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Positive Interactions and Avoidant and Anxious Representations in Relationships with Parents, Friends, and Romantic Partners

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Abstract

We examined associations between positive interactions and avoidant and anxious representations in relationships with parents, friends, and romantic partners. Two hundred adolescents completed questionnaires, observations, and attachment interviews. From a between-person perspective, those adolescents with more positive interactions overall had less avoidant representations. Within persons, more positive interactions were relative to one's own average level in relationships, the less avoidant representations were for that type of relationship. Adolescents were less anxious about a particular type of relationship if they have positive interactions in their other types of relationships. Finally, representations were primarily predicted by interactions in the same type of relationship; interactions in other relationships contributed little. The findings underscore the importance of examining representations of particular types of relationships.

One of Bowlby's (1973) key contributions was the idea that individuals develop mental representations of their relationships. Such representations are based on their interactions with others; the representations affect how individuals interpret the behavior of others and how they behave toward them. Differences in these representations are commonly characterized in terms of two continuous dimensions of avoidance and anxiety (Brennan, Clark, & Shaver, 1998). Those who are high on the avoidant (dismissing) dimension are not comfortable with intimacy and prefer self-reliance; those who are high on the anxious (preoccupied) dimension may worry about their partner's availability. Those who are high on both the avoidant and anxious dimensions have been characterized as fearful (Bartholomew, 1990). Those who are low on both the avoidant and anxious dimensions are considered secure; they are comfortable with intimacy and worry less about their partner's availability. Over the course of the last 25 years, researchers have demonstrated that individual differences in such representations are linked to multiple aspects of social behavior. For example, those with more secure representations have more positive and supportive relationships than those with more avoidant or anxious representations (see Mikulincer & Shaver, 2007). Such findings regarding differences *between* persons are well-established.

Behavioral systems theorists and other investigators have proposed that individuals may not only have global representations of relationships, but representations of specific types of

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relationships (Collins & Read, 1994; Furman & Wehner, 1994). Theoretically, global representations are based on experiences in all relationships, whereas representations of specific types of relationships are primarily based on ongoing experiences in that type of relationship. Several reasons exist why experiences in one type of relationship may not be fully congruent with experiences in other types of relationships. For one, parent-child relationships are asymmetrical in nature, whereas relationships with peers are symmetrical. That is, a parent typically provides significantly more care for a child than a child provides for a parent, whereas peers often provide relatively equal amounts of care for one another. Secondly, romantic relationships have elements of fascination, exclusiveness, and passion that are not characteristic of other relationships (Davis & Todd, 1982). Finally, patterns of interactions are likely to differ as the person one is interacting with is different in different types of relationships. As a consequence of these differences, individuals may have more positive interactions in some types of relationships than others.

For reasons outlined above, representations of different types of relationships are likely to be somewhat distinct. That is, differences will exist *within* a person in his or her representations of different types of relationships because of the different interactions he or she experiences in different types of relationships. The purpose of the present study was to investigate differences individuals may have in their representations of relationships with parents, friends, and romantic partners. Additionally, the present study aimed to examine whether differences in patterns of interactions are associated with these differences in representations in types of relationships.

The idea that within-person differences in representations exist is supported by past research that has shown that representations of different types of relationships are only moderately related (Furman, Simon, Shaffer, & Bouchey, 2002; Owens et al., 1995). More specifically, La Guardia, Couchman, Ryan, and Deci (2000) examined avoidant and anxious styles for college students' relationships with parents, romantic partners, and friends; they found that 13–36% of the variance in styles was *between-persons*, whereas 64–87% of the variance was *within-person*—i.e., across an individual's different relationships. Such findings indicate that there are meaningful differences in representations of different types of relationships. One aim of this study is to further explore these differences, and to explore them at a younger age.

As representations of different types of relationships can differ within an individual, it can be inferred that an individual can be more or less avoidant or anxious in one type of relationship (e.g., friendship) relative to another type of relationship (e.g., romantic). However, further research is needed to identify factors associated with such differences. Theoretically, one's representations of relationships are strongly influenced by one's experiences in a relationship (Bowlby, 1973); in fact, considerable evidence links relationship experiences and representations. In particular, less supportive, less intimate, and less positive interactions are associated with more avoidant and anxious representations (see Mikulincer & Shaver, 2007 for a review).

Most prior studies, however, only examined links between experiences and representations in one type of relationship. Little research has examined these associations in multiple types

of relationships simultaneously; thus little is known about whether, *within an individual*, different experiences in different types of relationships are associated with different representations. In the sole study on this topic, La Guardia et al. (2000) examined *within-person* variation in need fulfillment and representations of particular relationships. They found that when an individual's needs are met more in one relationship as compared to other relationships, he or she feels less anxious and avoidant about that particular relationship than the other relationships. These findings support the idea that differences across one's relationship experiences are related to differences in one's representations of various types of relationships.

More generally, La Guardia et al.'s (2000) findings highlight the importance of examining representations at the within-person level. Indeed, studies of within-person variation are key to many psychological theories, as social scientists are often interested in understanding changes or differences within a person, rather than differences between people per se. By the same reasoning, it is not only important to study the same person over time, but is also important to examine the same person in multiple contexts. Within-person variations may be particularly important to examine when behavior is not only affected by their attitude toward that behavior, but their attitude toward that behavior relative to their attitude toward other behaviors. For example, representations of a relationship may be affected by the experiences in that relationship relative to the experiences in other relationships, as much as by the actual nature of the experiences in that relationship. Thus, it is important to investigate how cognitions and behaviors vary across different relationship contexts versus simply inferring such within-person associations from studies of differences between individuals in one kind of relationship.

Studies of between-person effects may also be prone to spurious associations (e.g., associations stemming from third variables). We do not mean to imply that between-person effects are not important. In fact, one limitation of La Guardia et al.'s (2000) seminal study is that it only examined the association between relationship experiences and representations *within person*. The correct estimation of within-person and between-person effects requires that both be examined simultaneously (Snijders & Bosker, 1999). More generally, between-person and within-person effects may be the same, but not necessarily (Curran & Bauer, 2011).

