

Behavioral Confirmation of Everyday Sadism

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Psychological Science
24(11) 2201–2209
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DOI: 10.1177/0956797613490749
pss.sagepub.com



Abstract

Past research on socially aversive personalities has focused on subclinical psychopathy, subclinical narcissism, and Machiavellianism—the “Dark Triad” of personality. In the research reported here, we evaluated whether an everyday form of sadism should be added to that list. Acts of apparent cruelty were captured using two laboratory procedures, and we showed that such behavior could be predicted with two measures of sadistic personality. Study 1 featured a bug-killing paradigm. As expected, sadists volunteered to kill bugs at greater rates than did nonsadists. Study 2 examined willingness to harm an innocent victim. When aggression was easy, sadism and Dark Triad measures predicted unprovoked aggression. However, only sadists were willing to work for the opportunity to hurt an innocent person. In both studies, sadism emerged as an independent predictor of behavior reflecting an appetite for cruelty. Together, these findings support the construct validity of everyday sadism and its incorporation into a new “Dark Tetrad” of personality.

Keywords

sadism, sadistic personality, cruelty, aggression, killing, antisocial behavior, individual differences, violence, personality, rewards

Received 12/12/12; Revision accepted 4/19/13

To see others suffer does one good, to make others suffer even more. . . . Without cruelty there is no festival . . . and in punishment there is so much that is festive!

—Nietzsche (1887/1967, p. 67)

Most people experience distress after hurting an innocent person. Yet for others, cruelty affords a different emotional experience: It is pleasurable, exciting, perhaps even sexually arousing. Instead of seeking to alleviate suffering, these individuals may seek opportunities to exercise brutality and indulge their appetites for cruelty (Baumeister & Campbell, 1999; Nell, 2006; Taylor, 2009). How can we reconcile these conflicting reactions to human suffering?

The fact that some people crave cruelty, whereas others abhor it, points to an individual-difference variable that has been largely overlooked in personality research. Current conceptions of sadism rarely extend beyond those of sexual fetishes or criminal behavior (Fedoroff,

2008; Knight, 1999; Nitschke, Osterheider, & Mokros, 2009). Yet enjoyment of cruelty occurs in apparently normal, everyday people (Baumeister & Campbell, 1999). Consider the popularity of violent films, brutal sports, and video games with cruel content—not to mention incidents of police and military brutality. These commonplace manifestations of cruelty¹ implicate a subclinical form of sadism, or, simply, *everyday sadism*.

In contrast to the paucity of research on sadism, there is an abundance of empirical work on psychopathy, narcissism, and Machiavellianism, together known as the “Dark Triad” of personality (Paulhus & Williams, 2002). The Dark Triad share a propensity for callous exploitation (Jakobwitz & Egan, 2006; Jones & Figueredo, 2012;

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Lee & Ashton, 2005), but each trait has a distinct profile (Jones & Paulhus, 2010; Vernon, Villani, Vickers, & Harris, 2008). For a comprehensive review of the Dark Triad, see Furnham, Richards, and Paulhus (2013).

Two recent findings suggest that everyday sadism may well warrant membership in this cast of villains. First, Reidy, Zeichner, and Seibert (2011) found that, independent of psychopathy, an implicit-sadism measure predicted unprovoked aggression in the laboratory. Second, Chabrol, Van Leeuwen, Rodgers, and Séjourné (2009) found that sadistic personality predicted antisocial behavior independently of its overlap with the Dark Triad. The latter authors suggested that the Dark Triad should be expanded to a “Dark Tetrad” of personality.

In sum, the existing research on everyday sadism is sparse and has been relegated to self-reports. The next step in advancing this literature is to link personality measures with behavior. Given the ethical limitations of studying sadism in the laboratory, our research required some creativity to develop appropriate analogues.

Overview of the Present Research

We aimed to address two interrelated questions. First, can sadistic behavior be captured in the laboratory? And second, can measures of sadistic personality predict these behaviors beyond already established measures of the Dark Triad? These questions were addressed with two studies.

Study 1: Everyday Sadism and Willingness to Kill

Study 1 was designed to link everyday sadism with an appetite for killing. Although horrific to the average person, murder is sometimes perpetrated for sheer pleasure alone (Taylor, 2009), and it may be especially gratifying for sadists when performed with direct physical contact. Needless to say, it is not possible to study human murder in the laboratory. We therefore turned to a proxy behavior more amenable to ethical research, namely, killing bugs.

