



Social decision making in narcissism: Reduced generosity and increased retaliation are driven by alterations in perspective-taking and anger



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ABSTRACT

Narcissism can lead to various interpersonal problems. However, the characteristics of social decision making in trait narcissism and the cognitive and affective underpinnings are poorly understood. We employed established game theoretical paradigms to investigate different facets of social behavior in participants ($N = 122$; 41 female, mean age = 30 years) with a wide range of scores on the Pathological Narcissistic Inventory. Interpersonal traits, attitudes, and emotions were assessed as potential mediators of behavioral differences. High narcissism scores were related to lower generosity, especially when this could result in being punished. This maladaptive behavior was fully mediated by reduced perspective-taking abilities in narcissism. Also, narcissism scores predicted higher levels of punishment behavior, driven by higher levels of experienced anger. Hence, the difficulties narcissists face in interactions may be due to their reduced perspective-taking skills and resulting reduced generosity as well as enhanced anger-based retaliation behavior.

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1. Introduction

Narcissism – both on the sub-clinical and on the pathological level – is characterized by enhanced feelings of grandiosity and entitlement as well as by impairments in interpersonal functioning (Bushman & Baumeister, 1998; Campbell, Bush, Brunell, & Shelton, 2005; Given-Wilson, Ilwain, & Warburton, 2011; Morf & Rhodewalt, 2001). Narcissists are considered less likable by others (Back et al., 2013), are less often engaged in committed and satisfactory relationships (Campbell, 1999; Campbell, Foster, & Finkel, 2002; Carroll, 1987; Paulhus, 1998), and their behavior negatively impacts on others and on society (Barry, Kerig, Stellwagen, & Barry, 2011; Rosenthal & Pittinsky, 2006; Sedikides, Campbell, Reeder, Elliot, & Gregg, 2002). Considering the increase of narcissistic traits in young generations (Cai, Kwan, & Sedikides, 2012; Twenge, Konrath, Foster, Campbell, & Bushman, 2008), a more comprehensive understanding of social decision making and the underlying impairments in narcissism is crucial. Accordingly, the present study addressed two questions. First, which specific characteristics of social decision making in reciprocal interactive situations are affected by trait narcissism? Second, which differences in

socio-cognitive and -affective abilities mediate the observed behavioral differences?

Concerning the first question, psychological research suggests that (sub-clinical) narcissism is related to reduced prosocial decision making. Narcissists report lower moral and ethical standards (Antes et al., 2007; Brown, Sautter, Littvay, Sautter, & Bearnes, 2010; Cooper & Pullig, 2013), volunteer less for the sake of others, and invest less time to help others (Brunell, Tumblyn, & Buelow, 2014; Lannin, Guyll, Krizan, & Madon, 2014). Using a social dilemma ('Public Goods Game') Campbell et al. (2005) demonstrated that trait narcissism predicts more selfish and less prosocial choices.

While previous studies investigated how generously narcissists acted towards others, it is yet unknown how their behavior is shaped in interactions that consist not only of an isolated action towards another, but also entails the other's response. In fact, decades of research in behavioral economics suggest that the opportunity to reciprocate or retaliate against others' actions determines social decision making in two important ways: First, people adjust generous or cooperative behavior to whether their interaction partners can respond (e.g., by punishing unfair distribution choices; Fehr & Gächter, 2002; Güth, 1995; Spitzer, Fischbacher, Herrnberger, Gron, & Fehr, 2007; Steinbeis, Bernhardt, & Singer, 2012). Put simply, people give more when others have the option to retaliate, a behavioral tendency that has been termed strategic giving (e.g., Steinbeis et al., 2012). Second, people tend to punish those who behave selfishly (Fehr & Fischbacher, 2004; Fehr & Gächter, 2002; McAuliffe, Jordan, & Warneken, 2015). This behavior can reflect

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anger-based retaliation, but also a tendency to enforce social norms (Fehr & Fischbacher, 2004; Fehr & Gächter, 2002; McCall, Steinbeis, Ricard, & Singer, 2014; Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003; Sigmund, 2007). Based on this literature, two crucial questions arise regarding social decision making in narcissism: First, how do narcissists adjust their generous behavior depending on whether or not their interaction partner can punish (i.e., how strategic do they behave)? And second, how do people scoring high on narcissism punish others' unfair offers (i.e., how norm-driven or anger-driven do they behave)?

The second goal of the present study concerns the mechanisms that underlie altered social decision making in narcissism. Research shows, for instance, that reduced levels of empathy and perspective-taking drive the enhanced sense of entitlement in criminal narcissists (Hepper, Hart, Meek, Cisek, & Sedikides, 2014). Besides impairments in such interpersonal traits, narcissism has been linked to enhanced Machiavellian attitudes and increased negative emotions such as anger (Bushman & Baumeister, 1998; Menon & Sharland, 2011; Witte, Callahan, & Perez-Lopez, 2002). As these socio-affective and socio-cognitive processes have been related to inter-individual differences in social behavior in the general population (Bereczkei, Birkas, & Kerekes, 2010; Hein, Silani, Preuschoff, Batson, & Singer, 2010; Knoch, Pascual-Leone, Meyer, Treyer, & Fehr, 2006; Rudolph, Roesch, Greitemeyer, & Weiner, 2004), the present study systematically tested whether inter-individual differences in such traits mediate the identified alterations in social decision making in narcissism.

