

REVIEW ARTICLE

A Comprehensive Examination of Narcissists' Self-Perceived and Actual Socioemotional Cognition Ability

Simon Mota*, Marius Leckelt*[†], Katharina Geukes*, Steffen Nestler[‡], Sarah Humberg*, Michela Schröder-Abé[§], Stefan C. Schmukle[‡] and Mitja D. Back*

Narcissists are assumed to lack the motivation and ability to share and understand the mental states of others. Prior empirical research, however, has yielded inconclusive findings and has differed with respect to the specific aspects of narcissism and socioemotional cognition that have been examined. Here, we propose a differentiated facet approach that can be applied across research traditions and that distinguishes between facets of narcissism (agentic vs. antagonistic) on the one hand, and facets of socioemotional cognition ability (SECA; self-perceived vs. actual) on the other. Using five nonclinical samples in two studies (total $N = 602$), we investigated the effect of facets of grandiose narcissism on aspects of socioemotional cognition across measures of affective and cognitive empathy, Theory of Mind, and emotional intelligence, while also controlling for general reasoning ability. Across both studies, agentic facets of narcissism were found to be positively related to perceived SECA, whereas antagonistic facets of narcissism were found to be negatively related to perceived SECA. However, both narcissism facets were negatively related to actual SECA. Exploratory condition-based regression analyses further showed that agentic narcissists had a higher directed discrepancy between perceived and actual SECA: They self-enhanced their socio-emotional capacities. Implications of these results for the multifaceted theoretical understanding of the narcissism-SECA link are discussed.

Keywords: narcissism; socioemotional cognition; self-perceived ability; actual ability; empathy; emotional intelligence; self-enhancement

The motivation and ability to share and understand other people's mental states (emotions, cognitions) is important for successful interpersonal interactions and can predict success in life (e.g., Byron, Terranova, & Nowicki, 2007; Cosmides & Tooby, 2000; Davis & Oathout, 1987; Parker et al., 2004; Salovey & Grewal, 2005). Research has identified a variety of psychological constructs that each cover aspects of this fundamental capacity, including empathy (Davis, 1994), emotional intelligence (Mayer & Salovey, 1997), and theory of mind (Premack & Woodruff, 1978). As all of these constructs pertain to how individuals capture the mental states of their social counterparts, we refer to them as aspects of socioemotional cognition ability (SECA).

Across different fields of psychological research, trait narcissism (Campbell & Miller, 2011; Foster & Campbell, 2007) has been characterized by deficits in SECA, especially in the domain of empathy (e.g., American Psychiatric

Association, 2013; Kernberg, 1985; Morf & Rhodewalt, 2001). Researchers appear to agree that deficits in SECA are a key foundation of narcissists' socially harmful behaviors and interpersonal problems (for an overview, see Hepper, Hart, & Sedikides, 2014; Morf & Rhodewalt, 2001; Roepke & Vater, 2014). Empirical research, however, has yielded rather mixed findings. Whereas some studies have indeed reported negative effects of narcissism on aspects of SECA (e.g., Vonk, Zeigler-Hill, Mayhew, & Mercer, 2013; Watson, Grisham, Trotter, & Biderman, 1984), other research has even found positive effects (Konrath, Corneille, Bushman, & Luminet, 2014; Petrides, Vernon, Schermer, Veselka, 2011). Researchers have not yet found a way to reconcile these conflicting, partly surprising, findings, leaving many questions in the field of narcissism and SECA unanswered. The search for answers has proven to be difficult due to the heterogeneous natures of the constructs in question: narcissism as a multifaceted personality construct comprised of several interrelated aspects and SECA as an umbrella term for various partially overlapping constructs.

In the present study, we aimed at providing a detailed analysis of how narcissism is related to SECA. In the following, we will present an overview of prior research on the relation between narcissism and SECA, followed by a presentation of two differentiations that we deem

* University of Münster, DE

[†] University of Mainz, DE

[‡] Leipzig University, DE

[§] University of Potsdam, DE

Corresponding author: Simon Mota (simon.mota@wwu.de)

necessary: First, the differentiation of the agentic and antagonistic facets of narcissism and, second, the differentiation between perceived SECA and actual SECA. Finally, we will provide results from two studies in which we tested the association between narcissism and SECA based on these differentiations.

Prior Research on the Link between Narcissism and Socioemotional Cognition Ability

The links between narcissism and various aspects of SECA such as affective and cognitive empathy, Theory of Mind, and emotional intelligence have been examined in several studies that have applied heterogeneous approaches and have hailed from various theoretical traditions.

Affective Empathy

Affective empathy describes the ability to share the emotional state of another person and is comparable to the concept of *emotional contagion* (Hatfield, Cacioppo, & Rapson, 1993). Some researchers argue that affective empathy not only entails the experience of similar or parallel emotions, but also the experience of reactive emotions (e.g., sympathy and concern; Davis, 1983; Vreeke & van der Mark, 2003). In line with this definition, affective empathy has been shown to be positively linked to prosocial behaviors (Eisenberg & Miller, 1987), such as altruistic sharing (Edele, Dziobek, & Keller, 2013), and helping behavior (Pavey, Greitemeyer, & Sparks, 2012). Conversely, the lack of affective empathy is regarded as detrimental for social relationships as it may give rise to the callous, nonresponsive, and “socially glueless” (Hepper, Hart, & Sedikides, 2014, p. 1079) narcissistic personality.

In our review of the existing literature, we found several studies that indicated that narcissists display lower affective empathy (Ehrenberg, Hunter, & Elterman, 1996; Ghorbani, Watson, Hamzavy, & Weathington, 2010; Gurtman, 1992; Hepper, Hart, Meek, Cisek, & Sedikides, 2014; Hepper, Hart, & Sedikides, 2014; Vonk et al., 2013; Wai & Tiliopoulos, 2012; Watson & Biderman, 1994; Watson et al., 1984; Watson & Morris, 1991). However, a more detailed examination of the relevant body of literature revealed that this apparent link was not as clear as it appeared to be. First, not all studies that assessed narcissists' empathic functioning found deficits in affective empathy. Jonason and Krause (2013) found that narcissism (assessed via the Dark Triad Dirty Dozen Scale; Jonason & Webster, 2010) was unrelated to affective empathy (measured with the 20-item Basic Empathy Scale; Jolliffe & Farrington, 2006) and even positively predicted affective empathy in a model in which the other two Dark Triad traits (i.e., Machiavellianism and psychopathy) were also taken into account. Vonk et al. (2013), by contrast, found that grandiose narcissism was not related to affective empathy. Second, negative links between global narcissism and affective empathy appear to be driven by some (but not all) facets of grandiose narcissism. Watson and Morris (1991) demonstrated that the Exploitativeness/Entitlement subscale (Emmons, 1984) of the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979; Raskin & Terry, 1988) was responsible for the negative association, whereas the other subscales were not

correlated with affective empathy. Ghorbani et al. (2010) found that only one of three subfacets (i.e., “Interpersonal Vanity”) was negatively related to affective empathy. To sum up, although there is some evidence for a deficit in affective empathy in narcissists, the above-mentioned findings cast doubt on the notion that narcissists generally display low levels of affective empathy.

Cognitive Empathy

The counterpart to affective empathy is cognitive empathy, which describes the ability to understand another person's experience and perspective without necessarily sharing his or her emotional state. The ability to put oneself in other people's shoes and to appreciate their perspectives appears to be important for forming and maintaining satisfying interpersonal relationships (Davis & Oathout, 1987; Simpson, Ickes, & Blackstone, 1995). Moreover, cognitive empathy is regarded as a “valuable tool for insight in such settings as counselling or law enforcement” (Wai & Tiliopoulos, 2012, p. 794). However, because cognitive empathy provides access to sensitive emotional information, it might also be employed for manipulative and exploitative purposes (McIlwain, 2003; Wai & Tiliopoulos, 2012).

Existing research on the link between narcissism and cognitive empathy has yielded an ambiguous pattern of results. Undoubtedly, a considerable amount of research has provided evidence for a negative association between the two constructs (Biscardi & Schill, 1985; Ehrenberg et al., 1996; Gurtman, 1992; Hepper, Hart, Meek, et al., 2014; Hepper, Hart, & Sedikides, 2014; Jonason & Krause, 2013; Pincus et al., 2009; Vonk et al., 2013; Watson & Biderman, 1994; Watson & Morris, 1991). Beyond these findings, however, there are also studies that point to a null relation between certain facets of narcissism and cognitive empathy (Biscardi & Schill, 1985; Ghorbani et al., 2010; Vonk et al., 2013; Watson et al., 1984). Wai and Tiliopoulos (2012) even found evidence for a positive association between narcissism and self-reported cognitive empathy; they argued that narcissists' slightly superior cognitive empathy most likely aids their callous and manipulative nature because their needs for admiration and the reinforcement of their self-views require them to be capable of understanding the emotional states of others.

These diverging findings are further complicated by Ames and Kammrath's (2004) results, who demonstrated that there might be a discrepancy between narcissists' self-reported and actual abilities to engage in cognitive empathy. In their study, narcissism was positively related to participants' estimation of performance in an interpersonal perception task (IPT-15; Costanzo & Archer, 1989, 1993), whereas it was unrelated to actual IPT performance. In sum, the notion that narcissists generally display low levels of cognitive empathy has been challenged by recent studies.