Inspired by the faux-bug-killing paradigm of Martens, Kosloff, Greenberg, Landau, and Schmader (2007), we asked participants to choose among several odious tasks, including one that involved killing live bugs. To maximize gruesomeness, we designed a killing machine that produced a distinct crunching sound. To anthropomorphize the victims, we gave them endearing names.

We hypothesized that sadism would predict willingness to kill bugs over other unsavory options.² We also expected that sadism would remain a significant predictor of bug killing even after controlling for the Dark Triad

and negative reactions toward bugs. Finally, we assessed postkilling affect in an attempt to document sadistic pleasure.

Method

Participants. A total of 78 psychology students participated in return for course credit. Data from 7 participants were unusable because their task choices were not recorded. The final sample comprised 71 participants (72.9% female, 27.1% male; mean age = 20.37 years, $SD = 2.33$).

Materials. We used the 10-item Short Sadistic Impulse Scale (O'Meara, Davies, & Hammond, 2011) to assess a dispositional tendency to enjoy hurting others (example item: “Hurting people is exciting”; $\alpha = .87$). The 27-item Short Dark Triad scale (Jones & Paulhus, 2011) was used to assess narcissism ($\alpha = .66$), Machiavellianism ($\alpha = .72$), and subclinical psychopathy ($\alpha = .68$). We used the 25-item Disgust Sensitivity Scale–Revised (Haidt, McCauley, & Rozin, 1994; modified by Olatunji et al., 2007) to assess sensitivity to disgusting stimuli ($\alpha = .86$). We also included a yes-or-no question about fear of bugs (“Are you afraid of bugs?”). Finally, we assessed posttask emotions with an 18-item adjective-rating measure. Responses were made using scales from 1 (*very slightly*) to 5 (*very much*). We created a composite score for pleasure by averaging responses to “happy,” “excited,” and “aroused” items ($\alpha = .64$).

Procedure. Participants were told that the study topic was “personality and tolerance for challenging jobs.” Participants chose among four tasks that mirrored those of real-life jobs: killing bugs (exterminator), helping the experimenter kill bugs (exterminator's assistant), cleaning dirty toilets (sanitation worker), or enduring pain from ice water (a worker in cold environments).

If bug killing was chosen, participants were presented with the bug-crunching machine, which actually was a modified coffee grinder (see Fig. 1). Each of three cups adjacent to the machine contained a live pill bug. The bugs' names—Muffin, Ike, and Tootsie—were written on the cups. The participant's job was to drop the bugs into the machine, force down the cover, and “grind them up,” starting with Muffin. The experimenter sat on the other side of the room, apparently checking e-mail. Unbeknownst to participants, a barrier prevented the bugs from reaching the grinding blades. Thus, it appeared and sounded as though the bugs were being crunched, but no bugs were harmed in the experiment.

For participants who chose the role of exterminator's assistant, the procedure was identical except the



Fig. 1. Materials used in the bug-killing task. The large picture shows the bug-crunching machine (a modified coffee grinder) and three cups containing live pill bugs, with the bugs' names printed on them. The inset depicts two pill bugs next to a ruler to show their scale.

participant simply handed the cups to the experimenter. Participants who chose the toilet-cleaning option were shown a toilet plunger and cleaning supplies, whereas those who chose pain tolerance were told that the ice-bath apparatus was in the next room. Afterward, participants who had chosen the toilet-cleaning or ice-water options were told that they did not have to complete those tasks. Finally, all participants completed the emotion ratings.

After running a few participants, we noticed that some proceeded to "kill" all three bugs, whereas other participants declined after "killing" one or two. We therefore began to record number of bugs participants killed. Those data were available for 69 participants (mean number of bugs killed = 1.0, $SD = 1.02$).

Results

Tables S1 and S3 in the Supplemental Material available online present descriptive statistics and correlations among the personality scales. Correlations between sadism and Dark Triad scores ranged from low to moderate. Importantly, sadism was unrelated to disgust sensitivity, $r = .02$, $p = .90$.

