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Citation for published version (APA):

van Teffelen, M. W., Vancleef, L. M. G., & Lobbestael, J. (2021). Provoked Aggression, Psychopathy and Narcissism: Comparing the Impact of Social Exclusion and Insult. *Psychology of Violence*, *11*(1), 82-91. https://doi.org/10.1037/vio0000340

Document status and date:
Published: 01/01/2021

DOI:
10.1037/vio0000340

Document Version:
Publisher's PDF, also known as Version of record

Document license:
Taverne

Please check the document version of this publication:

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Download date: 20 Apr. 2024

AMERICAN PSYCHOLOGICAL ASSOCIATION

Psychology of Violence

© 2020 American Psychological Association
ISSN: 2152-0828

2021, Vol. 11, No. 1, 82–91
http://dx.doi.org/10.1037/vio0000340

Provoked Aggression, Psychopathy and Narcissism: Comparing the Impact of Social Exclusion and Insult

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Objective: Numerous provocations cause aggressive behavior. However, different provocation procedures are rarely directly compared. This study examined whether two different provocations (i.e., social exclusion and insult) were equally effective in terms of producing aggressive behavior, negative affective change and threat perception. As psychopathic and narcissistic personality traits may moderate provoked aggression, the current study also explored the differential impact of psychopathic and narcissistic traits on these variables. ***Method:*** A male (N = 94) community sample was randomly allocated to receive negative social belonging feedback (i.e., social exclusion) or negative intelligence feedback (i.e., insult) by a confederate. Aggressive behavior was measured using a competitive reaction time task after provocation. Here, aggressive behavior before first provocation (i.e., noise blast) by the opponent reflected unprovoked aggression, whereas aggressive behavior after first provocation reflected provoked aggression. Negative affect was measured pre- and postprovocation, and threat perception was measured postprovocation. ***Results:*** Results showed that both provocations were equally effective in producing aggressive behavior, negative affective change, and threat perception. Explorative analysis revealed that increased threat perception suppresses initial aggressive responding under the condition of agentic threat in narcissistic people. Also, decreased negative affective change during provocation suppressed aggressive responding in people with psychopathic traits. ***Conclusions:*** The findings suggest that both provocations can interchangeably be implemented to study provoked aggression. Emotional blunting may protect against detrimental provocation effects in people with psychopathic traits. Under conditions of agentic threat narcissistic traits related to withholding aggressive responding after first provocation, lashing out when a new threat emerges.

Keywords: aggression, provocation, psychopathy, narcissism

Supplemental materials: http://dx.doi.org/10.1037/vio0000340.supp

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To prevent aggressive behavior and its destructive consequences, it is vitally important to identify and comprehend the effects of its situational antecedents. Provocations that predict aggressive behavior are, for example, electric shocks (Taylor, 1967), aversive noise blasts (Bushman, 1995), social exclusion (Twenge, Baumeister, Tice, & Stucke, 2001), and poor evaluation (Bushman & Baumeister, 1998). Although these provocations predict aggression, knowledge on potential differences between diverse provocation techniques in eliciting aggression and other outcome measures is still limited. Two available studies found that guided imagination of a fictive anger-evoking event resulted in increased self-reported anger, compared to autobiographical recall of an anger-evoking event (Jallais & Gilet, 2010; Zhang, Yu, & Barrett, 2014). Another study compared the impact of four provocation methods (i.e., an anger-evoking film clip, autobiographical recall of an anger-evoking event, punishment, and harassment) and observed increased physiological responding after autobiographical recall and harassment, but no significant difference in self-reported anger across the four methods (Lobbestael, Arntz, & Wiers, 2008). Yet, between-domain (e.g., physical vs. psychological provocation), or even within-domain (e.g., experiencing shocks vs. loud noises), head-to-head comparisons of provocations on a behavioral level are sparse. Consequently, the relative strength of previously observed provocation effects on aggressive behavior is unclear, limiting (meta-analytical) comparability. Also, provocation methods may operate through different (e.g., emotional or cognitive) pathways. In the present work, we will directly compare provocation methods on a behavioral, emotional and cognitive level.

The effects of provocation on aggressive behavior are often studied in the context of personality factors such as psychopathy and narcissism, because these factors predispose a person to behave aggressively (Hyatt, Zeichner, & Miller, 2019; Rasmussen, 2016; Reidy, Shelley-Tremblay, & Lilienfeld, 2011). On the one hand, psychopathy is characterized by affective deficiency. Studies generally find two psychopathy factors (Harpur, Hare, & Hakstian, 1989): one factor representing a personality dimension (i.e., egocentricity, lack of empathy, lack of guilt, and impaired affective processing) and the other factor representing a behavioral dimen-

This article was published Online First July 13, 2020.

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sion (i.e., unstable and antisocial lifestyle or social deviance). On the other hand, narcissistic people tend to harbor a cognitive-affective preoccupation with the self, including grandiose self-expectations, superiority and entitlement (Emmons, 1987; Raskin & Hall, 1979).

