

Personality Disorder Symptoms and Marital Functioning

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Pathological personality is strongly linked with interpersonal impairment, yet no study to date has examined the relationship between concurrent personality pathology and dysfunction in marriage—a relationship that most people find central to their lives. In a cross-sectional study of a community sample of married couples ($N = 82$), the authors used multilevel modeling to estimate the association of self- and spouse-reported symptoms of personality disorder (PD) with levels of marital satisfaction and verbal aggression and perpetration of physical violence. Inclusion of self- and spouse report of total PD symptoms resulted in improved model fit and greater variance explained, with much of the improvement coming after the addition of spouse report. The incremental validity of spouse report for several of the 10 PD scales was supported for marital satisfaction and verbal aggression, particularly for the Borderline and Dependent PD scales.

Keywords: personality disorders, marital adjustment, informants

The symptoms that delineate Axis II personality pathology inevitably lead to difficulties in interacting with the interpersonal world. As others have noted, there are aspects of personality disorder (PD) beyond trouble with relating to others (e.g., chronicity and dysfunction in multiple social roles; Pilkonis, Kim, Proietti, & Barkham, 1996), but a common overriding theme to all such disorders is marked impairment in relationships. Indeed, it is well argued that an inability to pursue fundamental adult life tasks, including “close and meaningful intimate relationships,” is at the core of the concept of PD (Krueger, Skodol, Livesley, Shrout, & Huang, 2007, p. S70). There is research linking personality pathology to the most extreme forms of maladaptive intimate relationships (i.e., partner violence), yet no study to date has examined more normative measures of marital functioning in relation to PD features. This gap is surprising, when one considers that these disorders are a collection of cognitive, behavioral, and affective traits that are severe and chronic (American Psychiatric Association,

2000) and that lead to significant impairment in social functioning (Skodol et al., 2002).

In the current study, we examined the association between PD symptoms and key features of marital relationships, from satisfaction to verbal conflict and physical violence. Personality pathology is currently represented in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV*; American Psychiatric Association, 2000) as 10 disorders that are purportedly distinct from each other and from other forms of psychopathology, although they are grouped together into odd (Cluster A: paranoid, schizoid, schizotypal), dramatic (Cluster B: antisocial, borderline, histrionic, narcissistic), and fearful (Cluster C: avoidant, dependent, and obsessive-compulsive) clusters. In practice, there is a great deal of comorbidity among the PDs (Zimmerman, Rothschild, & Chelminski, 2005) and between PDs and normal personality (O'Connor, 2002).

There is now a consensus that PDs are best conceptualized as dimensional constructs (Widiger & Simonsen, 2005) and that abnormal personality is best characterized as extremes of normal personality variation (O'Connor & Dyce, 2001). Krueger et al. (2007) discussed how the reconceptualization of Axis II, particularly definition of the boundary between normal and abnormal, would most likely hinge on how to define the “impairment” associated with the specific constellation of traits that define a PD. An important consideration for those conducting PD research is to begin to understand when personality pathology results in clinically significant impairment. Thus, in this study we focused on how PD dimensional scores in a community sample are cross-sectionally related to impairment in marital functioning.

The notion that maladaptive personality styles are linked to dysfunction in marriage is not a new concept. Seventy years ago, Terman, Battenwieser, Ferguson, Johnson, and Wilson (1938) posited that the individual characteristics of certain people predis-

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pose them to experience dissatisfaction within their relationships. More recently, Karney and Bradbury (1995) proposed a vulnerability–stress–adaptation model of marital quality that describes how the effect of individual differences on marital satisfaction is mediated by interpersonal processes. The enduring vulnerabilities of each spouse, including personality traits, are hypothesized to affect both the stressful events that the couple encounters and the types of behavioral exchanges that occur between the spouses. Within the last 2 decades, there has been a renewed interest in personality traits in relation to marital adjustment. This focus follows from changes in several areas: resurgence in the field of personality generally (cf. Funder, 2001); statistical advances that allow examination of the joint influence and interdependence of spouses (e.g., Campbell & Kashy, 2002); and the relatively modest and, at times, inconsistent associations found between marital functioning and more process-oriented, interpersonal variables (Bradbury & Karney, 2004).

So far, research on individual differences and marital functioning has not extended to pathological personality features, even though there is growing evidence that the romantic relationships of persons with PDs are often marked by discord (Craig, 2003; Gondolf & White, 2001). In a college student sample, Oltmanns, Melley, and Turkheimer (2002) found that self-reported paranoid, schizoid, schizotypal, borderline, and avoidant features and peer-reported schizoid, schizotypal, and obsessive-compulsive features were all correlated with poor social functioning, which included dating history. Looking specifically at relationship difficulties, Daley, Burge, and Hammen (2000) found that 4-year romantic relationship dysfunction (i.e., chronic stress, relationship quality, partner satisfaction) was best accounted for by general Axis II symptomatology. Chen et al. (2004) examined the amount of conflict in the relationships of a community sample of young adults who had been assessed in adolescence for presence of PD criteria. Individuals with PDs experienced significantly more discord throughout the 10-year follow-up period (from age 17 to age 27). Cluster B PDs were associated with the greatest sustained amount of conflict over time. Cluster A and Cluster C PDs were related to higher conflict until the age of 23, when relationship conflict in persons with PDs actually declined relative to that in the no-PD controls.

PD symptoms have been repeatedly linked with more serious forms of marital conflict, including intimate partner violence. This research comes from two lines of inquiry. Factor-analytic and behavioral analogue studies of partner-violent spouses, particularly of men, have identified the importance of antisocial and borderline personality traits for intimate relationship violence (Dutton, 1995; Edwards, Scott, Yarvis, Paizis, & Panizzon, 2003; Holtzworth-Munroe, 2000; Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; Holtzworth-Munroe & Stuart, 1994; Tweed & Dutton, 1998). Developmental research has also shown links between early temperament and personality traits in childhood and adolescence and later abusive behavior in romantic relationships (Capaldi & Clark, 1998; Ehrensaft, Cohen, & Johnson, 2006; Giordano, Millhollin, Cernkovich, Pugh, & Rudolph, 1999; Magdol, Moffitt, Caspi, & Silva, 1998; Moffitt, Krueger, Caspi, & Fagan, 2000; Moffitt, Robins & Caspi, 2001).

