



Contents lists available at SciVerse ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Mirror, mirror on the wall, which form of narcissist knows self and others best of all?

Jennifer Vonk^{a,*}, Virgil Zeigler-Hill^a, Patricia Mayhew^b, Sterett Mercer^c^a *Oakland University, United States*^b *University of Southern Mississippi, United States*^c *University of British Columbia, Canada*

ARTICLE INFO

Article history:

Received 24 June 2012

Received in revised form 10 October 2012

Accepted 14 October 2012

Available online xxxx

Keywords:

Narcissism

Perspective-taking

Empathy

Causal-reasoning

Emotional intelligence

ABSTRACT

We examined the relationships of narcissism and its various facets with measures of cognition, such as perspective-taking/theory of mind, emotional intelligence, empathy, and systemizing, in a non-clinical sample of 368 undergraduate students. Social and physical causal reasoning was assessed using a novel procedure, which allowed for a thorough examination of participants' attributions of causes to social and non-social events. Results revealed that individuals high in grandiosity scored higher on measures of social reasoning, emotional intelligence, perspective-taking, systemizing, and empathy. Other facets of narcissism, as well as the overall construct of narcissism, were negatively associated with emotional intelligence, empathy, and perspective-taking. These results suggest that the facets of narcissism may differ considerably in their associations with various aspects of social cognition, which should prompt researchers to further examine the heterogeneous nature of narcissism.

Published by Elsevier Ltd.

1. Introduction

Narcissism is most often characterized by an over-inflated sense of self-worth, exaggerated self-importance, and general disregard for others, which can be seen in their willingness to manipulate and exploit others in order to achieve personal goals (Morf & Rhodewalt, 2001). Although the construct of narcissism has received a considerable amount of attention from clinical and social psychologists, important disagreements persist about the nature of the construct (Maxwell, Donnellan, Hopwood, & Ackerman, 2011). For example, some have conceptualized narcissism as a maladaptive behavior pattern, whereas others have focused on the relatively adaptive qualities that accompany narcissistic personality features (Ghorbani, Watson, Hamzavy, & Weathington, 2010). This confusion may stem from the fact that narcissistic individuals may have traits that are both 'adaptive' (e.g., high self-esteem; Brown, Budzek, & Tamborski, 2009) and 'maladaptive' (e.g., reduced empathy; Ghorbani et al., 2010; Wai & Tiliopoulos, 2012). The use of a term such as 'adaptive' is also clearly context dependent. Overly high self-esteem can hinder an ability to assess one's abilities accurately, and lack of empathy can protect one from distress.

Researchers have also distinguished between the form of narcissism that is a clinical disorder (i.e., Narcissistic Personality Dis-

order; American Psychiatric Association, 2000) and its expression as a continuous dimension of normal personality (Pincus & Lukowitsky, 2010). The differences between the pathological form of narcissism (which is more directly tied to Narcissistic Personality Disorder) and the more "normal" form of narcissism (which refers to the subclinical manifestations of narcissism in personality) are further complicated by the possibility that both forms may also be heterogeneous constructs. For example, well-known instruments such as the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979) have been found to consist of subscales that capture relatively desirable features of narcissism (e.g., leadership and authority) as well as less socially desirable features (e.g., a willingness to exploit others; Ackerman et al., 2011; Tamborski, Brown, & Chowning, 2012). Ackerman et al. (2011) have recently suggested that the NPI possesses three factors Leadership/Authority, Grandiose Exhibitionism, and Entitlement/Exploitativeness. The Pathological Narcissism Inventory (PNI; Pincus et al., 2009), – which captures a more pathological version of narcissism, has been shown to consist of two higher-order factors; Grandiose narcissism and Vulnerable narcissism. Grandiose narcissism is the most easily recognized feature of pathological narcissism because of its similarity to Narcissistic Personality Disorder with one common characteristic being the use of unrealistic self-enhancement strategies (e.g., holding an overly positive self-image). Vulnerable narcissism, in contrast, is characterized by dysregulation across various areas including the self (e.g., negative self-image), emotionality (e.g., anger, shame, and dysphoria), and interpersonal relationship

* Corresponding author. Address: Department of Psychology, Oakland University, 2200 N. Squirrel Rd, Rochester, MI 48309, United States. Tel.: +1 248 370 2318.

