

What do highly narcissistic people think and feel about (their) intelligence?

Marcin Zajenkowski¹  | Anna Z. Czarna² | Kinga Szymaniak¹ | Michael Dufner³

¹Faculty of Psychology, University of Warsaw, Warsaw, Poland

²Institute of Applied Psychology, Jagiellonian University, Krakow, Poland

³Institute of Psychology, Medical School Berlin, Berlin, Germany

Correspondence

Marcin Zajenkowski, Faculty of Psychology, University of Warsaw, Stawki 5/7, 00-183 Warsaw, Poland.
Email: zajenkowski@psych.uw.edu.pl

Funding information

Narodowe Centrum Nauki, Grant/Award Number: 2015/19/B/HS6/02214 and 2016/23/B/HS6/00312

Abstract

Objective: The current research comprehensively examined how grandiose and vulnerable narcissism are linked to intelligence and intelligence-related beliefs and emotions.

Method: In four studies (total $N = 1,141$), we tested the associations between both forms of narcissism, subjectively and objectively assessed intelligence, basic personality traits, test-related stress, beliefs about intelligence, and well-being.

Results: Both forms of narcissism (grandiose and vulnerable) were unrelated to objective intelligence. Grandiose narcissism was associated with high self-perceived intelligence (Studies 1–3) and explained more variance in self-perceived intelligence than objective intelligence and the Big Five personality traits. It was correlated with reduced distress in the context of IQ testing and low engagement in cognitive performance (Study 2). Individuals with high grandiose narcissism based their well-being (Study 3) partly on intelligence and considered intelligence important for success in different life domains, especially for social relations (Study 4). Vulnerable narcissism was unrelated to self-perceived intelligence (Studies 1–3) and went along with increased distress in the context of IQ testing (Study 2).

Conclusions: The results indicate that the topic of intelligence is of key importance for people with high grandiose narcissism psychological functioning and it also has some relevance for individuals with high vulnerable narcissism.

KEYWORDS

grandiose narcissism, intelligence, narcissism, vulnerable narcissism

1 | INTRODUCTION

“I’m much smarter than them. I think I have a much higher IQ.”

“Sorry losers and haters, but my IQ is one of the highest, and you all know it!”

Donald J. Trump
(CNN Politics, n.d.)

The quotes above indicate that the current U.S. President Donald Trump, who has repeatedly been described as a prime exemplar of a highly narcissistic person (e.g., Lee, 2017), is preoccupied with the topic of intelligence. He often talks about smartness, brags about his IQ, and ridicules others by questioning their intelligence. Is this just a coincidence, or might there be a genuine connection between the trait of narcissism and intelligence?

Intelligence and narcissism are among the oldest constructs studied in contemporary psychology, each having

more than a century of research tradition. Alfred Binet, who is known for having developed the first intelligence test, is also among the first to use the term “Narcissus” to describe a patient whose admiration focused exclusively on himself (Binet, 1887). The term “narcissism” became popular in clinical psychology and was historically used to describe patients with strong egocentrism (e.g., Freud, 1914). Nowadays, researchers are also interested in narcissism as a personality trait that varies in the population (Hermann, Brunell, & Foster, 2018). It has been suggested that among nonclinical narcissistic individuals, agentic constructs such as intelligence are highly valued (Campbell & Foster, 2007). However, the perception of intelligence and its role in narcissism is still poorly understood. The current research aims to bridge the gap between narcissism and intelligence. How are different forms of narcissism related to objectively assessed IQ and subjective intelligence self-views? What do narcissistic persons experience during the completion of an IQ test? What importance do they assign to intelligence? And to what extent does their well-being depend on self-rated IQ? These are the questions we addressed in the current research.

1.1 | Grandiose and vulnerable narcissism

In the social–personality literature, the term narcissism is most commonly associated with a variant called “grandiose narcissism.” This variant is characterized by an unrealistically positive self-view, a strong self-focus, feelings of entitlement, and a lack of regard for others (Campbell & Foster, 2007; Miller et al., 2011). Grandiose narcissism typically goes along with high subjective well-being (Czarna, Zajenkowski, & Dufner, 2018; Dufner et al., 2012; Dufner, Gebauer, Sedikides, & Denissen, 2018; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). In terms of social behavior, grandiose narcissism is characterized by open displays of dominance and arrogance (Back et al., 2013; Campbell, 1999).

Some research, however, also suggests the existence of another variant of narcissism termed vulnerable narcissism. This variant is rooted in a brittle sense of self, associated with low self-esteem, and reflects defensiveness and insecurity. It involves feelings of inadequacy, incompetence, and negative affect (Cain, Pincus, & Ansell, 2008; Miller et al., 2011; Pincus & Lukowitsky, 2010). In terms of social behavior, vulnerable narcissism is characterized by hostility and social avoidance (Dickinson & Pincus, 2003; Hendin & Cheek, 1997; Miller et al., 2011; Wink, 1991).

The common core of grandiose and vulnerable narcissism is that both forms are characterized by egocentrism and a sense of superiority (Krizan & Herlache, 2017). The major difference between the two variants is that those high on grandiose narcissism confidently act out this desire in social interactions, whereas those high on vulnerable narcissism are socially inhibited and mainly concerned with protection of their fragile egos.

1.2 | Narcissism and objectively assessed intelligence

When investigating the relations between narcissism and intelligence, objective IQ scores are relevant. Intelligence can be measured with high precision, and IQ scores predict major life outcomes such as educational attainment (Deary, Strand, Smith, & Fernandes, 2007), occupational success (Schmidt, 2002), income (Zagorsky, 2007), and longevity (Gottfredson & Deary, 2004). However, objectively assessed intelligence (OAI) is essentially unrelated to most personality traits with the exception of the openness/intellect factor of the Big Five, to which it is positively correlated (Ackerman & Haggstad, 1997). Additionally, OAI shows weak negative correlations with traits related to maladjustment such as Neuroticism and negative emotionality (Austin et al., 2011). Previous research indicates that grandiose narcissism is essentially unrelated to OAI (Dufner et al., 2012; Gabriel, Critelli, & Ee, 1994; Nathanson, Paulhus, & Williams, 2006; Paulhus & Williams, 2002; Zajenkowski & Czarna, 2015), which matches with the fact that most personality traits have no substantial correlations with OAI.

We are not aware of any previous research addressing the relation between vulnerable narcissism and OAI. Given that Neuroticism and negative emotionality (Austin et al., 2011) are both modestly negatively associated with OAI, one might expect a weak negative correlation between vulnerable narcissism and OAI.

1.3 | Narcissism and intelligence-related beliefs and emotions

Even though narcissism might be unrelated to OAI, there is a reason to believe that for people scoring high on grandiose narcissism, the topic of intelligence is nevertheless central to their cognition and emotions. According to the extended agency model of narcissism (Campbell & Foster, 2007), they have a focus on agentic attributes such as social dominance and, importantly for the current context, competence. Being high in agency is highly rewarding for individuals with high grandiose narcissism and enables them to experience positive feelings. To feel that way, they use various agentic intrapersonal and interpersonal strategies. Thus, narcissism is regarded as a self-regulatory system in which “activation of one element will lead to activation in other elements” (Campbell & Foster, 2007, p. 122). Among the intrapersonal strategies is the tendency to maintain unrealistically positive self-views regarding agentic attributes such as intelligence. As Campbell and Foster (2007) state, inflated views of their IQ can boost social confidence and thereby lead to social success (e.g., high social status) among narcissistic persons. Social success, in turn, can lead to even more inflated self-views. Correspondingly, maintaining a subjective belief of

high intelligence should be an important part of narcissistic individuals' psychological functioning including their beliefs, emotions, and motivations.

If this is really the case, then grandiose narcissism should go along with a positive self-concept with regard to intelligence. Past research indicates that subjectively assessed intelligence (SAI) overlaps moderately with IQ (Freund & Kasten, 2012) but also with personality dispositions, such as high Extraversion, high openness/intellect, and low Neuroticism (Chamorro-Premuzic & Furnham, 2004; Furnham, 2001). Likewise, grandiose narcissism has been linked to high SAI (Dufner et al., 2012; Gabriel et al., 1994; Paulhus & Williams, 2002; Nathanson, Paulhus & Williams, 2006; Zajenkowski & Czarna, 2015), which matches with the interpretation that self-enhancing one's IQ might be an important self-regulatory goal for persons with high grandiose narcissism. However, this conclusion must be regarded as preliminary, as no previous research has demonstrated that grandiose narcissism is *uniquely* linked to SAI when potential confounds such as OAI and personality traits are controlled. Particularly, the trait of openness is a potential confounder. DeYoung (2014) noticed that in psychological literature openness has been described variously as Openness to Experience, culture, or intellect. Recent findings established that openness reflects two central facets, that is, openness and intellect, of the broader factor labeled openness/intellect (DeYoung, Quilty, & Peterson, 2007). Out of these two facets, intellect is positively correlated to both grandiose narcissism (Zajenkowski, Stolarski, Maciantowicz, Malesza, & Witowska, 2016) and SAI (DeYoung, 2014; Zajenkowski & Matthews, 2019).

