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Enthusiastic Acts of Evil: The Assessment of Sadistic Personality in Polish and Italian Populations

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ABSTRACT

Subclinical sadism has received substantial attention in recent research as a trait that predicts a variety of malevolent behaviors. The objective of this study was to assess the 'psychometric robustness and portability' of the Assessment of Sadistic Personality (ASP). We examined the convergent and discriminant validity, and invariance of translated versions of the ASP within community samples of Polish and Italian individuals. The study included 568 individuals (340 women and 228 men) residing in Italy ($M = 23.57$, $SD = 2.55$) and 556 individuals (411 women, 144 men, 1 other) residing in Poland ($M = 23.48$, $SD = 4.60$). For cultural invariance purposes, data from a Canadian sample comprising 638 students were used. To establish convergent and discriminant validity, participants completed measures of sadism, the Dark Triad, the Big Five, interpersonal reactivity, and maladaptive traits described in the DSM-5. Across both samples, convergent and discriminant validity were supported. Configural and partial metric invariance were satisfied, and following implementation of alignment optimization, latent mean differences were evaluated between countries. Results of the study supported the psychometric qualities of the ASP across different cultures and languages, and the utility of the ASP as a valid measure extending beyond university samples.

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Sadism; Polish; Italian; assessment; ASP

When Kaminski's RONA troops first arrived in the neighborhood, some joyful local residents, hearing Russian spoken and seeing their old Soviet uniforms, assumed the Red Army had crossed the Vistula and had rushed out to greet them. They soon learned their mistake... This happy band of bachelors murdered and raped as if it was as natural as breathing, and between times they drank as much alcohol as they could find (Borowiec, 2015, p. 207).

While the history of civilization is replete with examples of cruelty, violence, war, and atrocities, ranging from the major world wars of the 20th century to the never-ending present-day examples of such extreme inhumanity, the world continues to witness the most significant occurrences of unspeakable evil. It is not surprising, then, that there is recent growing interest in the phenomenon of human capacity for malevolence.

For personality researchers, a significant contribution to the collective understanding of this phenomenon in recent decades has been the Dark Triad, including personality traits of narcissism, psychopathy, and Machiavellianism. Since its introduction by Paulhus and Williams (2002), the Dark Tetrad has been proposed, which includes the addition of subclinical sadism to the original three traits of the Dark Triad (Buckels, Jones, & Paulhus, 2013; Chabrol, Van Leeuwen, Rodgers, & Séjourné, 2009; Mededović & Petrović,

2015; Paulhus, 2014). This four-trait description has proven to be a valid model accounting for both psychological and behavioral tendencies in community samples. In line with these findings, the main purpose of this article is to introduce valid and reliable adaptations of Plouffe, Saklofske, and Smith's (2017) Assessment of Sadistic Personality (ASP) in other countries. This study examines the ASP with Polish and Italian speaking populations.

Sadism

Sadism refers to tendencies towards inflicting pain and humiliation on others to assert dominance and power, or for the purposes of pleasure and enjoyment (O'Meara, Davies, & Hammond, 2011). Sadism has been linked to behaviors such as traditional bullying and cyberbullying (van Geel, Goemans, Toprak, & Vedder, 2017), internet trolling (Buckels, Trapnell, Andjelovic, & Paulhus, 2018; Buckels, Trapnell, & Paulhus, 2014), unprovoked aggression (Reidy, Zeichner, & Seibert, 2011), preferences for violent video games, a fascination with weapons (Gonzalez & Greitemeyer, 2018; Greitemeyer, 2015), intimate partner cyberstalking (Smoker & March, 2017), experiencing schaudenfreude (Lee, 2019; Schumpe & Lafrenière, 2016),

vandalism (Pfattheicher, Keller, & Knezevic, 2019), sexual violence (Russell, Doan, & King, 2017; Russell & King, 2016), and juvenile delinquency (Chabrol et al., 2009). Recent evidence has demonstrated that those high in sadism not only derive pleasure from others' pain, but also employ psychological rationalizations in order to avoid guilt (Buckels et al., 2018; Trémolière & Djeriouat, 2016). Although everyday sadism is a subclinical trait and not a clinical diagnosis, researchers have suggested that sadism stems from defective moral reasoning (Buckels et al., 2018; Mededović, 2017; Pajević, Vuksavljević-Gvozden, Stevanović, & Neumann, 2018; Trémolière & Djeriouat, 2016). Because of the tendency for individuals who score high on sadism to respond positively to violent visual stimuli (while positive affect was suppressed by peaceful visual stimuli), Mededović (2017) has even likened sadism to parathymia, an emotional disorder associated with schizophrenia.

An important presupposition underlying this line of research is that differences in traits such as sadism (similarly to narcissism and psychopathy) exist on a spectrum from normal to clinical levels. This assertion is further supported by the fact that outcomes, clinically relevant and otherwise, that are generally associated with these personality disorders are still very prevalent below the threshold for clinical diagnosis. Research has demonstrated that subclinical levels of Dark Tetrad traits are associated with unprovoked aggression (Reidy et al., 2011), sexual violence (Russell & King, 2016), substance abuse (Stenason & Vernon, 2016), and criminality (Azili et al., 2016).

A controversy in the Dark Tetrad literature is the notion of redundancy between psychopathy and sadism leading to questions about the position of sadism within the framework of the Dark Tetrad¹. Research has highlighted several important similarities including a proneness to aggression (Buckels et al., 2013) and relation to low honesty-humility, which some have suggested is the core of the Dark Tetrad (Book et al., 2016). Additionally, there are moderate-to-strong correlations between various measures of sadism and psychopathy (Lee, 2019; Pfattheicher et al., 2019; Plouffe, Saklofske, & Smith, 2017; Plouffe, Smith, & Saklofske, 2019; Womick, Foltz, & King, 2019). Others have argued for the reduction of the Dark Tetrad to a single Dark Core, given that the addition of sadism fails to contribute to the explanatory value of the model (Bertl, Pietschnig, Tran, Stieger, & Voracek, 2017). For instance, some studies have shown that sadism fails to predict incremental variance beyond the Dark Triad in moral decision-making (Karandikar, Kapoor, Fernandes, & Jonason, 2019) and beyond psychopathy in accurately perceiving others' vulnerability based on gait cues (Ritchie, Blais, & Forth, 2019). Moreover, Jonason, Zeigler-Hill, and Okan (2017) have found that the addition of sadism to the Dark Triad only negligibly added to the prediction of the seven deadly sins and moral foundations. In the same vein, Sest and March (2017) found that sadism and psychopathy had

almost identical patterns of correlations with cognitive and affective empathy and trolling.