E-mail address: vonk@oakland.edu (J. Vonk).

functioning (e.g., interpersonal sensitivity). The complexity of the narcissistic personality construct has made it difficult to achieve an overarching conceptual representation of what it means to be “narcissistic”. As a result of this debate, it is important to consider whether the various facets of narcissism differ in their associations with social cognitive capacities such as theory of mind (including perspective-taking), empathy, emotional intelligence, and causal reasoning.

Theory of mind encompasses the ability to take the perspective of and understand the mental states of others, including their thoughts, feelings, and beliefs (Premack & Woodruff, 1978). This capacity significantly enhances the ability to predict and manipulate the thoughts and behaviors of others. Surprisingly little research has examined the connection between narcissistic personality features and theory of mind given the obvious potential connection between these variables. For example, individuals with narcissistic personality features may be too self-absorbed to take the perspective of others. Alternatively, narcissistic individuals may be especially adept at perspective-taking through a desire to manipulate and exploit the thoughts and feelings of others. Individuals with narcissistic personality features display deficits in affective empathy (caring about the emotional experiences of another person) but not cognitive empathy (recognizing the emotional experiences of another person; Wai & Tiliopoulos, 2012). Thus, narcissistic individuals seem capable of understanding the emotional experiences of others but they do not seem to care very much about the implications of those experiences for other individuals. Thus, we hypothesize that those individuals who possess certain narcissistic characteristics – such as the willingness to exploit others – may be especially skilled at reading the thoughts of others in order to achieve their own interpersonal goals. Individuals with other narcissistic personality features (e.g., those involving extreme self-focus such as Narcissistic Vulnerability) may often fail to take the perspective of others. The purpose of the present study was to examine these potential relationships. We predicted that the complex relationships between various facets of narcissism and social cognition would support the idea of a multifaceted construct of narcissism. We predicted that Grandiose narcissism, Leadership/Authority, and Grandiose Exhibitionism would predict higher levels of social cognitive ability, given prior associations with positive outcomes, such as self-esteem and adjustment (Brown et al., 2009). On the other hand, vulnerable narcissism and Entitlement/Exploitativeness might predict lower levels of social cognitive ability, given the extreme self-focus and prior association with negative outcomes (Brown et al., 2009).

Individuals high in narcissism generally misrepresent themselves through inflation of their own skills and positive attributes. It is of interest whether this attribution failure transcends self-concept and extends to other areas of attribution. We included a new measure of social cognition that provides a detailed assessment of causal reasoning in both social and physical domains. This measure – the Social and Physical Causal Reasoning Task (SPCRT) – utilizes narratives that are loosely based on Happé’s (1994) strange stories for assessing higher order theory of mind, and was designed to tap into social and physical reasoning, specifically with regard to attributions of causes for both social and non-social events. Because we were concerned with differences in the type of cause attributed to various events, we scored several possible attributions on the basis of the depth and type (descriptive, intentional etc.) of causal analysis provided by participants.

Baron-Cohen’s (2009) Empathizing/Systemizing Model of personality/cognition also highlights potential differences between social and non-social cognition. According to this model, empathizing reflects the ability to take the perspective of others and relate to their thoughts and feelings, whereas systemizing focuses on the attention that is given to rules and structure. Previous studies

have provided some initial support for the idea that individuals with narcissistic personality features appear to possess lower levels of empathy as captured by Davis’ (1983) Interpersonal Reactivity Index (IRI; Ghorbani et al., 2010; Watson, Little, Sawrie, & Biderman, 1992) and (Baron-Cohen & Wheelwright, 2004) Empathizing Quotient (Wai & Tiliopoulos, 2012). Few studies have examined the connection between narcissistic personality features and theory of mind or causal reasoning. Wai and Tiliopoulos (2012) found that narcissists showed no deficits in emotion recognition, although they showed a pattern of affective desensitization such that they reacted positively to sad faces. Although this study provides some evidence with regard to the ability of narcissists to read the emotions of others, the emotion recognition task used by Wai and Tiliopoulos involved only the basic emotions, rather than the more complex range displayed in Baron-Cohen’s (1995) Reading the Mind in the Eyes Test.