Maintaining high SAI might be particularly important for people with high grandiose narcissism because it contributes to their subjective well-being. Unrealistically positive views of one's abilities go along with stress resistance (Gramzow, Willard, & Mendes, 2008) and previous research has shown that that global self-esteem mediates the positive link between grandiose narcissism and well-being indicators (Sedikides et al., 2004). Sedikides and colleagues (2004) used global self-esteem indicators and did not specifically look at SAI. From the background of the extended agency model (Campbell & Foster, 2007), it seems likely that SAI, which directly concerns self-perception of an agentic ability, accounts for positive links between grandiose narcissism on one side and stress experience and well-being on the other side.

If the topic of intelligence is indeed central to the self-regulation of people with high grandiose narcissism, it is likely that they generally consider intelligence a very important trait. When asked about the importance of intelligence for overall life success and for success in specific life domains, individuals with high grandiose narcissism should rate intelligence as more important than people low in grandiose narcissism. Furthermore, their own standing on the dimension of intelligence should be personally

relevant for them. That is, their level of well-being should depend on their IQ.

The predictions are less straightforward regarding the link between vulnerable narcissism and intelligence-related beliefs, emotions, and motivations. Because vulnerable narcissism goes along with low self-esteem, negative emotionality, and insecurity (Miller et al., 2011; Wink, 1991), it is conceivable that individuals with high vulnerable narcissism might be doubtful about their intelligence. In this case, vulnerable narcissism would correlate negatively with SAI.

1.4 | The current research

In the current research, we aimed to comprehensively examine how the two major forms of narcissism (grandiose and vulnerable) are linked to OAI and intelligence-related cognition, emotions, and motivations. In Studies 1 and 2, we tested how grandiose and vulnerable narcissism were associated with OAI. In these studies, we also tested how the two forms of narcissism were linked to SAI and whether these links could be reduced to overlaps with OAI or basic personality dimensions. In Study 2, we also investigated how people high in narcissism experience IQ test. We assessed their cognitions, emotions, and motivations shortly before and after an IQ test. In Study 3, we tested whether high SAI accounts for a positive link between grandiose narcissism and well-being. In Study 4, we investigated the importance that narcissistic individuals attribute to intelligence for attaining success in different life domains.

2 | STUDY 1

In the first study, we examined how the two forms of narcissism are related to OAI and SAI. We expected grandiose narcissism to be unrelated to OAI and to be positively related to SAI. Moreover, we predicted that vulnerable narcissism would show a negative association with both OAI and SAI. When investigating SAI as the outcome variable, we controlled for OAI and the Big Five to test whether narcissism was a unique predictor. The most relevant traits in this context are intellect, which correlates with both grandiose narcissism and SAI (Zajenkowski & Matthews, 2019; Zajenkowski et al., 2016), and Neuroticism, which correlates with both vulnerable narcissism and SAI (Miller et al., 2018).

3 | METHOD

All raw data necessary to reproduce the reported results from all studies and R scripts for data analyses reported in this manuscript are available at osf.io/8jq4w. The power analysis is available in the Supporting Information (at osf.io/8jq4w).

We consider correlations of .10, .20, and .30 as relatively small, medium, and relatively large, respectively (Gignac & Szodorai, 2016). For this and the following studies, only the measures that were relevant for the current research question will be described.

3.1 | Participants

A total of 232 participants (122 women and 110 men) were recruited via publicly accessible social networking websites. Their mean age was 23.62 ($SD = 3.79$) with a range of 18–39. The sample was composed of undergraduate students from various universities in Warsaw who were tested individually in a lab at the University of Warsaw and who received the equivalent of 10 EUR in Polish zloty for participating in the study.

3.2 | Measures

Grandiose narcissism was assessed with the Narcissistic Personality Inventory (Raskin & Hall, 1979). The Polish adaptation (Bazińska & Drat-Ruszczak, 2000) is composed of 34 items with a 5-point response scale from 1 (*does not apply to me*) to 5 (*applies to me*).

Vulnerable narcissism was measured with the Polish version (Czarna, Dufner, & Clifton, 2014) of the Hypersensitive Narcissism Scale (HSNS; Hendin & Cheek, 1997). The scale contains 10 items with a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Objectively assessed intelligence (OAI) was assessed with two tests. Cattell's Culture Fair Intelligence Test (CFT; Cattell, 1973) consists of four nonverbal subtests with strict time limits. The first part consists of 13 items each comprising a series of three abstract shapes/figures with one piece missing. Respondents must complete the series by selecting the single correct answer from six options. In the second subtest, respondents are required to identify the two patterns from a set of 5 that do not belong to the group; there are 14 sets of patterns. The third subtest is similar to the Raven test and consists of 13 matrices. The last subtest (10 items) requires the respondents to select one out of five answers to replicate the relationships between figures and a dot in the model. A total number of correct answers across all subtests constituted the CFT final score. The second measure of intelligence was Raven's test in the advanced version (Raven, Court, & Raven, 1983). There are 36 original matrices, and the administration time in the current study was 30 min. Additionally, a factor score (g) was calculated (z -standardized composite score) for each participant from the two intelligence test scores.

Subjectively assessed intelligence Following the procedure developed by Zajenkowski et al. (2016), participants estimated their intelligence on a rating scale ranging from very

low (1) to very high (25). Prior to providing a response to the scale, the following instruction was presented:

“People differ with respect to their intelligence and can have a low, average or high level. Using the following scale, please indicate where you can be placed comparing to other people. Please mark an X in the appropriate box corresponding to your level of intelligence.”

Big Five The Big Five personality traits were measured with the Polish adaptation (Strus, Ciecuch, & Rowiński, 2014) of the 50-item set of International Personality Items Pool Big Five Factor Markers (Goldberg, 1992). The questionnaire includes Neuroticism, Extraversion, Agreeableness, Conscientiousness, and intellect scales. It has a 5-point Likert-type response format (1 = *very inaccurate*, 5 = *very accurate*). The reliability and validity of the Polish version was tested on a large sample showing high internal consistency, an adequate factor structure, and associations with other Big Five measures (Strus et al., 2014).

4 | RESULTS

Table 1 presents descriptive statistics, intercorrelations, and internal consistency reliability estimates α (in parentheses on the main diagonal). Because of the large number of significance tests, we interpret only the correlations significant at $p < .01$. The results indicated that grandiose narcissism was uncorrelated with OAI but it showed a relatively large and positive correlation with SAI. Vulnerable narcissism was not significantly related to both OAI and SAI. Furthermore, SAI was positively correlated with OAI, and intellect. Grandiose narcissism correlated positively with Extraversion and intellect, while vulnerable narcissism correlated negatively with Extraversion, Agreeableness, and positively with Neuroticism.

Subsequently, we investigated the unique prediction of SAI by grandiose narcissism, controlling for OAI (g factor) and the Big Five. In the regression models (Table 2), SAI was a dependent variable with the predictors being OAI (Step 1), the Big Five (Step 2), and narcissism (Step 3). Grandiose narcissism was a significant predictor of SAI even after controlling for OAI and the Big Five, accounting for additional 8% of the variance in Step 3. Interestingly, when we reversed the order of the predictors in Steps 2–3, grandiose narcissism explained 14% of the variance beyond OAI, while personality added only 5% beyond intelligence and grandiose narcissism. Aside from narcissism and OAI, Neuroticism and intellect were significant predictors of SAI.

