Journal of Research in Personality 118 (2025) 104637

Contents lists available at ScienceDirect

Journal of Research in Personality

journal homepage: www.elsevier.com/locate/jrp

Full Length Article

A social relations perspective on attachment orientations and judgments of relationship quality in friendships

Zoe Dunnum [a], William J. Chopik [b,*]

[a] University of Michigan, USA
[b] Michigan State University, USA

ARTICLE INFO

Keywords:
Attachment anxiety
Attachment avoidance
Friendships
Relationship quality
Social relations model

ABSTRACT

How well friendships are going likely depends on perceptions people have about their friends, such as how they approach relationships in general. Adopting a social relations model perspective, we examined sources of variation in relationship quality (across 10 indicators) and attachment judgments in a sample of 377 quads of friends ($N = 1{,}508$ individuals). Relationship quality largely stemmed from the shared interactions between two people, although some perceiver variance was found. Judgments of avoidance largely stemmed from consensus; judgments of anxiety came from a mix of consensus and perceiver variance (i.e., tending to see everyone as anxious or not). Bivariate analyses found that people seen as anxious were seen as ambivalent friends — providing both positive and negative experiences for friends.

1. Introduction

Friends are a large source of people's happiness (Pezirkianidis et al., 2023). Indeed, people like their friends and rate them as being supportive and like-minded (Alsarrani et al., 2022; Dryburgh et al., 2022; Kochendorfer & Kerns, 2020; Lazerus et al., 2016). But why are some friendships of higher quality than others? Part of this variation is attributable to how positively an individual sees particular friendships and the metric on which they are evaluating it. Presumably, what people think about their friends likely depends on how they approach relationships and how well the relationship is going. For example, people who fight a lot might judge each other more negatively or may view their friends as insecurely attached (i.e., struggling to form secure, mutually affectionate bonds). The current study examined perceptions of attachment orientations and friendship quality, and how they correlate with each other in a large study of 377 friendship quads.

1.1. Friendships and links with well-being

Friendships are important for well-being; they contribute to a sense of purpose, control, and satisfaction with one's life (Fehr & Harasymchuk, 2019; Kim et al., 2023; Lu et al., 2021; Veiel & Baumann, 1992). Both the quantity and quality of friendships matter. For example, college students feel less lonely when they have a larger social network (Fehr & Harasymchuk, 2019; Green et al., 2001). Middle-aged adults have lower psychological well-being at the age of 50 if they have smaller friendship networks (Cable et al., 2013; Fehr & Harasymchuk, 2019), and older adults with many friendships feel less social and emotional loneliness (Binder et al., 2012).

Friendships also improve mental and physical health across the lifespan, such that the presence and quality of friendships are associated with more positive affect, less stress, reduced risk of depression, enhanced cognitive functioning, more positive health behavior, and lower mortality (Chopik, 2017; Christakis & Fowler, 2008; Fehr & Harasymchuk, 2019; Kim et al., 2023). These effects are largely attributable to the promotion of health and happiness behaviors as well as the encouragement of these behaviors that friends provide (Kim et al., 2023; Thanakwang & Soonthorndhada, 2011). However, friendships vary in quality and thus vary in the resulting benefits they can potentially provide. One source of this variance comes from the way people view their friends—for better or worse. In the current study, we hypothesized that perceptions of friends' attachment orientations might be related to how well people think a friendship is going.

1.2. Judgments of attachment orientation

An individual's attachment orientation is their position on two relatively independent dimensions—attachment anxiety and avoidance

* Corresponding author at: Department of Psychology, Michigan State University, 316 Physics Rd., East Lansing, MI 48824, USA.
E-mail address: bill.chopik@gmail.com (W.J. Chopik).

https://doi.org/10.1016/j.jrp.2025.104637
Received 12 February 2025; Received in revised form 12 June 2025; Accepted 8 July 2025
Available online 14 July 2025

(Mikulincer & Shaver, 2019). Anxious attachment primarily describes a greater desire for closeness and a fear of rejection and abandonment (Mikulincer et al., 2002). Higher attachment anxiety contributes to increased sensitivity and attunement to signs of unresponsiveness or separation from partners (Candel & Turliuc, 2019; Hadden et al., 2014). Attachment avoidance is characterized by a discomfort with emotional and physical intimacy and a heightened desire for independence (Brennan et al., 1998; Li & Chan, 2012). Avoidant individuals typically maintain distance from others and display little interpersonal trust or interest in their partners (Candel & Turliuc, 2019; Li & Chan, 2012). People who score lower on both dimensions are considered securely attached (Chopik et al., 2013; Fraley et al., 2000).

A person's attachment orientation is often detectable and observable by others in their social networks, albeit in sometimes surreptitious ways. For example, a person's attachment orientation can be displayed through their language use (Dunlop et al., 2020), nonverbal cues (Tucker & Anders, 1998), social media behaviors (Jenkins-Guarnieri et al., 2012; Oldmeadow et al., 2013), and even their musical preferences or wardrobe choices (Alaei et al., 2022; Gillath et al., 2012). Based on these cues, their interpersonal behavior, and their interactions, observers' judgments and self-reports of attachment tend to correlate modestly positively, whether it be romantic partners, long-term friends, or unacquainted strangers (Banai et al., 1998; Bartholomew & Horowitz, 1991; Chopik & Edelstein, 2015; Tu et al., 2022; Yang et al., 2024). Although there is agreement among people and observers regarding their attachment orientations, perceptions of the self and others can be biased and vary based on several factors (Paulhus & Vazire, 2007; Vazire, 2010; Vazire & Carlson, 2011). Of course, these judgments can also be inaccurate. For example, self-other overlap for attachment anxiety is occasionally a little lower than avoidance, which researchers attribute to the difficulty in evaluating more "internal" versus "external" characteristics (Yang et al., 2024). In one of these same studies, part of the inaccuracy of these judgments is attributable to assumed similarity biases (Cronbach, 1955): if people self-report being insecurely attached themselves, they tend to judge others as insecurely attached.

But what exactly goes into a judgment of someone's attachment orientation? Traditions in social/personality psychology have often relied on social relations modeling approaches to quantify where various sources of judgments originate (Back & Kenny, 2010; Kenny et al., 1994; Kenny & La Voie, 1984). Specifically, when people are asked to evaluate others' psychological characteristics, these judgments originate from at least three sources. First, perceivers are biased in how they perceive others, such that they might perceive everyone as more securely or insecurely attached (i.e., perceiver variance). Second, there might also be consensus about a particular person, or target, being judged. In other words, within a friend group, people might all judge one of the friends as being securely or insecurely attached; therefore, some of that judgment depends on the person being evaluated (i.e., target variance). Finally, a judgment about someone's attachment style might depend on the unique relationship between two people. This means that, independent of a person's perceiver biases (seeing everyone as secure) and target effects (people generally being thought of as secure), the shared history between two people might guide their judgments of each other. This history includes their unique interactions, the things that have bonded them together, their relationship transgressions ("beef"), and how they see each other. This source of variance is called a "relationship variance." Collectively, there is a rich history in the field of quantifying where judgments of psychological traits come from (Back & Kenny, 2010; Biesanz, 2010; Connelly & Ones, 2010; Human & Biesanz, 2011; LaBuda & Gere, 2023).

Decomposing variance reveals quite a bit of information about how people think about themselves, others, and their relationships. For example, a large amount of perceiver variance is useful to know in that it quantifies how systematically people see their social worlds—as full of homogenously secure or insecure people. Having such biases likely guides who people interact with and the types of relationships they pursue, and it might explain why some people have more fractious friendships on average. Large amounts of target variance (occasionally called "consensus") is useful to know in that it helps research characterize how detectable certain psychological characteristics are or whether particular indicators are driving how friends judge each other. Knowing these processes might enable researchers or practitioners to disabuse people of perceptions that might not reflect a person's underlying attributes. And finally, relationship variance is useful to know in that, after isolating perceiver (i.e., individual) and target (i.e., friend) variance, it can help quantify whether the source of judgments primarily stem from the unique interactions between people rather than the individual actors in relationships. Knowing how much is being explained by two people's dynamic interaction is necessary for discerning where friends might intervene to improve their relationships, such as whether friendship difficulties are emerging from the inaccurate assumptions people have (i.e., an individual consideration) or something substantive about how friends interact with each other.

