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Rage beneath the machine: implicit hostility and sadistic motivation in pranking contexts

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Abstract

Previous research has demonstrated that disrespect sensitivity plus anger rumination (DSAR) predicts outcomes congruent with sadistic motivation (such as positive affect in response to target harm) in pranking contexts. Because "successful" pranksters often appear giddy rather than overtly hostile, we conducted three studies involving 990 Canadian undergraduates based on the idea that DSAR-related hostility could be operating outside of awareness. When controlling for overlap among humour styles, DSAR predicted greater self-reported use of self-defeating but not aggressive humour (Study 1). Higher DSAR pranksters/observers (but not victims) perceived more happiness than anger in an art interpretation task by default but more anger than happiness when pranks were salient (Study 2). Contrary to their assertions, higher DSAR scorers' word fragment and projective test responses suggested implicit hostile/dominant tendencies but inhibition of overt aggression in the neutral condition that shifted to disinhibition and mirthless interpersonal detachment when pranks were salient (Study 3). Thus, at least among those most at risk for manifesting sadistic motivation, latent hostility may be overlooked amidst prank-related celebrations. This apparent implicit/overt discrepancy should be considered when designing interventions for minimizing the occurrence of sadistically motivated harm.

Keywords: humour, pranks, sadism, schadenfreude.

1. Introduction

1.1. The hostile (under)side of pranks

> Today, my "friends" showed me a video of them pranking my arachnophobic coworker with a fake toy spider. She cried. I told them very bluntly that they're horrible people and owe her an apology. They responded by getting their mean ass dog to antagonize me. I'm afraid of dogs. FML
>
> (Fmylife.com, 18 Jul 2023)

Many details are missing from this second-hand prank account owing to the host site's 320-character limit, so we don't know whether the pranksters had a prior relationship or a grievance with the prank target. We *can*, however, infer that they felt motivated to share their "accomplishment" with the poster and therefore probably didn't expect a condemning response. Moreover, although we suspect that few would take well to being labelled "horrible people" by someone in their social circle, the pranksters' response seems excessive if we take the poster's narrative at face value. That is, instead of "to each their own" or something more verbally dismissive, the pranksters opted for a behavioural response that capitalized on the poster's own vulnerability. Simply, their response appeared hostile. Where did it come from?

Burris and Leitch (2016; 2018) argued that pranking can be understood as a not-uncommon form of displaced aggression resulting from sadistic motivation, wherein willingness to harm a non-provocative other is in the service of elevating a downtrodden self (for a more sympathetic treatment of pranks or "practical jokes," see Marsh, 2015). Because the modus operandi is infliction of physical and/or psychological harm upon a target, the magnitude of conscious positive affect experienced by pranksters is tied to (the prospect of) a prank "succeeding." That is, pranksters are banking on the "right" reaction of targets (and present/future audiences, if relevant).

Burris and Leitch (2018) presented two studies in support of their model. In both, participants' propensity for experiencing a "downtrodden self" was assessed via the *DSAR index*: an average of the standardized scores on separate measures of disrespect sensitivity (DS: prioritizing respect from others but expecting/experiencing the opposite) and anger rumination (AR: mentally replaying anger-evoking episodes). DSAR was moderately positive correlated with a self-reported measure of sadistic tendencies in the first study. Moreover, among those who reflected on a past prank experience, higher DSAR also predicted retrospective endorsement of cognitions (e.g., "This is awesome," "I can't wait to do another prank") and emotions (e.g., excitement, amusement, pride, satisfaction) congruent with sadistic motivation – and it did so better than the dispositional sadism measure.

Burris and Leitch's (2018) second study replicated the DSAR/dispositional sadism relationship. Higher DSAR scorers who watched two videos featuring pranked strangers also subsequently scored higher on measures of sadistic affect/motivation (e.g., *I felt…* "amused," "like I wanted to be involved in planning and executing the prank") and self-elevation/victim derogation (e.g., *The person who was pranked…* "was really stupid," *I think that…* "I could have done the prank better than the prankster[s] in the video did"). These relationships occurred only when the prospect of long-term victim suffering was made salient, however: They were reversed when the prospect of long-term suffering was minimized.

At first glance, these results might seem paradoxical. For example, Study 1 emotion items such as "happiness," "anticipation," and "a sense of spontaneity" would not seem out of place in a positive psychology manifesto – except these emotions were reported by nostalgic pranksters chronically simmering with anger and prone to feeling disrespected. Likewise, even though the prank targets featured in Study 2's stimulus videos were strangers, higher DSAR scorers presented with the prospect of serious harm to victims reported more "enjoyment" of the prank. They also denied being "angry at the prankster" and were more willing to assert that the victims "completely overreacted" and "deserved what happened" to them.

Anecdotally speaking, "successful" pranksters often appear exuberant, even giddy, rather than angry or hostile. Nevertheless, as our opening account illustrated, the mood can turn quickly, with attacks directed toward those who do not share the pranksters' enthusiasm. To us, this suggests that higher DSAR scorers may not be aware of the hostile underlay of sadistically motivated pranks amidst the conscious experience of positive affect.

Tentatively convergent with this possibility is Szameitat et al.'s (2022; see also Szameitat & Szameitat, 2024) discovery that naïve listeners perceived schadenfreude laughter – triggered by stimuli such as a prank video of a person stepping in mousetraps – to be discriminable from laughter associated with joy or tickling. Whereas the latter two were inferred to be experienced as positive by sender and receiver, schadenfreude laughter – although superficially positive – was characterized by listeners as transmitting a subtext of dominance that has negative implications for the receiver (cf. the overview of "the superiority theory of humour" in Smith, 2013). Importantly, because the target laughter samples were spontaneously produced rather than simulated, the discerned nuances more likely reflected implicit/nonconscious rather than deliberate/conscious processes impacting their production.

