PERSONALITY DISORDER FEATURES AND PARAPHILIC INTERESTS AMONG UNDERGRADUATES: DIFFERENTIAL RELATIONS AND POTENTIAL ANTECEDENTS

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We examined the relations between: (1) narcissism, psychopathy, *DSM-5* personality disorder symptom counts; and (2) paraphilic interests among undergraduates (N = 608). Base rates of paraphilic interests were appreciable. The disinhibition and meanness features of psychopathy and the entitlement and exploitativeness features of narcissism were robustly associated with paraphilic interests, particularly sexual sadism, whereas the boldness features of narcissism and psychopathy were essentially unrelated to these interests. Narcissism and psychopathy features typically manifested the most pronounced relations with paraphilic interests, although antisocial personality disorder features were also strong predictors. By and large, these relations were comparable across gender. Lastly, there was no evidence that erotophilia mediated the relations between the narcissism and psychopathy features and paraphilic interests, most likely because erotophilia was generally unrelated to paraphilic interests. Relative to other dimensions of personality disorders, facets of meanness and disinhibition from psychopathy and entitlement/exploitativeness facets from narcissism were most associated with paraphilic interests.

Paraphilias comprise abnormal sexual fantasies and interests that may become psychopathological at extreme levels. Understanding the correlates and etiology of paraphilias is vital to understanding the causes of many sex offenses, and personality disorder features may offer one such avenue. For instance, psychopathic traits, such as lack of empathy and poor impulse control, are considered hallmarks of sex offenders deemed to be high risk (Woodworth et al., 2013). Moreover, psychopathic and narcissistic traits have been linked to sexual violence among undergraduates (Mouilso & Calhoun, 2012), and are elevated among sexual murderers (e.g., Chan, Beauregard, & Myers, 2015) and incarcerated sex offenders (e.g., Barnard, Hankins, & Robbins, 1992).

Certain personality and personality disorder (PD) features and paraphilic interests may be linked empirically, as both are predictors of recidivism (e.g., Woodworth et al., 2013), yet the relations between these two broad domains are not well understood.

Despite the theoretical ties between PD constructs and paraphilias, the correlates and causes of paraphilic interests have been largely neglected, and little research has examined paraphilic interests in nonclinical or nonforensic populations. Thus, we sought to better delineate the relations between narcissistic and psychopathic traits, on the one hand, and paraphilic interests, on the other. Additionally, we examined: (1) the specificity of these relations by comparing them with the relations between features of other PDs and paraphilic interests; and (2) a potential mechanism by which these relations arise by means of mediation analyses. To do so, we drew upon two pooled moderately-sized undergraduate samples.

PARAPHILIAS

Paraphilias comprise a heterogeneous constellation of aberrant, and sometimes deviant, sexual desires and fantasies surrounding either a relatively atypical target (i.e., nonconsenting individuals, inanimate objects) or activity (i.e., hurting others). Some taxonomies of paraphilias, such as that of the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (*DSM-5*; American Psychiatric Association, 2013), include eight paraphilic disorder subtypes: exhibitionistic, fetishistic, frotteuristic, pedophilic, sexual masochism, sexual sadism, transvestic (i.e., cross-gender), and voyeuristic. According to the *DSM-5*, atypical interests alone are insufficient for diagnoses of paraphilic disorder. Instead, paraphilic interests represent longstanding and persistent sexual desires (Dawson, Bannerman, & Lalumière, 2016) that need not be associated with clinically significant distress or impairment. Until relatively recently, paraphilias were construed as clinical constructs with relatively low base rates in the general population. As such, paraphilias have been studied nearly exclusively within the confines of forensic or clinical settings, often using exclusively male samples of sex offenders (e.g., Kafka, 2012).

This assumption notwithstanding, recent research suggests that paraphilic interests may be far more common than presumed (Ahlers et al., 2011; Dawson et al., 2016), and may even be found at comparable levels in nonoffenders and offenders (Williams, Cooper, Howell, Yuille, & Paulhus, 2009). Ahlers and colleagues (2011) found that 64% of male German community members reported at least one paraphilic interest, with the most common being voyeurism (35%), fetishism (30%), and sadism (22%), followed by frotteurism (13%), pedophilia (10%), transvestic fetishism (5%), and exhibitionism (4%). These findings are comparable with those reported for college-aged Canadian community members (Dawson et al., 2016). In addition to being relatively common in the general population, recent taxometric research suggests that paraphilias are continuously distributed (Thompson,

2016), at least among males, suggesting that those who endorse various paraphilic interests differ in degree as opposed to in kind from those who do not endorse such interests (see also Kafka, 2010). These findings are consistent with growing research supporting the dimensionality of both general hypersexuality (Graham, Walters, Harris, & Knight, 2016) and sexual compulsivity (Walters, Knight, & Långström, 2011). Taken together, research supports the study of paraphilic interests in the general population, and suggests that diagnostic levels of these interests represent one extreme end of the continuum.

PSYCHOPATHY AND NARCISSISM

Two overlapping but separable constellations of personality traits (see also Schoenleber, Sadeh, & Verona, 2011), namely, psychopathy and narcissism, have long been associated with many attitudes and behaviors associated with paraphilias: sexual aggression (Mouilso & Calhoun, 2012); sexual coercion (O'Connell & Marcus, 2016); sexual offending (Olver & Wong, 2006); and looser, unrestricted attitudes toward sexual behavior (i.e., sociosexuality; Kastner & Sellbom, 2012). Psychopathy is a constellation of traits characterized by callousness towards others, poor impulse control, promiscuity, and fearlessness, concealed by a veneer of superficial charm and poise (Cleckley, 1941/1982). Like psychopathy, narcissism is typically characterized by lack of empathy, interpersonal exploitativeness, and grandiose sense of self-worth, but it also encompasses excessive need for admiration, entitlement, and preoccupation with fantasies of unlimited success (e.g., Miller & Campbell, 2008).

As is the case for paraphilias, psychopathy and its constituent factors appear to be best explained by a dimensional, as opposed to a taxonic (i.e., categorical), structure (e.g., Edens, Marcus, Lilienfeld, & Poythress, 2006). On balance, it is increasingly accepted that psychopathy is a multidimensional combination or even configuration of traits that may be associated with numerous overlapping phenotypic presentations. In their influential triarchic model of psychopathy, Patrick, Fowles, and Krueger (2009) proposed that prototypical psychopathy is composed of three separable traits. According to this model, psychopathy comprises Boldness, Disinhibition, and Meanness, the latter of which overlaps moderately with a somewhat similar construct, Coldheartedness (Lilienfeld & Widows, 2005). Boldness reflects a relative insensitivity to signals of threat, and comprises an ability to remain calm in threatening situations, interpersonal dominance, reduced stress reactivity, physical harm avoidance, and thrill seeking (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). Disinhibition is a predisposition toward deficits in impulse control marked by a lack of planfulness, foresight, and affect regulation (see also Krueger, Derringer, Markon, Watson, & Skodol, , 2012), and overlaps with well-established traits, such as impulsivity, impulsive unsocialized sensation seeking, and (reversed) Constraint, in other personality models (e.g., Clark, Simms, Wu, & Casillas, 2008). Finally, Meanness is marked by a

lack of empathy and social attachment, guiltlessness, disdain towards others, and oppositionality (Patrick et al., 2009), and overlaps with the construct of antagonism in other personality models (e.g., Clark et al., 2008; Krueger et al., 2012). The related construct of Coldheartedness overlaps to some extent with Meanness, but in contrast to Meanness, largely reflects passive emotional detachment marked by lovelessness, guiltlessness, and remorselessness as opposed to active antagonism (Lilienfeld & Widows, 2005).

Narcissism is similarly best conceptualized as a comprising two multidimensional constructs. One dimension, grandiose narcissism, is associated with a self-assured, flamboyant, and interpersonally dominant style. The other, vulnerable narcissism, is associated with a socially withdrawn and emotionally fragile interpersonal style. These two dimensions are subsumed within the *DSM-5* diagnosis of NPD (American Psychiatric Association, 2013), which appears to be a blend of both grandiose and vulnerable narcissism, albeit with a greater emphasis on the former.