Theory of Mind and Emotion Recognition

Premack and Woodruff (1978) define Theory of Mind (ToM) as the basic ability to infer the mental states of others.¹ ToM is closely related to the concept of emotion recognition, which refers to the ability to correctly identify and recognize another's emotional state (Mier

et al., 2010; Miner et al., 2010). The two concepts will therefore be addressed jointly in this section. Research on how narcissism is related to either ToM or emotional recognition is surprisingly sparse. Nevertheless, two hypotheses have been proposed with regard to narcissists' capacity to engage in ToM (Vonk et al., 2013): Either narcissistic individuals might be too self-absorbed to infer the mental states of others or, alternatively, they might be especially adept at mind-reading due to a desire to manipulate and exploit the thoughts and feelings of others. The first hypothesis predicts lower levels of the capacity to engage in ToM, whereas the latter predicts higher levels of the capacity to engage in ToM. In our review of the literature, only three studies explicitly tested narcissists' ToM abilities, often by using facial- or emotion-recognition tasks. Wai and Tiliopoulos (2012) used a facial identification task and found that narcissism was positively related to the detection of anger. Vonk et al. (2013) employed the Reading the Mind in the Eyes Task (RMET; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001), a standard measure of ToM, and found that NPI narcissism was negatively related to this task. Last, Konrath et al. (2014) explicitly focused on the Entitlement/Exploitativeness subscale and showed, in two studies, that narcissistic exploitativeness was associated with increased emotion recognition as measured with the RMET and the University of California Davis Set of Emotion Expressions (UCDSEE; Tracy, Robins, & Schriber, 2009). All in all, ToM tests have yielded ambiguous results that do not clearly favor one of the above-mentioned hypotheses.

Emotional Intelligence

Emotional intelligence (EI) can be defined as either "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (ability EI; Salovey & Mayer, 1990, p. 189) or "a constellation of emotional self-perceptions located at the lower levels of personality hierarchies" (trait EI; Petrides et al., 2011, p. 35). Emotional intelligence is related to positive interpersonal outcomes (e.g., Lopes et al., 2004; Schröder-Abé & Schütz, 2011). The link between narcissism and EI has, thus far, received little research attention. More attention has been given to the other two Dark Triad traits, Machiavellianism and psychopathy, revealing their consistent and negative association with EI (Ali, Amorim, & Chamorro-Premuzic, 2009; Austin, Farrelly, Black, & Moore, 2007; Nagler, Reiter, Furtner, & Rauthmann, 2014; Petrides et al., 2011). By contrast, the association with narcissism, the seemingly "brightest" member of the Dark Triad (Rauthmann & Kolar, 2013), appears to be more ambiguous.

In a recent study, Petrides et al. (2011) found that narcissism was positively related to aspects of self-reported emotional intelligence (as measured with the Trait Emotional Intelligence Questionnaire, TEIQue; Petrides, 2009). More precisely, positive links with global trait EI and the subscales Sociability and Well-Being were found, whereas no links were found with the subscales Emotionality and Self-Control. The authors interpreted these positive associations with trait EI as representing an expression of narcissistic hubris (Petrides, 2010).

Nagler and colleagues (2014) employed the self-reported Social Skills Inventory (SSI; Riggio & Carney, 2003) and demonstrated that narcissism was positively related to socioemotional expressivity and control but was unrelated or even negatively related to emotional and social sensitivity, respectively. Vonk et al. (2013) added to the mixed results by showing that Narcissistic Grandiosity and the NPI Leadership/Authority subscale were positively related to EI (as measured with the Emotional Intelligence Scale, EIS; Schutte et al., 1998), whereas the NPI Entitlement/Exploitativeness subscale was negatively related to EI. The NPI Grandiose Exhibitionism subscale was uncorrelated with EI in this study. The entirety of the above-mentioned studies followed a conceptualization of EI that is based on individuals' EI self-perceptions (so called "trait EI").

A Differentiated Facet Approach to Narcissism and Socioemotional Cognition Ability

Although a considerable amount of research has attempted to characterize the link between narcissism and SECA, results remain inconclusive. Researchers interested in the socioemotional functioning of narcissists are repeatedly confronted with ambiguous and partly contradictory findings on the different aspects of SECA. Here, we propose that two crucial differentiations might help in providing a deeper and more detailed understanding of narcissists' SECA: (a) the differentiation between how individuals self-evaluate their SECA and their actual SECA and (b) the differentiation between the agentic and antagonistic facets of narcissism.

Differentiating the Facets of Socioemotional Cognition Ability: Perceived vs. Actual Ability

We posit that the differentiation between perceived SECA and actual SECA is crucial because the conceptual meanings of these constructs are considerably different. Perceived SECA can be defined as people's mental representation of their SECA, that is, how capable *they think* they are in dealing with socioemotional problems or tasks. By contrast, actual SECA can be described as the *actual* capacity displayed by an individual when dealing with socioemotional problems or tasks. The heterogeneity in existing measures of SECA can be sorted based on this conceptual differentiation (see Schlegel, Grandjean, & Scherer, 2013, for a related approach). Whereas self-report measures such as the Interpersonal Reactivity Index (IRI; Davis, 1980), the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2009) or the Emotional Competence Questionnaire (ECQ; Rindermann, 2009) assess how individuals perceive their SECA, performance-based measures such as the Movie for the Assessment of Social Cognition (MASC; Dziobek et al., 2006) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002) assess individuals' actual SECA.

A number of studies have indicated only weak or absent associations between an individual's self-construed empathic ability and their actual capacity to infer another person's mental and emotional states (e.g., Davis & Kraus, 1997; Ickes, 1993; Realo et al., 2003). Similar low

convergence between self-perceptions and performance measures have been reported in the domain of EI (e.g., Brackett & Mayer, 2003; Mayer et al., 2002; O'Connor & Little, 2003), and for various ability domains (Zell & Krizan, 2014). Thus, the convergence between self-report and performance-based ability measures seems to be low, so that a differentiation between the two constructs is vital for comprehensively capturing an individual's SECA.

However, this crucial differentiation has not been applied consistently in research on the relation between narcissism and SECA. The vast majority of the above-cited studies (Biscardi & Schill, 1985; Ehrenberg et al., 1996; Ghorbani et al., 2010; Gurtman, 1992; Hepper, Hart, Meek et al., 2014; Jonason & Krause, 2013; Nagler et al., 2014; Petrides et al., 2011; Pincus et al., 2009; Watson et al., 1984; Watson & Morris, 1991) has employed self-report measures to assess narcissists' SECA, hence providing some indication of how narcissists construe their socioemotional abilities while not capturing their actual abilities. This appears to be particularly problematic for examining narcissists because their grandiose sense of self-worth (e.g., Morf & Rhodewalt, 2001) along with their tendency to self-enhance in various domains (e.g., Gabriel, Critelli, & Ee, 1994; Paulhus, 1998; Paulhus & John, 1998; Robins & John, 1997) might lead them to a uniquely biased perception of their actual SECA.

Only a few studies have included both self-report and performance-based measures (Vonk et al., 2013; Wai & Tiliopoulos, 2012), but they did not explicitly differentiate between the different concepts captured by these measurements. Ames and Kammrath (2004) explicitly examined narcissists' self-reported and objectively measured mind-reading competence (as measured with an empathic accuracy task). Although narcissists self-reported better-than-average socioemotional skills, the authors found no relation between narcissism and actual SECA. Accordingly, we expected to find differentiated effects of narcissism on perceived vs. actual SECA. The simultaneous analysis of how narcissism relates to both self-report and ability measures inevitably brings up the question of narcissistic self-enhancement. More specifically, assessing both, perceived and actual SECA, allows to test whether individual differences in narcissism are related to individual differences in self-enhancement (SE; Alicke & Sedikides, 2011). Do more narcissistic people tend to hold inflated self-views about their empathetic competence (high SE, i.e., a positive deviation of self-perceived ability from actual ability), while people lower in narcissism tend to hold more accurate (medium SE, i.e., self-view matches ability) or even devaluated self-views (negative SE, i.e., a negative deviation of one's self-view from actual ability)? In fact, the concept of self-enhancement is often treated as a core feature of the narcissistic personality (Grijalva & Zhang, 2015; Morf, Horvath, & Torchetti, 2011). Empirical research has shown that narcissists self-enhance more than less narcissistic persons across a variety of domains (Grijalva & Zhang, 2015), particularly when these domains are agentic in nature (e.g., intelligence, attractiveness, creativity). In contrast, narcissists' motivation to self-enhance in communal domains appears to be lower.

We aim at exploring whether narcissists self-enhance in SECA, a broad concept that entails both agentic aspects (since it is an ability) and communal aspects (because this ability concerns others). In doing so, we apply an analytical approach that circumvents the problem of previous statistical procedures by differentiating effects of self-enhancement from mere main effects of positive self-views (Humberg et al., 2018).

Differentiating between the Facets of Narcissism: Agentic versus Antagonistic Facets of Grandiose Narcissism

Grandiose narcissism² is a multifaceted construct consisting of several interrelated aspects. Although conceptual and taxonomic questions (as to the exact number, nature, and labeling of these dimensions) are a matter of an ongoing debate (e.g., Back et al., 2013; Barry & Kauten, 2014; Brown, Budzek, & Tamborski, 2009; Foster & Campbell, 2007; Miller & Campbell, 2008), researchers have recognized that not all aspects of narcissism are associated with negative emotional or behavioral outcomes (e.g., Back, Schmukle, & Egloff, 2010; Back et al., 2013; Barry, Frick, Adler, & Grafeman, 2007; Barry & Wallace, 2010; Campbell, 2001; Campbell & Campbell, 2009; Rose, 2002; Washburn, McMahon, King, Reinecke, & Silver, 2004; Wink, 1991). These findings have also inspired researchers to acknowledge that the heterogeneity of the narcissism construct has to be taken into consideration when examining its associated correlates (e.g., Back et al., 2013; Brown et al., 2009; Krizan & Herlache, 2018; Miller, Lynam, Hyatt, & Campbell, 2017; Wright & Edershile, 2018), especially in the domain of SECA (Vonk et al., 2013). According to a recent two-dimensional reconceptualization of grandiose narcissism, the Narcissistic Admiration and Rivalry Concept (NARC; Back et al., 2013), the wealth of narcissistic processes and correlates can be better understood by distinguishing between agentic and antagonistic aspects of grandiose narcissism (also see Paulhus, 2001).