1.2. The present research

With the above as a backdrop, we investigated whether the same index used by Burris and Leitch (2018) to predict overt markers congruent with sadistic motivation in pranking contexts could also predict outcomes suggestive of covert, sadism-congruent hostility. Study 1 looked at the relationship between DSAR and humour styles. If DSAR predicts self-reported use of aggressive humour and little else, then the postulation of nonconscious contributors to sadism-congruent outcomes might seem superfluous. If one or more less "obvious" humour styles predominated among higher DSAR scorers, this would leave the door open for nonconscious contributors, however.

Studies 2 and 3 manipulated the salience of prior prank experiences and examined whether DSAR differentially predicted implicit outcomes. For example, in Study 2, we were interested in whether higher DSAR scorers would be more likely to perceive "anger" rather than "happiness" in abstract art images after reflecting on a past prank that they had either performed or observed. In Study 3, we similarly explored the impact of prank salience on higher DSAR scorers' tendency to complete fragments to form target words tapping either hostile dominance or positive interpersonal connection. We also examined higher DSAR scorers' propensity for aggressive acting out (versus self-restraint) as indicated by their projective test responses and compared their explicit responses on thematically similar outcome measures as a gauge of disconnect between conscious and nonconscious experiences.

2. Study 1

As a first look at the architecture of sadism-congruent hostility, we explored relationships between DSAR and self-reported humour style(s). We relied on Martin et al.'s (2003) fourfold distinction – that is, "relatively benign uses of humor to enhance the self (Self-enhancing) and to enhance one's relationships with others (Affiliative), use of humor to enhance the self at the expense of others (Aggressive), and use of humor to enhance relationships at the expense of self (Self-defeating)" (p. 48). Of these, Martin et al. only drew an explicit conceptual link between hostility and the aggressive style, characterized by "uses of humor that are intended to belittle others, albeit often under the guise of playful fun" (p. 52). This characterization is strikingly reminiscent of sadistically motivated pranks in Burris and Leitch (2016; 2018).

Martin et al. (2003) reported "expected" positive zero-order relationships between the Aggressive subscale of their Humor Styles Questionnaire (HSQ) and both the Cook-Medley Hostility Scale (Cook & Medley, 1954) and global scores on the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992). No significant relationships emerged for the Affiliative or Self-enhancing subscales, but Martin et al. "[s]omewhat surprisingly" (p. 67) obtained positive correlations between the Self-defeating subscale and both hostility-related measures. No attempt was made to account for the modest overlap between the aggressive and self-defeating humour styles, however, so unique relationships could not be determined.

Elsewhere, positive correlations in the .50s between HSQ-Aggressive – the only subscale administered – and a self-report measure of sadistic tendencies have occurred (Hart et al., 2023; Međedović & Bulut, 2017). Moreover, reminiscent of the pattern of relationships between humour styles and hostility in Martin et al. (2003), Volkmer et al. (2023) reported positive correlations between a self-report measure of online trolling behaviour – deemed emblematic of so-called "everyday sadism" by Buckels et al. (2013) – and both the Aggressive and Self-defeating HSQ subscales. The latter relationship appeared weaker than the former, but relationships controlling for HSQ subscales' overlap were once again not reported.

Based on previous research, it would seem obvious to expect a positive relationship between DSAR and the HSQ's Aggressive subscale indicative of a conscious, hostility-congruent focus on personal amusement at others' expense. More interesting for our purposes, however, would be a link between DSAR and the HSQ's Self-defeating subscale, postulated by Martin et al. (2003) to include using "humor as a form of defensive denial to hide underlying negative feelings" (p. 71). Such a relationship – especially if stronger than a DSAR/HSQ-Aggressive relationship – would be consistent with the suggestion that not all sadism-congruent hostility may be consciously accessible, at least in default circumstances.

2.1. Method

As part of a larger online investigation, 331 Canadian psychology undergraduates (of which 64.7% identified as women, 33.5% men, and 1.8% as other) first completed a brief demographic questionnaire. Preliminary analyses controlling for gender did not alter the pattern of significant findings reported below, so this variable will not be discussed further.

Participants subsequently completed the two DSAR-related measures used by Burris and Leitch (2018): Sixteen items from McDonald (2008) assessing disrespect sensitivity (e.g., "I feel disrespected when people tease me"; 1 = *strongly disagree*, 10 = *strongly agree*) and Sukhodolsky et al.'s (2001) 19-item Anger Rumination Scale (e.g., "I have long living fantasies of revenge after the conflict is over"; 1 = *almost never*, 4 = *almost always*). Our primary analyses were based on the respective 12-item and 10-item sets used in Studies 2 and 3 below to ensure comparability: for disrespect sensitivity, $M = 6.15$, $SD = 1.31$, $\alpha = .84$; for anger rumination, $M = 2.28$, $SD = .66$, $\alpha = .89$. These two measures were moderately positively correlated, $r(329) = .37$, $p < .001$, so they were standardized and then averaged to create the DSAR index ($M = .00$, $SD = .83$), as in Burris and Leitch.

Participants also completed Martin et al.'s (2003) 32-item HSQ, comprised of four 8-item subscales (1 = *totally disagree*; 7 = *totally agree*) assessing affiliative (e.g., "I laugh and joke a lot with my friends;" $M = 5.71$, $SD = .83$, $\alpha = .79$), self-enhancing (e.g., "If I am feeling depressed, I can usually cheer myself up with humor;" $M = 4.52$, $SD = .99$, $\alpha = .81$), aggressive (e.g., "If I don't like someone, I often use humor or teasing to put them down;" $M = 3.53$, $SD = .91$, $\alpha = .70$), and self-defeating (e.g., "I often go overboard in putting myself down when I am making jokes or trying to be funny;" $M = 3.89$, $SD = 1.16$, $\alpha = .83$) uses of humour.

