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Grandiose narcissism versus vulnerable narcissism and impulsivity

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ABSTRACT

Correlations between the grandiose narcissism and vulnerable narcissism with two self-report personality measures (i.e., BIS-11 and I_7) and two behavioral tasks (i.e., Stop-Signal Task and Delay-Discounting task) of impulsivity in 338 students were examined. As one of the first studies to apply a two-dimensional approach to narcissism (i.e. grandiose narcissism and vulnerable narcissism) in different self-report and behavioral impulsivity measures, the present results have reported that both grandiose and vulnerable narcissism showed a significant positive correlations with the self-reported impulsivity. Moreover, the grandiose narcissism has shown significant associations with both behavioral tasks of impulsivity. Contrary, vulnerable narcissism was negatively related to the stop reaction time – people high in vulnerable narcissism scored shorter stop reaction time values and, consequently, presented less impulsive responding.

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1. Introduction

The definition of "impulsivity" varies widely and have included many concepts such as an insensitivity to consequences, an inability to wait or to inhibit inappropriate behaviors, and cognitive or motor impulsivity (e.g., Madden & Bickel, 2010; Reynolds, Ortengren, Richards, & de Wit, 2006). In order to assess behaviors that are considered impulsive, a variety of measurement methods have been developed. These methods can be categorized as (1) self-report questionnaires, that assess an individual's self-perception of their own behaviors across a variety of contexts, and (2) laboratory behavioral tasks, which assess specific behavioral processes (Reynolds et al., 2006). Moreover, some recent studies indicate that self-report and behavioral assessments are not, or are only weakly correlated (e.g., Lane, Cherek, Rhodes, Pietras, & Techeremissine, 2003; Reynolds et al., 2006; Reynolds, Richards, Horn, & Karraker, 2004). Consequently, these findings indicate that the tendency for impulsive behaviors assessed by laboratory behavioral procedures may not be the same as those detected by self-report assessments.

1.1. Grandiose vs. vulnerable narcissism

It is increasingly recognized that there are at least two forms of narcissism, which might be most aptly titled "grandiose narcissism" and "vulnerable narcissism" (e.g., Dickinson & Pincus, 2003; Fossati et al., 2005; Miller & Campbell, 2008; Miller et al., 2011; Russ, Shedler, Bradley, & Westen, 2008; Wink, 1991; Wright, Lukowitsky, Pincus, & Conroy, 2010). Grandiosity is characterized by dominance, aggression, self-assurance, arrogant attitudes, inflated self-esteem, exploitativeness, entitlement, and a strong need for the admiration of others. Vulnerability, in contrast, is characterized by fragile self-esteem, emotional instability, introversion, negative affect, hostility, need for recognition, entitlement, egocentricity, and preoccupation with grandiose fantasies, oscillation between feelings of superiority and inferiority (Hendin & Cheek, 1997; Miller et al., 2011). Factor and cluster analyses denoted grandiose and vulnerable narcissism as separate constructs (e.g., Lapsley & Aalsma, 2006). However, the two forms share the core traits of narcissism, such as grandiose fantasies about the self, feelings of entitlement, and a willingness to exploit others for one's own gain (Dickinson & Pincus, 2003; Pincus et al., 2009).

1.2. Narcissism and impulsivity

Researchers have found some evidence of a link between narcissism and impulsivity. Given the pattern of associations with the self-reported impulsivity (e.g., Barratt Impulsiveness Scale-11, Impulsiveness-Venturesomeness-Empathy questionnaire; Dickman's measures of functional and dysfunctional impulsivity), previous studies concluded that grandiose narcissism moderately correlated with self-report measures of impulsivity ($r = 0.13–.55$; Crysel, Crosier, & Webster, 2013; Jones & Paulhus, 2011; Malesza & Ostaszewski, 2016). Furthermore, in case of behaviorally assessed impulsivity, the grandiose narcissism component was positively related to steeper delay discounting ($r = 0.17$; Crysel et al., 2013). Delay discounting is recognized as a possible mechanism of impulsive behavior (for a review, see Madden & Bickel, 2010), where individuals are asked to make a series of choices between a smaller sooner reward and a larger but more delayed reward (Reynolds et al., 2006). Thus, people with a high level of grandiose narcissism preferred less money immediately to more money later (Crysel et al.,

