Published in final edited form as:
Child Dev. 2012 September ; 83(5): 1689–1702. doi:10.1111/j.1467-8624.2012.01801.x.

Shared and Distinctive Origins and Correlates of Adult Attachment Representations: The Developmental Organization of Romantic Functioning

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Abstract

To test proposals regarding the hierarchical organization of adult attachment, this study examined developmental origins of generalized and romantic attachment representations and their concurrent associations with romantic functioning. Participants (N = 112) in a 35-year prospective study completed the Adult Attachment Interview (AAI) and Current Relationship Interview (CRI). Two-way ANOVAs tested interactive associations of AAI and CRI security with infant attachment, early parenting quality, preschool ego resiliency, adolescent friendship quality, and adult romantic functioning. Both representations were associated with earlier parenting and core attachment-related romantic behavior, but romantic representations had distinctive links to ego resiliency and relationship-specific romantic behaviors. Attachment representations were independent and did not interactively predict romantic functioning, suggesting that they confer somewhat distinctive benefits for romantic functioning.

Keywords

Attachment representations; romantic functioning; developmental organization

Following the precedent set by those who elaborated organizational processes in infant attachment (e.g., Sroufe & Waters, 1977), recent romantic attachment research has turned toward the organizational implications of attachment representations for romantic functioning. At least two key gaps exist within this literature, however. The first concerns the distinct or overlapping roles of generalized representations (i.e., representations of early attachment relationships with caregivers, Main et al., 1985) and romantic attachment representations (i.e., representations of specific romantic partners, Treboux et al., 2004) in organizing romantic functioning. Both generalized and romantic attachment representations have been independently linked to a number of romantic behaviors. Generalized

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representations are typically assessed by the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), in which variation in discourse and states of mind regarding childhood experiences with caregivers are used to assign an overall secure-autonomous or non-autonomous (i.e., dismissing or preoccupied) classification. Secure-autonomous AAI classifications have been associated with more optimal romantic functioning and relationship stability, whereas non-autonomous classifications have been associated with relationship distress, poorer functioning, autonomic reactivity, and relationship instability (Bouthillier, Julien, Dube, Belanger, & Hemelin, 2002; Cohn, Silver, Cowan, Cowan, & Pearson, 1992; Creasey, 2002; Holland & Roisman, 2010; Paley, Cox, Burchinal, & Payne, 1999; Roisman, 2007; Simpson, Rholes, Oriña, & Grich, 2002; Spangler & Zimmerman, 1999; Wampler, Shi, Nelson, & Kimball, 2003).

Relatively less research has examined the role of romantic representations in these areas, but the pattern of links to romantic functioning is similar to those observed for the AAI. One commonly used representational assessment of romantic attachment is the Current Relationship Interview (CRI; Crowell & Owens, 1996), which is analogous to the AAI in structure and coding (i.e., it assesses states of mind and coherence of discourse regarding romantic attachment experiences and assigns a secure, dismissing, or preoccupied classification) but differs in that it focuses on attachment experiences with a specific, current romantic partner. Secure CRI classifications (analogous to secure-autonomous AAI classifications) have been linked to higher romantic functioning both with respect to behavior and cognition (Roisman, Collins, Sroufe, & Egeland, 2005; Treboux, Crowell, & Waters, 2004).

Although extensive literatures exist regarding their separate associations to romantic functioning, questions about each representation's contribution in the context of the other have been addressed rather obliquely. Research to date has not fully examined whether the two representations have shared, distinctive, or interactive effects on various aspects of romantic functioning. Attachment theory suggests that, as concurrent components of the adult attachment system, generalized and romantic representations should be associated and should have overlapping influences on romantic behavior. Specifically, the prototype hypothesis, which postulates in its strictest formulation that early attachment relationships are templates on which all subsequent relationships are based (Crowell & Waters, 2005; Owens et al., 1995), anticipates interdependence of generalized and romantic representations due to their presumed shared basis in earlier experiences. Prior research, however, has documented only moderate concordance between AAI and CRI classifications (64%, Owens et al., 1995; 58%, Treboux et al., 2004). Such evidence that a substantial minority of adults have discordant representations (i.e., one secure-autonomous and one insecure non-autonomous representation) leaves open the possibility that generalized and romantic representations are not as strongly associated in adulthood as expected by the prototype hypothesis. Moreover, the prototype hypothesis does not provide a clear basis for predictions about whether the two representations have distinctive or interactive effects on romantic functioning.

A more comprehensive argument for their interdependent influence on behavior is based on the temporal order of the two representations' development. Overall, Fletcher, and Friesen (2003), for example, found support for a hierarchical model in which relationship-specific representations (i.e., of a current romantic partner) were nested within domain-specific representations (i.e., of all romantic partners), which in turn were nested under a single global representation (i.e., of all attachment relationships). This structure may develop in part because of the temporal sequence of relationships on which different representations are based. Generalized representations develop in response to the accumulation of attachment experiences in multiple relationships; thus, they may be more robust and may exert greater

influence on romantic behavior than partner-specific representations, which are founded on relatively smaller accumulation of interactions with one partner (Overall et al., 2003). Thus, the effects of the romantic representation may be constrained (i.e., moderated) by the pre-existing higher-order generalized representation.

Treboux, Crowell, and Waters (2004) similarly proposed that romantic partner-specific representations are referenced to generalized representations as part of a feedback loop through which the attachment system maintains its organization. In particular, generalized representations are thought to serve as foundations on which partner-specific representations are based. The course of romantic partnerships is thus, according to this account, directed in part by the concordance or discrepancy of the two representations. Treboux and her colleagues also argued that generalized representations take primacy over partner-specific representations under conditions of stress. That is, the partner-specific representation may guide functioning under low stress conditions but under duress the more established generalized representation is activated, for better or worse (i.e., romantic representations are constrained by generalized representations to some extent).