2.2. Results and discussion

As shown in Table 1, the DSAR index was significantly positively correlated with aggressive and self-defeating humour styles at the zero-order level. To determine unique variance accounted for by humour styles when controlling for overlap, we simultaneously entered all four into a regression to predict DSAR scores, $R^2 = .093$, $F(4, 326) = 8.39$, $p < .001$. The partial correlation associated with the self-defeating humour style was significant ($p < .001$), whereas the partial correlations associated with the aggressive, affiliative, and self-enhancing styles were not (all *p*s > .139). Thus, despite being simultaneously reactive to disrespect and resistant to letting go of past insults, higher DSAR scorers reported that their predominant target of humour was not *others* but rather themselves.

Table 1. Zero-order and partial correlations among humour styles and the DSAR index

	enhancing	aggressive	self-defeating	DSAR	DSAR (partials)
affiliative	.34***	.08	.08	-.07	-.08
enhancing		.13*	.19***	.01	-.03
aggressive			.35***	.15**	.06
self-defeating				.29***	.26***

Note. $N = 331$. *$p < .05$; **$p < .01$; ***$p < .001$. Partial correlations are based on simultaneous entry of the four humour styles to predict DSAR.

Although perhaps counterintuitive at first glance, this result is reminiscent of humour style patterns among bullying victims, who report feeling disrespected (e.g., Smokowski et al., 2014) and are prone to anger rumination (e.g., Zsila et al., 2018). For example, Fox et al. (2015) showed that being bullied by peers predicted an increase in self-reported use of self-defeating humour (and decreased use of aggressive humour by boys) over time in a sample of English youth. Similarly, being bullied predicted greater use of self-defeating humour (and less use of affiliative humour) among Swedish adults (Plenty et al., 2014).[1] Moreover, congruent with Martin et al.'s (2003) speculation concerning its use to conceal negative emotions, self-defeating humour has been linked to expressive suppression – an emotion regulation strategy focused on masking or restricting the outward manifestation of one's true feelings (Poncy, 2017; Young & Kyranides, 2022).

Thus, the predominance of self-defeating humour among higher DSAR scorers seems at least tentatively congruent with the suggestion that sadism-congruent hostility is more covert than overt under default (i.e., neutral) circumstances. Studies 2 and 3 were designed to investigate this possibility more directly.

3. Study 2

Building on Burris and Leitch's (2018) demonstration of the usefulness of the DSAR index as

[1]Paralleling Plenty et al.'s (2014) results, when the four humour styles were entered into a regression to predict DSAR scores based on its full-length component measures, $R^2 = .105$, $F(4, 326) = 9.59$, $p < .001$, the significant positive self-defeating correlation, $r_{\text{partial}} = .26$, $p < .001$, was accompanied by a significant negative affiliative correlation, $r_{\text{partial}} = -.11$, $p = .041$. In contrast, the aggressive and enhancing correlations with DSAR were non-significant, $r_{\text{partial}} = .08$, $p = .154$, and $r_{\text{partial}} = -.02$, $p = .735$, respectively.

a predictor of sadism-congruent outcomes in pranking contexts, Study 2 focused on the impact of a prank salience manipulation on implicit emotions. Specifically, participants were instructed to recall a memorable prank – whether they were pranksters, victims, or third parties. Either before or after, they completed a task that measures implicit emotions via inferring artists' intentions based on a series of abstract-expressionist images (see Bartoszek & Cervone, 2017).

We were particularly interested in perceptions of anger versus happiness and whether this varied as a function of prank salience. We expected that higher DSAR scores would predict implicit anger to predominate over implicit happiness after (but not before) the prank reflection task. This would suggest that prank salience primes sadistic motivation that manifests, in part, as implicit hostility. More specifically, we expected this priming effect among pranksters and third parties (cf. Burris & Leitch, 2018), but not among prank victims.

For comparison purposes, we also asked participants to complete self-report measures concerning their conscious experience of the prank reflection task. We expected minimal overlap, at most, between these explicit measures and the implicit measures.

3.1. Method

3.1.1. Participants

With the promise of extra course credit, six hundred Canadian psychology undergraduates were recruited for an online study described as focused on learning about people's reactions to "two very different forms of creative outlet: pranks and abstract-expressionist art." Of these, 106 were removed for failing to describe a prank or failing to complete the DSAR index, leaving 494 participants (of which 74.3% identified as women, 23.3% as men, and 2.4% as other). Controlling for gender did not eliminate the key interaction described below, so this variable will not be discussed further.

3.1.2. Materials and procedure

Participants were randomly assigned to either a high prank-salience or a low prank-salience condition. *High prank-salience* participants were asked to think of the most memorable prank that came to mind – "*one that **you** did or one that **someone else** did. It can be one that was **done to you** or **done to someone else**. It can be one that brings up **good** feelings, **bad** feelings, or some **mix** of the two as you remember it*" – and to provide a brief description of the prank and their reactions to it in a text box. They also indicated their role, i.e., "I was the prankster," "I was the one being pranked," or "I only watched the prank (live or video) or heard/read about it."

Adapting the procedure introduced by Bartoszek and Cervone (2017), high prank-salience participants were subsequently asked to select which emotion from a pair they thought that an artist was trying to depict in each of twenty-four abstract-expressionist art images they were shown. In all, six emotion pairs (*anger*/fear, *anger*/happiness, *anger*/sadness, *sadness*/fear, *sadness*/happiness, and *fear*/happiness) were presented four times each (counterbalanced, e.g., anger/happiness and happiness/anger) in fixed, randomized order. This yielded six implicit emotion indices (possible range: 0-4), with higher scores indicating a greater tendency to choose the italicized emotion in each pair.

