significant with a small effect size ($r = -0.11$, $p = 0.02$), but the correlation between AAI_{dis} at age 18 and romantic relationship adjustment in adulthood was not ($r = -0.07$, $p = 0.14$; see Table 1). Using the Steiger's

TABLE 3 Hierarchical linear regression of the interaction of AAI_{gs} and demographics (family income-to-needs ratio, sex, and ethnicity) predicting dyadic adjustment at around age 30, controlling for other demographic covariates and cognitive functioning (N = 479).

Variable	B	SE _B	β	p	Variable	B	SE _B	β	p	Variable	B	SE _B	β	p
AAI _{gs}	0.56	0.64	0.08	0.38	AAI _{gs}	0.62	1.28	0.08	0.63	AAI _{gs}	1.12	0.93	0.15	0.23
I/N ratio	-0.36	0.36	-0.07	0.56	I/N Ratio	0.14	0.27	0.03	0.60	I/N Ratio	0.14	0.27	0.03	0.60
Sex	1.61	1.34	0.05	0.23	Sex	0.59	3.25	0.02	0.86	Sex	0.64	1.34	0.05	0.22
Eth (1)	5.69	1.81	-0.07	0.00*	Eth (1)	5.71	1.82	0.15	0.00*	Eth (1)	6.00	4.02	0.16	0.14
Mat. Ed	0.07	0.34	0.02	0.82	Mat. Ed.	0.06	0.34	0.00	0.85	Mat. Ed.	0.07	0.34	0.01	0.84
Cog. Fun.	-0.06	0.08	-0.04	0.46	Cog. Fun.	-0.06	0.08	-0.04	0.45	Cog. Fun.	-0.06	0.08	-0.04	0.44
AAI _{gs} × I/N Ratio	0.13	0.14	0.13	0.37	AAI _{gs} × Sex	0.26	0.73	0.07	0.73	AAI _{gs} × Eth (1)	-0.08	1.00	-0.02	0.93
R ²	0.06					0.05					0.05			0.09

Note: Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered.

Abbreviations: AAI_{gs}, secure base script knowledge measured in the Adult Attachment Interview; Cog. Fun, Cognitive functioning; Eth (1), White/non-Hispanic versus Blacks; I/N, Family income-to-needs; Mat. Ed, Maternal education.

*N = 433.

^ad, p < 0.001.

TABLE 4 Hierarchical linear regression of the interaction of AAI_{coh} and demographics (income-to-needs ratio, sex, and ethnicity) predicting dyadic adjustment at around age 30, controlling for other demographic covariates and cognitive functioning ($N = 479$).

Variable	B	SE _B	β	p	Variable	B	SE _B	β	p	Variable	B	SE _B	β	p
AAI _{coh}	0.45	0.82	0.04	0.58	AAI _{coh}	-0.08	1.58	-0.01	0.95	AAI _{coh}	0.87	1.05	0.08	0.41
I/N Ratio	-0.06	0.90	-0.01	0.94	I/N Ratio	0.10	0.27	0.01	0.71	I/N Ratio	0.12	1.37	0.02	0.67
Sex	1.79	1.37	0.06	0.20	Sex	-0.34	5.10	-0.01	0.95	Sex	1.84	0.27	0.06	0.18
Eth (1)	6.36	1.82	0.17	0.00*	Eth (1)	6.34	1.81	0.17	0.00*	Eth (2) ^a	8.04	5.87	0.21	0.17
Mat. Ed.	0.07	0.34	0.20	0.85	Mat. Ed.	0.07	0.34	0.01	0.83	Mat. Ed.	0.07	0.34	0.01	0.83
Cog. Fun.	-0.06	0.08	-0.04	0.46	Cog. Fun.	-0.06	0.08	-0.04	0.46	Cog. Fun.	-0.06	0.08	-0.04	0.45
AAI _{coh} × I/N Ratio	0.03	0.16	0.04	0.83	AAI _{coh} × Sex	0.43	0.96	0.11	0.65	AAI _{coh} × Eth (1)	-0.35	1.18	-0.06	0.76
										Eth (2) ^a				
R ²	0.04					0.04					0.04			

Note: Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered.