Despite their similarities, a large body of research has refuted the notion that sadism is redundant with psychopathy. For instance, sadism has been shown to predict various maladaptive and deviant behaviors and outcomes beyond the effects of both psychopathy and the Dark Triad; significant associations have been found with unprovoked aggression (Reidy et al., 2011), juvenile delinquency in boys (Chabrol et al., 2009), inappropriate reactions to mourner grief (Lee, 2019), and vandalism (Pfattheicher et al., 2019). Additionally, empirical evidence also shows Dark Triad traits and sadistic traits distinctly relate to affective empathy (i.e., the ability to be emotionally involved in others' affect states) and cognitive empathy (i.e., the ability to recognize others' emotional states). For instance, narcissism is usually linked to high levels of cognitive empathy, but low affective empathy (Di Pierro, Di Sarno, Preti, Di Mattei, & Madeddu, 2018; Pajević et al., 2018), psychopathy relates only to low affective empathy (Pajević et al., 2018; Velimirović, Bojanić, & Dinić, 2018), while sadistic traits are negatively linked to both affective and cognitive empathy (Velimirović et al., 2018). Additionally, Pajević et al. (2018) showed that, after accounting for shared variance with psychopathy, only sadism remained as a significant predictor of poor performance on emotion recognition tasks. Using exploratory factor analyses, Plouffe et al. (2017) demonstrated that ASP sadism items and Short Dark Triad (SD3; Jones & Paulhus, 2014) trait items grouped into four interpretable factors: Sadism, Psychopathy, Narcissism, and Machiavellianism. Using similar methodology, but with a different measure of sadism, Johnson, Plouffe, and Saklofske (2019) extracted six interpretable factors, representing narcissism, psychopathy, Machiavellianism, physical sadism, verbal sadism, and vicarious sadism. Extant research has also demonstrated that sadism and psychopathy have distinct patterns of associations with agency and communion (Southard, Noser, Pollock, Mercer, & Zeigler-Hill, 2015; Trapnell & Paulhus, 2012). Researchers have also noted an important conceptual difference in motivation for aggression. That is, those high in psychopathy participate in aggression as a means to an end (instrumental aggression), as a reaction to provocation (reactive aggression), and unprovoked aggression, while high-sadism individuals are more likely to participate in aggressive behavior solely for enjoyment (i.e., sadism uniquely predicts unprovoked aggression beyond the effect of psychopathy; Baumeister & Campbell, 1999; Reidy et al., 2011). Out of the 'dark personalities', only high-sadism individuals were willing to exert additional effort for the opportunity to hurt an innocent person (Buckels et al., 2013) and some researchers have suggested that though high-psychopathy individuals participate in unprovoked aggression, they may not actually derive pleasure from these behaviors, unlike high-sadism individuals (Jones & Neria, 2019). This not only supports sadism's position amongst the other Dark Tetrad traits, but also contributes to the understanding of historic accounts of not only indifferent, reluctant, and instrumental acts of evil but further, to the understanding of enthusiastic acts of evil, such as the brutal acts during the Warsaw Uprising, described above.

¹We analyzed whether sadism and psychopathy form two distinct factors and found that despite being significantly correlated, they do indeed load on two separate factors. The detailed description of the analysis with relevant syntaxes are available on our OSF project site.

Table 1. Results of the meta-analysis of the relationships between sadism, the Dark Triad, and basic personality traits.

	<i>N</i>	<i>k</i>	<i>d</i>	95% CI	<i>Q</i>
Narcissism	23853	42	0.27**	.26, .28	218.56**
Psychopathy	24384	44	0.58**	.57, .59	674.13**
Machiavellianism	23853	42	0.46**	.45, .47	376.06**
Neuroticism	5674	9	0.03*	.01, .06	107.26**
Extraversion	5674	9	0.03*	.00, .05	80.05**
Openness to experience	5674	9	−0.02	−.05, .00	45.71**
Agreeableness	5674	9	−0.45**	−.47, −.43	84.81**
Conscientiousness	5674	9	−0.26**	−.28, −.23	67.60**

Note. *k* = number of effect sizes; *d* = the inverse variance weighted mean observed effect size estimate (Hedge's *g*); 95% CI = lower and upper bounds of the 95% CI for *d*; *Q* = χ^2 test for the homogeneity of true correlations across studies. The studies and the reported correlation estimates used for the meta-analysis are available in an open science repository project associated with this paper.

**p* < .05.

***p* < .01.

Sadism and personality

To comprehensively review the empirical literature on the relationship between sadism and personality, we conducted a meta-analysis following PRISMA guidelines. We searched google scholar, psycINFO, and psycARTICLES with the keywords: “Dark Tetrad”, “Dark Triad sadism”, “sadism personality”, “interpersonal reactivity index sadism”, and “sadism big five”. To be included in our analyses, articles must have presented the correlations between sadism and at least one other trait that was assessed in the present study. Papers also must have been either peer-reviewed articles or dissertations. Articles regarding sexual sadism or clinical sadism were not included in analyses as these constructs are distinct from everyday sadism². The exclusion criteria were as follows: no composite score for sadism, lack of composite score for other variables, and correlations provided separately for gender. In total, we included 53 articles in our meta-analysis, 44 of which investigated the relationship between sadism and the Dark Triad traits, and nine of which assessed the relationship between sadism and the Big Five traits. We did not find enough eligible articles assessing the relationship of sadism and the Personality Inventory for the DSM-5 traits, or sadism and Interpersonal Reactivity Index traits to include them in the meta-analysis. The results of the meta-analysis are presented in Table 1.

The results of our meta-analysis revealed that although sadism is positively associated with all Dark Triad traits, the highest associations were found with psychopathy, followed by Machiavellianism, while it was most weakly related to narcissism. Moreover, our meta-analysis revealed that sadism is primarily related to low agreeableness and secondarily to low conscientiousness. Although the relation to extraversion and neuroticism was significant (*p*'s < .05) it was close to zero, and thus, negligible.

Empirical studies on the associations between sadism and maladaptive personality traits measured by the Personality

Inventory for the DSM-5 (PID5-BF; Krueger, Derringer, Markon, Watson, & Skodol, 2013) are limited in number. Still, Plouffe et al. (2019) have demonstrated that ASP sadism scores positively correlated with antagonism, disinhibition, psychoticism, and detachment, but were unrelated to negative affect. Russell et al. (2017) have mostly corroborated these results with different measures of sadism, showing correlations that are remarkably similar in direction and magnitude.

The Interpersonal Reactivity Index (IRI; Davis, 1983) is a measure of empathy. To date, to the best of our knowledge, there have been no studies assessing the relationship between sadism and the IRI model of empathy. However, previous studies have shown that individuals high in sadism showed emotional deficits leading to positive emotional responses towards violence (Međedović, 2017). Moreover, individuals who scored high on sadism have been shown to display callous responses (i.e., annoyance, boredom, entitlement, schadenfreude, and humor) to mourner grief. Moreover, Pajević et al. (2018) found that sadism was negatively correlated with emotion recognition, affective empathy, cognitive empathy, and overall empathy. Conflicting results to those of Pajević et al. (2018) were reported by Sest and March (2017) who, using a different conceptualization of empathy, found that sadism was significantly negatively correlated with affective empathy and social skills, but unrelated to cognitive empathy. On the other hand, Velimirović et al. (2018) found that sadism was related to both cognitive and affective empathy and suggested that though sadistic individuals generally do not understand others' emotions, those who do derive more pleasure from hurting others and damaging property. Moreover, using different measures of empathy, O'Meara et al. (2011) found that sadism was negatively correlated with overall empathy, insensitivity, and social skill, and was unrelated to emotional response. O'Meara et al., (2011) posited that their results may indicate that individuals who score high on sadism are aware of the effect of their actions on others, but are unconcerned with the thoughts of others pertaining to themselves.

The present study

The objective of the present study is to introduce and validate Polish and Italian adaptations of Plouffe et al. (2017) ASP, thereby also providing a 'test' of the structure of the Dark Tetrad in other countries and languages. The ASP was initially introduced to address the shortcomings of previous measures, such as the Short Sadistic Impulse Scale which has a largely homogeneous item pool that mostly assesses the hurting nature of sadism (SSIS; O'Meara et al., 2011; Plouffe et al., 2017), or the Varieties of Sadistic Tendencies scale (VAST; Paulhus & Jones, 2015) which employs a limited definition of sadism that does not include the subjugative nature of the construct (Plouffe et al., 2017). To address these concerns, Plouffe et al. (2017) designed the ASP to reflect the constructs subjugative, pleasure-seeking, and unempathic qualities. Preliminary results have shown

²Clinical sadism and sexual sadism have been excluded from the meta-analysis because the main purpose of the meta-analysis was to inform our hypotheses. Confounding different types of sadism with everyday sadism may have given us different results as these are distinct constructs; thus giving us less pure estimates of relationships between everyday sadism and external correlates.