It remains unknown whether individuals with certain narcissistic personality features differ on measures of self-awareness, systemizing, or non-social reasoning. Therefore, the present study examined typical college students and assessed the degree to which various facets of narcissism were associated with social and non-social causal reasoning, systemizing, empathy, emotional intelligence, and theory of mind. We considered the facets of both normal narcissism and pathological narcissism in order to capture the complex nature of narcissistic personality features. We do not intend to imply that our participants are pathologically narcissistic – however the PNI can capture a range of responses within normal populations such that it is appropriate to discuss non-pathological individuals as scoring relatively high on pathological grandiosity or vulnerability. As a result, our study contributes to a more complete and nuanced understanding of the connection between various facets of narcissism and various aspects of cognition.

2. Method

2.1. Participants and procedure

368 undergraduate psychology students (278 women) at the University of Southern Mississippi participated in exchange for course credit. Participants responded to a series of online questionnaires via a secure website.

2.2. Measures

2.2.1. NPI

The version of the NPI used in the present study (Raskin & Hall, 1979) consisted of 40 items and employed a forced-choice format such that participants were asked to decide between a narcissistic alternative and a non-narcissistic alternative for each item (e.g., “I really like to be the center of attention” vs. “It makes me uncomfortable to be the center of attention”). We employed the three-factor model of the NPI (Ackerman et al., 2011): Leadership/Authority (11 items; $\alpha = .72$), Grandiose Exhibitionism (10 items; $\alpha = .74$), and Entitlement/Exploitativeness (4 items; $\alpha = .43$).

2.2.2. PNI

The PNI (Pincus et al., 2009) captures two features of pathological narcissism: Narcissistic Grandiosity (18 items; $\alpha = .89$) and Narcissistic Vulnerability (34 items; $\alpha = .95$). Responses for the 52 items of the PNI are made on scales ranging from 0 (*not at all like me*) to 5 (*very much like me*). The PNI is correlated with other measures of narcissism (e.g., NPI) as well as related constructs such as self-esteem level, interpersonal style, and clinical outcomes (Pincus et al., 2009).

2.2.3. The interpersonal reactivity index (IRI)

A 28 item scale consisting of four subscales measuring perspective-taking, empathic concern, personal distress, and fantasy (Davis, 1983). The perspective-taking scale, reflects the positive dimension of cognitive empathy, $\alpha = .71$. Empathic concern reflects the positive dimension of emotional empathy, $\alpha = .77$. Fantasy represents the negative outcome of cognitive empathy, $\alpha = .70$, while personal distress represents the negative outcome of emotional empathy, $\alpha = .60$.

2.2.4. EQ

An additional measure of empathy, the Empathy Quotient (EQ), developed by Baron-Cohen and Wheelwright (2004), requires participants to rate on a 4-point scale the degree to which they agree with 40 statements, $\alpha = .90$.

2.2.5. SQ

Systemizing is focused on predicting behaviors of inanimate objects based on the laws of the universe rather than predicting another person's behavior. The Systemizing Quotient (SQ; Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003) consists of 75 items measured on a 4-point scale from *strongly disagree* to *strongly agree*, $\alpha = .69$.

2.2.6. Eyes test

The Reading the Mind in the Eyes Test (Baron-Cohen, Wheelwright, & Hill, 2001) was used to assess theory of mind. Participants are asked to choose the best response to describe the feeling or thought projected in 36 images of eyes from four alternatives, $\alpha = .70$.