Abbreviations: AAI_{sp5r} secure base script knowledge measured in the Adult Attachment Interview; I/N, family income-to-needs; Mat. Ed, maternal education; Cog. Fun, cognitive functioning; Eth(1), White/non-Hispanic versus others; Eth(2), White/non-Hispanic versus Blacks.

^a $N = 433$.

* $d > 0.0001$.

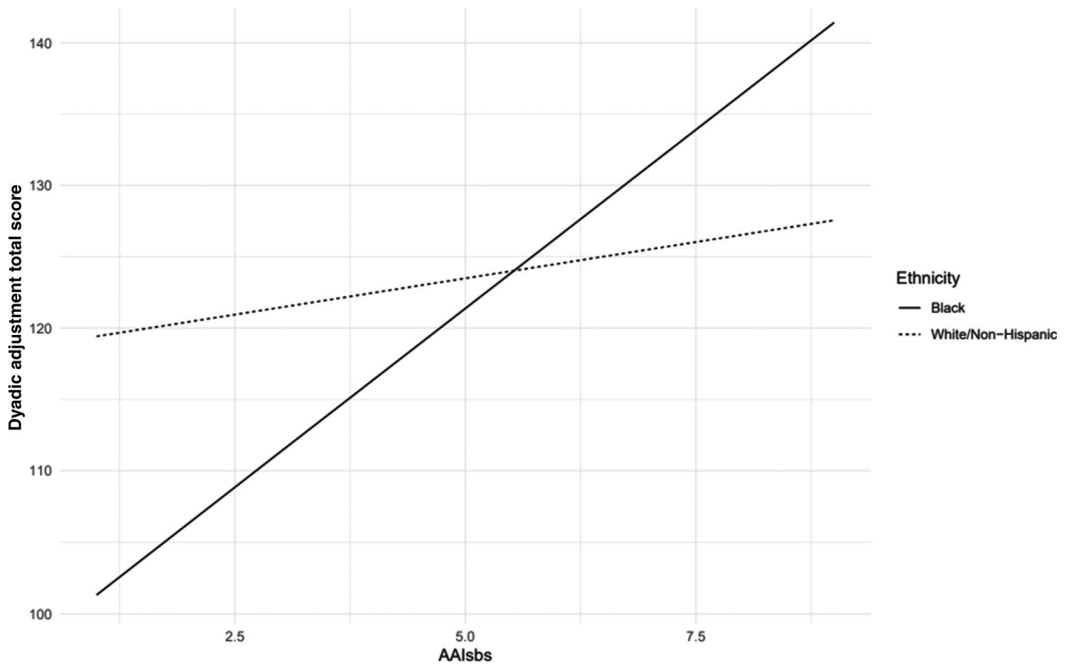


FIGURE 1 Secure base script knowledge coded in the AAI (AAI_{sbs}) measured at around age 18 predicts dyadic adjustment total score around age 30 is dependent on ethnicity (White/non-Hispanic [$n = 392$] vs. Black participants [$n = 41$]). AAI_{sbs} , secure base script knowledge measured in the Adult Attachment Interview.