According to this conceptual distinction, agentic narcissism is characterized by a self-promoting strategy to obtain social admiration, whereas antagonistic narcissism is characterized by adverse self-protection to prevent social failure. Agentic narcissists are individuals who strive for grandiosity and uniqueness while behaving in a charming manner when interacting with others. What is more, they see themselves as born leaders and claim authority for themselves. Agentic narcissists also display a sense of grandiose exhibitionism (Ackerman et al., 2011; Back et al., 2013; Brown et al., 2009; Brunell et al., 2008; Campbell, Brunell, & Finkel, 2006; Campbell & Foster, 2007). Antagonistic narcissism, on the contrary, can be characterized by an other-derogating strategy to maintain superiority. Antagonistic narcissists devalue others, strive for supremacy, and display aggressiveness in interpersonal relationships. This set of characteristics is expanded by marked feelings of entitlement and a tendency to exploit others (Ackerman et al., 2011; Back et al., 2013; Brown et al., 2009; Reidy, Zeichner, Foster, & Martinez, 2008).

A comprehensive assessment of these two overarching dimensions of grandiose narcissism can be found by referring to the agentic and antagonistic facets of narcissism as captured by the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979; Raskin & Terry, 1988) and the Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013). Two of the subscales from Ackerman et al.'s (2011) NPI three-factor solution capture agentic aspects of the narcissistic personality, namely, the Grandiose Exhibitionism and Leadership/Authority subscales. The third of Ackerman and colleagues' three factors, the NPI Entitlement/Exploitativeness subscale, captures antagonistic facets of the narcissistic personality. The NARQ was explicitly designed to capture the agentic and antagonistic facets of grandiose narcissism. The agentic facets are captured by the Grandiosity, Striving for uniqueness, and Charmingness subfacets of the narcissistic admiration dimension. The antagonistic facets are captured by the Devaluation, Striving for supremacy, and Aggressiveness subfacets of the narcissistic rivalry dimension.

Prior research indicates that a distinction between agentic and antagonistic narcissism is helpful for disentangling the adaptive and maladaptive consequences of narcissism in the social domain. Specifically, individuals high in agentic narcissism have been shown to be extraverted, to hold high and rather stable levels of self-esteem (Campbell, Rudich, & Sedikides, 2002; Geukes, et al., 2017; Rhodewalt, Madrian, & Cheney, 1998; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004), and to perceive themselves as assertive, sociable, attractive, competent, and likable (Back et al., 2013). Moreover, the agentic narcissism facets have been found to uniquely predict agentic behaviors (e.g., self-assured voice, facial expression, expressive gestures), benign envy, which entails the motivation to improve performance (Lange, Crusius, & Hagemeyer, 2016), and peer popularity (Back et al., 2010; Küfner et al., 2013; Leckelt, Küfner, Nestler, & Back, 2015). By contrast, individuals high in antagonistic narcissism have been shown to be disagreeable, to have a low and fragile self-esteem (Geukes et al., 2017), and to perceive themselves as aggressive (Back et al., 2013). The antagonistic narcissism facets, moreover, have been found to predict characteristics that are unfavorable for the maintenance of close relationships (e.g., malicious envy, hostility, lack of trust, forgiveness, and gratitude) and have been linked to a lack of communal behaviors (e.g., warm voice, authentic smile, overall warmth) and unpopularity among peers (Back et al., 2013; Fatfouta, Gerlach, Schröder-Abé, & Merkl, 2015; Fatfouta & Schröder-Abé, 2017; Küfner et al., 2013; Lange et al., 2016; Leckelt et al., 2015; for romantic relationships see also Wurst et al., 2017).

On the basis of these findings in related social domains, we expected differential associations of agentic and antagonistic narcissism with both perceived and actual SECA. Specifically, the tendency to describe oneself in an overly positive way, which is associated with agentic narcissism, should be paralleled by a higher level of perceived SECA. By contrast, the antagonistic, other-devaluing self-perceptions that are characteristic of people

high in antagonistic narcissism should be reflected in a lower level of perceived SECA. As there are few previous studies investigating the effects of narcissism facets on actual ability, expectations for the domain of actual SECA are not as straightforward and thus of a more exploratory nature. Following the conceptualization of narcissism facets, we might expect a more positive – or at least less negative – association with agentic than with antagonistic narcissism in the domain of actual SECA. Although people high in agentic narcissism are preoccupied with their own egos, they might still be motivated to understand other people's mental states as other people are the targets of agentic narcissists' primary strategy of obtaining social admiration. In addition, it is likely that agentic narcissists interact more with others compared to individuals low in agentic narcissism affording them more learning opportunities for socio-emotional skills, which in turn could translate into higher actual SECA. People high in antagonistic narcissism, by contrast, might focus more heavily on defending their own self instead of trying to understand other people's cognitions and affective states (cf. Back et al., 2013).

Present Research

The aim of the present research was to provide a detailed examination of the link between the facets of narcissism and actual vs. perceived SECA. Specifically, we wanted to shed light on the following questions: (a) How do narcissists perceive their own SECA? And to what extent do the agentic and antagonistic facets differ with respect to perceived SECA? (b) How well (or poorly) do narcissists actually perform on SECA tests? And to what extent do the agentic and antagonistic facets differ with respect to their actual SECA? In all of these analyses, we controlled for general reasoning ability to being able to unravel the unique associations between narcissism and SECA independent of more general cognitive capacities. We do, however, also report all analyses without controlling for reasoning ability to provide estimates of the effects of narcissism on SECA more broadly defined (including a potential overlap with general cognitive capacities). Finally, we aimed to investigate in an exploratory fashion whether the narcissistic facets are linked to SECA self-enhancement, that is, (d) whether agentic and antagonistic narcissism are related to the discrepancy between perceived and actual ability.

We hypothesized that agentic and antagonistic narcissism would be differentially related to both perceived and actual SECA. Because the agentic facet of narcissism, in essence, captures assertive strategies to shed a very positive light on one's own abilities, a positive relation between agentic narcissism and perceived SECA was expected. Arguably, the communal content of the SECA concept (i.e., the read emotions, to take another person's perspective, to empathize with another person) might also hamper the motivation of agentic narcissists to construe their SECA very positively. We expected, however, that their motivation to create a positive self-view in general prevails. Because individuals high in antagonistic narcissism, tend to devalue others, and

describe themselves more negatively with respect to their communal motivations, a negative relation between antagonistic narcissism and perceived SECA was expected. Our predictions concerning actual SECA were less clear-cut and had more of an exploratory nature: For agentic narcissism, a stronger positive relation with actual SECA relative to antagonistic narcissism might be expected as higher SECA might help the admiration-seeking narcissist to garner the desired adulation and attention on which their actually higher self-esteem might be based. On the other hand, agentic narcissists appear to be less motivated to understand others, which could hamper their motivation to perform well in SECA tasks resulting in a negative association between agentic narcissism and SECA. Antagonistic narcissists, a bit nearer to the clinical conceptions of narcissism and with greater focus on the devaluation of others (rather than the enhancement of self) might reflect a negative relationship to SECA since they are neither motivated to understand others nor motivated to engage in SECA to appear charming, unique and admired by others. For our exploratory research question concerning potential self-enhancing tendencies, no explicit hypotheses were formulated as to how these tendencies might be related to narcissism facets.

To address the hypotheses and research questions outlined above, we applied an extensive multimethodological approach in two studies. First, we separately assessed both self-perceived and actual SECA as well as the agentic and antagonistic facets of grandiose narcissism. Second, to allow for more generalizable results, independent of the unique characteristics of each specific assessment tool, we employed multiple measures for each facet of narcissism and SECA. Third, to check for the specificity of potential effects of narcissism on SECA, we added a measure of general reasoning ability. Fourth, to further enhance the replicability of our findings, we independently assessed two samples in Study 1 and three samples in Study 2, in different laboratories and regions, amounting to a total of five subsamples.

Heeding recent calls for a more "Open Science" (Open Science Collaboration, 2015), we undertook a number of measures to optimize the transparency, informational value, and replicability of the present research. First, in both studies, we aimed at sample sizes that allow for stable correlational results (Schönbrodt & Perugini, 2013). Second, we included a direct and well-powered replication study (Study 2) with regard to the associations between narcissism and SECA facets. Third, following our first study (Study 1), and before the data of Study 2 were analyzed, we pre-registered our main hypotheses (pertaining to a replication of the Study 1 findings) and further research questions (pertaining to potential mediators of the narcissism-SECA relations) on the Open Science Framework (OSF; see osf.io/jtrfm/). Fourth, on this OSF page we added information on all applied procedures and measures (i.e., Open Material) as well as a number of supplemental analyses that might help the reader to further evaluate the present findings. Finally, fifth, we also uploaded the data files that were analyzed (i.e., Open Data) as well as the syntax files applied, which reproduce the results presented in the manuscript (i.e., Open Code)

and that might be used to better comprehend the present analyses and/or to apply alternative models to the data.