The samples utilized in these studies of intimate partner violence are varied in composition and design. They range from unselected birth cohorts (Giordano et al., 1999; Magdol et al.,

1998; Moffitt et al., 2000) to at-risk community samples (Capaldi & Clark, 1998) to men who were court mandated to treatment for domestic violence (Dutton, 1995; Tweed & Dutton, 1998) or were incarcerated at the time of the study (Edwards et al., 2003). Studies of the most severe or at-risk populations are important, in that they provide information on individuals whose level of impairment has become most detrimental to society. However, these samples may be more likely to include individuals who show a general tendency toward violence, as there is considerable overlap between intimate partner violence and both general violence and nonviolent crime (Fagan & Browne, 1994; Fagan & Wexler, 1987). Given our interest in individual difference personality variables that are specifically related to partner violence (Moffitt et al., 2000), we recruited a community sample for the current study that included individuals who had experienced all levels of conflict. We believed this design would increase the generalizability of our findings (Karney et al., 1995).

To our knowledge, this study is the first to examine symptoms across the range of all *DSM-IV* PDs in relationship to marital satisfaction and the first to examine the association between PD features and both normative (marital satisfaction) and dysfunctional (physical violence) forms of marital functioning in the same study. Previous research that linked PDs to partner violence, particularly in men, has relied on self-reported PD symptoms collected through questionnaires or interviews. Ehrensaft et al. (2006) utilized a composite PD report based on self- and parent report but did not directly compare the two types of report. A reliance on self-report may be a particularly important limitation for the assessment of PD criteria, as there are significant discrepancies between self- and informant report of PDs (Klonsky, Oltmanns, & Turkheimer, 2002; Oltmanns & Turkheimer, 2006). There is growing support for supplementation of self-report with informant report in the assessment of psychopathology (Achenbach, Krukowski, Dumenci, & Ivanova, 2005), particularly of PDs (Klein, 2003).

Thus, in the current study, we assessed whether self- and spouse report of PD would be related to marital satisfaction, verbal aggression, and physical violence. It was expected that higher levels of total self-reported PD symptoms would be related to lower levels of one's own and spouse's marital satisfaction and higher levels of marital conflict. Further, we expected that the presence of personality pathology as reported by the spouse would have a negative impact on one's own and spouse's marital functioning, above and beyond self-report. We also explored whether any of the 10 individual PD scales would add to the explanation of marital functioning after we had controlled for other personality pathology. Again, we examined marital satisfaction and conflict from self- and spouse reports from each partner. On the basis of previous research (e.g., Ehrensaft et al., 2006), we expected that Cluster A and Cluster B disorder symptoms would be positively related to measures of marital aggression. We viewed the examination of marital satisfaction from PD features as exploratory and thus made no a priori predictions regarding specific PD scales.

Method

Participants

The sample consisted of 82 married heterosexual couples ($N = 164$) from central Virginia who were recruited through newspaper

advertisements, television bulletins on a community access channel, and community flyers that invited couples to “participate in a research project examining personality and marriage.” Flyers were also sent to professionals (therapists, physicians) who were working with potential study participants. Couples who responded to the advertisements were screened in a telephone interview to determine whether (a) both spouses were at least 21 years old, (b) both spouses were comfortable with reading and writing English, (c) the couple had been married for at least 1 year but no more than 10 years,¹ and (d) the spouses were currently living together. Persons were excluded if they had a history of, were currently in treatment for, or were taking medication for a psychotic illness. A total of 84 couples completed data collection; we excluded 2 couples when it was discovered that they had been married for longer than 10 years.

Participants had been married an average of 3.7 years ($SD = 2.6$), with a minimum of 12 months and a maximum of 10 years, 11 months. The number of children per couple ranged from zero to four ($M = 0.5$, $SD = 0.85$). Of the participants, 23% of wives and 20% of husbands reported having been in couples counseling and/or psychotherapy with their current spouse. Husbands ranged from 23 to 69 years of age, with a mean of 33.6 years ($SD = 9.55$). Wives ranged from 21 to 59 years of age, with a mean of 32 years ($SD = 8.60$). A majority of husbands (92%) and wives (84%) identified themselves as Caucasian. Most of the husbands had at least a college degree (72%); 38% had been in individual therapy, and 18% had been married previously. A majority of the wives had at least a college degree (85.4%); 50% had been in individual therapy at some point, and 13% had been married previously. In general, those sampled were slightly older than were community couples recruited for marital intervention programs, but they had satisfaction levels and history of couples counseling comparable with those of community couples who had elected to participate in a marital intervention program (Rogge et al., 2006).

Measures

Assessment of PDs. PD symptoms were assessed with the Multisource Assessment of Personality Pathology (MAPP; see Oltmanns & Turkheimer, 2006, for a review of studies using the MAPP). The MAPP contains 105 items, of which 81 are based on the features of the 10 PDs listed in *DSM-IV* (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive); the remaining 24 items describe other, mostly positive, personality characteristics. MAPP items were constructed by translating the *DSM-IV* criterion sets for PDs into lay language. The 79 *DSM-IV* PD criteria were rewritten in such a way as to avoid the use of technical psychopathological terms and psychiatric jargon. One of the criteria for narcissistic PD, “is often envious of others or believes that others are envious of him or her,” was split into two items (“is jealous of other people” and “thinks other people are jealous of him/her”). Similarly, the schizotypal PD criterion, “inappropriate or constricted affect,” was split into the items “shows emotional responses that seem strange or ‘out of sync’” and “is cold; doesn’t show any feelings.”