Z comparison test to compare the strength of these associations with that of the AAI_{sbs} and romantic relationship adjustment, we found no significant difference between AAI_{sbs} and AAI_{dis} ($Z = 1.95, p = 0.05$), and between AAI_{sbs} and AAI_{pre} ($Z = 1.07, p = 0.28$). AAI_{sbs} was a significant predictor of romantic relationship adjustment above and beyond AAI_{dis} , AAI_{pre} , demographic covariates, and cognitive functioning ($B = 0.95, SE_B = 0.38, \beta = 0.13, p = 0.01$), but AAI_{dis} and AAI_{pre} were not (Table 7). The associations between AAI_{dis} and AAI_{pre} at age 18 years and romantic relationship satisfaction in adulthood were not moderated by sex, ethnicity, and income-to-needs ratio (Tables 8 and 9). In post hoc, non-preregistered analyses, we examined whether any of the interaction terms of both AAI_{dis} and AAI_{pre} with potential sociocultural moderators (i.e., sex, ethnicity, and or income-to-needs ratio) were robust to the others. We found that none of the interaction terms were significant predictors of romantic relationship quality at around age 30 above and beyond other interaction effects (see Tables 5 and 6).

5 | DISCUSSION

The aim of the current report was to replicate and extend previous findings regarding the predictive significance of attachment representations assessed via the AAI for adults' perceptions of their romantic relationship quality. Consistent with our hypothesis, secure base script knowledge coded in the AAI (i.e., AAI_{sbs}) was a significant predictor of romantic relationship adjustment, as measured by the Dyadic Adjustment Scale. In contrast, AAI_{coh} in late adolescence did not significantly predict self-reported dyadic adjustment 12 years later. In a set of exploratory analyses, we found that the AAI derived measures at age 18 years did not significantly differ from one another in the strength of their respective associations with adult romantic relationship quality, but that AAI_{sbs} incrementally predicted dyadic adjustment scale scores above and beyond AAI_{coh} , AAI_{dis} , and AAI_{pre} . By and large, demographics and cognitive functioning did not moderate the associations reported here between the AAI-derived attachment representations

TABLE 5 Hierarchical linear regression of the interaction of AAI coding measures and demographics (family income-to-needs ratio, sex, and ethnicity [White/non-Hispanic vs. other participants]) predicting dyadic adjustment at around age 30, controlling for demographic covariates, their interaction with the attachment measures, and cognitive functioning ($N = 479$).

Variable	B	SE _B	β	p	Variable	B	SE _B	β	p	Variable	B	SE _B	β	p
AAI _{sbs}	0.28	1.65	0.04	0.86	AAI _{coh}	0.01	1.90	-0.00	0.99	AAI _{dis}	-0.60	7.00	-0.02	0.93
I/N Ratio	-0.42	0.64	-0.09	0.51	I/N Ratio	-0.17	0.92	-0.03	0.86	I/N Ratio	0.12	0.28	0.02	0.66
Sex	0.41	3.27	0.01	0.90	Sex	-0.54	5.04	-0.02	0.91	Sex	1.72	1.39	0.06	0.26
Eth	6.76	4.11	0.18	0.10	Eth	8.44	5.98	0.22	0.16	Eth	6.61	6.61	0.16	0.00
Mat. Ed.	0.08	0.34	0.01	0.80	Mat. Ed.	0.08	0.34	0.01	0.81	Mat. Ed.	0.03	0.03	0.03	0.94
Cog. Fun.	-0.06	0.08	-0.04	0.45	Cog. Fun.	-0.06	0.08	-0.04	0.45	Cog. Fun.	-0.04	0.08	-0.03	0.56
AAI _{sbs} × Sex	0.29	0.73	0.08	0.69	AAI _{coh} × Sex	0.46	0.96	0.11	0.63	AAI _{dis} × Sex	2.29	3.45	0.10	0.50
AAI _{sbs} × Eth	-0.30	1.03	-0.05	0.77	AAI _{coh} × Eth	-0.44	1.20	-0.07	0.71	AAI _{dis} × Eth	-3.92	4.44	-0.10	0.38
AAI _{sbs} × I/N	0.14	0.14	0.14	0.34	AAI _{coh} × I/N	0.05	1.17	0.06	0.76	AAI _{dis} × I/N	-0.30	0.58	-0.04	0.61
R ²	0.06					0.04					0.04			0.05

Note: Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered.
 Abbreviations: AAI_{coh}, AAI coherence of mind; AAI_{dis}, dismissing coded via the AAI Q-set; AAI_{pre}, Preoccupied coded via the AAI Q-set; AAI_{sbs}, secure base script knowledge measured in the AAI; Cog. Fun, cognitive functioning; Eth, White/non-Hispanic versus other participants; I/N, family income-to-needs ratio; Mat. Ed, maternal education.