PERSONALITY DISORDERS AND PARAPHILIAS

Psychopathy and Narcissism. A significant amount of work has examined personality disorder features and their implications for a broad swath of deviant or otherwise aberrant sexual attitudes and behaviors. Nevertheless, little research has examined these personality constructs' relations with paraphilias (or paraphilic interests) per se. Although potentially overlapping with other forms of sexual deviance (Kafka, 2010), paraphilic interests are separable constructs that may or may not bear the same correlates as other forms of sexual interests.

Drawing on records and clinical interviews, Woodworth and colleagues (2013) examined Canadian high-risk sex offenders and found that 61% of those scoring highly on the Psychopathy Checklist-Revised (PCL-R; Hare, 1991, 2003), the most widely-used psychopathy measure in applied settings, reported violent sexual fantasies. Studying paraphilic interests outside of prison walls, Williams and colleagues (2009) found that narcissism significantly predicted sadistic fantasies, whereas psychopathy significantly predicted both sadistic and bondage fantasies (Williams et al., 2009). Probably owing to their shared emotional deficits, psychopathy and sexual sadism have even been posited to be largely overlapping constructs (Mokros, Osterheider, Hucker, & Nitschke, 2011). Aside from sexual sadism, less is known about psychopathy and narcissism as they relate to other paraphilic interests.

Specificity. Much of the existing research surrounding personality disorder features and both paraphilias and paraphilic interests has focused on psychopathy and narcissism, perhaps because they are the best established predictors of sexual behavior. Although narcissism and psychopathy are among the most studied personality constructs in the domain of sexual disorders, other PDs may also relate to paraphilic disorders, and still others (especially those tied to anxiety) may even be protective against the development of paraphilias.

Hill, Habermann, Berner, and Briken (2007) found elevated levels of sadistic and voyeuristic paraphilias as well as antisocial and schizoid PDs among serial sexual offenders compared with one-time sexual offenders. Chan, Beauregard, and Myers (2015) replicated this finding, and further demonstrated that homicidal offenders (a) reported elevated rates of paraphilic interests and behaviors and were (b) more likely to display elevated levels of schizoid, narcissistic, and obsessive-compulsive PD traits (see also Briken, Hill, Habermann, Kafka, & Berner, 2010). Moreover, borderline, histrionic, obsessive-compulsive, and depressive PD traits were elevated among paraphilic child molesters compared with their nonparaphilic counterparts (Bogaerts, Daalder, Vanheule, Desmet, & Leeuw, 2008). In contrast, other research suggests that avoidant PD traits, which are tied to social anxiety, may be protective against paraphilias (Briken et al., 2010). The importance of these studies notwithstanding, levels of PD traits appear to be higher in forensic and clinical samples than in general population samples. Research has yet to determine whether these trends extend to populations with lower levels of impairment.

Potential Attitudinal and Behavioral Antecedents. Despite its theoretical and practical importance, little research has examined the potential mechanisms by which those with personality pathology engage in deviant sexual behavior, particularly paraphilic interests. Dawson and colleagues (2016) demonstrated that sociosexuality, which overlaps substantially with erotophilia (i.e., positive sexual affect; Wright & Reise, 1997), was a small to medium statistical predictor (rs = .20 for males and .23 for females) of paraphilic interests. Relatedly, Mouilso and Calhoun (2012) found that sociosexuality partially mediated the relationship between psychopathy, narcissism, and sexual assault perpetration among undergraduate males. These findings hint towards processes that may contribute to the development of paraphilic interests, although no work has formally examined how traits such as erotophilia may statistically account for (i.e., mediate) the relationship between personality traits and atypical sexual interests.

PRESENT STUDY

No published research has examined the associations between both narcissism and psychopathy subdimensions, on the one hand, and paraphilic interests, on the other. Given this gap in the literature, we examined these relations among measures of these constructs, all of which are continuously distributed in student and community samples (e.g., Thompson, 2016; Walters, Duncan, & Mitchell-Perez, 2007). To do so, we employed confirmatory factor analysis (CFA), which allowed us to ascertain the adequacy of the proposed phenotypic structure of paraphilic interests given that measures of these constructs are not typically used in nonclinical and nonforensic samples. Moreover, although paraphilic interests are relatively prevalent in community and undergraduate samples, these constructs are non-normally distributed, and certain features of structural equation modeling (SEM; i.e.,

the use of a robust estimator) better account for violations of normality than do more conventional regression techniques (Flora & Curran, 2004).

We advanced several key hypotheses based on the existing, albeit limited, literature:

1. We expected that the potentially more adaptive, agentic aspects of narcissism and psychopathy (i.e., boldness features) would be unrelated or slightly negatively related to sadism, unrelated or slightly positively related to exhibitionism, and negatively associated with voyeurism and fetishism. We predicted this pattern of results because boldness features are typically adaptive insofar as they confer a relative immunity to distress-related psychopathology, are associated with increased social skills (e.g., Vidal, Skeem, & Camp, 2010), and do not appear to be associated with negative sexual attitudes (i.e., harsh rape attitudes; Watts, Bowes, Latzman, & Lilienfeld, 2017).

2. In contrast, we hypothesized that the disinhibitory features of psychopathy would exhibit moderate positive relations with all paraphilic interests given that impulsivity, a related construct, predicts paraphilias broadly construed (Dawson et al., 2016).

3. We expected that the callousness and antagonism aspects of psychopathy would demonstrate the greatest association with sadism, as has been demonstrated in previous research (Williams et al., 2009), display a slight to moderate positive relation with exhibitionism and voyeurism, and be essentially unrelated to fetishism. We predicted this differential pattern of findings given that exhibitionism and voyeurism, but not fetishism, are intrinsically interpersonal, and may stem in part from hostility to others or at least indifference to their feelings.

4. Given their conceptual overlap with the callousness and antagonism features, we expected the entitled and exploitative aspects of narcissism to be moderately positively related to sadism, exhibitionism, voyeurism and slightly positively related to fetishism.

Following examination of zero-order relations among measures, we explored the role of gender in these relations. Research suggests that males are markedly more inclined to endorse paraphilic interests compared with females (e.g., Dawson et al., 2016), but little to no research has examined the extent to which gender may moderate (i.e., statistically affect the magnitude or direction of) the relation between personality disorder features and paraphilic interests. The literature on gender differences in the expression of psychopathy has been decidedly mixed, with several intriguing findings that have yet to be independently replicated (Cale & Lilienfeld, 2002; Miller, Watts, & Jones, 2011; but see Schulz, Murphy, & Verona, 2016; Sellbom, Donnelly, Rock, Phillips, & Ben-Porath, 2016). In light of these inconsistent results, we tentatively anticipated that gender would not moderate the patterns of relations between psychopathy and paraphilic interests. There is relatively little research examining gender differences in the expression of other personality

disorder features, so we were agnostic with regards to predictions for the remaining PD features.

As a secondary aim, we ascertained the specificity of the relations from the first aim by comparing them with the relations between dimensional *DSM-5* Section I PD symptom counts and paraphilic interests given both the covariation (comorbidity) among many PDs (Lilienfeld & Latzman, in press) and the potential for other traits to relate to paraphilic interests equally well. Given the dearth of research, we proposed several tentative hypotheses for the relations between other PDs and specific paraphilic interests.

5. We predicted that Antisocial and Paranoid PD features would be slightly positively related to sexual sadism (Hill, Habermann, Berner, & Briken, 2007), whereas Cluster C disorder features (i.e., Avoidant, Dependent, and Obsessive-Compulsive) would be slightly negatively related given their linkages to anxiety, including social anxiety.