Next, high prank-salience participants were asked to indicate their agreement (1 = *not at all*; 7 = *extremely*) with twelve appraisal items concerning the prank that they had recalled (e.g., "The target deserved to be pranked," "You feel upset every time you think of the prank" [reverse-scored]). To maximize reliability, two items ("The prank was creative" and "The target didn't see the prank coming at all") were omitted, leaving a 10-item "pro-prank" index ($\alpha = .85$).

Finally, high prank-salience participants completed twelve disrespect sensitivity items (M = 6.34; SD = 1.34; α = .86) and ten anger rumination items (M = 2.39; SD = .65; α = .90). As in Study 1, these two scales were moderately positively correlated, $r(492) = .39$, $p < .001$, so they were standardized and subsequently averaged to create the DSAR index (M = .00, SD = .83). DSAR scores did not differ as a function of prank salience, prank role, or their interaction (all Fs < 1).

A short demographic questionnaire followed. *Low prank-salience* participants completed the materials in the following order: implicit emotion measure, prank recall task, pro-prank index, DSAR index, and demographics.

3.2. Results

Because Burris and Leitch (2018) found that DSAR predicted affect, cognitions, and behavioural intentions congruent with sadistic motivation among prank observers as well as pranksters, we combined first-person and third-person prank perspectives for our main analyses. Second-person participants – that is, self-identified prank victims – were analysed separately to evaluate the distinctiveness of any observed effects.

To test whether the implicit salience of anger relative to happiness increased following the prank prime among higher DSAR scorers, we first entered DSAR and the dummy-coded salience variable, followed by their interaction, into a regression to predict anger v. happiness scores. Similar regressions were also performed for the other five emotion pairs to evaluate the distinctiveness of any observed effects.

For anger v. happiness, neither the DSAR main effect nor the salience main effect was significant, β = -.02, $t(300)$ = .39, p = .697, R^2_{inc} = .001, and β = .02, $t(300)$ = .33, p = .742, R^2_{inc} = .000, respectively. The DSAR x salience interaction was significant, however, β = .25, $t(299)$ = 2.93, p = .004, R^2_{inc} = .028: Congruent with the hypothesis, whereas higher DSAR scorers perceived more happiness than anger in the low prank-salience condition, β = -.37, $t(299)$ = -2.81, p = .005, they perceived more anger than happiness following the prank recall task, β = .30, $t(299)$ = 2.43, p = .016 (see Figure 1).

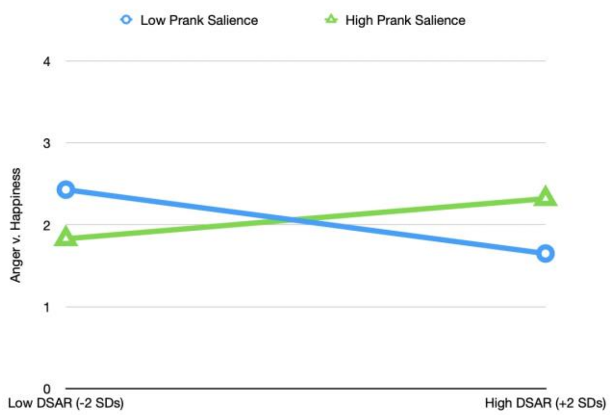

Figure 1. Anger v. happiness as a function of prank salience and DSAR

This interaction remained significant (p = .006) when controlling for the other five implicit emotion pairs or when first-person and third-person participants were analysed separately (p = .038 and p = .048, respectively). In contrast, neither main effect, nor the DSAR x salience interaction, was significant for any of the other implicit emotion pairs (all ps > .05). Likewise, neither main effect, nor the DSAR x salience interaction, was significant for the anger v. happiness index among self-identified prank victims (all ps > .25).

A few effects on the other implicit emotion pairs emerged among prank victims, however. Specifically, although the DSAR and salience main effects were not significant for anger v. sadness (both *p*s > .05), the DSAR x salience interaction was significant, $\beta = -.25$, $t(187) = 2.46$, $p = .015$, $R^2_{inc} = .031$: Whereas DSAR did not predict differentiation between these two emotions among prank victims in the low salience condition, $r(93) = .12$, $p = .266$, higher DSAR victims were more likely to perceive sadness relative to anger following the prank recall task, $r(94) = -.26$, $p = .012$. There was also a significant main effect of salience on anger v. fear, $\beta = -.15$, $t(188) = 2.06$, $p = .041$, $R^2_{inc} = .022$, such that prank victims' fear responses outpaced anger responses following the recall task. Finally, there was a main effect of DSAR on happiness v. fear, $\beta = -.15$, $t(188) = 2.12$, $p = .035$, $R^2_{inc} = .023$, that was qualified by a significant DSAR x condition interaction, $\beta = -.25$, $t(187) = 2.40$, $p = .018$, $R^2_{inc} = .029$: Whereas DSAR did not predict differentiation between these two emotions among prank victims in the low salience condition, $r(93) = .02$, $p = .814$, higher DSAR-scoring prank victims were more likely to perceive fear relative to happiness following the recall task, $r(94) = -.31$, $p = .002$.

Follow-up analyses in the high prank-salience condition revealed that higher pro-prank attitudes among victims tended to predict perceiving anger rather than happiness, $r(94) = .20$, $p = .050$. In contrast, higher pro-prank attitudes among pranksters/observers tended to predict perceiving happiness rather than anger, $r(154) = -.15$, $p = .059$. Note that the latter relationship is the opposite of what was observed for DSAR and anger v. happiness in this condition (see Fig. 1): This suggests a disconnect between nonconscious emotions and consciously professed reactions to pranks when one's role as a perpetrator or observer is salient.