Study 1

Study 1 served as initial investigation of the relationship between facets of narcissism (agentic vs. antagonistic) and facets of SECA (perceived vs. actual) as well as general reasoning capacity in two samples.

Method

Participants. Participants were recruited in two German cities located in the eastern and western regions of Germany, respectively, via notices in university buildings, social media platforms (e.g., Facebook or student mailing lists), and direct advertisements in psychology classrooms, resulting in two independent samples. In the following, information concerning the second western sample is given to the right of the slash symbol. Fluent knowledge of German was explicitly required for participation in the present study. Participants were offered either course credit or monetary compensation (20/25€) for their participation. Of the 144/176 persons signed up for testing, 10/12 persons signed up for participation but failed to complete both the online questionnaire and the laboratory session, nine/eight subjects completed only the online questionnaire, 1/12 persons had to be excluded due to insufficient time spent on the online questionnaire (<30 min/<49 min) and 4/12 further participants were not included due to insufficient self-reported language proficiency (either "not mother tongue", "very low", "low", or "intermediate"). Thus, the resulting sample with complete data (online questionnaire + laboratory data) entailed a total of 120/136 participants, of which 95/101 were female and 25/35 were male. Ages ranged from 18/18 to 36/52 years ($M = 22.84, SD = 3.94/M = 23.69, SD = 5.39$). Psychology students comprised 60%/46% of the sample.

Procedure. For both samples, we used a combination of a web- and a laboratory-based approach for data collection. First, participants accessed a website on which they provided demographic information, filled out questionnaires, and completed an online ability test on emotional intelligence. Second, computer-based SECA tasks were administered to groups of maximally ten/seven participants in the laboratory session. During this session, all participants were seated in front of a computer screen in separate cubicles and worked individually on the tasks. Data collection for the second sample was performed analogously (only one task was exchanged due to low reliability on this task in the first sample, and an additional self-report measure was added). The second sample included an additional experimental manipulation,³ which had no effects on any of the measures or on the reported associations. Therefore, the two sets of data that we collected on the second sample were combined and treated as one for data analysis (Curran & Hussong, 2009). Data collection was in line with the ethical requirements of the DGPs (German Society for Psychology) and the DFG (German Research Foundation). Due to the standard kind of data assessed, the respective Universities (University of Muenster and University of Leipzig) did not require an explicit approval of the ethics commission.

Measures.⁴ Intercorrelations between all specific measures can be found in Tables 1 to 3 of the Supplement 1 (osf.io/2y34r/).

Narcissism. *Narcissistic Personality Inventory (NPI).* As a first measure of individual differences in the domain of grandiose narcissism, we used the 40-item forced-choice Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979; Raskin & Terry, 1988; German version: Schütz, Marcus, & Sellin, 2004). For the analyses, we applied Ackerman et al.'s (2011) three-factor solution, which differentiates between Leadership/Authority (eleven items), Grandiose Exhibitionism (ten items), and Entitlement/Exploitativeness (four items). For each item, participants were presented with two statements and asked to select the one that best described them. A sample item is "I really like to be the center of attention" (scored 1) versus "It makes me uncomfortable to be the center of attention" (scored 0). In the two samples, the Cronbach's alphas for the three factors were .62/.74 for Leadership/Authority, .61/.72 for Grandiose Exhibitionism, and .53/.36 for Entitlement/Exploitativeness. The internal consistencies of the Entitlement/Exploitativeness subscale were moderate to low but comparable to the alphas of .46, .44, and .47 reported in Ackerman et al.'s (2011) three studies and to the alpha of .52 reported in the original NPI development paper (Raskin & Terry, 1988).

Narcissistic Admiration and Rivalry Questionnaire (NARQ). The NARQ (Back et al., 2013) captures two dimensions of grandiose narcissism: Narcissistic Admiration (nine items; $\alpha = .81/.87$) and Narcissistic Rivalry (nine items; $\alpha = .79/.83$). The two dimensions consist of three subfacets each. Striving for Uniqueness (three items; e.g., "Being a very special person gives me a lot of strength"), Charmingness (three items; e.g., "I manage to be the center of attention with my outstanding contributions"), and Grandiose Fantasies (three items; e.g., "I deserve to be seen as a great personality") represent the subfacets of Narcissistic Admiration. Striving for Supremacy (three items; e.g., "I want my rivals to fail"), Aggressiveness (three items; e.g., "I react with annoyance if another person steals the show from me"), and Devaluation of Others (three items; e.g., "Most people are somehow losers") represent the subscales of Narcissistic Rivalry. Answers for the 18 items of the NARQ were given on 6-point Likert-type scales (1 = *do not agree at all* to 6 = *agree completely*), and means were computed.

Perceived socioemotional cognition ability. *Interpersonal Reactivity Index (IRI).* The Interpersonal Reactivity Index (IRI; Davis, 1980) is commonly used to assess different facets of a person's self-perceived empathic tendencies. The German version of this measure (Saarbrücker Personality Questionnaire, SPQ; Paulus, 2009) was employed in this study with a focus on the two other-oriented empathy scales Empathic Concern and Perspective-Taking. The Empathic Concern subscale (four items) measures other-oriented emotions such as warm-heartedness, concern, or compassion and thus assesses individuals' self-perceived tendencies to show affective empathy. An example item is "I often have tender, concerned feelings for people less fortunate than me." The internal consistencies for this subscale were relatively low ($\alpha = .48/.56$) in comparison

with those reported by others (e.g., $\alpha = .75$, Edele et al., 2013; $\alpha = .78$, Ritter et al., 2011; $\alpha = .77$, Vonk et al., 2013). The Perspective-Taking subscale (four items) measures the self-reported ability to put oneself in someone else's shoes as well as to view things from another's perspective and is thus a measure of perceived cognitive empathy ability. The internal consistencies for this subscale ($\alpha = .71/.64$) were comparable to those reported in other studies (e.g., $\alpha = .66$, Edele et al., 2013; $\alpha = .75$, Ritter et al., 2011; $\alpha = .71$, Vonk et al., 2013). A sample item is "I try to look at everybody's side of a disagreement before I make a decision." Answers were given on 5-point Likert-type scales (1 = *not at all like me* to 5 = *very much like me*) and means were computed.

Theory of Mind in Everyday Life Questionnaire (Theory of Mind im Alltag, ToMiA). The ToMiA (Kalbe, Fleck, Brand, & Kessler, 2002) is a 16-item self-report measure of ToM ability in everyday life. Subjects were asked to indicate how much they identified with a given statement (e.g., "I usually recognize ironic remarks or jokes quickly") on a scale ranging from 1 (*not at all like me*) to 4 (*very much like me*). The answers to the 16 items were summed to form a global score (minimum: 16, maximum 64). The internal consistency of this measure was .80. The ToMiA was included as an additional measure of perceived SECA in the second sample.

Emotional Competence Questionnaire (ECQ). The ECQ (Rindermann, 2009) assesses different facets of emotional competence. Of the four available subscales, the second subscale (Recognition of the Emotions of Others) was employed because it most clearly captures an aspect of SECA. Due to time restrictions, the scale (originally comprising 17 items) was shortened to six items. Item selection was based on the content-related aspects, discriminatory power, and difficulty of the items. A sample item is "I am good at describing my friends' varying emotional states." Responses were made on a scale ranging from 1 (*not at all like me*) to 5 (*very much like me*), and means were computed. The internal consistency was high in both sub-samples ($\alpha = .88/.81$).

Actual socioemotional cognition ability. *Movie for the Assessment of Social Cognition (MASC).* The MASC (Dziobek et al., 2006) is a video-based measure that assesses an individual's actual SECA in terms of cognitive empathy and ToM. Participants are shown a 15-min movie about four protagonists who spend an evening together. The movie contains everyday social interactions and is stopped 46 times for questions concerning the feelings, thoughts, and intentions of the protagonists. The participants' task is to choose the correct answer out of four possible alternatives. A total score (minimum: 0, maximum: 45) for correct answers was calculated. The internal consistency of the MASC was $\alpha = .59/.67$.

Reading the Mind in the Eyes Task (RMET). The RMET was developed by Baron-Cohen and colleagues to assess subtle ToM deficits (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997). A revised version of this test (Baron-Cohen et al., 2001) was used in this study to assess an individual's actual SECA in terms of cognitive empathy and ToM. Participants were shown 36 images depicting eyes, each of which was surrounded by four adjectives.

For each image, the participants' task was to identify the adjective that best describes the feeling or thought conveyed in the corresponding image of the eyes. Since the RMET displayed a low internal consistency ($\alpha = .36$) in the first sample, it was replaced with another task that also focused on cognitive empathy, the cognitive subtask of the MET (Multifaceted Empathy Test; Dziobek et al., 2008) in the second sample.

Multifaceted Empathy Test (MET). The Cognitive Empathy subtest of the PC-assisted MET (Dziobek et al., 2008) is an ability test for which subjects have to infer the mental states of people depicted in photographs using a multiple-choice format. Participants were asked to choose the correct answer from four possible options for each of the 40 items. The highest possible score was therefore 40, the lowest zero; reliability of this 40-item scale was $\alpha = .48$, which was still relatively low but higher than the alpha for the RMET, which was replaced by the MET.

Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). The MSCEIT (Mayer et al., 2002) is the most commonly used performance-based measure of EI, which comprises the four subscales Perceiving Emotions, Using Emotions, Understanding Emotions, and Managing Emotions. We used the German version of this test (Steinmayr, Schütz, Hertel, & Schröder-Abé, 2011) in the present study. The 141 test items were scored using the consensus method. Internal consistencies of .85/.90 were obtained for this measure.

Emotion Recognition Index (ERI). The ERI (Scherer & Scherer, 2011) is an ability test that assesses emotional recognition with two subtests that comprise different modalities. On the first subtest, participants are asked to identify facial emotions that were taken from the Pictures of Facial Affect (Ekman & Friesen, 1971). Emotions belonging to the set of universal emotions such as *joy*, *sadness*, *fear*, *anger*, and *disgust* are depicted in photographs of the faces of female and male actors. These photographs are presented for 3 seconds to the participants who have to indicate the expressed emotion. On the second subtest, participants are asked to identify emotions conveyed by meaningless speech in a fantasy language. The sound recordings were derived from the International Study of Vocal Emotion Expression (Scherer, Banse, & Wallbott, 2001) and comprise *joyful*, *sad*, *angry*, *fearful*, and *neutral* statements. The ERI consists of a total of 60 items (30 items per subtest), and it takes approximately 20 min to complete. A global score across the two subtests was calculated as a measure of emotional recognition. The ERI displayed internal consistencies of $\alpha = .49/.60$.

General reasoning capacity (fluid intelligence). The Raven's Advanced Progressive Matrices (APM) test is a nonverbal measure of general reasoning capacity. The version employed in this study was a short version (e.g., Denissen, Schönbrodt, van Zalk, Meeus, & van Aken, 2011) of the original measure developed by Raven, Raven, and Court (1962). Participants are presented with patterns in the form of 3×3 matrices containing a blank space in the bottom right corner. For each of the 15 test items, the participants have to choose the correct answer

from a total of eight elements to fill in the blank space and to complete the pattern in a logical way. The level of difficulty increases with each test item. Participants had 20 min to complete the 15 test items. The brief Raven's APM test displayed internal consistencies of $\alpha = .57/.73$.

Data Analysis

Prior to data analyses, we z-standardized within the two Study 1 samples to account for the slight change in measures applied in the respective sample (Sample 1: RMET vs. Sample 2: MET, as described above). We used structural equation modelling for the data analyses. In a first step we examined whether our proposed two-factor models for narcissism and SECA, respectively, better represented the data than models, which contained only one global narcissism factor or one global SECA factor, respectively. To this end, we compared the fits of the two-factor versus the one-factor model with a chi-square difference test. Thereafter, we combined the two-factor models and modelled narcissism facets as predictors for the SECA facets. This was done for each narcissism facet separately as well as with both facets as joint predictors of SECA. General reasoning capacity (Raven's APM) was included as a covariate in all models but we additionally ran and report all models without this control. We also examined whether the results of the estimated models differed between the two samples. A graphical summary of the prediction models is shown in **Figure 1**.

Prior analysis showed that some of the narcissism measures and some of the empathy measures suffered from low reliability. We therefore decided to use a parcelling approach to define the latent variables. Parcelling refers to constructing aggregate-level indicators of multiple items to define latent variables and is often used in favor of single-items as it provides psychometrics advantages such as higher reliability (Little, Cunningham, Shahar, & Widaman, 2002). We constructed three item-parcels for each latent variable (i.e., three item-parcels for the antagonistic facet of narcissism and three parcels for the agentic facet) by applying the item-to-construct balancing approach (Little et al., 2002), in which the items with the highest loadings were used to anchor the three parcels. Subsequently, the items with the next highest factor loadings were added to the anchor items in inverted order until all items were assigned to a parcel. The created narcissism parcels contained items of both the NARQ and the NPI. Table 8 of Supplement 2 at osf.io/2y34r/ gives an overview on which item belongs to which item parcel. The raw data and the R codes to analyze the raw data can be found in the Open Science Framework (osf.io/jtrfm/). All structural equation models were estimated in R with the lavaan package (version 05-16, Rosseel, 2012).

Results

Correlations between all narcissism and SECA measures applied for further analyses can be found in **Table 1** (upper triangle, values left to the slash). The global measures of narcissism facets (agentic vs. antagonistic) and SECA facets (perceived vs. actual) were aggregate measures of the three parcels constituting the corresponding facet (cf. Table 8

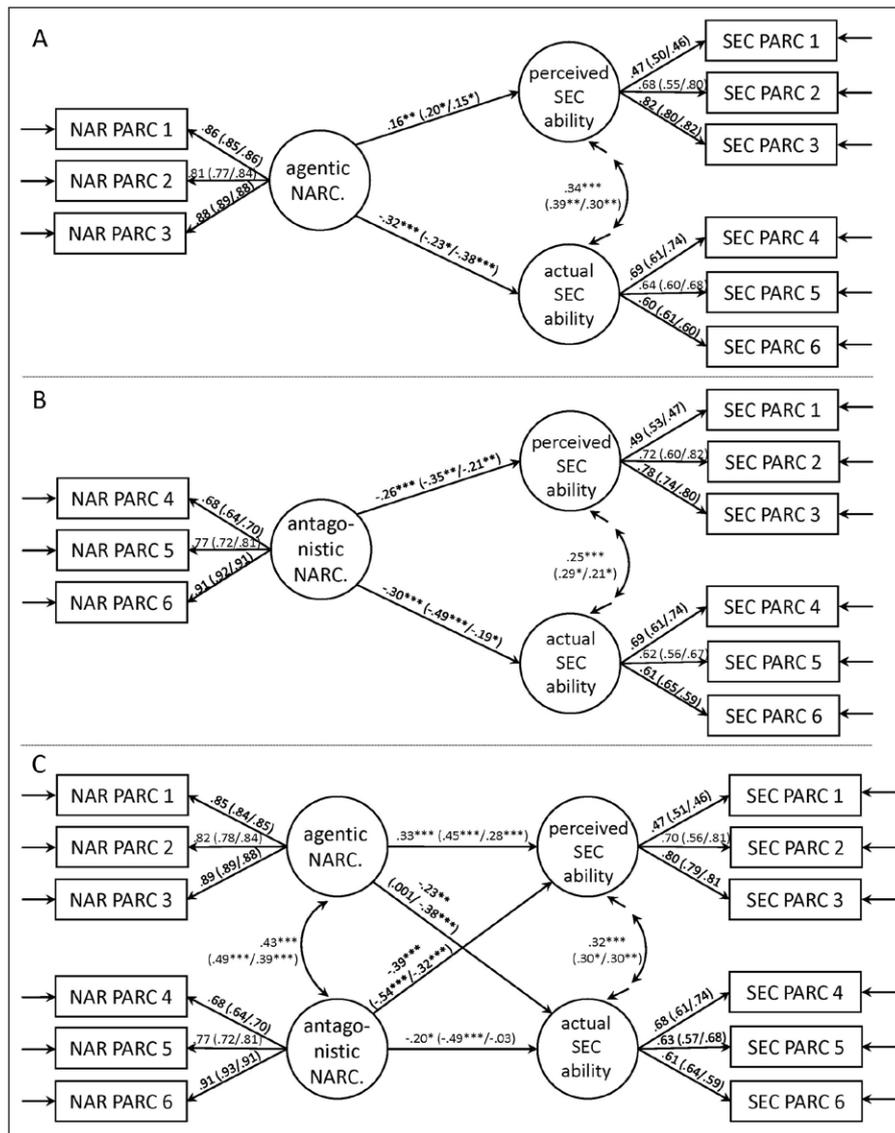


Figure 1: 1-facet structural equation models (A) & (B) and 2-facet structural equation models (C) relating agentive and antagonistic narcissism to perceived socioemotional cognition ability and actual socioemotional cognition ability controlling for general reasoning capacity (i.e., RAVEN). Coefficients left to the brackets are based on the pooled data of Study 1 and Study 2 ($N = 602$); left coefficients within brackets are based on Study 1 ($N = 256$) data, right coefficients in brackets are based on Study 2 ($N = 346$) data. All coefficients and loadings are standardized. The figure does not contain the correlations between the RAVEN score and agentive and antagonistic narcissism. Both paths were included in the estimated models, however; corresponding coefficients for these paths are displayed in Table 2. * $p < .05$. ** $p < .01$. *** $p < .001$.

of Supplement 2 at osf.io/2y34r/). Descriptive statistics, Cronbach's Alphas of and intercorrelations between all specific measures can be found in Tables 1 to 3 of Supplement 1 (osf.io/2y34r/).

Factor structure of narcissism and SECA. Across samples, measures of agentive narcissism displayed higher correlations with other measures of agentive narcissism in comparison with antagonistic narcissism and vice versa (cf. Table 1 of Supplement 1 osf.io/2y34r/). Agentive and antagonistic narcissism aggregates were positively related ($r = .42, p < .001$). To provide a more formal test of the two-facet narcissism model that we proposed, we fitted a two-facet model comprising the agentive and antagonistic narcissism facets (the latent correlation between the two facets amounted to $r = .51, p < .001$) and

a one-factor model containing an overall narcissism factor only to the data. Results for the two-factor model showed a solid fit, $\chi^2(8) = 8.896, p = .351, CFI = .999, RMSEA = .021$, whereas the one-factor model did not fit the data well, $\chi^2(9) = 197.229, p < .001, CFI = .735, RMSEA = .286$. This result was supported by a significant chi-square difference test, $\Delta\chi^2(1) = 188.332, p < .001$.