2.2.7. EIS

The Emotional Intelligence scale (EIS; Schutte et al., 1998) consists of 33 items and measures aspects of emotional intelligence including appraisal and expression, regulation, and utilization of emotion and contains 33 items rated on a 5-point scale from *strongly disagree* to *strongly agree*, $\alpha = .93$.

2.2.8. SPCRT

The social and physical causal reasoning task (SPCRT) was designed to assess participants' attribution of cause to various brief social and non-social scenarios. Responses were open-ended and scored by two independent raters on the basis of inclusion of descriptive information (higher score for more descriptive content), attribution of mental state (higher scores to second order, then first order mental state attributions versus other causal explanations), attribution to immediate versus long-term factors (higher score for considering character's backstory and underlying traits versus immediate precipitating event or action). Rater agreement was high ($r = .70$, $p < .001$) on two randomly selected social and physical narratives for 67 participants).

2.3. Statistical analyses

We calculated descriptive statistics and zero-order correlations for our variables. Facets of narcissism and general narcissism were modeled as predictors of the cognitive measures in a structural equation model. Because narcissism is comprised of multiple correlated facets, we used a bifactor model to represent both general narcissism and the unique variance accounted for by each separate facet. This analysis also circumvents the issue of multicollinearity between the subscales. In the bifactor model, each item of the PNI and NPI loads on a general narcissism factor as well as one facet corresponding to the appropriate subscale of the PNI or NPI. As is typical in bifactor models, the subscale facets and general factor were constrained to be orthogonal (Chen, Hayes, Carver, Laurenceau, &

Zhang, 2012). All analyses were conducted using maximum likelihood estimation in Mplus 6.12 (Muthén & Muthén, 2010).

3. Results

3.1. Correlations

Table 1 presents descriptive statistics and zero-order correlations for the measures included in the present study. NPI Leadership/Authority was negatively correlated with causal reasoning, empathic concern, and theory of mind but positively correlated with emotional intelligence. NPI Grandiose Exhibitionism was negatively correlated with causal reasoning, empathic concern, theory of mind, and empathizing but positively correlated with personal distress. NPI Entitlement/Exploitativeness was negatively correlated with emotional intelligence, perspective-taking, empathic concern, empathizing, and theory of mind. PNI Vulnerability had a pattern of correlations that was similar to those for the facets of narcissism captured by the NPI such that it was negatively correlated with emotional intelligence, empathizing, and systemizing. However, this facet of narcissism was not negatively associated with performance on the eyes test. In contrast to the other facets of narcissism, PNI Grandiosity was positively correlated with systemizing and emotional intelligence as well as the fantasy and distress aspects of the IRI.

3.2. Bifactor narcissism model

Prior to fitting the bifactor model, a 2nd order confirmatory factor analysis model was fit as a baseline model. In the model, each item of the PNI and NPI loaded on its relevant subscale, and the factors representing subscales loaded on general narcissism. The 2nd order model did not appear to fit the data well, $\chi^2(2926) = 7231.35$, $p < .001$, CFI = .66, RMSEA = .07. The bifactor model also had questionable model fit on some indexes, $\chi^2(2772) = 6504.86$, $p < .001$, CFI = .71, RMSEA = .06, but fit better than the 2nd order model, $\Delta\chi^2(154) = 726.49$, $p < .001$, Δ CFI = .05, Δ RMSEA = .01.

3.3. Narcissism facets as predictors

To determine the extent to which narcissism predicted cognitive capacities, the narcissism facets and general narcissism – as specified by the bifactor model – were specified as independent predictors of scores on each of the criterion measures. Model fit on the CFI continued to be marginal, with $\chi^2(3482) = 7066.63$, $p < .001$, CFI = .74, and RMSEA = .05. Variance explained for each criterion variable and standardized beta weights are presented in Table 2.

PNI Grandiosity predicted greater social reasoning ($\beta = .14$, $SE = .07$, $p = .036$), whereas NPI Leadership/Authority predicted lower levels of social reasoning ($\beta = -.16$, $SE = .06$, $p = .013$). NPI Leadership/Authority also predicted lower levels of physical reasoning ($\beta = -.15$, $SE = .07$, $p = .023$).