3.3. Discussion

Echoing DSAR's failure to predict the self-reported predominance of overtly aggressive humour in Study 1, higher DSAR scorers were more likely to perceive ambiguous art images as expressing happiness versus anger in the present study's neutral condition (that is, before reflecting on a prank that they had either performed or consumed). In contrast, perceived anger prevailed over happiness among higher DSAR scorers when pranks were salient. This pattern was specific to anger v. happiness (i.e., not evident for forced choices involving fear or sadness). Further, it did not manifest among self-identified prank victims, among whom higher DSAR predicted perceiving more sadness and fear (versus anger and happiness, respectively). Lastly, whereas DSAR predicted the predominance of anger over happiness among pranksters and observers when pranks were salient, their conscious approval of pranks tended to predict the opposite – that is, the predominance of happiness over anger.

Bartoszek and Cervone (2017) argued that their infer-the-artist's-emotion technique helps bypass self-report bias resulting from experimental demand or social desirability by prompting responses that are "automatic," "unintentional," and "uncontrollable" (p. 1389). Indeed, the correlations between implicit and self-report measures of specific emotions in their own research were weak, albeit positive and significant. But even if Study 2's implicit emotion measure offered a truer read of participants' experiences compared to conventional self-reports, its forced-choice format obscured whether the key shift from low to high prank-salience resulted from increased anger, decreased happiness, or both. Study 3 was designed to address this limitation and to flesh out further the link between DSAR and implicit, hostility-related dynamics operative in pranking contexts.

4. Study 3

Unlike Study 2, Study 3 focused solely on the first-person perspective. Thus, participants were asked to think of a favourite prank that they had done or would like to do. They completed the outcome measures – intended to assess implicit processes as in Study 2 – either before or after this prank salience induction.

Word fragment completion tasks – in which the respondent is presented with a series of letter strings and asked to fill in blanks to make words – have been used elsewhere to detect implicit aggression-related cognitions, e.g., if H_T is completed as "hit" versus a neutral word such as "hat" (see Anderson et al., 2003; for a broader overview, see Koopman et al. 2013). We constructed our own word fragments in Study 3 to represent core elements of Burris and Leitch's (2016, 2018) model of sadistic motivation, wherein willingness to harm a non-provocative other is in the service of elevating a downtrodden self, often signified by positive affective payoff. In so doing, we were mindful of Szameitat et al.'s (2022) discovery that naïve listeners perceived schadenfreude laughter – a behavioural indicator of sadistic gratification – as transmitting a subtext of dominance that has negative implications for its target. Thus, we had participants complete two intermixed sets of word fragments tapping: (1) hostility yoked with the desire to boost the self and (2) positive affect yoked with a sense of interpersonal connection. For comparison purposes, participants answered simple yes or no questions concerning whether they felt angry, "in charge," happy, and/or connected to others when reflecting on a prank.

Participants also responded to the Hand Test (Wagner, 1962; 1983) – a projective instrument that yields codable open-ended responses to drawings of hands in assorted poses. Among its various a priori coding outcomes is one "obtained by comparing those action tendencies which reflect a heightened readiness for aggressive overt behaviour against those which imply a strong sense of social cooperation or a fear of overt aggressive activity" (Bricklin et al., 1962, pp. 7-8). In other words, this *acting out* score is intended to tap the propensity for overt aggression versus its inhibition (see Clemence et al., 1999; Sivec & Hilsenroth, 1994; Suris et al., 2004). Participants also completed the DSAR index.

We included the "domineering" (hostility/boosting the self) and "conviviality" (positive affect/interpersonal connection) word fragment composites with the goal of determining whether differences in the predominance of implicit anger versus happiness as a function of DSAR scores and prank salience in Study 2 were likely attributable to shifts in anger, happiness, or both. Moreover, as a proxy for shifts in the propensity for overt aggression or its inhibition, we looked for differences in Hand Test acting out scores as a function of DSAR and prank salience. Finally, we assessed the degree of disconnect between participants' (implicit) domineering and conviviality scores and their (conscious) self-reports of similar experiences.

4.1. Method

4.1.1. Participants

With the promise of extra course credit, 203 Canadian psychology undergraduates were recruited for an online study focused on "links between how people solve puzzles (involving pictures and words) and the ways they sometimes use pranks as a form of self-expression." Thirty-eight participants were removed for failing to complete one or more study components, submitting indiscriminate responses on the DSAR index, or declining post-debriefing consent for use of their data. Preliminary analyses among the remaining 165 participants (of which 77.0% identified as women, 21.2% as men, and 1.8% as other) revealed no substantive differences in key patterns reported below as a function of gender, so this variable will not be discussed further.

4.1.2. Materials and procedure

Participants were randomly assigned to one of two prank-salience conditions. Those in the *high* *prank-salience* condition were asked first to think of a prank that really captured their attention – "*one that* ***you've done*** *OR a 'perfect' prank that* ***you haven't done but would want to do***" – and to provide a brief description of it and their reactions to it in a text box. If they declined, they were invited to explain why. High prank-salience participants who opted out (n = 15) were excluded from salience-related analyses. (In contrast, low prank-salience participants who opted out were retained, as their exposure to the prank task occurred after the implicit measures described below were completed.)

Following the reflection task, high prank-salience participants were presented with the ten Hand Test stimuli – that is, nine drawings of hands in different positions plus a blank image with instructions to imagine a hand – and prompted to type what they thought each hand might be doing (see Wagner 1962, 1983). Blind to condition and DSAR scores, the first and second authors independently coded all responses to each hand based on the 11 categories described in Bricklin et al. (1962), i.e., *Aggression*, *Directs*, *Fear*, *Affection*, *Communication*, *Dependence*, *Exhibitionism*, *Crippled*, *Active Impersonal*, *Passive Impersonal*, and *Description* (a few participants – unprompted – provided more than one response to some hands; see Table 2 for representative responses and descriptive statistics for each category). Initial agreement was 91.7%; disagreements were resolved via discussion. We took the sum of each participant's Aggression and Directs responses and subtracted the sum of their Fear, Affection, Communication, and Dependence responses as per Bricklin et al. to compute acting out scores (M = -.45; SD = 2.37).