There are two versions of the MAPP: a self-report and an informant report. For both, the participant assigns a score (0, 1, 2, or 3) on each item to the target to indicate that the person *never*,

sometimes, *often*, or *always* displays this characteristic. The self-report version of the MAPP has good test-retest reliability, and comparisons between the MAPP and other standard PD questionnaires and structured interviews have shown moderate agreement (Okada & Oltmanns, 2007; Oltmanns & Turkheimer, 2006). Self- and informant report scales from the MAPP show strong relationships to (a) traits from the five-factor model of personality (Friedman, Oltmanns, Gleason, & Turkheimer, 2006; Friedman, Oltmanns, & Turkheimer, 2007; Oltmanns, Friedman, Fiedler, & Turkheimer, 2004; South, Oltmanns, & Turkheimer, 2005); (b) impaired social and interpersonal functioning (Clifton, Turkheimer, & Oltmanns, 2005; Oltmanns et al., 2002); and (c) laboratory and life-event outcome measures of impaired functioning (Fiedler, Oltmanns, & Turkheimer, 2004; South, Oltmanns, & Turkheimer, 2003).

In the current study, each participant (husband and wife) completed the self-report version of the MAPP and the informant report version regarding his or her spouse.² Scores on individual PD items were summed to create 11 PD dimensional scales, one for each of the *DSM-IV* PDs and one total summary score of all PD symptoms. The means for the self-reported overall PD total scores were 37.35 ($SD = 18.89$, range = 6–94) for wives and 34.09 ($SD = 15.60$, range = 7–74) for husbands; corresponding means for spouse-reported PD total score were 33.12 ($SD = 21.24$, range = 6–105) for wives and 28.50 ($SD = 15.46$, range = 3–108) for husbands. As expected, given the community sample, approximately 15% of husbands and 12% of wives endorsed enough symptoms, from self-report on the MAPP, to fulfill the criteria for a PD.

Assessment of marital satisfaction. All participants completed the Short Marital Adjustment Test (SMAT; Locke & Wallace, 1959), a 15-item scale that is widely used as a measure of marital satisfaction. Eight questions ask for a rating of perceived agreement across several areas of possible conflict (“sex relations,” “handling family finances”); 6 questions assess the couple’s means of conflict resolution, cohesion, and communication; and a final question asks for an overall rating of the marriage. Responses to all items are weighted and combined to form an overall index of marital satisfaction; higher scores indicate better levels of adjustment. The SMAT demonstrates adequate cross-sectional reliability and discriminates between nondistressed spouses and spouses with documented marital problems. Alpha coefficients for the two SMAT scale scores were .79 (wife) and .76 (husband). Participants in this sample were relatively happy, averaging a score of 109 for wives and 110 for husbands, but demonstrated a wide range of variance in satisfaction ($SD = 20.95$ for wives, 18.64 for hus-

¹ We decided to collect a sample of people who had gotten beyond the honeymoon period of their marriage, when any ratings of satisfaction might be most positively biased, but had not yet reached the point of already separating or divorcing because of dissatisfaction with their marriage.

² As part of this study, we also collected informant reports of participants from family members and/or friends outside the marriage. We attempted to collect these reports from two persons per participant. Unfortunately, complete data were available for only 26 wives and 23 husbands. At least one informant completed the MAPP for 41 wives and 39 husbands. The low numbers limited our power to conduct the multilevel modeling with this source of information, so the collateral informants were left out of the multilevel model results. Full results of these analyses are available from Susan C. South.

bands). Roughly one quarter of the sample (28% of wives, 22% of husbands) was below the typical distress threshold of 100 (Rogge & Bradbury, 1999). There was no significant difference between husbands' and wives' self-reported satisfaction, $t(81) = 0.60$, *ns*, and satisfaction was correlated .49 for husbands and wives.

Assessment of partner violence. The Conflict Tactics Scale (CTS; Straus, 1979) consists of 18 items that measure the frequency of a variety of functional, verbally aggressive, and physically aggressive conflict tactics. The CTS has demonstrated good reliability (split half = 0.90; Straus, 1979) and has been used in national surveys of the prevalence of marital aggression (Straus & Gelles, 1990). The CTS lists each behavior twice, asking (a) what the participant has done to his or her partner and (b) what the partner has done to the participant. For each behavior listed, the participant indicates whether the behavior has ever occurred or, if it has happened in the past 12 months, how often (on a scale of 0–6 representing *never* to *more than 20 times*). We used the higher of the two past-year frequencies reported by either spouse (i.e., if a wife reported a greater number of incidents than did her husband, we used the frequency she reported). Therefore, the final scores were a past-year composite of the target's report of own behavior and the spouse's report of target behavior.

We used two measures of partner conflict. First, following Straus and Gelles (1990), we created a Verbal Aggression Scale that included items measuring insults, sulking, stomping, saying something spiteful, threatening to hit or throw something at one's partner, or throwing something. A sum score was calculated for each individual participant by summing the items (measured on a scale of 0–6); higher scores reflected greater violence.³ The average for the Verbal Aggression Scale was 11.13 ($SD = 7.19$) for wives' perpetration and 9.76 ($SD = 6.35$) for husbands' perpetration. Second, we collapsed across the eight items measuring minor or severe physical violence (throwing something at one's partner; pushing/grabbing/shoving; slapping; kicking; hitting; beating; threatening; or using a knife or gun) to count whether any physically violent act had been perpetrated by the target in the last year. The past-year prevalence rates, based on composite report, were 29.27% of wives and 19.51% of husbands. Consistent with previous research, more women than men reported being physically violent, and in some cases women reported more violence for their partners than husbands reported for themselves (Browning & Dutton, 1986; Jouriles & O'Leary, 1985; O'Leary et al., 1989; Straus & Gelles, 1990).