In addition to examining within-person and between-person associations between experiences and representations, research also needs to examine these associations between one particular type of relationship (e.g., parents) and other types of relationships (e.g., peer or romantic). Attachment researchers have provided evidence that *experiences* in one type of relationship—typically with parents—are predictive of *representations* of other types of relationships, such as with friends or romantic partners (Collins & Read, 1990; Nosko, Tieu, Lawford, & Pratt, 2011). However, it is important to examine these associations not just from one type of relationship to another (e.g., parent relationships predicting peer relationships) but also between multiple types of relationships and one particular type of relationship (e.g., parent and peer relationships predicting romantic relationships). Otherwise, it is difficult to conclude that any associations between experiences in one relationship and representations of another type of relationship reflect a direct association

between the two. Any association between experiences in one type of relationship and representations of a different type of relationship could be indirect and stem from shared variation in experiences in multiple types of relationships, or shared variation in representations of multiple types of relationships. If an examination of the associations with multiple types of relationships revealed that experiences in a particular type of relationship were found to be the primary predictor of representations of that type of relationship, it would underscore the importance of examining experiences in that type of relationship and not assuming the experiences in other relationships determine one's representations of a different type of relationship.

Such findings also have important implications for understanding discontinuities in representations. That is, one may have negative experiences that are associated with a less secure representation of one type of relationship, while having more positive experiences and a more secure representation of a different type of relationship. This discontinuity can be clarified by demonstrating that experiences in a particular type of relationship are the primary predictor of representations of that type of relationship. Not only would such findings help explain why discontinuities develop, but are also pertinent to understanding why some individuals may have positive representations of subsequent relationships despite having negative interpersonal experiences in earlier relationships.

Present Study

The present study had three primary purposes: (a) to provide further information about the associations among representations of different types of relationships in adolescence, (b) to examine within and between-person associations between positive interactions in relationships and representations, and (c) to examine the associations between positive interactions in multiple types of relationships and representations of a particular type of relationship.

Based on prior research and behavioral systems theory (Furman & Wehner, 1994), we expected that corresponding representations of different types of relationships would only be moderately related. Similarly, we hypothesized that most of the variation in representations would be within-person rather than between-person.

We hypothesized that more positive interactions would be associated with less avoidant and less anxious representations. Such associations were expected both between-person and within-person. That is, we expected that if individuals had more positive experiences in their relationships overall, their representations would be less avoidant and anxious than those of individuals with less positive experiences in relationships (i.e., a between-person association). Additionally, we expected that if individuals had more positive experiences in one type of relationship relative to other types of relationships, their representations of that type of relationship would be less avoidant and anxious than their representations of other types of relationships (i.e., a within-person association).

Finally, the current study investigated the influence of experiences in one type of relationship on representations of other types of relationships. Consistent with behavioral systems theory (Furman & Wehner, 1994), we expected unique associations between

positive interactions and representations to primarily occur between experiences in and representations of the same type of relationship. Unique associations between one type of experience in and representations of another type of relationship were expected to be small.

The current study also extended prior research in a number of important ways. One is that the current study used a sample of adolescents, whereas most research has examined samples of young adults (typically college students). Parents, friends, and romantic partners are all central figures in adolescents' social worlds (Furman & Buhrmester, 1992), and such relationships all differ in nature from one another. Additionally, the development of formal operations and abstract thinking allows adolescents to reflect on their relationships for the first time (Main, Kaplan, & Cassidy, 1985). Finally, Bowlby (1973) theorized that sensitivity to one's environment diminishes over the course of development, thus making changes in representations based on experiences less likely in adulthood. Thus, adolescence is a particularly interesting period for examining representations of different types of relationships and their associations with experiences such as positive interactions.

Although La Guardia et al.'s (2000) research on within-person associations was groundbreaking, they assessed both experiences and representations by self-report measures. The associations that were observed could have stemmed from shared method variance. The current study extended this research by incorporating questionnaire, interview, and observational measures of positive interactions. We also examined two types of representations—styles and working models (Furman & Wehner, 1994). We used questionnaire measures to assess *relational styles*, which are self-perceptions of how one approaches relationships and what one expects from these relationships. It is important to examine both styles and working models, as studies have found that self-reported styles and internalized working models are not highly correlated (see Crowell, Fraley, & Shaver, 2008). We expected similar results for the different methods of measuring experiences and for the different methods of measuring representations. It is important, however, to determine empirically if the results are indeed similar across methods.

Method

Participants

The participants were part of a longitudinal study investigating the role of relationships with parents, peers, and romantic partners on psychosocial adjustment. Two hundred 10th grade high school students (100 males, 100 females; *M* age = 15 yr 10.44 mo old, *SD* = .49) were recruited from a diverse range of neighborhoods and schools in a large Western metropolitan area. We distributed brochures and sent letters to families residing in various zip codes and to students enrolled in various schools in ethnically diverse neighborhoods. We were unable to determine the ascertainment rate because we used brochures and because letters were sent to many families who did not have a 10th grader. To insure maximal response, we paid families $25 to hear a description of the project in their home. Of the families that heard the description, 85.5% expressed interest and carried through with the Wave 1 assessment.

The sample consisted of 11.5% African Americans, 12.5% Hispanics, 1.5% Native Americans, 1% Asian American, 4% biracial, and 69.5% White, non-Hispanics. The sample

was comparable to national norms on intelligence, substance use, internalizing and externalizing symptoms (see Furman, Ho, & Low, 2009 for information on recruiting and representativeness).

A mother figure took part in an observational session with the participant (N = 197). Almost all of the mother figures were the participants' biological or adoptive parent (98%); the remaining were stepmothers or grandmothers whom the participant had lived with for at least 4 years. In terms of family structure, 57.5% were residing with two biological or adoptive parents, 11.5% were residing with a biological or adoptive parent and a stepparent or partner, and the remaining 31% were residing with a single parent or relative.