Table 2. Hand Test coding categories, examples, and frequencies

Coding Category	**Examples**	**Frequency**
Aggression	pretending to punch someone; karate chop	242 (14.51%)
Directs	telling someone to stop; lower your volume	284 (17.03%)
Fear	flinch; trembling	16 (0.96%)
Affection	about to give a hug; fist bump	433 (25.96%)
Communication	rock, paper, scissors; ok sign with a hand	141 (8.45%)
Dependence	raising a hand in a classroom; doing bundagi (prayer)	11 (0.65%)
Exhibitionism	showing nails; shadow puppet	41 (2.46%)
Crippled	cramp; hand hurts	39 (2.34%)
Active Impersonal	someone writing; playing pool	289 (17.33%)
Passive Impersonal	hand dangling at your side; resting	40 (2.40%)
Description	normal; right hand	123 (7.37%)

Note. Percentages are based on 1659 codable responses plus 9 fails (e.g., "I don't know" or missing) and are rounded to the nearest hundredth.

High prank-salience participants were then presented with twenty-four word fragments and asked to fill in missing letters to make whatever word first occurred to them. Specifically, six target words tapping each of four implicit themes appeared in fixed random order: (1) *hostility* (HATE, ANGER, PISSED, MAD, RAGE, FURIOUS); (2) *boosting the self* (SUPERIOR, SMART, RESPECT, PRIDE, BOSS, MASTER); (3) *positive affect* (JOY, GRIN, GIGGLES, FUNNY, PLEASURE, STOKED); and (4) *interpersonal connection* (CONNECTED, BONDING, US, WE, UNION, INCLUDED). Three fragments were dropped due to extremely low target word completion rates (i.e., GRIN = 10%, UNION = 12%, and WE = 9%); the hit rate for all other fragments ranged from 24% to 71% (cf. Koopman et al. 2013). Each participant's "domineering" score was based on total hits for the hostility and boosting the self fragments divided by 12 ($M = .45$; $SD = .15$). Likewise, each participant's "conviviality" score was based on total hits for the happiness and interpersonal connection fragments divided by 9 ($M = .40$; $SD = .17$). The domineering and conviviality indices were uncorrelated overall, $r(163) = .04$, $p = .582$.

High prank-salience participants then answered four yes (= 1) or no (= 0) questions concerning their experience during the prank reflection task; open-ended explanations for their responses were also solicited but not analysed. Conscious analogues to the domineering and conviviality indices described above were computed by separately summing participants' responses to feeling *angry* and *in charge* ($M = .50$; $SD = .51$), and *happy* and *connected to other people* ($M = 1.40$; $SD = .79$), respectively.

Finally, high prank-salience participants completed the same brief measures of disrespect sensitivity ($M = 6.40$, $SD = 1.39$, $\alpha = 0.85$) and anger rumination ($M = 2.39$; $SD = 0.67$; $\alpha = 0.88$) described in Study 2. The scales were moderately positively correlated, $r(163) = .45$, $p < .001$; they were standardized and then averaged to create a single DSAR index ($M = .00$, $SD = .85$). DSAR scores did not differ significantly as a function of prank salience, response to the prank reflection task, or their interaction (all ps > .05).

A short demographic questionnaire concluded the materials. *Low prank-salience* participants completed the Hand Test and the word fragments before the prank reflection task; the order of materials was otherwise the same.

4.2. Results

4.2.1. Word fragments

For the domineering composite, neither the DSAR main effect nor the prank-salience main effect was significant: $\beta = .12$, $t(147) = 1.47$, $p = .143$, $R^2_{inc} = .014$, and $\beta = -.08$, $t(147) = .96$, $p = .338$, $R^2_{inc} = .006$, respectively. The DSAR x salience interaction was significant, however, $\beta = -.28$, $t(146) = 2.70$, $p = .008$, $R^2_{inc} = .046$: Higher DSAR predicted higher domineering scores in the low salience condition, $\beta = .34$, $t(146) = 2.97$, $p = .003$, whereas this relationship was negative but not significant in the high salience condition, $\beta = -.09$, $t(146) = -.83$, $p = .406$ (see Figure 2).

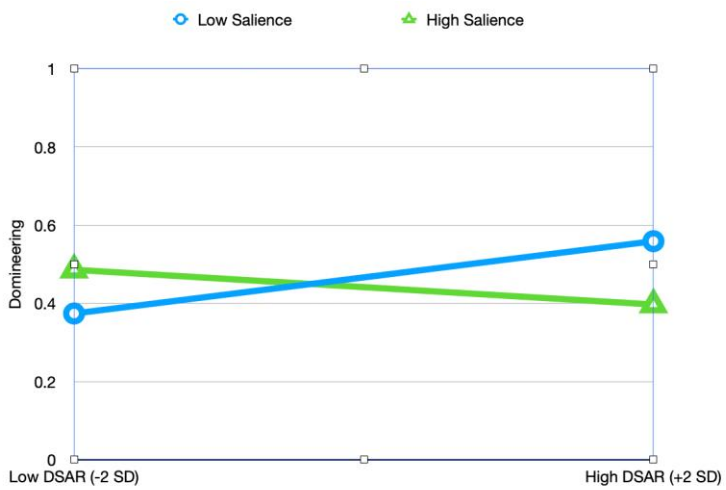

Figure 2. Domineering word fragment proportions as a function of prank salience and DSAR

For the conviviality composite, neither the DSAR main effect nor the salience main effect was significant: $\beta = -.15$, $t(147) = 1.79$, $p = .075$, $R^2_{inc} = .021$, and $\beta = .08$, $t(147) = .94$, $p = .350$, $R^2_{inc} = .006$, respectively. The DSAR x salience interaction was significant, however, $\beta = -.22$, $t(146) = -2.09$, $p = .038$, $R^2_{inc} = .028$: DSAR was not predictive of conviviality scores in the low salience condition, $\beta = .02$, $t(146) = .21$, $p = .834$, but higher DSAR predicted lower conviviality scores in the high salience condition, $\beta = -.31$, $t(146) = -2.76$, $p = .007$ (see Figure 3).