Attachment orientations are no exception in this regard, such that judging someone's attachment orientation is a function of perceiver, target, and relationship effects, and knowing these sources of variance can reveal additional considerations about both individuals and the friendships in which they are embedded (An et al., 2023; Buist et al., 2002; Buist et al., 2004; Cook, 2000; De Meulenaere et al., 2022). For instance, Yang and colleagues (2024) found moderate *consensus* among the judgements of attachment anxiety and avoidance in friend groups of four. In other words, friends tended to agree in general on who was anxious or avoidantly attached—a sign that attachment orientations might be communicated in ways that can readily identify someone as insecurely attached. Nevertheless, two people's unique relationship also mattered, constituting one of the largest sources of people's attachment orientation judgments. People's perceptual tendencies (i.e., seeing everyone as anxiously or avoidantly attached) were less common, although it was a source of 8–18 % of the variance in these judgments. Despite these different sources contributing to attachment-related judgments, there were also associations between these observer judgments and what people said about themselves (i.e., self-reports). For example, there was moderate agreement between friends and the self-reports that individuals provided (r = 0.29–0.41). There was also an interesting effect in which people tended to "project" their own attachment orientations onto their friends: anxiously attached people thought their friends were anxiously attached (r = 0.29); avoidantly attached people thought their friends were avoidantly attached (r = 0.22). This phenomenon is referred to as *assumed similarity* (Cronbach, 1955; Human & Biesanz, 2011).

1.3. Attachment orientations and relationship quality

People make judgments about close others and relationships all the time, albeit it is often framed in the context of how well they think their relationship is going. One of the most replicable findings in the field is that attachment orientations are associated with relationship quality assessments. Specifically, attachment insecurity is associated with poorer relationship functioning (Candel & Turliuc, 2019; Hadden et al., 2014; Li & Chan, 2012). The reasons for these associations are several: anxiously attached individuals tend to catastrophize negative relationship contexts (Kratz et al., 2012), make maladaptive attributions (Collins, 1996), and doubt their partners' sincerity in ways that ultimately undermine and sabotage relationships (Campbell & Marshall, 2011; Overall et al., 2014; Simpson et al., 1996). Avoidantly attached individuals tend to suppress affectionate tendencies (Mikulincer & Shaver, 2019), offer less support to close others (Simpson et al., 1992), and look for relationship alternatives (DeWall et al., 2011).

Although associations between attachment orientations and *overall* relationship quality are not in dispute, there are at least two limitations to previous research: relying on self-reports of attachment orientations and outcomes and a relatively narrow conceptualization of relationship

quality.

1.3.1. Informant-reported attachment orientations and relationship outcomes

Researchers have often defaulted to examining a correlation between a self-reported attachment orientation and a self-reported, general, relationship quality. Doing so introduces some ambiguity over how attachment and relationship outcomes are related. For example, the association might be due to shared method variance. The association might also miss out on their relational partners' perspectives about them and their relationship, which likely has implications for their interactions. We posit that some of the negative association between attachment insecurity and relationship quality might be attributable to people's *perceptions* of their friends' attachment orientations: if they think their friends are insecurely attached, that might be a reason why they evaluate their friendships in a more negative light. Indeed, given the many relationship compromising behaviors of insecurely attached people, people may judge their friends accordingly if they exhibit these behaviors (Mikulincer & Shaver, 2017; Shaver & Mikulincer, 2021). In other words, if people think a friend is distant/aloof (correlates of avoidance) or hypervigilant and overreactive to relationship slights or transgressions (correlates of anxiety), these perceptions likely have implications for how well the relationship is going.

There is also a sense that, in addition to attachment judgments shaping relationships, relationship quality might shape how people see their friends—for better and for worse. For example, a friendship may be supportive and ostensibly going well (e.g., flowing conversations; Hall et al., 2025; Truong et al., 2020). The positive emotions that result from these interactions may be associated with people seeing their friend in a more positive light such as being caring, communicative, and dependable (Fletcher, 2015; Lackenbauer et al., 2010; Mizrahi et al., 2022). Indeed, all these characteristics are thought to underlie feelings of security and also describe securely attached people (Arriaga & Kumashiro, 2019; Arriaga et al., 2018; Fraley & Shaver, 2000). As a result, people may rate close others more positively if their relationship is going well, whether they be judging them on their attachment orientations, how funny they are (Purol & Chopik, 2022), or even how attractive they think they are (Barelds & Dijkstra, 2009).

But how is this information communicated across people? As previously stated, there is evidence that people use all sorts of behavioral residue to make inferences about other people, like their social media behavior or physical appearance. However, long-acquainted friends are rarely making one-shot judgments based on thin slices of information. Rather, their shared history (i.e., relationship variance) runs the gamut of both deep and superficial conversations, shared memories, and similar experiences. For example, it may be common for people to talk about their romantic relationships with their friends (Kee et al., 2025). Given that disclosure is one the bedrocks of forming intimacy between friends (Sprecher, 2021), doing so likely brings friends closer together. But, in addition to providing opportunities for mutual disclosure between friends, talking about romantic pursuits may also convey information about attachment orientations. This information might be diagnostic about how they approach relationships (e.g., if one friend thinks another friend might be over- or underreacting to something in their dating life) or even having these discussions might provide information (e.g., if a friend is uncomfortable talking about their romantic relationships or are unresponsive when listening to a friend talk about their relationships). Judgments of attachment orientations and relationship quality are likely bidirectional and influence each other, even if people might not be explicitly thinking about their friends in terms of their attachment orientations or constantly tracking how well their friendship is going (and people are likely unaware about the sources of these characteristics; Nisbett & Wilson, 1977). Regardless, friendships provide unique context to study both of these judgments given the wealth of shared experiences and conversations, through which information about friends and friendships are likely communicated. But to date, researchers have typically relied on omnibus measures of relationship quality and linking it to interpersonal judgments. Given the multifaceted nature of friendships, it is possible that particular relational judgments might be more closely aligned with how we see friends (e.g., whether a friend is instrumentally helpful but maybe not particularly nurturing might be uniquely related to judgments of attachment orientation).

1.3.2. Expanding the operationalization of relationship quality in the study of interpersonal judgments

To date, researchers have also defaulted to an inadvertently simplistic operationalization of relationship quality. When asking people how happy their relationship is overall, are researchers missing out on more detailed information about how the relationship is going? Left unassessed in these contexts are how often people argue, how antagonistic a friendship is, how much aid they provide, how much they feel cared for, and how much they feel nurtured. Of course, judgments of relationship quality likely capture the "gist" of these characteristics. But relationship quality is also multifaceted (Birditt et al., 2009; Mattson et al., 2013; Rook, 2015). However, in light of theoretical models positing that specific types of relationship behaviors have implications for variation in attachment functioning (Arriaga et al., 2021; Arriaga & Kumashiro, 2019; Arriaga et al., 2014; Arriaga et al., 2018; Overall et al., 2013; Simpson & Overall, 2014), it seems reasonable that judgments of a friend's attachment orientation might have different implications for evaluating different aspects of a relationship (e.g., Are they antagonistic? Do they provide support when needed?).

Of course, attachment insecurity is associated with lower relationship quality *generally* across different ways of operationalizing relationship quality (Candel & Turliuc, 2019; Costello et al., 2023; Fraley et al., 2013; Khan et al., 2020; Li & Chan, 2012; Zhao et al., 2015). However, the fact that different relationship quality measures are assessed in different studies makes it difficult to compare the magnitude with different facets of relationship quality. Ideally, the same group of participants would fill out a broad array of relationship indicators so that they are more directly comparable. Although a full review of relationship quality measures is beyond the scope of the current study, research to date provides some useful justifications that attachment orientations are associated with various relationship quality indicators. For example, anxiously and avoidantly attached people report higher antagonism and less affection within relationships, reporting that their relationship partners get on their nerves and rarely offer opportunities to engage in affectionate behavior (Chopik et al., 2014; Farrell et al., 2016; Waldeck et al., 2024). Similarly, reliable alliance (conceptually close to what would be considered a "secure" relationship; Furman & Buhrmester, 2009; Furman et al., 2002; Furman et al., 2014) is negatively associated with attachment anxiety and avoidance, so much so that these people think their relationship is unlikely to overcome relationship obstacles and stand the test of time (Hazan & Shaver, 1987; Saferstein et al., 2005). Conversely, securely attached people express greater affection in their relationships, characterizing them with higher feelings of liking, care, and love (Floyd, 2002). Although there is more heterogeneity with avoidance, conflict in relationships is positively correlated with anxious attachment (Li and Chan, 2012). Attachment anxiety is associated with less instrumental aid, and anxiously attached people are less likely to offer help and instruction in stressful circumstances (Jayamaha et al., 2017; Shaver et al., 2019). In contrast, avoidant individuals report less respect for partners and less relationship nurturance (Feeney & Collins, 2001; Frei & Shaver, 2002; Rholes et al., 1997). Avoidant individuals are also less inclined to share personal information or self-disclose to close others, less likely to say relationships provide companionship, and have a lower desire to spend quality time with close others (Bradford et al., 2002; Saferstein et al., 2005).