In order to address the first goal, we used well-established game theoretical paradigms that specifically allowed the assessment of 1) *first mover giving behavior*: giving behavior displayed towards others who could or could not respond with punishment (Dictator Game and 2nd Party Punishment Game; Axelrod & Hamilton, 1981; Camerer, 2003; Fehr & Fischbacher, 2004) and 2) *second/third mover punishment behavior*: costly punishment responses to distribution choices of others in direct and observed interactions (2nd and 3rd Party Punishment Game; Fehr & Fischbacher, 2004). In order to investigate possible mediators of altered social decision making, we assessed state affect during the hypothetical punishment game, as well as interpersonal traits (Interpersonal Reactivity Index and Cognitive and Emotional Empathy Questionnaire; Davis, 1983; Savage, Teague, Koehne, Borod, & Dziobek, submitted), and Machiavellianism (Henning & Six, 1977).

Concerning first mover behavior, we expected to replicate findings of reduced generosity in narcissism (e.g., Campbell et al., 2005). Beyond, we were interested whether trait narcissism is related to enhanced strategic behavior (i.e., less generosity especially when others cannot punish), which would be in line with reports of enhanced Machiavellian attitudes in narcissism (Menon & Sharland, 2011). Alternatively, given that narcissists are less concerned with the effects their actions have on others (Sedikides et al., 2002), it may be that they are less sensitive to other's prospective reactions and, hence, behave less generously not only when retaliation is impossible (Dictator Game), but also when the other player can punish (2nd Party Punishment Game). Concerning second and third mover punishment behavior, based on findings of a heightened perception of others as unfair and enhanced anger and aggression in narcissism (Bushman & Baumeister, 1998; Menon & Sharland, 2011), we hypothesized that narcissism is related to an increase in anger-based punishment.

2. Material and methods

2.1. Participants

Participants completed a short screening on demographic information and mental health. Only participants without a history of psychiatric disorders were included. In total, 122 Native German speaking participants took part in the study (41 female, mean age = 30 years, SD = 11 years). Sample size was selected based on recommendations

to ensure statistical power even in case of small to medium effect sizes (Vazire, 2016).

Participants filled in the Pathological Narcissistic Inventory (PNI; Pincus et al., 2009), which has good psychometric properties and measures narcissism in a more comprehensive manner by including both grandiose and vulnerable elements (as opposed to the NPI, which has been criticized for focusing too much on the grandiose elements; Brown & Zeigler-Hill, 2004; Maxwell, Donnellan, Hopwood, & Ackerman, 2011; Miller & Campbell, 2008; Morf & Rhodewalt, 2001; Pincus et al., 2009). We used the overall PNI score because of (i) the correlation between the grandiose and the vulnerable subscales and (ii) its validation with other trait narcissism scales as well as with narcissistic personality disorder according to the DSM-IV (Ackerman et al., 2011; Maxwell et al., 2011). The participant sample was divided into a low narcissism and a high narcissism group according to a median split on the PNI (median = 123, ranging from 20 to 219). The low and high narcissism groups did not differ in age, gender, or handedness ($ps > 0.1$) (see Table 1). Dichotomizing data in this way allowed us to perform ANOVAs including narcissism group as a factor and testing for interaction effects (see, for example, Byrne & Worthy, 2013; Heiserman & Cook, 1998; Svindseth, Nøttestad, Wallin, Roaldset, & Dahl, 2008 for similar approaches). Importantly, in addition to testing for differences between the low and the high narcissism group, the relation of narcissism to all dependent variables was also assessed dimensionally by means of correlations with PNI scores.

The study was approved by the Ethics Commission of the Department of Psychology of the Humboldt University of Berlin. Participants signed informed consent and received 7 euros per hour for their participation in addition to the money they could gain in the game theoretical paradigms.

2.2. Data acquisition & general procedure

All game theoretical paradigms were assessed on 17 in. TFT monitors in two subsequent testing sessions. Hypothetical distribution scales and questionnaires were filled in via an online platform after the two testing sessions (Questback GmbH, Released 2014. EFS Survey Enterprise Feedback Suite, Version 10.4).

2.3. Measures

2.3.1. Game theoretical paradigms

Participants completed the economic games on two days (separated on average by two weeks) whereby first mover giving paradigms were completed on the first and second/third mover punishment paradigms were completed on the second day. Participants received instructions in written form and filled in control questions in order to ensure they understood the underlying payoff functions. Participants were informed that they were playing for monetary units (MUs; 1 MU = 10 Euro cents) and that they would receive the pay-off of a randomly selected trial at the end of the experimental sessions. All game theoretical paradigms were completed as anonymous one shot versions. Participants were informed that they were connected to randomly selected players via an interactive digital internet platform. In reality, players played according

Table 1
Demographic and questionnaire data.

	High narcissism group		Low narcissism group		Statistics	
	M	SD	M	SD		
Gender	21:39		19:41		$t(118) = 0.38$	$p = 0.38$
Age	29.4	10.1	32.0	11.7	$t(114) = 1.27$	$p = 0.21$
Handedness	2.0	0.18	1.9	0.28	$t(118) = -1.17$	$p = 0.25$
PNI	149.4	21.2	85.5	28.3	$t(120) = -14.1$	$p < 0.001$

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