Evidence of the impact of psychopathic traits on provoked aggression is mixed. Studies in forensic populations (Williamson, Hare, & Wong, 1987) roughly observed no or negative relationships between psychopathy on provoked aggression, whereas studies in nonforensic populations (Lotze, Veit, Anders, & Birbaumer, 2007) demonstrated a stronger positive relationship between psychopathic traits and provoked aggression. For example, one study showed that psychopathic traits and aggression were positively related, but only after participants were provoked twice in a row (Jones & Paulhus, 2010). This has led some authors to propose that dysregulated affect in people with psychopathic traits, or "emotional blunting," may negatively attenuate the relationship between psychopathic traits and provoked aggression (i.e., mediation; Reidy et al., 2011).

In contrast, narcissistic traits were consistently found predictive of provoked aggression, for example, after receiving poor evaluation (Bushman & Baumeister, 1998), social exclusion (Twenge & Campbell, 2003), or noise blasts (Reidy, Zeichner, Foster, & Martinez, 2008). One theory that can account for the narcissism–aggression relationship is the threatened egotism theory. This states that people with an inflated sense of self respond with retaliation after provocation to restore self-esteem (Baumeister, Smart, & Boden, 1996; Rasmussen, 2016). Moreover, there is reason to believe that narcissistic people may respond more aggressively to threats in the agentic domain (i.e., personal achievements and power) compared to threats in the communal domain (i.e., social acceptance; Konrath, Bushman, & Campbell, 2006). For example, narcissistic people have been shown to be less concerned about social relationships (Raskin, Novacek, & Hogan, 1991) and are willing to sacrifice social acceptance to gain power (Park, Ferrero, Colvin, & Carney, 2013). Hence, narcissistic traits may predispose to perceiving a provocation as threatening, and especially so under conditions of agentic threat when compared to a communal threat. Following the threatened egotism theory increased threat perception would then lead to aggressive responding (i.e., moderated mediation).

Taken together, studies sparsely investigated the differential impact of provocation methods on aggressive behavior and their relationship with psychopathic and narcissistic personality traits. The primary goal of current study therefore is to extend on earlier findings by comparing two provocation procedures. To enable comparability, we selected a social exclusion and an insult procedure from the literature that were matched on procedural similarity. As we expected, the two provocations to have comparable outcomes, we opted to use a Bayesian statistical approach. A Bayesian approach has the advantage that both a null-hypothesis and an alternative hypothesis can be tested. The secondary goal was to explore relationships between psychopathic traits, narcissistic traits, and aggression. Because previous studies investigated psychopathic and narcissistic traits in relative isolation of each other, both traits were statistically residualized to assure personality-trait specific conclusions. Specifically, we hypothesized as follows:

Hypothesis 1: Social exclusion and insult will be equal in terms of our primary outcome, that is, aggressive behavior, and secondary outcomes, that is, change in negative affect and perceived threat.

Hypothesis 2: Psychopathic traits are negatively associated with negative affective responding in response to threat and, in turn, are negatively associated with aggressive responding.

Hypothesis 3: Narcissistic traits are positively associated with perceived threat, especially under conditions of agentic threat and, in turn, are positively associated with aggressive responding (i.e., moderated mediation).

Method

Participants

Participants were recruited through the use of flyers on university campus. Inclusion criteria were age between 18 and 60 and male gender. Advanced-level psychology students were excluded owing to expected familiarity with the study's procedures and knowledge of the study's topic. Women were excluded to prevent floor effects because psychopathic and narcissistic traits are more prevalent in men (Coid & Yang, 2011; Grijalva et al., 2015). The main hypothesis was tested using Bayesian statistical analysis. Therefore, traditional power analysis was not possible. In Bayesian statistical analysis, "one uses an entire distribution of parameters instead of a single point value for the effect size" (Kruschke, 2013). Specifically, precision planning in Bayesian statistical analysis uses posterior distributions of previous data. As such distribution is absent at present, a default prior distribution was chosen. For more information on this, see the article by Kruschke and Liddell (2018). In total, 94 people entered the study. To give an indication of the relative precision of the present data set in frequentist statistical terms, a group size of $N_1 = N_2 = 47$ would have enabled the detection of a between subjects difference in competitive reaction time task (CRTT) response of 0.36 with 80% power, using a standard deviation of 0.63 (Bobadilla, Metze, & Taylor, 2013) and $\alpha = .05$. Before conducting data analysis, we excluded people who did not believe the provocation procedures ($n = 8$). The final sample thus consisted of $N = 86$ people with a mean age of 28 years, of who the majority were students (76%). Sample characteristics are shown in Table 1. Analyses showed that the groups did not significantly differ in age, nationality, education level, and current work situation.