A friend (N = 185) nominated by the participant also took part in an observational session. For those participants who did not have a friend take part in an observational session, we used participants' questionnaire and interview descriptions of their closest same-sex friend. The mean duration of friendships was 52.78 months (*SD* = 42 mo). The majority of adolescents and their peers were same-sex friends (N = 174); a minority were other-sex friends (N = 26).

Participants also reported on their most important romantic partner of 1 month or longer in the last year (N=110). The mean duration of romantic relationships was 5.79 months (*SD* = 7.16 mo). With regard to sexual orientation, 94% said they were heterosexual, whereas the remaining 6% said they were bisexual, gay, lesbian, or questioning.

Procedure

Adolescents participated in two or three laboratory sessions in which they were interviewed about a particular kind of relationship, completed questionnaires, and participated in a videotaped interaction with the mother figure or friend. Sessions were counterbalanced and separated by at least six days (*Mdn* = 12.8 days). Participants, mothers, and friends were compensated financially. The study was approved by the local Institutional Review Board.

Measures

Behavioral Systems Questionnaire—Three parallel versions of the Behavioral Systems Questionnaire (BSQ) were used to measure self-perceptions of relational styles for relationships with parents, friends and romantic partners (Furman & Wehner, 1999). The BSQ resembles attachment style questionnaires, but assesses intimacy and closeness with respect to caregiving and affiliation as well as attachment. Such items were incorporated because representations of these relationships were expected to include expectations regarding these behavioral systems as well as attachment (Furman & Wehner, 1994). For each type of relationship, secure, dismissing, and preoccupied styles were each assessed with nine 5-point Likert items.

Principal axes factor analyses with oblique rotation were conducted to determine the factor structure of each version of the BSQ. For each of the three versions, a two-factor solution was found to provide the best fit theoretically. Consistent with existing literature (Brennan et al., 1998), the two factors were: (a) an avoidant style on which all dismissing items primarily loaded positively and all secure items primarily loaded negatively and (b) an

anxious style on which all preoccupied items primarily loaded. Accordingly, two relational style scores were calculated by averaging the items that primarily loaded on the relevant factor (*M* α = .85).

Network of Relationships Inventory: Behavioral Systems Version (NRI)— Participants completed the NRI, which assessed positive interactions in different close relationships (Furman & Buhrmester, 2009). In the present study, the questionnaire measures of positive interactions were the NRI support factor scores for the mother figure, the friend participating in the study, and their most important romantic partner. Eight participants who did not have a friend participating in the study answered the questions about their closest same-sex friend. The NRI support factors consisted of fifteen items, which examined five features of support related to attachment, caregiving, and affiliation: (a) participant seeks safe haven; (b) participant seeks secure base; (c) participant provides safe haven; (d) participant provides secure base; and (e) companionship. The internal consistency of all factor scores was satisfactory (*M* α = .95).

Adult Attachment Interview—The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985, 1996) was used to assess adolescents' working models of and positive interactions in relationships with parents. This semi-structured interview consisted of 18 questions which ask participants to describe their childhood relationships with parents and to support their descriptions by providing particular memories. The AAI has proven to be a highly valuable means of assessing representations or states of minds regarding attachment relationships (see Hesse, 2008). The AAI does not measure the security of a particular past or current relationship. Instead, it is usually conceptualized as a measure of generalized representations of attachment (Hesse, 2008). However, we believe that a more conservative interpretation would be that it reflects representations of relationship with parents because the vast majority of AAI questions focus on relationships with parents. In fact, the AAI has been found to be unrelated, or only modestly, related to similar interview measures of representations of romantic relationships or friendships (Crowell, et al., 2004; Furman, et al., 2002; Roisman, Collins, Sroufe, & Egeland, 2005). If the AAI were assessing generalized representations of all types of attachments, one would expect stronger associations with these measures of representations of other types of relationships. Thus, it seems most informative and comprehensive to separately assess representations of different types of relationships by using interviews that are based on the AAI, but have questions that focus on other relationships such as friendships or romantic relationships.

Friendship Interview—The Friendship Interview was used to assess adolescents' working models of and positive interactions in friendships (Furman, 2001). It was based on the AAI, and many questions were the same as or similar to those of the AAI. A few questions were modified to take into account differences between relationships with parents and peers. For instance, AAI questions about being upset were included, but the ones about being hurt or ill were omitted, as adolescents do not commonly seek care from peers in those instances. Because of the symmetrical nature of friendships, the interview included questions about caregiving and affiliation as well as attachment. Thus, we asked about what happened when the friend was upset as well what happened when the participant was upset.

The interview focused primarily on the two high school friendships they considered most important, although participants were provided opportunities to discuss other friendships or share their insights about friendships in general. Friendships that had become romantic relationships were excluded from the interview.

Romantic Relationship Interview—The Romantic Relationship Interview was used to assess working models of and positive interactions in romantic relationships. It was the same as the Friendship Interview except that the questions focused on romantic relationships. Like the Friendship Interview, the interview focused primarily on the one to three romantic relationships they considered most important, including the most important one in the last year (if applicable). The interview was only administered to those who had at least one relationship of at least one month's duration (N = 145).

Coding of interviews: The AAIs, Friendship Interviews, and Romantic Relationship Interviews were audiotaped and subsequently transcribed verbatim. Working models (states of mind) were primarily assessed using Main and Goldwyn's (1985) AAI scales and Crowell and Owens' (1996) valuing of intimacy and autonomy scales. Secure transcripts were those in which the adolescents were able to describe relationships coherently, value them, and find them to be influential in their lives. Dismissing transcripts were those in which the adolescent attempted to limit the influence of relationships by idealizing, derogating, or failing to remember their experiences. In preoccupied transcripts, the adolescent was vague, passive in speech, confused, angry, or absorbed with the experiences or relationships. The bases of prototype ratings for friendships and romantic relationships were similar to those used for the classifications on the AAI, but also took into account the nature of peer relationships among adolescents and young adults. For example, we considered not only whether they valued the attachment feature of support-seeking, but also whether they valued caregiving, and affiliative features, such as co-operation, mutuality, and shared interests.