Analyses

As a first step, we conducted reliability analyses and simple data plots to assess the psychometric adequacy of the measures. To handle the unique nature of the data (inclusion of both members of married couples), we utilized two-level multilevel models (MLM). These models—also called multilevel linear models, nested models, mixed linear models, covariance components models, or hierarchical linear regression models—are an extension of the general linear model in which there are multiple units of analysis, or levels, often arranged hierarchically (Raudenbush & Bryk, 2001; Snijders & Bosker, 1999). Level 1 of the model represents the individual-level effects, whereas Level 2 represents couple-level effects. Multilevel modeling has recently been applied to family data, in particular for married persons (see Barnett, Marshall, Raudenbush,

& Brennan, 1993) because married individuals are nested within families and are thus inherently nonindependent. In this study, we followed the work of Campbell and Kashy (2002), Kenny and Cook (1999), and Snijders and Kenny (1999), who detailed guidelines for estimation of actor and partner effects using multilevel modeling. A series of stepwise hierarchical linear regressions were conducted for the three outcome variables. For all models, the grouping variable (i.e., the intercept) was treated as a random effect, and all the individual difference predictor effects were fixed (i.e., there were no error terms in these equations) and grand mean centered.

SAS PROC MIXED was utilized for the marital satisfaction and verbal aggression outcome variables. The MAPP PD scores were normalized with a log transformation to correct for skew. Regression coefficients were tested by *t* tests to evaluate the fixed effects in PROC MIXED. Following Snijders and Bosker (1994, 1999), we calculated the proportional reduction of prediction error, R^2 (or what is commonly called the amount of variance explained in multiple linear regression), by comparing the variance components in unrestricted, baseline models (which contained only the dependent variable and a random intercept) with restricted models (which contained all final independent variables). We used SAS PROC NL MIXED to run multilevel binary logistic regressions on the physical violence outcome measure (McMahon, Pouget, & Tortu, 2006). For these models, we report regression coefficients and odds ratios. For all models, we report Akaike's information criterion (AIC; Akaike, 1987), an information-theoretic fit statistic that evaluates how well the specified model reproduces the observed data. Lower AIC values generally reflect the best fitting model.

Results

PD symptoms of both spouses as assessed by self- and spouse report were used to explain the three outcome measures: marital satisfaction, verbal aggression, and physical violence. Marital satisfaction was the target's self-reported level of satisfaction with the relationship. The partner conflict measures were composite scores based on both target report and spouse report of the target's behavior. These measures reflected (a) the level of verbal aggression by the target toward his or her partner in the past year and (b) whether the target had perpetrated any physical violence toward his or her partner in the past 12 months. A series of stepwise multilevel models was conducted by regressing the outcome variables separately on total PD scores and each of the 10 individual PD scales. To account for comorbidity among the PD symptom scales, we included a variable summing all of the other PD symptoms in each of the 10 separate PD models (e.g., for paranoid PD, we included a variable summing all of the symptoms from the 9 other PDs). In the first step, gender, age, education level, and other PD symptoms (for the 10 individual PD scales) were entered into the equation as covariates. In the second step, actor (the self-report of the target) and partner (self-report of the target's spouse) were entered. Finally, the third step included partner-by-spouse (how the target rated his or her spouse), actor-by-spouse

³ An alternate scoring strategy for the CTS is to substitute the midpoint frequency scores for each response category (e.g., to use 0, 1, 2, 4, 8, 15, and 25 instead of 0–6). We chose not to use this strategy, because it results in more skewed distributions and because the scoring methods were highly correlated.

(how each target was rated by his or her spouse), and discrepancy, or the absolute value of the difference between actor and actor-by-spouse (i.e., how different your view of yourself is from your spouse's view of you). Gender interactions for each independent variable and the interaction of the two spouse reports (Actor \times Partner, Actor-by-Spouse \times Partner-by-Spouse) were added to the model; if an interaction was significant, it remained in the model.

PD Symptoms and Marital Satisfaction

The final model predicting a target's own marital satisfaction from total PD score explained 23% of the variance (see Table 1). The addition of self-reported PD symptoms of both partners in Step 2 improved the model over the covariates-only model in Step 1, and the actor effect was a significant, negative predictor of satisfaction. It was the addition of spouse-reported total PD symptoms of both partners in Step 3 that substantially increased the explained variance. In the final model, the partner-by-spouse effect, $B = -35.84$, $t(72) = -4.41$, $p < .0001$, and the actor-by-spouse effect, $B = -24.24$, $t(72) = -2.87$, $p < .01$, were significant, such that higher levels of spouse-reported pathology were related to lower target satisfaction.⁴

When self-report of both partners was added to the covariates-only model for each of the 10 PD scales, the variance explained increased from 0% to 3%, and the AIC improved for all models (see Table 2). In Step 2, the actor effect was significant for Schizoid (negatively related) and Schizotypal (positively related), and the partner effect was significant and negatively related to satisfaction for Narcissistic PD. The addition of spouse reports of PD symptoms further increased the R^2 value for several of the PD scales.⁵ After we controlled for other PD symptoms, the Schizotypal, Antisocial, Borderline, Dependent, and Obsessive-Compulsive PD scales explained additional variance in satisfaction with the addition of partner report of pathology. For Dependent PD, each of the four reporter main effects was significant. Higher levels of dependency, as reported by the target and his or her spouse (actor and partner), were associated with higher levels of target satisfaction, but higher levels of spouse-reported pathology were related to lower levels of satisfaction. To understand the Discrepancy \times Gender interaction for the Schizotypal scale, we examined regression equations separately for men and women. The association between higher discrepancy scores and lower target satisfaction was significant for wives, $t(68) = -2.97$, $p < .01$, but not for husbands, $t(67) = 1.33$, *ns*.

