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## Attachment styles, social behavior and personality functioning in romantic relationships

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### Abstract

Personality disorders are commonly associated with romantic relationship disturbance. However, research has seldom evaluated who people with high PD severity partner with, and what explains the link between PD severity and romantic relationship disturbance. First, we examined the degree to which people match with partners with similar levels of personality and interpersonal problems. Second, we evaluated whether the relationship between PD severity and romantic relationship satisfaction would be explained by attachment styles and demand/withdraw behavior. Couples selected for high PD severity ( $n = 130$ ; 260 participants) engaged in a conflict task, were assessed for PDs and attachment using semi-structured interviews and self-reported their relationship satisfaction. Dyad members were not similar in terms of PD severity but evidenced a small degree of similarity on specific attachment styles and were moderately similar on attachment insecurity and interpersonal problems. PD severity also moderated the degree to which one person's attachment anxiety was associated with their partner's attachment avoidance. In addition, using a dyadic analytic approach, we found attachment anxiety and actor and partner withdrawal explained some of the relationship between PD severity and relationship satisfaction. Our results indicate people often have romantic partners with similar levels of attachment disturbance and interpersonal problems and that attachment styles and related behavior explains some of the association between PD severity and relationship satisfaction.

### Keywords

romantic partners; dyadic data analysis; demand/withdrawal; attachment anxiety; personality disorders

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Interpersonal difficulties are both a hallmark and an intractable feature of personality disorders (PDs; Gunderson et al., 2011; Hopwood, Wright, Ansell, & Pincus, 2013). Healthy romantic relationships carry with them benefits that range from decreased stress reactivity to improved physical health (Coan, Kasle, Jackson, Schaefer, & Davidson, 2013; Kiecolt-

Glaser & Newton, 2001). However, people with PDs struggle to form and sustain close relationships (Whisman, Tolejko, & Chatav, 2007; Zimmerman & Coryell, 1989). Romantic relationships of those with PDs are often conflictual, violent, and unstable (e.g., South, 2014), and they represent a domain characterized by stress rather than support and health. Better understanding is needed of the mechanisms involved in poor romantic relationships among those with PDs.

Several theories of personality disorders describe a primary role for disturbed attachment or related interpersonal concepts (Benjamin, 1974; Fonagy & Bateman, 2006; Gunderson, 1996; Hopwood et al., 2013; Levy et al., 2006). According to attachment theory, people develop internal working models of self and others based on experiences with close others (Bowlby, 1980). Individual differences in these internal working models form the basis for different attachment styles, which are associated with distinct patterns of thought, perception and behavior in close relationships (Campbell, Simpson, Boldry, & Kashy, 2005). Stressful situations like conflict in romantic relationships are likely to activate the attachment system and behavior patterns consistent with individual differences in attachment styles. A vast literature has found individuals with elevated attachment insecurity experience less relationship satisfaction (for review, see Hadden, Smith, & Webster, 2014). Given the high rates of attachment insecurity among individuals with elevated PD symptoms, it is likely that insecure attachment styles and associated behaviors play some role in the link between PD and relationship difficulties.

Dyadic communication patterns may also be important to understanding problems in romantic relationships among people with elevated PD symptoms. Though developed independent of attachment theory, theorists have linked demand and withdrawal behaviors with insecure attachment (Beck, Pietromonaco, DeBuse, Powers, & Sayer, 2013; Levine & Heller, 2010; Millwood & Waltz, 2008). The demand/withdrawal pattern of interaction has been shown to negatively affect relationship satisfaction (Schrodt, Witt, & Shimkowski, 2014). Demands may be expressed as critical remarks, blaming, and pressuring the other for changes. Withdrawal may occur when one person disengages emotionally, avoids the topic, denies the problem, or stonewalls (Christensen, 1988). Demands are thought to be made by the person seeking greater intimacy, which is a typical feature of attachment anxiety. Withdrawal is a bid for greater interpersonal distance, which may be made to decrease intimacy, to avoid conflict, to deal with feeling overwhelmed by one's partner, or to protest lack of connection (Allison, Bartholomew, Mayseless, & Dutton, 2007; Gottman & Silver, 1999). Theorists have thought of the demand/withdraw dynamic as emanating from differences in desired intimacy within couples (Millwood & Waltz, 2008), which is present when one or both partners has significant attachment insecurity (Doumas, Pearson, Elgin, & McKinley, 2008). However, the link between attachment styles and demand/withdraw behavior has not been formally examined within a dyadic framework. Further, given the association between PD severity and elevated attachment anxiety and avoidance, people with elevated PD severity may engage in more demand or withdrawal behaviors which lead to disturbed relationships.

Though research has established people with PDs have elevated rates of attachment insecurity and interpersonal difficulties, less attention has been paid to the relationship

partners of people with PDs. Some research suggests people with PDs pair with partners with elevated PD symptoms (Boutwell, Beaver, & Barnes, 2012; Krueger, Moffitt, Caspi, Bleske, & Silva, 1998; Lavner, Lamkin, & Miller, 2015). In addition, research in general populations suggests people who are more insecurely attached pair with romantic partners who also have elevated attachment insecurity (Kirkpatrick & Hazan, 1994; Kirkpatrick & Davis, 1994; Molero, Shaver, Ferrer, Cuadrado, & Alonso-Arbiol, 2011). Functioning in romantic relationships is a dyadic process in which couples must navigate interdependence and negotiate potentially conflicting goals and desires. Research has shown relationship partners can help regulate reactions to attachment concerns (Overall & Simpson, 2015). At the same time, if both partners have higher attachment insecurity, each may struggle to promote security for the other, and may instead exacerbate attachment-related reactions that reduce relationship satisfaction.