TABLE 1 Study 1: descriptive statistics and intercorrelations

	M	SD	1	2	3	4	5	6	7	8	9	10	
1. Grandiose narcissism	101.59	20.23	(0.92)										
2. Vulnerable narcissism	30.11	5.95	0.20	(0.70)									
3. Raven	22.01	7.13	0.13	0.09	(0.90)								
4. Cattell	24.91	5.12	0.11	0.13	0.70	(0.77)							
5. Intelligence (g)	0.00	1.00	0.13	0.12	0.92	0.32	(0.90)						
6. Subjectively assessed intelligence	16.98	3.00	0.42	0.04	0.41	0.32	0.39						
7. Extraversion	32.49	8.13	0.39	-0.34	-0.05	-0.02	-0.04	0.15	(0.87)				
8. Agreeableness	39.34	5.65	0.07	-0.30	0.14	0.10	0.13	0.12	0.39	(0.80)			
9. Conscientiousness	34.72	7.44	0.07	-0.08	-0.06	-0.09	-0.08	0.04	0.11	0.14	(0.84)		
10. Neuroticism	28.66	7.68	-0.07	0.50	0.03	0.08	0.06	-0.15	-0.22	-0.11	-0.05	(0.87)	
11. Intellect trait	38.40	5.54	0.34	-0.03	0.31	0.32	0.34	0.40	0.25	0.33	0.04	-0.01	(0.67)

Note: Correlations significant at $p < .01$ are marked in bold. Coefficients on the main diagonal (in parentheses) are internal consistency reliability estimates (α).

TABLE 2 Regression models with intelligence, personality, and grandiose narcissism as predictors and subjectively assessed intelligence as the dependent variables

Step		F	ΔR^2	β	p
1	Intelligence (g)	38.21	.15**	.38	<.001
2	Intelligence (g)	12.71	.11*	.30	<.001
	Extraversion			.08	.213
	Neuroticism			-.14	.018
	Agreeableness			-.07	.267
	Conscientiousness			.04	.532
	Intellect			.29	<.001
3	Intelligence (g)	8.90	.08*	.27	<.001
	Extraversion			-.05	.452
	Neuroticism			-.14	.014
	Agreeableness			-.01	.918
	Conscientiousness			.02	.672
	Intellect trait			.21	.002
	Grandiose narcissism			.33	<.001

* $p < .05$; ** $p < .01$.

Subsequently, we examined the relative contribution of all predictors (i.e., OAI, the Big Five, and grandiose narcissism) toward explaining variance in SAI using relative importance analysis in the R package “relaimpo” (Grömping, 2006). The results indicated that the entire model explained 33.7% of the variance in SAI. Grandiose narcissism explained the highest percentage of variance in SAI (12.17%), followed by intelligence (9.96%), intellect (8.47%), and Neuroticism (1.80%). The remaining traits accounted for less than 1% of the variance.

Finally, because previous research revealed gender differences in both SAI (e.g., Furnham, 2001) and grandiose narcissism (Grijalva et al., 2015), we repeated all regression analyses controlling for gender. All the effects remained essentially unchanged (see Table S1 in Supporting Information).

5 | DISCUSSION

Study 1 revealed a robust and substantial association between grandiose narcissism and SAI even after controlling for OAI and the Big Five, which indicates that people with high grandiose narcissism indeed have the tendency toward intellectual self-enhancement (defined as the tendency to maintain unrealistically positive views of their own intelligence; Dufner et al., 2012; Gabriel et al., 1994; Paulhus & Williams, 2002; Zajenkowski & Czarna, 2015). The current results demonstrate for the first time that grandiose narcissism is a unique predictor of SAI when OAI and basic personality dimensions

are controlled. Contrary to our expectations, vulnerable narcissism was unrelated to SAI, and OAI. The null correlation with SAI suggests that despite tendency to experience negative emotionality and low self-esteem, people with high vulnerable narcissism do not generally maintain negative views of their intelligence.

We found a relatively large and positive correlation between SAI and intellect. However, in contrast to grandiose narcissism, intellect was also correlated with OAI, which is consistent with previous studies (DeYoung et al., 2014). According to DeYoung et al. (2007), intellect is part of a broader trait of openness/intellect and reflects intellectual engagement with semantic and abstract information, enjoyment of cognitive activity as well as one's perceived cognitive abilities.

6 | STUDY 2

Study 2 had two aims. First, we wanted to replicate the findings of Study 1, which indicated that when studying the link between grandiose narcissism and SAI, trait intellect was a potential confounder that needed to be controlled. Accordingly, in Study 2, we tested whether grandiose narcissism predicts SAI when intellect and OAI are controlled, but this time we chose alternative instruments to assess OAI and intellect. Second, we examined how the two forms of narcissism predict state responses related to IQ tests performance. In particular, we were interested in how narcissistic individuals feel, what they think, and how engaged they are when faced with a demanding cognitive task such as an intelligence test. To assess states experienced during intelligence test performance, we used the concept of task-related stress developed by Matthews et al. (2002), which integrates motivational, affective, and cognitive dimensions of subjective stress experienced during cognitive performance. Matthews et al. (2002) distinguished three factors: (a) task engagement, which reflects interest, energy, motivation, and concentration; (b) distress, which reflects negative mood, tension, and lack of confidence and control; and (c) worry, which reflects cognitive components such as task-irrelevant thoughts, self-focused attention, and low self-esteem. The three factors are assessed with a self-report measure before and after a task is completed. The pretask state represents an individual's stress experience in anticipation of the task, and the posttask state represents the stress experience after completion of the task. To gain an indicator of stress responsivity, the posttask state can be investigated controlling for the pretask state.

Grandiose narcissism is characterized by self-confidence (Campbell & Foster, 2007) and, therefore, we hypothesized that people scoring high on this trait experience low task-related stress (i.e., high engagement, low distress, low worry).

In particular, their intellectual self-enhancement might be beneficial in this context. Previous research has indicated that an unrealistically positive view of one's academic abilities goes along with attenuated stress reactions in test situations (Gramzow et al., 2008). Thus, we hypothesized that the links between grandiose narcissism and the stress indicators are accounted for by high SAI. Furthermore, we were interested in whether test-related experience might differentiate grandiose narcissism from trait intellect. Aside from perceived intelligence, intellect reflects intellectual engagement and enjoyment of cognitive activity (DeYoung, 2014). Therefore, we explored how intellect and grandiose narcissism uniquely predict states experienced in a situation of solving an IQ test.

In contrast to grandiose narcissism, vulnerable narcissism is correlated with low self-confidence and high Neuroticism (e.g., Miller et al., 2011). Thus, we hypothesized that vulnerable narcissism would go along with an increase in task-related stress (low engagement, high distress, high worry).

6.1 | Participants

A total of 241 participants took part in the study (123 women and 118 men; mean age = 23.12; $SD = 5.00$). Approximately 70% of the sample were students, and the remaining participants were working adults. Participants were recruited via website announcements, gave their informed consent, and were tested individually in a lab at the University of Warsaw. They received the equivalent of 20 EUR in Polish zloty for participation.

6.2 | Measures

Grandiose narcissism, vulnerable narcissism, and SAI were assessed with the same measures as in Study 1.

Fluid intelligence was assessed with three tests. In the *Number Series Test*, the task was to find the hidden rule according to which a sequence or an array of numbers was constructed and to complete the sequence or the array with the missing number. For example, the sequence "1, 5, 12, 22, 35, ..." should be completed with "51." Participants were given 18 min to solve 18 number series problems with ascending difficulty. The second test was the *Paper Folding Test*. The test consisted of 16 tasks, and the time limit was 10 min. In each task, participants were presented with a drawing showing a sheet of paper that has been folded. A black dot showed where a hole was punched. The task was to choose one correct answer out of five drawings presenting the holes when the sheet was unfolded. Finally, we used Cattell's Culture Fair Intelligence Test (see Study 1). In the analyses described below, we used a factor score of all three fluid intelligence tests.

Trait intellect was measured with the Polish adaptation (Strus, Rowiński, & Ciecuch, 2012) of the International

Personality Item Pool-Big Five Aspect Scale (DeYoung, Quilty, & Peterson, 2007). The scales consist of 10 items with a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Stress states were measured with the short version of the Polish version (Zajenkowski et al., 2016) of the Dundee Stress State Questionnaire (DSSQ; Matthews et al., 2002). The DSSQ measures the three factors from Matthews et al.'s (2002) model: task engagement, distress, and worry. It includes 24 items with a 5-point response scale from 0 (*definitely false*) to 4 (*definitely true*). The DSSQ was administered twice, once immediately before and once immediately after the intelligence tests. Before the first measurement of stress states, participants were told that they were going to solve several cognitive tasks.