As can be seen in Table 2 Supplement 1 osf.io/2y34r/, self-report measures of SECA displayed higher correlations with other self-report measures of SECA in comparison with performance-based measures of SECA and vice versa. Aggregates of perceived and actual SECA correlated positively ($r = .23, p < .001$, latent $r = .37, p = .003$). Accordingly, the hypothesized two-facet model revealed an excellent fit, $\chi^2(8) = 5.724, p = 0.678$,

Table 1: Pearson's correlation coefficients between facets of narcissism and facets of socioemotional cognition ability (perceived vs. actual).

	1	2	3	4	5
Facets of Narcissism					
1 Agentic Narcissism	–	.42/.34	.09/.08	–.17/–.25	–.11/–.04
2 Antagonistic Narcissism	.37	–	–.18/–.18	–.26/–.10	–.08/.11
Facets of SECA					
3 Perceived SECA	.09	–.18	–	.23/.16	–.03/–.09
4 Actual SECA	–.21	–.17	.19	–	.22/.29
General reasoning capacity					
5 RAVEN	–.07	.03	–.06	.26	–

Note: Numbers left to the slash in upper triangle show the Pearson's correlation coefficients for Study 1 ($N = 256$), numbers right to slash in the upper triangle show the Pearson's correlation coefficients of Study 2 ($N = 346$). The lower triangle contains the Pearson's correlation coefficients for pooled data of both Study 1 and Study 2 ($N = 602$). Bold correlations are significant ($p < .05$, two-tailed). SECA = socioemotional cognition ability.

CFI = 1.000, RMSEA = .000, whereas the alternative model proposing only one common SECA factor did not fit the data well, $\chi^2(9) = 75.988, p < .001, CFI = .670, RMSEA = .171$. Furthermore, the two-factor model fitted the data significantly better than the one-factor model, $\Delta\chi^2(1) = 70.264, p < .001$.

Narcissism – SECA prediction models. Table 1 (upper triangle, values left to the slash) presents Pearson's correlation coefficients between facets of narcissism and facets of SECA. Agentic narcissism showed a non-significant positive association to perceived SECA ($r = .09, p = .146$) while it was negatively related to actual SECA ($r = -.17, p = .006$). Antagonistic narcissism showed negative associations to both perceived SECA ($r = -.18, p = .004$) and actual SECA ($r = -.26, p < .001$).

To more formally test the unique associations between agentic narcissism, antagonistic narcissism (composed of the indicators described above), and the SECA facets, we fitted structural equation models to the data (see Figure 1, panels A, B, and C, left coefficients in brackets) in which fluid intelligence (Raven's APM) served as an additional predictor variable.

Agentic narcissism was used as a predictor for SECA facets in the first model (A), antagonistic narcissism in the second model (B), and both agentic and antagonistic narcissism were used as predictors in the third model (C). Each model fitted the data well, A: $\chi^2(30) = 40.268, p = .100, CFI = .984, RMSEA = .037$; B: Each model fitted the data well, $\chi^2(30) = 42.218, p = .069, CFI = .976, RMSEA = .040$; C: Each model fitted the data well, $\chi^2(56) = 79.523, p = .021, CFI = .976, RMSEA = .041$. Path coefficients for each model are shown in Table 2. As indicated by the (standardized) path coefficients in Table 2, we found that agentic narcissism positively predicted perceived SECA, whereas it negatively predicted actual SECA. Antagonistic narcissism negatively predicted perceived SECA and also negatively predicted actual SECA. Actual SECA was positively related to perceived SECA. The 2-facet model (C), showed the same associations with one exception: Agentic narcissism did not predict actual SECA when controlling for the antagonistic

facet ($b = .001, p = .995, \beta = .001$). Agentic and antagonistic narcissism were positively related ($r = .49, p < .001$). In all models, general cognitive ability (i.e., Raven's APM) significantly predicted higher levels of actual SECA but did not predict perceived SECA. When excluding the Raven test from the structural equation analysis, the pattern of results remained unchanged with negligible differences in the resulting (standardized) path coefficients (see Table 2, models A', B', C').

As our sample consists of two samples that were assessed in two different German cities, we additionally fitted two multiple group-structural equation models to the data to test whether the four path coefficients of (a) agentic narcissism – perceived SECA, (b) agentic narcissism – actual SECA, (c) antagonistic narcissism – perceived SECA, (d) antagonistic narcissism – actual SECA varied between the two samples. First, we estimated a model in which all factor loadings, the indicator intercepts, and the errors variances of the indicators were constrained to be equal across both samples but in which the four path coefficients were allowed to vary between the two samples. Thereafter, the same model was estimated across the two samples. This time, however, we specified the coefficients of the four paths to be equal across the two samples. The fit of the latter model was not significantly inferior than the fit of the first model, $\Delta\chi^2(4) = 7.13, p = .129$. Thus, the important parameters did not significantly differ between the two samples.

Discussion

The aim of Study 1 was to provide a first comprehensive investigation of the unique association between facets of narcissism and aspects of SECA. Two nonclinical samples ($N = 120/136$) were examined in two German cities. Narcissism was measured with two different self-report questionnaires covering agentic and antagonistic displays of this construct. Various forms of socioemotional cognition self-views and ability were assessed with self-report and performance-based tests to broadly cover both perceived SECA and actual SECA. An additional measure of

Table 2: Standardized (β) and unstandardized (b) path coefficients for the 1-facet structural equation models (A & B, A' & B') and the 2-facet structural equation model (C, C').

Model	Predictor	Criterion	Study 1			Study 2			Mega-analytical integration		
			b [95% CI]	p	β	b [95% CI]	p	β	b [95% CI]	p	β
A	Agentic Narc.	Perceived SECA	.20 [.01; .39]	.040	.17	0.15 [.02; .29]	.023	.15	0.16 [.05; .27]	.004	.15
		Actual SECA	-.23 [-.42; -.03]	.025	-.19	-.038 [-.56; -.21]	<.001	-.28	-.032 [-.45; -.18]	<.001	-.24
Raven	Raven	Perceived SECA	-.02 [-.09; .05]	.624	-.04	-.006 [-.12; -.01]	.030	-.13	-.004 [-.09; .001]	.054	-.09
		Actual SECA	.13 [.05; .21]	.002	.26	0.20 [.13; .28]	<.001	.34	0.17 [.11; .23]	<.001	.30
A'	Agentic Narc.	Perceived SECA	.20 [.01; .39]	.042	.17	0.16 [.03; .30]	.020	.15	0.17 [.05; .28]	.004	.15
		Actual SECA	-.25 [-.45; -.06]	.012	-.22	-.040 [-.58; -.21]	<.001	-.30	-.034 [-.47; -.20]	<.001	-.27
B	Antagonistic Narc.	Perceived SECA	-.35 [-.59; -.10]	.005	-.26	-.021 [-.36; -.07]	.004	-.20	-.026 [-.38; -.13]	<.001	-.22
		Actual SECA	-.49 [-.72; -.26]	<.001	-.38	-.019 [-.37; -.004]	.045	-.13	-.030 [-.44; -.17]	<.001	-.23
Raven	Raven	Perceived SECA	-.03 [-.11; .05]	.436	-.06	-.005 [-.11; .01]	.091	-.11	-.004 [-.09; .01]	.094	-.08
		Actual SECA	.13 [.05; .20]	.002	.25	0.22 [.15; .30]	<.001	.37	0.18 [.13; .24]	<.001	.33
B'	Antagonistic Narc.	Perceived SECA	-.35 [-.59; -.11]	.005	-.26	-.023 [-.37; -.08]	.002	-.21	-.027 [-.39; -.14]	<.001	-.23
		Actual SECA	-.50 [-.73; -.26]	<.001	-.40	-.012 [-.31; .07]	.203	-.09	-.028 [-.43; -.14]	<.001	-.22
C	Agentic Narc.	Perceived SECA	.45 [.20; .69]	<.001	.37	0.28 [.13; .44]	<.001	.27	0.33 [.20; .46]	<.001	.30
		Actual SECA	.001 [-.22; .22]	.995	.001	-.038 [-.57; -.18]	<.001	-.27	-.023 [-.38; -.09]	.002	-.18
Antagonistic Narc.	Antagonistic Narc.	Perceived SECA	-.54 [-.83; -.25]	<.001	-.42	-.032 [-.49; -.16]	<.001	-.30	-.039 [-.54; -.24]	<.001	-.34
		Actual SECA	-.49 [-.75; -.23]	<.001	-.38	-.003 [-.23; .17]	.758	-.02	-.020 [-.35; -.04]	.013	-.15
Raven	Raven	Perceived SECA	-.02 [-.09; .05]	.581	-.04	-.004 [-.09; .02]	.175	-.08	-.003 [-.07; .01]	.180	-.06
		Actual SECA	.13 [.05; .20]	.002	.25	0.21 [.13; .28]	<.001	.35	0.18 [.12; .23]	<.001	.32
C'	Agentic Narc.	Perceived SECA	.45 [.21; .70]	<.001	.37	0.30 [.14; .45]	<.001	.28	0.34 [.20; .47]	<.001	.30
		Actual SECA	-.03 [-.25; .19]	.792	-.03	-.042 [-.51; -.18]	<.001	-.31	-.027 [-.43; -.12]	<.001	-.21
Antagonistic Narc.	Antagonistic Narc.	Perceived SECA	-.54 [.83; -.25]	<.001	-.42	-.034 [-.63; -.22]	<.001	-.32	-.041 [-.55; -.26]	<.001	-.35
		Actual SECA	-.48 [-.74; -.22]	<.001	-.38	0.05 [-.16; .25]	.653	.03	-.016 [-.32; -.003]	.045	-.12

Note: General reasoning ability (i.e., RAVEN) is controlled for in models A-C, whereas general reasoning ability is not controlled for in models A'-C'. 95% CI = 95% confidence interval. SECA = socioemotional cognition ability.

fluid intelligence was included to account for the potential influence of reasoning capacity. The narcissism measures were modeled as predictors of both the self-report and performance-based measures of SECA, as was fluid intelligence. The results indicate that the differentiations that we made are crucial, namely, between the facets of narcissism on the one hand and the aspects of SECA on the other hand.