6. We expected that Histrionic, Schizotypal, and Schizoid PD features would be positively related and Avoidant PD features would be negatively related (Briken et al., 2010) to exhibitionism. We hypothesized that Cluster A PD features (i.e., Schizoid, Schizotypal, and Paranoid) would be slightly positively related to voyeurism given their association with interpersonal oddity and poor social skills, whereas the Cluster C PD features would be slightly negatively related to these interests, again by virtue of their ties to anxiety.

7. Finally, we predicted slight positive associations between Cluster A and C PD features and fetishism, with an especially marked association for Schizoid PD features given their linkages to poor social skills (Briken et al., 2010).

METHOD
PARTICIPANTS

Participants were undergraduates enrolled in one of two universities in the Southeastern United States, one a large, public university (*n* = 308) and the other a mid-sized private university (*n* = 300). The overall samples largely comprised females (73%) who were mostly freshmen (38%), sophomores (29%), or juniors (22%). Participants from the first sample were predominantly of Caucasian (35%), African American (35%), or Asian (20%) descent and participants from the second sample were predominantly of Caucasian (47%), Asian (33%), or African American (9%) descent. The mean age for the second sample was 19.13 years (*SD* = 1.20). Age data were not available for the first sample, although previously published studies using students from this university have reported mean ages similar to the other sample included in this study (e.g., Hecht, Berg, Lilienfeld, & Latzman, 2016; *M* = 20.71 years, *SD* = 4.65). Sample (dummy-coded as a dichotomous variable) did not moderate any of the relations between psychopathy and paraphilic interests, strongly suggesting replication of our major findings across the two samples. As such, we combined these two samples for the remaining analyses

(N = 608). Results separated by sample are available from the first author upon request.

MEASURES

Table 1 includes the intercorrelations between each of the scales used in the present study along with their internal consistencies (alphas; presented along the diagonal) and descriptive statistics.

Psychopathy and Narcissism. Participants completed three well-validated self-report psychopathy measures, the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005), the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), and the Triarchic Psychopathy Measure (TriPM; Patrick, 2010). The PPI-R yields a total score, eight lower-order subscale scores including Coldheartedness (C), and scores on two higher-order factors, PPI-R Fearless Dominance (FD) and PPI-R Self-centered Impulsivity (SCI); Coldheartedness does not load highly on either FD or SCI and is commonly treated as a standalone dimension. In contrast, the TriPM yields scores on the three dimensions of the triarchic model of psychopathy. Although the three major PPI-R subdimensions of FD, SCI, and Coldheartedness in large measure reflect the triarchic dimensions, they differ in a few noteworthy ways. As noted earlier, the PPI-R Coldlheartedness subscale relates conceptually and empirically to Meanness, but reflects passive affective detachment more than antagonism. In addition, SCI appears to reflect a blend of TriPM Disinhibition and Meanness.

In contrast to the PPI-R and TriPM, the LSRP yields scores on two factors: Factor 1 (F1) measures selfish, uncaring, and manipulative tendencies towards others, whereas Factor 2 (F2) measures impulsivity and self-defeating lifestyle behaviors; both of these factors are more closely aligned with the lifestyle and antisocial aspects of psychopathy and do not map cleanly onto the triarchic dimensions (e.g., Levenson et al., 1995).[1]

To assess narcissism, we administered the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), which is the most widely-used self-report measure of trait narcissism. The NPI comprises 40 items that coalesce into two broad factors (Corry, Merritt, Mrug, & Pamp, 2008), both of which appear to assess grandiose as opposed to vulnerable narcissism (Miller, Price, & Campbell, 2011): Leadership/Authority (LA), characterized by dominance, assertiveness, interest in leadership, and self-confidence, and Entitlement/Exploitativeness (EE), characterized by grandiose sense of self-worth, egocentricity, and manipulativeness. In addition, the Leadership/Authority subdimension of the NPI overlaps highly with PPI-R Fearless Dominance and is associated almost entirely with adaptive outcomes, whereas the Entitlement/Exploitativeness subdimension overlaps moderately with PPI-R SCI

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1. Some research has demonstrated a three-factor model for the LSRP (e.g., Sellbom, 2011). As such, we report the relations between the three-factor model of the LSRP and paraphilic interests in Supplemental Table S2.

TABLE 1. Descriptive Statistics and Intercorrelations for Personality Disorder Features

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. NPI Leadership/Authority	4.73 (2.55)	*.77*	.48	.50	.11	.21	.53	.06	.22	.26	-.04	.03	-.18	-.06	.04	-.08	.27	.25	-.38	-.17	-.01	-.05	-.23
2. NPI Entitlement/Exploitativeness	4.69 (2.94)		*.71*	.41	.39	.32	.31	.31	.38	.43	.21	.13	-.03	.11	.27	.18	.53	.43	-.29	.06	-.03	.15	-.05
3. PPI-R Fearless Dominance	110.78 (18.01)			*.89*	.21	.21	.82	.08	.23	.19	-.03	-.19	-.20	-.03	.14	-.10	.27	.10	-.59	-.23	-.23	-.11	-.38
4. PPI-R Self-centered Impulsivity	142.68 (23.27)				*.91*	.34	-.01	.69	.65	.61	.67	.38	.28	.36	.42	.51	.28	.44	.04	.25	-.01	.48	.36
5. PPI-R Coldheartedness	31.15 (7.49)					*.85*	.12	.37	.67	.64	.35	.09	.18	.05	.28	.04	.01	.25	-.14	-.13	-.16	.11	-.08
6. TriPM Boldness	49.78 (8.57)						*.81*	-.10	.06	.05	-.23	-.22	-.26	-.10	.04	-.23	.20	.00	-.57	-.32	-.16	-.22	-.45
7. TriPM Disinhibition	38.23 (9.32)							*.84*	.65	.54	.73	.31	.26	.32	.44	.47	.19	.32	.06	.24	-.09	.40	.29
8. TriPM Meanness	33.53 (9.66)								*.89*	.76	.62	.29	.30	.25	.45	.33	.17	.41	-.03	.10	-.07	.37	.20
9. LSRP Factor 1	31.78 (8.54)									*.87*	.54	.33	.25	.23	.35	.30	.25	.51	-.02	.15	-.03	.39	.17
10. LSRP Factor 2	20.46 (5.02)										*.74*	.35	.34	.30	.29	.51	.13	.33	.19	.26	.03	.49	.38
11. Paranoid PD	10.87 (2.28)											*.74*	.49	.42	.28	.55	.14	.52	.38	.32	.47	.58	.55
12. Schizoid PD	10.31 (1.83)												*.62*	.45	.37	.46	-.05	.38	.38	.24	.33	.43	.43
13. Schizotypal PD	11.17 (2.14)													*.74*	.40	.48	.18	.44	.24	.36	.29	.44	.39
14. Antisocial PD	16.15 (2.36)														*.87*	.39	.20	.37	.00	.24	.07	.28	.22
15. Borderline PD	19.30 (3.33)															*.79*	.22	.50	.33	.38	.31	.55	.57
16. Histrionic PD	9.75 (1.83)																*.61*	.43	-.16	.25	.06	.20	.03
17. Narcissistic PD	22.88 (3.43)																	*.76*	.13	.30	.31	.49	.32
18. Avoidant PD	10.06 (2.09)																		*.73*	.34	.37	.35	.54
19. Dependent PD	10.35 (1.85)																			*.63*	.34	.40	.44
20. Obsessive-Compulsive PD	13.44 (1.94)																				*.52*	.37	.38
21. Passive-Aggressive PD	10.40 (1.87)																					*.62*	.54
22. Depressive PD	10.68 (1.85)																						*.74*

Note. Bold values are significant at $p < .001$. Internal consistencies (alphas) are italicized and presented along the diagonal. NPI = Narcissistic Personality Inventory; PPI-R = Psychopathic Personality Inventory-Revised; TriPM = Triarchic Personality Measure; PD = personality disorder.

and Machiavellianism, reflecting an "end justifies the means" orientation to the world (Ackerman et al., 2010).