6.3 | Results

Table 3 presents descriptive statistic, intercorrelations, and internal consistency reliability estimates α (in parentheses on the main diagonal). As in Study 1, grandiose narcissism was unrelated to OAI and it indicated a positive and relatively large correlation with SAI. As in Study 1, vulnerable narcissism was unrelated to both OAI and SAI. Intellect correlated positively with grandiose narcissism, OAI, and SAI.

As in Study 1, we tested whether the relation between grandiose narcissism and SAI persists when we control for OAI and intellect. Again, all three predictors were significant and positively associated with SAI ($\beta = .13, p = .022$ for OAI; $\beta = .28, p < .001$ for intellect; $\beta = .39, p < .001$ for grandiose narcissism). Grandiose narcissism explained 13.6% of the variance in SAI beyond OAI and intellect. As in Study 1, we examined the relative contribution of all predictors (i.e., of intellect, grandiose narcissism, and intelligence) toward explaining variance in SAI using the R package “relaimpo” (Grömping, 2006). The entire model explained 33.2% of the variance in SAI. Grandiose narcissism explained the highest portion of variance in SAI (18.35%), followed by intellect (12.50%) and intelligence (2.33%). As in Study 1, we repeated the regression analyses controlling for gender. The results were virtually identical (see Table S2 in Supporting Information).

When we analyzed the links between narcissism and subjective stress, we found that grandiose narcissism was negatively associated with pretask and posttask distress, whereas vulnerable narcissism was correlated with worry (pre- and posttask). Intellect was generally correlated with low levels of pre- and posttask stress (high engagement, low distress and worry). SAI correlated with low distress.

Next, we examined whether SAI accounted for the significant associations between grandiose narcissism and stress states (i.e., pretask distress and post-task distress). We used the “lavaan” package in R (Rosseel et al., 2018) to test

the model. We found only one significant indirect effect. Specifically, the indirect path from grandiose narcissism to pretask distress via SAI was significant ($-0.106, 95\% \text{ CI: } -0.172 \text{ to } -0.041$; see Figure 1).

In order to test whether test-related experience differentiates grandiose narcissism from trait intellect, we ran several regression analyses with grandiose narcissism and intellect as predictors and each stress state as dependent variable (Table 4). We found that intellect was negatively related to pre task worry, while narcissism correlated positively with this state. Moreover, in case of posttask engagement, we observed a reversed pattern, that is, positive association with intellect and negative with grandiose narcissism.

Subsequently, we examined the link to stress responsivity for each variant of narcissism, that is, we tested whether grandiose or vulnerable narcissism predicted posttask stress while controlling for pretask (i.e., baseline) stress. In the analyses pertaining to grandiose narcissism (Table 5), we also controlled for intellect, as it was a potential confounder. In each of the models, Step 1 introduced the pretask measurement score, followed by grandiose narcissism (Step 2) and intellect (Step 3). Additionally, we reversed Steps 2 and 3 to examine unique variance of the two predictors. We found that grandiose narcissism and intellect were associated with post-task engagement in opposite ways. Specifically, grandiose narcissism was negatively, while intellect was positively related to task engagement. The posttask distress was negatively associated with grandiose narcissism only in Step 2, but the ΔR^2 was not significant in this case. Finally, only intellect negatively predicted posttask worry when analyzed together with grandiose narcissism.

For the analyses pertaining to vulnerable narcissism, we used pretask states (Step 1) and vulnerable narcissism (Step 2) as predictors and posttask states as dependent variables. Vulnerable narcissism did not account for additional variance beyond pretask stress and was insignificant in all of the models (see Table S3 in Supporting Information).

7 | DISCUSSION

In Study 2, we found that grandiose narcissism was positively and substantially associated with SAI, while its correlation with actual intelligence was nonsignificant. The positive association with SAI persisted when intellect was controlled. Vulnerable narcissism, by contrast, was unrelated to both OAI and SAI. These results match with those of Study 1.

Grandiose narcissism was negatively linked to pre- and post-task stress. For pre-task but not posttask stress, the association was accounted for by SAI, which partly supports the interpretation that their intellectual self-enhancement protects people with high grandiose narcissism from stress in test situations. Furthermore, regression analyses

TABLE 3 Study 2: correlations and descriptive statistics

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Grandiose narcissism	102.01	20.11	(0.91)													
2. Vulnerable narcissism	30.25	6.24	0.23	(0.70)												
3. Paper folding	10.00	3.41	0.03	-0.13	(0.80)											
4. Numbers	11.12	3.13	0.01	-0.06	0.40	(0.72)										
5. Cattell	25.98	4.43	-0.02	-0.07	0.46	0.41	(0.71)									
6. Intelligence (<i>g</i>)	0.00	1.00	0.01	-0.11	0.80	0.76	0.79	(0.71)								
7. Subjectively assessed intelligence	17.02	2.51	0.48	0.01	0.15	0.18	0.09	0.18	-							
8. Intellect trait	35.69	5.08	0.33	-0.10	0.19	0.16	0.14	0.21	0.43	(0.61)						
9. Task engagement pretask	21.72	5.07	0.08	-0.06	-0.03	-0.03	-0.05	-0.05	0.15	0.14	(0.64)					
10. Distress pretask	10.32	5.46	-0.16	0.15	-0.01	-0.07	0.05	-0.02	-0.26	-0.36	-0.50	(0.77)				
11. Worry pretask	15.43	6.85	0.07	0.23	-0.12	-0.09	-0.08	-0.13	-0.07	-0.22	-0.08	0.34	(0.83)			
12. Task engagement posttask	19.62	5.71	-0.08	-0.06	0.04	0.02	-0.04	0.00	0.06	0.16	0.64	-0.32	-0.02	(0.79)		
13. Distress posttask	13.79	5.61	-0.22	0.11	-0.01	-0.06	0.00	-0.03	-0.18	-0.22	-0.24	0.51	0.20	-0.36	(0.74)	
14. Worry posttask	10.43	5.94	-0.03	0.20	-0.09	-0.18	-0.03	-0.12	-0.16	-0.27	-0.13	0.36	0.64	-0.12	0.28	(0.76)

Note: Correlations significant at $p < .01$ are marked in bold. Coefficients on the main diagonal (in parentheses) are internal consistency reliability estimates (ω for the *g* factor and α for the remaining variables).

FIGURE 1 The path model relating grandiose narcissism, subjectively assessed intelligence, and distress before (pretask) the IQ test. The numbers are standardized regression coefficients. $**p < .01$

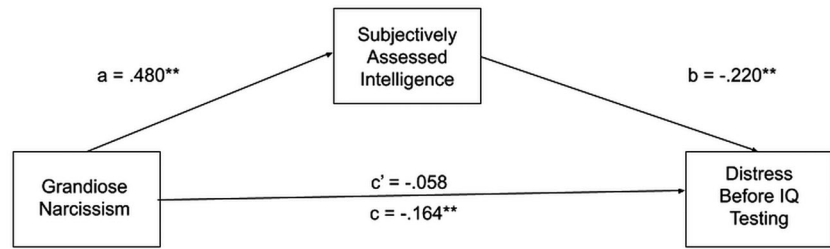


TABLE 4 Regression analyses with grandiose narcissism and intellect as predictors and stress states as dependent variables

Predictor	Outcome														
	Engagement pretask			Distress pretask			Worry pretask		Engagement posttask		Distress posttask		Worry post task		
	β	ΔR^2		β	ΔR^2		β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	
Grandiose narcissism	.04	.00		-.06	.00		.17*	.03*	-.15	.02*		-.16*	.02*	.09	.01
Intellect	.12	.01		-.32**	.09**		-.28**	.07**	.19	.03*		-.15*	.02*	-.26**	.06**

Note: ΔR^2 = incremental R for each predictor when entered after the other predictor.

* $p < .05$; ** $p < .01$.