2. The current study

In the current study, we examined whether judgments of relationship quality were associated with judgments of their friends' attachment orientations. We expected there to be a large relationship component to both judgments—that a substantial proportion of the variance in relationship quality and attachment orientation judgments would be attributable to two people's shared relationship history (over and above perceiver and target variance). In a rare test of bivariate associations in a social relations framework, we expected people to perceive poorer relationship quality (across facets/domains) to the extent that they viewed their friends as insecurely attached. We thought that judgments of attachment orientations might relate differently to some relationship quality judgments more than others (e.g., perceptions of antagonism v. perceptions of instrumental aid/help). Beyond these general expectations, we treated the analyses as exploratory.

3. Method

This study was not pre-registered. The data, syntax, full list of variables, and a copy of the survey are available at https://osf.io/ue8ta/. Descriptive statistics are provided in Supplementary Table 1.

3.1. Participants and procedure

Participants were 377 quads of friends who participated in an online survey study ($N = 1{,}508$ individuals). Groups of four friends logged onto a Zoom meeting where they were provided with instructions for how to complete the surveys in such a way that they provided reports for each of their three friends (as observer reports) and themselves (as self-reports). They were given a survey link in the chat and participants kept their mics off to ensure that there was no discussion between participants while they completed the study. Participants completed target measures about their three friends first (randomized) and then completed the self-report versions of the survey questions afterward. Once all friends had completed the study, they were debriefed verbally as a group on Zoom. Participants were compensated with a $20 gift card.

The final sample was 1,508 people (78.0 % women, 20.4 % men, 1.2 % other, 0.4% missing) with an average age of 19.62 years old ($SD = 3.15$ years). Participants were mostly White (60.9 %) and Asian (16.0 %), followed by Black/African American (7.1 %), Multiracial (6.1 %), Hispanic/Latinx (5.6 %), and 4.4 % other races/ethnicities. Friends knew each other on average for a little over 3 years ($M = 40.63$ months, $SD = 47.90$ months).

We collected as many friend groups as we could, given available grant funding. However, in discussions about power in the context of social relations model analyses, round robin designs often provide greater statistical power, although the required sample size varies based on the particular effect being estimated (Kenny et al., 2006; Lashley & Kenny, 1998). For example, based on simulations, to estimate relatively modest amounts of perceiver (0.10) and target variance (0.30) would require 69 groups of four people at 80 % power, and we had 377 such groups. Estimating covariances with sufficient power requires larger sample sizes. Specifically, modest covariances between perceiver and target characteristics (0.05) and relationship variances (0.10) requires 324 and 136 groups of four people, respectively. Thus, our sample size was sufficient to estimate both the variances and covariances of interest in our study.

3.2. Measures

3.2.1. Attachment orientation

Attachment orientation was measured using the 9-item version of the Experiences in Close Relationships scale, a short-form scale that has been shown to adequately predict relationship and interpersonal functioning outcomes (Fraley et al., 2011). Attachment anxiety was measured with a 3-item subscale (e.g., "[John] is afraid that other people may abandon them"), and attachment avoidance was measured with a 6-item subscale (e.g., "[John] finds it easy to depend on others"; reverse-scored). Agreement with each item was assessed on a scale ranging from 1(*strongly disagree*) to 7(*strongly agree*), and items were averaged to create scores for anxiety ($\alpha_{friend\text{-}report} = 0.83$) and avoidance ($\alpha_{friend\text{-}report} = 0.78$). The same measure was administered to participants as a self-report (e.g., "I am afraid that other people may abandon me;" "I find it easy to depend on others"), and mean composites were created for anxiety ($\alpha_{self\text{-}report} = 0.88$) and avoidance ($\alpha_{self\text{-}report} = 0.83$).

3.2.2. Relationship quality

Relationship quality was assessed with a 16 items adapted social provisions version of the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985, 1992, 2009). This subsample measures companionship (1-item; e.g., "How much do you play around and have fun with Pedro?"), intimate disclosure (1-item; e.g., "How much do you share your secrets and private feelings with Taylor?"), instrumental aid (1-item; e.g., "How much does Gracie help you figure out or fix things?"), nurturance (1-item; e.g., "How much do you take care of Sabrina?"), respect (i.e., reassurance of worth; 1-item; e.g., "How much does Jenna treat you like you're admired and respected?"), reliable alliance (1-item; e.g., "How sure are you that your relationship with Daenerys will last no matter what?"), affection (1-item; e.g., "How much does Olivia really care about you?"), conflict/quarreling (3-item; e.g., "How much do you and Sydney argue with each other?"), antagonism (3-items; e.g., "How much do you and Addison get annoyed with each other's behavior?"), and satisfaction (3-item; e.g., "How satisfied are you with your relationship with Selena?").

3.3. Analytic strategy

We analyzed the round-robin data using the social relations model (SRM; Christensen et al., 2023; Kenny et al., 2006; Kenny & La Voie, 1984) with the TripleR package for R (Schönbrodt et al., 2012). The SRM allows us to partition variance in the interpersonal perception ratings into dispositional and relationship-specific factors (Kenny & La Voie, 1984). Specifically, the SRM decomposes the variance in a dyadic rating into four components: perceiver variance, target variance, relationship variance, and error. Occasional missing pairwise ratings (about 17 groups had one or two missing ratings out of the 16 possible ratings) were accounted for using the missing data algorithm provided by the TripleR package.

Multiple indicators per construct are required to distinguish relationship variance from error. For most of our relationship quality indicators, we used single items which prevent us from distinguishing between relationship variance and error. For univariate and bivariate models that include these measures, relationship and error variance is confounded. However, for three of the relationship quality indicators (conflict, antagonism, satisfaction), relationship and error variance could be separated. For these three variables (and attachment anxiety and avoidance), we used the latent variable approach in which scale items were combined into two parcels per scale and entered as indicators of each outcome. The choice to measure some characteristics with multiple versus single items reflected a tradeoff in designing this round robin interpersonal judgment study. Having multiple indicators for a construct is an important consideration in that it enables researchers to more appropriately separate relationship variance from other unrelated sources of variance (e.g., measurement error). However, using single-item indicators is often employed in these studies to alleviate participant burden (as they fill out the same measures multiple times, which may become monotonous and lead to inattentive responding). Worth noting, in the covariance analyses, a linear relationship between two single-indicator constructs still reflects the systematic parts of the association between true sources of variance (as the rest is thought to be random error). Nevertheless, measuring psychological characteristics

with multiple items yields more reliable measures (and an ability to separate relationship and error variance). We consider this tradeoff as a limitation of the current work that can be improved upon in future work.

The perceiver variance reflects the degree of assimilation, which is the extent to which the perceiver generally rates others on a construct similarly (e.g., if a person views others as generally avoidantly attached). The target variance captures the degree of consensus, which is the extent to which all perceivers agree upon the target's level of a construct (e.g., if people generally agree that one particular person is avoidantly attached). The relationship variance reflects the degree of uniqueness, which is the extent to which ratings vary depending upon the specific individuals within a dyad and their particular relational dynamics (e.g., if John rates Jane as especially high on attachment avoidance, over and above John's general tendency to perceive others as avoidant and Jane's general tendency to be perceived by others as avoidant).

We began our analyses by conducting univariate SRMs to provide a descriptive account of where the variance in the judgments of relationship quality, attachment anxiety, and attachment avoidance comes from (i.e., perceiver, target, relationship, and error variance).

Then, we ran bivariate extensions of SRMs to examine covariations between the SRM components of relationship quality and that of attachment orientations. For example, this approach allowed us to examine if those who are rated as more securely attached are also rated as being high quality friends (i.e., target-target covariance). Also, we tested whether people who tend to rate their friends as generally securely attached also tend to rate them as being high quality friends (i.e., perceiver-perceiver covariance).

Four other covariances were also estimated. First, the perceiver-target covariances represent the degree to which a person's general perceptions of friends' attachment (perceiver effect) is associated with how their friends evaluate the relationship quality of that person (target effect). Second, the target-perceiver covariances represent the degree to which people are judged as insecurely attached (target effect) is associated with their perceptions of friendship quality (perceiver effect). Third, intrapersonal relationship covariances represent the degree to which unique judgments of attachment orientation covary with judgments of relationship quality. And finally, interpersonal relationship covariances represent the degree to which unique judgments from one person covary with the judgments of another person.

4. Results

4.1. Univariate analyses

The results of the univariate analyses are presented in Table 1 (top portion for multi-indicator [i.e., item] scales, bottom portion for the single-indicator scales). As a reminder, having multiple indicators for the social relations analyses enabled us to distinguish variance attributable to a person's unique relationship with their friend from error. For the single-indicator scales, relationship and error variance are combined.

For attachment anxiety, the variance was split relatively equitably between sources, with the largest variance being attributable to the unique friendship relationship and error. The perceiver variance suggested that 20 % of the judgment arises from people tending to see all their friends as similarly anxiously attached. The target variance suggested that 19 % of the judgment arises from "consensus" or friends all tending to identify a particular friend as anxiously attached. The relationship variance suggested that about 30 % of the variance in the judgment arises from the shared relational context between two friends. For attachment avoidance, error variance was more substantial. Nevertheless, 24 % of the variance arose from the unique relationship context between two friends. The perceiver variance (9 %) was much smaller, suggesting that people don't tend to view all their friends as particularly avoidant. The target variance was comparable though, with 22 % of the judgment arising from consensus—that friends tended to agree on who was avoidant in a friend group.[1]

Table 1
Variance components from univariate social relations models.