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2013). Furthermore, Malesza and Ostaszewski (2016) observed that grandiose narcissism was weakly significantly correlated with the stop reaction time (people high in narcissism scored longer stop reaction time value and, consequently, presented more impulsive responding; r = 0.12).

Despite the research linking the grandiose narcissism with both types of impulsivity (Crysel et al., 2013; Jones & Paulhus, 2011; Malesza & Ostaszewski, 2016), there is no systematic research linking the vulnerable narcissism with the self-reported impulsivity (i.e. Barratt Impulsiveness Scale-11 and Impulsiveness-Venturesomeness-Empathy questionnaire) and two forms of behavioral impulsivity (i.e. steeper discounting rate of delayed outcomes and behavioral inhibition of impulsivity). Following the stream of research suggesting that narcissism should the existence of two orthogonal constructs of narcissism, the present study fill this gap by examining the relations between measures of both grandiose and vulnerable narcissism and their associations with two self-reported measures of impulsivity and two behavioral tasks of impulsivity.

1.2.1. The present study

Grandiose narcissists are generally described as aggressive (Wink, 1991). Knowing that grandiose narcissism primarily reflects traits related to aggression (Miller et al., 2011), and that impulsivity is linked to aggression (Lesch & Merschdorf, 2000), it is reasonable to suppose that narcissists' aggression is due in part to their impulsive influences on behavior. Moreover, giving the pattern of associations between the grandiose narcissism and self-report impulsivity (e.g., Jones & Paulhus, 2011; Malesza & Ostaszewski, 2016), research has shown that grandiose narcissists are inclined to exhibit many impulsive behaviors (e.g., gambling) that are likely to make a good first impression (e.g., socializing), and to engage in behaviors that provide immediate gratification of their desires for social status, positive affect, and ego-involvement in achievement domains, but they do so at the cost of fulfilling these desires in the negative long-term (Vazire & Funder, 2006). Individuals high in grandiose narcissism also claim for immediate rewards (Dickinson & Pincus, 2003). Thus, it was predicted that grandiose narcissism would be significantly associated with both self-report (i.e., BIS-11 and I_7) and both behavioral impulsivity (i.e., Stop-Signal and Delay-Discounting) measures.

On the other hand, limited information is available about the association between vulnerable narcissism and both self-report and behavioral impulsivity. Theoretically, vulnerable narcissists are also described as defensive, hostile, and insisting upon having their own way (Wink, 1991). Thus, the vulnerable narcissism should be also significantly associated with the self-reported impulsivity. However, the same may not be true for the behavioral impulsivity. Although, individuals high in vulnerable narcissism are willing to exploit others for one's own gain, they also present shyness, inhibited behaviors, and are introverted in social interaction, but covertly possess unrealistic fantasies about success and entitlement from others (Miller et al., 2011). Therefore, we hypothesized that individuals high in vulnerable narcissism would show stronger behavioral inhibition and, consequently, less impulsive responding. Thus, negative correlation between the vulnerable narcissism and Stop-Signal Task was expected. In case of the second behavioral impulsivity measure, only the grandiose narcissism should be significantly associated with the Delay-Discounting task, because only individuals high in grandiose narcissism claim for immediate rewards (Dickinson & Pincus, 2003).