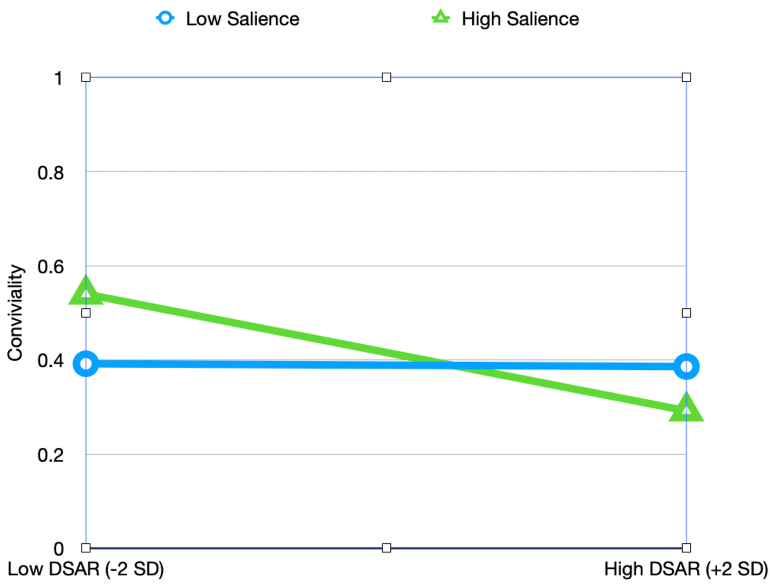

Figure 3. Conviviality word fragment proportions as a function of prank salience and DSAR

4.2.2. Acting out index (Hand Test)

For the acting out index of the Hand Test, neither the DSAR main effect nor the salience main effect was significant: $\beta = -.13$, $t(147) = 1.66$, $p = .099$, $R^2_{inc} = .018$, and $\beta = -.14$, $t(147) = 1.76$, $p = .080$, $R^2_{inc} = .020$, respectively. The DSAR x salience interaction was significant, however, $\beta = .26$, $t(146) = 2.47$, $p = .015$, $R^2_{inc} = .039$: Higher DSAR predicted lower acting out scores in the low salience condition, $\beta = -.33$, $t(146) = -2.94$, $p = .004$, whereas this relationship was positive but not significant in the high salience condition, $\beta = .06$, $t(146) = .54$, $p = .587$ (see Figure 4). Curiously, higher DSAR also predicted lower acting out scores among high salience participants who opted out of describing a prank, $r(13) = -.57$, $p = .025$.

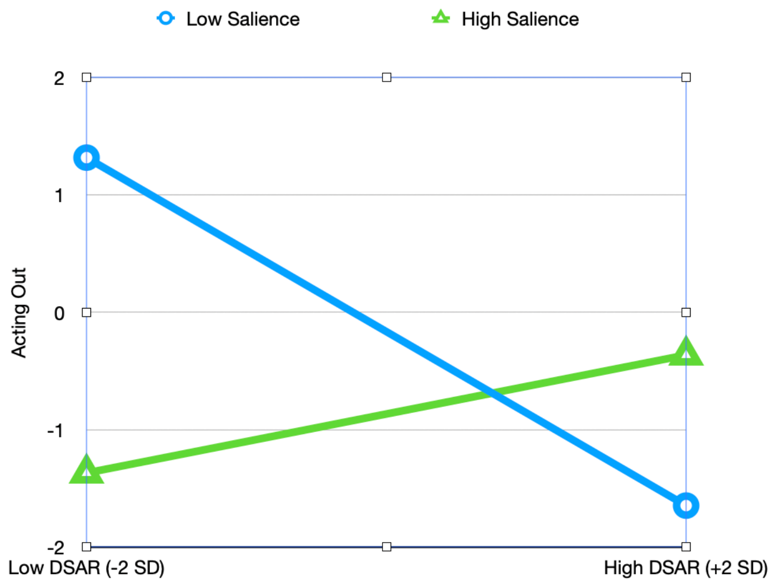

Figure 4. Hand Test acting out scores as a function of prank salience and DSAR

4.2.3. Conscious reactions to the prank task

Neither the conscious domineering nor the conscious conviviality index differed significantly as a function of the salience manipulation (both *ps* > .556); given their placement near the end of the study materials, these null results should not be surprising. The conscious domineering index was significantly positively correlated with DSAR, $r(148) = .19$, $p = .019$, but 98.7% of respondents *denied* feeling "angry" as they reflected on their chosen prank, and only 50% reported feeling "in control." The conscious conviviality index was not significantly correlated with DSAR, $r(148) = -.13$, $p = .124$; 84% of participants reported feeling "happy" and 68.7% reported feeling "connected to others" as they reflected on their chosen prank.

Conscious domineering was not significantly related to scores on the implicit domineering measure in either the high salience, $r(58) = -.07$, $p = .588$, or the low salience condition, $r(88) = .07$, $p = .541$. Likewise, conscious conviviality was not significantly related to scores on the implicit conviviality measure in either the high salience, $r(58) = .13$, $p = .309$, or the low salience condition, $r(88) = .01$, $p = .964$.