TABLE 5 Grandiose narcissism, intellect, and pretask stress states as predictors of posttask stress states

Step	Predictor	Outcome: engagement posttask		Predictor	Outcome: distress posttask		Predictor	Outcome: worry posttask	
		ΔR^2	β		ΔR^2	β		ΔR^2	β
1	Engagement pretask	.42**	.65**	Distress pretask	.27**	.50**	Worry pretask	.41**	.61**
2	Grandiose Narcissism	.02*	-.18**	Grandiose Narcissism	.02	-.13*	Grandiose Narcissism	.00	-.02
3	Intellect	.01*	.13*	Intellect	.00	.00	Intellect	.01*	-.13*

* $p < .05$; ** $p < .01$.

with both grandiose narcissism and intellect as predictors revealed a surprising pattern of results. While intellect was positively associated with task engagement during IQ test performance, grandiose narcissism was inversely related to task engagement. Moreover, only intellect uniquely predicted posttask worry. These results suggest that individuals scoring high on intellect are more engaged and motivated on demanding cognitive tests such as solving intelligence tests. Their thoughts are also more focused on the task, as indicated by their low tendency to worry. By contrast, people with high grandiose narcissism seem to be less interested and motivated to accomplish the test. Taking these results together, the question arises why persons with high grandiose narcissism manifest inflated views on their intelligence if they are not really engaged in intellectual activities. One way of examining this question is to examine the role of high SAI in personal adjustment among people with different level of narcissism. This issue was addressed in Study 3.

Vulnerable narcissism was associated with increased distress (pretask) and worry (pre- and posttask). Further analyses revealed, however, that while controlling for the pretask states, vulnerable narcissism did not account for any additional variance in the posttask states. These results suggest that the stress experienced by individuals with high vulnerable narcissism might be a result of their general tendency toward negative emotionality and their anticipation of aversive experiences, not a reaction to this specific test situation. Interestingly, the stress was mainly associated with emotional reactions (distress) and self-focused negative thoughts (worry) but not with motivation (task engagement).

8 | STUDY 3

Studies 1 and 2 demonstrated that individuals with high grandiose narcissism maintain unrealistically positive self-views with regard to intelligence. The results of Study 2 are also

partly in line with the suggestion that intellectual self-enhancement acts as a buffer against stress in the context of cognitively challenging tasks. Study 3 examined whether intellectual self-enhancement accounts for the link between grandiose narcissism and a more distant cognitive outcome, life satisfaction. Because general well-being is partly a result of domain-specific well-being, we hypothesized that SAI positively predicts life satisfaction, not directly but via satisfaction with one's intelligence (Zajenkowski & Matthews, 2019).

With respect to vulnerable narcissism, we expected a null correlation with SAI, given the results of Studies 1 and 2. Because those with high vulnerable narcissism have a general inclination toward negativity (Czarna et al., 2018), we also expected them to be unsatisfied with both their intelligence (intelligence satisfaction) and their life in general (life satisfaction).

9 | METHOD

9.1 | Participants

The online study was completed by 306 volunteer participants (213 women, 93 men) who were recruited via publicly accessible social networking websites. Their mean age was 24.07 ($SD = 7.00$) with a range of 18–52.

9.2 | Measures

Grandiose narcissism and vulnerable narcissism were assessed with the same instruments as in Study 1.

SAI was assessed with the same method as in Study 1. The only difference was that instead of 25-point scale, we used a 10-point scale ranging from 1 (*very low*) to 10 (*very high*).

Life satisfaction was measured with the Polish version of the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Participants gave their answers on a 7-point Likert-type scale ranging from 1 (*I totally disagree*) to 7 (*I fully agree*).

Satisfaction with Intelligence was measured with the Satisfaction with Intelligence Scale (Zajenkowski &

Matthews, 2019), which was recently created based on the Satisfaction with Life Scale (Diener et al., 1985). It consists of five items that are parallel to SWLS, but instead of general life satisfaction, it asks about satisfaction with one's intellectual abilities. Sample items are "I am satisfied with my intelligence" and "In most ways my intelligence is close to my ideal." Participants gave their answers on a 7-point Likert-type scale from 1 (*I totally disagree*) to 7 (*I fully agree*).

10 | RESULTS

Table 6 displays descriptive statistic, intercorrelations, and internal consistency reliability estimates α (in parentheses on the main diagonal). Grandiose narcissism, life satisfaction, satisfaction with intelligence, and SAI were all positively interrelated. These correlations were relatively large. In the case of vulnerable narcissism, we found no significant correlations.

Subsequently, we tested the hypothesis that grandiose narcissism is linked to global life satisfaction via SAI and intelligence satisfaction. The model is shown in Figure 2. We used the "lavaan" package in R to test this model (Rosseel et al., 2018). The results indicated that the hypothesized indirect effect from SAI through intelligence satisfaction (0.026, 95% CI: 0.012 to 0.052) was significant. Furthermore, the indirect effect via intelligence satisfaction (0.052, 95% CI: 0.013/ to 0.090) was also significant, whereas the indirect path via SAI to life satisfaction was not significant (0.007, 95% CI: -0.018 to 0.050).

11 | DISCUSSION

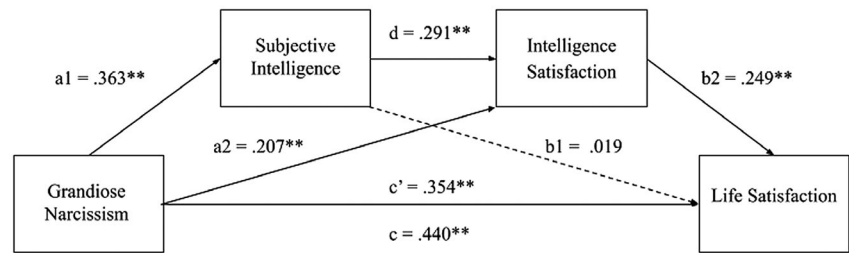
Study 3 confirmed that intelligence-related beliefs are important for understanding the relation between grandiose narcissism and well-being. We found evidence for the hypothesized pathway, which indicates that high SAI resulting from grandiose narcissism might lead to high intelligence satisfaction, which might then lead to high well-being. One should note,

	M	SD	1	2	3	4	5
1. Grandiose narcissism	102.94	22.49	(0.93)				
2. Vulnerable narcissism	30.81	6.55	0.11	(0.74)			
3. Subjectively assessed intelligence	6.84	1.82	0.36	-0.02	-		
4. Intelligence satisfaction	22.30	7.25	0.31	-0.01	0.37	(0.90)	
5. Life satisfaction	20.95	6.82	0.44	-0.11	0.24	0.37	(0.88)

TABLE 6 Study 3: correlations and descriptive statistics

Note: Correlations significant at $p < .01$ are marked in bold. Coefficients on the main diagonal (in parentheses) are internal consistency reliability estimates (α).

FIGURE 2 The path model relating grandiose narcissism, subjectively assessed intelligence, intelligence satisfaction, and life satisfaction. The numbers are standardized regression coefficients. $**p < .01$



however, that SAI accounts only for small part of the variance, which means that there must be additional factors accounting for the link between grandiose narcissism and well-being. For vulnerable narcissism, we found the expected negative link to well-being and null relations to intelligence-related beliefs.

12 | STUDY 4

Intelligence is a predictor of major life outcomes such as occupation success (Schmidt, 2002), income (Zagorsky, 2007), or longevity (Gottfredson & Deary, 2004), and thus it is likely to play a role in many life domains. However, the subjective importance assigned to intelligence might differ from person to person. In Study 4, we examined whether this subjective importance might be a function of people's narcissism. We hypothesized that because intelligence is of key importance for individuals with high on grandiose narcissism's agentic sense of self-worth, these people should generally consider intelligence important across life domains. On the contrary, because the concept of intelligence is not central to people with high vulnerable narcissism, we did not expect that they consider intelligence generally more important than do people low in vulnerable narcissism.

13 | METHOD

13.1 | Participants

A total of 362 individuals (282 women, 80 men) were recruited via publicly accessible social networking websites and volunteered to participate in an online study. Participants' mean age was 23.70 years ($SD = 5.95$) with a range of 18–66.

13.2 | Measures

Grandiose narcissism and vulnerable narcissism were assessed with the same instruments as in Study 1.