Such problems with interpersonal regulation may be most prominent among couples in which one person has elevated attachment anxiety and the other has elevated attachment avoidance. Among such couples, one person is likely to be concerned with relationship threats and seeking reassurance regarding commitment, whereas the other is likely to be concerned with self-reliance and autonomy (Simpson & Overall, 2014). Pairings of elevated attachment anxiety in one person and elevated attachment avoidance in another are thought to lead to relationship dysfunction because each person has a pathway to “felt security” that may activate central concerns and fears of the other. For instance, a person with elevated attachment anxiety can feel more secure if their partner signals commitment and support. However, such signs of interdependence may conflict with the goals of someone elevated in attachment avoidance to increase interpersonal distance during conflict. Consistent with the idea that anxious-avoidant pairings are problematic, one study found couples with one anxious and one avoidant partner exhibited more physiological reactivity than other couples in anticipation of conflict (Beck et al., 2013). Other research has linked anxious/avoidant pairings with relationship violence (Allison et al., 2007; Dumas et al., 2008; Roberts & Noller, 1998). Such pairings may be more prominent among people with PDs due to more severe attachment disturbance and difficulties with interpersonal regulation (Beeney et al., 2017). Thus, for understanding romantic relationship dysfunction in PDs, a better understanding of the characteristics of relationship partners may be important.

## Current Study

We had two major aims for the current study. The first was to examine pairings in terms of PD similarity, attachment styles and interpersonal functioning in a sample with elevated personality difficulties. For this aim, we hypothesized that dyad members would evidence similar degrees of PD severity, attachment anxiety, attachment avoidance, attachment insecurity, and indicators of interpersonal functioning. We also expected that (a) anxious attachment in one dyad member would be associated with avoidant attachment in the partner and (b) this relationship would be stronger for participants with greater PD severity.

Our second aim was to examine attachment styles and demand/withdrawal behavior as indirect links between PD severity and relationship satisfaction. We used an actor-partner interdependence model (Kenny, Kashy, & Cook, 2006) using PD severity, attachment styles

and demand/withdrawal behavior as predictors of romantic relationship satisfaction. Actor effects refer to relationships between variables within the same person, whereas partner effects refer to relationships between variables of two different people. We had a number of hypotheses regarding associations in this larger model, which are depicted in figure 1. We hypothesized one person's personality disorder severity would be associated their own and their partner's attachment anxiety and avoidance. We then hypothesized one person's attachment anxiety would be associated with their own elevated demands and increased withdrawal, and their partner's greater degree of withdrawal. Finally, we anticipated one person's withdrawal would be associated with their own and their partner's reduced relationship satisfaction. In other words, we expected PD severity would predict poorer relationships satisfaction, and that this relationship would be partly explained by elevations among attachment styles and demand/withdrawal.

## Methods

### Participants

**Recruitment**—We recruited participants via fliers posted in psychiatric clinics. Our recruitment focused on enrolling participants, in equal proportions, who met a) criteria for BPD, b) any other PD, c) or a mental health disorder other than a PD. The initially identified participant was required to be in some form of mental health treatment and to be in a romantic relationship with a partner also willing to participate in the study. Potential participants were screened via telephone using the McLean Screening Instrument for borderline personality disorder (Zanarini & Vujanovic, 2003) and the personality disorder scales from the Inventory of Interpersonal Problems (Pilkonis, Kim, Proietti, & Barkham, 1996). Once screened into the study, participants were required to confirm current romantic relationship status, including a relationship length of at least one month and contact at least four times per week (with at least two face-to-face contacts per week). Participants were excluded if they met criteria for a lifetime diagnosis of bipolar disorder or psychosis, severe developmental disability, or major medical illnesses that influence the central nervous system.

**Sample characteristics**—A total of 618 individuals were screened. Of those, 311 were screened out because they did not meet study criteria ( $n = 176$ ; e.g., no romantic partner, not in treatment, not in age range), were eligible but not enrolled for stratification reasons ( $n = 12$ ), or because they were uninterested after the study was described ( $n = 123$ ). Of the 307 remaining participants, 260 completed intake. All other participants either failed to complete intake or were found to meet exclusion criteria during intake ( $n = 19$ ). The final sample consisted of 130 couples and 260 participants. Relationship length for these couples averaged 54.5 months ( $SD = 51.2$  months). The majority of couples cohabitated ( $n = 93$ , 71.5%), though a minority of couples ( $n = 44$ , 33.8%) were married. Data were available for all participants for clinician rated and self-report data. Data was missing for nine couples for the conflict discussion task due to problems with video recording. Data was collected from each member of the dyad for all measures. Demographic characteristics of participants are summarized in Table 1.

## Procedure

The University of Pittsburgh Institutional Review Board approved all study procedures, and participants provided informed, voluntary, written consent before enrollment. Participants were required to sign informed consent documents prior to participating in the study. The same clinical evaluator assessed the participant for PD diagnosis and attachment ratings. Clinical evaluators were unaware of details of each participant's partner. Observer ratings for the conflict task were conducted by an independent rater.

## Measures

**Consensus PD diagnosis and severity**—Psychiatric diagnoses were determined by clinical evaluators using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID; First, Spitzer, & Williams, 1997) and the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997). Interviewers were trained clinicians with a master's or doctoral degree. Ratings for each participant were evaluated within a diagnostic case conference meeting with at least three judges. PD severity scores were calculated by taking the sum of continuous ratings (0 = not present, 1 = present, 2 = strongly present) of the 80 items assessing PD criteria. In addition, seven clinical evaluators independently scored the SCID-I and SIDP-IV interview for 5 participants from videotape in order to establish inter-rater agreement. Level of agreement among raters was high for PD severity scores (ICC = .90).

**Relationship satisfaction**—Relationship satisfaction was assessed for each member of the dyad using the Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS has 32 self-report items, is among the most widely used measures of relationship satisfaction, and has consistently demonstrated good reliability (Graham, Liu & Jeziorski, 2006).

**Adult Attachment Ratings**—Attachment styles were evaluated by clinicians following a social and developmental historical interview focused on parental, work, and romantic relationships throughout the lifespan (Interpersonal Relations Assessment [IRA]; Heape, Pilkonis, Lambert, & Proietti, 1989). Clinicians scored participants on attachment dimensions using the Adult Attachment Ratings (AAR; Pilkonis, Kim, Yu, & Morse, 2013), a measure that includes three, five-item subscales each for anxious attachment (compulsive care-giving, interpersonal ambivalence, and excessive dependency) and avoidant attachment (defensive separation, rigid self-control, and emotional detachment). The measure has demonstrated good interrater reliability and internal consistency, and has shown convergent validity with the ECR-R and Attachment Q-sort (Pilkonis et al., 2013). Ratings were confirmed in a consensus meeting using all available information with 2-3 additional judges, as described in our previous research protocols (Pilkonis et al., 1995).