Experimental Provocations

Social exclusion: Negative social belonging feedback. In this condition, participants were told that we were interested in testing different aspects of social interaction and that they were to interact with a second participant, who was in fact a female confederate. In this interaction task, the participant and the confederate were set in separate rooms and received the instruction that they were to engage in interaction by speaking to each other through a microphone. During the task one of them would take on the role of "speaker," whereas the other would take on the role of "evaluator." We told the participants that these roles were assigned to them randomly, whereas, in reality, participants always received

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Table 1
Sample Characteristics

Demographic variable	Condition: Social exclusion (n = 42)	Condition: Insult (n = 44)	Statistical group difference
Age in years, *M* (*SD*)	26.21 (11.31)	29.68 (13.00)	$Z = 1.34, p = .182$
Nationality, *n* (%)			$\chi^2 = 11.34, p = .331$
Dutch	25 (29)	25 (29)	
German	10 (12)	16 (19)	
Other European	4 (5)	2 (2)	
Non-European	3 (3)	1 (1)	
Education, *n* (%)			$\chi^2 = 2.56, p = .465$
Low	0 (0)	0 (0)	
Middle	27 (31)	29 (34)	
High	10 (12)	11 (13)	
Work situation, *n* (%)			$\chi^2 = 4.83, p = .437$
Employed	5 (6)	10 (12)	
Student	31 (36)	29 (34)	
Unemployed	6 (7)	5 (6)	

the role of speaker. When the task started, the evaluator (i.e., the confederate) read aloud questions from the Relationship Closeness Induction Task (Sedikides, Campbell, Reader, & Elliot, 1999). The sequence of questions started out with general questions (e.g., "What is your first name?" and "How old are you?") and gradually became more personal (e.g., "Describe the last time you felt lonely" and "If you could change one thing about yourself, what would that be?"). The speaker (i.e., the participant) answered these questions. Each minute the evaluator then supposedly rated on a scale from 1 (*not at all*) to 7 (*very much*) to what degree she would like to get to know the speaker. This rating was then projected as bogus feedback on the participant's computer screen with seven colored squares. Squares lit up red or green (i.e., deeper red for lower ratings and brighter green for higher ratings) when the evaluator provided a rating. To induce social exclusion, participants were presented with five ratings, one rating per minute in the sequence: 7-5-3-3-2. Thus, by the end of the task the participants were under the impression that the confederate did not want to get to know them. This procedure lasted 6 min and is similar to that used in other studies that were designed to elicit social exclusion (Buckley, Winkel, & Leary, 2004). This procedure has been shown to increase negative affect with a standardized effect size of $z = 0.60$ (as reported in Blackhart, Nelson, Knowles, & Baumeister, 2009).

Insult: Negative intelligence feedback. In this condition, participants were asked to freely estimate their IQ before engaging in a frustrating "Trivial Pursuit" task, where participants were asked to answer forced choice questions of general knowledge (Lobbestael et al., 2008). The participants were informed that research shows that these general knowledge questions form an estimation of the participants' IQ. The task took about 20 min, and at four predefined timepoints a female lab-assistant provided the participant with negative verbal comments such as "You should try harder" or "This way you will not get a good estimation." During the task, the experimenter left the room to provide the student-assistant the opportunity to practice her skills in guiding the task. After the questionnaire, participants received standardized bogus feedback indicating that they had only achieved an average score on the test and that such a score is unusual and unacceptable for a college student. If participants were nonstudents, the bogus feedback indicated that they had only achieved an average score on the test and that this score was lower than they predicted. Research showed that that this procedure significantly increases anger (Gilbert & Thompson, 1999; Jäncke, 1996; Lobbestael et al., 2008).

Aggression

Aggressive behavior was measured using a CRTT (Warburton & Bushman, 2019). In this task, participants engaged in a game against a computer of whom they thought it was another participant. The goal was to click the mouse button as fast as possible on a rectangle when it changed from yellow to red. The time it took to turn from yellow to red randomly varied between 1,000 and 2,000 ms. The player that supposedly reacted fastest won the trial. In reality, the game was programmed to let the player win in approximately 50% of trials, in a total of 25 trials (see Table S1 in the online supplemental materials for the preset trial specifications of intensity, duration, and win/loss). The participant that lost received the unpleasant tone. The duration and loudness of this tone was determined by the other player before each trial, with a maximum of 100 dB. The registered loudness and duration of tones served as a quantitative index of physical aggression (Giancola & Parrott, 2008). At present, there is no consensus on how to score the CRTT. To avoid "cherry picking," we followed the scoring procedure described by Brugman et al. (2015). First, principal components analysis (PCA) with orthogonal rotation was run to determine the underlying data structure. As the number CRTT trials variables high (i.e., 2 × 25) and sample size was rather small, we decided to cluster CRTT trials based on three characteristics: response type (intensity/duration), preceding experience (win/loss), and phase (before/after receiving a first noise blast by the opponent). This resulted in eight items (e.g., trials won before first provocation—intensity) who were entered in the PCA. Based on Scree-plot and Kaiser criterion (i.e., Eigenvalues > 1.00) inspection, the PCA resulted in two factors: unprovoked aggression (i.e., intensity/duration on trials before receiving a first noise blast from the opponent) and provoked aggression (i.e., intensity/duration on trials after receiving a first noise blast from the

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opponent). This factor structure converges with earlier findings (Brugman et al., 2015). The unprovoked and provoked aggression factor scores were used in the analysis.