PNI Grandiosity predicted higher levels of systemizing ($\beta = .19$, $SE = .07$, $p = .008$), whereas PNI Vulnerability predicted lower levels of systemizing ($\beta = -.22$, $SE = .08$, $p = .007$).

Only PNI Grandiosity predicted greater empathizing ($\beta = .28$, $SE = .08$, $p < .001$) as reported on the EQ. Using the IRI scales of empathy, PNI Grandiosity predicted greater empathic concern ($\beta = .28$, $SE = .07$, $p < .001$), whereas NPI Grandiose Exhibitionism ($\beta = -.16$, $SE = .06$, $p = .010$), NPI Entitlement/Exploitativeness ($\beta = -.17$, $SE = .08$, $p = .027$), NPI Leadership/Authority ($\beta = -.19$, $SE = .07$, $p = .009$), and general narcissism ($\beta = -.16$, $SE = .07$, $p = .024$) predicted less empathic concern. PNI Grandiosity

Table 1
Correlations and descriptive statistics for all measures.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. PNI Grandiosity	–														
2. PNI Vulnerability	.65***	–													
3. NPI Grandiose Exhibitionism	.14**	.03	–												
4. NPI Entitlement/Exploitativeness	.19***	.25***	.24***	–											
5. NPI Leadership/Authority	.19***	–.07***	.45***	.21***	–										
6. Social Causal Reasoning	.05	.02	–.11*	–.08	–.13**	–									
7. Physical Causal Reasoning	.05	.03	–.10*	–.05	–.13*	.93***	–								
8. Systemizing	.11	–.11*	–.03	–.01	.09	.10***	.09	–							
9. Empathizing	.08	–.18***	–.11**	–.13**	–.01	.24***	.17***	.44***	–						
10. IRI: Perspective-Taking	.03	–.15**	–.17***	–.15**	–.10	.22***	.21***	.29***	.60***	–					
11. IRI: Fantasy	.27***	.12*	–.07	–.06	–.08	.25***	.18***	.18***	.48***	.38***	–				
12. IRI: Empathic Concern	.07	–.14**	–.19***	–.20***	–.17***	.26***	.21***	.28***	.69***	.69***	.52***	–			
13. IRI: Physical Distress	.20***	–.27***	.10*	.09	–.08	.06	.04	–.08	–.05	–.04	.21***	.00	–		
14. Emotional Intelligence	.14**	–.19***	–.01	–.14**	.14**	.25***	.20***	.41***	.51***	.45***	.25***	.40***	–.02	–	
15. Theory of Mind	.04	–.04	–.23***	–.20***	–.17***	.33***	.31***	.14**	.36***	.30***	.28***	.34***	–.13**	.26***	–
M	3.58	2.96	3.77	0.83	5.81	247.23	202.97	53.53	36.66	2.49	2.44	2.68	1.90	3.74	22.96
SD	0.90	0.93	2.54	0.98	2.68	47.08	43.30	17.46	13.61	0.65	0.71	0.72	0.61	0.57	4.93

Note: $N = 368$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

predicted greater perspective-taking ($\beta = .18$, $SE = .07$, $p = .013$), whereas NPI Grandiose Exhibitionism predicted poorer perspective-taking ($\beta = -.14$, $SE = .07$, $p = .031$). PNI Grandiosity predicted greater fantasy ($\beta = .33$, $SE = .07$, $p < .001$), whereas NPI Leadership/Authority predicted lower levels of fantasy ($\beta = -.14$, $SE = .07$, $p = .044$). NPI Grandiose Exhibitionism ($\beta = .15$, $SE = .06$, $p = .015$) and general narcissism ($\beta = .27$, $SE = .05$, $p < .001$) predicted greater personal distress, whereas NPI Leadership/Authority predicted lower levels of personal distress ($\beta = -.13$, $SE = .06$, $p = .039$).