the ASP to be a valid and reliable measure of everyday sadism (Plouffe et al., 2017, 2019), but it is only available for use in English-speaking populations, limiting its diffusion. The present study will introduce, validate, and assess the generalizability of the ASP for use in two other languages with distinct linguistic lineages (Romance and Slavic). To achieve this goal, we assessed the reliability, factor structure, convergent and discriminant validity, and invariance of the ASP among general convenience samples of Polish and Italian speaking individuals. We predicted that the Polish and Italian translations of the ASP would demonstrate acceptable reliability. We also predicted that relationships between sadism and other relevant personality traits would be consistent with past research, as previously summarized in the meta-analyses. Specifically, across both samples, we expected moderate-to-strong positive correlations between ASP sadism scores, an alternate measure of sadism, and the Dark Triad traits, with highest relations to psychopathy and lowest to narcissism. We expected small-to-moderate negative associations between sadism, conscientiousness, and agreeableness, respectively. We also expected negative relationships between sadism and empathic concern and perspective-taking, as well as positive correlations between sadism and psychoticism, antagonism, disinhibition, and detachment. With regard to discriminant validity, we expected that ASP sadism will be non-significantly or negligibly correlated with neuroticism, extraversion, openness, and PID negative affect. Moreover, we predicted that the unidimensionality of the ASP as found by Plouffe et al. (2019) would be replicated across both samples. Therefore, we hypothesized that configural invariance would emerge across Polish, Italian, and Plouffe et al. (2019) Canadian sample. Data, [supplementary materials](#), syntaxes, meta-analytic sources, and additional analyses are available at https://osf.io/xtj52/?view_only=2d8ca7c0918e475db446197a7b035851

Method

Participants and procedure

The study involved nonclinical adults sampled from the general population of Italy and Poland. As well, results from a Canadian undergraduate sample reported in previous research (Plouffe et al., 2019) were re-analyzed to assess measurement invariance across samples.

The Italian sample included 568 participants (340 females, 228 males) with an overall mean age of 23.57 years ($SD = 2.55$, range 18–30 years old). Participants self-described as single (50.4%, $n = 286$), in an informal relationship (43.1%, $n = 245$) or in a formal relationship (6.5% $n = 37$). Participants reported education levels to include a secondary level of education (50.5%, $n = 287$), a university degree (46.5%, $n = 264$), or a primary level of education (2.6%, $n = 15$). Data on education level were not available for two participants. The majority of the participants were university students (64.3%, $n = 365$), 31.7% of participants were workers ($n = 180$), and 4.0% of participants were unemployed ($n = 23$). Finally, 39.1% of participants ($n = 222$) lived in a small town (i.e. up to 20000 people),

35.2% of participants ($n = 200$) lived in a big city (i.e. above 50,000 people), and 25.7% of participants ($n = 146$) lived in a medium-sized city (i.e. from 20,000 to 50,000 people).

The Polish sample included 556 participants (411 females, 144 males, and 1 other) with an overall mean age of 23.48 years ($SD = 4.60$, range 16 – 70 years old). The majority of participants were in an informal relationship (50.7%, $n = 282$), 37.4% of participants were single ($n = 208$), 11.0% of participants were in a formal relationship ($n = 61$), and only five participants (0.9%) were divorced. Most of the participants reported to have a secondary level of education (53.4%, $n = 297$), 45.1% of participants had a university degree ($n = 251$), and only 1.4% of participants ($n = 8$) had a primary level of education. The majority of the participants were students (54.5%, $n = 303$), 38.7% of participants were workers ($n = 215$), 6.5% of participants were unemployed ($n = 36$), and only two participants (0.4%) were retired. Finally, most of the participants (62.9%, $n = 350$) lived in a big city (i.e. above 50,000 people), 25.5% of participants lived in a small town up to 20,000 people, and 11.5% of participants ($n = 64$) lived in a medium-size city (i.e. from 20,000 to 50,000).

Participants were invited to participate in the study through announcements on social networking websites (i.e. Facebook), and they completed the questionnaires online only after reading and accepting the informed consent form. Each participant was compensated with a small monetary (approximately 0.70\$) reward. The institutional review boards approved all materials and procedures of the study both in Italy and in Poland.

The Canadian sample comprised 638 undergraduate university students (456 women, 181 men, and one unspecified gender) aged 17–43 ($M = 18.50$, $SD = 2.14$; Plouffe et al., 2019). Of the 638 participants in the Canadian sample, 344 of the participants were Caucasian, 233 were Asian, and 12 were African-American, two were Native American/Alaskan Indian, while 51 participants selected the ‘other’ option; nine participants reported more than one ethnicity. Canadian participants completed questionnaires after providing informed consent and received course credit for their time. The institutional Review Board approved all materials and procedures.

Measures

Measures used in both Polish and Italian samples

The *Assessment of Sadistic Personality* (Plouffe et al., 2017) is a 9-item self-report measure of subclinical sadism. Participants are asked to rate the items on a 5-point Likert type scale (1 = *strongly disagree*, 5 = *strongly agree*). Both the Italian and the Polish versions of the ASP were developed following the back-translation method. Also, the authors of the ASP were involved in the translation procedure to ensure that the items’ original meaning was respected. The ASP showed good internal consistency in both the Italian sample and the Polish sample. Participants from Plouffe et al. (2019) study also completed the ASP. These results pertaining to the ASP, alone, will be reanalyzed for the purposes of examining measurement invariance.

The *Short Sadistic Impulse Inventory* (SSIS; O'Meara et al., 2011) is a 10-item self-report measure of sadism. Participants are asked to rate the items on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The SSIS showed acceptable internal consistency in both the Italian sample and the Polish sample³.

Italian sample measures

The *Dark Triad Dirty Dozen* (DTDD; Jonason & Webster, 2010; Schimmenti et al., 2019) is a 12-item self-report measure assessing the three Dark Triad traits: Machiavellianism, Psychopathy, and Narcissism. Participants are asked to rate the items on a 4-point Likert type scale (0 = *I don't agree at all*, 4 = *I agree very much*). The composite score for Machiavellianism, Psychopathy and Narcissism was obtained by averaging the four items included in each subscale. All the DTDD subscales showed acceptable internal consistency in the Italian sample.

The *Personality Inventory for DSM-5 - Brief Form* (PID-5-BF; Krueger et al., 2013; Fossati, Krueger, Markon, Borroni, & Maffei, 2013) is a 25-item self-report measure of pathological personality traits. According to the Alternative Model for Personality Disorders described in the DSM-5 (American Psychiatric Association, 2013), the PID-5 assesses traits of Psychoticism, Antagonism, Negative Affect, Disinhibition, and Detachment. Each subscale is composed by five items measured on a 4-point Likert type scale (0 = *very false or often false*, 3 = *very true or often true*). Items were summed to create a composite score for each subscale. All the PID-5 subscales showed acceptable internal consistency.

The *Interpersonal Reactivity Index* (IRI; Albiro, Ingoglia, & Lo Coco, 2006; Davis, 1983) is a 28-item self-report measure of empathy assessing four subscales: Perspective Taking, Fantasy, Personal Distress, and Empathic Concern. Participants are asked to rate the items on a 5-point Likert type scale (1 = *does not describe me well*, 5 = *describes me very well*). Each subscale is composed of seven items, and its composite score was obtained by averaging the items. All the IRI subscales showed acceptable internal consistency.

Polish sample measures

The *Short Dark Triad* (SD3; Jones & Paulhus, 2014; Rogoza & Cieciuch, 2017) is a 27-item self-report measure of the Dark Triad traits. Participants rate their agreement with each statement using a 5-point Likert type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Each scale is composed of nine items and the composite scores were obtained by averaging the scores from each item. The reliability estimates in the current study were good for all scales.

The *Big Five Inventory 2* (Soto & John, 2017) is a 60-item self-report measure of the basic personality traits:

Neuroticism (labelled Negative Emotionality), Extraversion, Openness to experience (labelled Open-Mindedness), Agreeableness, and Conscientiousness. Participants rate their agreement using 5-point Likert type scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*). Each subscale is composed of 12 items, and the composite scores were obtained by averaging the scores together. The reliability estimates in the current study ranged from adequate to excellent.