An alternative proposal is that generalized and romantic representations are relatively independent elements of the adult attachment system that confer somewhat distinctive benefits for romantic functioning. The generalized representation, built on an accumulation of attachment experience across development, may be more closely tied to core aspects of attachment functioning such as secure base behavior and conflict resolution, whereas the romantic representation may be more closely tied to aspects of functioning that are more relationship-specific (e.g., current relationship conflicts, feelings about a specific relationship). This possibility is bolstered by evidence that romantic representations may be uniquely tied to relationship perceptions (Roisman et al., 2005), although a recent study found associations between AAI security-autonomy and self-reported satisfaction concurrently and across time (Holland & Roisman, 2010).

Despite such proposals regarding the independent or interactive effects of generalized and romantic attachment representations on romantic behavior, Treboux et al.'s (2004) study remains the only published test of the joint associations of generalized and partner-specific representations with romantic functioning (but see Creasey & Ladd, 2005). Treboux and her colleagues examined differences in romantic functioning based on within-person configurations of AAI and CRI classifications to understand what happens when the generalized representation is challenged or confirmed by a representation of a specific romantic partner, and to test whether distinct patterns of functioning are observed for each of the possible AAI/CRI configurations. As expected, individuals classified as secure-autonomous on both the AAI and CRI displayed the most effective romantic functioning, whereas those with concordant-insecure representations displayed the least optimal functioning. Particularly interesting patterns emerged for the AAI/CRI discordant groups: romantic behavior and perceptions were associated with whether the relationship exceeded (or failed to meet) expectations set by the generalized representation (see Treboux et al., 2004, for a detailed discussion). These findings offer compelling evidence that both representations play a role in organizing romantic functioning and suggest that they may not be interchangeable in terms of the benefits each form of security-autonomy provides. Nonetheless, this initial study has not been replicated, and no study has explicitly tested whether the two representations operate distinctively or interact to affect romantic functioning.

Questions about interdependent or distinct functional roles of generalized versus romantic representations also raise questions about their developmental origins. A second gap in the literature concerns how the two representations are organized by earlier experience. The

attachment system becomes elaborated from infancy through adulthood as representations of early history are consolidated and new representational targets (i.e., romantic partners) are engaged; however, the extent of the interdependence of the two representations' origins is currently unknown. Instead, research has largely focused on correlates of (dis)continuity of attachment representations between either: (a) infant security and AAI classifications (e.g., Weinfield, Whaley, & Egeland, 2004), (b) stability of AAI classifications in adulthood (e.g., Crowell, Treboux, & Waters, 2002); or (c) intergenerational transmission of attachment patterns (e.g., van IJzendoorn, 1995).

An important facet of the prototype hypothesis is the expectation that generalized and romantic representations share a common origin in early experience (Owens et al., 1995), but research to date has not examined fully whether this is the case—especially in terms of antecedents other than infant attachment security. One possibility is that they share some common origins (e.g., early parenting) but also have some distinctive antecedents (e.g., romantic attachment may be distinctly tied to earlier voluntary dyadic relationships or other experiences outside the family). Only one published study to date has documented shared antecedents of both generalized and romantic representations. Grossmann, Grossmann, and Kindler (2006) reported associations of parental support and coping strategies across childhood and adolescence with secure-autonomous generalized and romantic representations in adulthood. Their analyses, however, did not include antecedents outside of the family of origin which may operate as distinctive antecedents of the two representations.

The processes by which experiences across development organize the adult attachment system, and specifically how romantic representations emerge in the context of existing representations of earlier experience, have not been fully addressed. Whether generalized and romantic representations have shared or distinctive origins and whether they interact to influence romantic functioning remains to be seen. Answers to these questions would clarify the developmental processes that organize the attachment system in adulthood and clarify the roles of each representation in organizing romantic functioning.

The Current Study

The current study addressed these questions using prospective data from the Minnesota Longitudinal Study of Risk and Adaptation (MLSRA; Sroufe et al., 2005). We sought to examine whether generalized and romantic attachment representations have shared and distinctive developmental origins and whether they have shared, distinctive, or interactive associations with romantic behavior.

Developmental origins

We used an ANOVA framework to test main effect and interactive associations between AAI and CRI security-autonomy and developmental antecedents to examine whether generalized and romantic representations have shared or distinctive developmental origins. Antecedent measures were chosen to tap salient aspects of earlier functioning that were, on the basis of theory and previous empirical evidence, expected to be associated with adult attachment representations: infant attachment security, early parenting quality, ego resiliency in preschool, and friendship quality in adolescence.

Prior research documents links between infant attachment security and subsequent parenting quality with both generalized and romantic attachment representations (Roisman et al., 2005, Roisman et al., 2001) and romantic functioning (Conger, Cui, Bryant, & Elder, 2000). Poor ego resiliency has been associated with earlier infant insecurity (Arend, Gove, & Sroufe, 1979) as well as concurrent non-autonomous AAI classifications (Grossman et al.,

2005; Kobak & Sceery, 1988) and romantic insecurity (Gjerde, Onishi, & Carlson, 2004). Ego resiliency has also been associated with adaptive regulation of negative affect and constructive persistence in interpersonal interactions (Arend et al., 1979; Hennighausen, Hauser, Billings, Hickey Schultz, & Allen, 2004; Kobak & Sceery, 1988). We thus expected that early self-regulatory capacities (defined here as flexible attentional, affective, and behavioral control in the face of changing environmental demands) might be especially relevant to establishing and maintaining romantic attachment relationships. We targeted preschool ego resiliency in light of its developmental salience during this period (Erikson, 1950/1963; Sroufe et al., 2005). The quality of close friendships in adolescence is also a known precursor of later romantic functioning (Collins, Hennighausen, Schmit, & Sroufe, 1997; Furman et al., 2002; Simpson et al., 2007; Zimmerman, 2004). Participation in extra-familial close relationships that serve attachment-like functions (e.g., mutual support-giving and displays of emotional vulnerability) may provide opportunities for interactions that depart from previous experiences in parent-child attachment relationships (for better or worse) and thus may be uniquely associated with romantic attachment representations.