Finally, the two forms share the core traits of narcissism, such as sense of entitlement, disregard of others, and grandiose self-relevant fantasies (Besser & Priel, 2010). However, they differ in many other constructs, each having unique characteristic. That is, individuals high on either dimensions behave similarly, but motivation behind their behaviors are completely different (Miller et al., 2011). Thus, grandiose narcissism and vulnerable narcissism should be significantly correlated because they both reflect the narcissism construct. However, the correlation between both narcissism instruments should be weak, supporting the distinction between grandiose and vulnerable narcissism.

2. Methodology

The experiment was conducted using WebExp (Keller, 1999), a software package for running psychological experiments online. WebExp is implemented in Java and uses a client–server architecture which gives the experimenter maximal control over stimulus presentation and collection of responses. A strong point is WebExp's timing component, which includes both the timing of the presentation of stimulus, and the measurement of response times. The web-based data collected previously in several experiments provided a close match with the data collected under controlled laboratory conditions (Keller, 1999).

2.1. Participants and procedure

338 German university students participated in the experiment (147 men and 191 women, ranging in age from 19 to 26 years, M = 23.1, SD = 1.05). Individuals were recruited through advertisements posted on social media (i.e., Facebook). Inclusion criteria included being over 18-years-old, and having no history of psychological illness. Participation was voluntary and anonymous. Subjects were not compensated in any way. All participants provided a consent which was obtained online after a detailed instruction describing main purpose and approximate duration of the study. All individuals were offered feedback on general results of the study.

At the beginning of the experiment, participants were provided the following instructions: "*For this study*, *you will be asked a series of questions and you will be given a series of choices. There are no right or wrong answers*." Individuals were simply instructed to follow the instructions that appeared on the screen. Participants were assured that the computer would present all of the information they required to conduct the study. Before the individuals could send their answers over the net, the data were checked for completeness.

2.2. Materials

2.2.1. Narcissism measures

Grandiose narcissism was measured with the 37-item Narcissistic Personality Inventory (NPI; German translation; Raskin & Hall, 1979). Items were rated on a Likert scale from 1 = *strongly disagree* to 7 = *strongly agree* (α = 0.83). Vulnerable narcissism was assessed using the 10-item Hypersensitive Narcissism Scale (HSNS; German translation; Hendin & Cheek, 1997), that required rating on a 1–5 Likert scale. Participants' responses were measured on a 5-point scale (1 = *very uncharacteristic of me/strongly disagree*; 5 = *very characteristic of me/strongly agree*; α = 0.80).

2.2.2. Barratt impulsiveness Scale-11

The BIS-11 is a widely used personality test of impulsivity (German version by Hartmann, Rief, & Hilbert, 2011). It comprises 30 items (with an answer format on a four-point Likert–type scale, from *1 = rarely*/*never* to *4 = almost always*/*always*), which constitute six factors: self-control, attention impulsivity, motor impulsivity,

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cognitive instability, cognitive complexity, and perseverance (α ranged from .76 to .85).

2.2.3. I_7

The I_7 was developed to measure impulsivity within the framework of Eysenck's conception of impulsivity (German version by Eysenck, Daum, Schugens, & Diehl, 1990). It consists of 54 statements with a *yes*/*no* answer format, divided into three scales: impulsiveness, venturesomeness, and empathy (α ranged from .72 to .79). As only the first two scales are supposed to measure facets of impulsiveness, we report only on these.