PNI Grandiosity predicted greater emotional intelligence ($\beta = .37$, $SE = .07$, $p < .001$), whereas general narcissism predicted lower levels of emotional intelligence ($\beta = -.22$, $SE = .08$, $p = .004$). Higher scores on NPI Grandiose Exhibitionism ($\beta = -.13$, $SE = .07$, $p = .048$), NPI Entitlement/Exploitativeness ($\beta = -.21$, $SE = .08$, $p = .010$), and NPI Leadership/Authority ($\beta = -.14$, $SE = .07$, $p = .044$) predicted poorer performance on our measure of theory of mind (the Eyes Test).

4. Discussion

In contrast to other forms of narcissism, those non-clinical participants who were high in pathological Grandiosity were more adept at perspective-taking and social reasoning, and showed higher levels of emotional intelligence and empathy. Our findings suggest the interesting possibility that these individuals may use these social cognitive skills to manipulate others and bolster their own self-image. Thus, the social skills of Grandiose narcissists may support an agentic or social dominance view of narcissism (e.g., Campbell, Brunell, & Finkel, 2006) if understanding the feelings of self and others allows individuals with narcissistic personality features to navigate social situations and climb social dominance hierarchies. In contrast, general narcissism and particular facets such as Exploitativeness/Entitlement and Grandiose Exhibitionism were negatively associated with positive outcomes such as emotional intelligence, theory of mind, perspective-taking, and empathy, but positively associated with negative outcomes such as personal distress. Thus, narcissistic individuals may tend to possess relatively poor social cognitive skills, with the facet of Grandiose narcissism being an exception due to its unique associations with

positive aspects of social cognition. Implications for the Leadership/Authority facet were mixed, but could be interpreted as supporting the idea that this facet is relatively adaptive in terms of interpersonal success. For instance, Leadership/Authority was associated with lower levels of fantasy and personal distress. However, this facet was also associated with lower levels of empathy, theory of mind, and physical reasoning. Thus, individuals with high scores on this particular facet may have a general inability to assess the mental states of others, but they may be able to use this resulting lack of empathy for personal success.

These are the first empirical results that connect various facets of narcissism to multiple measures of social and non-social cognition. Our results extend previous findings linking narcissism with lower levels of empathy (Ghorbani et al., 2010; Wai & Tiliopoulos, 2012; Watson et al., 1992) and emotion sensitivity (Ames & Kamrath, 2004; Wai & Tiliopoulos, 2012) by demonstrating that particular facets of narcissism are differentially associated with theory of mind, empathy, emotional intelligence, and causal reasoning. Although some prior studies have examined the relationship between narcissism and empathy, the present study extended that work by utilizing the Systemizing/Empathizing framework developed by Baron-Cohen (2009), employing the Eyes Test (which is a frequently used measure of perspective-taking/theory of mind), and assessing social and physical causal reasoning. In addition, although prior work has shown an association between narcissism and emotional intelligence (Petrides, Vernon, Schermer, & Veselka, 2011), these researchers examined the association between only the overall construct of narcissism and emotional intelligence. By examining the relationship between both the overall construct and the individual facets (of both normal and 'pathological' narcissism), we can paint a richer picture of these complex relationships and provide further support for the idea of narcissism as a heterogeneous construct (see also Houlcroft, Bore, & Munro, 2012; Maxwell et al., 2011).

Few studies have examined the relationship between narcissism and theory of mind directly. However, Ames and Kamrath (2004) found that narcissism did not predict self-awareness or success on the Interpersonal Perspective Task (IPT; Costanzo & Archer, 1989) but did predict overestimation of one's own skill. Taken together, the current findings – along with those of previous studies – are consistent with the idea that the general construct of narciss-

Table 2
Facets of narcissism and general narcissism as predictors of cognitive measures.