Personality Disorder Features. To assess other personality disorder features, participants completed the Structured Clinical Interview for DSM-IV Personality Disorders–Personality Questionnaire (SCID-II-PQ; First, Gibbon, Spitzer, Williams, & Benjamin, 1997), which is a 119-item self-report questionnaire designed to assess the diagnostic criteria for the *DSM-IV* (and now *DSM-5*) personality disorders. In addition to the 10 disorders included in *DSM-IV/DSM-5*, it includes items assessing depressive and passive-aggressive (negativistic) PDs, both of which were included in the Appendix to *DSM-IV*.

Paraphilic Interests. Paraphilic interests were measured by five separate scales, one for each of the most common fantasy subtypes (e.g., Ahlers et al., 2011) that are potentially most relevant to undergraduate populations: a 5-item Exhibitionism Scale (Freund, Watson, & Rienzo, 1988; α = .73), an 8-item Fetishism Scale (Freund, Steiner, & Chan, 1982; α = .83), a 20-item Sadism Scale (Freund et al., 1982; α = .78), an 11-item transvestic fetishism scale called the Cross-Gender Fetishism Scale (Blanchard, 1985; α = .90), and a 6-item Voyeurism Scale (Freund et al., 1988; α = .74).

Potential Mediator. The Sexual Opinion Survey (SOS; Fisher, White, Byrne, & Kelley, 1988) is a 21-item survey that is intended to assess erotophilia (e.g., I think it would be entertaining to look at erotica; α = .95). Higher scores on this scale indicate positive responses to sexual activity and sexuality, and predict a greater variety of sexual experiences, casual sex, short-term mating, lower levels of guilt following sex, and greater masturbation frequency (e.g., Fisher et al., 1998). As noted earlier, we anticipated that erotphilia would mediate the relations between psychopathic and narcissistic traits, on the one hand, and paraphilic interest, on the other.

DATA ANALYSIS

We conducted all CFA and SEM analyses using Mplus version 7.2 (Muthén & Muthén, 2014). Data were analyzed using the WLMSV estimator (weighted least squares means and variance adjusted) to best account for the ordinal nature and nonnormality of the paraphilic interests variables. Before ascertaining the relations between personality disorder features and the paraphilic interests, we tested measurement models for exhibitionism, fetishism, sadism, transvestic fetishism, and voyeurism. We tested individual models for each of the paraphilic interests for two reasons. First, we used items from five measures of paraphilic interests, one each for exhibitionism, fetishism, sadism, transvestic fetishism, and voyeurism. Little is known about the factor structure of these measures, so we provisionally expected that the items from each paraphilic type would cohere into one factor. For each of these models,

the items from each measure were allowed to load onto their respective latent paraphilic interest construct. We tested models for each latent paraphilic interests construct in isolation as well as a hierarchical model of paraphilic interests, the latter of which simultaneously estimated each of the five paraphilic interest types and a higher-order factor of paraphilic interests.[2]

We considered the following goodness-of-fit statistics to evaluate model fit: the χ^2 test statistic and its associated degrees-of-freedom (df), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). Adequacy of model fit was based on the following guidelines suggested in the literature: CFI and TLI greater than 0.95 for reasonably good fit (Hu & Bentler, 1999); and RMSEA less than or equal to .08 for adequate fit and less than or equal to .05 for close fit (Browne & Cudeck, 1993; MacCallum, Browne, & Sugawara, 1996). Although the χ^2 values, their p values, and their degrees of freedom are presented for each model tested, we did not rely on them to determine adequacy of model fit because χ^2 significance tests (which are highly sensitive to N) would be virtually certain to be rejected given our large sample size. Instead, the fit of a single model was evaluated using the combination of CFI, TLI, and RMSEA, as each individual fit index has its strengths and limitations, and no consensus exists regarding the use of a single fit index to evaluate the adequacy of model fit (e.g., Loehlin, 2004).

After establishing the best-fitting models for each paraphilic interest subtype, we simultaneously estimated each latent paraphilic interests variable while regressing each of these on each of the manifest personality variables, thereby obviating the need to save factor scores. To account for family-wise error, we adopted a more conservative p value of .01 for the zero-order relations between PD features and paraphilic interests given the large number of tests conducted. Following these primary analyses, we explored the extent to which the relations between PD features and paraphilic interests differed across gender. To do so, we conducted hierarchical regression analyses within SEM in which the personality-by-gender interaction term was entered after the main effects.

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2. We also tested measurement models of the psychopathy and narcissism subdimensions and factors (e.g., Boldness) and dimensional SCID-II PD symptom counts, although we anticipated that model fit for these constructs would be lower than is typically regarded as adequate given the frequent occurrence of cross-loadings across subdimensions/factors (e.g., Neumann, Malterer, & Newman, 2008). Indeed, model fit for these constructs was not adequate (see Supplemental Table S1). Thus, we treated these constructs as manifest indicators in the remaining analyses given the frequent applied use of these scales. Despite the poor model fit of our PD features latent variables, we conducted the same set of analyses (i.e., zero-order correlations with paraphilic interests and gender moderation of these relations) using the latent PD features variables and report these relations in Supplemental Materials (see Supplemental Table S2). To facilitate comparison across these two sets of analyses (i.e., manifest and latent indicators) examining the relations between PD features and paraphilic interests, we conducted Steiger's Z tests of independent correlations, which indicated that only 13 percent of the analyses conducted using manifest indicators of PD features deviated significantly from those of their latent variable counterparts (significant Steiger's Z statistics using $p < .05$ are denoted in Supplemental Table S3).

Next, to test our mediational hypotheses, we conducted a path analysis in which PD features served as manifest independent variables, paraphilic interests as latent dependent variables, and erotophilia as manifest mediator variables.[3] All analyses were conducted with 5,000 bootstrapped samples, producing bias-corrected confidence intervals (Hayes, 2013). These bias-corrected confidence intervals were used to evaluate the statistical significance of the total, direct, and indirect effects obtained in each path analysis; statistical significance is indicated by a 95% confidence interval that does not include zero. In the overwhelming majority of cases, the lower and upper boundaries of the confidence intervals were .0000. To determine the confidence interval values beyond the ten thousandths place, we divided the PD features' indicators by 100 before conducting the mediation analyses to attempt to produce a confidence interval estimate with positive integers after the decimal point.

RESULTS
BASE RATES AND LATENT STRUCTURE OF PARAPHILIC INTERESTS

Base rates of each paraphilic interest were determined by dichotomizing paraphilic interests scores into 0, if the participant endorsed no items relating to the paraphilic interest type at hand, and 1, if the participant endorsed one or more items in this category. Seventy-eight percent of participants reported at least one paraphilic interest (i.e., indicated yes to one of the paraphilic interests items), which is slightly higher than prevalences of paraphilic interests in a relatively recent community sample (Ahlers et al., 2011). Base rates broken down by paraphilic interest category were also consistent with existing findings (Ahlers et al., 2011).[4] Also consistent with research (Dawson et al., 2016), males' mean levels of paraphilic interests (when each item was dichotomized and summed into a composite index reflecting the total number of paraphilic interests endorsed) were significantly higher than females' interests, $t(199) = 3.62$, $p < .001$; Cohen's $d = 0.51$, as was the variability in paraphilic interests for males compared with females ($F = 29.79$, $p < .001$).

The proposed paraphilic interests models all fit the data very well (see Supplemental Table S1 for model fit statistics). After establishing the structure of each paraphilic interest, we tested a hierarchical model in which a higher-order paraphilic interests factor accounted for the covariation among

3. We first tested a single-factor erotophilia variable in which all of the erotophilia items freely estimated only this latent variable, but model fit was poor (see Supplemental Table S1), suggesting that these items did not cohere adequately into a single dimension.