Applying this twofold differentiation, the following pattern of associations between facets of narcissism and facets of SECA emerged: First, agentic narcissism was positively related to perceived SECA while a negative association was found between agentic narcissism and actual SECA. Second, antagonistic narcissism was negatively related to perceived SECA and a negative relationship was also found between antagonistic narcissism and actual SECA. Third, our measure of general reasoning capacity was positively linked to actual SECA whereas it had no association to perceived SECA. Controlling for reasoning capacity did not affect the pattern of results. When both narcissism facets were included in the model, the pattern of results did not change except that the negative association between agentic narcissism and actual SECA could no longer be found.

Study 2

To test the replicability of and extend our findings, we conducted a novel data collection in three German cities using the same research design as in Study 1. Previous to this novel data collection, we pre-registered our hypotheses: osf.io/jtrfm/. Following results of Study 1, we expected to find the same set of differentiated effects of narcissism facets on SECA facets.⁵

Method

Data collection was conducted analogous to Study 1 and in three German cities ($n_1 = 127$, $n_2 = 107$, $n_3 = 114$) using an online survey and computer-based tests in the laboratory. Data were merged across the three samples resulting in a total sample size of $N = 348$. Subjects who needed less than a total of 1200 seconds (=20 min) to complete the online questionnaire ($n = 1$) and who indicated German language proficiency below "good" ($n = 1$), were excluded from the data set, resulting in a total sample size of $N = 346$. Within the final sample, participants' mean age was 23.89 years ($SD = 6.84$) and 75% ($n = 261$) were females. Psychology students comprised 53% of the sample. As incentives, participants received either course credit or monetary compensation (20€). Data collection was in line with the ethical requirements of the DGPs (German Society for Psychology) and the DFG (German Research Foundation). Due to the standard kind of data assessed, the respective Universities (University of Muenster, University of Leipzig, and University of Darmstadt) did not require an explicit approval of the ethics commission.

We used the same instruments⁶ as in Study 1. Cronbach's Alphas of the measures ranged between .30 and .88 for the narcissism subscales, between .56 and .92 for perceived SECA measures, and between .39 and .88 for actual SECA measures. Cronbach's Alphas of and intercorrelations

between all specific measures can be found in Tables 4 to 6 of the Online supplement (osf.io/2y34r/).

Data Analysis

We applied the same analytical strategy as in Study 1 (for the raw data and reproducible R code, see osf.io/jtrfm/).

Results

Factor structure of narcissism and SECA.

Across samples, measures of agentic narcissism displayed higher correlations with other measures of agentic narcissism in comparison with antagonistic narcissism and vice versa (see Table 4 of Supplement 1 at osf.io/2y34r/). Agentic and antagonistic narcissism aggregates were positively related ($r = .34$, $p < .001$, latent $r = .40$, $p < .001$). Similar to Study 1, the two-factor model showed a solid fit, $\chi^2(8) = 13.685$, $p = .090$, CFI = .995, RMSEA = .045, whereas the one-factor model did not fit the data well, $\chi^2(9) = 398.195$, $p < .001$, CFI = .649, RMSEA = .354. This result was supported by a significant chi-square difference test, $\Delta\chi^2(1) = 384.510$, $p < .001$.

As can be seen in Table 5 of Supplement 1 at osf.io/2y34r/, self-report measures of SECA displayed higher correlations with other self-report measures of SECA in comparison with the performance-based measures of SECA and vice versa. Perceived SECA and actual SECA aggregates correlated positively ($r = .16$, $p = .003$, latent $r = .13$, $p = .036$). Again, as in Study 1, the two-facet model revealed good fit, $\chi^2(8) = 15.584$, $p = 0.049$, CFI = .983, RMSEA = .052, whereas the alternative model proposing only one common SECA factor did not fit the data well, $\chi^2(9) = 185.261$, $p < .001$, CFI = .604, RMSEA = .238. Furthermore, the two-factor model fitted the data significantly better than the one-factor model, $\Delta\chi^2(1) = 169.677$, $p < .001$.

Narcissism – SECA prediction model. Table 1 (upper triangle, values right to the slash) summarizes zero-order Pearson correlation coefficients between facets of narcissism and facets of SECA. Correlations were relatively similar to those found in Study 1. In the domain of perceived SECA, a non-significant positive association was found for agentic narcissism ($r = .08$, $p = .133$), while a negative association was found for antagonistic narcissism ($r = -.18$, $p = .001$). In the domain of actual SECA, a negative association was found for agentic narcissism ($r = -.25$, $p < .001$) while a non-significant negative association was found for antagonistic narcissism ($r = -.10$, $p = .070$).

To test the replicability of facet-specific unique associations between narcissism and SECA found in Study 1 with our new Study 2 data, we submitted the new data to the structure equation modelling approach described above. The resulting models are depicted in **Figure 1A–C** (right coefficients in brackets). Each model fitted the data well, A: $\chi^2(30) = 56.801$, $p = .002$, CFI = .976, RMSEA = .051; B: $\chi^2(30) = 65.702$, $p < .001$, CFI = .963, RMSEA = .059; C: $\chi^2(56) = 107.211$, $p < .001$, CFI = .969, RMSEA = .051. Path coefficients for each model are shown in Table 2. As indicated by the (standardized) path coefficients in Table 2, results for models with each narcissism facet as a separate predictor (models A/A' and

B/B') are very similar to these of Study 1: We found that agentic narcissism positively predicted perceived SECA, whereas it negatively predicted actual SECA. Antagonistic narcissism negatively predicted perceived SECA and also negatively predicted actual SECA. Actual SECA was positively related to perceived SECA. The 2-facet model (1C), showed the same associations with one exception: Antagonistic narcissism did not predict actual SECA when controlling for the agentic facet ($b = -.03, p = .758, \beta = -.02$). Again, agentic and antagonistic narcissism were positively related ($r = .51, p < .001$). In all models, general cognitive ability (i.e., Raven's APM) significantly predicted higher levels of actual SECA but did not predict perceived SECA. When excluding the Raven test from the structural equation analysis, the pattern of results remained unchanged with negligible differences in the resulting (standardized) path coefficients (see **Table 2**).

As in Study 1, we also tested for differences in the same four path coefficients between the three samples by using multiple-group structural equation modelling. First, a model was fitted to the data for which no equality constraints were imposed on the four coefficients across the three samples (but for the indicator loadings, indicator intercepts, error variances). A second model was then fitted to the data in which the four path coefficients were defined to be equal across the three samples. A chi-square difference test showed that the fit of the latter model was not significantly worse compared to the fit of the first model, $\Delta\chi^2(8) = 11.893, p = .156$. Thus, the four path coefficients did not significantly differ between the three samples.

Discussion

The purpose of Study 2 was to replicate Study 1 with a larger sample. As in Study 1, the agentic facet of narcissism was uniquely linked to a positive perceived SECA whereas it was negatively linked to actual SECA. Likewise, negative associations emerged between the antagonistic facet and both perceived SECA and actual SECA. In sum, all associations found in Study 1 could be replicated in Study 2.

When controlling for the opposing narcissism facet (2 facet model), however, the pattern of associations between narcissism facets and actual SECA found in Study 1 could not be replicated. In Study 1, a nil-relationship to actual SECA was found for the agentic narcissism, whereas a negative relationship to actual SECA was found for antagonistic narcissism. The reversed pattern emerged in Study 2: A negative association was found for the agentic narcissism facet, while a nil-relationship was found for antagonistic narcissism. These associations differed significantly from those found for Study 1 both for agentic narcissism and for antagonistic narcissism in the 2-facet model. This finding underlines the often less robust nature of associations that are controlled for overlapping constructs (see, e.g., Vize, Collison, Miller, & Lynam, 2018). To provide results that are even more robust, we further analyzed the data of both studies by means of a mega-analytic integration. This mega-analytic approach was additionally used to explore the relation of narcissism facets and self-enhancement.

Mega-Analytic Integration

To improve the statistical power and the accuracy of the estimations in question, we integrated the complete body of our data by means of a mega-analytic approach (see Sung et al., 2014, for a comparison between meta- and mega-analytic methodology). That is, we used the same analysis methods as described in Study 1 and 2 and calculated the same models with the pooled data ($N = 602$). Furthermore, we submitted the data to exploratory analyses to examine potential SECA self-enhancement tendencies related to individual differences in narcissistic facets.

Narcissism – SECA Prediction Model

Prior to data analyses, we z-standardized across the three methodologically homogeneous Study 2 samples. As in Study 1 and Study 2, we used structural equation models to test our hypotheses. Again, three narcissism – SECA prediction models (see **Figure 1A–C**, and Data analysis section of Study 1) were fitted to the pooled data. **Table 1** (lower triangle) summarizes zero-order Pearson correlation coefficients between facets of narcissism and facets of SECA. In the domain of perceived SECA, a positive association was found for agentic narcissism ($r = .09, p = .037$), while a negative association was found for antagonistic narcissism ($r = -.18, p < .001$). In the domain of actual SECA, negative associations were found for both agentic narcissism ($r = -.21, p < .001$) and antagonistic narcissism ($r = -.17, p < .001$).