Hypotheses—We expected generalized and romantic representations to have a shared basis in experiences in the family of origin (i.e., infant security and early parenting quality) but that romantic representations would be uniquely associated with earlier functioning outside the family of origin (i.e., preschool ego resiliency and adolescent friendship quality).

Romantic functioning

Next, we examined whether generalized and romantic representations had shared, distinctive, or interactive associations with observed and self-reported measures of romantic functioning. To provide a basis for continuity with prior research in this area, we chose measures of romantic functioning that paralleled those assessed by Treboux et al. (2004) as closely as possible: secure base behavior, romantic conflict, and conflict resolution, and self-reported feelings about the relationship.

Hypotheses—As noted earlier, we anticipated two possibilities regarding the shared, distinctive, or interactive links of both representations to romantic functioning: one in which the generalized representation moderates the romantic representation's effect on romantic functioning, and a second in which the romantic representation has independent associations with some aspects of romantic functioning. Given our expectation that romantic representations have some shared and distinctive origins, we expected to find main, but not necessarily interactive, effects of both generalized and romantic security-autonomy on core attachment behaviors (secure base behavior and conflict resolution), and that romantic security would be uniquely related to more relationship-specific aspects of functioning (discussion of a current relationship conflict, feelings about the current relationship).

Method

Participants

Analyses drew on data from the Minnesota Longitudinal Study of Risk and Adaptation (MLSRA; Sroufe et al., 2005). The MLSRA began in the mid-1970s as a study of 267 at-risk mothers who sought prenatal care from public health clinics in Minneapolis. The target children of these mothers, now 35-years-old, have been studied intensively since birth. Today, approximately 180 of the original children still participate; the majority of attrition occurred in the first months after birth. Multi-method assessments have targeted salient tasks at each developmental period; the present study relied especially on assessments of participants' functioning in close relationships, including relationships with parents in early childhood, with friends in adolescence, and with romantic partners in early adulthood.

Subsample Selection—The present study drew on data from two waves of romantic relationship assessments conducted when participants were between ages 20-21 and 26-28 (see Couples Assessment Procedure). All participants who completed either wave were included in analyses ($N = 112$). Some participants completed two assessments with the same partner ($n = 24$) or with two different partners ($n = 26$). For these participants, the age 20-21 assessment was selected. The final sample included 112 target participants (from 112 heterosexual couples; 79 from the age 20-21 assessment and 33 from the age 26-28 assessment). In light of normative changes in the content and quality of romantic relationships across the age groups represented by this sample (see Collins & Madsen, 2006), we compared participants from the age 20-21 assessment vs. the age 26-28 assessment on all romantic functioning measures. With the exception of mean relationship length (27.6 months, $SD = 21.1$, at age 20-21 vs. 44.9 months, $SD = 28.9$, at age 26-28; $t = -3.50$, $p = .02$), groups did not differ on romantic behavior, perceptions, rates of AAI and CRI secure-autonomous classifications, or AAI and CRI coherence. These results informed our decision to combine age groups into one sample.

Target participants were 53% male, 67% White, 11% Black, and 18% mixed race. Paternal race information was not available for the remaining 4% of the sample. Mothers' mean age at time of birth was 20.6 years; 57% of target participants were born to single mothers. Participants in the selected subsample did not differ significantly from the full sample on these characteristics. Mean relationship length was 32.7 months ($SD = 24.9$ months); relationships ranged in length from 4 months to 10 years and 4 months. The majority of couples were dating at the time of assessment (61.5%); 14.7% were engaged, 18.3% were married, and 5.5% indicated their relationship status was "committed."

Measures

12-month Strange Situation Procedure—The quality of parent-infant attachment relationships was assessed at 12 months using the Strange Situation procedure (Ainsworth, Blehar, Waters, & Wall, 1978). Certified raters classified infants' attachment patterns as Secure, Avoidant, or Anxious-Resistant. Twelve-month attachment disorganization scores were not available on the full sample (see Carlson 1998 for details); consistent with prior work on links between infant attachment and romantic attachment (Roisman et al., 2005), infants classified as disorganized were coded as insecure in the current analyses.

24-month Parenting Quality—At 24 months, target participants and their mothers completed a videotaped interaction task in the laboratory (see Sroufe et al., 2005). The task required toddlers to use available tools to solve a series of increasingly difficult problems, which were designed so that toddlers would need assistance from their mothers at some point to accomplish the task. Mothers' behaviors were coded on a seven-point scale of Parenting Quality (a global rating of the parent's sensitivity to the child's emotional and developmental needs). The intraclass correlation (ICC) for this scale was .82.