**Interpersonal functioning**—We used a clinician-rated measure of interpersonal functioning to examine couple similarity in interpersonal functioning. Raters were unaware of the partner details. Interviewers rated level of romantic, occupational, and overall dysfunction on a 9-point scale according to the pervasiveness and severity of dysfunction, using the Revised Adult Personality Functioning Assessment (RAPFA; Hill et al., 2008). RAPFA ratings focus on the most recent 5-year period, though allow recent change (e.g.,

better functioning in current relationship) to impact scores considerably. We have used the RAPFA over the last 15 years, within three large research protocols. We have also previously demonstrated high inter-rater reliability ( $ICC > .80$ ) on the RAPFA (Beeney et al., 2017; Hill et al., 2008). Consistent with our previous work, RAPFA ratings were appraised within a consensus conference in which at least 2 other judges were presented video and detailed reports prepared based on the IRA and other interview materials. Final scores were made based on agreement between the 3-4 judges.

**Conflict discussion**—Before discussing a relationship conflict for 10 minutes, participants were first asked to complete a form indicating their major areas of disagreement. On the form, each person in the dyad listed disagreements, along with the degree of conflict. Clinical interviewers then used the information provided on the form to determine possible conflict topics. Topics for which both dyad members perceived a high degree of conflict were selected for discussion. Interviewers then asked each member of the dyad to share their opinions on the areas of disagreement without interruption, including their desired resolution. Couples were then directed to begin the 10-minute discussion. Finances, childcare, sex, and household chores were commonly discussed. Each discussion was videotaped.

**Observational coding**—Coders rated behaviors throughout the taped conflict discussions using the Couples Interaction Rating System (CIRS; Heavey, Gill, & Christensen, 1996). The CIRS is an observational rating system consisting of 13 items created to assess problem-solving and communication within dyads. Rather than counting the occurrence of specific behaviors, the CIRS requires overall impressions of behaviors within the context of the interaction using a Likert scale of 1 (*none*) to 9 (*a lot*). Of the 13 items coded using the CIRS, we used the 2 codes that comprise the Demand composite (Blaming and Pressures for Change) and the 3 codes that comprise the Withdrawal composite (Withdrawal, Avoidance, and reverse-scored Discussion). As suggested by Sevier, Simpson & Christensen (2004), we used individual Demand and Withdrawal scores, rather than combined couple ratio scores, given that demand/withdrawal summary scores are likely to mask couple differences in the relative amount of Demand and Withdrawal. In addition, using individual scores for each construct within a dyadic context provides information about within-person associations. A random subset of 56 conflict interactions were coded by an additional rater to assess agreement. Inter-rater reliability was high, with an intraclass coefficient (ICC) of .89 for demand scores and .67 for withdrawal scores.

## Results

### APIM and Distinguishability of Dyads

For relevant analyses, we used actor-partner interdependence models (APIM; Kenny et al., 2006) with partially distinguishable dyads. Partial distinguishability in dyads means that there is no categorical variable that distinguishes actor and partner effects between the two members of the couple but means and variances are allowed to differ. With 22 same-sex couples, we could not distinguish members on gender. Likewise, there was no theoretically defensible rationale for distinguishing dyads according to patients versus partners, or PD

versus no-PD. Within some couples, both people in the dyad were in treatment or both were diagnosed with a PD. Analyses with partially distinguishable dyads do require a minimal group identifier, for which we used an indicator of who was the originally identified patient, i.e., the person initially screened into the study and selected for recruitment stratification goals. We did not expect there to be differences in effects based on this classification. At the same time, we expected there would be differences in means and variances between these two “groups,” with the initial patient group displaying greater severity and variability on most measures. By treating dyads as partially distinguishable, means and variances for each variable for actors and partners were freely estimated, though corresponding actor and partner associations were constrained to equality. Gender, depression scores and relationship length were entered into all analyses as covariates.

### **Aim 1: Similarity**

For descriptive purposes, we examined the degree to which romantic partners were similar in terms of major variables used in the study. Similarity was examined using a double-entry intraclass correlation (ICC) method (Griffin & Gonzalez, 1995). This method is recommended for dyadic data sets with indistinguishable (or partially distinguishable) partners because it assesses the level of agreement among the dyads with results that do not change based on the column into which each participant in a dyad is placed. These results are summarized in Table 2. In particular, we were interested in similarity on attachment variables (e.g., do people pair with people who are similarly elevated on attachment anxiety?). We found small effects for similarity on clinician-rated attachment styles (anxious and avoidant) and a moderate effect for similarity on overall attachment insecurity (the sum of attachment anxiety and attachment avoidance). We also found moderate similarity on clinician-rated measures of interpersonal functioning: romantic functioning, occupational functioning and overall social functioning.

### **Attachment style similarity: anxious-anxious, avoidant-avoidant and anxious-avoidant**

In order to characterize similarity of attachment styles for dyad members, we computed a multilevel model (MLM) using generalized least squares analysis with correlated errors and restricted maximum likelihood estimation. APIM MLM analyses require a pairwise dataset (double-entry method). APIM was necessary for this analysis because analyzing associations with two different variables and two people results in two ICCs (i.e., anxiety person 1 -> avoidance person 2; anxiety person 2 -> avoidance person 1). APIM allows for constraining the two associations to equality, while simultaneously evaluating similarity among dyad members on the same variable (e.g., attachment anxiety). Attachment anxiety was the predictor and avoidance was the outcome. Variables for this analysis were standardized and relationship length, gender and actor and partner depression scores were entered as covariates. None of these covariates significantly predicted the outcome. The actor effect (e.g., person 1’s attachment anxiety associated with person 1’s attachment avoidance) was not significant ( $p > .1$ ). As expected, higher attachment anxiety in one member of the dyad was associated with higher attachment avoidance in the other member ( $\beta = .26, p < .001, 95\% \text{ CI} = .12 \text{ to } .40$ ). At the same time, consistent with ICCs presented earlier, couples also exhibited modest similarity for each of the individual attachment styles ( $\beta_s = .24, ps < .001$ ).