Avoidant working model ratings were calculated by subtracting secure prototype ratings from dismissing prototype ratings because secure and dismissing prototype ratings were strongly negatively related ($M\ r = -.87$). Preoccupied ratings were used for the anxious dimension scores.

Our interview measures of positive interactions were the loving scores for the mother, the friend participating in the study, and the participant's most important romantic partner in the last year. For those who did not have a friend participating in the study, we used the loving scores for the closest same-sex friend.

Different coders coded each of the three interviews for a participant. All coders had attended Main and Hesse's AAI Workshop and received additional training and practice in coding romantic and friendship interviews. Reliabilities of the working model and loving scores were satisfactory (M ICC = .74, Range = .69 to .82).

Observations—The observational measure of positive interactions was derived from videotaped interactions of adolescents and their friend or mother participating in a series of six five-minute interactions. As a warm-up task, the pair planned a celebration they might

have. In the next two tasks, each person discussed a problem he or she was having outside of their relationship. In the fourth task, the pair discussed a personal goal that the adolescent was working toward. Next, the two discussed a problem inside their relationship, which both had selected as a significant conflict. Finally, as a wrap-up task, the dyad discussed past good times in their relationship.

Observational coding: The Interactional Dimensions Coding System (IDCS; Julien, Markman, & van Widenfelt, 1986) was originally designed to assess adult couples' interactions during a problem discussion and was slightly modified to make the scales more applicable to an adolescent population. We coded the two discussions of problems outside the relationship, the goal task, and the discussion of a problem inside the relationship. In the present study, our observational measures of positive interactions were the dyadic positivity factor scores for the interactions with mother and friends. These scores consisted of the mean of five dyadic scale scores averaged across tasks: (a) mutuality, (b) relationship quality, (c) relationship satisfaction, (d) positive escalation, and (e) negative escalation (scored in the opposite direction).

Interactions were rated by coders naïve to other information about the participants. To minimize halo effects, each task was coded at a different time. Inter-rater agreement on the dyadic positivity composite was satisfactory (ICC=.74).

Results

Data Preparation

All variables were examined to insure that they had acceptable levels of skew (≤ ±3) and kurtosis (≤ ±10). Six outliers were Winsorized and brought in so that they were equal to 1.5 times the interquartile range below the 25th percentile or above the 75th percentile. High scores on the working model scales were not adjusted as we wanted to retain the conceptually important distinction between scores of 5 points or higher and lower scores on these scales (Main & Goldwyn, 1985). Table 1 presents the averaged pattern of correlations, means, and standard deviations for working model, style, and positive interaction variables. The correlations, means, and standard deviations for these variables for each of the 3 types of relationship are available from the corresponding author or on the online version.

Representations of Different Relationship Types

As shown in Table 2, avoidant working model scores for the three types of relationships were significantly but moderately related to one another. Anxious working model scores for relationships with parents were significantly related to corresponding scores for friendships and romantic relationships, but anxious working model scores for friendships and romantic relationships were not significantly related to each other. Neither avoidant nor anxious style scores for the three relationships were significantly related to one another. In summary, our hypothesis that corresponding representations of different types of relationships would only be moderately related was generally supported.

Between and Within Person Variation

Sources of variability—To assess the between-person and within-person variability, we ran fully unconditional multilevel models (with no predictors at either level) for the avoidant and anxious attachment working models and styles. Consistent with our hypothesis that representations would only be moderately related and thus vary within person, the results indicated that 67.5% of the variability of avoidant working model scores, 99.2% of the variability of avoidant style scores, 80.3% of the variability of anxious working model scores, and 83.3% of the variability of anxious style scores were within-person; the remaining proportions of variability were between-person.

Positive interactions and representations—Next, we ran several models to test the central hypothesis that more positive interactions in relationships would be related to less avoidant and anxious attachment styles and working models. We had three measures of positive interaction: questionnaire, interview, and observational coding; thus, we ran twelve different models to test this hypothesis. Each model assessed both a within-person effect and a between-person effect and followed the following form.

$$\text{Level 1:} \quad Y_{ij} = \beta_{0j} + \beta_1(\textit{positive interaction})_j + \beta_2(\textit{friend rel.})_j + \beta_3(\textit{romantic rel.})_j + r_{ij}$$

$$\text{Level 2:} \quad \beta_{0j} = \gamma_{00} + \gamma_{01}(\textit{gender}) + \gamma_{02}(\textit{mean positive interaction}) + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

In these models, *Y* represented the dependent variable (avoidant or anxious attachment working models or styles) for individual *i* in relationship type *j*. At Level 1, *positive interaction* (β_1) (measured by questionnaire, interview, or observational coding) was group-mean centered, which provided a test for within-person effects; *friend* (β_2) was an uncentered dummy-coded variable that indicated if the relationship was a friendship (1) or another type of relationship (0); similarly, *romantic relationship* (β_3) indicated if the relationship was a romantic relationship (1) or another type of relationship (0). The analyses of the observational data only contained one contrast between friendships and parent-adolescent relationships [β_2] as observations of romantic relationships were not available. The relationship type variables were included so that relationship type was controlled for when examining the association between positive interactions and working models and styles. The inclusion of these dummy variables also allowed us to test for differences across relationship types in working models and styles. (At Level 2, gender (γ_{01}, uncentered) was entered in the first equation (females = 1; males = 0). To test for between-person effects, the mean positive interaction score for each individual (γ_{02}, averaged across their relationship types) was also entered at Level 2 and was grand-mean centered.

Table 3 reports the results of these analyses. In terms of avoidant working models, five of the six effects of positive interactions were significant. Specifically, all three between-person effects (γ_{02}) were significant. Individuals who had higher positive interaction scores as measured by questionnaire, interview or observation had lower avoidant working model scores. We also found significant within-person effects (β_1) on the interview and observational measures of positive interactions. Specifically, the more positive interactions

were relative to one's own average level of positive interaction across relationships, the less avoidant their working models were for that type of relationship.