54-month Ego Resiliency—Ego resiliency was assessed by compositing performance on four laboratory tasks developed by Block and Block (1980). The composite included the number of clicks correctly responded to and story comprehension scores from Block and Block's (1973) Dual Focus Task, the number of solutions generated in the Preschool Interpersonal Problem-Solving Test (Shure & Spivack, 1974; Spivack & Shure, 1974), the imaginativeness rating from the Lowenfeld Mosaics Test (Block & Block, 1980), and the exploration score from Banta's (1970) curiosity box. Measures were standardized and summed to create the composite. Together, the scales measured the extent to which target participants could flexibly regulate attention, affect, and behavior in response to changing environmental demands.

Adolescent Friendship Quality—At age 16, target participants were given a comprehensive interview in which they described their closest friendship, including whether they reported behaviors and feelings indicative of trust and authenticity and examples of typical conflict resolution. Trained raters coded responses on separate seven-point scales of Friendship Security, Disclosure, and Closeness. Friendship security reflected the extent to which target participants felt they could be themselves in their friendships and expected friends to be available and supportive (ICC was .59; the Spearman-Brown correction was . 74). Disclosure reflected the extent to which participants and their friends mutually shared positive and negative experiences, thoughts, and feelings (ICC was .73; the Spearman-Brown correction was .84). Closeness reflected the extent which participants described their closest friendship as connected, special, and irreplaceable (ICC was .72; the Spearman-Brown correction was .84). Pearson correlations between scales ranged from .64 to .77. The Friendship Security, Disclosure, and Closeness scales were summed into a composite measure of Friendship Quality (Cronbach's alpha was .88).

Couples Assessment Procedure—Between ages 20-21, participants and their partners (with whom they had been involved for at least 4 months) completed a laboratory assessment of romantic functioning. A second assessment wave following the same protocol was collected when participants were between ages 26-28. As noted previously, there was partial overlap in participation in the two waves, depending on participants' relationship status at each wave. During the assessments, each partner was separately administered the Current Relationship Interview (CRI; Crowell & Owens, 1996) and completed self-report measures of relationship perceptions. Partners then jointly completed a videotaped interaction that consisted of two tasks: the Markman-Cox procedure and the Ideal Couple Q-sort. The Markman-Cox procedure (Cox, 1991) involves a discussion of a jointly-identified relationship problem. Participants and their partners were instructed to state their individual views on the problem and then work together for ten minutes to try to identify a mutually satisfactory solution. Following a brief discussion of areas of agreement in their relationship, they completed the Ideal Couple Q-Sort (Collins, Aguilar, Hennighausen, Hyson, Jimerson, Levy, Meyer, Roisman, & Sesma, 1999), in which each couple was asked to sort 45 cards describing potential qualities of an ideal couple.

Observed Romantic Behavior—Seven trained observers rated the videotaped interactions on dyadic scales that assessed behaviors exhibited by both partners during each interaction. The Conflict Resolution scale assessed the extent to which partners effectively collaborated to reach a mutually satisfying solution to their relationship problem. The Secure Base Process scale assessed the extent to which partners mutually and flexibly adopted caregiving and care-seeking roles during the conflict discussion. ICCs for these scales ranged from .82 to .95 (Collins et al., 1999). A separate group of three coders also rated each couple's use of negative conflict engagement on a five-point dyadic scale of Negative Reciprocity, which occurs when partners exchange negatively framed demands for change in the relationship or partner. Such exchanges involve mutual criticism and blame and coincide with conflict in the interaction. High scores reflected high frequency and intensity of negative reciprocity in couples' discussions. Low scores were assigned when couples did not exhibit negative reciprocity when engaging in conflict or when the incidence of negative reciprocity was low. The ICC was .94. Measures from the MLSRA dataset were chosen to match Treboux et al.'s (2004) measures in terms of construct and method where possible. Observer ratings of relationship conflict (i.e., negative reciprocity) were used in the present study because self-reported conflict measures were not available.

Positive Relationship Feelings—Participants' relationship satisfaction was assessed with the seven-item Relationship Assessment Scale (RAS; Hendrick, 1988; Cronbach's

alpha = .86). The Emotional Tone Index (ETI; Berscheid, Snyder, & Omoto, 1989) measured the frequency of ten positive emotions that participants typically experience in the relationship. Cronbach's alpha was .87. The Subjective Closeness Index (SCI; Berscheid, Snyder, & Omoto, 1989) assessed perceptions of relationship closeness based on two seven-point items. Cronbach's alpha for the SCI was .87. Pearson correlations between the SCI, RAS, and ETI positive scores ranged from .50 to .68. To parallel the measure of positive feelings used by Treboux et al. (2004), a composite measure was constructed from these three scales using summed scores. Cronbach's alpha for this composite measure was .85.

Generalized Attachment Representation—The Adult Attachment Interview (AAI; George et al., 1985) asks participants to describe their childhood experiences with caregivers and evaluate the effects these experiences may have had on them. The AAI coding system (Main & Goldwyn, 1998) evaluates participants' states of mind regarding attachment experiences with multiple caregivers and coherence of discourse in order to assign an overall major classification: secure-autonomous or one of two insecure non-autonomous classifications (Dismissing or Preoccupied). Seventeen individuals received a primary Unresolved AAI classification. Consistent with prior research (Owens et al., 1995; Treboux et al., 2004), the present study used the three major classifications rather than unresolved status to determine AAI classifications. The Dismissing and Preoccupied classifications were collapsed into a single insecure non-autonomous group. The AAI was administered to target participants at age 19 and again at age 26. AAI classifications assigned nearest the time of the CRI assessment were used in analyses (i.e., the age 19 AAI was used for participants who completed the age 20-21 romantic relationship assessment and the age 26 AAI was used for participants who completed the age 26-28 romantic relationships assessment). All interview transcripts were coded by raters who had completed reliability certification through the University of California at Berkeley. Interrater agreement was κ = .72 for age 19 and κ = .72 for age 26.