Analytic strategy

We used SPSS Version 22 (IBM Corp., 2013) to evaluate the reliability, convergent validity, and discriminant validity of the ASP across samples. Dimensionality of the ASP was assessed using multigroup confirmatory factor analytic (MGCFA) procedures in Mplus Version 7.2 (Muthén & Muthén, 1998-2012). We first conducted a power analysis using Monte Carlo simulations with 1000 repetitions (Muthén & Muthén, 2002). Given the number of parameters, a total of 275 participants are required to achieve adequate power (all parameters over .80). We used the maximum likelihood estimation with robust standard errors (MLR). In terms of configural model fit, root mean square error of approximation (RMSEA) values close to .06 demonstrate good fit, values between .07 and .08 indicate acceptable fit, values between .08 and .10 demonstrate marginal fit, and values greater than .10 indicate poor fit. Comparative fit index (CFI) values of .95 or larger reflect excellent model fit, and values between .90 and .95 reflect acceptable fit (Hu & Bentler, 1998). In assessment of metric and scalar invariance, the difference in model fit indicators should not exceed .010 for CFI and .015 for RMSEA (Chen, 2007). To make the latent mean comparisons more trustworthy in case of lack of scalar invariance, alignment optimization was used (Asparouhov & Muthén, 2014). The alignment optimization method is based on a configural model of measurement invariance. Therefore, it does not constrain loadings and intercepts to be equal across groups (Cieciuch, Davidov, & Schmidt, 2018). The advantage of the alignment optimization over traditional approaches in case of non-invariance is that it estimates latent means by taking into account real differences in loadings and intercepts (Cieciuch et al., 2018). Thus, in the situation of non-invariance, this might be seen as an adequate method of data assessment. Latent means comparisons can be seen as trustworthy if the total number of non-invariant parameters do not exceed 25% (Cieciuch et al., 2018)⁴.

⁴We have also assessed the incremental validity of ASP sadism over psychopathy, as well as the incremental validity of the ASP over the SSIS in predicting the external measures used in our study. To assess this, we used multivariate regression and commonality analyses (which we interpreted when R^2 was $\geq .20$). We found that the ASP predicted (over the effect of psychopathy) agreeableness (11.83% uniquely explained variance by ASP; 65.74% in common with psychopathy), IRI empathic concern (8.51% unique, 45.26% common), IRI perspective-taking (44.14% unique, 46.14% common), and antagonism (44.07% unique, 46.17% common). Moreover, the ASP uniquely predicted (over the effect of the SSIS) agreeableness (32.78% unique, 66.52% common), IRI empathic concern (17.35% unique, 75.89% common), IRI perspective-taking (39.65% unique, 60.34% common), and antagonism (18% unique, 75.66% common). Our findings can be found on our OSF page.

³The Polish version of the SSIS was translated following the back-translation procedure by one of the authors of the paper for the purpose of the present study. The Italian version of the SSIS was translated following the back-translation procedure by the research group in criminological and forensic psychology led by Prof. Georgia Zara (Department of Psychology, Turin University).

Table 2. Reliabilities, descriptive statistics, and bivariate correlations for Poland study variables.

Variable	α	Female <i>M</i> (<i>SD</i>)	Male <i>M</i> (<i>SD</i>)	<i>t</i>	Cohen's <i>d</i>	1	2	3	4	5	6	7	8	9	10
1. ASP Sadism	.83	1.99 (0.71)	2.51 (0.85)	−6.50*	0.66	1									
2. SSIS Sadism	.87	1.62 (0.60)	2.21 (0.93)	−7.09*	0.75	.77*	1								
3. SD3 Psychopathy	.77	2.03 (0.64)	2.53 (0.82)	−6.67*	0.68	.66*	.61*	1							
4. SD3 Machiavellianism	.77	3.14 (0.72)	3.52 (0.72)	−5.38*	0.53	.57*	.45*	.60*	1						
5. SD3 Narcissism	.78	2.75 (0.70)	2.95 (0.82)	−2.72†	0.26	.27*	.18*	.34*	.35*	1					
6. BFI Extraversion	.90	3.23 (0.81)	3.19 (0.93)	0.48	0.05	.02	−.07	.04	.07	.70*	1				
7. BFI Agreeableness	.83	3.55 (0.62)	3.29 (0.73)	3.86*	0.38	−.59*	−.48*	−.63*	−.51*	−.15*	.10	1			
8. BFI Conscientiousness	.88	3.37 (0.74)	3.25 (0.78)	1.69	0.16	−.21*	−.19*	−.21*	−.11	.19*	.38*	.27*	1		
9. BFI Neuroticism	.90	3.36 (0.81)	2.92 (0.85)	5.49*	0.53	.05	.04	.12	.04	−.38*	−.53*	−.25*	−.37*	1	
10. BFI Openness	.78	3.74 (0.62)	3.72 (0.66)	0.19	0.03	−.07	−.10	−.11	−.05	.26*	.32*	.22*	.08	−.11	1

Note. Bonferroni correction applied to correlations (significant at $p = .005$).

† $p < .01$.

* $p < .001$.

Table 3. Reliabilities, descriptive statistics, and bivariate correlations for Italy study variables.

Variable	α	Female <i>M</i> (<i>SD</i>)	Male <i>M</i> (<i>SD</i>)	<i>t</i>	Cohen's <i>d</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ASP Sadism	.86	1.65 (0.62)	2.11 (0.79)	−7.44*	0.65	1												
2. SSIS Sadism	.85	1.66 (0.55)	2.07 (0.76)	−7.01*	0.62	.77*	1											
3. DDDT Psychopathy	.70	1.06 (0.76)	1.51 (0.76)	−6.84*	0.59	.50*	.49*	1										
4. DDDT Machiavellianism	.86	0.73 (0.68)	1.13 (0.85)	−5.80*	0.52	.63*	.59*	.45*	1									
5. DDDT Narcissism	.83	1.53 (0.86)	1.81 (0.97)	−3.63*	0.31	.46*	.37*	.24*	.56*	1								
6. IRI Empathic Concern	.76	3.84 (0.60)	3.48 (0.56)	7.12*	0.62	−.44*	−.42*	−.58*	−.37*	−.21*	1							
7. IRI Perspective Taking	.81	3.58 (0.61)	3.37 (0.65)	3.90*	0.33	−.45*	−.35*	−.35*	−.34*	−.31*	.46*	1						
8. IRI Fantasy	.77	3.70 (0.61)	3.36 (0.66)	6.22*	0.54	−.11	−.07	−.23*	−.05	.08	.41*	.25*	1					
9. IRI Personal Distress	.74	2.94 (0.60)	2.63 (0.59)	6.27*	0.52	−.05	−.03	−.17*	−.07	.03	.25*	−.02	.31*	1				
10. PID Negative Affect	.66	1.41 (0.53)	1.23 (0.55)	4.09*	0.33	.01	.05	−.07	−.05	.05	.21*	−.04	.29*	.47*	1			
11. PID Detachment	.65	0.91 (0.52)	0.96 (0.53)	−1.25	0.10	.34*	.37*	.35*	.22*	.15*	−.19*	−.30*	.002	.21*	.49*	1		
12. PID Antagonism	.61	0.72 (0.47)	0.91 (0.57)	−4.20*	0.36	.59*	.55*	.46*	.64*	.57*	−.39*	−.35*	−.05	.01	.14*	.40*	1	
13. PID Disinhibition	.71	0.82 (0.57)	1.08 (0.55)	−5.37*	0.46	.41*	.36*	.31*	.32*	.17*	−.16*	−.28*	.03	.10	.15*	.35*	.31*	1
14. PID Psychoticism	.78	0.96 (0.57)	1.07 (0.52)	−2.18†	0.20	.28*	.34*	.26*	.19*	.16*	−.11	−.08	.21*	.22*	.47*	.56*	.56*	.44*

Note. Bonferroni correction applied to correlations (significant at $p < .004$).