Intelligence in everyday life To assess people's beliefs about the influence of intelligence, we created a new scale called the Intelligence in Everyday Life Scale. The scale consisted of 13 items asking to what extent intelligence is advantageous for various domains from 1 (*not at all*) to 5 (*very much*). The items covered the three categories described above. The first category was very broad and included "life success" and "solving problems." The second

category contained life outcomes that have been repeatedly empirically linked to intelligence in past research, namely "job performance" (Schmidt, 2002), "school achievements" (Deary et al., 2007), "income" (Zagorsky, 2007), "creativity" (Jauk, Bendek, Dunst, & Neubauer, 2013), "social status," "health," and "longevity" (Gottfredson & Deary, 2004). The third category was narcissism specific and included "popularity among people," "successful relations with others," and "physical attractiveness," which are important goals for narcissistic persons (Back et al., 2013; Campbell & Campbell, 2009). Although we selected items from three categories, we did not make any predictions regarding the structure of the scale. Therefore, we conducted an exploratory factor analysis including all items. The mean inter-item correlation was .25 (see Table 6). The Kaiser–Meyer–Olkin measure of sampling adequacy was estimated at 0.83, which suggested that the data were appropriate for data reduction (Kaiser & Rice, 1974). The parallel analysis suggested the presence of one large factor (Eigenvalue = 4.77) and the possibility of a second, weaker factor (Eigenvalue = 2.14) that was not considered interpretable. The single-factor model explained approximately 40% of the variance and was defined by loadings exceeding 0.40. The reliability of the entire scale was $\alpha = .84$. We analyzed the aggregated score as well as single items.

14 | RESULTS

Table 7 presents descriptive statistics, intercorrelations, and internal consistency reliability estimates α (in parentheses on the main diagonal). We first investigated mean differences across the 13 items. A repeated-measures ANOVA revealed that the means varied significantly across the items ($F(12, 3,840) = 175.19; p < .001$). School achievements, work success, and life success were regarded as the most strongly influenced by intelligence followed by life problems, income, and social status, followed by creativity, interpersonal relations, and relationships, followed by popularity and health, and finally followed by longevity and physical attractiveness, which had the lowest scores.

Grandiose narcissism correlated with the total score on the Intelligence in Everyday Life Scale as well as with several of the single items. Specifically, people with high grandiose narcissism believed that intelligence was beneficial for social

TABLE 7 Study 4: correlations and descriptive statistics

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Grandiose narcissism	97.54	22.10	(0.93)															
2. Vulnerable narcissism	31.01	6.41	0.11	(0.74)														
3. Life success	4.33	0.94	0.08	-0.01														
4. Life problems	4.12	0.96	0.10	0.00	0.44													
5. Work success	4.38	0.80	0.09	0.02	0.67	0.53												
6. School achievements	4.41	0.93	0.00	-0.01	0.50	0.35	0.54											
7. Income	4.13	0.93	0.06	-0.02	0.58	0.36	0.64	0.49										
8. Creativity	3.76	1.13	0.05	0.06	0.24	0.35	0.25	0.30	0.18									
9. Longevity	2.75	1.15	0.14	-0.01	0.03	0.15	0.05	0.12	0.13	0.13								
10. Good health	2.96	1.12	0.12	-0.08	0.06	0.21	0.08	0.02	0.16	0.13	0.61							
11. Social status	4.07	0.98	0.17	0.01	0.50	0.36	0.59	0.57	0.71	0.29	0.13	0.15						
12. Interpersonal relations	3.62	1.12	0.15	-0.07	0.42	0.44	0.39	0.25	0.27	0.27	0.18	0.18	0.33					
13. Good relationship	3.47	1.06	0.15	-0.09	0.23	0.36	0.24	0.18	0.27	0.26	0.33	0.39	0.26	0.43				
14. Popularity	3.16	1.09	0.21	0.03	0.15	0.23	0.26	0.24	0.20	0.27	0.27	0.28	0.32	0.32	0.37			
15. Physical attractiveness	2.61	1.17	0.21	0.12	0.06	0.14	0.06	0.05	0.14	0.25	0.48	0.35	0.16	0.18	0.35	0.43		
16. Everyday life total score	47.76	7.90	0.22	0.02	0.61	0.63	0.65	0.56	0.64	0.53	0.53	0.53	0.67	0.62	0.65	0.61	0.53	(0.82)

Note: Correlations significant at $p < .01$ are marked in bold. Coefficients on the main diagonal (in parentheses) are internal consistency reliability estimates (α).

status, good relations with others, good romantic relationships, popularity among people, and physical attractiveness. In the case of vulnerable narcissism, there were no significant correlations.

15 | DISCUSSION

In Study 4, we examined how people with different levels of narcissism perceive the role of intelligence in everyday life. Generally, individuals with high grandiose narcissism think that cognitive ability plays an important role in various life domains. Interestingly, they regard intelligence as an important factor determining interpersonal outcomes such as popularity among people, social status, or interpersonal relations. Thus, it seems that their understanding of intelligence is most strongly associated with themes central for grandiose narcissism such as popularity, attractiveness, and status, but they also attribute to it the power to influence multiple domains, even less obvious and communal ones such as relationship satisfaction. Vulnerable narcissism was unrelated to all indicators. Thus, the results indicate that people scoring high on grandiose (but not vulnerable) narcissism believe that intelligence buys people advantages in life, especially in the domains persons with high grandiose narcissism care the most about.

16 | GENERAL DISCUSSION

In the current research, we comprehensively investigated the relation between narcissism and intelligence. We did so by considering both grandiose and vulnerable narcissism and by investigating not only OAI but also intelligence-related beliefs, motivations, and emotions. Studies 1 and 2 indicated that both grandiose and vulnerable narcissism were essentially unrelated to OAI. The null correlation for grandiose narcissism is congruent with extant research literature (Dufner et al., 2012; Gabriel et al., 1994; Nathanson et al., 2006; Paulhus & Williams, 2002; Zajenkowski & Czarna, 2015). To our knowledge, the null correlation between vulnerable narcissism and cognitive ability has now been demonstrated for the first time. Although both forms of narcissism were unrelated to OAI, we found that one type of narcissism, namely the grandiose type, was consistently linked to intelligence-related beliefs and emotions. We will discuss these links in the following section.

16.1 | The role of intelligence in grandiose narcissism: Cognition, emotions, and motivations

In a recent meta-analysis of SAI correlates, it has been suggested that “SAI plays a more central role in the self than

commonly suggested, and thereby SAI may have a larger relationship with well-being and human functioning than often believed” (Horward & Cogswell, 2018, p. 32). Our studies suggest that this conclusion might be even more relevant for people with high grandiose narcissism. Across three studies (Studies 1–3), grandiose narcissism was a strong and robust positive correlate of SAI. Going beyond earlier studies, our results have demonstrated that grandiose narcissism predicts SAI beyond objective intelligence and basic personality traits. The current research further indicates that intellectual self-enhancement is instrumental for individuals with high grandiose narcissism. Study 2 suggests that high SAI enables them to keep their stress level low in the context of an IQ test, and Study 3 indicates that high SAI enables them to maintain high general life satisfaction. Thus, intellectual self-enhancement might help them to maintain their subjective well-being.

In Study 4, we examined the general importance that people with high and low narcissism attribute to intelligence. We found that those with high grandiose narcissism consider intelligence relevant for success in many life domains. Interestingly, they locate intelligence primarily in the interpersonal context as a factor influencing popularity among people, social status, positive interpersonal relations, relationship satisfaction, and even physical attractiveness. Thus, for people with high grandiose narcissism, cognitive ability appears to be an instrument enabling them to gain high popularity, admiration, and social status. This seems to be consistent with their interpersonal style. Campbell (1999) proposed that persons with high grandiose narcissism have a certain outlook and attitude toward interpersonal (including romantic) relationships; they perceive them as yet another competitive field in which they can win admiration and fulfillment of ego needs. Their attitude toward relationships is thus somewhat “agentic.” In line with this attitude, they believe that intelligence, an agentic ability par excellence, brings benefits for relationships, interpersonal attraction, and popularity.

Studies 1 and 2 revealed that the personality trait of intellect was related to both grandiose narcissism and SAI. We found that intellect, like grandiose narcissism, was associated with high levels of SAI even after controlling for objective intelligence. However, aside from this similarity and their positive intercorrelation, we observed several differences between grandiose narcissism and intellect. First, intellect, unlike narcissism, was significantly correlated with OAI, which is consistent with previous research (DeYoung, 2014). Thus, individuals high in intellect to some extent accurately perceive their cognitive ability, which is not the case among those with high grandiose narcissism. Second, it seems that the intellect–SAI link cannot be simply reduced to narcissistic illusions or to the level of genuine intelligence because, in both of our studies, intellect predicted SAI independently from grandiose narcissism and OAI.