Multiple indicator models				
	Perceiver	Target	Relationship	Error
Attachment anxiety	0.201	0.189	0.301	0.309
Attachment avoidance	0.090	0.216	0.241	0.453
Satisfaction	0.219	0.123	0.473	0.185
Conflict	0.180	0.105	0.440	0.275
Antagonism	0.208	0.070	0.348	0.373
Single indicator models				
	Perceiver	**Target**	**Relationship + Error**	
Companionship	0.192	0.125	0.683	
Instrumental aid	0.146	0.100	0.754	
Disclosure	0.169	0.091	0.740	
Affection	0.231	0.119	0.651	
Nurturance	0.320	0.082	0.598	
Respect	0.261	0.103	0.636	
Alliance	0.271	0.130	0.599	

Note. Multiple indicator models enable the disaggregation of relationship and error variance; single indicator models confound relationship and error variance.

For relationship indicators, a great deal of the variance across all variables was attributable to relationship variance. This intuitively makes sense—when judging how well a relationship is going, people tend to rely on the shared relationship context they have with that friend. Less variance was attributable to things like perceiver variance (i.e., perceiving high relationship quality with every friend) or target variance (i.e., being perceived as someone who always has high friendship quality). There were some deviations from this general pattern though. For example, perceiver variance was a little bit larger for nurturance, respect, and alliance. Specifically, these judgments tended to arise from people perceiving all their friends as nurturing, respectful, and providing alliance.[2]

4.2. Bivariate analyses

We next examined covariation in sources of variance in judgments of attachment orientation and relationship quality. Results from these analyses can be found in Fig. 1 (red markers correspond to anxiety; blue markers correspond to avoidance).

In the top portion of Fig. 1, perceiver-perceiver covariances represent linkages between how people generally perceive the quality of their friendships and how they generally perceive their friends' attachment orientations. The findings for attachment anxiety and avoidance were relatively similar. People who tended to think their friendship were satisfying, filled with respect, characterized by alliance, and affectionate tended to rate their friends as more secure. There were some covariances specific to anxiety or avoidance as well. People who generally thought their friendships were high in companionship judged their friends as less

[1] Replicating previous work (Yang et al., 2024), we found that self-other overlap was higher for attachment avoidance ($r = 0.37$, $p < 0.001$) compared to attachment anxiety ($r = 0.29$, $p < 0.001$). Assumed similarity biases were comparable for attachment anxiety ($r = 0.28$, $p < 0.001$) and avoidance ($r = 0.23$, $p < 0.001$).

[2] Because the variance always sums to 100%, the magnitudes of variance can be directly compared across models in a relatively straightforward way (e.g., the perceiver variance for nurturance [.320] is larger than the perceiver variance for instrumental aid [.146]). However, the degree to which a particular difference is *substantive* has not been examined or definitively settled in the literature, and estimates of these variance components differ across studies (Back & Kenny, 2010). This heterogeneity also makes it difficult to make firm statements about how much variance explained is "substantial" or "minimal.".

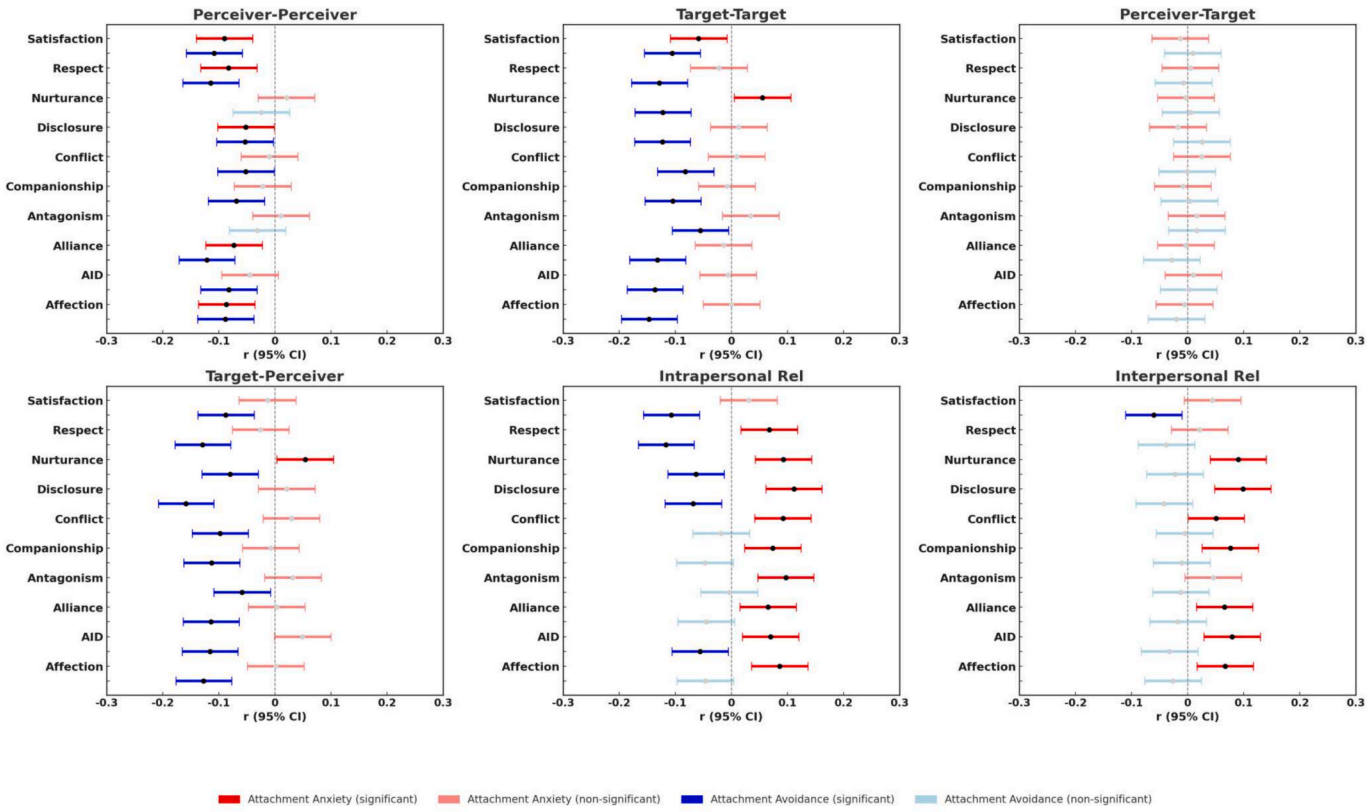

Fig. 1. Bivariate social relations models.

avoidant, but companionship was unrelated to attachment anxiety. The same pattern was true for instrumental aid (i.e., people who thought their friends provided aid judged them as less avoidant, but this didn't affect their judgments of anxiety). Judgments of relationship quality and attachment orientations were not significant for judgments of nurturance, conflict, and antagonism. The results for disclosure were consistent with those reported above; however, these effects were very close to zero.

The target-target covariances represent linkages between how people are seen by their friends with respect to relationship quality and attachment orientations (e.g., are people seen as good friends also judged as being more secure?). Avoidance showed the strongest associations with affection, aid, and alliance. In other words, participants judged friendships with avoidant people to be less affectionate and having lower levels of aid and alliance. Avoidance also had a similar and significant effect for all other quality indicators excluding a close to zero relationship with antagonism. Anxiety was only associated with satisfaction and nurturance, but these effects were close to zero, indicating that, for the most part, being judged as more anxious was not related to friends' perceptions of one's quality as a friend.

The perceiver-target covariances represent the degree to which a person's general perceptions of friends' attachment (perceiver effect) are associated with how their friends evaluate the relationship quality of that person (target effect). In other words, this tests whether people who perceive their friends as generally insecurely attached are judged as a low-quality friend by their friends. None of these covariances were significant, suggesting that biases in friend perceptions do not seem to affect how we are judged by our friends.

The target-perceiver covariances represent the degree to which people are judged as insecurely attached (target effect) is associated with their perceptions of friendship quality (perceiver effect). In other words, this tests if being perceived as securely attached is linked with thinking their friendships are of higher quality. For the most part, being seen as particularly anxious by friends is unrelated to judgments of friendship quality. Interestingly, most effects are seen for avoidance. Specifically, people who are judged as more avoidantly attached tended to rate their friendships as less satisfying, less respectful, less nurturing, having fewer disclosures, being more conflictual, having less companionship, having less alliance, less instrumental aid, and less affection. People judged as avoidantly attached also saw their friendship as more antagonistic, but this association was closer to zero. In sum, being perceived as avoidant does indeed guide judgments of how well friendships are going.