PDs and Verbal Aggression

The final model predicting verbal aggression from PD total score explained 18% of the variance and had an AIC of 947. It improved over a model that included only self-reports ($R^2 = 7\%$, AIC = 986) and a model that included only covariates ($R^2 = 3\%$, AIC = 998). In the best fitting MLM model for total PD features, spouse report of the target (actor-by-spouse) was significantly positively related to verbal aggression, $B = 12.98$, $t(72) = 4.35$, $p < .0001$, such that higher levels of PD symptoms were related to higher levels of aggression (see Table 1). The actor effect, which had been significant in Step 2, no longer remained significant when spouse reports were added to the model.

The addition of self-reports to the covariates-only model resulted in greater variance explained for several of the 10 PD scales and lower AIC values for all of the scales (see Table 3). The changes in R^2 from Step 1 to Step 2 in the modeling ranged from 0% to 5%, and the Antisocial and Borderline scales showed the greatest increase. Further, the only significant actor effects in Step 2 were found for Antisocial and Borderline. When spouse reports were added to the model, five of the PD scales showed at least small increases in R^2 . Of the Cluster A PDs, both Schizoid and Schizotypal showed improvement in the models with the addition of spouse reports; for Schizoid there was a significant Partner-by-Spouse \times Gender effect, whereas for Schizotypal there was a significant Discrepancy \times Gender effect. For two of the PD scales, Borderline and Dependent, spouse report of symptoms particularly increased the percentage of variance explained and improved the fit of the model according to AIC. The partner-by-spouse and actor-by-spouse effects were each significant for the Borderline and Dependent scales, such that higher levels of pathology as reported by each spouse were related to higher levels of verbal aggression by the target.

PDs and Physical Violence

The addition of self-reports of total PD symptoms improved the model predicting any physical violence perpetration (AIC = 141) over a covariates-only model (AIC = 149). Both actor and partner were significant predictors of physical violence in Step 2. The final model incorporating spouse report improved over the model including only self-report (AIC = 138). In the final model, actor and partner were no longer significant, but partner-by-spouse ($B = 0.11$, odds ratio [OR] = 1.12), $p < .05$) did significantly predict perpetration of physical violence.

⁴ In the final model, self-report PD scores of both partners were positively related to marital satisfaction, such that higher PD pathology was related to greater marital happiness. This relation is a change from earlier in the modeling and the bivariate correlations, in which both self-report scores (of husband and wife) were negatively related to satisfaction. (A similar pattern was found in regard to the Verbal Aggression scale). This change seems to be an instance of a crossover suppressor effect, in that the beta coefficients of the actor and partner scores have reversed signs and the beta coefficients for the actor-by-spouse and partner-by-spouse effects in the final model have increased relative to the initial beta coefficients in a model that includes them alone (Paulhus, Robins, Trzesniewski, & Tracy, 2004). The negative association between self-reports of pathology and marital functioning found in Step 2 of the modeling is due to the variance in self-reports that overlaps with the variance in spouse reports. Thus, in the final model, once that common variance is accounted for by inclusion of spouse reports, the part of self-reported personality pathology not shared with the pathology seen by one's spouse is positively related to marital satisfaction (and negatively related to verbal aggression).

⁵ Of note, in several instances the R^2 actually decreased with the addition of self- and spouse reports of PD features (see Table 2). Snijders and Bosker (1999, p. 123) suggested that "for reasonably large data sets, a decrease by a magnitude of 0.05 or more" may be a sign of model misspecification but otherwise is most likely "a result of chance fluctuations." Given that decreases in the current analyses were on the magnitude of 0.01 or 0.02, we feel reasonably certain that they were due to fluctuations. Further, when we compared AIC values for the models after each of the three steps, in every case the AIC for the full model (with covariates, self-reports, and spouse reports) was the best.

Table 1
 Percentage of Variance Explained by Total Personality Disorder (PD) Score for Two-Level Multilevel Modeling of Marital Functioning

Variable	Marital satisfaction			Verbal aggression			Physical violence		
	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	OR	AIC
Step 1									
Covariates		.03	1,364		.03	998			149
Step 2									
Actor	−19.37**	.10	1,343	5.51*	.07	986	0.08*	1.08	141
Partner	−11.19			3.44			0.07*	1.07	
Step 3									
Actor	14.58	.23	1,305	−1.02	.18	947	0.01	1.01	138
Partner	15.75			−5.89			0.02	1.02	
Actor-by-spouse	−24.24**			12.98***			0.06	1.06	
Partner-by-spouse	−35.84***			3.11			0.11*	1.12	
Discrepancy	−9.33			5.46*			−0.01	0.99	

Note. *N* = 164. *R*² = percentage of variance explained; AIC = Akaike's information criterion; OR = odds ratio; Step 1 = a model including only covariates; Step 2 = a model including covariates and self-reports of PD symptom scales; Step 3 = a model including covariates, self-reports of PD symptom scales, partner reports of PD symptom scales, and discrepancy; actor = target's self-reported PD symptoms; partner = PD symptoms of the target's spouse, as reported by the spouse; actor-by-spouse = PD symptoms of the target, as reported by target's spouse; partner-by-spouse = PD symptoms of target's spouse, as reported by the target.

* *p* < .05. ** *p* < .01. *** *p* < .0001.

After we controlled for other PD symptoms, almost none of the individual PDs demonstrated a strong relationship with physical violence with the addition of self-reports (see Table 4). Only the addition of self-report for the Antisocial and Avoidant scales resulted in model improvement according to AIC. Partner report of Antisocial PD approached significance (*B* = .96, OR = 2.61, *p* = .06) when added in Step 2. When spouse reports were added to the model for the Antisocial and Narcissistic scales, this resulted in small improvement in AIC. In the final model for Antisocial, the actor effect trended toward significance (*B* = 1.91, OR = 6.76, *p* = .08). Similarly, the partner-by-spouse effect for Narcissistic (*B* = .77, OR = 2.16, *p* = .06) and the discrepancy effect for Schizotypal (*B* = .59, OR = 1.80, *p* = .06) approached significance.