TABLE 6 Hierarchical linear regression of the interaction of AAI coding measures and demographics (family income-to-needs ratio, sex, and ethnicity [White/non-Hispanic vs. Black participants]) predicting dyadic adjustment at around age 30, controlling for demographic covariates, their interaction with the attachment measures, and cognitive functioning ($N = 433$).

Variable	B	SE _B	β	p	Variable	B	SE _B	β	p	Variable	B	SE _B	β	p
AAI _{sbs}	4.50	2.21	0.60	0.03	AAI _{coh}	2.63	2.29	0.26	0.25	AAI _{dis}	-0.90	8.44	-0.02	0.92
I/N Ratio	-0.52	-0.52	-0.10	0.42	I/N Ratio	-0.12	0.93	-0.03	0.89	I/N Ratio	0.09	0.28	0.02	0.76
Sex	1.40	3.38	0.05	0.68	Sex	1.82	5.23	0.06	0.73	Sex	1.70	1.44	0.06	0.24
Eth	23.13	6.00	0.47	0.00	Eth	20.31	7.78	0.41	0.01	Eth	11.26	2.62	0.23	0.21
Mat. Ed.	0.25	0.35	0.04	0.47	Mat. Ed.	0.25	0.36	0.04	0.48	Mat. Ed.	0.19	0.36	0.03	0.60
Cog. Fun.	-0.07	0.08	-0.04	0.41	Cog. Fun.	-0.07	0.06	-0.05	0.40	Cog. Fun.	-0.06	0.09	-0.04	0.51
AAI _{sbs} × Sex	0.09	0.75	0.03	0.90	AAI _{coh} × Sex	0.03	1.00	0.01	0.98	AAI _{dis} × Sex	2.99	3.58	0.14	0.40
AAI _{sbs} × Eth	-4.31	1.17	-0.67	0.01	AAI _{coh} × Eth	-2.35	1.71	-0.33	0.17	AAI _{dis} × Eth	-4.77	6.29	-0.12	0.44
AAI _{sbs} × I/N	0.16	0.14	0.17	0.26	AAI _{coh} × I/N	0.04	0.17	0.05	0.82	AAI _{dis} × I/N	-0.26	0.58	-0.04	0.65
R ²	0.09					0.06					0.06			0.07

Note: Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered.

Abbreviations: AAI coherence of mind; AAI_{dis}, dismissing coded via the AAI Q-set; AAI_{pre}, preoccupied coded via the AAI Q-set; AAI_{sbs}, secure base script knowledge measured in the AAI; Cog. Fun, cognitive functioning; Eth, White/non-Hispanic versus Black participants; I/N, family income-to-needs ratio; Mat. Ed, maternal education.

TABLE 7 Hierarchical linear regression of AAI-derived attachment representation measurements (AAI_{dis}, AAI_{pre}, and AAI_{sbs}) predicting romantic relationship adjustment at around age 30, controlling for demographic covariates and cognitive functioning ($N = 479$).

