Preprint: The next distinction without a difference: Do psychopathy and sadism scales assess the same construct?

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Abstract

There is vigorous debate about the distinctiveness of the components that make up the *Dark Triad*. With its expansion toward the *Dark Tetrad*, the inclusion of everyday sadism sparked further disagreement on whether this fourth component allows explaining additional variance in relevant criteria not accounted for by psychopathy, narcissism, or Machiavellianism. Given that psychopathy and sadism are highly similar in their conceptualizations, we compared prominent measures for both constructs (Psychopathy and Sadism subscales of the *Short Dark Tetrad*; short form of the *Self-Report Psychopathy Scale-III*; *P7*; *Varieties of Sadistic Tendencies*) in terms of structural properties (i.e., different confirmatory factor analyses) and their nomological networks (i.e., correlation difference tests concerning 51 criteria; overall agreement of nomological networks). In a sample of 594 participants (77% women, $M_{age} = 28.4$, $SD_{age} = 9.0$), we found that latent single-factor and two-factor solutions of psychopathy and sadism items are almost equivalent, that the nomological networks of scales purportedly measuring either psychopathy or sadism are virtually identical, and that psychopathy scales were at least equivalent predictors of core characteristics of sadism. Thus, our results militate against the measurement-related distinctiveness of sadism and psychopathy.

Keywords: Dark Tetrad, Profile similarity, Psychometric evaluation, Sadism, Psychopathy

1.   Introduction

The *Dark Triad* is a compound of "overlapping but distinct constructs" (Paulhus & Williams, 2002, p. 556) that is meant to explain antagonistic behavior in a normal range of personality. It comprises subclinical forms of *narcissism* (entitlement, self-love, and overestimation of one's abilities), *psychopathy* (disinhibition, low impulse control, aggression, lack of empathy, and socially aversive behaviors), and *Machiavellianism* (Mach; strategic manipulativeness, amoral reasoning, and cynicism; Paulhus & Williams, 2002). Research on these traits has attracted numerous endeavors and burgeoned ever since (e.g., Kowalski et al., 2021). A few years after the presentation of the Dark Triad, considerations arose as to whether it could be extended to a *Dark Tetrad* (Chabrol et al., 2009). Chabrol and colleagues postulated that *sadism* was a well-suited candidate as it augments predictions of the Dark Triad (Note that in this context, sadism is oftentimes qualified with attributes such as *everyday* to distinguish it from sexual sadism that entails acts of degradation, violence, or control to experience sexual gratification; e.g., Foulkes, 2019).

Extending an existing compound of constructs raises the question of potential redundancies (Blötner et al., 2022). The most prominent discussion regarding potential redundancy among components of the Dark Triad/Tetrad concerned Mach and psychopathy (Miller et al., 2017), while the potential redundancy of measures of sadism and psychopathy has not yet been considered systematically (Kowalski et al., 2021). To address this research gap, we aimed to shed light on the redundancy of sadism and psychopathy scales.

1.1.   Theoretical Notes on Psychopathy and Sadism

The Dark Tetrad was *not* conceptualized based on theoretical considerations. Instead, the traits were selected for their alleged suitability to explain malevolent behaviors (Kowalski et al., 2021). Whereas the presumed redundancy between Mach and psychopathy (Miller et al., 2017) was rather subtle, commonalities between sadism and psychopathy are more obvious: The most focal features of sadism refer to inflicting physical or psychological pain

(e.g., by physical or verbal assaults), observing others' suffering, and asserting dominance (Buckels et al., 2013; Foulkes, 2019), suggesting callousness (i.e., feeling no emotions, showing no sympathy for others; Book & Power, 2016) and antagonistic attitudes (i.e., low agreeableness, immoral, antipathic, and antisocial tendencies; Lynam & Miller, 2019; Zimmermann et al., 2014). However, aggression (i.e., a *behavior* that is *intended to harm* another person who is *motivated to avoid that harm*; Allen & Anderson, 2017, p. 1, italicizations in original), antagonism, and callousness are also covered by psychopathy (e.g., Kay & Arrow, 2022; Neumann et al., 2015; Patrick et al., 2009). Unlike individuals high in psychopathy, individuals high in sadism are *intrinsically* motivated to inflict or observe harm such that they derive pleasure from it and that they are willing to work for opportunities to aggress (Buckels et al., 2013).