Self-Report Measurements

Psychopathic traits. Self-reported psychopathic traits were assessed with the Dutch version of the 154-item Psychopathy Personality Inventory–Revised (Lilienfeld & Widows, 2005). Items are scored on a 4-point Likert scale ranging from 1 (*not true*) to 4 (*true*). Internal consistency of the scale is good—in our sample, $\alpha = .84$ (Kimonis, Branch, Hagman, Graham, & Miller, 2013; Sörman et al., 2016). Convergent, discriminant, concurrent and construct validity have been demonstrated (Edens & McDermott, 2010; Hughes, Stout, & Dolan, 2013; Sörman et al., 2016; Uzieblo, Verschuere, Van den Bussche, & Crombez, 2010).

Narcissistic traits. Self-reported narcissistic traits were measured with the Dutch version of the Narcissistic Personality Inventory (Raskin & Hall, 1979), an index of grandiose narcissism. We used a 37-item multiple choice version (Emmons, 1987). Items were scored on a 7-point Likert scale ranging from 1 (*I do not at all agree*) to 7 (*I entirely agree*). Although high internal consistency levels are generally found, in our sample, $\alpha = .87$, evidence of its construct validity is mixed (Ackerman et al., 2011; Miller, Lynam, & Campbell, 2016). Nonetheless, strong criterion validity has been demonstrated (Miller et al., 2014).

Negative affect. Self-reported negative affect was measured using the Dutch version of the Negative Affect (NA) scale of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). The 10-item (i.e., scared, afraid, upset, distressed, jittery, nervous, ashamed, guilty, irritable, hostile) NA scale of the Positive and Negative Affect Schedule is scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). Good internal consistency—in our sample, $\alpha = .83$—(Leue & Lange, 2011; Ostir, Smith, Smith, & Ottenbacher, 2005; Watson et al., 1988), and construct, convergent, and discriminant validity (Crawford & Henry, 2004; Watson et al., 1988) have been demonstrated.

Threat perception. Self-reported threat perception was assessed using the Dutch version of the Perceived Ego-Threat Questionnaire (Bushman & Baumeister, 1998). This questionnaire assesses whether the participants found the negative intelligence or negative social belonging feedback they received from the confederate during the provocation procedures malicious, threatening, and unfair. Questions were assessed on a 100-mm Visual Analogue Scale, anchored by word descriptors at each end. The three items ranged from malicious to harmless, threatening to safe, and unfair to fair. All items were reverse-scored and summed to indicate the level of threat perception. The total scale was found to be internally consistent—$\alpha = .78$—in the present sample.

Procedure

The Ethical Review Committee Psychology and Neuroscience at Maastricht University provided ethical approval to carry out the study (ECP-145 07_10_2014). At sign-up, people were randomly assigned to either social exclusion or insult. When participants arrived at the lab, the experimental procedure was explained, followed by agreement of informed consent. The procedural explanation depended on the relevant condition. After agreeing upon participation, demographic variables and negative affect were assessed. Next, participants engaged in one of the two provocation procedures, followed by measurement of NA and threat perception. Then, participants played the noise blasting game (CRTT) to measure aggression. The participants were told that the current study was being run in several labs spread across universities. In addition, they were told that they would play the game against an unknown player on our network. To support the believability of our manipulation, we told the participants that every experimenter at the different labs was tracking their participants' progress on a mobile phone application, so that every experimenter had an online overview of available participants. This (bogus) application was shown to the participants. Lastly, psychopathic and narcissistic personality traits were assessed (in random order). Afterward, participants were extensively debriefed about the nature of the experiment. In addition, an exit-interview was performed. Using open-ended questions, the participants were asked what they thought the experiment was about, what they thought of the student-assistant/other participant (i.e., played by the same confederate), and what they thought of their opponent during the reaction time game (i.e., CRTT). Responses were scored by the interviewer on a 3-point scale (i.e., whether participants believed, doubted, or did not believe the manipulations). People were excluded from data analysis when they indicated that they totally did not believe the manipulations (e.g., by indicating that the CRTT opponent was a computer, or by indicating that the assistant/confederate was playing a role). Lastly, participants were thanked for their participation, and they received a gift voucher or course credit if they were students. One experimental session lasted 75 min on average.