† $p < .05$.

* $p < .001$.

Results

Descriptive statistics, convergent, and discriminant validity

Descriptive statistics, internal consistency reliabilities, and bivariate correlations for all study variables in the Polish sample are displayed in Table 2. Descriptive statistics, internal consistencies, and bivariate correlations for the Italian sample are shown in Table 3. Significant gender differences emerged in the Polish sample on all variables except for extraversion, conscientiousness, and openness (see Table 2). In the Italian sample, significant gender differences were seen on all variables except for detachment (see Table 3). For both samples, skewness and kurtosis values for all study variables fell within the acceptable range (Kline, 2011).

In the Polish sample, Cronbach's alpha values for all study variables were high. Internal consistencies were generally high in the Italian sample as well, with the exception of three PID scales: Antagonism, Detachment, and Negative Affect. However, these modest alpha values are consistent with past research conducted using the PID-5 Brief Form in Italian samples (e.g., Fossati, Somma, Borroni, Markon, & Krueger, 2017). The authors speculated that the low Cronbach's alpha values were due to the nature of the coefficients varying as a function of number of items, response scale and mean inter-item correlations (Fossati et al., 2017; Sijtsma, 2009). Reliability coefficients for ASP sadism were strong across the Polish and Italian samples.

Both ASP sadism scores and SSIS sadism scores showed strong positive relationships with the Dark Triad traits across Polish and Italian samples. In the Polish sample, both ASP and SSIS sadism scores correlated negatively with agreeableness and conscientiousness, indicating their lack of cooperative, trusting, and diligent characteristics. Sadism was unrelated to extraversion, neuroticism, and openness, as predicted. The Dark Triad traits displayed similar relationships. However, narcissism was positively related to extraversion, openness, and conscientiousness, and negatively related to neuroticism. Machiavellianism was unrelated to conscientiousness. In the Italian sample, as expected, strong positive correlations emerged between ASP sadism scores, SSIS sadism scores, and the Dark Triad traits. Both ASP and SSIS sadism scores were negatively related to IRI Perspective Taking and Empathic Concern scales, and were positively related to PID Detachment, Antagonism, Disinhibition, and Psychoticism scales. Consistent with past research, none of the Dark Tetrad traits were significantly related to negative affect (Plouffe et al., 2019).

National invariance analyses

A series of nested categorical MGCFA models was tested to evaluate whether the ASP demonstrated national invariance across Canadian, Polish, and Italian samples (see Table 4). Overall, configural model fit was good, $\chi^2_{(81)} = 347.31$, $p < .001$, RMSEA = .075 (90%CI = .067–.083), CFI = .938,

Table 4. National invariance model fit indices.

Model	χ^2 (df)	CFI	RMSEA	RMSEA 90% CI
1. Configural invariance	347.31*(81)	.938	.075	.067–.083
2. Metric invariance	419.41*(97)	.925	.075	.068–.083
3. Metric invariance with item 6 loading freed	389.31*(96)	.931	.072	.065–.080
4. Scalar invariance	781.58*(112)	.843	.101	.094–.108

Note. * $p < .001$.

supporting the hypothesis. All factor loadings were moderate-to-strong, ranging from .45 to .76 for the Polish sample, .52 to .83 for the Italian sample, and .54 to .84 for the Canadian sample, with the exception of Item 9 for each translation (.18–.28). A metric model, although well fitted, $\chi^2_{(97)} = 419.41$, $p < .001$, RMSEA = .075 (90%CI = .068–.083), CFI = .925, slightly exceeded the assumed difference in CFI (.013). When we freed the loading of one item in Canadian sample (item 6), the model fit improved to the acceptable range, $\chi^2_{(96)} = 389.31$, $p < .001$, RMSEA = .072 (90%CI = .065–.080), CFI = .931. The model fit of the scalar model was poor, $\chi^2_{(112)} = 781.58$, $p < .001$, RMSEA = .101 (90%CI = .094–.108), CFI = .843, and freeing subsequent parameters did not improve the model fit to the acceptable range. Therefore, to make the latent means comparisons more trustworthy we used the alignment optimization. The results revealed that there are 7.41% non-invariant factor loadings and 18.52% non-invariant item intercepts, making latent means comparison trustworthy. In reference to Canadian sample (which latent mean was fixed to 0), we did not find any significant differences with the Italian sample ($M = .03$), but the Polish sample ($M = .36$) scored higher on sadism than both Canadian and Italian samples ($p < .05$).

Discussion

The purpose of this study was to introduce and validate Polish and Italian adaptations of the ASP further reflecting the addition of sadism to the current Dark Triad description. Given the many destructive interpersonal behaviors and outcomes of individuals high in dark personality traits, including dispositional aggression (Jones & Neria, 2015), physical violence (Buckels et al., 2013), bullying (Goodboy & Martin, 2015), and a general propensity toward an antagonistic and exploitative interpersonal style (Book & Quinsey, 2004; Jonason, Li, & Teicher, 2010), it is imperative that researchers develop valid measurement tools for these traits. Validation of the ASP is important in order to effectively evaluate and subsequently mitigate high-sadism individuals' malevolent behaviors by employing, for example, effective punishments or interventions for such individuals, but also to further understand the psychological mechanisms and motivations behind sadistic behavior and decision-making.

Our results supported both the validity and reliability of the measures. Specifically, ASP sadism was strongly and positively correlated with an alternate measure of sadism in both Polish and Italian samples – a result that is consistent with findings from Plouffe and colleagues' psychometric investigations of the original English ASP measure (Plouffe

et al., 2017, 2019). Furthermore, our hypotheses regarding the relationship between ASP sadism and the Dark Triad were mostly supported. In both Polish and Italian samples, ASP sadism was moderately-to-strongly and positively correlated with psychopathy and Machiavellianism. In the Italian sample, narcissism was moderately and positively correlated with ASP sadism, but in the Polish sample, narcissism was weakly and positively correlated with ASP sadism. These results are comparable to previous research that investigated the relationship between the Dark Triad and sadism as demonstrated in the meta-analysis (i.e., Bertl et al., 2017; Gonzalez & Greitemeyer, 2018; Johnson et al., 2019; Karandikar et al., 2019; Lee, 2019; Pajevic et al., 2018; Plouffe et al., 2017, 2019; Ritchie et al., 2019; Russell et al., 2017; Smoker & March, 2017; van Geel et al., 2017; Womick et al., 2019).

As expected, SSIS sadism demonstrated a very similar pattern of correlations with the Dark Triad. In both samples, SSIS sadism was moderately-to-strongly positively correlated with Machiavellianism and psychopathy. In the Italian sample, SSIS sadism was also moderately correlated with narcissism, but in the Polish sample, similarly to ASP sadism, SSIS sadism was only weakly positively correlated with narcissism. These results show that not only are our results comparable to previous research, but also that results from the ASP are similar to other popular measures of sadism. Taken together, these results clearly demonstrate the convergent validity of the ASP adaptations.

In the Polish sample, we expected small-to-moderate associations between sadism and conscientiousness and agreeableness. ASP sadism was significantly and moderately negatively correlated with agreeableness, and significantly and negatively (albeit weakly) correlated with conscientiousness, as was SSIS sadism, thus, supporting our expectations. These findings can be explained, for example, by the sadistic individual's impulsivity, lack of prosocial, moral, and cooperative behaviors, and their tendencies to aggress against others (Book et al., 2016; Međedović & Petrović, 2015; Plouffe et al., 2019). Again, the ASP had similar correlations with external variables to the SSIS, supporting its validity. We also expected that ASP sadism would have negligible correlations with neuroticism, extraversion, and openness; these predictions were supported by our results. The lack of relationship between sadism and openness is consistent with the notion that sadism is conceptually unrelated to such elements of personality as esthetic appreciation and inquisitiveness (Međedović & Petrović, 2015). Although some past studies have found small correlations between sadism and extraversion and neuroticism (e.g., Book et al., 2016), a withdrawn, introverted nature and lack of anxiety

are not primary features of the construct. Additionally, other studies have found non-significant correlations between sadism and neuroticism, thus supporting our prediction (Buckels, 2012; Greitemeyer, 2015).