Theoretical descriptions of psychopathy differ from those of sadism in that prominent psychopathy models and measures emphasize egocentricity, deceitfulness, irresponsibility, peculiarities in lifestyle, and impulsivity (Kay & Arrow, 2022; Neumann et al., 2015; Patrick et al., 2009). Thus, the increment of sadism comes under scrutiny since, in many studies, sadism and psychopathy predicted essentially the same antisocial and violent criteria (cf. Kowalski et al., 2021). For example, Johnson et al. (2019) found that psychopathy and sadism scales are strongly related, but still distinguishable and that their items loaded onto different factors in exploratory factor analyses (EFA). However, correlations with certain scores of selected criteria were very similar (see also Dinić et al., 2020, 2021; Međedović & Petrović, 2015). Furthermore, due to content-related overlaps of sadism and psychopathy, substantial cross-loadings occurred, exacerbating interpretations of the emergent factors.

1.2.   Current Research and Hypotheses

To provide a systematic examination of the potential redundancy of sadism and psychopathy, we subjected measures of both constructs to structural analyses (i.e., confirmatory factor analyses [CFA]) and investigated their nomological networks. To this

end, we reanalyzed data from Blötner et al.'s (2022) broadband validation of the *Short Dark Tetrad* (SD4; original by Paulhus et al., 2021), which is a concise measure of the Dark Tetrad traits. In the original study, the authors examined the subscales of the SD4, but similarities among different psychopathy and sadism scales have not yet been examined. We used the psychopathy and sadism subscales of the SD4 (Paulhus et al., 2021), the *Varieties of Sadistic Tendencies* (VAST; Paulhus & Jones, 2015), a short form of the *Self-Report Psychopathy Scale-III* (SRP; Gordts et al., 2015), and the brief psychopathy measure *P7* (Grosz et al., 2020). Those measures were used because they represent a wide array of the contents of psychopathy and sadism while being relatively concise.

First, we tested whether the structure of psychopathy and sadism items from different measures can be better described by a common latent factor or by two correlated factors. We preferred CFA to EFA — as carried out by Johnson et al. (2019), for instance — to be able to contrast two competing model alternatives. Referring to the nomological networks, sadism and psychopathy should both correlate positively with hostility and antagonism and negatively with empathy and agreeableness (Chabrol et al., 2009; Kay & Arrow, 2022; Kowalski et al., 2021). Compared to sadism, however, psychopathy should be more strongly linked to constructs representing self-control, such as impulsivity, conscientiousness, and disinhibition. These constructs should be at the center of the nomological network of psychopathy (e.g., Patrick et al., 2009), but they are not explicitly mentioned in any model of sadism. Dominance striving and both physical and verbal aggression, on the other hand, should be rather at the center of the nomological network of sadism. Compared to sadism, aggression and egotism are rather subsidiary to psychopathy because they reflect only two of many characteristics (Foulkes, 2019; Kay & Arrow, 2022), leading us to hypothesize that sadism measures correlate more strongly with physical and verbal aggression and striving for dominance than psychopathy measures. We further included other, less focal criteria for which we did not derive specific hypotheses (e.g., openness to experience, narcissism, striving

for prestige). These domains were intended to extend the scope of the nomological networks and further inform our conclusions of (non-)redundancy.

2.   Method

2.1.   Sample

We adopted the data from Blötner et al.'s (2022) analyses of the nomological network of the SD4 (original by Paulhus et al., 2021). After excluding underaged individuals and those who experienced technical problems during study processing, the sample contained 594 participants (77% women, $M_{age} = 28.4$, $SD_{age} = 9.0$). Since each participant responded only to a subset of scales (*planned missingness design*), multiple imputation was used (van Buuren & Groothuis-Oudshoorn, 2011). Participants were recruited from universities and social media.

2.2.   Measures

Psychopathy was measured with Blötner et al.'s (2022) German 7-item psychopathy subscale from the SD4 (original by Paulhus et al., 2021), Blötner et al.'s German translation of the 28-item version of the SRP (original by Gordts et al., 2015), and Grosz et al.'s (2020) German 7-item *P7*. Sadism was assessed with the German 7-item sadism subscale from the SD4 and the 16-item VAST (Paulhus & Jones, 2015; German translation used in Wehner et al., 2021).