To test the hypothesis that the partner effect between attachment anxiety and attachment avoidance increased as personality dysfunction increased, we added actor and partner PD severity to the model and estimated moderation in an APIM using a structural equation model (SEM) with the R package lavaan. For this, the DyadR web application (<https://davidakenny.shinyapps.io/APIMoM/>), which relies on the R package lavaan, was used for ease in describing interaction effects. The predictor and moderator variables were grand-mean centered. Four moderation effects were estimated, with the first component referring to attachment anxiety and the second referring to PD severity: actor-actor, actor-partner, partner-actor and partner-partner effects. To test for the four moderation effects combined involves first fitting a model without the moderation effects and then one with these effects. Comparing these two models showed a significant improvement in the model with the moderation terms,  $\chi^2(4) = 12.19, p = .016$ . Examining the four interactions, the actor-actor ( $\beta = -.01, p = .017, CI = -.16 \text{ to } -.02$ ) and partner-actor ( $\beta = .01, p = .003, CI = .04 \text{ to } .15$ ) effects were both significant. Simple slopes were computed for one standard deviation above the mean and one standard deviation below the mean for PD severity. The first significant interaction was not hypothesized. The actor-actor interaction effect signifies the actor effect of attachment anxiety on avoidance when actor PD severity is one standard deviation above and below the mean. At one standard deviation below the mean, the effect was  $-.14, p = .154$ , whereas at one standard deviation above the mean, the effect was  $-.41, p < .001$ . Thus, when actor PD severity increases, the within-person relationship between attachment anxiety and attachment avoidance is more strongly negative. We hypothesized that the association between attachment anxiety and avoidance would be stronger for people with higher PD severity compared to those with lower severity. This hypothesis was supported. The partner-actor interaction effect signifies the partner effect of attachment anxiety on avoidance when actor PD severity is one standard deviation above and below the mean. At one standard deviation below the mean, the effect was  $-.02, p = .81$ , whereas at one standard deviation above the mean, the effect was  $.34, p < .001$ . One dyad member's attachment anxiety was positively associated with their partner's attachment avoidance when the actor's PD severity was high, but not when PD severity was low. This effect is consistent with our hypothesis that anxious-avoidant pairing is more prominent when PD severity is high.

## Aim 2: Predictors of Romantic Relationship Satisfaction

Subsequently, we examined the influence of PD severity, attachment styles, and interaction behavior on general romantic relationship functioning. For this analysis we used APIM within a Bayesian structural equation modeling (SEM) context. Mplus 8.1 was used for this analysis (Muthén & Muthén, 2013). Indirect effects are typically not normally distributed (MacKinnon, 2008), which violates the assumptions of a maximum likelihood approach. Normality of model parameters is not assumed by a Bayesian approach, however. Because the means and variances of the outcome variables have not been well established with a sample with high PD severity, uninformative priors were used. In a Bayes context, model convergence must be verified by examining potential scale reduction (PSR). A PSR that quickly nears 1 and does not deviate over subsequent iterations indicates good convergence. The model converged according to the posterior scale reduction factor (PSR) diagnostic (Gelman & Rubin, 1992), and examination of convergence, posterior density, and autocorrelation plots. Model fit in a Bayesian framework uses approaches that compare the



discrepancy between the data generated by the model and the actual data, called posterior predictive checking (Gelman et al., 2004). A confidence interval can be calculated that indicates the difference between observed and replicated chi-square values. A 95% posterior predictive checking confidence interval that includes zero indicates good fit, along with a posterior predictive p-value  $> .05$ . The posterior predictive p-value was 0.22, indicating good fit. This model is presented in figure 2.

For this larger model, we hypothesized that PD Severity would be associated with attachment anxiety and attachment avoidance for both actor and partner. This hypothesis was partially supported. We found PD severity was associated with actor (est. = .13, s.e. = .01, 95% C.I. = .10 to .15) and partner attachment anxiety (est. = .13, s.e. = .01, 95% C.I. = .10 to .15) and actor attachment avoidance (est. = .06, s.e. = .02, 95% C.I. = .02 to .08), but not partner avoidance ( $p > .1$ ). We also hypothesized that attachment anxiety would be associated with actor demand and withdrawal, and partner withdrawal. This hypothesis was also partially supported. Attachment anxiety was not associated with demand ( $ps > .1$ ) but was associated with both actor (est. = .09, s.e. = .02, 95% C.I. = .04 to .13) and partner (est. = .07, s.e. = .02, 95% C.I. = .03 to .12) withdrawal. We also predicted withdrawal would be associated with actor and partner relationship satisfaction. Withdrawal did not predict one's own relationship satisfaction but was associated with partner relationship satisfaction (est. =  $-.05$ , s.e. = .02, 95% C.I. =  $-.09$  to  $-.01$ ). In addition, PD Severity was directly associated with actor (est. =  $-.004$ , s.e. = .002, 95% C.I. =  $-.007$  to .000) and partner (est. =  $-.004$ , s.e. = .002, 95% C.I. =  $-.007$  to  $-.001$ ) relationship satisfaction. Attachment anxiety was associated with actor (est. =  $-.014$ , s.e. = .007, 95% C.I. =  $-.028$  to .000) relationship satisfaction. Longer relationship length was associated with lower relationship satisfaction (est. =  $-.36$ , s.e. = .10, 95% C.I. =  $-.60$  to  $-.16$ ).