Statistical Analysis

SPSS Version 23 (IBM Corp, 2015) was used for inferential statistical analysis. JASP (JASP Team, 2018) was used for Bayesian statistical analysis, as we had no a priori expectations on group differences between our social exclusion and insult conditions. By using Bayesian statistics for this part of the analysis, we wanted to examine whether the data fit to a null hypothesis (i.e., no group difference) or to an alternative hypothesis (i.e., a group difference). First, a Wilcoxon signed-ranks test was run to examine change in negative affect from pre- to postprovocation. Second, Bayes' factors were calculated to examine group means in terms of the primary outcomes, that is, unprovoked and provoked aggression, and the secondary outcomes, that is, change in negative affect and threat perception. The use of Bayes factors provides an alternative way to hypothesis testing. In Bayesian statistical reasoning, one starts with a prior degree of belief in the possibility that (for example) there is a relationship between provoked aggression and psychopathic/narcissistic traits. Then, we collect data and adjust this prior degree of belief to the posterior degree of belief. A Bayes factor (BF_{10}) is an index for the degree that the prior belief is reallocated to the posterior belief (Kruschke & Liddell,

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2018). Bayes' factors were interpreted using interpretation categories (i.e., to determine the strength of a Bayes' factor) according to Jeffreys (1961).[1] Third, relationships between the outcome variables (i.e., unprovoked aggression, provoked aggression, change in negative affect, and threat perception) and the independent variables (i.e., psychopathic and narcissistic traits) were explored. Pearson's correlation analysis was applied to test the bivariate relationships between unprovoked and provoked aggression, change in negative affect, threat perception, psychopathic traits, and narcissistic traits. Multiple linear regression analysis was run to explore the unique predictive value of independent variables psychopathic and narcissistic traits (i.e., residualized) on dependent variables unprovoked and provoked aggression, change in negative affect, and threat perception. All predictors were simultaneously entered in the model. Last, (moderated)mediation models were tested using the PROCESS Macro Version 3.4 for SPSS (Hayes, 2013). In the psychopathy mediation model psychopathic traits were entered as independent variable, change in negative affect as mediator variable, and provoked aggression as independent variable. In the narcissism moderated-mediation model narcissistic traits were entered as independent variable, perceived threat as mediator, condition as moderator (between narcissistic traits and perceived threat), and unprovoked aggression as dependent variable.

Results

For means and standard deviations of study variables, see Table 2. All variables were normally distributed, except for the positively skewed negative affect indices (i.e., the value 0 is outside the +/ −2 × standard error interval of the skewness value). Psychopathic and narcissistic trait scores resembled those of other studies using nonclinical male samples (Lobbestael, Baumeister, Fiebig, & Eckel, 2014; Uzieblo et al., 2010). Table 2 shows that there were no group differences at baseline regarding psychopathy, narcissism, and NA scores, indicating successful random group allocation.

First, a Wilcoxon signed-ranks test was run to test the prediction that negative affect increases after provocation. The test was run on baseline and post-provocation scores averaged across condition and showed that negative affect increased from pre- ($M = 13.48$, $SD = 4.42$) to post- provocation ($M = 14.52$, $SD = 5.49$), $Z = 2.09$, $p = .037$, $d = 0.46$. These results suggest that our provocation procedures increased negative affect.

Then, Bayesian statistical analysis was performed to examine differences or equality between social exclusion and insult, in terms of (un)provoked aggression, change in negative affect, and threat perception (Hypothesis 1). The null hypothesis (i.e., no difference) was tested against the alternative hypothesis that there was a difference in terms of these variables. In the analyses with provoked aggression as (dependent) variable, seven people were suspicious *after* they first received a noise blast from the opponent and thus removed from all further analyses. Bayes' factors (Table 2) indicate moderate evidence in favor of the null hypothesis. More precisely, these findings indicate that for unprovoked aggression, provoked aggression, negative affective change, and threat perception, the data were respectively $1/BF_{10} = 4.16$, 4.15, 4.35, and 1.81 times more likely to have occurred under the null hypothesis than under the alternative hypothesis. In other words, there was no difference between social exclusion and insult in terms of unprovoked and provoked aggression, negative affective change, and threat perception.

Next, Pearson's correlation analyses were run on all study variables (Table 3). These bivariate analyses were explorative in nature. The results showed a positive association between provoked aggression and negative affective change ($p = .015$) only, whereas all other correlations between the diverse outcome variables were nonsignificant ($ps > .056$). The data further revealed a positive relationship between psychopathy and narcissism ($p < .001$). The results also showed that narcissism was linked with increased threat perception ($p = .020$). All other relations were found to be nonsignificant ($ps > .060$).

Then, multiple linear regression analyses were run to closer inspect the unique (i.e., residualized) multivariate relationships between residualized psychopathic and narcissistic traits and unprovoked aggression, provoked aggression, change in negative affect, and threat perception. Results are shown in Table 4. The findings suggest that residualized psychopathic traits were unrelated to aggression, change in negative affect, and threat perception.[2] The results also show that residualized narcissistic personality traits were positively related to provoked aggression, but unrelated to unprovoked aggression, change in negative affect, and threat perception. Closer inspection of multicollinearity diagnostics reveals a variance inflation factor of 1.47, not exceeding a critical threshold of 10 (Hair, Anderson, Tatham, & Black, 1995). In short, residualized narcissistic traits were positively related to aggressive responding after provocation.