Finally, individuals scoring high in intellect experience IQ testing in a different way than those scoring high in grandiose

narcissism. Most importantly, intellect predicted higher engagement, motivation, and concentration in solving intelligence tests, whereas grandiose narcissism was associated with lower levels of engagement and motivation. Thus, although intelligence is an important aspect of a belief system in narcissism, it does not lead to increased engagement in abstract cognitive tasks such as IQ tests. Some authors suggest, however, that people with high grandiose narcissism might be sensitive to specific situational contexts which can increase their motivation. For instance, Wallace, Ready, and Weitenhagen (2009) found that narcissistic participants were more persistent in attempting to solve impossible tasks framed as intelligence tests. One might wonder whether low engagement of narcissistic individuals observed in our study could be due to a lack of information that they will perform tests measuring intelligence. It is possible that creating such situation would make them feel more motivated toward taking intelligence tests, and perhaps this would also increase their performance.

16.2 | The role of intelligence in vulnerable narcissism: Cognition, emotions, and motivations

The results of Studies 1 and 2 indicate that individuals with high vulnerable narcissism do not consider themselves any more or less intelligent than people low in vulnerable narcissism, and the findings from Study 3 show that, unlike people with high grandiose narcissism, those with high narcissistic vulnerability do not consider intelligence important across life domains. These findings indicate that the topic of intelligence does not have special relevance in vulnerable narcissism. However, the topic is not totally irrelevant, either. Study 2 showed that people with high vulnerable narcissism felt elevated stress when taking an IQ test. However, it is likely that these reactions are not specific to the content domain of intelligence but rather represent a general tendency observed in vulnerable narcissism toward increased stress proneness, self-esteem instability, and self-doubt (Miller et al., 2011; Wink, 1991).

16.3 | Limitations and future directions

The current research has several limitations. First, the present studies were cross-sectional, which did not allow for establishing causal relationships. The path models, which test potential causal processes, should be replicated with longitudinal data. Second, most samples included young adults, mainly college students or people with a college degree who might value cognitive ability more than other populations. Third, because people with high grandiose narcissism are sensitive to situational factors that might increase their motivation (Wallace et al., 2009), it would be interesting to examine how individuals with high grandiose

and vulnerable narcissism perform IQ tests in various conditions, for example, under high challenge or after negative feedback. It is likely that grandiose narcissism would be correlated with higher score on an intelligence test when the opportunity for self-enhancement is high. People with high vulnerable narcissism, on the other hand, were found to be more reactive to negative feedback and, as a result, experienced high negative emotionality (Krizan & Herlache, 2017), which in turn might impair cognitive performance.

Finally, the current studies showed that the concept of intelligence is of high importance for individuals with high grandiose narcissism. However, research findings indicate that persons high in narcissism also tend to overestimate other agentic skills and attributes, such as creativity, leadership, Extraversion, or social influence (see Carlson & Khafagy, 2018 for a review). It is an open question to what extent the effects presented in the current research are unique for the content domain of intelligence or whether such other agentic domains are of similar importance for narcissistic self-regulation. Intelligence might be of special importance for people with high grandiose narcissism, given that intelligence is among the most prototypically agentic constructs (Abele & Wojciszke, 2014) and a central concept in modern society that might be regarded as a synonym of general self-efficacy (Horward & Cogswell, 2018). Yet, future research needs to address this issue directly.

16.4 | Conclusion

The current research indicates that a belief in their intellectual superiority is an important building block of self-concept among individuals with high grandiose narcissism. They feel that high intelligence is a resource that buys people benefits in multiple domains, and they feel that they possess that resource. Thus, people scoring high on grandiose narcissism are indeed preoccupied with the topic of intelligence. Intelligence seems to be less important in vulnerable narcissism; however, people with high level of this trait feel increased distress in the context of IQ testing.

ACKNOWLEDGMENTS

Preparation of this manuscript was supported by a grant no 2016/23/ B/HS6/00312 from National Science Centre in Poland awarded to the first author and a grant no 2015/19/B/HS6/02214 awarded to the second author.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

ORCID

Marcin Zajenkowski  <https://orcid.org/0000-0001-8669-4231>

REFERENCES

- Abele, A. E., & Wojciszke, B. (2014). Communal and agentic content in social cognition: A dual perspective model. *Advances in Experimental Social Psychology*, *50*, 195–255.
- Ackerman, P. L., & Heggestad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin*, *121*, 219–245. <https://doi.org/10.1037/0033-2909.121.2.219>
- Austin, E. J., Boyle, G. J., Groth-Marnat, G., Matthews, G., Saklofske, D. H., & Schwean, V. L. (2011). Integrating intelligence and personality. In T. M. Harwood, L. E. Beutler, & G. Groth-Marnat (Eds.), *Integrative assessment of adult personality* (pp. 110–151). New York, NY: The Guilford Press.
- Back, M. D., Küfner, A. C. P., Dufner, M., Gerlach, T. M., Rauthmann, J. F., & Denissen, J. J. A. (2013). Narcissistic admiration and rivalry: Disentangling the bright and dark sides of narcissism. *Journal of Personality and Social Psychology*, *105*, 1013–1037. <https://doi.org/10.1037/a0034431>
- Bazińska, R., & Drat-Ruszczak, K. (2000). The structure of narcissism measured with Polish adaptation of Raskin and Hall NPI. *Czasopismo Psychologiczne*, *6*, 171–187.
- Binet, A. (1887). Le Fétichisme dans l'Amour. *Revue philosophique de la France et l'étranger*, *24*, 252–274.
- Cain, N. M., Pincus, A. L., & Ansell, E. B. (2008). Narcissism at the crossroads: Phenotypic description of pathological narcissism across clinical theory, social/personality psychology, and psychiatric diagnosis. *Clinical Psychology Review*, *28*, 638–656. <https://doi.org/10.1016/j.cpr.2007.09.006>
- Campbell, W. K. (1999). Narcissism and romantic attraction. *Journal of Personality and Social Psychology*, *77*, 1254–1270. <https://doi.org/10.1037/0022-3514.77.6.1254>
- Campbell, W. K., & Campbell, S. M. (2009). On the self-regulatory dynamics created by the peculiar benefits and costs of narcissism: A contextual reinforcement model and examination of leadership. *Self and Identity*, *8*, 214–232. <https://doi.org/10.1080/15298860802505129>
- Campbell, W. K., & Foster, J. D. (2007). The narcissistic self: Background, an extended agency model, and ongoing controversies. In C. Sedikides & S. Spencer (Eds.), *Frontiers in social psychology: The self* (pp. 115–138). Philadelphia, PA: Psych Press.
- Carlson, E., & Khafagy, R. (2018). What do narcissists know about themselves? Exploring the bright spots and blind spots of narcissists' self-knowledge. In A. Hermann, A. Brunell, & J. Foster (Eds.), *The handbook of trait narcissism: Key advances, research methods, and controversies* (pp. 275–282). Cham, Switzerland: Springer.
- Cattell, R. B. (1973). *Measuring intelligence with the culture-fair tests*. Champaign, IL: Institute for Personality and Ability Testing.
- Chamorro-Premuzic, T., & Furnham, A. (2004). A possible model for explaining the personality-intelligence interface. *British Journal of Psychology*, *95*, 249–264.
- CNN. Politics. (n.d.). *Donald Trump's IQ obsession, in 22 quotes*. Retrieved from <https://edition.cnn.com/2017/10/10/politics/donald-trump-tillerson-iq>
- Czarna, A. Z., Dufner, M., & Clifton, A. D. (2014). The effects of vulnerable and grandiose narcissism on liking-based and disliking-based centrality in social networks. *Journal of Research in Personality*, *50*, 42–45. <https://doi.org/10.1016/j.jrp.2014.02.004>
- Czarna, A. Z., Zajenkowski, M., & Dufner, M. (2018). How does it feel to be a narcissist? Narcissism and emotions. In A. Hermann, A. Brunell, & J. Foster (Eds.), *The handbook of trait narcissism: Key advances, research methods, and controversies* (pp. 255–263). Cham, Switzerland: Springer.
- Deary, I. J., Strand, S., Smith, P., & Fernandes, C. (2007). Intelligence and educational achievement. *Intelligence*, *35*, 13–21. <https://doi.org/10.1016/j.intell.2006.02.001>
- DeYoung, C. G. (2014). Openness/intellect: A dimension of personality reflecting cognitive exploration. In R. J. Larsen & M. L. Cooper (Eds.), *The APA handbook of personality and social psychology* (Vol. 3, pp. 369–399). Washington, DC: APA.
- DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology*, *93*, 880–896. <https://doi.org/10.1037/0022-3514.93.5.880>
- Dickinson, K. A., & Pincus, A. L. (2003). Interpersonal analysis of grandiose and vulnerable narcissism. *Journal of Personality Disorders*, *17*, 188–207. <https://doi.org/10.1521/pedi.17.3.188.22146>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Dufner, M., Denissen, J., van Zalk, M., Matthes, B., Meeus, W., van Aken, M., & Sedikides, C. (2012). Positive intelligence illusions: On the relation between intellectual self-enhancement and psychological adjustment. *Journal of Personality*, *80*, 537–572. <https://doi.org/10.1111/j.1467-6494.2011.00742.x>
- Dufner, M., Gebauer, J. E., Sedikides, C., & Denissen, J. J. A. (2018). Self-enhancement and psychological adjustment: A meta-analytic review. *Personality and Social Psychology Review*, *23*(1), 48–72.
- Freud, Z. (1914). On narcissism: An introduction. In P. Gay (Ed.), *The Freud reader* (pp. 545–562). New York, NY: W. W. Horton.
- Freund, P., & Kasten, N. (2012). How smart do you think you are? A meta-analysis on the validity of self-estimates of cognitive ability. *Psychological Bulletin*, *138*, 296–321. <https://doi.org/10.1037/a0026556>
- Furnham, A. (2001). Self-estimates of intelligence: Culture and gender difference in self and other estimates of both general (g) and multiple intelligences. *Personality and Individual Differences*, *31*, 1381–1405.
- Gabriel, M. T., Critelli, J. W., & Ee, J. S. (1994). Narcissistic illusions in self-evaluations of intelligence and attractiveness. *Journal of Personality*, *62*, 143–155. <https://doi.org/10.1111/j.1467-6494.1994.tb00798.x>
- Gignac, G. E., & Szodorai, E. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences*, *102*, 74–78.
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, *4*, 26–42. <https://doi.org/10.1037/1040-3590.4.1.26>
- Gottfredson, L. S., & Deary, I. J. (2004). Intelligence predicts health and longevity, but why? *Current Directions in Psychological Science*, *13*, 1–4. <https://doi.org/10.1111/j.0963-7214.2004.01301001.x>
- Gramzow, R. H., Willard, G., & Mendes, W. B. (2008). Big tales and cool heads: Academic exaggeration is related to cardiac vagal reactivity. *Emotion*, *8*, 138–144.