Task choice. Among all the participants, 12.7% chose the pain-tolerance task, 33.8% chose the toilet-cleaning task, 26.8% chose to help kill bugs, and 26.8% chose to kill bugs. Proportions of male and female participants did

not vary across the task choices, $\chi^2(3, N = 71) = 4.13$, $p = .25$.

As shown in Figure 2, bug killers had the highest sadism scores. This effect was evaluated formally using an ordered logistic regression with sadism and Dark Triad scores entered as predictors of the sadistic behavioral choices (on a continuum with bug killing as the most sadistic choice, followed by assisting with bug killing, and then toilet cleaning and pain tolerance combined as the least-sadistic options). Gender and fear of bugs were entered as control variables to ensure that the effects would not simply reflect gender differences or be obscured by irrelevant phobias.⁵

As expected, higher sadism scores were associated with greater odds of sadistic behavioral choices, odds ratio = 3.41, $SE = 2.00$, $z = 2.10$, $p = .036$, 95% confidence interval = [1.09, 10.76]. With each standard-deviation increase in sadism, the odds of choosing bug killing over the other options increased by a factor of 2.10 (or 110.3%) when Dark Triad scores, gender, and bug fears were held constant. This relation remained relatively unaffected when disgust sensitivity was added to the model, odds ratio = 3.37, $SE = 1.97$, $z = 2.07$, $p = .038$, 95% confidence interval = [1.07, 10.60]. The likelihood-ratio test indicated that the proportional odds assumption was tenable, $\chi^2(6, N = 67) = 4.38$, $p = .63$.

Posttask pleasure. We next examined the relations between sadism and posttask pleasure ratings via a series of multiple regression analyses. Gender and bug fears were again entered as covariates.⁴ Sadists reported marginally lower posttask pleasure than did nonsadists, irrespective of their task choice, $\beta = -0.62$, $SE = 0.40$, $t(59) = -1.53$, $p = .13$. However, this trend was qualified by an interaction between sadism and sadistic-behavior choice, $\beta = 0.85$, $SE = 0.26$, $t(59) = 3.24$, $p = .002$. Among participants with low levels of sadism (1 SD below the mean), engaging in a bug-killing task was not associated with posttask pleasure, $\beta = -0.09$, $SE = 0.15$, $t(59) = -0.60$, $p = .50$. However, among participants with high levels of sadism (1 SD above the mean), those who killed bugs reported significantly greater pleasure than those who did not, $\beta = 1.61$, $SE = 0.57$, $t(59) = 2.83$, $p = .006$. Finally, the association between the number of bugs killed and self-reported pleasure was positive and substantial, $\beta = 0.81$, $SE = 0.29$, $t(30) = 2.84$, $p = .008$.

Discussion

In Study 1, we examined overt sadistic behavior and its personality predictors. As expected, higher sadistic-personality scores were associated with greater preference for bug killing over other tasks. The visceral experience of personally killing the bugs was the most appealing