2.2.4. Delay-Discounting task

Discounting was assessed at seven delay intervals (1, 7, 14, 30, 180, 365, and 730 days later; procedure adapted from Richards, Zhang, Mitchell, & de Wit, 1999). On each delay task trial, participants chose between € 400 available after a delay (i.e., 1, 7, 14, 30, 180, 365. Or 730 days) and a smaller amount of money available immediately (i.e., 'Would you rather have € 100 now or € 400 in 14 days?'). This computerized task used an adjusting amount procedure (adjusting the immediate amount in increments or decrements of ±€ 20) to derive indifference points between the delayed standard and immediate adjusting options for each of the seven delays assessed. The procedure was repeated until an indifference value was obtained for each delay condition. Each indifference value was determined for each participant by taking the smallest amount of money where the participant switched preference from immediate instead of the delayed standard amount (€ 400) at the specific delay (see Richards et al., 1999). An area-under-the-curve (AUC) method was used to characterize the delay discounting rate (Myerson, Green, & Warusawitharana, 2001). Obtained AUC value represents a proportion on a range between 0.0 and 1.0 where larger AUC values are indicative of slower or no discounting and lower AUC values mean greater levels of discounting. Myerson et al. (2001) stated that AUC has several merits that make it appropriate for statistical analysis in discounting research. One advantage is that the AUC measure is theoretically neutral and can be calculated for all participants regardless of their response pattern. In addition, AUC measure usually follows a normal distribution, which allows the use of parametric statistical analysis. As such, these improved measurement properties make it a stronger candidate marker than discounting rates.

2.2.5. Stop-Signal Task

The Stop-Signal Task was derived from the task of Logan, Schachar, and Tannock (1997). The procedure has been used extensively in order to test abilities of behavioral inhibition. Participants were instructed to respond to a visual "go" signal as quickly as possible (75% of the trials), but to withhold this response when an auditory "stop" signal is presented (25% of the trials). The stop signal was presented at varying delays (in milliseconds) following by an auditory stop signal, and subjects were instructed to withhold their responses. The delay to the stop signal was varied systematically across trials according to the participant's performance until a delay was found at which the individuals inhibited their responses on approximately 50% of trials. This procedure provides an estimate of the time taken to stop a response, the stop reaction time (SRT). Longer stop reaction times (SRTs) are taken to indicate poor behavioral inhibition and more impulsive responding.

3. Results

Descriptive statistics for all variables are reported in Table 1.

Table 1 also shows bivariate Pearson correlations between two narcissism traits, self-report and behavioral measures of impulsivity. Next, to probe the unique contribution of two narcissism traits predicting the different impulsivity types we also conducted separated multiple linear regression analyses. More specifically, self-report and behavioral impulsivity scales were separately regressed on the predictors of the grandiose and vulnerable narcissism. As predicted, the grandiose and vulnerable narcissism were each positively and independently associated with most subscales of the BIS-11. The strongest relation was found between the grandiose narcissism and Motor Impulsivity subscale, whereas the weakest significant association was observed between the vulnerable narcissism and Self-control scale. Moreover, as expected, both narcissism traits were significantly related to the Impulsivity and Venturesome I_7 scales.

In case of behavioral impulsivity, only grandiose narcissism predicted steep delay discounting, suggesting that individuals who score high in grandiose narcissism tend to obtain rather immediate outcomes (i.e., individuals preferred smaller sum of money immediately instead of bigger outcome later). Also, the grandiose narcissism was positively associated with the stop-signal reaction time (individuals high in grandiose narcissism presented longer stop reaction time values and, consequently, poorer behavioral inhibition). Whereas, vulnerable narcissism was moderately negatively related to the stop reaction time (people high in vulnerable narcissism scored shorter stop reaction time values and, consequently, presented less impulsive responding). Additionally, age and gender were entered as second block of predictors at each regression analysis. However, neither age nor gender showed a significant association with other variables. Finally, correlation analyses showed that grandiose narcissism was significantly, although weakly, correlated with vulnerable narcissism.

Self-reported and behavioral measures of impulsivity were weakly correlated as well. All of the scales of each of the self-report measures of impulsivity positively correlated with other self-report measure (i.e., BIS-11 and I_7; the stronger correlation between Motor Im-

Table 1
Descriptive statistics and correlations and regressions coefficients (in brackets) between both measures of narcissism and all measures of impulsivity.