Discussion

Overall, personality pathology was robustly associated with all three forms of marital functioning. As expected, we found that a person's self-reported level of total PD symptoms was associated with verbal aggression and partner violence. This finding confirmed previous research that found significant links between greater number of PD symptoms and higher frequency of partner violence (Ehrensaft et al., 2006; Holtzworth-Munroe et al., 2000; Holtzworth-Munroe & Stuart, 1994). The evidence also demonstrated a significant partner effect for perpetration of physical violence, such that a person's level of total PD features was significantly related to greater levels of violence perpetrated by that person's partner. Findings for both the actor and partner effects for partner violence suggest that people with higher levels of personality pathology may be particularly likely to end up in a relationship that is marked by aggressive behavior by both members of the couple. For marital satisfaction, the target's self-report of PD symptoms explained a substantial amount of the variance, and higher levels of pathology were associated with lower levels of

satisfaction. Certainly, this result should not be surprising in light of research that suggests that people with PDs intensify their interpersonal problems because they are rigid, inflexible, and either unwilling or unable to adapt to the social challenges they encounter (Chen et al., 2004; J. G. Johnson, Chen, & Cohen, 2004; Pagano et al., 2004).

A main contribution of the present study is the identification of spouse report as an important source of PD assessment in association with relationship dysfunction. It appears that self- and spouse report of personality are not mutually exclusive sources of information in regard to relationships with marital functioning. The addition of spouse-reported information on personality pathology revealed patterns of association with marital functioning not shown by the use of self-reports alone. This was true for spouse reports of total PD symptoms and all three outcome measures, although which spouse effects were significant differed by outcome. Differences between verbal aggression and physical violence are particularly intriguing and may indicate either that verbal aggression precedes physical aggression (Murphy & O'Leary, 1989) or that these two forms of conflict are taxometrically different from each other and from satisfaction (Heyman & Smith Slep, 2006).

Borderline and dependent PD features were strongly related to low satisfaction and high verbal aggression. The symptoms of emotional lability and identity dysregulation that define borderline PD may predispose an individual to the most serious and maladaptive forms of dysfunction. This finding fits well with evidence that the most longitudinally stable borderline criteria are impulsivity, anger, and affective instability (McGlashan et al., 2005). It would be difficult for any marriage to survive if one partner were never sure how the other was going to function emotionally on a day-to-day basis. Of note, in the final model, self-reports of dependent features were positively related to satisfaction, as has been found in previous research (e.g., Ehrensaft et al., 2006), such that higher

Table 2
Parameter Estimates for Two-Level Multilevel Modeling of Marital Satisfaction

Variable	Cluster A											
	Paranoid			Schizoid			Schizotypal					
	B	R ²	AIC	B	R ²	AIC	B	R ²	AIC			
Step 1												
Covariates		.22	1,312		.22	1,314		.23	1,310			
Step 2												
Actor	-0.72	.22	1,300	-19.71*	.24	1,296	13.60*	.26	1,294			
Partner	-5.87			-6.50			5.61					
Step 3												
Actor	-6.26	.21	1,280	-19.46	.23	1,278	15.22*	.29	1,264			
Partner	-6.45			-5.63			6.73					
Actor-by-spouse	3.00			1.87			-4.35					
Partner-by-spouse	3.24			-3.23			-1.43					
Discrepancy	10.41			0.67			-8.54					
Discrepancy × Gender							-15.68**					
	Cluster B											
	Antisocial			Borderline			Histrionic			Narcissistic		
	B	R ²	AIC	B	R ²	AIC	B	R ²	AIC	B	R ²	AIC
Step 1												
Covariates		.21	1,315		.21	1,315		.22	1,313		.23	1,311
Step 2												
Actor	-12.98	.23	1,300	-10.51	.21	1,299	-2.65	.21	1,301	0.53	.26	1,284
Partner	-10.56			2.17			-5.94			-13.03*		
Actor × Partner										-44.11*		
Step 3												
Actor	-12.39	.25	1,273	-3.11	.26	1,274	0.27	.20	1,283	2.29	.25	1,265
Partner	-1.02			10.77			-2.15			-14.77*		
Actor × Partner										-54.75*		
Actor-by-spouse	1.65			-12.73			-4.55			3.51		
Partner-by-spouse	-17.89*			-20.74**			-5.39			-3.65		
Discrepancy	-0.39			-0.97			6.49			-8.04		
	Cluster C											
	Avoidant			Dependent			Obsessive-compulsive					
	B	R ²	AIC	B	R ²	AIC	B	R ²	AIC			
Step 1												
Covariates		.22	1,312		.20	1,315		.22	1,314			
Step 2												
Actor	0.43	.22	1,301	7.79	.22	1,301	-2.43	.24	1,293			
Actor × Gender							11.90*					
Partner	3.87			9.92			-1.30					
Step 3												
Actor	0.47	.21	1,282	20.96**	.32	1,266	-3.80	.25	1,261			
Actor × Gender							18.37**					
Partner	3.29			22.88**			2.17					
Actor-by-spouse	-4.39			-25.93**			-0.79					
Actor-by-Spouse × Gender							-12.60*					
Partner-by-spouse	3.95			-26.03**			-7.24					
Discrepancy	-6.39			2.13			-8.35					

Note. N = 164. R² = percentage of variance explained; AIC = Akaike's information criterion; PD = personality disorder; actor = target's self-reported PD symptoms; partner = PD symptoms of the target's spouse, as reported by the spouse; actor by spouse = PD symptoms of the target, as reported by target's spouse; partner by spouse = PD symptoms of target's spouse, as reported by the target.