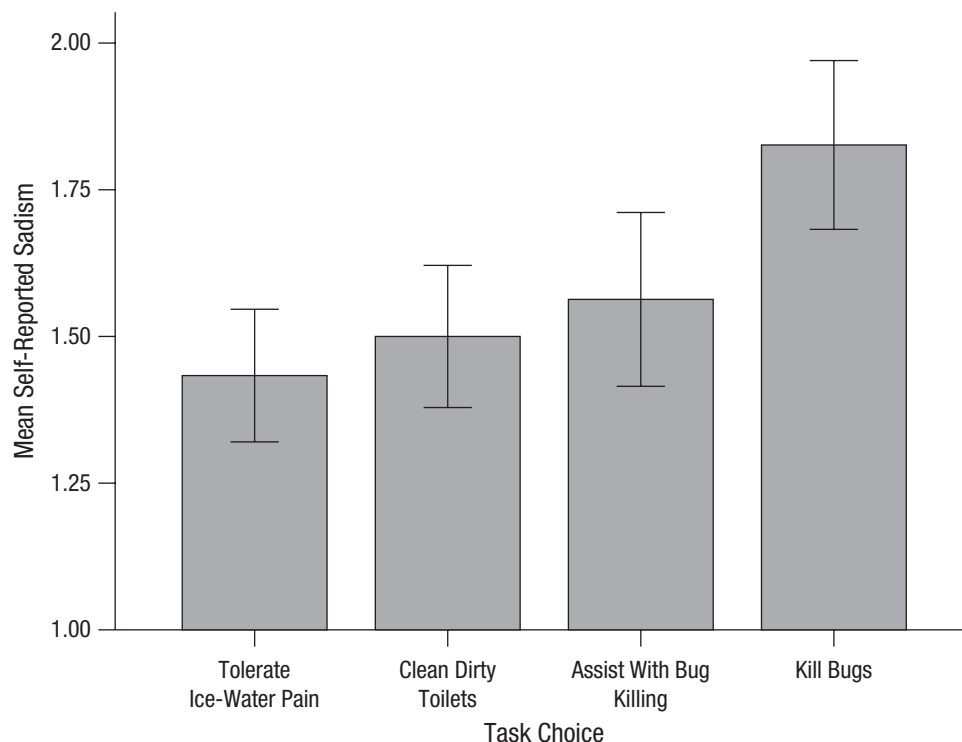


Fig. 2. Results from Study 1: sadism score as a function of task choice. Error bars represent standard errors.

choice for sadists. This association was independent of sadism's overlap with the Dark Triad, which confirms that sadism adds unique variance to the prediction of this concrete behavior. By contrast, controlling for sadism eliminated any predictive power of the Dark Triad.

Of special importance was our ability to rule out the alternative explanation that sadists simply have a high tolerance for dealing with disgusting stimuli, such as blood, excrement, and bugs. Both the behavioral and personality results contradicted that possibility. Sadists were more likely to choose bug killing over the (unquestionably) disgusting toilet-cleaning option. Moreover, the sadistic preference for bug killing held even when we controlled for disgust sensitivity and fear of bugs. Furthermore, sadistic-personality scores were unrelated to dispositional disgust sensitivity.

The posttask emotion results were intriguing. Unexpectedly, sadists reported (marginally) less positive affect than did nonsadists across all conditions. This relative lack of pleasure was especially prominent among non-bug killing sadists, which suggests that the sadists who opted out of bug killing may have regretted their choice. By contrast, sadists who killed bugs reported significantly greater pleasure than did their nonkilling

counterparts. These findings provide preliminary evidence that sadists obtain pleasure from cruel behaviors. Furthermore, the pattern suggests that sadists may use cruelty to compensate for a low baseline level of positive emotion. Finally, those participants who killed more bugs expressed greater pleasure than did participants who killed fewer bugs. This last result is the clearest indication of the reward value of sadistic behavior.

Study 1 demonstrated that sadistic behavior can be elicited under controlled laboratory conditions and that it varies according to sadistic-personality scores. In Study 2, we attempted to replicate these results using a different behavioral operationalization of sadism, namely, hurting innocent victims.

Study 2: Everyday Sadism and Hurting Innocent Victims

It is not uncommon for people to attack others in revenge or when provoked. Sadists go further, hurting even innocent others (Baumeister & Campbell, 1999; Nell, 2006). For them, cruelty is a directly reinforcing, appetitive motive (Taylor, 2009); hence, they will aggress without external incitement. This phenomenon was demonstrated

by Reidy et al. (2011), who found that some study participants—although unprovoked—blasted their opponents with gratuitous white noise.

By comparison, Dark Triad aggression appears to be context dependent (Jones & Paulhus, 2010). Psychopaths have no qualms about hurting others, but their goals are largely instrumental (Woodworth & Porter, 2002). Moreover, their impulsive orientation limits aggression to low-investment, short-term responses (Jones & Paulhus, 2011). Conversely, narcissists are unlikely to bother with aggression unless their ego is threatened (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004), and Machiavellians are too calculating to risk retaliation or punishment without sufficient benefits (Jones & Paulhus, 2010).

Given these constraints on the Dark Triad, there may be situations in which only sadists will aggress. One such situation is when the aggression is both unprovoked and costly in terms of time and effort. Only sadists crave cruelty enough to expend time and resources to harm an innocent person when there are no discernible benefits (Baumeister & Campbell, 1999; Fedoroff, 2008).