Variable	<i>B</i>	<i>SE_B</i>	β	<i>SE</i>	<i>t</i>	<i>p</i>	<i>R</i> ²
Step 1							0.02
AAI _{dis}	-2.24	1.66	-0.06	1.66	-1.34	0.18	
AAI _{pre}	-6.62	2.94	-0.10	2.94	-2.25	0.02	
Step 2							0.03
AAI _{dis}	-0.36	1.76	-0.01	1.76	-0.20	0.84	
AAI _{pre}	-4.69	2.98	0.07	2.98	-1.57	0.11	
AAI _{sbs}	1.13	0.37	0.15	0.37	3.02	0.00*	
Step 3							0.06
AAI _{dis}	0.34	1.85	0.01	1.85	0.19	0.85	
AAI _{pre}	-4.56	3.03	-0.07	3.03	-1.50	0.13	
AAI _{sbs}	0.95	0.38	0.13	0.38	2.54	0.01	
Sex	1.99	1.39	0.07	1.39	1.45	0.15	
Ethnicity	5.55	1.82	0.15	1.82	3.06	0.00*	
Income-to-needs ratio	0.11	0.27	0.02	0.27	0.40	0.69	
Maternal education	0.06	0.34	0.01	0.34	0.18	0.86	
Cognitive functioning	-0.06	0.08	-0.04	0.08	-0.73	0.46	

Abbreviations: AAI_{dis}, dismissing coded via the AAI Q-set; AAI_{pre}, preoccupied coded via the AAI Q-set; AAI_{sbs}, secure base script knowledge measured in the AAI; cognitive functioning, composite of the standard scores of the Woodcock-Johnson; Ethnicity, white/non-Hispanic coded as 1, other coded as 0; family income-to-needs ratio, composite family income-to-needs ratio; Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered; I/N, income-to-needs; maternal education, total number of years of mother education; Sex, male coded as 1, female coded as 2. * $p < 0.01$.

measures and dyadic adjustment in adulthood. However, increase in AAI_{sbs} was associated with a higher increase of dyadic adjustment in Black versus White/non-Hispanic individuals (even when controlling for other sociocultural moderation effects), although this analysis was somewhat underpowered and exploratory in nature. Taken together, results from this study extend an emerging literature suggesting that attachment representations in the form of secure base script knowledge, which is associated with early experiences with primary caregivers (e.g., Nivison et al., 2021; Nivison et al., 2023; Steele et al., 2014; Waters et al., 2017), predicts the quality of romantic relationship later in life (Dagan et al., 2021; Waters et al., 2013, 2018).

Whereas Waters et al. (2018) reported that neither AAI_{coh} nor AAI_{sbs} uniquely predicted self-reported romantic relationship quality in the Minnesota Longitudinal Study of Risk and Adaptation when entered simultaneously in a regression model, current findings based on the SECCYD suggest that AAI_{sbs} predicts self-reported romantic relationship quality above and beyond AAI_{coh}. These different patterns of results may be accounted for by multiple methodological differences (e.g., different self-reported measures of romantic relationship quality and a large difference in sample sizes [$N = 111$ in Waters et al., 2018]) between the two studies. In addition, in contrast to the normative-risk SECCYD sample analysed in this study, individuals assessed in the MLSRA were born into poverty. The higher risk individuals assessed by Waters et al. (2018) on average experienced more environmental social stressors (e.g., high life stress, low stability of living situations, and low social support; Egeland & Brunnequell, 1979). Such everyday difficulties might have compromised these individuals' ability to provide effective soothing to their romantic partners or interfered with their opportunities to seek out support, which in turn may have led to less self-reported satisfaction in their romantic relationship independent of their secure base script knowledge.

TABLE 8 Hierarchical linear regression of the interaction of AAI_{dis} and demographics (family income-to-needs ratio, sex, and ethnicity) predicting dyadic adjustment at around age 30, controlling for other demographic covariates and cognitive functioning ($N = 479$).