Romantic Attachment Representation—The CRI (Crowell & Owens, 1996) was developed as a representational assessment of a specific romantic partner. The interview protocol parallels the AAI in that participants are asked to describe their current partnership and evaluate the effects it may have had on them. The CRI coding system also parallels the AAI in that secure, dismissing, or preoccupied classifications are assigned on the basis of participants' states of mind and discourse strategies. Both the AAI and CRI classifications are thought to reflect attachment-related attentional and emotion regulation strategies. A key difference between the AAI and CRI is that the CRI classification is tied to one specific romantic partner, whereas the AAI classification is not necessarily tied to a specific caregiver. Transcripts were coded by raters who had completed training for both the Adult Attachment Interview and Current Relationship Interview scoring procedures. AAI and CRI transcripts were coded by independent raters who were unaware of participants' classifications on the other measure. Interrater reliability was κ = .53 for age 20-21, and κ = .77 for age 26-28. Dismissing and Preoccupied CRI classifications were collapsed into a single insecure group.

Treatment of Missing Data

Percentages of missing data within antecedent variables ranged from 0% to 11.6%. The *Prelis* multiple imputation procedure was used to impute values for missing data on predictor variables. The resulting means of measures including imputed data were not significantly different from means of measures with missing data.

Results

Analytic Plan

The current study examined the shared, distinctive, and interactive developmental origins of generalized and romantic representations and their shared, distinctive, and interactive effects on concurrent romantic functioning. We first conducted a series of two-way univariate analyses of variance (ANOVAs) to test for main and interactive associations of AAI and CRI classifications with antecedent measures, which addressed whether generalized and romantic representations have shared and distinctive antecedents. Next, we conducted a series of two-way univariate ANOVAs to test for main effects and interactions between AAI and CRI security-autonomy on measures of romantic functioning. This approach examined whether, as proposed in the literature, generalized representations moderate the effects of romantic representations or generalized and romantic representations have independent associations with romantic functioning.

Descriptive Statistics, Concordance Rates, and Zero-Order Correlations

In contrast to prior research (Owens et al., 1995; Treboux et al., 2004), AAI and CRI classifications were not significantly associated in the current sample (55% concordant; $\kappa = .07$, $p = .46$). Of 45 participants classified as secure-autonomous on the AAI, 20 were also secure on the CRI. Of 67 participants classified as insecure on the AAI, 42 were also insecure on the CRI. AAI and CRI classifications were also not significantly related when analyzed separately by age group (56% concordant, $\kappa = .04$, $p = .73$ in the age 20-21 group; 55% concordant, $\kappa = .09$, $p = .60$ for the age 26-28 group). Correlations between all variables, as well as AAI and CRI coherence and relationship length, appear in Table 1. Antecedent variables were modestly correlated (absolute *rs* ranged from .07 to .36); measures of romantic behavior were more strongly correlated (absolute *rs* ranged from .27 to .79). Means and standard deviations for all variables are presented in Table 2.

Developmental Origins

Two-way ANOVA results are presented in Table 3. Consistent with our hypotheses, the two-way ANOVAs indicated that both AAI and CRI security-autonomy were positively associated with early parenting quality. As expected, CRI security but not AAI security-autonomy was associated with preschool ego resiliency. Contrary to expectations, neither AAI nor CRI security-autonomy were significantly associated with adolescent friendship quality. Notably, neither AAI nor CRI security-autonomy was associated with infant attachment security. This null finding was further probed with a logistic regression in which a dichotomous measure of infant security vs. insecurity was regressed on AAI and CRI security vs. insecurity and their interaction term; the results did not differ from the ANOVA finding (i.e., all effects were non-significant). Finally, no significant interactions between AAI and CRI security-autonomy were observed for any antecedent measure.

Current Romantic Functioning

Two-way ANOVAs are presented in Table 4. Consistent with hypotheses, two-way ANOVAs indicated that both secure-autonomous AAI and CRI classifications were positively associated with effective conflict resolution. AAI security-autonomy was also positively associated with secure base behavior, but CRI security was only marginally significantly associated with secure base behavior. As expected, only CRI security was associated in the expected directions with positive relationship feelings and negative reciprocity. Of particular note, AAI and CRI security-autonomy did not significantly interact to predict any romantic functioning measure.

Discussion

This study provides the first direct test of whether generalized and romantic representations have shared, distinctive, or interactive developmental origins, and whether their associations with romantic functioning are independent or interactive. Results indicated that while both representations have some shared basis in early experience and some shared associations with romantic behavior, romantic representations appear to have some distinctive origins in earlier development and some independent links to adult romantic behavior. Despite theoretical predictions about their interdependence—specifically, that the link between the romantic attachment representation and romantic behavior is moderated by the generalized representation—we found no evidence of interactions between the two representations associated with antecedent or romantic functioning. The present results indicated that generalized and romantic representations have independent rather than interactive links to romantic functioning, suggesting that the two representations offer some distinctive benefits (or liabilities) for romantic functioning.