Blötner et al. (2022) used different measures for narcissism, Mach, psychopathy, and sadism, as well as measures of the Big Five, honesty-humility, maladaptive traits, impulsivity, aggression, motives and values, sexual drive, the interpersonal circumplex model, and self-esteem to validate the SD4. These domains were sought to cover a wide range of criteria relevant to antagonistic traits (for an overview, see https://osf.io/m4pyb/).

2.3.   Analytic Strategy

First, we performed three confirmatory factor analyses (CFA) and compared their fit characteristics. In the first CFA, all psychopathy and sadism items were regressed onto the same factor. In the second CFA, we specified one factor each with loadings from all

psychopathy (sadism) items. The factors were allowed to covary. In the third CFA, we employed a hierarchical analysis in which all items were regressed onto their original (sub)scales, which in turn were regressed onto trait-specific factors (e.g., SD4-Psychopathy items onto an *SD4-Psychopathy* factor, Lifestyle items from the SRP onto a *Lifestyle* factor, *SD4-Psychopathy* and *Lifestyle* factors onto a *Psychopathy* factor). Sufficient fit was indicated by *CFI*s > .90, *RMSEA*s < .06, and *SRMR*s < .08 (Hu & Bentler, 1999). To conclude that psychopathy and sadism measures assess different traits, both two-factor solutions should exhibit better fit than the single-factor solution. Considering parsimonious interpretations, negligible differences between the fit properties of the models indicate that the more complex models are not justified.

To evaluate construct validity, we employed two approaches. At a local level, we tested whether sadism and psychopathy measures differ concerning their links with focal criteria, controlling for intercorrelations, using the *R* package *diffcor* (version 0.7.2; Blötner, 2022). To trade off the problems of multiple testing with those of correction methods (i.e., quite liberal support of our *redundancy hypothesis*), we employed $\alpha = .001$. At the global level, we quantified the overall agreement of the correlation profiles of the compared measures (excluding intercorrelations) via *Double-Entry Intraclass Correlation* (ICC_{DE}) and the *R* package *iccde* (version 0.3.4; Blötner & Grosz, 2022). The ICC_{DE} is the correlation of the columns of the correlation matrix, whereby the correlations listed in one column (e.g., SD4-Psychopathy) are appended to the correlations listed in another column (e.g., SD4-Sadism) and vice versa. In doing so, the scatters, elevations, and shapes of the distributions are aligned. This research was not preregistered. All data and R scripts can be retrieved from https://osf.io/x49vw/.

3.   Results

3.1.   Confirmatory Factor Analyses

All model alternatives showed poor fit concerning *CFI*s (.56, .57, and .59 for single-,

two-factor, and hierarchical solutions, respectively) and *SRMR*s (.12, .12, and .11), but good

fit concerning *RMSEA*s (all *RMSEA*s = .04). The loading patterns were very similar (.14 ≤ λs

≤ .88 [single-factor], .15 ≤ λs ≤ .89 [two-factor], .17 ≤ λs ≤ .96 [hierarchical]). Psychopathy

and sadism factors were correlated at ρ = .85 (two-factor model) and .89 (hierarchical two-

factor model). Among the highest modification indices for the single-factor model (*MI* > 10;

$n_{\text{Modification indices}}$ = 44), 12 suggested correlated residuals among items assessing different

constructs. Similarly, among the highest modification indices for the two-factor model (*MI* >

10; $n_{\text{Modification indices}}$ = 69), 18 indices each suggested cross-loadings and correlated residuals

between items assessing different constructs. In the hierarchical model, 72 of the highest

modification indices (*MI* > 10; $n_{\text{Modification indices}}$ = 197) suggested cross-loadings and 31

suggested correlated residuals among items or second-order factors assessing different

constructs.

3.2.   Correlation Differences

All measures of psychopathy and sadism correlated negatively with agreeableness and

empathy and positively with antagonism and hostility. The P7 was more strongly related to

antagonism than the VAST. SD4-Psychopathy and the P7, but not the SRP, were more

strongly related to disinhibition than the two sadism scales. No differences were observed

regarding the links with conscientiousness. Psychopathy scales were more strongly related to

some, but not all facets of impulsivity than were SD4-Sadism and the VAST. For example, no

differences were observed concerning perseverance (i.e., low patience for tedious tasks). The

SRP and the VAST did not differ in their links with negative urgency and lack of

premeditation (both reflecting low self-control) and sensation seeking. SD4-Psychopathy and

the SRP correlated more strongly with both physical and verbal aggression than SD4-Sadism.