This hypothesis was evaluated using a white-noise paradigm in which participants' ostensible opponent in a game always abstained from aggression. Thus, any aggression by participants was unprovoked. The study included a condition in which participants had to work at a boring task for the opportunity to aggress. We predicted that both psychopathy and sadism would be associated with unprovoked aggression when no work was required. Only sadism, however, would predict unprovoked aggression when personal costs were incurred. We further hypothesized that sadism would predict aggression independently of its overlap with the Dark Triad. Measures of the Big Five and empathy were included for comparison.

Method

Participants. A total of 75 psychology students participated in return for course credit. Data from 4 participants were unusable because of a computer malfunction. The final sample consisted of 71 participants (49.3% female, 50.7% male; mean age = 20.52 years, $SD = 3.69$; 60.6% East Asian, 26.8% Caucasian, 12.7% other or undisclosed ethnicity). Participants were randomly assigned to the work and no-work conditions, resulting in roughly equal numbers in each condition (work condition: $n = 39$; no-work condition: $n = 32$) and equal gender proportions (work condition: 51.3% female, 48.7% male; no-work condition: 50.0% female, 50.0% male).

Materials. Seven direct sadism items from the Varieties of Sadistic Tendencies (Paulhus & Jones, in press) were used to assess sadistic personality (example item: "I enjoy

hurting people"; $\alpha = .61$).⁵ Responses were made using 7-point scales from 1 (*not at all*) to 7 (*very much*). The Varieties of Sadistic Tendencies and the Short Sadistic Impulse Scale are strongly correlated ($r_s > .60$; Buckels & Paulhus, 2012).

We used the 27-item Short Dark Triad scale (Jones & Paulhus, in press) to assess narcissism ($\alpha = .67$), Machiavellianism ($\alpha = .83$), and subclinical psychopathy ($\alpha = .68$). The 44-item Big Five Inventory (John & Srivastava, 1999) was used to assess extraversion ($\alpha = .86$), agreeableness ($\alpha = .74$), conscientiousness ($\alpha = .86$), neuroticism ($\alpha = .81$), and openness ($\alpha = .80$). The Interpersonal Reactivity Index (Davis, 1983) was used to assess individual differences in empathy; the index contains four subscales measuring personal distress ($\alpha = .66$), empathic concern ($\alpha = .82$), fantasy ($\alpha = .82$), and perspective taking ($\alpha = .80$). Finally, Hahn-Holbrook, Holt-Lunstad, Holbrook, Coyne, and Lawson (2011) provided a sample white-noise aggression program, which we modified for the study.

Procedure. The procedure followed that of Bushman and Baumeister (1998). Participants competed in a computer game against an opponent who was allegedly a same-sex student seated in another room. Their objective was to press a button faster than their opponent did. On every trial, both players selected the strength of a white-noise blast to be delivered to their opponent. Blast levels were always visible, but only the winner could blast the loser. The available blast levels ranged from 0 (no blast) to 10 (a 90-dB audio clip). Blast duration was determined in real time via a blast delivery button on the keyboard (maximum duration = 5 s). The opponent always chose a blast level of 0 (no punishment). Hence, the participant had no justification for retaliating.

Participants completed a practice trial with the experimenter before the test trials began. The existence of the ostensible opponent was "confirmed" via an audio feed that was ostensibly from the opponent's room. All participants won six of eight trials, with the first and fifth selected as the losing trials.

In the no-work condition, participants were able to punish their opponent immediately after each winning trial. Those in the work condition had to complete a boring letter-counting task on every winning trial in which they wanted to punish their opponent. The letter-counting task was easy—participants were given an unlimited time limit and number of attempts—but tedious and monotonous. The task materials consisted of two to three paragraphs of lorem-ipsuam nonsense text (see <http://www.lipsum.com>). Participants counted the number of times a particular letter appeared in the text (a different letter was selected each time). We used nonsense text to increase task complexity and ensure that the content was

neutral in valence. Participants could change their mind and skip the blast delivery if they wished.

Results

Preliminary analyses. Tables S1 and S3 in the Supplemental Material present descriptive statistics and correlations. Sadistic personality was again moderately and positively associated with psychopathy and Machiavellianism. Sadism was also negatively associated with perspective taking ($r = -.24, p = .04$), empathic concern ($r = -.56, p < .001$), agreeableness ($r = -.46, p < .001$), and conscientiousness ($r = -.28, p = .02$).