Variable	B	SE _B	β	p	Variable	B	SE _B	β	p	Variable	B	SE _B	β	p
AAI _{dis}	0.35	2.87	0.01	0.90	AAI _{dis}	-5.19	5.70	-0.14	0.36	AAI _{dis}	2.26	3.94	0.06	0.57
I/N Ratio	0.10	0.27	0.02	0.71	I/N Ratio	0.14	0.27	0.03	0.60	I/N Ratio	0.13	0.27	0.03	0.64
Sex	1.77	1.39	0.06	0.20	Sex	1.88	1.39	0.06	0.18	Sex	1.76	1.39	0.06	0.21
Eth (1)	6.42	1.80	0.17	0.00*	Eth (1)	6.50	1.82	0.17	0.00*	Eth (2) ^a	11.12	2.61	0.22	0.00*
Mat. Ed.	0.07	0.34	0.01	0.84	Mat. Ed.	0.07	0.34	0.01	0.85	Mat. Ed.	0.02	0.00	0.15	0.92
Cog. Fun.	-0.05	0.08	-0.03	0.53	Cog. Fun.	-0.05	0.08	-0.04	0.50	Cog. Fun.	-0.04	0.08	-0.03	0.55
AAI _{dis} × I/N Ratio	-0.43	0.56	-0.06	0.49	AAI _{dis} × Sex	2.43	3.44	0.11	0.48	AAI _{dis} × Eth (1)	-4.47	4.34	-0.11	0.30
										(2) ^a				
R ²	0.04					0.04					0.06			

Note: Family income-to-needs ratio, maternal education, and cognitive functioning variables are centered.

Abbreviations: AAI_{dis}, dismissing coded via the AAI Q-set; Cog. Fun, cognitive functioning; Eth(1), White/non-Hispanic versus others; Eth(2), White/non-Hispanic versus Blacks; I/N, family income-to-needs; Mat. Ed, maternal education.

^a $N = 433$.

* $d > 0.001$.

TABLE 9 Hierarchical linear regression of the interaction of AA_{pre} and demographics (income-to-needs ratio, sex, and ethnicity) predicting dyadic adjustment at around age 30, controlling for other demographic covariates and cognitive functioning (N = 479).

Variable	B	SE _B	β	p	Variable	B	SE _B	β	p	Variable	B	SE _B	β	p
AA _{pre}	-1.95	5.02	-0.03	0.70	AA _{pre}	-11.39	11.04	-0.18	0.30	AA _{pre}	-7.31	6.31	-0.11	0.25
I/N ratio	-0.24	0.40	-0.05	0.55	I/N	0.09	0.27	0.01	0.12	I/N	2.47	0.27	0.02	0.77
					Ratio					Ratio				
Sex	2.39	1.35	0.08	0.08	Sex	3.26	2.11	0.11	0.74	Sex	0.08	1.35	0.08	0.07
Eth (1)	6.15	1.81	0.16	0.00*	Eth (1)	6.08	1.82	0.16	0.00*	Eth (1)	6.42	2.30	0.17	0.00*
Mat. Ed	0.10	0.33	0.02	0.77	Mat. Ed.	0.07	0.34	0.10	0.85	Mat. Ed.	0.08	0.34	0.01	0.81
Cog. Fun.	-0.04	0.08	-0.03	0.61	Cog. Fun.	-0.05	0.08	-0.03	0.57	Cog. Fun.	-0.05	0.08	-0.03	0.56
AA _{pre} × I/N	-1.15	1.07	-0.11	0.28	AA _{pre} × Sex	3.02	6.33	0.09	0.63	AA _{pre} × Eth	1.29	7.14	0.02	0.86
ratio					Sex					Eth (1)				
					Fun.					Eth (2) ^a				
R ²	0.05					0.05					0.05			

Note: Family income-to-needs ratio, maternal education, and cognitive functioning are centered.

Abbreviations: AA_{pre}, Preoccupied coded via the AAI Q-set; I/N, family income-to-needs; Mat. Ed, maternal education; Cog. Fun, cognitive functioning; Eth(1), White/non-Hispanic versus others; Eth(2), White/non-Hispanic versus Blacks.

^aN = 433.

*p < 0.001.