We expected Italian sadism scores to be negatively correlated with empathic concern and perspective-taking, and positively correlated with psychoticism, antagonism, disinhibition, and detachment. These hypotheses were fully supported; both ASP sadism and SSIS sadism were similarly correlated with these external variables. Specifically, scores from both sadism measures were significantly moderately and negatively correlated with empathic concern and perspective-taking, and significantly moderately and positively correlated with psychoticism, antagonism, disinhibition, and detachment. We also expected a non-significant or negligible correlation with ASP sadism and negative affect and this prediction was supported by our results. This pattern of results is similar to previous research suggesting that individuals who score high on sadism have deficient empathy (O'Meara et al., 2011; Pajevic et al., 2018). For example, Pajevic et al. (2018) found that sadism was negatively, although weakly correlated with both affective and cognitive empathy. Our results extend this further, as sadism was moderately negatively correlated with only one facet of both affective and cognitive empathy, and was uncorrelated with the other facets, suggesting that the strength of the correlation in Pajevic et al. (2018) results were suppressed by the aspects of cognitive and affective empathy that are unrelated. An alternative explanation may be that the IRI confounds empathy with sympathy, and mis-measures cognitive empathy (Joliffe & Farrington, 2006). It is possible that this confound and mis-measurement is inflating, or otherwise affecting the relationships between sadism and IRI dimensions in our study. Regardless, the correlations between ASP sadism and IRI dimensions roughly paralleled the correlations between SSIS sadism and IRI dimensions. With regard to the PID-5 variables, Plouffe et al. (2019) found a similar pattern of correlations, such that they found negative correlations of similar magnitudes between sadism and psychoticism, antagonism, disinhibition, and detachment, as well as a non-significant correlation with negative affect. These results reflect the notion that individuals high in sadism tend to be callous in interpersonal situations, erratic, and display deficits in affect and attachment (Plouffe et al., 2019). Overall, these findings provide further support for the construct validity of the Italian adaptation of the ASP.

Using multigroup factor analytic procedures, we provided evidence that the unidimensional model of sadism, as measured by the ASP (Plouffe et al., 2019), is invariant across both Polish and Italian samples. Both item 6 ("I get pleasure from mocking people in front of their friends" and item 9 ("I would not purposely hurt anybody, even if I didn't like them") did not perform well relative to the other items. Although it is impossible to conclusively explain why these items did not perform as well without additional studies, we can consider some possible explanations. For item 6, it is possible that cross-national differences exist in the acceptableness of aggressive humor. Item 9, on the other hand is a

reverse-coded item; reverse coded items have been found to be less valid and cause confusion among participants (van Sonderen, Sanderman, & Coyne, 2013) and this may be a potential reason for this item's poorer performance across samples. Because we failed to achieve scalar invariance, we used the alignment optimization to identify non-invariant parameters and make the latent means comparisons more trustworthy. We found no significant difference in mean levels of latent sadism between the Canadian and the Italian samples. On the contrary, the Polish sample was significantly higher in mean levels of latent sadism than the Canadian and Italian samples. As empirical studies are lacking, we cannot compare this result with past findings. Indeed, there are no previous studies investigating sadistic traits in the Polish population and no study has compared mean levels of other personality traits related to sadism (i.e., Dark Triad traits, trait aggression) across national groups including Polish samples until now. However, Schwartz (2006) explored cultural value orientation across 73 countries, including Italy, Poland, and Canada. He found that compared with other countries, the Italian culture has high levels of egalitarianism; i.e., values of equality between people. In the same vein, Schwartz (2006) found that Poland has lower levels of egalitarian values relative to Canada and Italy. As suggested by Schwartz (2006), the cultural value orientation defines what is desirable and acceptable in a certain cultural context, influencing people's behavior. In particular, egalitarianism induces people to cooperate with others, to feel concern for everyone's well-being, and to act for the benefit of others. Thus, the cultural egalitarianism describing Italian people might discourage them from expressing behaviors and psychological attitudes that oppose these principles, as in the case of sadistic traits.

Limitations and future directions

This study is not without its limitations. First, the ASP did not reach scalar invariance, indicating that there may be some differences in interpreting some of the items across countries. Although means across adaptations can be compared, we advise that comparisons be made with some caution. Moreover, age differences exist across the samples. Specifically, the Canadian age range (17–43, $M = 18.50$, $SD = 2.14$) was larger than the Italian age range (18–30, $M = 23.57$, $SD = 2.55$), while the Polish age range (16–70, $M = 23.48$, $SD = 4.60$) was the largest. To mitigate this issue, we provided CFA results from the Polish sample with restricted age to match the Italian sample in the [supplementary materials](#); the results are roughly the same. Moreover, our samples were relatively young and well-educated compared to the average population, which may potentially limit the generalizability of our results.

We advocate for further study and use of the ASP in future research. It is a concise and valid measure of sadism that offers superior construct coverage than do other extant measures of sadism (see Plouffe et al., 2017). Future research should further examine the psychometric properties of the ASP using Item Response Theory, as has been done with

other measures of the Dark Tetrad traits (e.g., Ackerman, Donnellan, & Robins, 2012; Garcia et al., 2018; Kajonius, Persson, Rosenberg, & Garcia, 2016; Persson, Kajonius, & Garcia, 2017; Rauthmann, 2013; Webster & Jonason, 2013). Moreover, future research should investigate the relationship between behavioral measures and the ASP to investigate its predictive ability, as well as to differentiate between sadism and psychopathy, following from studies showing that behavioral measures of such constructs as impulsiveness may measure distinct (and narrower) constructs from self-report measures (Malesza & Ostaszewski, 2016; Reynolds, Ortengren, Richards, & de Wit, 2006).

To conclude this paper, we recommend the use of the ASP as a valid and brief measure of everyday sadism. The ASP has now demonstrated reliability, convergent validity, and discriminant validity in three countries and additional validation studies will be continued in order to both investigate the properties of the ASP and improve on them, as well as to adapt the measure for use in other countries.