No-work condition. Two aggression indexes were computed in this condition. First, because white-noise intensity and duration were strongly correlated ($r = .58, p < .001$), the scores were standardized within condition and combined to create a composite index of aggression strength. Second, because the Trial 1 blast was selected before the opponent's nonaggressive behavior was revealed, it constituted a natural control. The difference between the blast strength⁶ of the first and later trials therefore provided an index of reactive aggression. Specifically, the mean blast-intensity scores from Trials 2 through 8 were regressed on the Trial 1 blast-intensity scores (separately for each condition), and the residual scores were saved. Table S2 in the Supplemental Material presents descriptive statistics for the aggression indexes.

Correlations between measures of personality and behavior in the no-work condition are presented in Table 1. Gender was a control variable in all analyses. As expected, sadism was strongly and positively associated with the strength of noncostly aggression toward the innocent opponent. Narcissism, psychopathy, low perspective taking, and low empathic concern were also

significant predictors of noncostly aggression. Finally, sadism was positively associated with reactive aggression after nonprovocation, whereas personal distress was negatively associated with reactive aggression.⁷

We next conducted a multiple regression analysis with sadism, psychopathy, narcissism, Machiavellianism, and gender as predictors of noncostly aggression. As expected, sadism emerged as a significant independent predictor of noncostly aggression toward the innocent opponent, $\beta = 0.35, SE = 0.16, t(26) = 2.18, p = .039$, when controlling for the Dark Triad and gender.⁸ Psychopathy was also an independent predictor of noncostly aggression toward the innocent opponent, $\beta = 0.42, SE = 0.19, t(26) = 2.23, p = .034$. Narcissism, Machiavellianism, and gender did not reach significance (all $ps > .17$).

Work condition. Here the primary dependent variable was the number of times the participant completed the boring task in order to aggress. Note that participants could back down at any point and bypass the boring task. Thus, the behavioral count indexed the extent to which aggressive intentions culminated in aggressive behavior when said behavior was costly.

Correlations (controlling for gender differences) are displayed in Table 1. As predicted, sadism was highly correlated with the number of times the participants worked to aggress against the innocent opponent. Additionally, empathic concern was negatively correlated with working to aggress. Gender did not moderate the effect of sadism, $t(20) = 0.45, p = .66$.

Next, we conducted a multiple regression with sadism, the Dark Triad, and gender⁹ as predictors of working to aggress against the innocent opponent. As expected, sadism was the only unique (albeit marginally significant) predictor of working to aggress against the innocent opponent, $\beta = 0.62, SE = 0.34, t(21) = 1.84, p = .08$. The

Table 1. Partial Correlations Between Personality and White-Noise Aggression

Predictor	No work required		Work required
	Aggression strength	Reactive aggression	Working to aggress
Sadism	.57***	.42**	.40**
Narcissism	.39**	.07	-.04
Psychopathy	.62***	.22	.22
Machiavellianism	.12	-.05	.04
Personal distress	-.14	-.34*	-.03
Fantasy	-.23	-.18	-.04
Perspective taking	-.38**	-.23	-.07
Empathic concern	-.38**	-.09	-.35*

Note: Gender was controlled for in all analyses. Reactive aggression was in response to an opponent's nonaggressive behavior. Vicarious sadism (not shown) marginally predicted aggression strength, $r(29) = .33, p = .07$.

* $p < .10$. ** $p < .05$. *** $p < .001$.

standardized regression coefficients for psychopathy, narcissism, and Machiavellianism were weak and not significant, β s = -0.23 to 0.10 , p s = $.40$ to 1.0 .

Discussion

Using a white-noise-aggression paradigm, we found that sadists, psychopaths, narcissists, and those low in empathy and perspective taking aggressed against an innocent person when aggression was easy. Of those with dark personalities, however, only sadists increased the intensity of their attack once they realized that the innocent person would not fight back. Sadists were also the only dark personalities willing to work (i.e., expend time and energy) to hurt an innocent person. Together, these results suggest that sadists possess an intrinsic appetitive motivation to inflict suffering on innocent others—a motivation that is absent in other dark personalities. Inflicting suffering on the weak is so rewarding for sadists that they will aggress even at a personal cost.