There were a number of significant indirect effects between PD severity and relationship satisfaction. "Actor" and "partner" for indirect effects refer to whether the effect is between two variables for the same person (actor) or for two variables for different people (partner). Non-symmetric Bayes credibility intervals are provided. The following indirect effects involve attachment anxiety: 1) PD severity  $\rightarrow$  partner attachment anxiety  $\rightarrow$  actor relationship satisfaction (est. =  $-.03$ , s.e. = .02, 95% CI =  $-.06$  to .00) and 2) PD severity  $\rightarrow$  actor attachment anxiety  $\rightarrow$  actor relationship satisfaction (est. =  $-.09$ , s.e. = .04, 95% CI =  $-.17$  to  $-.001$ ). Several other indirect paths between PD severity and relationship satisfaction were through both attachment anxiety and withdrawal: 1) PD severity  $\rightarrow$  actor attachment anxiety  $\rightarrow$  partner withdrawal  $\rightarrow$  partner relationship satisfaction (est. =  $-0.013$ , s.e. = .01, 95% CI =  $-.03$  to  $-.001$ ), 2) PD severity  $\rightarrow$  partner attachment anxiety  $\rightarrow$  actor withdrawal  $\rightarrow$  partner relationship satisfaction (est. =  $-0.006$ , s.e. = .003, 95% CI =  $-.013$  to  $-.001$ ), 3) PD severity  $\rightarrow$  partner attachment anxiety  $\rightarrow$  partner withdrawal  $\rightarrow$  partner relationship satisfaction (est. =  $-0.008$ , s.e. = .004, 95% CI =  $-.017$  to  $-.001$ ), and 4) PD severity  $\rightarrow$  actor attachment anxiety  $\rightarrow$  actor withdrawal  $\rightarrow$  partner relationship satisfaction (est. =  $-0.022$ , s.e. = .012, 95% CI =  $-.049$  to  $-.003$ ). In summary, PD severity was associated with relationship satisfaction, both through links with attachment anxiety and links with attachment anxiety and withdrawal.

## Discussion

Research has shown that romantic relationships among individuals with PDs are often disturbed (e.g., South, 2014; Whisman et al., 2007). Though individuals are typically the focus for description of interpersonal difficulties among those with personality disorders, interpersonal conflict is a dyadic process in which both dyad members influence relationship health. Relatedly, little is known about the characteristics of couples in which at least one dyad member has psychopathology. We found that couples showed moderate similarity on personality variables and interpersonal functioning, meaning people may pair with partners with a similar degree of interpersonal problems, and/or shape and reinforce similar difficulties over time. In addition, we found evidence that both members' PD severity, attachment style and interpersonal behavior affect relationship satisfaction in dynamic, theoretically coherent ways.

### Romantic partner similarity

Research has shown that choice in a romantic partner may have consequences for mental health (Daley & Hammen, 2002; Simon, Aikins, & Prinstein, 2008). Research on assortative mating - the non-random pattern of romantic partner selection - has often found people pair with others who are similar on a number of factors, including, socioeconomic status, age, attractiveness, and values, but also personality variables (Luo & Klohnen, 2005). However, people may also become more similar to one another over time (e.g., Simon et al., 2008). For people with problems with personality functioning, assortative mating based on similarity would mean people are involved with romantic partners with a similar level of personality difficulties and social impairment. We found partners showed no evidence of similarity in terms of level of PD severity, as indexed by the sum of all scores on the SIDP. This was surprising, given previous research has found at least some degree of similarity among romantic partners for borderline personality disorder symptoms (Lavner et al., 2015) and antisocial behavior (Krueger et al., 1998; Rhule-Louie & McMahon, 2007).

At the same time, however, romantic partners evidenced similarity in terms of other personality measures and interpersonal functioning. Though partners were modestly similar in terms of specific attachment styles, moderate similarity was evident in terms of attachment insecurity as a whole. Previous research is consistent with these results. Past studies of assortative mating based on dimensions of attachment have generally found significant but weak similarity in terms of attachment styles (e.g., Luo & Klohnen, 2005; Rholes, Simpson, Campbell, Grich, & Rholes, 2001). However, using a categorical approach, another study found that 69% of women with BPD and their partners were categorized as insecurely attached (Bouchard & Sabourin, 2009). In the current study, partners were also moderately similar in terms of level of social impairment, including occupational functioning and overall social functioning. Overall, our results suggest people pair with others with a similar level of interpersonal difficulties, and/or drift together over time. Such similarity is likely to have consequences for the course of romantic relationship functioning among people with elevated attachment and/or interpersonal problems. Additional research is needed to illuminate characteristics of romantic partners that may positively influence personality and interpersonal difficulties over time.

The anxious-avoidant couple has been described in various literatures (Christensen & Heavey, 1990; Levine & Heller, 2010; Millwood & Waltz, 2008; Schrodt et al., 2014), but seldom assessed empirically. As predicted, using an APIM moderation model, we found PD severity moderated the association between one person's attachment anxiety and the other's attachment avoidance. At high levels of PD severity, we found a moderate association between one person's attachment anxiety and another's attachment avoidance, but the association was non-significant at low levels of PD severity. This suggests that among people with higher PD severity, partners may have attachment difficulties that their partner may not be well-suited to help regulate. Previous studies used categorical approaches to attachment, or zero-order correlations without controlling for other variables or actor (within-person) associations between anxiety and attachment. We used a dimensional approach within an analytic framework in which within- and between-partner associations of attachment anxiety and avoidance were modeled simultaneously. One of the benefits of such an approach is that in addition to finding associations between attachment anxiety and attachment avoidance between partners, we found partners also evidenced a small degree of similarity on attachment anxiety and attachment avoidance. A previous study using a categorical approach of 354 found no anxious-anxious or avoidant-avoidant couples, but elevated rates of anxious-avoidant couples (Kirkpatrick & Davis, 1994). The current results may suggest attachment difficulties among couples is more complicated than suggested by the archetype of the anxious-avoidant couple. Future research could provide more greater detail on common romantic partner pairings using couple-centered approaches.

### **Predictors of relationship satisfaction**

Our second aim was to potentially illuminate variables that might explain the association between PD severity and relationship satisfaction by exploring associations with attachment styles and demand/withdraw behavior. We selected these variables because previous research in the relationship science literature has linked them to relationship satisfaction and because previous accounts have suggested demand/withdrawal dynamics may be associated with attachment styles of relationship partners (Allison, Bartholomew, Mayseless, & Dutton, 2008; e.g., Millwood & Waltz, 2008). We hypothesized that PD severity would be linked to actor and partner attachment styles, attachment styles would be associated with demand/withdrawal behavior, which would then be associated with relationship satisfaction. More specifically, we hypothesized higher attachment anxiety would be related to more actor demands and more actor and partner withdrawal, whereas attachment avoidance would be associated with actor withdrawal. We found that higher PD severity was related to higher attachment anxiety and attachment avoidance for the affected person and higher attachment anxiety for their partner. Contrary to expectations, attachment anxiety was not associated with more demands during conflict. However, as hypothesized, higher attachment anxiety predicted greater withdrawal by both the person with higher attachment anxiety and their partner. Withdrawal was associated with lower relationship satisfaction for one's partner. In addition, PD severity was directly associated with actor and partner relationship satisfaction and attachment anxiety was directly associated with actor relationship satisfaction.