* p < .05. ** p < .01. *** p < .0001.

Table 3
 Parameter Estimates for Two-Level Multilevel Modeling of Verbal Aggression

Variable	Cluster A											
	Paranoid			Schizoid			Schizotypal					
	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC			
Step 1												
Covariates		.13	960		.13	962		.15	955			
Step 2												
Actor	4.49	.14	948	1.66	.15	946	-2.07	.15	946			
Partner	1.36			-0.30			-3.21					
Partner × Gender				4.20*								
Step 3												
Actor	3.86	.13	937	2.75	.20	918	-4.63	.21	923			
Partner	0.62			0.92			-5.29*					
Partner × Gender				7.66**								
Actor-by-spouse	1.80			1.32			3.92					
Partner-by-spouse	0.95			-3.45			3.54					
Partner-by-Spouse × Gender				-4.40*								
Discrepancy	-0.50			3.71			3.40*					
Discrepancy × Gender							3.73*					
Variable	Cluster B											
	Antisocial			Borderline			Histrionic			Narcissistic		
	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC
Step 1												
Covariates		.15	956		.13	962		.16	956		.15	955
Step 2												
Actor	6.76**	.20	942	7.68**	.18	939	2.48	.16	948	-1.63	.14	946
Partner	4.15			2.11			2.61			1.47		
Step 3												
Actor	9.00**	.20	928	3.23	.28	901	3.74	.17	933	-2.94	.14	934
Partner	5.82			-1.17			4.46			0.40		
Actor-by-spouse	-3.57			10.78***			-0.68			3.19		
Partner-by-spouse	-2.79			5.45*			-4.07			2.08		
Discrepancy	-3.29			1.75			0.87			1.58		
Discrepancy × Gender				2.85*								
Variable	Cluster C											
	Avoidant			Dependent			Obsessive-compulsive					
	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC	<i>B</i>	<i>R</i> ²	AIC			
Step 1												
Covariates		.15	954		.14	954		.16	958			
Step 2												
Actor	-4.15	.16	944	-2.92	.14	946	2.25	.15	951			
Partner	-1.99			-1.04			0.49					
Step 3												
Actor	-5.54*	.19	931	-6.50**	.22	922	2.03	.15	938			
Partner	-3.35			-4.58			.11					
Actor-by-spouse	3.81			6.62*		2.32						
Actor-by-Spouse × Gender				2.87*								
Partner-by-spouse	3.21			6.49**		-1.30						
Discrepancy	2.77			0.17			2.51					

Note. *N* = 164. *R*² = percentage of variance explained; AIC = Akaike's information criterion; PD = personality disorder; actor = target's self-reported PD symptoms; partner = PD symptoms of the target's spouse, as reported by the spouse; actor-by-spouse = PD symptoms of the target, as reported by target's spouse; partner-by-spouse = PD symptoms of target's spouse, as reported by the target.

* *p* < .05. ** *p* < .01. *** *p* < .0001.

Table 4
Parameter Estimates for Two-Level Multilevel Modeling of Physical Violence

Variable	Cluster A											
	Paranoid			Schizoid			Schizotypal					
	B	OR	AIC	B	OR	AIC	B	OR	AIC			
Step 1												
Covariates			137			136				136		
Step 2												
Actor	0.29	1.34	139	0.26	1.29	138	0.06	1.06		136		
Partner	0.43	1.53		0.26	1.30		0.15	1.17				
Partner × Gender							-0.34*	0.71				
Step 3												
Actor	0.08	1.08	144	0.18	1.20	142	-0.11	0.89		138		
Partner	0.23	1.25		0.42	1.52		0.09	1.09				
Actor-by-spouse	0.21	1.23		0.07	1.07		-0.37	0.69				
Partner-by-spouse	0.30	1.35		-0.19	0.82		0.26	1.30				
Discrepancy	0.09	1.10		0.47	1.60		0.59	1.80				
Variable	Cluster B											
	Antisocial			Borderline			Histrionic			Narcissistic		
	B	OR	AIC	B	OR	AIC	B	OR	AIC	B	OR	AIC
Step 1												
Covariates			137			137			136			136
Step 2												
Actor	0.68	1.98	134	0.59	1.81	137	0.12	1.13	139	-0.25	0.78	137
Partner	0.96	2.61		0.30	1.35		0.09	1.09		-0.45	0.64	
Step 3												
Actor	1.91	6.76	131	0.40	1.50	140	0.37	1.45	143	-0.42	0.66	136
Partner	1.28	3.58		0.14	1.15		0.18	1.20		-0.65	0.52	
Actor-by-spouse	-0.92	0.40		0.49	1.64		-0.33	0.72		0.34	1.41	
Partner-by-spouse	0.00	1.00		0.51	1.66		-0.11	0.90		0.77	2.16	
Discrepancy	-1.22	0.29		-0.18	0.83		-0.26	0.77		-0.15	0.86	
Variable	Cluster C											
	Avoidant			Dependent			Obsessive-compulsive					
	B	OR	AIC	B	OR	AIC	B	OR	AIC			
Step 1												
Covariates			135			134			136			
Step 2												
Actor	-0.59	0.56	132	0.00	1.00	137	0.10	1.11	137			
Partner	-0.18	0.84		-0.24	0.79		0.35	1.42				
Step 3												
Actor	-0.63	0.53	137	0.06	1.06	141	0.60	1.83	139			
Partner	-0.26	0.77		-0.12	0.88		0.77	2.17				
Actor-by-spouse	-0.17	0.84		-0.03	0.97		0.28	1.32				
Partner-by-spouse	0.13	1.14		-0.35	0.70		-0.13	0.88				
Discrepancy	-0.11	0.89		-0.19	0.83		-0.68	0.51				

Note. N = 164. OR = odds ratio; AIC = Akaike's information criterion; PD = personality disorder; actor = target's self-reported PD symptoms; partner = PD symptoms of the target's spouse, as reported by the spouse; actor-by-spouse = PD symptoms of the target, as reported by target's spouse; partner-by-spouse = PD symptoms of target's spouse, as reported by the target.