	Social reasoning	Physical reasoning	Systemizing	Empathizing	Perspective-taking	Fantasy	Empathic concern	Personal distress	Emotional intelligence	Theory of mind
R ²	.05	.04	.10**	.16***	.10**	.16**	.20***	.11**	.23***	.12**
PNI Grandiosity	.14*	.10	.19**	.28***	.18*	.33***	.28***	.05	.37***	.10
PNI Vulnerability	-.02	-.08	-.22**	-.16	-.10	-.11	-.06	.02	-.04	-.18
NPI GE	-.07	-.06	-.08	-.13	-.14*	-.04	-.16*	.15*	-.07	-.13*
NPI E/E	-.02	.02	.06	-.10	-.11	-.08	-.17*	.02	-.15	-.21*
NPI L/A	-.16*	-.15*	.07	-.05	-.10	-.14*	-.19**	-.13*	.10	-.14*
General narcissism	-.01	.02	-.08	-.18	-.14	-.10	-.16*	.27***	-.22**	-.05

Note: NPI GE = NPI Grandiose Exhibitionism; NPI E/E = NPI Entitlement/Exploitativeness; NPI L/A = NPI Leadership/Authority. N = 368.

* p < .05.

** p < .01.

*** p < .001.

sism tends to be associated with deficiencies in some aspects of social reasoning, whereas one particular facet of narcissism (PNI Grandiosity) is associated with skill in these areas. Thus, the facets of narcissism differentially predict performance on tasks of social and physical cognition which lends support to the idea that narcissism is a complex and multifaceted personality construct.

The finding that pathological grandiosity – which is presumed to be a ‘maladaptive’ facet of narcissism – appears to be positively associated with desirable traits such as empathy, emotional intelligence, social reasoning, and perspective-taking is very interesting and should be explored further. One possible explanation for this finding is that individuals who possess pathological grandiosity are extremely reliant on others to bolster and maintain their feelings of self-worth so they need to be relatively adept at understanding the mental states of these individuals. This speculation is consistent with recent findings showing that individuals who report high scores on this facet of narcissism are especially reactive to public humiliation because it may undermine their use of the social environment to regulate their feelings of self-worth (Besser & Zeigler-Hill, 2010). The current pattern of results supports a model of narcissism that includes both socially adaptive and maladaptive features. Discrepancies in depictions of such facets as Leadership/Authority may reflect differences in how ‘adaptive’ behavior is defined. Individuals may find a road to success through exploitation of others, which may be more easily accomplished with diminished empathy and perspective-taking. High levels of causal reasoning and low levels of distress may further facilitate social dominance. It is therefore necessary to interpret the pattern of results as a whole in order to make sense of the various personality profiles emerging from our analysis. Based on the results of this study, we can begin to paint a social profile of individuals that manifest particular patterns of responding on the various subscales of the PNI and NPI together.

4.1. Limitations and prospects

Future studies should examine whether participants scoring high on vulnerable and Grandiose narcissism actually behave in empathic or exploitative ways, and the motivations underlying such behaviors. Such studies should also include a measure of psychopathy in both clinical and non-clinical populations to further clarify our inclusion of pathological narcissism in a non-clinical sample. In addition, the role of gender should be further explored. We hope that the present findings will serve as a starting point to understand the complex relationships that exist between narcissism and social cognition.

References

- Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. (2011). What does the narcissistic personality inventory really measure? *Assessment*, 18, 67–87.
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. Text revision). Washington, DC: Author.
- Ames, D. R., & Kammrath, L. K. (2004). Mind-reading and metacognition: Narcissism, not actual competence, predicts self-estimated ability. *Journal of Nonverbal Behavior*, 28, 187–209.
- Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: MIT Press/Bradford Books.
- Baron-Cohen, S. (2009). Autism: The empathizing-systemizing (E-S) theory. *Annals of the New York Academy of Sciences*, 1156, 68–80.
- Baron-Cohen, S., Richler, J., Bisarya, D., Guranathan, N., & Wheelwright, S. (2003). The systemizing quotient: An investigation of adults with Asperger syndrome or high functioning autism, and normal sex differences. *Philosophical Transactions of the Royal Society*, 358, 361–374.
- Baron-Cohen, S., & Wheelwright, S. (2004). The Empathy Quotient: An investigation of adults with Asperger syndrome or high functioning autism, and normal sex differences. *Journal of Autism and Developmental Disorders*, 34, 163–175.
- Baron-Cohen, S., Wheelwright, S., & Hill, J. (2001). The ‘Reading the Mind in the Eyes’ test revised version: A study with normal adults, and adults with Asperger