Attachment anxiety was the main predictor of partner interaction dynamics. High attachment anxiety in one member of the dyad was associated with withdrawal both for that person and

their partner. Interestingly, contrary to our hypothesis, attachment anxiety was not associated with increased demands, but was nonetheless, as hypothesized, associated with more partner withdrawal. This demand/withdrawal dynamic has been a major focus in relationship research (Schrodt et al., 2014), and our own results suggest an association between demand and withdrawal among partners. However, our results suggest partners of those with elevated attachment anxiety may withdraw for reasons aside from increased demands. Previous research has found that high attachment anxiety is associated with greater hostility, conflict and distress (e.g., Creasey & Hesson-McInnis, 2001; Simpson, Rholes, & Phillips, 1996). In addition, people with elevated attachment anxiety may be less supportive, responsive and more negative towards their partners (Collins & Feeney, 2000). It may be that partners of participants with elevated attachment anxiety withdraw in response unmeasured conflict behaviors or previous experiences in conflict with the romantic partner. This possibility is consistent with our results. In addition to indirect effects that involved links between attachment styles and behavior, we found indirect effects between PD severity and relationship satisfaction that only involved attachment anxiety. Behaviors other than demand may also promote withdrawal, or relationship history may “train” partners to adopt this role, regardless of whether demand is present within any specific conflict.

One path from attachment anxiety to romantic relationship dysfunction was through partner withdrawal, suggesting that a partner’s distancing behaviors are associated with poorer relationship functioning of the actor. The optimal state for the attachment system is one of “felt security” (Bowlby, 1982; Sroufe & Waters, 1977), which is derived from a sense that attachment figures are available and responsive. Felt security is a cognitive and emotional state associated with calming of attachment-related concerns that allows the person to stop attending to connection, explore the outside world, and attend to others. Distancing behaviors on the part of an attachment figure are thought to activate the attachment system, putting the person in a state far from felt security, particularly for those with elevated attachment anxiety (Bowlby, 1982). When the attachment system is activated, a person is likely to seek proximity to and reassurance from attachment figures. The vigor of these bids, and the adaptiveness of the behaviors employed to make them are likely to vary with personality functioning and the severity of attachment difficulties. Attempts for connection experienced by the partner as clingy, smothering, or excessively burdensome are more likely to be met with distancing behaviors, which further activates the actor’s attachment system. In this way, withdrawal by the partner is apt to lead to increases in distress and feelings of dependence, *and* angry withdrawal as protest for the partner rejecting connection needs. Neither of these responses is likely to prompt the partner to meet the actor’s needs, further disrupting the actor’s ability to function in a healthy way in the relationship.

Consistent with expectations, attachment anxiety was also associated with relationship dissatisfaction through elevated withdrawal by the person with higher attachment anxiety. The motivation for withdrawal among those with elevated attachment anxiety is thought to be distinct from the impetus of those with elevated attachment avoidance. People with elevated attachment anxiety have negative views of conflict and are less likely to maintain open communication and collaboration (for review, see Mikulincer & Shaver, 2012). Withdrawal may commonly be a form of protest behavior (e.g., sulking, giving their partner the silent treatment), and an attempt to draw attention to their unmet needs for connection.

At the same time, withdrawal does not appear to be healthy for relationships, whether simply an attempt to avoid conflict or meant to spark approach behaviors from one's partner.

Unexpectedly, avoidant attachment was not a unique predictor of actor withdrawal. These findings conflict with theory and some research related to demand/withdrawal and attachment styles (Christensen & Heavey, 1990; Millwood & Waltz, 2008). It is important to note that the simultaneous estimation of structural equation models means that zero-order effects may be explained by other variables (e.g., avoidant attachment is related to withdrawal outside of the model, but not in the presence of other variables). In our current model, the partner effect between attachment anxiety and withdrawal may better explain the effect between avoidance and withdrawal.

There were also direct links between PD severity and relationship satisfaction, consistent with previous research (e.g., South, Turkheimer, & Oltmanns, 2008). These direct effects suggest additional research is needed to understand additional factors that might explain these associations. The current study evaluated variables that are common predictors of relationship problems among the general population. Other behaviors that are common to romantic relationship conflict (e.g., absence of positive behaviors, lower support) may help explain this link more fully. In addition, it may be useful to evaluate behaviors that may be more specific to relationships among people with PDs (e.g., oscillations between approach and withdrawal behaviors). At the same time, we have identified that withdrawal may be problematic to relationships among people with high PD severity, while also replicating previous studies that have found PD severity in one person affects the relationship for both dyad members (South et al., 2008).

### **Clinical Implications**

Our current results suggest that couples therapy to address conflicts between attachment and autonomy could positively impact romantic relationship functioning of those with personality difficulties and high attachment anxiety. Unfortunately, there is currently little guidance regarding couples treatment with people with PDs (Landucci & Foley, 2014). Given the links between romantic relationship functioning and other domains of functioning, particularly amongst those with PDs (Hill et al., 2008), improving this important relationship is likely to have other positive effects. Replacing withdrawal with more direct communication regarding relationship needs may positively impact romantic relationships. In addition, helping both members of the couple to recognize and respond to bids for connection may reduce the distress and anger often experienced by people with attachment anxiety in the face of perceived rejection or increased interpersonal distance of their partner. Researchers have already identified ways in which partners can provide appropriate reassurance and respond to bids for connection with behaviors that will calm their partner rather than further activate the attachment system (Overall & Simpson, 2015).