Intrapersonal relationship covariances represent the degree to which unique judgments of attachment orientation covary with judgments of relationship quality. In other words, this tests whether being uniquely rated as anxiously attached is associated with being uniquely rated as a satisfying friend (i.e., over and above perceiver and target effects). For attachment avoidance, being uniquely rated as avoidantly attached is associated with being uniquely rated as being part of a lower quality friendship (particularly satisfaction and respect). The four exceptions were that unique ratings of conflict, companionship, antagonism, alliance, and affection were unrelated to unique ratings of avoidance. Higher unique ratings of attachment anxiety were associated with unique ratings of relationship quality across all indicators, including ostensibly negative things (e.g., conflict). In other words, being uniquely rated as more anxious was associated with unique ratings of positive relationship quality and negative relationship quality. The positive associations with negative relationship indicators make sense on their face because anxiously attached people often experience tumultuous relationships (people rated as more anxious are also rated to be more conflictual and antagonistic). The positive associations with positive indicators are a little more perplexing (people rated as more anxious were also rated as being more satisfying and affectionate friends). Upon further reflection, it is possible that anxious people's relationship striving tendencies (Shaver et al., 2005) might lead their friends to rate them more positively because this is a sign of more deliberate investment in their relationships. Nevertheless, despite these positive

associations, anxious people's behavior might ultimately lead to occasional conflict and antagonism. Thus, people perceived as more anxious can be a mixed bag—the trait is accompanied by more relationship investment, but anxious people's negative tendencies might lead to more conflict as well.

Interpersonal relationship covariances represent the degree to which unique judgments from one person covary with the judgments of another person. In other words, this tests whether when one person uniquely rates another as anxiously attached, that other person rates them as being a particularly satisfying friend. For attachment avoidance, the vast majority of these covariances are not significantly different than zero. The one, small exception is that when people rate their friend as uniquely avoidant, that friend rates their friendship as less satisfying. Many of the associations with attachment anxiety are relatively small. However, most of the significant associations implicated positive relationship qualities. Specifically, being uniquely rated as anxiously attached was associated with that person rating their friendships as more nurturing, disclosing, having more companionship, more alliance, providing more aid, and having more affection. Consistent with our explanation for the intrapersonal covariances, it appears that anxiety judgments and relationship quality are uniquely associated *across* people. So, in addition to judging anxious people as being good friends, these anxious people reciprocate those feelings: people who are rated as anxious by friends tend to rate the people judging them more positively.

5. Discussion

The current study examined how judgments of attachment orientations and different relationship quality indicators were associated in a large group of friends. Judgments of relationship quality primarily stemmed from relationship variance—the unique experiences that two people share in the context of a broader friend group. An important contribution of this work was our ability to quantify how much relationship judgments are *person*-specific, aside from the shared relationship experiences between two people. Specifically, perceiver variance was often larger than target variance in relationship quality judgments. In other words, when evaluating the quality of a relationship (across many indicators), much of it had to do with the evaluator's dispositional tendency to rate all their friendships as similar in quality (i.e., perceiver variance) rather than the characteristics of the person they are friends with (i.e., target variance).

People who rated their friendships as particularly satisfying also rated those friends as more anxious and less avoidant. There was also some evidence for reciprocity, such that if a person was rated as particularly anxious, that friend felt particularly warm about their relationship. Our study is among the largest studies of friendship judgments to date, and one that took a comprehensive view of relationship quality as a multidimensional construct.

5.1. Friends and what we think of them

Friendships provide meaningful and important contributions for individual health and well-being (Kim & VanderWeele, 2018; Pezirkianidis et al., 2023). The quality of these friendships is shaped not only by their shared experiences, knowledge, and time spent together, but also how friends perceive each other. As previously discussed, perceptions of friends can arise from person-specific tendencies in how they perceive friends (i.e., perceiver variance), consensus about what that friend is like (i.e., target variance), and the unique interactions and history that two friends share with each other (i.e., relationship variances).

Perceiver variance was largest for judgments of nurturance, alliance, and respect. Thus, a large portion of judgments about these characteristics can be attributable to people seeing their friends in relatively homogenous ways (e.g., seeing all friends as nurturing or not). Attributions of warmth and camaraderie are more susceptible to individual perceptual biases. Target variance was generally the smallest across all indicators. However, target variance tended to be largest for dispositional characteristics. Specifically, judgments of anxiety and avoidance tended to be the most "agreed upon" characteristics such that friends tended to agree on who was anxious and avoidant in a friend group (more so than being able to identify who was most nurturing). Finally, relationship variance was often the largest component underlying judgments of relationship quality. Perhaps this is not surprising, particularly for judgments of things like aid, disclosure, and companionship. These characteristics necessarily involve a reciprocity between two people. Thus, when people are evaluating friends on these indicators, they are likely drawing on their shared history and interactions they have had with each other.

Some relationship quality indicators more reliably reflect the unique relationship between two people. This pattern suggests that some indicators might tap into dynamics within a relationship more directly than other indicators. In other words, they better capture people's tendency to view everyone positively (perceiver variance) or any individuals in friend groups who might drive judgments of relationship quality regardless of their pairing with other people (target variance). The larger relative size of perceiver variance to target variance also suggests that a lot of why people rate friendships the way they do is primarily "in their head," and separate from what their friend is actually like (or at least what everyone agrees a friend is like, known as target variance). In the current study, we thought that the sources of these judgments about relationship quality might also covary with judgments of friends' attachment orientations.

5.2. Judgments of attachment orientation and how they covary with relationship quality

Adult attachment orientations are associated with several indicators of relationship quality, primarily when assessed with self-reports. For example, attachment anxiety is associated with more relationship conflict, and attachment avoidance—although occasionally associated with conflict—is more reliably associated with less relationship satisfaction (Li & Chan, 2012). Many of these associations are tied to insecure adults' thoughts and behaviors with respect to close relationships. Specifically, anxious individuals seek closeness and fear abandonment, both of which enhance emotional responses and sensitivity to abandonment and rejection, making conflict more likely (Brassard et al., 2009; Feeney & Fitzgerald, 2019). Avoidant individuals report discomfort with emotional intimacy, preferring emotional suppression and interpersonal distance, which likely translates to poorer quality relationships (Li & Chan, 2012). Although these associations make sense when assessed with self-reports, we extended this literature by examining how judgments of relationship quality covary with judgments of attachment orientation. Are some indicators of relationship quality more closely tied to whether we think *friends* are anxiously or avoidantly attached?

To answer this question, we began by examining covariation between the sources of judgment of attachment orientation and relationship quality. Perceiver-perceiver covariances showed that those who reported more satisfaction, respect, alliance, and affection in their relationship were also more likely to perceive their friends as being securely attached. These patterns suggest that people who tend to rate all their relationships as high quality also tend to rate all their friends as more securely attached. Perceptions of companionship and aid were correlated with seeing friends as less avoidant, though this was not true for anxiety. Target-target covariances were much more unequivocal. Across all relationship indicators, friends that people reported having great relationships with were rated as less avoidant across the board (e.g. if Brad is seen as avoidant, he is also seen as being less affectionate). These covariances were largely negligible for attachment anxiety. It could be the case that people could partially be deriving judgments about their friendships—how warm a friend is, how supportive a friend is—from judgments about their friends' interpersonal tendencies and behavior (e.g., avoidant people's tendencies to avoid emotional

intimacy and relationships).

Target-perceiver covariances showed that being judged as avoidantly attached was associated with seeing friendships in more negative ways (e.g., if Brad is perceived as being avoidantly attached, he will report being more disclosing with his friends [among other indicators]). There might be many explanations for this covariance. For example, being perceived as a warm and secure person by everyone in a friend group—and treated positively as a result—might motivate people to engage in more prosocial behavior that is associated with enhanced relationships. Likewise, acting in a homogeneously supportive and positive way toward friends likely affects other people's judgments of them—perceiving them as securely attached given how high quality of a friend they are. The fact that perceiver-target covariances were near-zero provides some specificity on how these perceptions are related. Specifically, this means that thinking and behaving as though friends are securely or insecurely attached doesn't really affect people's perception if you are a good friend. One might think that perceiving and potentially treating friends as though they are insecurely attached might "poison the well," such that friends might in turn see them as a bad friend. But this does not appear to be the case.

Intra- and interpersonal relationship covariances focus more on perceptions *within a dyad* (within the broader friend group) that are independent of perceiver and target variance. The intrapersonal covariances were less surprising. People uniquely rated as avoidantly attached were also uniquely related as lower quality friends, across indicators. Across most indicators, being uniquely rated as anxiously attached was associated with being uniquely rated as a higher quality friend. Again, it could be the case that anxious individuals' relationship striving behaviors in the context of friendships, driven by a concern about abandonment, might lead others to consider them invested in the relationship and more sensitive to their needs (resulting in higher quality ratings). But, along with this heavy investment comes plenty of negative relationship behaviors, too. Being rated as particularly anxious is also associated with being rated as more antagonistic and conflictual. So, although the investment of anxious people might be associated with positive evaluations of them as friends (which may be surprising to readers), it is also associated with relationship problems as well (which may be less surprising to raters).