Shared and Distinctive Origins

Consistent with the prototype hypothesis, broadly construed, generalized and romantic representations shared a common origin in early parenting quality. Experiencing higher quality parenting in early childhood was associated with having a secure representation of early experiences with caregivers and of the current romantic partner twenty years later. This finding underscores the special role of early close relationships with caregivers in calibrating interpersonal capacities for engaging in new relationships and how these capacities are applied in other social contexts across development (e.g., in subsequent romantic relationships). Neither generalized nor romantic security-autonomy was associated with 12-month infant attachment security, however. These results contradict the strictest formulation of the prototype hypothesis (i.e., that infant attachment in particular provides the basis for all subsequent attachment relationships). Roisman et al. (2005), however, reported an association in the MLRSA sample between CRI security at age 20-21 and a composite of 12- and 18-month infant security. Of particular note, a security rating from the 24-month parenting assessment was used as a tie-breaker when there was a mismatch between infant attachment classes at ages 12 and 18 months (see Roisman et al., 2005 for details). The 24-month security rating was drawn from the same assessment as the early parenting quality measure that was robustly associated with both AAI and CRI security-autonomy in the current report. One possibility is that the composite measure used by Roisman et al. (2005) captured a broader window of attachment-related early experience, which enabled more robust associations with adult attachment twenty years later. Thus we interpret the current null association between 12-month security and adult representations cautiously, given that both Roisman et al.'s (2005) and the current results provide evidence of links between early experiences with caregivers (variously operationalized) and adult attachment representations.

In addition to the shared origin in early parenting quality, romantic representations had a distinctive antecedent in earlier functioning outside the family of origin: ego resiliency in preschool was positively associated with CRI security but was unrelated to AAI security-autonomy. As expected, it appears that early capacities to flexibly exert attentional and behavioral control and regulate negative affect to facilitate constructive persistence are associated with subsequent establishment of a secure romantic representation. Contrary to expectations, CRI security-autonomy was not significantly associated with friendship quality in adolescence. One possibility, bolstered by prior evidence from the MLSRA of links between adolescent friendships and adult romantic behavior and perceptions (Simpson et al., 2007), is that the developmental provisions of adolescent friendships affect subsequent

romantic behaviors but are less closely tied to the development of romantic attachment representations.

Shared and Distinctive Associations with Romantic Functioning

Consistent with the pattern of shared and distinctive origins in earlier development, generalized and romantic representations had both shared and distinctive links to romantic functioning. As expected, both AAI and CRI security-autonomy were positively associated with effective conflict resolution. Romantic conflict resolution is developmentally analogous to the goal-correction processes in parent-infant relationships described by Bowlby, who noted that attachment dyads are likely to experience "...conflict until such time as set-goals are aligned" (1969/1982, p. 355) and that physical and emotional proximity maintenance depend on goal-realignment processes (i.e., conflict resolution; Kobak et al., 1993). Although we expected that secure base behavior, another fundamentally attachment-relevant task, would be associated with both representations, only AAI security-autonomy was related to secure base behavior, perhaps reflecting the link between generalized representations and cumulative experience with secure base and safe haven use across representational targets. Consistent with hypotheses, romantic representations but not generalized representations were uniquely associated in the expected directions with both romantic conflict and positive relationship feelings, perhaps due to the relatively more relationship-specific nature of these aspects of romantic functioning. We note that analyses not reported here (but available upon request from the first author) largely replicated findings regarding romantic functioning using the AAI/CRI profile approach reported by Treboux and her colleagues (2004). These results supported the finding that romantic representations operate distinctively with respect to romantic conflict: among those with secure-autonomous AAIs, individuals who had insecure CRIs engaged in significantly more romantic conflict than those with secure CRIs, suggesting that having a secure AAI did not buffer individuals from the risks associated with having an insecure CRI.

Independence of Generalized and Romantic Representations

Attachment theory provides a rich basis to expect interdependence of generalized and romantic representations. As noted previously, the prototype hypothesis anticipates interdependence of adult representations due to their shared basis in early experience. A second compelling argument for their interdependence is that because of the temporal order of their development and differences in the kinds of experiences on which they are based (i.e., one reflecting cumulative history with multiple attachment targets and the other reflecting shorter-term history with a current, specific attachment target), the pre-existing generalized representation should moderate the romantic representation's effect on romantic behavior. Nonetheless, evidence from the current study points toward the relative independence of the two representations with respect to adult romantic functioning, at least in this higher-risk sample. AAI and CRI classifications were not significantly associated with each other (but see Owens et al., 1995 and Treboux et al., 2004, in which significant associations between AAI and CRI were observed). Most notably, despite compelling proposals in the literature for the hierarchical organization of adult attachment system in which the effects of the romantic representation on behavior are contingent on the quality of the generalized representation, none of our analyses indicated that the AAI moderated the CRI's effect on romantic functioning.

These findings speak to several questions regarding the origins and organization of the adult attachment system. Results support the core premise of the prototype hypothesis (i.e., that early experiences with caregivers are the basis for adult attachment relationships), but do not support the secondary proposal that this shared origin should result in interdependence of generalized and romantic representations in adulthood. Considered in conjunction with

evidence that preschool ego resiliency was uniquely tied to romantic attachment representations, it appears that early experiences with caregivers are *one* basis for adult attachment relationships, and that prototype effects are joined by subsequent adaptations in other contexts to shape the adult romantic attachment system. The current results also do not support proposals regarding the hierarchical organization of adult attachment representations. We found some joint links (i.e., concurrent main effects) of generalized and romantic representations to some aspects of romantic behavior but unique associations of romantic representation with others, and we found no evidence that the romantic representation's links to behavior are constrained by the generalized representation. In contrast to the hierarchical organization proposed in the literature, the current results suggest that the two components of the adult attachment system have some overlapping and some distinctive links to romantic attachment behaviors. Said another way, the romantic representation is not entirely subsumed by a higher-order generalized representation.