### **Strengths and Limitations**

This study had a number of strengths. The sample was relatively large and unique, with 130 couples representing a range of personality pathology. We also used an ecologically valid task and relied on expert ratings of attachment and PD severity. Clinical evaluators were

unaware of details of the participant's romantic partner. However, some limitations to the study should also be pointed out. One limitation is that the same clinician who rated the participant on PD symptoms also rated the participant on attachment difficulties, potentially inflating associations between these variables. Our consensus approach is designed to reduce contamination of any single rating by global impressions, though this may still occur.

## Conclusion

Researchers have produced extensive evidence to support the healthy benefits of secure attachment and high quality romantic relationships (e.g., Mikulincer & Shaver, 2005). Our results suggest that romantic relationship functioning is disrupted by attachment-related conflicts among individuals with a range of PD severity. Moreover, people with high PD severity are frequently in relationships with others who may have a similar level of attachment and interpersonal disturbance. Focusing on attachment styles may help to improve relationship functioning by promoting more satisfying attachments and identifying potential partners whose style is compatible, rather than conflicting.

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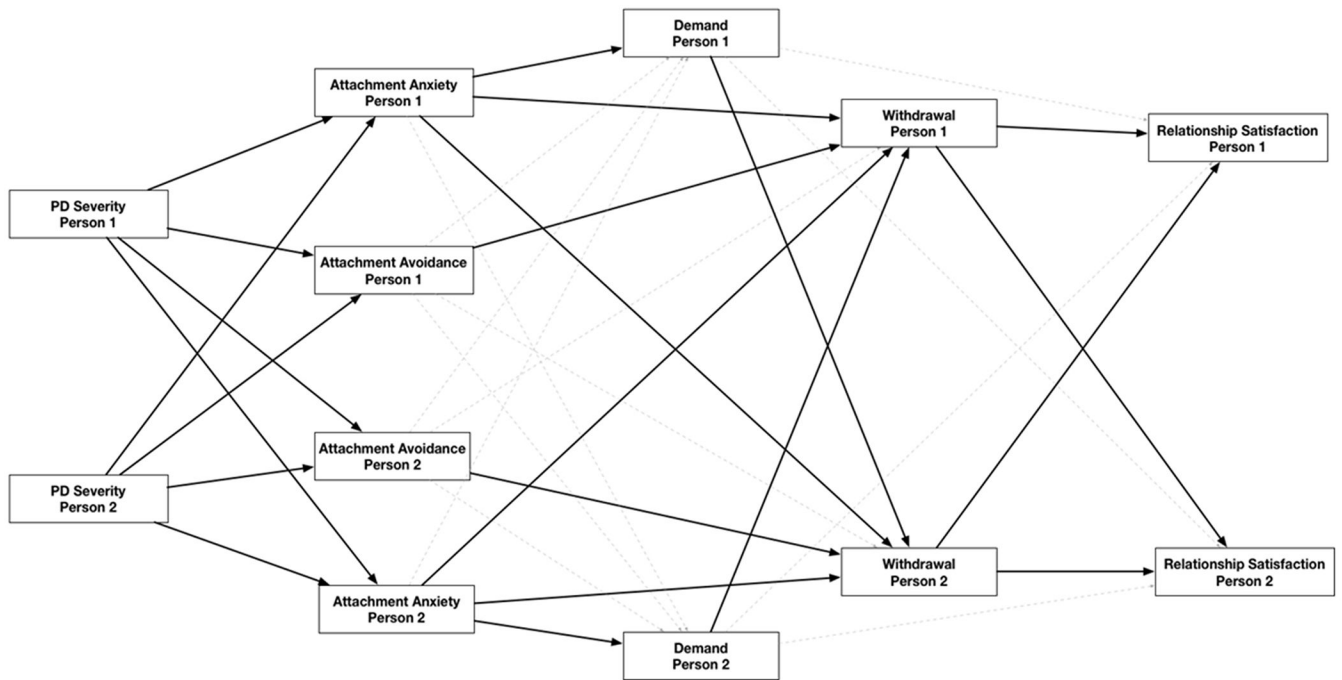
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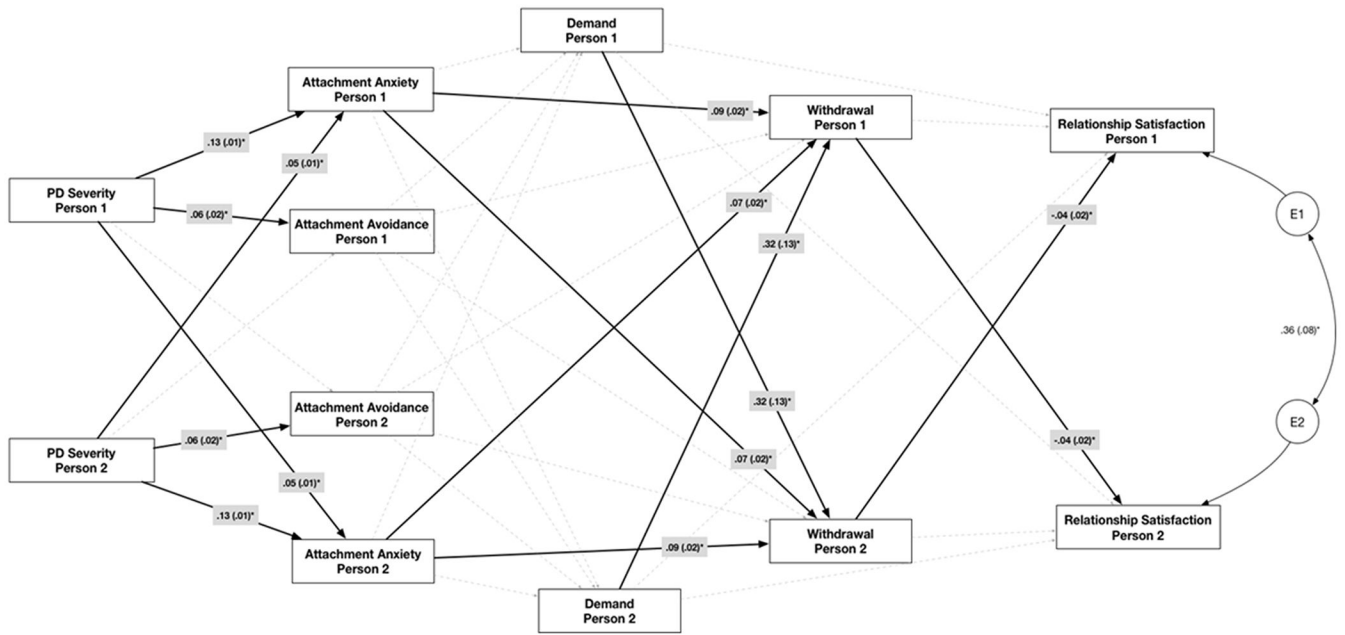


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**Figure 1.**  
Hypothesized model.