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References

- Ackerman, R. A., Donnellan, M. B., & Robins, R. W. (2012). An item response theory analysis of the narcissistic personality inventory. *Journal of Personality Assessment*, 94(2), 141–145. doi:10.1080/00223891.2011.645934
- Albiero, P., Ingoglia, S., & Lo Coco, A. (2006). Contributo all'adattamento italiano dell'Interpersonal Reactivity Index. *Testing Psicometria Metodologia*, 13, 107–125.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Asparouhov, T., & Muthén, B. O. (2014). Multi-group factor analysis alignment. *Structural Equation Modeling*, 21, 1–14. doi:10.1080/10705511.2014.919210
- Azili, N., Atkinson, B. E., Baughman, H. M., Chin, K., Vernon, P. A., Harris, E., & Veselka, L. (2016). Lies and crimes: Dark Triad, misconduct, and high-stakes deception. *Personality and Individual Differences*, 89, 34–39. doi:10.1016/j.paid.2015.09.034
- Baumeister, R. F., & Campbell, W. K. (1999). The intrinsic appeal of evil. Sadism, sensational thrills, and threatened egotism. *Personality and Social Psychology Review*, 3(3), 210–221. doi:10.1207/s15327957pspr0303_4
- Bertl, B., Pietschnig, J., Tran, U. S., Stieger, S., & Voracek, M. (2017). More or less than the sum of its parts? Mapping the Dark Triad of personality onto a single Dark Core. *Personality and Individual Differences*, 114, 140–144. doi:10.1016/j.paid.2017.04.002
- Book, A., Visser, B. A., Blais, J., Hosker-Field, A., Methot-Jones, T., Gauthier, N. Y., ... D'Agata, M. T. (2016). Unpacking more "evil": What is at the core of the Dark Tetrad? *Personality and Individual Differences*, 90, 269–272. doi:10.1016/j.paid.2015.11.009
- Book, A. S., & Quinsey, V. L. (2004). Psychopaths: Cheaters or warrior-hawks? *Personality and Individual Differences*, 36(1), 33–45. doi:10.1016/S0191-8869(03)00049-7
- Borowiec, A. (2015). *Warsaw boy: A memoir of a wartime childhood*. London: Penguin.
- Buckels, E. E. (2012). *The pleasures of hurting others: Behavioral evidence for everyday sadism* (Doctoral dissertation). University of British Columbia, Vancouver.
- Buckels, E. E., Jones, D. N., & Paulhus, D. L. (2013). Behavioral confirmation of everyday sadism. *Psychological Science*, 24(11), 2201–2209. doi:10.1177/0956797613490749
- Buckels, E. E., Trapnell, P. D., Andjelovic, T., & Paulhus, D. L. (2018). Internet trolling and everyday sadism: Parallel effects on pain perception and moral judgement. *Journal of Personality*, 87(2), 328–340. doi:10.1111/jopy.12393
- Buckels, E. E., Trapnell, P. D., & Paulhus, D. L. (2014). Trolls just want to have fun. *Personality and Individual Differences*, 67, 97–102. doi:10.1016/j.paid.2014.01.016
- Chabrol, H., Van Leeuwen, N., Rodgers, R., & Séjourné, N. (2009). Contributions of psychopathic, narcissistic, Machiavellian, and sadistic personality traits to juvenile delinquency. *Personality and Individual Differences*, 47(7), 734–739. doi:10.1016/j.paid.2009.06.020
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 14(3), 464–504. doi:10.1080/10705510701301834
- Cieciuch, J., Davidov, E., & Schmidt, P. (2018). Using alignment optimization in establishing measurement invariance. In E. Davidov, P. Schmidt, P. J. Billiet, & B. Meuleman (Eds.), *Cross-cultural analysis: Methods and applications* (2nd ed.). New York, NY: Routledge.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113–126. doi:10.1037/0022-3514.44.1.113
- Di Pierro, R., Di Sarno, M., Preti, E., Di Mattei, V., & Madeddu, F. (2018). The role of identity instability in the relationship between narcissism and emotional empathy. *Psychoanalytic Psychology*, 35(2), 237–243. doi:10.1037/pap0000159
- Fossati, A., Krueger, R. F., Markon, K. E., Borroni, S., & Maffei, C. (2013). Reliability and validity of the Personality Inventory for DSM-5 (PID-5) predicting DSM-IV personality disorders and psychopathy in community-dwelling Italian adults. *Assessment*, 20(6), 689–708. doi:10.1177/1073191113504984
- Fossati, A., Somma, A., Borroni, S., Markon, K. E., & Krueger, R. F. (2017). The personality inventory for DSM-5 brief form: Evidence for reliability and construct validity in a sample of community-dwelling Italian adolescents. *Assessment*, 24(5), 615–631. doi:10.1177/1073191115621793
- Garcia, D., Persson, B. N., Nima, A. A., Brulin, J. G., Rapp-Ricciardi, M., & Kajonius, P. J. (2018). IRT analyses of the Swedish Dark Triad Dirty Dozen. *Heliyon*, 4(3), e00569. doi:10.1016/j.heliyon.2018.e00569
- Gonzalez, J. M., & Greitemeyer, T. (2018). The relationship between everyday sadism, violent video game play, and fascination with weapons. *Personality and Individual Differences*, 124, 51–53. doi:10.1016/j.paid.2017.11.045
- Goodboy, A. K., & Martin, M. M. (2015). The personality profile of a cyberbully: Examining the Dark Triad. *Computers in Human Behavior*, 49, 1–4. doi:10.1016/j.chb.2015.02.052
- Greitemeyer, T. (2015). Everyday sadism predicts violent video game preferences. *Personality and Individual Differences*, 75, 19–23. doi:10.1016/j.paid.2014.10.049
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to under parameterized model misspecification. *Psychological Methods*, 3(4), 424–453. doi:10.1037/1082-989X.3.4.424
- IBM Corp. (2013). *IBM SPSS statistics for windows, version 22.0*. Armonk, NY: IBM Corp.
- Johnson, L. K., Plouffe, R. A., & Saklofske, D. H. (2019). Subclinical sadism and the Dark Triad: Should there be a Dark Tetrad? *Journal of Individual Differences*, 40, 127–133. doi:10.1027/1614-0001/a000284
- Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the basic empathy scale. *Journal of Adolescence*, 29, 589–611. doi:10.1016/j.adolescence.2005.08.010