This dynamic is made more nuanced by what is seen in the interpersonal relationship covariances. These covariances reflect a "reciprocity" such that if one person is uniquely rated as anxiously attached, that person rates the judge as being a higher quality friend (e.g., Brad thinks Amy is anxiously attached, and Amy thinks Brad is a higher quality friend). These significant covariances might highlight an acknowledgment between two friends—that one person thinks and perhaps even acknowledges that their friend is heavily invested in the relationship (if even a little preoccupied), and that friend sees that person in a more positive light. As such, both intrapersonal and interpersonal findings show anxiety judgements and relationship quality judgements are reciprocated and related across individuals. The consequences of these dynamics, such as whether they affect friendship longevity, can be the subject of future research.

5.3. Limitations and future directions

The current study had many strengths. It is among the largest study of friendship perceptions conducted to date. Employing multiple indicators of relationship quality revealed that there are differences in how different relationship components might guide judgments of the psychological characteristics of our friends. Employing sophisticated bivariate SRMs advances previous research that has traditionally relied on examining a limited number of predictions (e.g., Truth and Bias Modeling; LaBuda & Gere, 2023; West & Kenny, 2011) or relational partners (i.e., traditional dyadic analyses). Nevertheless, there are limitations that must be acknowledged.

First, the data were comprised of cross-sectional friend reports of attachment orientations and relationship quality. This introduces a few limitations that affect our interpretations. For example, the covariances we estimated are largely agnostic to the directionality of these effects. In other words, it is unclear if people are using judgments of their friends' characteristics (i.e., attachment orientation) as a guide for how well their friendships are going. Likewise, if a friendship is going poorly, it is possible that people are rating their friends in a less positive light because of this, as seen in the way observer reports of romantic partners' personalities change (Lenhausen et al., 2021; Oltmanns et al., 2020; Watson & Humrichouse, 2006). Longitudinal data would enhance the current study in many respects. Having follow-ups would enable us to examine some degree of directionality, how stable these judgments are, and whether these perceptions predict important individual and friendship outcomes (i.e., if people remain friends). Further, our data were comprised primarily of younger adults from one particular geographic region. Future research can examine the generalizability of our findings, including potential moderators of these interpersonal judgments.

Second, we relied entirely on Likert-type scales to assess attachment orientations and relationship quality. Relying entirely on one response format leaves open the possibility that response styles and shared method biases could have affected our results or inflated our covariance estimates (Campbell & Fiske, 1959; Orth, 2013). Our study partially mitigates this concern by integrating both self- and observer-reports of attachment orientations and, indeed, examining sources of variance in these judgments and reporters was one of the major goals of the study. The ideal design would blend additional methods with perceptual judgments. In one illustrative example, Ackerman and colleagues (2013) linked behavioral observations in adolescence (using videotaped interactions) to marital outcomes in adulthood (using both questionnaires and videotaped interactions) using a SRM framework. Future research should employ multiple methods to triangulate relationship quality and attachment orientations.

Finally, the judgements in our study took place in a relatively decontextualized setting that might not resemble how people think about and judge their friends. As previously discussed, the interactions and conversations held within friendships may inform the way others view both the quality of their friendship and their friends' psychological characteristics. However, people may be unlikely to explicitly talk about and disclose their attachment orientations and attachment-related concerns, although some may. Rather, it is more likely the case that people are making inferences about their friends' attachment orientations based on their interpersonal behavior and conversations about their relationships with others. Future research can determine whether these judgments are more specific to attachment orientations or might reflect judgments about broader characteristics (e.g., moral judgments). Related, our study also took place over Zoom—another context that might not resemble a typical friend meet-up. Doing so enabled us to collect a wider variety of friend groups and a larger sample, but we were unable to fully ensure that participants were not communicating for its duration. Despite this, we took measures to prevent interaction as much as possible including turning off participant's mic and monitoring cameras if they were left on. Future research can observe more genuine or spontaneous conversations between friends or ask them to complete an activity together to study judgements in greater context. Doing so might also help researchers get closer to establishing the directionality of these judgments (e.g., whether relationship quality guides attachment judgments or attachment-related judgments guide how people evaluate their relationships).

5.4. Conclusion

The current study examined covariation in judgments of relationship quality and attachment orientations. SRM components varied across relationship quality indicators, and this had implications for their associations with attachment orientations. The current study highlights

potential avenues for targeting relationship outcomes based on particular facets of relationship quality. Future research should examine the antecedents of these interpersonal judgments and the implications they have for people's friendships.

Funding: This work was supported by funding from the John Templeton Foundation's Science of Honesty.

Data, syntax, and materials can be found at: https://osf.io/ue8ta/.

This study was not pre-registered.

The authors would like to thank Hyewon Yang and Aislinn Low for their comments on a previous draft of this manuscript.

CRediT authorship contribution statement

Zoe Dunnum: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Conceptualization. **William J. Chopik:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jrp.2025.104637.

References

Ackerman, R. A., Kashy, D. A., Donnellan, M. B., Neppl, T., Lorenz, F. O., & Conger, R. D. (2013). The interpersonal legacy of a positive family climate in adolescence. *Psychological Science, 24*, 243–250.

Alaei, R., Rule, N. O., & MacDonald, G. (2022). Individuals' favorite songs' lyrics reflect their attachment style. *Personal Relationships, 29*, 778–794.

Alsarrani, A., Hunter, R. F., Dunne, L., & Garcia, L. (2022). Association between friendship quality and subjective wellbeing among adolescents: A systematic review. *BMC Public Health, 22*, 2420.

An, D., Jager, J., Putnick, D. L., & Bornstein, M. H. (2023). Parenting stress and attachment insecurity in young adulthood: A social relations model. *Journal of Marriage and the Family, 85*, 556–579.

Arriaga, X. B., Eller, J., Kumashiro, M., Rholes, W. S., & Simpson, J. A. (2021). Self-efficacy and declines over time in attachment anxiety during the transition to parenthood. *Social Psychological and Personality Science, 12*, 658–666.

Arriaga, X. B., & Kumashiro, M. (2019). Walking a security tightrope: relationship-induced changes in attachment security. *Current Opinion in Psychology, 25*, 121–126.

Arriaga, X. B., Kumashiro, M., Finkel, E. J., VanderDrift, L. E., & Luchies, L. B. (2014). Filling the void: bolstering attachment security in committed relationships. *Social Psychological and Personality Science, 5*, 398–406.

Arriaga, X. B., Kumashiro, M., Simpson, J. A., & Overall, N. C. (2018). Revising working models across time: relationship situations that enhance attachment security. *Personality and Social Psychology Review, 22*, 71–96.

Back, M. D., & Kenny, D. A. (2010). The social relations model: how to understand dyadic processes. *Social and Personality Psychology Compass, 4*, 855–870.

Banai, E., Weller, A., & Mikulincer, M. (1998). Inter-judge agreement in evaluation of adult attachment style: The impact of acquaintanceship. *The British Journal of Social Psychology, 37*(Pt 1), 95–109.

Barelds, D. P., & Dijkstra, P. (2009). Positive illusions about a partner's physical attractiveness and relationship quality. *Personal Relationships, 16*, 263–283.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226–244.

Biesanz, J. C. (2010). The social accuracy model of interpersonal perception: Assessing individual differences in perceptive and expressive accuracy. *Multivariate Behavioral Research, 45*, 853–885.

Binder, J. F., Roberts, S. G., & Sutcliffe, A. G. (2012). Closeness, loneliness, support: Core ties and significant ties in personal communities. *Social Networks, 34*, 206–214.

Birditt, K. S., Miller, L. M., Fingerman, K. L., & Lefkowitz, E. S. (2009). Tensions in the parent and adult child relationship: Links to solidarity and ambivalence. *Psychology and Aging, 24*, 287–295.

Bradford, S. A., Feeney, J. A., & Campbell, L. (2002). Links between attachment orientations and dispositional and diary–based measures of disclosure in dating couples: A study of actor and partner effects. *Personal Relationships, 9*, 491–506.

Brassard, A., Lussier, Y., & Shaver, P. R. (2009). Attachment, perceived conflict, and couple satisfaction: Test of a mediational dyadic model. *Family Relations, 58*, 634–646.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson, & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). Guilford Press.

Buist, K. L., Deković, M., Meeus, W., & van Aken, M. A. G. (2002). Developmental patterns in adolescent attachment to mother, father and sibling [journal article]. *Journal of Youth and Adolescence, 31*, 167–176.