The SRP also correlated more strongly with verbal aggression and dominance striving than

the VAST (see Table 1 for an overview). The spectrum of pairwise correlation differences (*p*

< .001) ranged from five (SD4-Sadism — SRP) to 20 (SD4-Psychopathy — VAST).

Table 1

Comparisons of the Nomological Networks of Different Psychopathy and Sadism Scales

Criteria (Cronbach's α)	SD4P	P7	SRP	SD4S	VAST
Narcissism					
SD4N (.77)	$.42_{ab}$	$.42_{ae}$	$.35_{beh}$	$.29_{hj}$	$.20_j$
Admiration (.81)	$.30_{ab}$	$.33_{ae}$	$.24_{beh}$	$.17_{hj}$	$.09_j$
Rivalry (.56)	$.40_{abcd}$	$.45_{aefg}$	$.39_{behi}$	$.48_{cfh}$	$.35_{dgi}$
NPI13 (.67)	$.29_{acd}$	$.29_{afg}$	$.41_{hi}$	$.31_{cfhj}$	$.33_{dgij}$
Psychopathy					
SD4P (.74)	—	$.78_e$	$.70_e$	$.54_j$	$.53_j$
P7 (.79)	.78	—	$.62_h$	$.57_{hj}$	$.50_j$
SRP (.90)	$.70_d$	$.62_{fg}$	—	$.60_f$	$.71_{dg}$
Machiavellianism					
SD4M (.70)	$.19_{bd}$	$.28_{ef}$	$.27_{beh}$	$.32_{fh}$	$.13_d$
M7 (.78)	$.17_d$	$.28_{efg}$	$.29_{ehi}$	$.37_{fh}$	$.22_{dgi}$
Mach IV (.80)	$.36_{ad}$	$.37_{ag}$	$.53_i$	$.54_j$	$.46_{dgij}$
Sadism					
SD4S (.69)	$.54_{ab}$	$.57_{aeg}$	$.60_{bei}$	—	$.66_{gi}$
VAST (.76)	$.53_a$	$.50_a$	$.71_h$	$.66_h$	—
Broad personality					
Openness (.87)	$-.03_{ac}$	$-.06_{aef}$	$-.15_{ei}$	$-.10_{cfj}$	$-.19_{ij}$
Conscientiousness (.88)	$-.37_{abcd}$	$-.39_{aefg}$	$-.31_{behi}$	$-.30_{cfhj}$	$-.29_{dgij}$
Extraversion (.89)	$.15_b$	$.04_{efg}$	$.06_{be}$	$-.06_{fj}$	$-.05_{gj}$
Agreeableness (.80)	$-.34_{abcd}$	$-.31_{ag}$	$-.43_{bhi}$	$-.42_{chj}$	$-.42_{dgij}$
Neuroticism (.89)	$.09_{abcd}$	$.02_{aefg}$	$.07_{behi}$	$.10_{cfhj}$	$.09_{dgij}$
Honesty-Humility (.72)	$-.26_{ad}$	$-.32_{aefg}$	$-.39_{ehi}$	$-.38_{fhj}$	$-.37_{dgij}$
Maladaptive personality					
Negative Affectivity (.70)	$.26_{abcd}$	$.24_{aefg}$	$.22_{behi}$	$.22_{cfhj}$	$.17_{dgij}$
Detachment (.69)	$.19_{abcd}$	$.24_{aefg}$	$.26_{behi}$	$.26_{cfhj}$	$.28_{dgij}$
Antagonism (.76)	$.52_{abcd}$	$.58_{aef}$	$.53_{beh}$	$.50_{cfhj}$	$.44_{dj}$
Disinhibition (.75)	$.67_a$	$.66_a$	$.48_{hi}$	$.41_{hj}$	$.40_{ij}$
Psychoticism (.78)	$.56_a$	$.52_a$	$.42_{hi}$	$.40_{hj}$	$.34_{ij}$
Impulsivity					
Negative Urgency (.81)	$.55_a$	$.51_a$	$.38_{hi}$	$.33_{hj}$	$.29_{ij}$
Lack of Premeditation (.82)	$.45_a$	$.39_a$	$.27_i$	$.14_j$	$.24_{ij}$
Lack of Perseverance (.81)	$.25_{abcd}$	$.29_{aefg}$	$.21_{behi}$	$.26_{cfhj}$	$.22_{dgij}$
Sensation Seeking (.75)	$.22_{abc}$	$.30_{af}$	$.14_{bhi}$	$.19_{cfh}$	$.05_i$