Following this, a multiple regression model was run to test the hypothesis that psychopathic traits are negatively associated with negative affective responding in response to threat and, in turn, are negatively associated with aggressive responding (i.e., mediation model; Hypothesis 2). The results showed that psychopathic traits negatively related to negative affective change from pre- to post-provocation (i.e., $t = -2.37$, $p = .020$) and that negative affective change positively related to provoked aggression (i.e., $t = 2.68$, $p = .009$). The direct relationship between psychopathic traits and provoked aggression was not significant ($p = .738$). The results suggest that decreased negative affective change suppressed aggressive responding in people with psychopathic traits.

Last, a multiple regression model was run to test the hypothesis that narcissistic traits are positively associated with perceived threat, especially under conditions of agentic threat and, in turn, are positively associated with aggressive responding (i.e., moderated mediation; Hypothesis 3). The results showed that there was no meaningful interaction between narcissistic traits and condition in terms of perceived threat ($p = .092$). Closer inspection of simple

[1] Bayes' Factor (BF_{10}) categories, where H_1 = the alternative hypothesis and H_0 = the null hypothesis are as follows. $BF_{10} > 100$: extreme evidence for H_1. $BF_{10} = 30–100$: very strong evidence for H_1. $BF_{10} = 10–30$: strong evidence for H_1. $BF_{10} = 3–10$: moderate evidence for H_1. $BF_{10} = 1–3$: anecdotal evidence for H_1. $BF_{10} = 1$: no evidence. $BF_{10} > 1/3–1$ anecdotal evidence for H_0. $BF_{10} = 1/3–1/10$: moderate evidence for H_0. $BF_{10} = 1/10–1/30$: strong evidence for H_0. $BF_{10} = 1/30–1/100$: very strong evidence for H_0. $BF_{10} < 1/100$: extreme evidence for H_0.

[2] For completeness, when people who were suspicious of the CRTT manipulation were retained in the model psychopathic traits did negatively predict provoked aggression at $\beta = 0.27$, $p = .033$.

Table 2
Study Means, Standard Deviations and Difference Testing

Variable	Social exclusion (n = 42) M (SD)	Insult (n = 44) M (SD)	Difference test $t(p)/Z(p)$	Bayes' factor BF_{10}
Unprovoked aggression	−0.02 (1.11)	0.04 (0.92)	−0.38 (.702)	0.24
Provoked aggression[a]	0.02 (1.02)	0.08 (1.07)	−0.27 (.787)	0.24
Negative affect				
Baseline[b]	14.43 (5.59)	12.57 (2.65)	−1.54 (.124)	1.24
Post-manipulation[b]	15.45 (6.54)	13.64 (4.14)	−1.01 (.311)	0.64
Change[b]	1.02 (3.74)	1.07 (3.32)	.336 (.737)	0.23
Threat perception	39.92 (18.84)	46.67 (24.54)	−1.43 (.157)	0.55
Psychopathy	297.86 (28.60)	298.59 (31.58)	−0.11 (.910)	0.23
Narcissism	148.31 (22.32)	151.53 (23.62)	−0.65 (.519)	0.27

Note. BF_{10} = Bayes factor.
[a] n = 7 cases were excluded who did not believe the aggression manipulation. [b] These variables were not normally distributed.

effects revealed a positive relationship between narcissistic traits and perceived threat in the insult condition (i.e., t = 2.86, p = .005), whereas there was no significant relationship between narcissistic traits and perceived threat in the social exclusion condition (i.e., t = 0.31, p = .756). In turn, perceived threat related negatively to unprovoked aggression (i.e., t = −2.07, p = .042). The direct relationship between narcissistic traits and unprovoked aggression was not significant (p = .433). The findings suggest that perceived threat in the insult condition suppresses provoked aggressive responding *before* being provoked during CRTT in individuals with narcissistic traits.

Discussion

This study compared social exclusion and insult provocations in terms of aggressive behavior, change in negative affect, and threat perception in a male community sample. We predicted comparable effects on all variables for both provocations. Moreover, we explored the impact of psychopathic and narcissistic traits on these variables.

The main findings are in line with our prediction that social exclusion and insult are equal in terms of producing aggression (Hypothesis 1). This converges with earlier observations (Berkowitz, 1960; Bushman & Baumeister, 1998; Twenge et al., 2001; Twenge & Campbell, 2003). Interestingly, the findings also show that social exclusion and insult produce negative affect and threat perception—our secondary outcome measures. This converges with earlier findings showing that social exclusion and insult predict negative affect (Blackhart et al., 2009; Buckley et al., 2004; Gilbert & Thompson, 1999; Jäncke, 1996; Lobbestael et al., 2008) and threat perception (Bushman & Baumeister, 1998). One explanation for social exclusion and insult to equally produce aggressive behavior therefore is that they impact on similar mediators: the levels of negative affective state and perceived threat. Indeed, the present findings show that social exclusion and insult are equal in producing negative affect and threat perception. This is in line with the social information processing model of aggression that predicts aggressive behavior when other people's intentions are attributed as hostile (Crick & Dodge, 1994; Epps & Kendall, 1995) or when people are in a negative affective state (Lemerise & Arsenio, 2000). Despite the distinctive nature of both provocation methods (i.e., negative social belonging vs. negative intelligence feedback), they thus appear to equally produce aggression, negative affect, and perceived threat. This implies that future research may interchangeably implement any of the two methods to study psychologically provoked aggression.