Of note, in this study, we did not find a significant bivariate correlation between AAI_{coh} and self-reported romantic relationship quality in adulthood, though this association is likely driven by the non-significant association of AAI_{dis} (but *not* AAI_{pre}) and the age 30 year outcome. Findings from previous studies with regards to the correlations between AAI_{coh} and self-reported romantic relationship quality are mixed (Treboux et al., 2004; Waters et al., 2018), which makes it hard to clearly determine the degree to which AAI_{coh} is predictive of self-reported romantic relationship quality in adulthood. However, previous findings are consistent in reporting significant correlations between AAI_{coh} and direct observations of the quality of romantic interactions and interview-based assessments of romantic relationship quality (Holland & Roisman, 2010; Roisman et al., 2001; Waters et al., 2018). The use of a large sample study to compare the predictive validity of AAI_{coh} on self-reports, observed couple interactions, and interview-based assessments is thus needed to determine the robustness of the results we obtained here.

Attachment theory has long sought to explain variability in the quality of romantic relationships (e.g., Collins & Sroufe, 1999; Feeney, 2016), and clinically intervene to reduce romantic relationship distress (e.g. Emotionally Focused Therapy; Greenman & Johnson, 2013; Johnson et al., 2013). Findings from the current research support the notion that attachment-related expectations may influence the quality of romantic relationships. Specifically, being confident in one's ability to solicit effective support from one's romantic partner may lead to decreased levels of interpersonal distress within the relationship, and promote higher quality romantic relationships. Future research should experimentally test the casual relationship between interventions designed to increase the knowledge of, and access to the secure base script and romantic relationship quality.

5.1 | Study limitations and future research

Findings of this study replicate and extend previous research on the predictive significance of secure base script knowledge as coded via the AAI, using the largest sample size and time interval between assessments of attachment representations and romantic relationship quality to date. However, two limitations should be noted. First, the current study used a self-report measure of romantic relationship quality in adulthood during a single follow-up assessment. Future assessments of romantic relationship quality via multiple informants (e.g., partner evaluations of the romantic relationship quality) and in multiple time points to evaluate the functioning of the target individuals over time will expand our understanding of the role of attachment representations and romantic functioning. Second, due to the single time point administration of the AAI, we were unable to assess the degree of stability in attachment representations in early adulthood. Multiple waves of attachment data would have allowed for the study of growth and change in adult attachment representations, which is likely to influence interpersonal information processing (Collins & Sroufe, 1999; Dykas & Cassidy, 2011). Future research will benefit from multiple assessments of attachment representations over time in adulthood and multi-method (and informant) approach to the evaluation of romantic relationship functioning.

6 | CONCLUSION

The AAI has provided developmental psychologists with a critical measurement tool to embark on research regarding attachment representations during post-childhood years and their predictive significance for adult functioning. Building on programmatic research investigating the antecedents and sequelae of AAI_{sbs} , this study partially replicates and extends previous findings regarding the predictive validity of multiple AAI-derived coding scales on romantic relationship quality in adulthood (Waters et al., 2013, 2018). Alongside previous research (Dagan et al., 2021), this report also strengthens the validity of secure base script knowledge in understanding individual differences in the quality of close relationships in adulthood.

AUTHOR CONTRIBUTIONS

Or Dagan: Conceptualization; formal analysis; investigation; writing – original draft; writing – review and editing.
Marissa D. Nivison: Conceptualization; investigation; writing – review and editing. **Maria E. Bleil:** Data curation;

funding acquisition; investigation; writing – review and editing. **Cathryn Booth-LaForce**: Data curation; funding acquisition; investigation; writing – review and editing. **Glenn I. Roisman**: Conceptualization; data curation; funding acquisition; investigation; supervision; writing – review and editing. **Theodore E. A. Waters**: Conceptualization; investigation; supervision; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

In accordance with Taylor & Francis policy and my ethical obligation as a researcher, I am reporting that the authors of this manuscript have no interests to disclose.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

Ethics approval was granted by the Human Subjects Division at the University of Washington (IRB# STUDY00001821).

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