Positive Urgency (.80)	$.66_a$	$.66_a$	$.48_h$	$.45_{hj}$	$.37_j$
Violence					
Anger (.76)	$.34_{bcd}$	$.20_{fg}$	$.35_{bh}$	$.25_{cfhj}$	$.23_{dgj}$
Physical Aggression (.76)	$.62_{bd}$	$.53_f$	$.66_{bi}$	$.51_f$	$.63_{di}$
Verbal Aggression (.67)	$.50_{bd}$	$.36_{fg}$	$.51_b$	$.38_{fj}$	$.41_{dgj}$
Mistrust (.70)	$.33_{abcd}$	$.27_{afg}$	$.38_{bhi}$	$.35_{cfhj}$	$.34_{dgij}$
Personal Values and Motives					
Self-Transcendence (.82)	$-.22_{abcd}$	$-.23_{aefg}$	$-.30_{behi}$	$-.32_{cfhj}$	$-.30_{dgij}$
Self-Enhancement (.67)	$.04_{abcd}$	$.11_{aefg}$	$.08_{behi}$	$.07_{cfhj}$	$-.01_{dgij}$
Openness to Change (.83)	$-.05_{ab}$	$-.10_{aefg}$	$-.14_{behi}$	$-.18_{fhj}$	$-.21_{gij}$
Conservation (.65)	$-.21_{ac}$	$-.18_{aefg}$	$-.09_{ehi}$	$-.11_{cfhj}$	$-.06_{gij}$
Hope for Achievement (.69)	$-.12_{abcd}$	$-.10_{aefg}$	$-.17_{behi}$	$-.10_{cfhj}$	$-.19_{dgij}$
Hope for Power (.81)	$.31_{abc}$	$.35_{ae}$	$.27_{beh}$	$.21_{chj}$	$.15_j$
Hope for Affiliation (.88)	$-.08_{abd}$	$-.05_{aeg}$	$-.12_{behi}$	$-.21_{hj}$	$-.16_{dgij}$
Fear of Loss (.74)	$-.08_{abcd}$	$-.04_{aefg}$	$-.09_{behi}$	$-.02_{cfhj}$	$-.08_{dgij}$
Dominance (.82)	$.45_{acd}$	$.44_{afg}$	$.60$	$.50_{cfj}$	$.49_{dgj}$
Prestige (.78)	0_{acd}	$.04_{aefg}$	$.12_{eh}$	$.07_{cfhj}$	$-.01_{dgj}$
Leadership (.89)	$.24_{abcd}$	$.20_{aefg}$	$.25_{beh}$	$.20_{cfhj}$	$.14_{dgj}$
Sociosexual Orientation (.87)	$.33_{bd}$	$.22_{fg}$	$.36_b$	$.17_{fj}$	$.25_{dgj}$
Interpersonal circumplex					
Assertiveness (.77)	$.22_{ab}$	$.14_{aefg}$	$.14_{bei}$	$.02_{fj}$	$.05_{gij}$
Cynicism (.64)	$.46_{abc}$	$.52_a$	$.40_{bhi}$	$.39_{chj}$	$.33_{ij}$
Hostility (.77)	$.43_{abcd}$	$.48_{aefg}$	$.49_{behi}$	$.53_{cfhj}$	$.50_{dgij}$
Unsociability (.84)	$.13_{abcd}$	$.12_{aeg}$	$.18_{behi}$	$.24_{chj}$	$.21_{dgij}$
Shyness (.80)	$-.16_{ab}$	$-.08_{aefg}$	$-.08_{behi}$	0_{fhj}	$-.01_{gij}$
Obedience (.65)	$-.27_a$	$-.20_{aef}$	$-.14_{ehi}$	$-.13_{fhj}$	$-.07_{ij}$
Empathy (.80)	$-.38_{abcd}$	$-.35_{aefg}$	$-.43_{behi}$	$-.41_{cfhj}$	$-.42_{dgij}$
Sociableness (.85)	$.01_{ab}$	$.04_{ae}$	$-.06_{behi}$	$-.13_{hj}$	$-.14_{ij}$
Self-esteem (.93)	$-.17_{abcd}$	$-.12_{aef}$	$-.21_{behi}$	$-.17_{cfhj}$	$-.26_{dij}$
Correlation Differences and Profile Similarities among Psychopathy and Sadism Scales					
P7	6 (.98)	—			
SRP	16 (.93)	15 (.93)	—		
SD4S	19 (.88)	14 (.90)	5 (.96)	—	
VAST	20 (.87)	15 (.87)	14 (.95)	6 (.96)	—