The findings further reveal no bivariate or multivariate associations between psychopathic traits and aggression, negative affect, and threat perception. Moreover, it was observed that negative affective change during social inclusion and insult suppressed aggressive responding curing CRTT (Hypothesis 2). The findings on the relationship between psychopathic traits and aggressive behavior converge with other studies (Bobadilla et al., 2013; Jones & Paulhus, 2010, Provocation 1). The present findings diverge with two other studies. A first study reported a positive relation-

Table 3
Pearson's Correlations Aggression, Negative Affect Change, Ego-Threat and Psychopathic and Narcissistic Traits

Variable	UA	PA[a]	NA change[b]	Threat perception	Psychopathy	Narcissism
UA	1					
PA[a]	.02	1				
NA change[b]	−.09	.29**	1			
Threat perception	−.20	−.01	.17	1		
Psychopathy	.08	−.04	−.20	.19	1	
Narcissism	.03	.18	−.07	.25*	.53***	1

Note. NA = negative affect; UA = unprovoked aggression; PA = provoked aggression.
[a] Seven cases excluded as they did not believe the aggression manipulation. [b] Spearman's ranked correlations were calculated due to nonnormality.
* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 4
Multiple Linear Regression of Aggression, Negative Affect Change and Threat Perception on Psychopathic and Narcissistic Traits

Dependent variable	B	*SE*	β	*p*
Unprovoked aggression $R^2 = .01$, $F(2, 83)$, $p = .748$				
Psychopathic traits	.00	.00	.09	.478
Narcissistic traits	−.00	.01	−.02	.885
Provoked aggression[a] $R^2 = .07$, $F(2, 76)$, $p = .078$				
Psychopathic traits	−.01	.01	−.21	.116
Narcissistic traits	.01	.01	.31*	.026
Negative affect change $R^2 = .04$, $F(2, 83)$, $p = .158$				
Psychopathic traits	−.03	.02	−.23	.070
Narcissistic traits	.01	.02	.05	.671
Threat perception $R^2 = .07$, $F(2, 83)$, $p = .057$				
Psychopathic traits	.06	.09	.07	.553
Narcissistic traits	.20	.12	.21	.095

[a] Seven extra cases excluded as they did not believe the aggression manipulation; when cases are included psychopathic traits significantly predict provoked aggression.
* $p < .05$. ** $p < .01$.

ship between psychopathy and provoked aggressive behavior after experiencing a combination of negative essay feedback and noise blasts (Jones & Paulhus, 2010, Provocation 2). A second study reported a positive relationship between psychopathic traits and aggressive behavior after insult (Denson, White, & Warburton, 2009). One possible explanation for the current pattern of findings is that psychopathic traits predispose to emotional blunting for provocation. A first notion that supports this is that psychopathy theoretically relates to emotional blunting because deficient affective responding is one of the core criteria of psychopathy (Harpur et al., 1989). Emotional blunting is therefore inherent to psychopathy. A second notion that supports this is that psychopathic patients demonstrate impairments in physiological responding (e.g., P300 amplitude and P300 latency) to aversive stimuli (Gao & Raine, 2009). When we calculated the bivariate correlation between the fearless dominance factor (i.e., a factor indicative of emotional blunting) and negative affective change, we found that fearless dominance was negatively correlated to negative affective change, $r = -.30$, $p = .004$. Importantly, the relationship between overall psychopathic traits and negative affective change in the present study just failed to reach significance, potentially indicating a power problem.