* p < .05. ** p < .01. *** p < .0001.

levels of dependent PD symptoms were related to greater satisfaction. However, spouse reports of dependent symptoms were negatively related to satisfaction, with higher levels of dependent features as reported by one's spouse related to lower levels of satisfaction. A similar pattern was found in regard to verbal aggression. In the final model, higher levels of self-reported

dependent symptoms were related to the target reporting less verbal aggression against his or her partner, whereas higher levels of spouse report were related to higher levels of verbal aggression. Put another way, if I think that I'm dependent, my partner may find that acceptable, possibly even reassuring; however, if my spouse thinks that I'm dependent, he or she may find that aggravating

within the context of the relationship. This relation seems to indicate that the form of dependent PD that is most maladaptive for the marital relationship is best captured by informant report.

Two mechanisms may operate to produce the association between partner reports of personality pathology and poor marital functioning. First, these individuals may lack insight into their behavior (a notion inherent in most conceptualizations of PD). People with PD traits may have distressed marriages because they do not understand that their dysfunctional behavior will trigger negative reactions from their spouse and thus intensify their own distress. This hypothesis is supported by the association between ratings of the target by his or her spouse (actor-by-spouse) and lower levels of satisfaction and higher levels of verbal aggression. Certainly, disagreement between self- and spouse report does not necessarily imply that the target lacks knowledge of how he or she is viewed by the spouse. Previous research has shown that people have some incremental knowledge of how they are viewed by others along PD trait dimensions, but they do not report this information unless specifically queried (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005). Future research would do well to incorporate reports of how each target expects to be rated on PD symptoms by his or her spouse.

For individuals with PD pathology, development of greater insight into their behavior may be an important therapeutic goal. Therapists who are treating a couple in which one spouse presents with comorbid personality pathology and marital distress may wish to encourage development of self-knowledge, perhaps by incorporating how one partner interprets the actions of another. Metaperception, or the ability to see yourself as others see you, is a well-known concept in the normal personality literature (Norman, 1969). Laboratory studies that provide people with opportunities to observe specific aspects of their behavior carefully in group situations result in greater accuracy of metaperception (Albright & Malloy, 1999). With marital intervention, a focus on how we might come to know more about ourselves (Wilson, 2002) may be one of the most important elements of the therapeutic process. Marital therapy may, in fact, be an ideal setting in which to address personality pathology. To date, there are few available therapeutic approaches for PD (for exceptions, see Beck, Freeman, & Davis, 2004; Benjamin, 2003; Linehan & Dexter-Mazza, 2008). Addressing maladaptive personality dynamics in the context of their effect on relationship functioning may be a novel method of treating these disorders in a supportive and nonthreatening manner.

The second mechanism that might explain the association between partner-reported PD symptoms and general marital distress is sentiment override. A global evaluation of one's marital relationship can easily bias the knowledge that one can provide regarding the personality of one's partner (Kurtz & Sherker, 2003) or influence perceptions of that partner's behavior (Christensen, Sullaway, & King, 1983; Jacobson & Moore, 1981). Individuals in distressed marriages report higher daily frequencies of negative events, tend to overestimate the rate of occurrence of negative behaviors, and focus on displeasing behavior by their spouse (Floyd & Markman, 1983; Jacobson, Follette, & McDonald, 1982; P. L. Johnson & O'Leary, 1996; Sillars, Roberts, Leonard, & Dun, 2000; Weiss, 1980). We found some support for this process, in that the target's report of the partner for total PD symptoms (partner-by-spouse) was negatively related to the target's own satisfaction and perpetration of physical violence. The target's

rating of the partner was also significantly related to satisfaction and verbal aggression for several of the individual PDs but not to physical violence (although there was a trend for narcissistic PD).

Limitations

One limitation involves the demographics of the participants. This was a largely white and well-educated community sample. It is unknown whether the findings reported here will generalize to different ethnic groups or to persons from different socioeconomic levels who may be struggling with various issues that were largely not at play with the current sample. Further, it should be noted that this was a nonclinical sample; thus, the findings presented here have been explained in terms of personality features and traits, not of PDs per se. It remains to be seen whether persons with a diagnosed PD would have the same difficulties with marital adjustment as found here for persons with subclinical levels of PDs. Third, given the high comorbidity between PDs and Axis I disorders (Krueger & Tackett, 2006), researchers should endeavor to examine the interrelationships between personality pathology and other forms of psychopathology in marital relationships. Fourth, given that PD pathology may act to bias one's ratings of oneself or others, future research should attempt to gather reports of PD pathology from knowledgeable informants outside the marriage. Finally, as Karney and Bradbury (1995) correctly pointed out, the most revealing way to examine predictors of marital satisfaction is over time. Future research with a longitudinal design will better elucidate the temporal direction between personality and marital satisfaction.

Summary

Findings from the current study suggest that the processing dynamics that occur in people with PD features are particularly like to be associated with misunderstanding, misconceptions, poor communication, and even verbal and physical aggression. People with PDs may act in a way that is likely to annoy their spouse, or people with PD features are likely to interpret actions by their spouse in a threatening or negative manner. Individuals with pathological personality features have a greater likelihood of being generally unhappy in their marriage, but more important, they may fail to recognize that the source of their unhappiness lies in their own way of processing and interacting with the world. For people with increased levels of PD symptoms, a lack of self-knowledge into their thoughts, behaviors, and emotions may be a prime contributor to an unhappy marriage. The results of this study suggest, as Robins, Caspi, and Moffitt (2002) have stated, that "personality traits should be central to any analysis of why relationships thrive or falter, and they appear to be appropriate targets for intervention" (p. 955).

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