Note. SD4N, -P, -M, -S, = Narcissism, psychopathy, Machiavellianism, and sadism, as measured by the Short Dark Tetrad. SRP = Self-Report Psychopathy Scale III. VAST = Varieties of Sadistic Tendencies. NPI13 = 13-item Narcissistic Personality Inventory. Equal subscripts per line indicate that the correlations were not different

($p > .001$). Correlations greater than or equal to $\pm$ .14 were significant at $p < .001$. Numbers in parentheses in the lower panel reflect ICC_{DE}s.

3.3.   Profile Similarities

The nomological networks of scales assessing the same constructs were highly similar, .93 (P7 — SRP; SD4-Psychopathy — SRP) $\leq ICC_{DE} \leq$ .98 (SD4-Psychopathy — P7). Likewise, very high similarities were observed between the correlation profiles of scales allegedly tapping different constructs, .87 (SD4-Psychopathy — VAST; P7 — VAST) $\leq ICC_{DE} \leq$ .96 (SD4-Sadism — SRP).

4.   Discussion

In this research, we examined whether prominent psychopathy and sadism scales assess distinct traits. To this end, we tested whether their items can be better mapped onto one factor or onto two correlated factors; computed correlation difference tests for focal criteria which were expected to yield different correlations; and quantified the overall profile agreements.

Our CFAs revealed that the fit properties (global fit indices, loading patterns, factor correlation) of the single-factor, two-factor, and hierarchical two-factor models were virtually identical. Thus, the separating, theoretically more complex model assuming distinct psychopathy and sadism factors could not be justified in the light of striving for theoretical parsimony. This was further corroborated by extreme factor intercorrelations and suggestions regarding substantial cross-loadings and residual correlations. Since it was difficult to disentangle sadism and psychopathy in structural analyses, the respective findings militated against the structural separation of psychopathy and sadism.[1]

Correlation analyses revealed that measures on both sadism and psychopathy exhibited relations with focal criteria that were consistent with our expectations (i.e., positive with hostility, antagonism; negative with empathy, agreeableness). Therefore, the measures of

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[1] The same conclusions emerged when employing (sub)scale-specific parceling (see https://osf.io/2jsq9).

psychopathy and sadism yielded very similar relations with criteria that should combine both constructs (Foulkes, 2019; Kowalski et al., 2021). However, we observed evidence that contradicted our hypotheses in three ways: First, as opposed to our expectation that psychopathy measures correlated more strongly with low self-control, correlation analyses demonstrated that sadism and psychopathy measures yielded comparable links with conscientiousness and, in some cases, with facets of impulsivity. Second, unlike our expectation that sadism was more strongly linked to striving for dominance, measures of sadism and psychopathy were by and large equally predictive of dominance striving. Last, in contrast to our hypothesis on higher links with physical and verbal aggression in favor of sadism scales, measures of psychopathy were equivalent, in some cases even better predictors of both physical and verbal aggression than measures of sadism.

  Looking at the scales themselves, the P7 yielded higher correlations with disinhibition and the facets of impulsivity than the sadism scales. However, its items exclusively reflect impulsivity and antisocial attitudes (Grosz et al., 2020), making these links plausible. Likewise, many correlations differed between the psychopathy and sadism scales from the SD4. This is desirable since the authors of the SD4 aimed to reduce overlaps among the facets, especially by emphasizing vicarious over direct sadism and by omitting obvious aggression in the psychopathy scale (Paulhus et al., 2021). This being said, it was surprising that SD4-Psychopathy was more strongly related to verbal and physical aggression than was SD4-Sadism. SD4-Psychopathy also correlated more strongly with domains that emphasize low self-control (disinhibition, facets of impulsivity), but this comes at the expense of narrower contents covered by both subscales. For instance, since the sadism subscale from the SD4 predominantly assesses vicarious sadism, weaker associations with violent conduct are conceivable, but disadvantageous in terms of construct validity. In many other cases, however, sadism and psychopathy scales showed similar relations with domains we referred to as low self-control, suggesting that the sadism scales tap nuances of psychopathy. This is