- Grijalva, E., Newman, D. A., Tay, L., Donnellan, M., Harms, P. D., Robins, R. W., & Yan, T. (2015). Gender differences in narcissism. *Psychological Bulletin*, *141*, 261–310.
- Grömping, U. (2006). Relative importance for linear regression in R: The package relaimpo. *Journal of Statistical Software*, *17*, 1–27.
- Hendin, H. M., & Cheek, J. M. (1997). Assessing hypersensitive narcissism: An examination of Murray's narcissism scale. *Journal of Research in Personality*, *31*, 588–599.
- Herman, A. D., Brunell, A. B., & Foster, J. D. (2018). *Handbook of trait narcissism*. New York, NY: Springer.
- Horward, M. C., & Cogswell, J. (2018). The “other” relationships of self-assessed intelligence: A meta-analysis. *Journal of Research in Personality*, *77*, 31–46. <https://doi.org/10.1016/j.jrp.2018.09.006>
- Jauk, E., Bendek, M., Dunst, B., & Neubauer, A. C. (2013). The relationship between intelligence and creativity: New support for the threshold hypothesis by means of empirical breakpoint detection. *Intelligence*, *41*, 212–221. <https://doi.org/10.1016/j.intell.2013.03.003>
- Kaiser, H. F., & Rice, J. (1974). Little Jiffy, Mark Iv. *Educational and Psychological Measurement*, *34*, 111–117. <https://doi.org/10.1177/001316447403400115>
- Krizan, Z., & Herlache, A. D. (2017). The narcissism spectrum model: A synthetic view of narcissistic personality. *Personality and Social Psychology Review*, *22*, 3–31.
- Lee, B. X. (2017). *The dangerous case of Donald Trump: 27 psychiatrists and mental health experts assess a president*. New York, NY: Thomas Dunne Books.
- Matthews, G., Campbell, S. E., Falconer, S., Joyner, L. A., Huggins, J., Gilliland, K., ... Warm, J. S. (2002). Fundamental dimensions of subjective state in performance settings: Task engagement, distress and worry. *Emotion*, *2*, 315–340. <https://doi.org/10.1037/1528-3542.2.4.315>
- Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Campbell, W. K. (2011). Grandiose and vulnerable narcissism: A nomological network analysis. *Journal of Personality*, *79*, 1013–1042. <https://doi.org/10.1111/j.1467-6494.2010.00711.x>
- Miller, J. D., Lynam, D. R., Vize, C., Crowe, M., Sleep, C., Maples-Keller, J. L., ... Campbell, W. K. (2018). Vulnerable narcissism is (mostly) a disorder of neuroticism. *Journal of Personality*, *86*, 186–199. <https://doi.org/10.1111/jopy.12303>
- Nathanson, C., Paulhus, D. L., & Williams, K. M. (2006). Personality and misconduct correlates of body modification and other cultural deviance markers. *Journal of Research in Personality*, *40*, 779–802. <https://doi.org/10.1016/j.jrp.2005.09.002>
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, *36*, 556–563. [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)
- Pincus, A. L., & Lukowitsky, M. R. (2010). Pathological narcissism and narcissistic personality disorder. *Annual Review of Clinical Psychology*, *6*, 421–446. <https://doi.org/10.1146/annurev.clinpsy.121208.131215>
- Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, *45*, 590. <https://doi.org/10.2466/pr0.1979.45.2.590>
- Raven, J. C., Court, J. H., & Raven, J. (1983). *Manual for Raven's progressive matrices and vocabulary scales*. London, UK: H. K. Lewis.
- Rosseeel, Y., Oberski, D., Byrnes, J., Vanbrabant, L., Savalei, V., Merkle, E., ... Chow, M. (2018). Package “lavaan”.
- Schmidt, F. L. (2002). The role of general cognitive ability and job performance: Why there cannot be a debate. *Human Performance*, *15*, 187–210. https://doi.org/10.1207/S15327043HUP1501&02_12
- Sedikides, C., Rudich, E., Gregg, A., Kumashiro, M., & Rusbult, C. (2004). Are narcissists psychologically healthy? *Journal of Personality and Social Psychology*, *87*, 400–416.
- Strus, W., Ciecuch, J., & Rowiński, T. (2014). Polish adaptation of IPIP-BFM-50 measuring five personality traits in a lexical approach. *Roczniki Psychologiczne*, *17*, 327–346.
- Strus, W., Rowiński, T., & Ciecuch, J. (2012). *Polish version of Big Five aspects scales from international personality item pool*. In European Conference on Personality, Triest.
- Wallace, H., Ready, C. B., & Weitenhagen, E. (2009). Narcissism and task persistence. *Self and Identity*, *8*, 78–93. <https://doi.org/10.1080/15298860802194346>
- Wink, P. (1991). Two faces of narcissism. *Journal of Personality and Social Psychology*, *61*, 590–597. <https://doi.org/10.1037/0022-3514.61.4.590>
- Zagorsky, J. L. (2007). Do you have to be smart to be rich? The impact of IQ on wealth, income and financial distress. *Intelligence*, *35*, 489–501.
- Zajenkowski, M., & Czarna, A. (2015). What makes narcissists unhappy? Subjectively assessed intelligence moderates the relationship between narcissism and psychological well-being. *Personality and Individual Differences*, *77*, 50–54. <https://doi.org/10.1016/j.paid.2014.12.045>
- Zajenkowski, M., & Matthews, G. (2019). Intellect and openness differentially predict affect: Perceived and objective cognitive ability contexts. *Personality and Individual Differences*, *137*, 1–8. <https://doi.org/10.1016/j.paid.2018.08.001>
- Zajenkowski, M., Stolarski, M., Maciantowicz, O., Malesza, M., & Witowska, J. (2016). Time to be smart: Uncovering a complex interplay between intelligence and time perspectives. *Intelligence*, *58*, 1–9. <https://doi.org/10.1016/j.intell.2016.06.002>

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Zajenkowski M, Czarna AZ, Szymaniak K, Dufner M. What do highly narcissistic people think and feel about (their) intelligence?. *Journal of Personality*. 2019;00:1–16. <https://doi.org/10.1111/jopy.12520>