Results on the impact of narcissistic traits reveal a unique predisposition to respond with aggressive behavior, but only when provoked twice (e.g., after social exclusion *and* receiving a noise blast during CRTT) and when psychopathic traits were controlled for. Our findings further indicate that narcissistic traits predispose to perceive both provocations as threatening, although this effect became (marginally) nonsignificant when psychopathic traits were controlled for. In line with our predictions we showed that narcissistic traits related positively to perceiving an insult (i.e., an agentic threat) as more threatening than social exclusion (i.e., a communal threat; Hypothesis 3). In contrast, we observed that threat perception suppressed aggressive responding prior to being provoked during CRTT. We hereby partly replicated previous work observing that narcissism positively predicted aggressive responding after social exclusion or insult (Bushman & Baumeister, 1998; Ferriday, Vartanian, & Mandel, 2011; Martinez, Zeichner, Reidy, & Miller, 2008; Twenge & Campbell, 2003), or when psychopathic traits were controlled for (Jones & Paulhus, 2010). Also, we replicated that narcissistic traits positively related to threat perception under agentic than under communal threat (Konrath et al., 2006). Specifically, we demonstrated a positive relationship between narcissistic traits and aggressive behavior, but solely *after* participants obtained noise blasts during the CRTT. This finding may indicate that narcissistic traits may predispose to enter a preparatory, or "ready-to-attack" state after psychological provocation, focusing their attack on someone (i.e., in our case the CRTT opponent) only after the opponent behaves aggressively (i.e., through blasting noise). Although this reasoning seemingly contradicts the finding that narcissistic traits predispose to displayed aggression (i.e., aggression to an unknown third person) after provocation (Bushman & Baumeister, 1998; Twenge & Campbell, 2003), such an interpretation converges with a study observing a dampened narcissism-displayed aggression relationship in case people judge a threat "not ambiguous" (Martinez et al., 2008). Hence, narcissistic traits may predispose to enter a "ready-to-attack" or brooding state when confronted with a perceived unambiguous threat, lashing out when a new threat emerges. Importantly, it has been debated that it is problematic to "statistically correct" psychopathic and narcissistic traits for each other given the high linear interrelationship. For example, it was shown that narcissism no longer correlated to self-reported aggressiveness after statistically correcting for psychopathy (Vize, Lynam, Collison, & Miller, 2018). The present findings show the opposite. That is, the data revealed a positive association between aggression and narcissism, but only when psychopathic traits were controlled for. Closer inspection of multicollinearity diagnostics revealed that psychopathic traits did not inflate the effect of narcissism on aggression in the present dataset.

Limitations

Several limitations impacted the present findings. First, the sample consisted of (healthy) male, predominantly student participants recruited in the general population, troubling the generalization of these findings across gender and to the clinical range of psychopathy and narcissism. Second, our explorative analysis on

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the relationship between our personality measures and negative affect, threat perception, and aggressive behavior was statistically underpowered. Therefore, these findings require replication. Third, the main aim of the present study was to determine the relative impact of two established provocation procedures. The design therefore did not include a control condition. Although each experimental procedure reliably invoked anger and aggression inclinations in previous work (Buckley et al., 2004; Bushman & Baumeister, 1998; Gilbert & Thompson, 1999; Lobbestael et al., 2008), from this work alone we cannot demonstrate that social exclusion and insult produce more aggression than a control condition. Lastly, the present study examined aggressive responding to an unknown person (i.e., displaced aggression). It would be interesting to observe whether the provoked aggression effect changes or differentiates when people are allowed to respond aggressively to their insulter/rejecter.

Research Implications

The present study was primarily designed to directly compare two provocation procedures. Consequently, the present study did not include enough participants to extensively examine trait by condition interaction effects as testing these effects would greatly inflate the chance of Type I and II errors. This leaves a number of important questions open to be answered. First, future studies that compare provocation conditions should ideally include a control condition, strengthening the conclusion that the tested conditions lead to more aggression than a control condition. Second, given that narcissistic and psychopathic women have shown to respond to provocations in similar ways as men we highly recommend future research to include both genders (Fossati, Borroni, Eisenberg, & Maffei, 2010; Wallace, Barry, Zeigler-Hill, & Green, 2012). Related to this, there is evidence that men display more dominance than women (Colarelli, Spranger, & Hechanova, 2006) and male-male dominance may be expressed differently than male-female dominance (Hayduk, 1983). For this reason, we decided to include a female confederate. As dominance challenges have been shown to be a function of psychopathy levels (Lobbestael, Arntz, Voncken, & Potegal, 2018), it would be interesting for future research to investigate aggressive responding by same-sex provocateurs.

Prevention and Clinical Implications

The present findings stress that threat perception and affect reactivity may be important targets in prevention and intervention efforts. For example, hostile interpretation bias, a construct related to threat perception, has been shown to be successfully reduced by cognitive bias modification training in students (Hawkins & Cougle, 2013). The current findings further indicate that threat perception may be an especially important prevention and intervention target in people with narcissistic traits, who show increased threat perception under conditions of agentic threat. With regard to people with psychopathic traits the present findings indicate that emotional blunting may be an important clinical implication. Also, the provocations operationalized in this study apparently do not push the emotional buttons of people with psychopathic traits. Perhaps this may be different when these provocations are executed by people that they feel attached to.

Conclusion

In sum, this study showed that social exclusion and insult were comparable in producing aggressive behavior, negative affective change, and threat perception. We also observed a positive relationship between aggressive behavior after "double" provocation and narcissistic traits. This pattern of findings provides novel evidence on the equal impact of social exclusion and insult and fits with current theoretical models evidencing emotional blunting in psychopathic people and increased provoked aggression in narcissistic people. Last, although the findings suggest that while both provocations can interchangeably be implemented to study provoked aggression, the procedures may differentially impact narcissistic people.

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Received August 20, 2019
Revision received May 25, 2020
Accepted May 29, 2020 ■

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