Note. Bold lines indicate hypothesized paths. We hypothesized one person’s personality disorder severity would be associated their own and their partner’s attachment anxiety and avoidance. We then hypothesized one person’s attachment anxiety would be associated with their own greater demands and withdrawal, and their partner’s greater degree of withdrawal. Finally, we anticipated one person’s withdrawal would be associated with their own and their partner’s reduced relationship satisfaction. PD severity = personality disorder severity.



**Figure 2.**

Main and indirect effects of PD severity, attachment styles, interaction behavior and romantic relationship functioning

*Note.* For clarity direct effects are not depicted. Personality disorder severity was directly associated with both actor (est. =  $-.004$ , s.e. =  $.001$ , 95% C.I. =  $-.007$  to  $-.002$ ) and partner relationship satisfaction (est. =  $-.004$ , s.e. =  $.001$ , 95% C.I. =  $-.007$  to  $-.001$ ). Attachment anxiety also directly correlated with relationship satisfaction (est.  $-.01$ , s.e. =  $.01$ , 95% C.I. =  $-.03$  to  $.00$ ). PD Severity = ersonality disorder severity. Non-significant paths are presented in grey. All estimates are unstandardized values. Standardized estimates are unreliable for partially distinguishable dyads.

**Table 1.**

**Demographic Characteristics and Psychopathology**

<b>Age (years)</b>	Patient	Partner
M (SD)	29.2 (6.1)	30.2 (7.9)
<b>Gender N (%)</b>		
Female	99 (76.2%)	45 (34.6%)
Male	31 (23.9%)	85 (65.4%)
<b>Education N (%)</b>		
Graduate training	30 (23.1%)	35 (27.0%)
College graduate	29 (22.3%)	27 (20.8%)
Some college	56 (43.1%)	47 (36.2%)
High school graduate	15 (11.5%)	21 (16.2%)
<b>Household Income</b>		
\$24,999 or less	58 (44.6%)	56 (43.1%)
\$25,000 - \$49,999	33 (25.4%)	31 (23.9%)
\$50,000 - \$99,999	32 (24.6%)	30 (23.1%)
\$100,000 or more	7 (5.4%)	13 (10.0%)
<b>Employment N (%)</b>		
Full Time	39 (30.0%)	60 (46.2%)
Part Time	37 (28.5%)	35 (26.9%)
Unemployed	54 (41.5%)	35 (26.9%)
<b>Race N (%)</b>		
White	95 (73.1%)	101 (77.7%)
Black or African American	18 (13.8%)	19 (14.6%)
Mixed race	11 (8.5%)	7 (5.4%)
Asian	5 (3.9%)	3 (2.3%)
Native American	1 (0.8%)	0 (0.0%)
<b>Sexual Identity N (%)</b>	(n = 1 unreported)	(n = 2 unreported)
Heterosexual or straight	96 (75.0%)	107 (82.9%)
Bisexual	19 (14.8%)	9 (7.0%)
Gay or Lesbian	13 (10.1%)	13 (10.2%)
<b>Psychopathology</b>	M (SD)	M (SD)
Hamilton Depression	13.83 (8.25)	7.16 (5.75)
Hamilton Anxiety	15.91 (9.69)	8.26 (6.24)
<b>PD symptom scores</b>		
Borderline PD	4.65 (4.21)	2.00 (2.60)
Antisocial PD	2.27 (3.51)	1.74 (2.95)
Narcissistic PD	1.76 (2.43)	1.47 (2.33)
Histrionic PD	1.77 (2.19)	0.76 (1.45)
Avoidant PD	2.78 (3.14)	1.60 (2.63)
Obsessive-Comp PD	3.24 (2.41)	2.12 (2.21)

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Dependent PD	1.88 (2.53)	0.81 (1.37)
Paranoid PD	1.34 (2.04)	0.87 (1.59)
Schizoid	0.98 (1.62)	0.77 (1.55)
Schizotypal	0.78 (1.39)	0.56 (1.23)

*Note.* Hamilton Depression = Hamilton Rating Scale for Depression; Hamilton Anxiety = Hamilton Rating Scale for Anxiety; GAF = Global Assessment of Functioning. PD symptom scores represent the dimensional score from the SIDP (sum of all items for each disorder).

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**Table 2.**

Descriptive Statistics and Within Dyad Agreement on Attachment and Personality Variables

	Mean (SD)	Couple ICC
Attachment Anxiety (AAR)	5.76 (3.87)	.23*
Attachment Avoidance (AAR)	5.79 (3.82)	.21*
Attachment Insecurity (AAR)	5.58 (2.67)	.41*
Personality Disorder Severity	22.11 (17.04)	.01
Romantic relationship functioning (RAPFA)	5.52 (1.41)	.64*
Occupational functioning (RAPFA)	4.70 (1.92)	.46*
Overall social functioning (RAPFA)	5.04 (1.40)	.40*
Relationship Satisfaction (DAS)	3.64 (0.38)	.48*
Demand (CIRS)	3.07 (2.22)	.63*
Withdrawal (CIRS)	2.83 (1.25)	.42*

*Note.*

\*  $p < .05$ .

AAR = Adult Attachment Ratings; DAS = Dyadic Adjustment Scale; CIRS = Couple Interaction Rating System. All means and standard deviations reflect average item values. Intraclass correlations calculated according to Shrout and Fleis (1979), single rater, absolute agreement, using a pairwise dataset (Kenny, Kashy & Cook, 2006).

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