General Discussion

In the present research, we investigated whether everyday sadism is a viable personality construct. Two questionnaire measures of sadistic personality converged with two overtly sadistic behaviors. In Study 1, sadistic personality predicted a preference for killing bugs. In Study 2, sadistic personalities were willing to hurt innocent others, and, importantly, to incur personal costs for the opportunity. In both studies, sadism remained a unique predictor of sadistic choice when we controlled for overlap with the Dark Triad. These findings support the call to incorporate sadism into a new Dark Tetrad of personality (Chabrol et al., 2009; Furnham et al., 2013).

Our results advance the literature on sadism by showing that (a) it can be studied in a laboratory setting and (b) the Short Sadistic Impulse Scale and the Varieties of Sadistic Tendencies are valid measures of sadistic personality. To our knowledge, there is no prior behavioral evidence for the validity of these measures. Admittedly, the enjoyment of killing bugs may not extend to the enjoyment of hurting human beings. However, the same sadistic personalities went out of their way to hurt human victims in Study 2. By contrast, participants with low sadism scores would rather endure the pain of ice water than hurt another living entity.

In conclusion, our findings provide a glimpse into sadism in everyday life. We hope this research will persuade readers to construe sadism as something more than a sexual disorder to be studied in hardened criminals (Mokros, Osterheider, Hucker, & Nitschke, 2011). The phenomenon goes well beyond the effects of anger

(Bushman & Whitaker, 2010), the instrumental aggression of psychopaths (Fedoroff, 2008; Malamuth, 2003; Woodworth & Porter, 2002), and callous narcissistic entitlement (Baumeister, Catanese, & Wallace, 2002; Campbell et al., 2004) to a pleasure-driven form of aggression. Its self-sustaining quality makes sadism more morally disturbing, and perhaps more dangerous, than antisociality tied to extrinsic contingencies. For the phenomenon of sadism to be fully addressed, its everyday nature and surprising commonness need to be acknowledged.

Author Contributions

E. E. Buckels devised Study 2 and drafted the manuscript. D. N. Jones devised and conducted Study 1. D. L. Paulhus supervised the program of research and edited the manuscript.

Acknowledgments

We thank Connie Do, Vivian Tong, Sean Ford, Iris Chu, and Mia Speck for their assistance in running participants.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

Notes

1. We have used the term *cruelty* to refer to behavior and the term *sadism* to refer to disposition.
2. A neutral or pleasant option would attract the bulk of responses and therefore reduce variance. In that case, task choice would boil down to a measure of social desirability. Sadistic choices are more easily justified when there are no obvious socially desirable alternatives. That logic is consistent with the standard procedure of equating desirability in forced-choice items.
3. The results were similar when gender and bug fears were excluded from the model but did not reach significance, odds ratio = 2.39, $SE = 1.29$, $z = 1.61$, $p = .10$, 95% confidence interval = [0.82, 6.90].
4. The results held when gender and bug fears were excluded: The interaction between sadism and task choice was significant, $\beta = 0.82$, $SE = 0.24$, $t(65) = 3.40$, $p = .001$. Among participants with low levels of sadism (1 SD below the mean), engaging in a bug-killing task was unrelated to posttask pleasure, $\beta = -0.08$, $SE = 0.14$, $t(65) = -0.53$, $p = .60$. Among participants with high levels of sadism (1 SD above the mean), those who killed bugs reported greater pleasure than those who did not, $\beta = 1.57$, $SE = 0.54$, $t(65) = 2.94$, $p = .005$.
5. Five other items assessed "vicarious sadism," for example, "In video games, I like the realistic blood spurts" ($\alpha = .71$).

6. Blast duration was not included because there were no data for Trial 1 (all participants lost on that trial).
7. The relation between sadism and noncostly aggression was not moderated by gender, $\beta = -0.27$, $SE = 0.27$, $t(25) = 1.01$, $p = .32$. The Sadism \times Gender interaction approached significance for reactive aggression, $\beta = -0.47$, $SE = 0.28$, $t(25) = 1.68$, $p = .10$.
8. Excluding gender did not affect these results, $\beta = 0.40$, $t(27) = 2.27$, $p = .03$.
9. The same results were obtained when we excluded gender, $\beta = 0.45$, $t(21) = 1.55$, $p = .14$.

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