The current results also suggest conceptualizing the two representations as governing relatively distinctive domains of attachment functioning in adulthood. The intergenerational transmission literature (e.g., van IJzendoorn, 1995) speaks to the robust associations between adults' AAI classifications and Strange Situation classifications in the second generation and the role of representations of early experience in organizing attachment behaviors in parent-child relationships. Consistent with that literature, the current results suggest that what is measured by the AAI is implicated in core attachment-relevant behaviors observed across attachment relationship types (e.g., secure base behavior and conflict resolution). Romantic representations, however, appear to be uniquely implicated in romantic relationship-specific functioning (e.g., relationship satisfaction and conflict behavior in a horizontal, voluntary relationship with a peer). The current results suggest that generalized and romantic representations may be conceptualized as relatively independent components of the adult attachment system with a common origin in early parenting but distinctive links to domain-specific attachment functioning in adulthood.

In the current study, we have addressed the interdependence of adult representations at the level of states of mind regarding experiences with caregivers versus romantic partners. A potentially rich direction for future research would be a conceptually parallel analysis examining convergence between AAI and CRI inferred experience scales (which assess the valence of participants' reports of their experiences with attachment figures along several attachment-related dimensions), as well as whether antecedent and concurrent correlates of divergence can be identified. As the current study does, such an investigation would represent one among several examples of what Roisman et al. (2005) described as "a family of interrelated proposals" regarding the prototype hypothesis (p. 118).

Security is Good: Revisiting the Inoculation Effect

Treboux and her colleagues (2004) noted that they found little evidence for an "inoculation effect" of having a secure-autonomous generalized representation (regardless of the security of the romantic representation). In accordance with Treboux et al.'s interpretation, the present findings suggest the possibility, supported by evidence of distinctive origins and correlates of romantic security, that having two secure-autonomous representations offers something more nuanced than a double dose of a broad-band form of security-autonomy. Generalized and romantic security-autonomy in the MLSRA sample conferred distinctive benefits for some aspects of romantic functioning, and having an insecure representation of one form was a risk factor for some aspects of romantic functioning regardless of the security-autonomy of the other representation. Specifically, in the present study, secure-autonomous AAIs were associated with effective secure base behavior regardless of the security of the romantic representation. Secure-autonomous AAI classifications, however, did not buffer individuals against the negative effects of insecure romantic representations

on romantic conflict. Similarly, insecure romantic representations were associated with more negative feelings about the relationship regardless of AAI security-autonomy. The current finding about somewhat distinctive origins of generalized and romantic representations also suggest that simply having two secure-autonomous representations in adulthood does not necessarily promote optimal romantic functioning in adulthood; it is the *organization* of specific aspects of an individual's developmental history and interpersonal capacities across time that predicts the adult romantic functioning in specific domains.

Caveats and Limitations

The foremost strength of this study is its prospective approach—beginning in infancy and extending through early adulthood—to examining attachment representational structure in adulthood. Currently, the MLSRA is the only dataset with which these questions can be tested. Our results provide valuable new findings that should be examined in larger data sets that have comparable measures when such data sets become available. Nonetheless, the current findings should be considered in conjunction with certain limitations. For example, our sample size ($N = 112$) was relatively small. Moreover, although our results (based on a sample with a history of elevated risk) converge with Treboux et al.'s (2004) findings regarding romantic functioning in their largely middle-class sample, our findings regarding antecedents of adult representations should be replicated in middle-class, lower-risk samples to confirm that experiences across the life course organize adult representations, regardless of early risk status. Second, despite the prospective design, the romantic attachment and romantic behavior measures were collected concurrently. While results indicated associations between attachment representations and romantic behavior, the data do not support inferences about the direction of these effects. The present study also did not fully account for the romantic partner's contribution to the target participant's attachment representations and romantic functioning. As Treboux et al. (2004) noted, one's partner's attachment history is likely to play a substantial role in the development of one's romantic attachment representation and, quite possibly, changes in the generalized attachment representation as well. Unfortunately, measures of partners' generalized representations were not collected in the MLSRA sample.

Conclusion: The Developmental Organization of Romantic Attachment Functioning

Research on romantic functioning as an outcome of early attachment experiences is guided by several proposals regarding the interdependence of representations of early experience with caregivers and representations of romantic partners. The current study provides new evidence that despite some shared origins in early parenting experience, romantic attachment representations have some distinctive origins and the two representations have independent rather than interactive associations with romantic behavior and perceptions in adulthood. These findings underscore that adult romantic functioning cannot be fully understood without accounting for the distinctive contributions of both generalized and romantic attachment representations, including their shared and distinctive antecedent and concurrent contexts, and how each is built upon previous developmental adaptations.

Acknowledgments

This report is based on the doctoral dissertation completed by the first author at the Institute of Child Development, University of Minnesota. This research was supported by a National Institute of Mental Health grant to Byron Egeland, L. Alan Sroufe, and W. Andrew Collins (R01-MH40864), by a National Institute of Child Health and Human Development grant to W. Andrew Collins, Byron Egeland, and L. Alan Sroufe (R01-HD054850), and by an NIMH predoctoral training grant to the third author (T32MH015755-32). The first and fifth authors' involvement with this research was also in part supported by a grant from NICHD (R01 HD054822). The authors gratefully acknowledge this financial support.