Narcissism measures			Self-report impulsivity measures								Behavioral impulsivity measures	
	1	2	3	4	5	6	7	8	9	10	11	12
1[a]	–	.22**	.35**(30**)	.67**(.62)**	.06(−.04)	.49**(.42**)	.28**(.17*)	.45**(.37**)	.34**(29**)	.38**(.29**)	−.44**(−.39**)	.46**(.41**)
2[b]		–	.27**(19*)	.44**(39**)	.13*(.07)	.24**(.16*)	.40**(.34**)	.41**(35**)	.29**(22**)	−.26*(−.18*)	.08(.00)	−.39**(−.33**)
M	121.75	27.83	12.25	17.15	10.83	9.49	7.30	11.34	7.75	8.39	.547[c]	842[d]
SD	29.28	7.15	3.11	4.81	2.38	2.95	2.17	4.10	2.26	2.85	.139	.292

1. Grandiose narcissism; 2. Vulnerable narcissism; 3. BIS-11: Attention; 4. BIS-11: Motor Impulsivity; 5. BIS-11: Self-control; 6. BIS-11: Cognitive complexity; 7. BIS-11: Perseverance; 8. BIS-11: Cognitive instability; 9. I_7: Impulsivity; 10. I_7: Venturesome; 11. Delay-Discounting task; 12: Stop-Signal Task.
R^2 is for R-squared effect size for regression analysis: [a] = 0.40**; [b] = 0.31**; [c] = AUC; d = milliseconds.

* $p < .05$.

** $p < .01$.

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pulsivity from BIS-11 and Impulsivity form I_7), and between subscales of the same instruments (e.g., BIS-11). All correlations varied from .23 to .58 (all *p*s < .01). Moreover, both behavioral impulsivity measures (i.e., Delay-Discounting task and Stop-Signal Task) were significantly associated (participants' smaller AUC value delay discounting correlated with stronger impulsive responding; $r = -0.41$; $p < .01$). By contrast, analysis conducted between self-report and behavioral measurement methods of impulsivity revealed only two significant correlations. There was a positive correlation between Motor Impulsivity of the BIS-11 and stop-reaction time on the Stop-Signal measure (participants with longer stop-signals time on the Stop-Signal Task presented higher motor impulsivity; $r = 0.37$; $p < .01$), and a correlation between Impulsivity scale from I_7 was negatively related to the AUC value from Delay-Discounting task (individuals higher on Impulsivity preferred immediate outcomes instead of bigger delayed ones in the Delay-Discounting task; $r = -0.29$; $p < .01$).

4. Discussion

The aim of the present study was to examine whether grandiose and vulnerable narcissism differ in their associations with self-reported and behavioral impulsivity. Our predictions were that both grandiose and vulnerable narcissism would be related to higher levels of self-reported impulsivity, and that only the grandiose narcissism would be associated with steeper delay discounting and longer stop reaction times and, consequently, present greater behavioral impulsivity. Contrary, it was hypothesized that individuals high in vulnerable narcissism would show stronger behavioral inhibition and, consequently, less impulsive responding.

What is most evident from the present analyses is that both self-report measures of impulsivity support the idea that impulsivity is linked to the grandiose and vulnerable narcissism. That is, higher scores on grandiose and vulnerable narcissism scales relate with higher self-reported impulsivity traits. Additionally, grandiose narcissism was correlated with both behavioral impulsivity measures, whereas vulnerable narcissism was negatively associated with the Stop-Signal Task, but not significantly related to behavioral Delay-Discounting measure. The results obtained are consistent with prior work on the grandiose narcissism (Crysel et al., 2013; Jones & Paulhus, 2011; Malesza & Ostaszewski, 2016), and shed new light on the associations between vulnerable narcissism and impulsivity.