- syndrome or high-functioning autism. *Journal of Child Psychiatry and Psychology*, *42*, 241–252.
- Besser, A., & Zeigler-Hill, V. (2010). The influence of pathological narcissism on emotional and motivational responses to negative events: The roles of visibility and concern about humiliation. *Journal of Research in Personality*, *44*, 520–534.
- Brown, R. P., Budzek, K., & Tamborski, M. (2009). On the meaning and measure of narcissism. *Personality and Social Psychology Bulletin*, *35*, 951–964.
- Campbell, W. K., Brunell, A. B., & Finkel, E. J. (2006). Narcissism, interpersonal self regulation, and romantic relationships: An agency model approach. In E. J. Finkel & K. D. Vohs (Eds.), *Intrapersonal processes, interpersonal relationships*. New York, NY: Guilford.
- Chen, F. F., Hayes, A., Carver, C. S., Laurenceau, J. P., & Zhang, Z. (2012). Modeling general and specific variance in multifaceted constructs: A comparison of the bifactor model to other approaches. *Journal of Personality*, *80*, 219–251.
- Costanzo, M., & Archer, D. (1989). Interpreting the expressive behavior of others: The interpersonal perception task. *Journal of Nonverbal Behavior*, *13*, 225–245.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, *44*, 113–126.
- Ghorbani, N., Watson, P. J., Hamzavy, F., & Weathington, B. L. (2010). Self-knowledge and narcissism in Iranians: Relationships with empathy and self-esteem. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, *29*, 135–143.
- Happé, F. G. E. (1994). An advanced test of theory of mind: Understanding of story characters' thoughts and feelings by able autistic, mentally handicapped and normal children and adults. *Journal of Autism and Developmental Disorders*, *24*, 129–154.
- Houlcroft, L., Bore, M., & Munro, D. (2012). Three faces of narcissism. *Personality and Individual Differences*, *53*, 274–278.
- Maxwell, K., Donnellan, M. B., Hopwood, C. J., & Ackerman, R. A. (2011). The two faces of narcissus? An empirical comparison of the narcissistic personality inventory and the pathological narcissism inventory. *Personality and Individual Differences*, *50*, 577–582.
- Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry*, *12*, 177–196.
- Muthén, L. K., & Muthén, B. O. (2010). *Mplus user's guide* (6th ed.). Los Angeles: Author.
- Petrides, K. V., Vernon, P. A., Schermer, J. A., & Veselka, L. (2011). Trait emotional intelligence and the dark triad traits of personality. *Twin Research and Human Genetics*, *14*, 35–41.
- Pincus, A. L., Ansell, E. B., Pimentel, C. A., Cain, N. M., Wright, A. G. C., & Levy, K. N. (2009). Initial construction and validation of the pathological narcissism inventory. *Psychological Assessment*, *21*, 365–379.
- Pincus, A. L., & Lukowitsky, M. R. (2010). Pathological narcissism and narcissistic personality disorder. *Annual Review of Clinical Psychology*, *6*, 421–446.
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences*, *1*, 515–526.
- Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, *45*, 590.
- Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., et al. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, *25*, 167–177.
- Tamborski, M., Brown, R. P., & Chowning, K. (2012). Self-serving bias or simply serving the self? Evidence for a dimensional approach to narcissism. *Personality and Individual Differences*, *52*, 942–946.
- Wai, M., & Tiliopoulos, N. (2012). The affective and cognitive empathic nature of the dark triad of personality. *Personality and Individual Differences*, *52*, 794–799.
- Watson, P. J., Little, T., Sawrie, S. M., & Biderman, M. D. (1992). Measures of the narcissistic personality: Complexity of relationships with self-esteem and empathy. *Journal of Personality Disorders*, *6*, 434–449.