supported by studies in which sadism and psychopathy measures exhibited comparable relations with both self-reported and behavioral risk-taking (Nott & Walker, 2021) and conscientiousness (Plouffe et al., 2019).

Notably, some items of the SRP would be suitable to assess sadism (e.g., enjoyment of violent sports and films; enjoyment of watching fight scenes). Consistent with this, Foulkes et al. (2014) found psychopathy as measured by a short form of the SRP to predict enjoyment of treating others cruelly. Note that the conceptualizations of different measures of psychopathy are in no way homogenous — even concerning ostensibly shared elements (Kay & Arrow, 2022).

Last, we found very high agreements of the nomological networks. Profile similarity indices were thereby comparable across measures of different traits and measures of the same traits. Intriguingly, the SRP revealed higher similarities with scales of sadism (ICC_{DE}s = .95 and .96) than with other measures of psychopathy (both ICC_{DE}s =.93). This is in keeping with Paulhus et al. (2021) who suggested that stand-alone measures of the Dark Tetrad overlap more strongly with scales on other constructs than measures not developed in tandem. In general, our findings on similarities of the nomological networks are consistent with those from earlier studies (Dinić et al., 2020, 2021; Johnson et al., 2019; Međedović & Petrović, 2015; Plouffe et al., 2017, 2019). Based on the correlations from Plouffe et al. (2017, 2019), for instance, we computed ICC_{DE}s between psychopathy and sadism scales ranging from .89 (Plouffe et al., 2017, Study 1) to .97 (Study 2).

4.1.   Strengths, Limitations, and Future Directions

The biggest limitation of this research might have been the exclusive reliance on self-report data. Utilizing self-report data was advantageous to provide a wide framework of criteria to compare psychopathy and sadism measures. Notwithstanding economic aspects, future research should also examine the redundancy of sadism and psychopathy measures with behavioral assessment, for instance, by using white-noise paradigms or applications of

weak shocks in laboratory studies (Chester et al., 2019). Such an endeavor would be a strong confirmation of our findings. Second, we must acknowledge that the data utilized in our study was collected from German students and social media users, yielding comparatively low cultural heterogeneity as well as a relatively young and highly educated sample (Plouffe et al., 2017, 2019). Although the Dark Tetrad should be pertinent for "normal" and institutionalized populations alike (Chabrol et al., 2009), our findings were affected by variance restrictions regarding extremely malevolent behaviors. Third, the majority of the sample were women, whereas men tend to outperform women in antagonistic behaviors and personality traits (e.g., Kowalski et al., 2021). Thus, replications in more heterogenous or incarcerated samples are required.

4.2.   Conclusion

Our study pointed out multiple difficulties in disentangling psychopathy and sadism from a measurement perspective. Thus, we concluded that current measures of sadism and psychopathy basically tap the same construct, which exacerbates appropriate conclusions derived from these scores. However, this is not to say that the constructs of psychopathy and sadism are identical. Indeed, the underlying theories differ. In this vein, we believe in the practical merit of sadism in predictions of harming others or of enjoying others' suffering, which — from a theoretical perspective — is unique to sadism, but not to psychopathy (Kowalski et al., 2021). To this end, measures of sadism are needed that better differentiate the construct from psychopathy. This would also help dissolve the *jingle jangle fallacy* proposed by having two constructs that should assess different contents, but appear identical in empirical analyses (Kay & Arrow, 2022). Relatedly, our findings have particular implications for the ongoing debate concerning the traits needed to explain antagonistic behavior: Neither the development of the Dark Triad nor its extension to the Dark Tetrad have been guided by a particular theory (e.g., Kowalski et al., 2021). Since our analyses suggested that the extension to the Dark Tetrad was not justified (i.e., psychopathy is an equivalent or in

some cases even better predictor of sadistic features), we would like to encourage future

research to refrain from using the Dark Tetrad.

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