Buist, K. L., Deković, M., Meeus, W. H., & van Aken, M. A. G. (2004). Attachment in adolescence: A social relations model analysis. *Journal of Adolescent Research, 19*, 826–850.

Cable, N., Bartley, M., Chandola, T., & Sacker, A. (2013). Friends are equally important to men and women, but family matters more for men's well-being. *Journal of Epidemiology and Community Health, 67*, 166–171.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81–105.

Campbell, L., & Marshall, T. (2011). Anxious attachment and relationship processes: An interactionist perspective. *Journal of Personality, 79*, 1219–1250.

Candel, O.-S., & Turliuc, M. N. (2019). Insecure attachment and relationship satisfaction: A meta-analysis of actor and partner associations. *Personality and Individual Differences, 147*, 190–199.

Chopik, W. J. (2017). Associations among relational values, support, health, and well-being across the adult lifespan. *Personal Relationships, 24*, 408–422.

Chopik, W. J., & Edelstein, R. S. (2015). Preliminary validation of a romantic attachment orientation measure from the California Adult Q-Sort. *Attachment and Human Development, 17*, 570–585.

Chopik, W. J., Edelstein, R. S., & Fraley, R. C. (2013). From the cradle to the grave: Age differences in attachment from early adulthood to old age. *Journal of Personality, 81*, 171–183.

Chopik, W. J., Edelstein, R. S., van Anders, S. M., Wardecker, B. M., Shipman, E. L., & Samples-Steele, C. R. (2014). Too close for comfort? Adult attachment and cuddling in romantic and parent–child relationships. *Personality and Individual Differences, 69*, 212–216.

Christakis, N. A., & Fowler, J. H. (2008). The collective dynamics of smoking in a large social network. *The New England Journal of Medicine, 358*, 2249–2258.

Christensen, P. N., Kashy, D. A., & Leahy, K. E. (2023). Using the social relations model to understand interpersonal perception and behavior. In H. Cooper, M. N. Coutanche, L. M. McMullen, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology: Data analysis and research publication* (pp. 451–464). American Psychological Association.

Collins, N. L. (1996). Working models of attachment: Implications for explanation, emotion, and behavior. *Journal of Personality and Social Psychology, 71*, 810–832.

Connelly, B. S., & Ones, D. S. (2010). An other perspective on personality: Meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin, 136*, 1092–1122.

Cook, W. L. (2000). Understanding attachment security in family context. *Journal of Personality and Social Psychology, 78*, 285–294.

Costello, M. A., Allen, J. P., Womack, S. R., Loeb, E. L., Stern, J. A., & Pettit, C. (2023). Characterizing emotional support development: From adolescent best friendships to young adult romantic relationships. *Journal of Research on Adolescence, 33*, 389–403.

Cronbach, L. J. (1955). Processes affecting scores on" understanding of others" and" assumed similarity.". *Psychological Bulletin, 52*, 177.

De Meulenaere, J., Stas, L., Antrop, I., Buysse, A., & Lemmens, G. M. (2022). Adolescent attachment: A social relations perspective on family relations. *Family Process, 61*, 764–778.

DeWall, C. N., Lambert, N. M., Slotter, E. B., Pond, R. S., Jr., Deckman, T., Finkel, E. J., Luchies, L. B., & Fincham, F. D. (2011). So far away from one's partner, yet so close to romantic alternatives: Avoidant attachment, interest in alternatives, and infidelity. *Journal of Personality and Social Psychology, 101*, 1302–1316.

Dryburgh, N. S., Ponath, E., Bukowski, W. M., & Dirks, M. A. (2022). Associations between interpersonal behavior and friendship quality in childhood and adolescence: A meta-analysis. *Child Development, 93*, e332–e347.

Dunlop, W. L., Karan, A., Wilkinson, D., & Harake, N. (2020). Love in the first degree: Individual differences in first-person pronoun use and adult romantic attachment styles. *Social Psychological and Personality Science, 11*, 254–265.

Farrell, A. K., Simpson, J. A., Overall, N. C., & Shallcross, S. L. (2016). Buffering the responses of avoidantly attached romantic partners in strain test situations. *Journal of Family Psychology, 30*, 580.

Feeney, B. C., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: An attachment theoretical perspective. *Journal of Personality and Social Psychology, 80*, 972–994.

Feeney, J., & Fitzgerald, J. (2019). Attachment, conflict and relationship quality: Laboratory-based and clinical insights. *Current Opinion in Psychology, 25*, 127–131.

Fehr, B., & Harasymchuk, C. (2019). Friendships: Close relationships throughout the life course. In D. Schoebi, & B. Campos (Eds.), *New directions in the psychology of close relationships* (pp. 62–79). Routledge.

Fletcher, G. J. (2015). Accuracy and bias of judgments in romantic relationships. *Current Directions in Psychological Science, 24*, 292–297.

Floyd, K. (2002). Human affection exchange: V. Attributes of the highly affectionate. *Communication Quarterly, 50*, 135–152.

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships—relationship structures questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment, 23*, 615–625.