In terms of avoidant styles, all three between-person effects (γ_{02}) and all three within-person effects (β_1) of positive interactions were significant. Specifically, individuals who had higher positive interaction scores had lower avoidant style scores. Additionally, the greater the positive interaction score was relative to one's own average positive interaction score, the less avoidant their styles were for that type of relationship. Thus, our hypothesis was supported in terms of both between- and within-person effects for both avoidant working models and styles. In addition, these analyses indicated that adolescent females generally were less avoidant than adolescent males (γ_{01}), and that representations of friendships and romantic relationships were characterized by less avoidance than relationships with parents (β_2 & β_3).

We found fewer significant associations between positive interactions and anxious representations. No between-person or within-person effects were significant for anxious models. For anxious styles, significant negative between-person associations (γ_{02}) were found in the analysis of the interview and observation positive interaction scores. In particular, those who had higher interview or observation positive interaction scores had less anxious styles. Positive interaction scores, measured by questionnaire and interview, were significantly associated with changes in anxious styles relative to one's own mean (i.e., within-person effects [β_1]). These associations were in the opposite direction from what was expected. Relative to one's own mean, greater positive interaction scores were associated with higher levels of anxious styles.

In addition, the analyses indicated females had more anxious working models than males (γ_{01}). Finally, styles for friendships and romantic relationships were more anxious than styles for relationships with parents (β_2 & β_3), controlling for other variables. In a supplementary analysis, we recoded the dummy variables so as to compare working models and styles for friendships and romantic relationships; no differences were found.

Positive interactions in focal and other relationships and representations—In the preceding analyses, we found a number of between-person effects (γ_{02}) in which the average level of positive interactions was predictive of representations. These findings could have occurred because positive interactions in *all* relationships were predictive of a representation in a *particular* type of relationship, or it could have occurred because positive interactions in *each type* of relationship were predictive of the representation for *that type* of relationship. For example, positive interactions with friends, romantic partners, and mothers could all be associated with representations of friends. Alternatively, positive interactions with friends alone could be associated with representations with friends; positive interactions with romantic partners alone could be associated with representations of romantic relationships; and positive interactions with mothers alone could be associated with representations of relationships with parents. These two possible explanations have different theoretical implications, but both would lead to the between-person effects that were found. We conducted further analyses to determine which explanation best accounted for the between-person effects that were observed.

Specifically, we examined how positive interactions in one type of relationship (i.e., the *focal* relationship) as well as positive interactions in *other* types of relationships were related to representations of the focal type of relationship. If the first explanation is accurate, interactions in both focal and other types of relationships should be predictive of representations. If the second explanation is accurate, interactions in the focal relationship variable should be the primary predictor of representations.

To prepare the data for these analyses, one of the relationships was designated to be the focal relationship, and the positive interaction scores for that relationship were designated as the focal interaction scores. The scores for positive interactions in other relationships were derived by averaging the positive interaction scores of the other relationships the participant had. This procedure was repeated three times such that each type of relationship was treated as the focal relationship in turn. The three sets of data were combined and analyzed as one set of data.

As previously reported in Table 1, avoidant working models and styles were negatively related to all measures of positive interactions in the same (focal) relationship. The follow-up analyses revealed that avoidant working models were also negatively related to the measures of positive interactions in the other relationships, whether measured by questionnaire, interview, or observation, averaged *r*s = −.11, −.31, & −.21, *p*s < .05, respectively. Similarly, avoidant styles were significantly negatively related to positive interactions in the other relationships as measured by questionnaires and interviews, but not by observations, averaged *r*s = −.13 & −.14, *p*s < .01, & *r* = −.09, *p* > .05, respectively.

Anxious working models were unrelated to any of the three measures of positive interactions in the same focal relationship; anxious styles were only significantly negatively related to observed interactions in the focal relationship and not the other two measures (see Table 1). The follow-up analyses revealed that anxious working models were also unrelated to positive interactions in the other relationships when measured by questionnaires or observations, and significantly *positively* related to the interview measure, averaged *r*s = .08 & .10, *p*s > .05, & *r* = .09, *p* < .05, respectively. Finally, anxious styles were unrelated to positive interactions in the other relationships when measured by questionnaires, and negatively when measured by interview or observation, averaged *r* = −.05, *p* > .05 & *r*s = −.17 & −.19, *p*s < .05, respectively.

Next, we conducted multilevel models to determine whether positive interactions in other types of relationships, as well as positive interactions in the focal type of relationship, uniquely contributed to the prediction of representations of a focal type of relationship. Each model followed the following form.

Level 1: $Y_{ij} = \beta_{0j} + \beta_1(\text{positive interaction in focal relationship})_j + \beta_2(\text{positive interaction in other relationships})_j + \beta_3(\text{friend rel.})_j + \beta_4(\text{romantic rel.})_j + r_{ij}$

Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{gender}) + u_{0j}$

$\beta_{1j} = \gamma_{10}$

$\beta_{2j} = \gamma_{20}$

$\beta_{3j} = \gamma_{30}$

$\beta_{4j} = \gamma_{40}$

In these models, *Y* represented the dependent variable (avoidant or anxious attachment working models or styles) for individual *i* in relationship type *j*. At Level 1, *positive interactions in the focal relationship* (β_1) and *positive interactions in other relationships* (measured by questionnaire, interview, or observational coding) were grand-mean centered so that we could examine the associations with the absolute levels of scores (vs. the relative levels group-mean centering would yield). *Friend* (β_3) and *romantic relationship* (β_4) were uncentered, dummy-coded variables that indicated type of relationship. (The analyses of the observational data only contained one contrast between friendships and parent-adolescent relationships [β_2] as observations of romantic relationships were not available.) Gender (γ_{01}) was entered at Level 2.

Table 4 reports the results of these analyses. Consistent with hypotheses, higher scores on all measures of positive interactions in the focal relationship (β_1) were associated with less avoidant models and less avoidant styles; only the associations between the interview and observational measures of positive interactions in other relationships (β_2) and avoidant models were significant. Thus, consistent with the second explanation, the between-person effects that were reported previously seem to primarily reflect associations between representations and positive interactions in the same type of corresponding relationship and not associations between particular representations and interactions in all types of relationships.