- Jonason, P. K., Li, N. P., & Teicher, E. A. (2010). Who is James Bond? The Dark Triad as an agentic social style. *Individual Differences Research*, 8, 111–120.
- Jonason, P. K., & Webster, G. D. (2010). The Dirty Dozen: A concise measure of the Dark Triad. *Psychological Assessment*, 22(2), 420–432. doi:10.1037/a0019265
- Jonason, P. K., Zeigler-Hill, V., & Okan, C. (2017). Good v. evil: Predicting sinning with dark personality traits and moral foundations. *Personality and Individual Differences*, 104, 180–185. doi:10.1016/j.paid.2016.08.002
- Jones, D. N., & Neria, A. L. (2015). The dark triad and dispositional aggression. *Personality and Individual Differences*, 86, 360–364. doi:10.1016/j.paid.2015.06.021
- Jones, D. N., & Neria, A. L. (2019). Incentive salience & psychopathy: A bio-behavioral exploration. *Personality and Individual Differences*, 138, 167–176. doi:10.1016/j.paid.2018.09.037
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, 21(1), 28–41. doi:10.1177/1073191113514105
- Kajonius, P. J., Persson, B. N., Rosenberg, P., & Garcia, D. (2016). The (mis)measurement of the Dark Triad Dirty Dozen: Exploitation at the core of the scale. *PeerJ*, 4, e1748. doi:10.7717/peerj.1748
- Karandikar, S., Kapoor, H., Fernandes, S., & Jonason, P. K. (2019). Predicting moral decision-making with dark personalities and moral values. *Personality and Individual Differences*, 140, 70–75. doi:10.1016/j.paid.2018.03.048
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.
- Krueger, R. F., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2013). *The personality inventory for DSM-5 (PID-5)*. Washington, DC: APA.
- Lee, S. A. (2019). The Dark Tetrad and callous reactions to mourner grief: Patterns of annoyance, boredom, entitlement, schadenfreude, and humor. *Personality and Individual Differences*, 137, 97–100. doi:10.1016/j.paid.2018.08.019
- Malesza, M., & Ostaszewski, P. (2016). Dark side of impulsivity - Associations between the Dark Triad, self-report and behavioral measures of impulsivity. *Personality and Individual Differences*, 88, 197–201. doi:10.1016/j.paid.2015.09.016
- Mededović, J. (2017). Aberrations in emotional processing of violence-dependent stimuli are the core features of sadism. *Motivation and Emotion*, 41, 273–283. doi:10.1007/s11031-016-9596-0
- Mededović, J., & Petrović, B. (2015). The Dark Tetrad: Structural properties and location in the personality space. *Journal of Individual Differences*, 36(4), 228–236. doi:10.1027/1614-0001/a000179
- Muthén, L. K., & Muthén, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling*, 9, 599–620.
- Muthén, L. K., and, & Muthén, B. O. (1998-2012). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
- O'Meara, A., Davies, J., & Hammond, S. (2011). The psychometric properties and utility of the short sadistic impulse scale (SSIS). *Psychological Assessment*, 23, 523–521. doi:10.1037/a0022400
- Pajević, M., Vuksavljević-Gvozden, T., Stevanović, N., & Neumann, C. S. (2018). The relationship between the Dark Tetrad and a two-dimensional view of empathy. *Personality and Individual Differences*, 122, 125–130. doi:10.1016/j.paid.2017.11.009
- Paulhus, D. L. (2014). Toward a taxonomy of dark personalities. *Current Directions in Psychological Science*, 23(6), 421–426. doi:10.1177/0963721414547737
- Paulhus, D. L., & Jones, D. N. (2015). Measuring dark personalities via questionnaire. In G. J. Boyle, D. H. Saklofske, & G. Matthews (Eds.), *Measures of personality and social psychological constructs*. San Diego, CA: Academic Press.
- Paulhus, D. L., & Williams, K. (2002). The Dark Triad of Personality: Narcissism, Machiavellianism and psychopathy. *Journal of Research in Personality*, 36(6), 556–563. doi:10.1016/S0092-6566(02)00505-6
- Persson, B. N., Kajonius, P. J., & Garcia, D. (2017). Testing construct independence in the Short Dark Triad using item response theory. *Personality and Individual Differences*, 117, 74–80. doi:10.1016/j.paid.2017.05.025
- Pfafftheicher, S., Keller, J., & Knezevic, G. (2019). Destroying things for pleasure: On the relation of sadism and vandalism. *Personality and Individual Differences*, 140, 52–56. doi:10.1016/j.paid.2018.03.049
- Plouffe, R. A., Saklofske, D. H., & Smith, M. M. (2017). The assessment of sadistic personality: Preliminary psychometric evidence for a new measure. *Personality and Individual Differences*, 104, 166–171. doi:10.1016/j.paid.2016.07.043
- Plouffe, R. A., Smith, M. M., & Saklofske, D. H. (2019). A psychometric investigation of the assessment of sadistic personality. *Personality and Individual Differences*, 140, 57. doi:10.1016/j.paid.2018.01.002
- Rauthmann, J. F. (2013). Investigating the MACH-IV with item response theory and proposing the Trimmed MACH*. *Journal of Personality Assessment*, 95(4), 388–397. doi:10.1080/00223891.2012.742905
- Reidy, D. E., Zeichner, A., & Seibert, L. A. (2011). Unprovoked aggression: Effects of psychopathic traits and sadism. *Journal of Personality*, 79(1), 75–100. doi:10.1111/j.1467-6494.2010.00691.x
- Reynolds, B., Ortengren, A., Richards, J. B., & de Wit, H. (2006). Dimensions of impulsive behavior: Personality and behavioral measures. *Personality and Individual Differences*, 40(2), 305–315. doi:10.1016/j.paid.2005.03.024
- Ritchie, M. B., Blais, J., & Forth, A. E. (2019). Evil intentions": Examining the relationship between the Dark Tetrad and victim selection based on nonverbal gait cues. *Personality and Individual Differences*, 138, 126–132. doi:10.1016/j.paid.2018.09.013
- Rogoza, R., & Cieciuch, J. (2017). Structural investigation of the Short Dark Triad Questionnaire in Polish population. *Current Psychology*, 38(3), 756–763. doi:10.1007/s12144-017-9653-1
- Russell, T. D., Doan, C. M., & King, A. R. (2017). Sexually violent women: The PID-5, everyday sadism, and adversarial sexual attitudes predict female sexual aggression and coercion against male victims. *Personality and Individual Differences*, 111, 242–249. doi:10.1016/j.paid.2017.02.019
- Russell, T. D., & King, A. R. (2016). Anxious, hostile, and sadistic: Maternal attachment and everyday sadism predict hostile masculine beliefs and male sexual violence. *Personality and Individual Differences*, 99, 340–345. doi:10.1016/j.paid.2016.05.029
- Schimmenti, A., Jonason, P. K., Passanisi, A., La Marca, L., Di Dio, N., & Gervasi, A. M. (2019). Exploring the dark side of personality: Emotional awareness, empathy, and the Dark Triad traits in an Italian sample. *Current Psychology*, 38(1), 100–109. doi:10.1007/s12144-017-9588-6
- Schwartz, S. H. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, 5(2-3), 137–182. doi:10.1163/156913306778667357
- Schumpe, B. M., & Lafrenière, M. K. (2016). Malicious joy: Sadism moderates the relationship between schadenfreude and the severity of others' misfortune. *Personality and Individual Differences*, 94, 32–37. doi:10.1016/j.paid.2016.01.005
- Sest, N., & March, E. (2017). Constructing the cyber-troll: Psychopathy, sadism, and empathy. *Personality and Individual Differences*, 119, 69–72. doi:10.1016/j.paid.2017.06.038
- Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika*, 74(1), 107–120. doi:10.1007/s11336-008-9101-0
- Smoker, M., & March, E. (2017). Predicting perpetration of intimate partner cyberstalking: Gender and the Dark Tetrad. *Computers in Human Behavior*, 72, 390–396. doi:10.1016/j.chb.2017.03.012
- Soto, C. J., & John, O. P. (2017). The next big five inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113(1), 117–143. doi:10.1037/pspp0000096
- Southard, A. C., Noser, A. E., Pollock, N. C., Mercer, S. H., & Zeigler-Hill, V. (2015). The interpersonal nature of dark personality

- features. *Journal of Social and Clinical Psychology*, 34(7), 555–586. doi:[10.1521/jscp.2015.34.7.555](https://doi.org/10.1521/jscp.2015.34.7.555)
- Stenason, L., & Vernon, P. A. (2016). The Dark Triad, reinforcement sensitivity and substance use. *Personality and Individual Differences*, 94, 59–63. doi:[10.1016/j.paid.2016.01.010](https://doi.org/10.1016/j.paid.2016.01.010)
- Trapnell, P. D., & Paulhus, D. L. (2012). Agentic and communal values: Their scope and measurement. *Journal of Personality Assessment*, 94(1), 39–52. doi:[10.1080/00223891.2011.627968](https://doi.org/10.1080/00223891.2011.627968)
- Trémolière, B., & Djeriouat, H. (2016). The sadistic trait predicts minimization of intention and causal responsibility in moral judgment. *Cognition*, 146, 158–171. doi:[10.1016/j.cognition.2015.09.014](https://doi.org/10.1016/j.cognition.2015.09.014)
- van Geel, M., Goemans, A., Toprak, F., & Vedder, P. (2017). Which personality traits are related to traditional bullying and cyberbullying? A study with the big five, Dark Triad, and sadism. *Personality and Individual Differences*, 106, 231–235. doi:[10.1016/j.paid.2016.10.063](https://doi.org/10.1016/j.paid.2016.10.063)
- van Sonderen, E., Sanderma, R., & Coyne, J. C. (2013). Ineffectiveness of reverse wording of questionnaire items: Let's learn from cows in the rain. *PLoS One*, 8(7), e68967. doi:[10.1371/journal.pone.0068967](https://doi.org/10.1371/journal.pone.0068967)
- Velimirović, M., Bojanić, M., & Dinić, B. (2018). Cognitive empathy distinguishes sadism from psychopathy: Effects on antisocial behaviour. Paper presented at the Proceedings of the XXIV Scientific Conference, University of Belgrade, Serbia: Empirical Studies in Psychology, 38–42.
- Webster, G. D., & Jonason, P. K. (2013). Putting the “IRT” in “dirty”: Item response theory analyses of the Dark Triad Dirty Dozen—An efficient measure of narcissism, psychopathy, and Machiavellianism. *Personality and Individual Differences*, 54(2), 302–306. doi:[10.1016/j.paid.2012.08.027](https://doi.org/10.1016/j.paid.2012.08.027)
- Womick, J., Foltz, R. M., & King, L. A. (2019). Releasing the beast within? Authenticity, well-being, and the Dark Tetrad. *Personality and Individual Differences*, 137, 115–125. doi:[10.1016/j.paid.2018.08.022](https://doi.org/10.1016/j.paid.2018.08.022)