Taking our findings together, both grandiose and vulnerable narcissism traits appeared to be moderately associated with self-reported impulsivity. First, and most obvious, explanation is that individuals high in grandiose narcissism feel entitled to things they want and are generally overconfident and aggressive (Emmons, 1987). Second, vulnerable narcissism individuals appear to be described defensive, hostile, and insisting upon having their own way (Wink, 1991). Importantly, however, at the behavioral level, the element of 'impulsive disinhibition' is a key in distinguishing grandiose narcissism from vulnerable narcissism. Grandiose narcissism manifested positive relation with behavioral inhibition of impulsivity. It is not surprising that grandiose narcissism and behavioral measure of impulsive inhibition were positively related as grandiose narcissists' present lack of the ability to inhibit unacceptable behaviors and antisocial impulses (Jones & Paulhus, 2011). Moreover, significant association may be driven by the individuals with grandiose narcissists' disposition to providing rapid and speedy responses. In particular, grandiose narcissists thrive well in situations involving automatized social interactions (Vazire & Funder, 2006), the rapid responses in behavioral impulsivity tasks confirms the validity of the obtained results. By contrast, vulnerable narcissism manifested significantly negative association with behavioral measure of impulsive inhibition. This negative association indicates that vulnerable narcissists are characterized by avoidance and social inhibition, and mainly concerned with the protection of their fragile egos (Czarna, Dufner, & Clifton, 2014; Miller et al., 2011). This finding was expected as vulnerable narcissism and high behavioral inhibition share a number of traits related to negative emotionality (e.g., depression, anxiety, feelings of inadequacy and shame). Negative affect and social inhibition may also explain weaker associations between the vulnerable narcissism and self-report impulsivity scales, than stronger associations between the same self-report impulsivity scales and grandiose narcissism.

Additionally, only the grandiose narcissism was significantly associated with behavioral Delay-Discounting measure. Individuals high in grandiose narcissism feel entitled to things they want (Emmons, 1987), even when they engage in behaviors that provide short-term benefits but lead to negative long-term outcomes (Miller et al., 2011). They also claim for immediate rewards. On the other hand, vulnerable narcissists are characterized by hypersensitivity to social evaluation and fear of negative comments (Dickinson & Pincus, 2003). As such, negative social evaluation may serve as the punishment that vulnerable narcissists want to avoid by choosing bigger, delayed rewards instead of smaller, immediate rewards. Lastly, grandiose narcissism and vulnerable narcissism were significantly correlated ($r = 0.22$), which is not surprising given that they both reflect the narcissism construct. Previous studies also reported a comparable results (e.g., Fossati et al., 2005; Hendin & Cheek, 1997; $r = 0.12$–0.25). However, the correlation between the NPI and HSNS was weak, supporting the distinction between grandiose and vulnerable narcissism (Miller et al., 2011).

Finally, our results confirm previous findings (Lane et al., 2003; Reynolds et al., 2004, 2006; but see also for contradictory results Richards et al., 1999) suggesting that self-report measures and behavioral measures assess different forms of impulsivity and different underlying processes. Observed differences may be due to the fact that behavioral methods measure more specific behavior (e.g., stop-reaction time), whereas self-report questionnaires assess more general impulsive behavior. Specifically, with self-report tasks, asking for reporting participants' behavioral tendencies in various contexts, may not always accurately reflect individuals' behavior. Performance on behavioral tasks, however measuring only one specific dimension, is less sensitive to biased self-perceptions (Reynolds et al., 2006).

5. Conclusions and limitations

In conclusion, it appears that both forms of narcissism are clearly sensitive to impulsivity, but the nature of the impulsivity must be considered. However, the present study has several limitations. A major limitation of this study is that we cannot draw a convincing causal relationship based on correlational data. Future studies should identify the mediating mechanisms that govern the association between two forms of narcissism and impulsivity. Another limitation of the current study is the reliance on self-reported measures of grandiose narcissism, vulnerable narcissism, and the behavioral measure of impulsivity (i.e., Delay-Discounting task). Thus, the correlations may be inflated due to shared method variance. It will be important to replicate these findings using the experiment conducted in more naturalistic settings, perhaps in the form of an investigation tapping daily life experiences. Finally, the current sample was limited to university students. As such, the present results may not be applicable to the general population.

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