Higher scores on the interview measure of positive interactions in the focal relationship (β_1) were associated with more anxious working models. In the analyses with the other two measures of positive interactions, however, neither the focal (β_1) nor other relationship(s) (β_2) variables were significantly related to anxious working models. None of the measures of positive interactions in the focal relationship (β_1) were related to anxious styles. When measured by either interview or observation, more positive interactions in other relationships (β_2) were associated with less to anxious styles.

Other analyses—It is possible that by averaging the scores for the positive interactions in the other two types relationships, an association between interactions in one other type of relationship and representations of the focal type of relationship could have been masked by a lack of association between interactions in the third type of relationship and representations of the focal type of relationship. For example, positive interactions with a friend could have been predictive of romantic representations, whereas positive interactions with mother may not have been predictive of romantic representations. We examined the pattern of relations between interactions in one type of relationship and representations of another type of relationships, and once again, the multilevel modeling results indicated that only a small proportion of the associations between experiences in one relationship and representations on another type of relationship were significant.

We also conducted a series of multilevel analyses in which we predicted *positive interactions* from the representation (avoidant or anxious) of the focal type of relationship and, the mean level of the representation for other types of relationships. The results complemented the analyses predicting representations from positive interactions in focal and

other relationships; for example, avoidant representations were predictive of lower levels of positive interaction (All supplementary results available from the first author).

Discussion

The results of the present study underscore the importance of examining representations of different types of relationships. Consistent with prior work (Furman, 1999; Furman et al., 2002), the pattern of correlations reveals that representations of different types of relationships are distinct from one another. Working models of the three different types of relationships were only moderately related. Similarly, anxious romantic styles were moderately related to anxious styles regarding relationships with parents and friends, but none of the avoidant style scores for the three relationships were significantly related to one another. In fact, only small proportions of the variance on all measures of representations were between-person.

We also found mean level differences among representations of different types of relationships. Compared to those for relationships with parents, working models and styles for friendships and romantic relationships were less avoidant, and styles for friendships and romantic relationships were more anxious. It may be that at this stage of development, many adolescents no longer believe that their parents are responsive to their needs and they may look elsewhere for satisfying close relationships, thus resulting in more avoidant representations of parent relationships. At the same time, most adolescents still turn to their parents as their primary secure base (Hazan & Zeifman, 1994) and may feel uncertain about the stability of their peers' availability or responsiveness, thus resulting in more anxious representations of friendships and romantic relationships than relationships with parents.

Although statistical comparisons across studies are not possible, the magnitude of relations among different types of relationships appeared to be smaller than in prior work. For example, an average of 9% of the variability in our self-report measure of representations was between-person, whereas La Guardia et al. (2000) found an average of 28% of the variability was between-person. (We did not include our interview measures in these estimates as La Guardia et al. did not have a comparable measure). Characteristics of the present study's sample may contribute to the discrepant findings. For example, the current sample of tenth graders was a little younger than prior samples that have used twelfth graders (Furman et al., 2002), all grades of high school (Furman, 1999), or college students (La Guardia et al., 2000). The adolescents in this sample may have had less experience in romantic relationships than participants in prior research and there may have been less time for experiences in one type of relationship to affect or be integrated with experiences in other types of relationships. The associations among representations were more consistent for working models than styles, which raises the possibility that younger adolescents may simply perceive their relationships to be more distinct than older adolescents or young adults do. Future research could more directly address whether the degree of similarity across relationship types changes developmentally.

Positive Interactions and Representations of Relationships

Avoidant representations—The present study contributed to existing literature by examining associations at both the between- and within-person level. The pattern of results was very similar for the between-person and within-person differences for avoidant representations. Adolescents who had fewer positive interactions overall had more avoidant representations. Furthermore, adolescents had more avoidant representations of relationships that had fewer positive interactions. The fact that we found within-person effects, as well as between-person effects, reduces the plausibility that the findings stem from third variable effects. Third variables that are relatively stable (e.g. SES) could not explain the findings as they do not vary within a person. In fact, even third variables that do vary across different types of relationships would be less plausible explanations as they would need to covary with both the person's relationship experiences and representations to explain the within-person associations, and yet also be sufficiently consistent across relationships to account for the between-person effects.

The pattern of associations was also similar regardless of whether the same or different methods were used to measure positive interactions and avoidant representations. Thus, these associations cannot be simply attributed to shared method variance.

The analyses of positive interactions in focal and other relationships provided further clarification of these associations with avoidant representations. The questionnaire, interview, and observational measures of positive interactions in focal relationships were all negatively correlated with both avoidant working models and styles for the corresponding types of relationships. Moreover, all six of these associations remained significant in the multilevel models, indicating that these interactions uniquely contribute to the prediction of representations of the corresponding type of relationship. Interactions in relationships may influence representations such that adolescents who experience less positive interactions in a particular type of relationship may develop more avoidant representations of that type of relationship. Alternatively, representations may influence interactions in a relationship such that adolescents who have an avoidant representation of that type of relationship may overvalue their independence and be uncomfortable with intimacy, resulting in fewer positive interactions in that type of relationship. Those with more avoidant representations may also seek out friends and romantic partners who are less likely to engage in such intimate interactions.

In five of six instances, significant correlations were found between interactions in *other* types of relationships and representations in the focal type of relationship, but these associations were substantially attenuated in the multilevel models. Only two remained significant. Thus, the associations seem substantially stronger for interactions in and representations of the same type of relationship, a point returned to subsequently.

Anxious representations—No significant links were found between positive interactions and anxious working models. It is possible associations would be obtained if we had examined relationship qualities other than positive interactions. For example, negative interactions or inconsistent patterns of interactions may be more associated with anxious representations than are positive interactions (Cassidy & Berlin, 1994). Alternatively, the

associations may not be as strong because anxious individuals are confused or uncertain about the nature of their relationships. Finally, the associations at this age may not be as strong because anxious representations—a fear of rejection, but a desire for intimacy—may be developmentally appropriate during this period of changing relationships (Collins, Cooper, & Albino, 2002).