Fraley, R. C., Roisman, G. I., Booth-LaForce, C., Owen, M. T., & Holland, A. S. (2013). Interpersonal and genetic origins of adult attachment styles: A longitudinal study from infancy to early adulthood. *Journal of Personality and Social Psychology, 104*, 817–838.
Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology, 4*, 132–154.
Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*, 350.
Frei, J. R., & Shaver, P. R. (2002). Respect in close relationships: Prototype definition, self-report assessment, and initial correlates. *Personal Relationships, 9*, 121–139.
Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*, 1016.
Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development, 63*, 103–115.
Furman, W., & Buhrmester, D. (2009). The network of relationships inventory: behavioral systems version. *International Journal of Behavioral Development, 33*, 470–478.
Furman, W., Simon, V., Shaffer, L., & Bouchey, H. A. (2002). Adolescents' working models and styles for relationships with parents, friends, and romantic partners. *Child Development, 73*, 241–255.
Furman, W., Stephenson, J. C., & Rhoades, G. K. (2014). Positive interactions and avoidant and anxious representations in relationships with parents, friends, and romantic partners. *Journal of Research on Adolescence, 24*, 615–629.
Gillath, O., Bahns, A. J., Ge, F., & Crandall, C. S. (2012). Shoes as a source of first impressions. *Journal of Research in Personality, 46*, 423–430.
Green, L. R., Richardson, D. S., Lago, T., & Schatten-Jones, E. C. (2001). Network correlates of social and emotional loneliness in young and older adults. *Personality and Social Psychology Bulletin, 27*, 281–288.
Hadden, B. W., Smith, C. V., & Webster, G. D. (2014). Relationship duration moderates associations between attachment and relationship quality: Meta-analytic support for the temporal adult romantic attachment model. *Personality and Social Psychology Review, 18*, 42–58.
Hall, J. A., Holmstrom, A. J., Pennington, N., Perrault, E. K., & Totzkay, D. (2025). Quality conversation can increase daily well-being. *Communication Research, 52*, 291–315.
Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511–524.
Human, L. J., & Biesanz, J. C. (2011). Through the looking glass clearly: Accuracy and assumed similarity in well-adjusted individuals' first impressions. *Journal of Personality and Social Psychology, 100*, 349–364.
Jayamaha, S. D., Girme, Y. U., & Overall, N. C. (2017). When attachment anxiety impedes support provision: The role of feeling unvalued and unappreciated. *Journal of Family Psychology, 31*, 181–191.
Jenkins-Guarnieri, M. A., Wright, S. L., & Hudiburgh, L. M. (2012). The relationships among attachment style, personality traits, interpersonal competency, and facebook use. *Journal of Applied Developmental Psychology, 33*, 294–301.
Kee, S., Jensen, J., Fish, M., & Fitzke, K. (2025). Does my friend like my romantic partner? Links among relationship work with partners and friends and physiological implications. *Journal of Marital and Family Therapy, 51*, Article e70021.
Kenny, D. A., Albright, L., Malloy, T. E., & Kashy, D. A. (1994). Consensus in interpersonal perception: Acquaintance and the big five. *Psychological Bulletin, 116*, 245–258.
Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. Guilford Press.
Kenny, D. A., & La Voie, L. (1984). The social relations model. In L. Berkowitz (Ed.), *Advances in Experimental Psychology* (Vol. 18, pp. 141–182). Academic Press. https://doi.org/10.1016/S0065-2601(08)60144-6.
Khan, F., Chong, J. Y., Theisen, J. C., Fraley, R. C., Young, J. F., & Hankin, B. L. (2020). Development and change in attachment: A multiwave assessment of attachment and its correlates across childhood and adolescence. *Journal of Personality and Social Psychology, 118*, 1188–1206.
Kim, E., Chopik, W., Chen, Y., Wilkinson, R., & VanderWeele, T. (2023). United we thrive: Friendship and subsequent physical, behavioural and psychosocial health in older adults (an outcome-wide longitudinal approach). *Epidemiology and Psychiatric Sciences, 32*, e65.
Kim, E. S., & VanderWeele, T. J. (2018). Mediators of the association between religious service attendance and mortality. *American Journal of Epidemiology, 188*, 96–101.
Kochendorfer, L. B., & Kerns, K. A. (2020). A meta-analysis of friendship qualities and romantic relationship outcomes in adolescence. *Journal of Research on Adolescence, 30*, 4–25.
Kratz, A. L., Davis, M. C., & Zautra, A. J. (2012). Attachment predicts daily catastrophizing and social coping in women with pain. *Health Psychology, 31*, 278.
LaBuda, J. E., & Gere, J. (2023). A meta-analytic review of accuracy and bias in romantic partner perceptions. *Psychological Bulletin, 149*, 580–610.
Lackenbauer, S. D., Campbell, L., Rubin, H., Fletcher, G. J., & Troister, T. (2010). The unique and combined benefits of accuracy and positive bias in relationships. *Personal Relationships, 17*, 475–493.
Lashley, B. R., & Kenny, D. A. (1998). Power estimation in social relations analyses. *Psychological Methods, 3*, 328–338.
Lazerus, T., Ingbretsen, Z. A., Stolier, R. M., Freeman, J. B., & Cikara, M. (2016). Positivity bias in judging ingroup members' emotional expressions. *Emotion, 16*, 1117.
Lenhausen, M. R., van Scheppingen, M. A., & Bleidorn, W. (2021). Self–other agreement in personality development in romantic couples. *European Journal of Personality, 35*, 797–813.
Li, T., & Chan, D. K. S. (2012). How anxious and avoidant attachment affect romantic relationship quality differently: A meta-analytic review. *European Journal of Social Psychology, 42*, 406–419.
Lu, P., Oh, J., Leahy, K. E., & Chopik, W. J. (2021). Friendship importance around the world: Links to cultural factors, health, and well-being. *Frontiers in Psychology, 11*, Article 570839.
Mattson, R. E., Rogge, R. D., Johnson, M. D., Davidson, E. K., & Fincham, F. D. (2013). The positive and negative semantic dimensions of relationship satisfaction. *Personal Relationships, 20*, 328–355.
Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology, 83*, 881–895.
Mikulincer, M., & Shaver, P. R. (2017). *Attachment in adulthood: Structure, dynamics, and change*. The Guilford Press.
Mikulincer, M., & Shaver, P. R. (2019). Attachment orientations and emotion regulation. *Current Opinion in Psychology, 25*, 6–10.
Mizrahi, M., Lemay, E. P., Jr, Maniaci, M. R., & Reis, H. T. (2022). Seeds of love: Positivity bias mediates between passionate love and prorelationship behavior in romantic couples. *Journal of Social and Personal Relationships, 39*, 2207–2227.
Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*, 231–259.
Oldmeadow, J. A., Quinn, S., & Kowert, R. (2013). Attachment style, social skills, and Facebook use amongst adults. *Computers in Human Behavior, 29*, 1142–1149.
Oltmanns, J. R., Jackson, J. J., & Oltmanns, T. F. (2020). Personality change: Longitudinal self-other agreement and convergence with retrospective-reports. *Journal of Personality and Social Psychology, 118*, 1065–1079.
Orth, U. (2013). How large are actor and partner effects of personality on relationship satisfaction? the importance of controlling for shared method variance. *Personality and Social Psychology Bulletin, 39*, 1359–1372.
Overall, N. C., Girme, Y. U., Lemay, E. P., Jr, & Hammond, M. D. (2014). Attachment anxiety and reactions to relationship threat: The benefits and costs of inducing guilt in romantic partners. *Journal of Personality and Social Psychology, 106*, 235–256.
Overall, N. C., Simpson, J. A., & Struthers, H. (2013). Buffering attachment-related avoidance: Softening emotional and behavioral defenses during conflict discussions. *Journal of Personality and Social Psychology, 104*, 854–871.
Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 224–239). The Guilford Press.
Pezirkianidis, C., Galanaki, E., Raftopoulou, G., Moraitou, D., & Stalikas, A. (2023). Adult friendship and wellbeing: A systematic review with practical implications. *Frontiers in Psychology, 14*, Article 1059057.
Purol, M. F., & Chopik, W. J. (2022). Partner accuracy in humor perception and associations with relationship satisfaction. *Personality and Social Psychology Bulletin, 01461672221080950*.
Rholes, W. S., Simpson, J. A., Blakely, B. S., Lanigan, L., & Allen, E. A. (1997). Adult attachment styles, the desire to have children, and working models of parenthood. *Journal of Personality, 65*, 357–385.
Rook, K. S. (2015). Social networks in later life: Weighing positive and negative effects on health and well-being. *Current Directions in Psychological Science, 24*, 45–51.
Saferstein, J. A., Neimeyer, G. J., & Hagans, C. L. (2005). Attachment as a predictor of friendship qualities in college youth. *Social Behavior and Personality: An International Journal, 33*, 767–776.
Schönbrodt, F. D., Back, M. D., & Schmukle, S. C. (2012). TripleR: An R package for social relations analyses based on round-robin designs. *Behavior Research Methods, 44*, 455–470.
Shaver, P. R., & Mikulincer, M. (2021). Defining attachment relationships and attachment security from a personality-social perspective on adult attachment. In R. A. Thompson, J. A. Simpson, & L. J. Berlin (Eds.), *Attachment: The fundamental questions* (pp. 39–45). The Guilford Press.
Shaver, P. R., Mikulincer, M., & Cassidy, J. (2019). Attachment, caregiving in couple relationships, and prosocial behavior in the wider world. *Current Opinion in Psychology, 25*, 16–20.
Shaver, P. R., Schachner, D. A., & Mikulincer, M. (2005). Attachment style, excessive reassurance seeking, relationship processes, and depression. *Personality and Social Psychology Bulletin, 31*, 343–359.
Simpson, J. A., & Overall, N. C. (2014). Partner buffering of attachment insecurity. *Current Directions in Psychological Science, 23*, 54–59.
Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology, 62*, 434–446.
Simpson, J. A., Rholes, W. S., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology, 71*, 899.
Sprecher, S. (2021). Closeness and other affiliative outcomes generated from the Fast Friends procedure: A comparison with a small-talk task and unstructured self-disclosure and the moderating role of mode of communication. *Journal of Social and Personal Relationships*, Article 0265407521996055.
Thanakwang, K., & Soonthorndhada, K. (2011). Mechanisms by which social support networks influence healthy aging among Thai community-dwelling elderly. *Journal of Aging and Health, 23*, 1352–1378.
Truong, M., Fast, N. J., & Kim, J. (2020). It's not what you say, it's how you say it: Conversational flow as a predictor of networking success. *Organizational Behavior and Human Decision Processes, 158*, 1–10.
Tu, E., Maxwell, J. A., Kim, J. J., Peragine, D., Impett, E. A., & Muise, A. (2022). Is my attachment style showing? Perceptions of a date's attachment anxiety and avoidance

and dating interest during a speed-dating event. *Journal of Research in Personality, 100*, Article 104269.
Tucker, J. S., & Anders, S. L. (1998). Adult attachment style and nonverbal closeness in dating couples. *Journal of Nonverbal Behavior, 22*, 109–124.
Vazire, S. (2010). Who knows what about a person? the self–other knowledge asymmetry (SOKA) model. *Journal of Personality and Social Psychology, 98*, 281–300.
Vazire, S., & Carlson, E. N. (2011). Others sometimes know us better than we know ourselves. *Current Directions in Psychological Science, 20*, 104–108.
Veiel, H. O., & Baumann, U. (1992). The many meanings of social support. In H. O. Veiel & U. Baumann (Eds.), *The meaning and measurement of social support* (pp. 1-9).
Waldeck, D., Berman-Roberts, E., Smyth, C., Riva, P., Adie, J., Holliman, A. J., & Tyndall, I. (2024). Unraveling perceived ostracism: The role of antagonistic traits and attachment orientation. *The Journal of Psychology*, 1–19.
Watson, D., & Humrichouse, J. (2006). Personality development in emerging adulthood: Integrating evidence from self-ratings and spouse ratings. *Journal of Personality and Social Psychology, 91*, 959–974.
West, T. V., & Kenny, D. A. (2011). The truth and bias model of judgment. *Psychological Review, 118*, 357.
Yang, H., Weidmann, R., Purol, M. F., Ackerman, R. A., Lucas, R. E., & Chopik, W. J. (2024). Ready (for love) or not? self and other perceptions of commitment readiness and associations with attachment orientations. *Journal of Social and Personal Relationships*.
Zhao, W., Young, R. E., Breslow, L., Michel, N. M., Flett, G. L., & Goldberg, J. O. (2015). Attachment style, relationship factors, and mental health stigma among adolescents. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement, 47*, 263–271.