Thus, participants' self-reports concerning their prank reminiscences were typified by high levels of "joyful connection" to others and low levels of "hostile superiority" overall. Although admissions of the latter were slightly more common among higher DSAR scorers (cf. Study 1's zero-order DSAR/aggressive humour link), self-reported anger was almost wholly absent. Moreover, scores on both composite indices of conscious experience appeared to be disconnected from analogous nonconscious dynamics revealed by the salience-dependent results on the implicit measures. The import of these findings is best understood by integrating them with those of the first two studies – a task to which we now turn.

5. General discussion

5.1. Summary and implications

Our overarching goal was to investigate whether the same index (i.e., higher joint levels of disrespect sensitivity and anger rumination, or DSAR: see Burris & Leitch, 2018) of elevated risk for displaying overt markers congruent with sadistic motivation could also predict congruent implicit markers. Three humour-themed studies offered nuanced but consistent support for this possibility.

In default (control) conditions, higher DSAR predicted: (1) more word fragment completions tapping thoughts of hostility and dominance (Study 3); (2) more "happy" than "angry" interpretations of abstract art images (Study 2); and (3) lower scores on the acting out index of the projective Hand Test measure (Study 3), which suggests a *lower* propensity for overt aggression (see Bricklin et al., 1962). Although these findings – all based on implicit outcome measures – might appear contradictory at first, we suggest that they help explain why Study 1's modest zero-order relationship between DSAR and the aggressive humour style disappeared when controlling for overlap among the four humour styles measured. Simply, higher DSAR scorers may be generally averse to expressing their desire for hostile dominance directly through ostensibly humorous means due to fear of retaliation (cf. Fox et al., 2015; Plenty et al., 2014). Indeed, recall that higher DSAR predicted lower Hand Test acting out scores among (the admittedly small number of) high salience participants *who opted out of describing a favourite past or future prank* in Study 3. Instead, higher DSAR scorers' apparent default is to opt for over-the-top self-mockery (that is, self-defeating humour) to get laughs from others (Study 1).

Pranks seem to offer a transformative environment, however: Higher DSAR predicted more implicit anger relative to happiness among planners and consumers – but *not* victims – who had just reminisced about a past pranking experience (Study 2). Moreover, thinking about a favourite past or future prank seemed to relax higher DSAR scorers' self-restraint with respect to aggressive acting out (Hand Test) while also decreasing their implicit sense of conviviality (word fragments). Thus, although well over half of Study 3's pranksters insisted that thinking about a favoured prank made them feel happy and connected to other people, and virtually everyone denied feeling angry, implicit measures told a different story. Specifically, higher DSAR scores were linked to an implicit sense of "joyless disconnect" from other people when the prankster role was salient. Thus, congruent with reports that schadenfreude laughter sounds different from other types (Szameitat et al., 2022), the pranking experience seems to embody "laughing *at*" rather than "laughing *with*" someone, despite higher DSAR scorers' benign depictions of it.

5.2. Limitations

There are, of course, limitations to the present research. First, all three studies relied on samples of Canadian psychology undergraduates. Reflective of diversity, however, about 30% were born outside of Canada.

Second, because we wished to tap specific implicit themes in Burris and Leitch's (2016, 2018) model of sadistic motivation, we assembled our own set of word fragments rather than drawing from sets used to tap generic aggression (see Anderson et al., 2003). Nevertheless, 21 of our 24 face-valid fragments yielded acceptable hit rates (cf. Koopman et al., 2013), and both fragment composites produced theoretically meaningful results.

Third – and not surprising given its vintage – the Hand Test was designed for in-person use that allows the administrator to solicit additional responses, ask for clarification, and make behavioural observations (see Wagner, 1962; 1983). Nevertheless, Clemence (2007) suggested that the Hand Test is well-suited for picking up on immediate (versus long-term) interpersonal tendencies, especially when administered in conjunction with other instruments as we did in Study 3. Moreover, notwithstanding constraints imposed by online administration, our initial interrater agreement for the more than 1600 Hand Test responses was excellent (nearly 92%) and the acting out index (see Bricklin et al., 1962) appeared sensitive to our prank salience manipulation and yielded theoretically meaningful results.

Fourth, although the order of the prank reflection tasks used in Studies 2 and 3 was randomly assigned, participants self-selected a first-, second-, or third-person perspective when recalling a prank in Study 2 and they could opt out of describing a first-person prank in Study 3. Higher DSAR predicted the prominence of implicit anger versus happiness among Study 2's first- and third-person respondents when pranks were salient, whereas higher DSAR predicted sadness over anger and fear over happiness among second-person respondents (i.e., victims), however. These results supported our conceptual model with specificity.

5.3. Conclusion

Recall that pranking was chosen by Burris and Leitch (2018) as a suitable context for testing their model of sadistic motivation wherein willingness to harm a non-provocative other is in the service of elevating a downtrodden self and the magnitude of accompanying conscious positive affect is an indicator that the self is being elevated. Recall also our opening example, wherein pranksters retaliated against the person who denounced them for their tormenting handiwork. Our research, which featured the DSAR index as the primary predictor, helps decode those pranksters' actions: Embedding displaced aggression in an ostensibly mirthful context allowed its hostile roots to remain masked until the pranksters were called out as "horrible people." This rebuke blocked the pranksters' ultimate goal of elevating the self, and so their critic became a target of direct aggression.

We suggest that the masked nature of the hostility that fuels sadistic motivation in pranking contexts and elsewhere may pose the single greatest challenge for interventions intended to prevent harm to innocent victims. Recall that, despite multiple implicit indicators that suggested underlying hostility, hardly any pranksters reported feeling angry in the moment. Direct confrontation may therefore only generate confusion at best – and direct aggression at worst. An ultimately more effective, albeit arduous, approach may be to target the roots of sadistic motivation that drives at least some pranks – that is, feeling disrespected and having a hard time letting go of past grievances. The agenda, then, is to help those most at risk of experiencing sadistic motivation to find a way to lift themselves up without trampling upon others.

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