4. Base rates by paraphilic interest category were as follows: exhibitionism (13.4%, ranging from 4.5% for masturbating to climax while imagining exposing oneself to 19.5% for imagining that someone the participant liked was viewing the participant's genitals from a distance), voyeurism (13.1%, ranging from 3.5% for masturbating while observing someone who was unaware of the participant's presence to 30.9% for imagining watching people have sex secretly), fetishism (11.9%, ranging from 4.4% for being more sexually attracted to inanimate objects compared with humans to 20.5% for being sexually attracted to inanimate objects worn by another person), sexual sadism (6.4%, ranging from 1.8% for being sexually aroused by imagining that someone is dead to 18.6% for being sexually aroused by tying up another person), and transvestic fetishism (3.9%, ranging from 2.7% for masturbating while wearing women's jewelry or outerwear to 6.1% for masturbating while thinking of wearing women's undergarments).

the lower-order paraphilic interests subtype factors, which also fit the data well: χ^2 (932) = 1594.81, p < .001; CFI = 0.97, TLI = 0.95; RMSEA = 0.03, p < .001. Of the five specific factors that were allowed to freely load onto the higher-order paraphilic interests factor, only exhibitionism and voyeurism loaded significantly on the higher-order factor (rs = .31 and .50, ps < .001, respectively). The loadings for sadism, fetishism, and transvestic fetishism were nonsignificant and essentially zero in magnitude (rs = .00, .00, .04, respectively, ps > .8). The specific factors were generally interrelated, with correlations ranging from .50 to .78. Given that this higher-order paraphilic interests factor did not represent each of the paraphilic interests well, we examined the lower-order paraphilic interests subtypes in the remaining analyses to provide the most-fine grained examination of their relations with PD features.

RELATIONS BETWEEN NARCISSISM, PSYCHOPATHY, AND PARAPHILIC INTERESTS

Triarchic Dimension Composites. In this sample, scores on PPI-R FD and TriPM Boldness (r = .89) were highly correlated (see Table 1 for intercorrelations), and PPI-R SCI and TriPM Disinhibition (r = .69) were also highly correlated, albeit somewhat less so. PPI-R SCI was nearly equally related to TriPM Meanness (r = .67), probably in part reflecting the PPI-R Machiavellian Egocentricity subscale's contribution to both dimensions (see also Hall et al., 2014; Sellbom & Phillips, 2013). As expected, PPI-R Coldheartedness and TriPM Meanness (r = .63) were also highly correlated but displayed significant unique variance.

To reduce the number of tests, we examined the extent to which the pairs of PPI-R and TriPM subdimensions (i.e., PPI-R FD and TriPM Boldness, PPI-R SCI and TriPM Disinhibition, PPI-R Coldheartedness and TriPM Meanness) could be condensed into triarchic dimension composites by means of redundancy analyses. To do so, we conducted a series of hierarchical regressions in which the PPI-R subdimensions were entered into the first step, the TriPM subdimensions into the second, and vice versa, in predicting paraphilic interests. Given the large zero-order overlap between the pairs of psychopathy subdimensions and that PPI-R and TriPM were largely redundant with one another in predicting paraphilic interests (i.e., TriPM subdimensions did not relate uniquely to paraphilic interests above and beyond PPI-R subdimensions, and vice versa), we standardized and summed the scores on two sets of subdimensions (e.g., PPI-R FD and TriPM Boldness) and heretofore refer to them as falling under the same umbrella terms, Boldness, Disinhibition, and Meanness, respectively.

Zero-Order Correlations. Table 2 displays the zero-order correlations between personality and paraphilic interests. By and large, findings were consistent with our predictions. As expected, boldness (i.e., the Boldness composite, NPI LA) features were largely unrelated to paraphilic interests (rs ranged from –.14 to .13, none of which survived correction for multiple testing). In contrast, meanness (i.e., the Meanness composite, LSRP F1) and

TABLE 2. Associations Between Manifest Personality Disorder Features and Latent Paraphilic Interests

	Exhibitionism	Fetishism	Sexual Sadism	Transvestic Fetishism	Voyeurism
Prevalence (range)	13.4% (4.5–19.5%)	11.9% (4.4–20.5%)	6.4% (1.8–18.6%)	3.9% (2.7–6.1%)	13.1% (3.5–30.9%)
NARCISSISM					
NPI Leadership/Authority	.13	.02	.00	.00	.13
NPI Entitlement/Exploitativeness	**.19**	**.18**	**.27**	**.22**	.33
PSYCHOPATHY					
Boldness Composite	.05	.04	.04	−.14	.05
Disinhibition Composite	**.29**	**.37**	**.44**	**.44**	**.39**
Meanness Composite	**.32**	**.37**	**.45**	**.40**	**.42**
LSRP Factor 1	**.28**	**.29**	**.35**	**.29**	**.42**
LSRP Factor 2	**.23**	**.24**	**.40**	**.40**	**.34**
DSM-5 PERSONALITY DISORDERS					
Paranoid	**.14**[a]	**.16**	.21	.07	.13
Schizoid	**.17**	**.18**	.26	**.21**	**.16**
Schizotypal	**.22**	**.12**	.28	.17	**.17**
Antisocial	**.32**	**.30**	**.74**	**.29**	**.30**
Borderline	**.18**	**.17**	**.51**	**.19**	**.16**
Histrionic	**.22**	**.16**	−.02	.11	.13
Narcissistic	**.25**	**.17**	.23	.06	**.20**
Avoidant	−.04	**.03**	−.07	.06	.06[a]
Dependent	.14[a]	−.15	.07	**−.04**[a]	−.07[a]
Obsessive-Compulsive	−.05	.05	−.13	.04	**.14**
Passive-Aggressive	**.16**[a]	−.13	.07	−.08	−.14
Depressive	.04	−.07	.06	−.08	−.03

Note. Bold values are significant following correcting for multiple comparisons (i.e., $p < .01$). NPI = Narcissistic Personality Inventory; PPI-R = Psychopathic Personality Inventory-Revised; TriPM = Triarchic Personality Measure; PD = Personality disorder.

disinhibition (i.e., the Disinhibition composite, LSRP F2) features and the entitlement and exploitativeness (i.e., NPI EE) features of narcissism were all distinctly associated with paraphilic interests (rs ranged from .19 to .45).

Relations between the meanness and disinhibition features, on the one hand, and paraphilic interests, on the other, were generally strongest for sexual sadism (rs ranged from .27 to .45), albeit not statistically significantly stronger, followed by voyeurism and transvestic fetishism (rs ranged from .33 to .42 and .22 to .44, respectively), all of which were moderate to high in magnitude; relations between these subdimensions and exhibitionism and fetishism were slightly smaller and moderate in magnitude (rs ranged from .19 to .32 and .18 to .37, respectively). These findings suggest that the psychopathy features associated with callousness, antagonism, and poor impulse control best predict paraphilic interests, whereas the largely interpersonally adaptive narcissism and psychopathy features are essentially unrelated to these interests. Lastly, in hierarchical multiple regression analyses, gender (dummy-coded as a moderator) did not significantly moderate any of the 35

relations described, suggesting that paraphilic interests manifest equivalently among psychopathic males and females.

Partial Correlations. Given that the callousness and disinhibition psychopathy features were nearly equally associated with each of the paraphilic interests, we conducted exploratory hierarchical linear regression analyses to examine the unique contribution of the callousness and meanness psychopathy features in predicting paraphilic interests after controlling for disinhibition's relations, and vice versa. Because boldness features were almost entirely unrelated to paraphilic interests, we did not include these measures in the analyses. Broadly, the callousness and meanness psychopathy features' relations with paraphilic interests decreased after controlling for disinhibition (*r*s ranged from .03 to .33), as did the relations between disinhibition and paraphilic interests after controlling for callousness or meanness (*r*s ranged from –.03 to .26).

RELATIONS BETWEEN PERSONALITY DISORDER FEATURES AND PARAPHILIC INTERESTS

Broadly, the findings for other personality disorders predicting paraphilic interests were consistent with our hypotheses. Speaking to the specificity of our narcissism and psychopathy findings, other PD features' relations with paraphilic interests were generally smaller in magnitude (*r*s ranged from –.14 to .32) than were the relations for narcissism and psychopathy, with antisocial PD features being the exception. Antisocial PD features manifested moderate to large positive relations with paraphilic interests (*r*s ranged from .29 to .74) and in many cases the magnitudes of these relations were comparable with or stronger than those of psychopathy and narcissism features.