The associations between positive interactions and anxious styles differed at the between-person and within-person level. At the between person level, higher rates of positive interactions as measured by interview or observation were associated with *lower* levels of anxious styles. At the within person level, higher interview and questionnaire ratings of positive interactions were associated with *greater—not lower*—levels of anxious styles. Interestingly, the analyses of focal and other interactions revealed that positive interactions in other relationships were *negatively* associated and uniquely predictive of anxious styles in two of the three instances. Putting these findings together, it appears that when adolescents have positive interactions in their other types of relationships, they may be less likely to worry about being rejected in a particular relationship. When their usual relationship experience is not very positive, they may particularly worry about being rejected in their more positive relationships. Alternatively, they may be less invested and less concerned about their less positive relationships and thus, less anxious about them.

Interactions in and representations of multiple relationships—As noted previously, past work has found that interactions in one type of relationship are generally predictive of representations of another type of relationship (Collins & Read, 1990; Nosko et al., 2011). The present study found evidence of similar links across different types of relationships in the pattern of correlations, but the associations between interactions in other relationships and representations were substantially attenuated in the multilevel models when interactions in the focal type of relationship were controlled for. Such a pattern of results could indicate that the links between the interactions in other types of relationships and representations of one particular type of relationship are mediated by interactions in that particular type of relationship. Alternatively, the associations could be spurious ones, reflecting the effects of interactions in one particular type of relationship or some third variable.

Past investigators have also found that representations of a particular type of relationship are predictive of experiences in other types of relationships (e.g., Roisman et al., 2005; Shomaker & Furman, 2009). In the present study such cross-relationship links are found in the correlations, but again the associations between representations of other relationships and interactions in a particular type of relationship were substantially attenuated in the multilevel models when representations of that particular type of relationship were controlled for. Attachment theory has emphasized the importance of cross-relationship links, but the present findings suggest that it is at least important to consider how experiences and representations in a particular type of relationship may affect each other (Furman & Wehner, 1994).

Other factors—Although positive interactions were predictive of representations, other factors also contributed. For example, females had less avoidant working models and styles

than males, even when the amount of positive interactions was controlled for. On the other hand, they had more anxious working models than males. Similarly, relationship type was predictive of representations after controlling for the amount of positive interaction; in particular, representations of friendships and romantic relationships were less avoidant than those of relationships with parents, whereas styles for friendships and romantic relationships were more anxious than those of relationships with parents. It is possible that other facets of interaction, such as negative interactions, might also contribute to the differences in the representations of relationships. If these interactions were taken into account, the gender and relationship type differences in representations may no longer occur. Alternatively, such differences may remain even after interactions of all types are accounted for; for example, adolescents may have less avoidant representations of peers than parents, even if peers and parents behaved similarly.

Styles and Working Models

In general, the results were relatively similar for the style and working model measures, suggesting the findings are relatively robust. Perhaps the most striking exception was that the avoidant style measures of the three types of relationships were not related to one another, whereas the avoidant working model measures were. As noted previously, adolescents may perceive their relationships to be more distinct than adults do, or perhaps their relationships are objectively more distinct. After all, as they grow older, relationships with parents typically become more positive and more symmetrical—changes that make them more similar, but not identical to, peer relationships (Shaver, Furman, & Buhrmester, 1985). Both the working model and style measures were related to the positive interaction measures in almost all cases; such findings are consistent with Bowlby's (1973) ideas that experiences in close relationships and representations are interrelated. Bowlby (1973), however, also proposed that representations become less responsive to experiences as individuals grow older, underscoring the need to examine such associations with an older sample.

Limitations and Future Directions

The current data are cross-sectional. A longitudinal study could examine the pattern of associations between relationship characteristics and representations over time. Such a study would also provide the opportunity to determine if representations of a particular type of relationship vary as a function of changing relationship experiences. For example, if romantic relationship experiences became more positive, we would expect that romantic representations would become less avoidant or anxious. Finally, the present findings suggest that some differences may exist in the pattern of associations in adolescence and early adulthood, an issue that could be examined in a longitudinal study.

The same person coded the interview used to measure positive interactions and working models, which could have inflated the associations between the two measures. Even if different individuals had coded interactions and working models, their ratings are likely to be influenced by having read the overall interview. However, the current study included multiple measures of both positive interactions and representations to help address any such

artifactual associations or to rule out the possibility that findings stemmed from shared method variance.

The present study also only included indices of overall levels of positive interactions. In subsequent research, it would be important to examine other aspects of relationship experiences. Similarly, more detailed assessments of different facets of positive interactions would provide us a more precise understanding of the nature of these associations.

These limitations notwithstanding, the present study shows that representations of different relationships are related, yet distinct. One implication is that adolescents may have negative experiences and insecure representations with parents, yet may have positive experiences and secure representations with friends or romantic partners. Conversely, secure representations of parents do not guarantee that secure representations of friends or romantic partners will emerge. Different types of relationships require different skills, and consequently different experiences may occur in different types of relationships (Furman & Wehner, 1994).

The present study also found that both the differences between adolescents and within adolescents' various relationships are linked to the experiences in these relationships. Furthermore, the associations between interactions in focal relationships and representations were more consistent than the associations between interactions in one type of relationship and representations of other types of relationships. Such findings underscore the importance of examining interactions in and representations of multiple types of relationships to understand how they are related, when representations are similar and different, and the impact different patterns of representations have on development.

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Table 1

Means, Standard Deviations, and Correlations of Representations and Positive Interactions

	2	3	4	5	6	7	M	SD
1. Avoidant models	.36**	−.05	.06	−.28**	−.64**	−.22**	−.07	4.11
2. Avoidant styles		−.03	.14**	−.46**	−.27**	−.30**	−3.58	.42
3. Anxious models			−.04	−.01	−.04	−.03	1.69	1.30
4. Anxious styles				.04	−.02	−.15**	2.30	.43
5. Positive interaction questionnaire					.34**	.21**	3.23	.76
6. Positive interaction interview						.21**	4.51	1.33
7. Positive interaction observation							3.23	.43

Note.