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Table 1

Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11
1. 12 month Attachment Security	-										
2. 24 month Parenting Quality	.21*	-									
3. 54 month Ego Resiliency	.20*	.25**	-								
4. Adolescent Friendship Quality	.07	.22*	.36***	-							
5. RR Positive Relationship Feelings	.19*	.17	.22*	.32**	-						
6. RR Secure Base Process	.15	.20*	.26**	.24**	.38***	-					
7. RR Negative Reciprocity	-.09	-.24*	-.29**	-.22*	-.36***	-.47***	-				
8. RR Conflict Resolution	.12	.28**	.27**	.32	.27**	.79***	-.47***	-			
9. AAI Coherence	-.03	.26**	.14	.20*	.17†	.27**	-.13	.38***	-		
10. CRI Coherence	.10	.33***	.25**	.23*	.29**	.24*	-.27**	.34***	.31**	-	
11. Relationship length in months	-.03	.09	-.08	-.08	.10	-.06	.00	-.10	.03	-.25*	-

Note.

RR indicates measures of adult romantic functioning.

† $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$.

Table 2

Means and Standard Deviations for Study Variables by AAI and CRI Classification.

			Antecedent Measures				Romantic Functioning			
AAI Class	**CRI Class**	***N***	**Infant Security**	**Parenting Quality**	**Ego Resiliency**	**Friendship Quality**	**Secure Base Behavior**	**Conflict Resolution**	**Negative Reciprocity**	**Positive Feelings**
Ins	Ins	42	1.59 (0.50)	2.83 (.93)	-0.24 (3.22)	13.22 (3.33)	2.50 (0.86)	3.29 (1.11)	1.88 (1.09)	17.23 (2.57)
	Sec	25	1.68 (0.48)	3.32 (1.03)	0.81 (2.24)	14.72 (3.03)	3.00 (1.00)	4.44 (1.29)	1.28 (0.54)	18.55 (2.06)
	Total	67	1.62 (0.49)	3.01 (.99)	0.16 (2.92)	13.78 (3.28)	2.69 (0.94)	3.72 (1.30)	1.66 (0.96)	17.72 (2.46)
Sec	Ins	25	1.56 (0.51)	3.20 (1.12)	-0.60 (2.75)	14.91 (3.65)	3.24 (0.93)	4.60 (1.41)	1.68 (0.85)	18.00 (1.46)
	Sec	20	1.55 (0.51)	4.05 (0.76)	1.14 (2.26)	15.14 (3.73)	3.35 (0.88)	4.95 (1.28)	1.40 (0.60)	18.82 (2.28)
	Total	45	1.56 (0.50)	4.58 (1.06)	0.18 (2.66)	15.01 (3.65)	3.29 (0.89)	4.76 (1.35)	1.56 (0.76)	18.37 (1.89)
Total	Ins	67	1.58 (0.50)	2.97 (1.01)	-0.37 (3.03)	13.85 (3.52)	2.78 (0.95)	3.77 (1.38)	1.81 (1.00)	17.52 (2.24)
	Sec	45	1.62 (0.49)	3.64 (0.98)	0.96 (2.23)	14.91 (3.33)	3.16 (0.95)	4.67 (1.30)	1.33 (0.56)	18.67 (2.14)
	Total	112	1.59 (0.49)	3.24 (1.05)	0.16 (2.81)	14.27 (0.47)	2.92 (0.97)	4.13 (1.41)	1.61 (0.88)	17.98 (2.26)

Note. Ins = Insecure Non-autonomous; Sec = Secure-Autonomous. Standard deviations appear in parentheses.

Table 3

Two-Way Univariate ANOVAs for Antecedent Measures

	SS	df	MS	F	p	Partial η^2
Infant Security						
AAI	.18	1	.18	.72	.40	.00
CRI	.04	1	.04	.15	.70	.00
AAI × CRI	.06	1	.06	.24	.63	.00
Error	26.67	108	.25			
Total	313.00	112				
Parenting Quality						
AAI	7.82	1	7.82	8.26	.01	.07
CRI	11.62	1	11.62	12.27	.00	.10
AAI × CRI	.86	1	.86	.91	.34	.01
Error	102.22	108	.95			
Total	1299.00	112				
Ego Resilience						
AAI	0.01	1	0.01	0.00	.98	.00
CRI	50.59	1	50.59	6.63	.01	.06
AAI × CRI	3.13	1	3.13	0.41	.52	.00
Error	824.34	108	7.63			
Total	878.26	112				
Friendship Quality						
AAI	28.82	1	28.82	2.47	.12	.02
CRI	19.38	1	19.38	1.66	.20	.02
AAI × CRI	10.42	1	10.42	0.89	.35	.01
Error	1259.51	108	11.66			
Total	24162.10	112				

Note. SS = Sum of Squares. MS = Mean Square.

Table 4

Two-Way Univariate ANOVAs for Romantic Functioning Measures

	SS	df	MS	F	p	Partial η^2
Secure Base						
AAI	7.72	1	7.72	9.31	.00	.08
CRI	2.42	1	2.42	2.92	.09	.03
AAI × CRI	0.99	1	0.99	1.19	.28	.01
Error	89.61	108	.85			
Total	1064.00	112				
Conflict Resolution						
AAI	21.64	1	21.64	13.77	.00	.11
CRI	14.71	1	14.71	9.36	.00	.08
AAI × CRI	4.21	1	4.21	2.68	.11	.02
Error	169.68	108	1.57			
Total	2135.00	112				
Negative Reciprocity						
AAI	0.43	1	0.43	0.06	.81	.01
CRI	5.05	1	5.05	6.84	.01	.06
AAI × CRI	0.67	1	0.67	0.91	.34	.01
Error	79.69	108	.74			
Total	379.00	112				
Positive Feelings						
AAI	7.18	1	7.18	1.49	.23	.01
CRI	29.82	1	29.82	6.17	.02	.05
AAI × CRI	1.58	1	1.58	0.33	.57	.00
Error	521.97	108	4.83			
Total	36791.97	112				

Note. SS = Sum of Squares. MS = Mean Square.