In addition, paranoid PD features were positively associated with fetishism (*r* = .16); schizotypal PD features manifested moderately positive relations with exhibitionism, sexual sadism, and transvestic fetishism (*r*s ranged from .17 to .28); and schizoid PD features were positively associated with all of the paraphilic interests except for sexual sadism (*r*s ranged from .16 to .26). Borderline PD features manifested small to moderate positive relations with all paraphilic interests (*r*s ranged from .16 to .51) and histrionic PD features were positively associated with exhibitionism and fetishism (*r*s were .16 and .22, respectively). Lastly, dependent and passive-aggressive PD features were significantly positively associated with fetishism (*r* = .15) and exhibitionism (*r* = .16), respectively, and obsessive-compulsive PD features were significantly negatively associated with voyeurism (*r* = –.14).

Gender Differences. Of the 55 zero-order correlations between personality disorder features and paraphilic interests, six were significantly moderated by gender (significant moderation effects are denoted in Table 2). In all but one of these cases, effects were stronger for males compared with females, where effects for the latter were near zero and nonsignificant. The five significant gender moderation effects that were stronger for males were as follows:

paranoid PD and exhibitionism ($p = .04$; $r_{males} = .31$, $p = .001$; $r_{females} = .08$, $p = .25$); avoidant PD and voyeurism ($p = .05$; $r_{males} = .14$, $p = .18$; $r_{females} = -.09$, $p = .18$); dependent PD and exhibitionism ($p = .003$; $r_{males} = .37$, $p < .001$; $r_{females} = .06$, $p = .40$), transvestic fetishism ($p = .05$; $r_{males} = .19$, $p = .03$; $r_{females} = -.06$, $p = .55$), and voyeurism ($p = .04$; $r_{males} = .22$, $p = .02$; $r_{females} = .00$, $p = .55$). In contrast, the relation between histrionic PD and sexual sadism was moderated by gender such that effects were small and positive for females and moderately negative for males ($p = .01$; $r_{males} = -.20$, $p = .04$; $r_{females} = .11$, $p = .10$), suggesting that histrionic traits may be protective against sexual sadism among males. Although potentially attributable to Type I error, these findings raise the possibility that the aforementioned relations between PD features and paraphilic interests are generally stronger for males compared with females.

EROTOPHILIA AS A MEDIATOR

Contrary to our predictions, there was no evidence that erotophilia mediated the relations between: (1) narcissism and psychopathy; and (2) paraphilic interests across the 25 analyses conducted.[5] That is, the bias-corrected bootstrapped confidence intervals contained zero in all cases, suggesting that erotophilia did not mediate the direct effects. Upon further inspection, the lack of support for mediation was probably due to the fact that erotophilia manifested nearly nonzero relations with most paraphilic interests, and in some cases were even slightly negative (zero-order rs ranged from $-.12$ to .00). Controlling for the nonsignificant indirect effect of erotophilia in the relation between PD features and paraphilic interests generally resulted in significant and substantial decreases in the magnitude of the relationship (i.e., the difference between the c and c' paths were statistically significant). Given that the indirect effect was not statistically responsible for this change, this finding suggests that controlling for the statistical influence of erotophilia when examining the relations between PD features and paraphilic interests removed a substantial portion of the variance in personality responsible for predicting paraphilic interests.

DISCUSSION

Despite the empirical links between psychopathic and narcissistic traits and sexual deviance (e.g., Chan et al., 2015), scant research has examined the relations between these constellations of personality traits and an ostensible precursor to negative sexual outcomes, paraphilic interests (Williams et al., 2009). The current study extended this limited literature by examining the pathological personality correlates of paraphilic interests in a large, non-

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5. The results of the path analyses are displayed in Supplemental Table S4, which presents the coefficients for the principal pathways: the relations between PD features and erotophilia, the relations between erotophilia and paraphilic interests, the indirect effect, and the relation between PD features and paraphilic interests before and after controlling for the indirect effect.

clinical sample of college students. Supporting our examination of paraphilic interests among undergraduates, the vast majority of participants endorsed at least one item pertaining to paraphilic interests (Ahlers et al., 2011) and base rates were appreciable, ranging from 4 percent for transvestic fetishistic interests to 14 percent for voyeuristic interests (Dawson et al., 2016). Taken together, these results supported our examination of these sexual interests among undergraduates.

PERSONALITY CORRELATES

Our results are broadly consistent with literature demonstrating that psychopathy, and narcissism to a lesser extent, was associated with paraphilic interests broadly construed (e.g., Williams et al., 2009). More specifically and not previously examined in the literature, some but not all psychopathy and narcissism subdimensions predicted paraphilic interests. Whereas the disinhibition and meanness features of narcissism and psychopathy were robust predictors of paraphilic interests, boldness features were generally unrelated to these interests. These findings are consistent with research that boldness: (1) generally reflects interpersonally adaptive features, such as venturesomeness and immunity to stress; and (2) is essentially unrelated to harsh sexual beliefs (Watts et al., 2017). Parsing narcissism and psychopathy into subdimensions revealed that narcissism and psychopathy's well-understood subdimensions fractionated in terms of their relations with paraphilic interests, a pattern masked by using total scores of these personality constructs. These findings are noteworthy given that past research has relied on total psychopathy scores to ascertain narcissism and psychopathy's relations with paraphilic interests (Williams et al., 2009). Our results suggest that such reliance is problematic, as they can conceal important differential relations at the subdimension level. These results are also noteworthy because previous research demonstrated that narcissism total scores were essentially unrelated to paraphilic interests (Williams et al., 2009).

Although we expected meanness features to relate more strongly to paraphilic interests than the disinhibition features, meanness, and disinhibition manifested largely equivalent relations with paraphilic interests. When controlling for the statistical influence of disinhibition in the relations between the callousness features and paraphilic interests, and vice versa, both sets of relations decreased in magnitude, suggesting that the shared variance between the meanness and disinhibition features best predict paraphilic interests. Moreover, meanness and disinhibition were generally related to paraphilic interests across the board, suggesting that these personality constructs may be broad risk factors for paraphilic interests broadly construed, as opposed to placing individuals at increased risk for a specific subset of paraphilic interests, such as sexual sadism.

PERSONALITY DISORDER FEATURE CORRELATES

With regards to the specificity of narcissism and psychopathy to paraphilic interests, certain other PD features were also related to such interests. Most notably, antisocial PD features, which overlap moderately to highly with the antagonism and impulsivity associated with psychopathy, were the strongest predictor of paraphilic interest regardless of type. Antisocial PD features exhibited even more pronounced relations with these interests than did narcissistic and psychopathic traits. In addition, borderline PD features were slightly albeit not consistently significantly stronger predictors of sexual sadism than were the most highly related narcissism and psychopathy subdimensions, but were less related to the remaining paraphilic interests. The remaining PDs displayed notably weaker relations with paraphilic interests. Schizoid, schizotypal, and borderline PDs were slightly related to each paraphilic interest, potentially consistent with the literature demonstrating that individuals with schizophrenia-spectrum and borderline personality traits are prone to risky sexual behavior (Ramrakha, Caspi, Dickson, Moffitt, & Paul, 2000). In contrast, avoidant, schizoid, and depressive PDs, all characterized by social withdrawal, were not significantly to paraphilic interests across the board.