** $p < .01$. The correlations, means and standard deviations were averaged across the three types of relationships.

Table 2

Correlations of Avoidant and Anxious Representations Across Relationships

	Parent-friend	Parent-romantic	Friend-romantic
Avoidant models	.39**	.31**	.35**
Avoidant styles	.09	.07	.12
Anxious models	.17*	.23**	.12
Anxious styles	.10	.29**	.18*

Note.

* $p < .05$

** $p < .01$. The numbers reflect the correlations between the representations for the pair of relationship types listed at the top of the column.

Table 3

Multilevel Models of Positive Interactions and Working Models and Relational Styles

	Avoid. models	Avoid. styles	Anx. models	Anx. styles
Questionnaire measure				
Intercept(β_0)	1.66** (0.47)	−3.25** (.04)	1.44** (0.13)	2.22** (0.05)
Gender(γ_{01})	−2.00** (0.60)	−0.18** (0.05)	0.50** (0.16)	−0.05 (0.06)
Mean pos. int.(γ_{02})	−1.26** (0.39)	−0.26** (.03)	0.02 (0.10)	0.00 (0.04)
Positive interaction(β_1)	−1.30** (0.31)	−0.35** (0.04)	−0.10 (0.10)	0.09* (0.05)
Friend relationship(β_2)	−1.57** (0.47)	−0.41** (0.06)	−0.13 (0.15)	0.16** (0.06)
Romantic rel.(β_3)	−1.31** (0.50)	−0.40** (0.06)	−0.03 (0.16)	0.16** (0.06)
Interview measure				
Intercept(β_0)	1.12** (.36)	−3.22** (0.05)	1.37** (0.13)	2.21** (0.06)
Gender(γ_{01})	−0.60 (0.46)	−0.17** (0.06)	0.65** (0.17)	−.03 (0.07)
Mean pos. int.(γ_{02})	−2.42** (0.18)	−0.10** (0.02)	−0.11 (0.06)	−0.05* (0.03)
Positive interaction(β_1)	−1.62** (0.16)	−0.09** (0.03)	−0.14 (0.06)	0.05* (0.03)
Friend relationship(β_2)	−1.78** (0.39)	−0.50** (0.06)	−0.15 (0.15)	0.16** (0.06)
Romantic rel.(β_3)	−1.80** (0.44)	−0.41** (0.08)	0.01 (0.17)	0.18* (0.07)
Observational coding				
Intercept(β_0)	1.39** (0.49)	−3.27** (0.06)	1.44** (0.14)	2.18** (0.06)
Gender(γ_{01})	−1.66** (0.64)	−0.13 (0.07)	0.42* (0.18)	−0.02 (0.07)
Mean pos. int.(γ_{02})	−2.55** (0.73)	−0.33** (0.08)	0.01 (0.21)	−0.32** (0.08)
Positive interaction(β_1)	−0.63 (0.79)	−0.36** (0.09)	−0.30 (0.23)	0.06 (0.09)
Friend relationship(β_2)	−1.74** (0.52)	−0.49** (0.06)	−0.05 (0.15)	0.19** (0.06)

Note. Mean pos. int. = between-subject; Positive interaction = within-subject.

* $p < .05$

** $p < .01$

Table 4

Multilevel Models of Interactions in Focal and Other Relationships and Representations

	Avoid. models	Avoid. styles	Anx. models	Anx. styles
Questionnaire measure				
Intercept(β_0)	1.60** (0.47)	−3.25** (0.05)	1.44** (0.13)	2.21** (0.06)
Gender(γ_{01})	−1.89** (0.60)	−0.17** (0.05)	0.50** (0.16)	−0.05 (0.07)
Focal pos. interaction(β_1)	−1.32** (0.24)	−0.31** (0.03)	−0.09 (0.07)	0.05 (0.03)
Other pos. interaction(β_2)	−0.11 (0.30)	0.05 (0.03)	0.13 (0.09)	−0.05 (0.04)
Friend relationship(β_3)	−1.56** (0.47)	−0.42** (0.06)	−0.11 (0.15)	0.17** (0.06)
Romantic rel.(β_4)	−1.33** (0.50)	−0.40** (0.06)	−0.04 (0.16)	0.17* (0.07)
Interview measure				
Intercept(β_0)	0.97** (0.37)	−3.22** (0.05)	1.34** (0.13)	2.18** (0.06)
Gender(γ_{01})	−0.39 (0.47)	−0.14* (0.06)	0.64** (0.17)	−0.01 (0.07)
Focal pos. interaction(β_1)	−2.02** (0.12)	−0.10** (0.02)	−0.13* (0.05)	0.01 (0.02)
Other pos. interaction(β_2)	−0.48** (0.14)	−0.01 (.02)	0.02 (0.05)	−0.07** (0.02)
Friend relationship(β_3)	−1.66** (0.39)	−0.51** (0.06)	−0.13 (0.15)	0.17** (0.06)
Romantic rel.(β_4)	−1.85** (0.44)	−0.42** (0.07)	0.03 (0.17)	0.18* (0.07)
Observational coding				
Intercept(β_0)	1.49** (0.50)	−3.27** (0.06)	1.50** (0.14)	2.29** (0.06)
Gender(γ_{01})	−1.81** (0.67)	−0.13 (0.07)	0.25 (0.18)	−0.03 (0.07)
Focal pos. interaction(β_1)	−1.77** (0.52)	−0.36** (0.06)	−0.03 (0.15)	−0.11 (0.06)
Other pos. interaction(β_2)	−1.14* (0.55)	0.01 (0.06)	0.26 (0.15)	−0.21** (0.06)
Friend relationship(β_3)	−1.81** (0.52)	−0.48** (0.06)	−0.07 (0.15)	0.20** (0.06)

* $p < .05$;

** $p < .01$