These findings indicate that PD features in and of themselves does not predict paraphilic interests, and that some pathological personality constructs were better predictors of paraphilic interests than were others. Nevertheless, because these PD traits were measured more briefly and with less resolution than were psychopathy and narcissism, we encourage further research exploring other PDs' relations with paraphilic interests. Taken together, our findings suggest that the callousness and disinhibition features of psychopathy as well as narcissism features, in addition to antisocial PD features, are the strongest PD predictors of paraphilic interests. Bearing out concerns that previous reports of the differential expression of psychopathic traits across genders may sometimes be less than robust (e.g., Miller, Watts, & Jones, 2011), we found little support for gender differences in the relations between PD features and paraphilic interests. At the same time, given the nonclinical nature of our combined sample, further examination of potential gender differences in the association between psychopathic traits and paraphilic interests is warranted, especially in more severely affected samples.

MEDIATION ANALYSES

Our mediation analyses were inconsistent with our hypothesis that erotophilia accounts, at least partially, for the relations between PD features and paraphilic interests. Controlling for erotophilia often dramatically reduced the relations between PD features and paraphilic interests, however, indicating that the shared variance between erotophilia and meanness and disinhibition was responsible for the relations with paraphilic interests. More broadly, this finding indicates that erotophilia may be part-and-parcel of certain narcissism and psychopathy features. Probably contributing to the lack of mediation, erotophilia predicted paraphilic interests only slightly, running

counter to the hypothesis that paraphilias, and potentially paraphilic interests, stem from hypersexuality or a heightened overall interest in sexual experience (Kafka, 2010).

STRENGTHS AND LIMITATIONS

In addition to the novel findings presented here, the present study possessed several methodological strengths. As noted earlier, latent variable modeling techniques were best equipped to handle the non-normal distributions of our data. In addition, our sample represented the largest of those to examine the relations between PD features and paraphilic interests; it is likely for these reasons that we were able to detect robust relations. Previous research on this topic, namely by Williams and colleagues (2009), was characterized by a much smaller sample size and employed conventional regression techniques (which presume that variables are measured without error) to predict paraphilic interests. As such, their observed relations between personality and paraphilic interests, although similar in pattern to ours, were smaller in magnitude.

These strengths aside, the current study was characterized by several potential limitations. First, our paraphilic interest measures were disproportionately weighted towards sexual sadism, thereby biasing our coverage of paraphilic interests in favor of this category. Second, because we relied exclusively on self-reported paraphilic interests, our findings are limited by mono-operation bias; further research should examine the personality predictors of a wider range of paraphilic interests operationalized by other means (e.g., physiological indices). Moreover, although anonymous self-report measures of paraphilic interests are in many ways preferable to other methods (e.g., interviews) and appear to yield comparable prevalence rates with data collected by other means, our study did not address the extent to which our findings were compromised by social desirability or related response styles. Given the socially undesirable nature of endorsing some paraphilic-like sexual interests and behaviors, it is likely that our assessment underestimated the base rate of paraphilic interests.

Lastly, our sample comprised undergraduates who volunteered to take part in a study of personality and sexual attitudes. Compared with other individuals, undergraduate-aged individuals are more prone to sexual experimentation (Herbenick et al., 2010). Moreover, volunteers in sexuality research tend to be more sexually experienced and open to sexual experiences than are nonvolunteers (e.g., Strassberg & Lowe, 1995). For these reasons, our sample may not generalize to the general population. That said, our paraphilic interests base rates were comparable with those found in other undergraduate and community samples (e.g., Joyal & Carpentier, 2017) and were even lower than those found in other samples (Ahlers et al., 2011). Further research should examine the extent to which our findings general-

ize to a broader community population comprising individuals who did not volunteer to take part in a sexuality-based study.

FUTURE DIRECTIONS

The extent to which our findings speak more broadly to sexual deviance, an umbrella term under which paraphilic interests are subsumed (Gee, Devilly, & Ward, 2004), is unclear. To this end, a great deal of research has demonstrated that many people who entertain aberrant or deviant sexual interests do not participate in sexually aberrant or deviant behaviors. Psychopathic traits may increase the likelihood that one acts on their sexual interests or impulses. For instance, Williams and colleagues (2009) demonstrated substantial correlations between paraphilic fantasies and paraphilic behaviors (rs = .72, p < .001; see also McCollaum & Lester, 1994), although not surprisingly, behavior rates were much lower than fantasy rates. Most germane to the present study, they found that psychopathy moderated the relation between overall paraphilic fantasies and behavior such that this relation was most pronounced among those with pronounced psychopathic features (Williams et al., 2009). Further research should examine whether the link we detected between the meanness and disinhibition features of narcissism and psychopathy moderate the relations between paraphilic fantasy and behavior. This line of research could suggest that psychopathic individuals, especially those with pronounced levels of disinhibition and meanness, are at increased risk for acting on their paraphilic interests or fantasies in a sexually deviant manner. Lastly, further research should explore whether sexual fantasies mediate the relations between these personality features and various forms of sexual deviance.

Our candidate potential mediator of the relations between PD features and paraphilic interests was not supported, leaving unexplained the potential processes by which paraphilic interests arise among those with pronounced PD features. Personality disorder features place individuals at risk for a variety of negative sexual outcomes, but many or most individuals with personality disorder features endorse few or no paraphilic interests. As such, there are almost certainly moderators and mediators of these relations, such as an adverse sexual learning history, social skills deficits (Segal & Marshall, 1985) or anger towards women (LeBreton, Baysinger, Abbey, & Jacques-Tiura, 2013). With respect to hostility towards women, LeBreton and colleagues (2013) demonstrated that community males with higher levels of narcissism and psychopathy reported greater interest in sexual dominance and impersonal sex, engagement in impersonal sex, hostility towards women, and negative attitudes towards women. Although necessarily correlational, these findings raise the possibility that intense interpersonal hostility predisposes to paraphilic interests, such as exhibitionism and sexual sadism, especially among those with marked PD features. We encourage further research on these and other potential mediators and moderators of paraphilic interests among individuals with PD features, especially marked levels of meanness and disinhibition.

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SUPPLEMENTAL TABLE S1. Measurement Model Fit Statistics

	χ^2 (*df*)	CFI	TLI	RMSEA	WRMR	N parameter
NARCISSISM						
NPI Leadership/Authority	84.86*** (27)	0.96	0.95	0.06***	1.17	18
NPI Entitlement/Exploitativeness	459.53*** (77)	0.79	0.76	0.09***	2.01	28
Narcissistic PD	303.66*** (119)	0.89	0.87	0.05	1.29	34
PSYCHOPATHY						
PPI-R Fearless Dominance	6816.71*** (945)	0.55	0.52	0.10***	3.38	180
PPI-R Self-centered Impulsivity	8078.15*** (2345)	0.64	0.64	0.06***	2.62	280
PPI-R Coldheartedness	3374.89*** (119)	0.25	0.14	0.21***	4.33	67
TriPM Boldness	1432.67*** (152)	0.72	0.69	0.12***	2.56	76
TriPM Meanness	1289.23*** (152)	0.90	0.89	0.11***	2.17	76
TriPM Disinhibition	886.16*** (170)	0.87	0.86	0.08***	1.76	80
LSRP F1	3644.64*** (119)	0.42	0.34	0.22***	5.14	67
LSRP F2	1359.45*** (44)	0.39	0.23	0.22***	4.07	43
Schizoid	45.70*** (20)	0.95	0.93	0.05	1.00	16
Schizotypal	103.27*** (27)	0.93	0.91	0.07*	1.29	18
Paranoid	110.51*** (20)	0.93	0.90	0.09***	1.50	16
Antisocial	108.88 (90)	0.99	0.99	0.02	0.75	30
Borderline	383.98*** (90)	0.87	0.85	0.08***	1.66	30
Histrionic	32.68** (14)	0.97	0.95	0.05	0.94	14
Avoidant	33.39** (14)	0.98	0.97	0.05	0.89	14
Dependent	22.94 (20)	1.00	0.99	0.02	0.67	16
Obsessive-compulsive	71.87*** (27)	0.83	0.78	0.05	1.18	18
Passive-Aggressive	55.89*** (20)	0.93	0.89	0.06	1.11	16
Depressive	134.04*** (20)	0.93	0.90	0.10***	1.64	16
EROTOPHILIA	5998.19*** (189)	0.90	0.89	0.23***	3.63	185

*p < .05. **p < .01. ***p < .001.

SUPPLEMENTAL TABLE S2. Associations Between Manifest Personality Pathology
and Latent Paraphilic Interests

	EXHIBITIONISM	FETISHISM	SEXUAL SADISM	TRANSVESTIC FETISHISM	VOYEURISM
Prevalence (range)	13.4% (4.5–19.5%)	11.9% (4.4–20.5%)	6.4% (1.8–18.6%)	3.9% (2.7–6.1%)	13.1% (3.5–30.9%)
NARCISSISM					
NPI Leadership/Authority	.13	.02	.00	.00	.13
NPI Entitlement/Exploitativeness	.19	.18	.27	.22	.33
PSYCHOPATHY					
PPI-R Fearless Dominance	.11	.08	.10	-.06	.08[a]
PPI-R Self-centered Impulsivity	.25	.29	.27	.29	.33
PPI-R Coldheartedness	.29	.28	.38	.30	.34
TriPM Boldness	.00	-.02	.02	-.19	-.03
TriPM Disinhibition	.29	.37	.43	.42	.41
TriPM Meanness	.33	.40	.44	.43	.35
LSRP Antisocial	.17	.24	.34	.34	.41
LSRP Callousness	.14	.20	.13	.13	.29
LSRP Egocentricity	.25	.32	.40	.29	.41

Note. Bold values are significant following correcting for multiple comparisons (i.e., $p < .01$). [a]Significant gender moderation. NPI = Narcissistic Personality Inventory; PPI-R = Psychopathic Personality Inventory-Revised; TriPM = Triarchic Personality Measure; PD = Personality disorder.

SUPPLEMENTAL TABLE S3. Associations Between Latent Personality Pathology and Latent Paraphilic Interests

	EXHIBITIONISM	FETISHISM	SEXUAL SADISM	TRANSVESTIC FETISHISM	VOYEURISM
NARCISSISM					
NPI Leadership/ Authority	.11[a]	–.02	–.06	–.08	.10
NPI Entitlement/ Exploitativeness	**.43[b]**	**.25**	**.27**	**.30**	**.33**
Narcissistic PD	**.33**	**.25**	.14	.14	**.29**
PSYCHOPATHY					
PPI-R Fearless Dominance	.12	.07	.08	–.06	.07[a]
PPI-R Self-centered Impulsivity	**.25**	**.25**	**.30**	**.35**	**.37**
PPI-R Coldheartedness	**.28**	**.25**	**.50[b]**	**.42[b]**	**.41**
TriPM Boldness	–.04	–.06	–.06	**–.17**	–.06
TriPM Disinhibition	**.34**	.40	**.53[b]**	**.52[b]**	**.45**
TriPM Meanness	**.36**	.37	.50	.49	**.47[b]**
LSRP Factor 1	**.28**	.31	**.40**	**.33**	**.45**
LSRP Factor 2	**.26**	.27	**.44**	**.45**	**.38**
DSM-IV PERSONALITY DISORDERS					
Paranoid	**.17**	**.18**	.11	.09	.15
Schizoid	**.23**	**.18**	**.22**	.29	**.25**
Schizotypal	**.28**	**.23[b]**	**.17[b]**	**.30[b]**	**.24**
Antisocial	**.51[b]**	**.47[b]**	**.54[b]**	**.54[b]**	**.50[b]**
Borderline	**.22**	**.22**	**.19[b]**	**.26**	**.20**
Histrionic	**.34**	**.24**	.07	.19	**.23**
Avoidant	–.05	–.03	–.08	–.07	–.06
Dependent	.20	.10	.11	.10	.15
Obsessive- Compulsive	.02	.02	–.10	.02	–.11
Passive-Aggressive	.20	.11	.09	.11	.18
Depressive	.04	.07	.07	.10	.03

Note. Bold values are significant following correcting for multiple comparisons (i.e., $p < .01$). [a]Significant gender moderation. [b]Significant difference in the zero-order relations between the manifest and latent personality pathology indicators. PD = personality disorder; PPI-R = Psychopathic Personality Inventory-Revised; TriPM = Triarchic Psychopathy Measure; LSRP = Levenson Self-report Psychopathy Scale. Bold indicates the relations that are significant after correcting for family-wise error.

SUPPLEMENTAL TABLE S4. Path Coefficients for the Mediation Analyses

IV	DV	Effect of IV on M (a)	Effect of M on DV (b)	Direct effects (c)/(c´)	Indirect effect (a*b) [95% BCCI]
NPI Entitlement/ Exploitativeness	Exhibitionism	.42***	.06	.19**/.01	.03 [−.01, .01]
	Fetishism		.05	.18***/.05	.02 [−.05, .02]
	Sexual Sadism		−.30	.27***/.20	−.13 [−.01, .01]
	Transvestic Fetishism		.00	.22**/.00	.00 [.00, .00]
	Voyeurism		−.01	.33***/.04	.00 [−.02, .01]
PPI-R Self-centered Impulsivity	Exhibitionism	.22*	.02	.25***/.18	.00 [−.01, .01]
	Fetishism		.03	.25***/.14*	.01 [−.01, .02]
	Sexual Sadism		−.23	.27***/.21	−.05 [−.01, .01]
	Transvestic Fetishism		−.02	.29***/.16	.00 [−.01, .02]
	Voyeurism		−.10	.33***/.19	−.02 [−.03, .01]
PPI-R Coldheartedness	Exhibitionism	.05	.05	.29***/.15	.00 [.00, .02]
	Fetishism		.03	.23***/.09	.00 [−.02, .00]
	Sexual Sadism		.26	.38***/.05	.01 [−.01, .01]
	Transvestic Fetishism		.00	.30***/.00	.00 [−.02, .00]
	Voyeurism		−.04	.34***/.11	.00 [−.07, .00]
TriPM Disinhibition	Exhibitionism	.08	.07	.29***/.01	.01 [.00, .02]
	Fetishism		.07	.33***/.00	.01 [−.02, .00]
	Sexual Sadism		−.15	.43***/.03	−.01 [.00, .00]
	Transvestic Fetishism		.00	.42***/.00	.00 [−.01, .01]
	Voyeurism		−.01	.41***/.03	.00 [−.02, .01]
TriPM Meanness	Exhibitionism	.14	.07	.33***/.03	.01 [.00, .03]
	Fetishism		.07	.34***/.00	.01 [.00, .03]
	Sexual Sadism		.26	.44***/−.02	.00 [−.02, .01]
	Transvestic Fetishism		.03	.43***/−.02	.00 [−.02, .01]
	Voyeurism		−.01	.35***/.01	.00 [−.03, .03]
LSRP F1	Exhibitionism	.20	.06	.28***/.03	.01 [.00, .03]
	Fetishism		.05	.29***/.08	.01 [.00, .03]
	Sexual Sadism		.28	.35***/−.02	.00 [.00, .00]
	Transvestic Fetishism		.02	.29***/.04	.00 [.00, .00]
	Voyeurism		−.02	.42***/.03	.00 [−.04, .04]
LSRP F2	Exhibitionism	.18	.04	.23***/.09	.01 [−.01, .03]
	Fetishism		.03	.24***/.14	.01 [−.04, .00]
	Sexual Sadism		.00	.40***/.12**	.00 [.00, .00]
	Transvestic Fetishism		−.01	.40***/.11	.00 [.00, .00]
	Voyeurism		−.07	.34***/.11	−.01 [−.05, .03]

Note. Results are based on 5,000 bootstrapped samples. Path coefficients are in the form of standardized Betas. Bias-corrected 95% confidence interval (BCCI) estimates for the indirect effects are reported in brackets and are bolded where statistically significant. NPI = Narcissistic Personality Inventory; PPI-R = Psychopathic Personality Inventory-Revised; TriPM = Triarchic Personality Measure. *$p < .05$. **$p < .01$. ***$p < .001$.