The resulting structural equation models are depicted in **Figure 1A–C** (coefficient left to the brackets). Each model fitted the data well, A: $\chi^2(30) = 52.778, p = .006, CFI = .987, RMSEA = .036$; B: $\chi^2(30) = 59.919, p = .001, CFI = .979, RMSEA = .041$; C: $\chi^2(56) = 106.614, p < .001, CFI = .981, RMSEA = .039$. Path coefficients for each model are shown in **Table 2**. As indicated by the (standardized) path coefficients in **Table 2**, we found that agentic narcissism positively predicted perceived SECA, whereas it negatively predicted actual SECA. Antagonistic narcissism negatively predicted perceived SECA and also negatively predicted actual SECA. Actual SECA was positively related to perceived SECA. The 2-facet model (1C) showed the same pattern of associations without any exception. Again, agentic and antagonistic narcissism were positively related ($r = .43, p < .001$). In all models, general cognitive ability (i.e., Raven's APM) significantly predicted higher levels of actual SECA but did not predict perceived SECA. When excluding the Raven test from the structural equation analysis, the pattern of results remained unchanged with negligible differences in the resulting (standardized) path coefficients (see **Table 2**, models A', B', C').

Condition Based Regression Analyses of Self-Enhancement Effects

For both studies and also for the mega-analytical integration, we found that agentic narcissism was positively related to perceived SECA and negatively related to actual SECA. A question that suggests itself based on this pattern of results is whether agentic narcissism is related to SECA self-enhancement: Given that agentic

narcissists' perceived SECA is high but their actual SECA is rather low, does this mean that agentic narcissism is positively related to the algebraic difference between perceived and actual SECA, a commonly applied measure of self-enhancement? To investigate this question as an exploratory additional analysis, we applied an analytical approach that was recently designed for the test of self-enhancement effects (condition-based regression analysis, CRA, Humberg et al., 2018). In analogy to our main analyses, we conducted CRA analyses for both narcissism facets, for the 1- and 2-facet versions of the models, with and without control for reasoning capacity, and we conducted separate analyses within the two studies as well as a mega-analytical integration (see Supplement 3 and the R code at osf.io/jtrfm/ for model specifications, see Supplement 3 for the results). For the 1-facet analysis for agentic narcissism (without control for reasoning capacity), for example, the basis of the CRA is the estimation of the multiple linear regression model⁷ $agentic_narcissism = c_0 + c_1 \text{perceived_SECA} + c_2 \text{actual_SECA} + \epsilon$. When estimating this model in the pooled Study 1 and Study 2 data, the regression coefficients of perceived SECA and actual SECA were $\hat{c}_1 = 0.20$ and $\hat{c}_2 = -0.25$, respectively, and both coefficients differed significantly from zero (see Table 9 of Supplement 3). According to the CRA approach, this pattern indicates that agentic narcissism was positively related to SECA self-enhancement. This conclusion is quite intuitive:

The positive association of perceived SECA and agentic narcissism under control for actual SECA indicates that when considering two persons with the same SECA, the person who self-enhances more (i.e., the person with the higher perceived SECA) is the more narcissistic person out of the two. The negative association of actual SECA and narcissism under control for perceived SECA mirrors that out of two persons with the same perceived SECA, again the person who self-enhances more (i.e., the person with lower ability) is more narcissistic. Together, these associations indicate that persons higher in agentic narcissism tend to hold perceptions of their SECA that exceed their actual ability more (or that fall behind their actual ability less) than less narcissistic persons.

This conclusion can also be illustrated graphically: **Figure 2** shows the graph of the estimated multiple regression model that relates agentic narcissism to perceived and actual SECA in a three-dimensional coordinate system. The graph was plotted using the R package RSA (version 0.9.11; Schönbrodt, 2017). The estimated model predicts that those persons with the highest narcissism scores (right corner of the coordinate cube) are the persons whose perceived ability is high while their actual ability is low, that is, the persons who heavily self-enhance their SECA. By contrast, according to the model, persons with mediocre narcissism values tend to be the persons with rather accurate self-views (middle part of the coordinate cube), and persons with very low

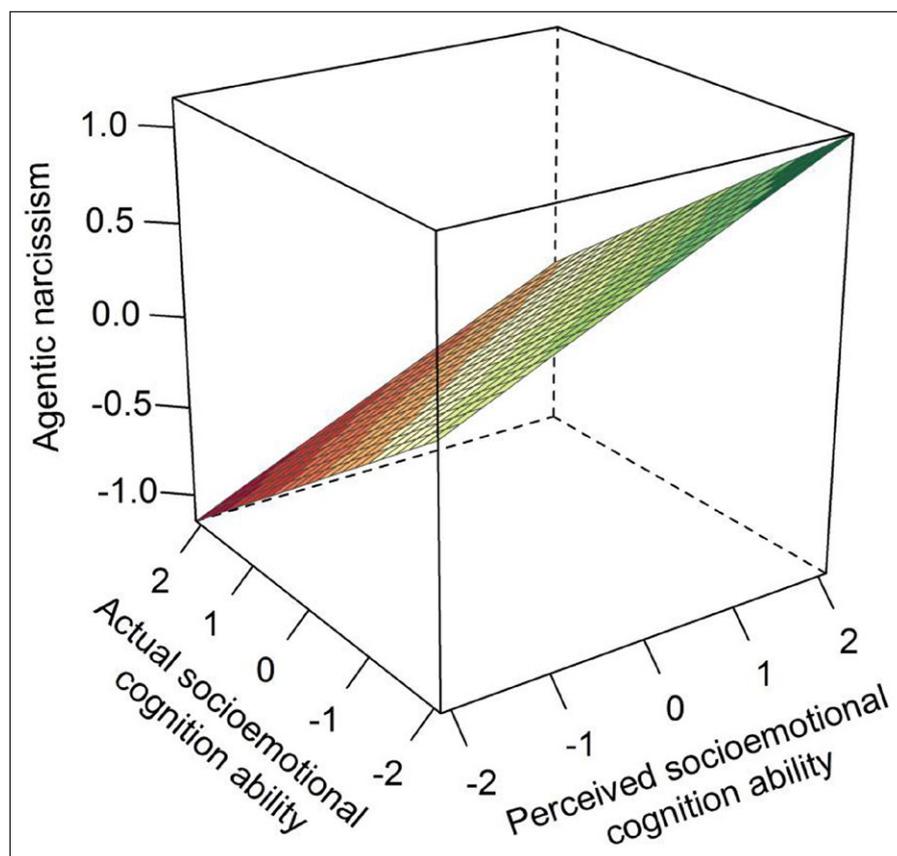


Figure 2: Graph of the model $agentic_narcissism = \hat{c}_1 \text{perceived_SECA} + \hat{c}_2 \text{actual_SECA}$, with coefficient estimates $\hat{c}_1 = 0.20$ and $\hat{c}_2 = -0.25$ from the respective 1-facet model (without control for general reasoning capacity), estimated with the pooled Study 1 and Study 2 data. SECA = socioemotional cognition ability.

narcissism scores (left corner) tend to understate their SECA (low perceived, high actual ability).

These interpretations further substantiated when we applied an advanced test for self-enhancement effects that Humberg et al. (2018) suggested to avoid alpha-error accumulation that can result from the combination of two significance tests. For this additional test, one must test the auxiliary parameter $abs = |c_1 - c_2| - |c_1 + c_2|$ for significance. Narcissism is positively associated to SECA self-enhancement if abs is significantly positive and $c_1 - c_2 > 0$, which was the case for the analysis reported above ($abs = .40$ significantly positive).

When considering all conducted CRA analyses, we found a fairly consistent pattern of results, within and across studies (see Table 9 of Supplement 3): Agentic narcissism was positively associated with self-enhancement of SECA (i.e., in Study 1, Study 2, and the mega-analysis, for all model types, irrespective of whether general cognitive capacity was controlled). For antagonistic narcissism, by contrast, we found no indication of an association with self-enhancement in neither of the computed models.

General Discussion

In this paper, we argued that the heterogeneous and partly diverging evidence in the domain of narcissism and SECA can be reconciled by making two fundamental differentiations: The first differentiation pertains to the distinction between facets of SECA, namely perceived and actual SECA; the second differentiation pertains to the distinction between facets of narcissism, namely agentic and antagonistic narcissism. Applying this twofold differentiation to an integrative and multimethodological empirical investigation in two studies across several subsamples, laboratories, and measures allowed us to paint a clearer and at the same time more comprehensive picture of the complex relations between narcissism and SECA.

A Facet Approach to the Link between Narcissism and Socioemotional Cognition Ability

Findings of the present two studies underline the utility of the proposed facet approach to the study of narcissism and SECA. Most generally speaking, this relation does indeed seem to depend on the specific narcissism facet–SECA facet combination one is looking at. Despite the fact that agentic and antagonistic narcissism were positively related, they showed distinct relations to SECA facets; and despite the fact that perceived and actual SECA were positively related they exhibited distinct relations to narcissism facets. These differential associations were relatively robust: Across studies and subsamples, agentic narcissism was positively related to perceived SECA, while antagonistic narcissism was negatively related to perceived SECA. Both narcissistic facets showed negative relations to actual SECA.

In sum, the facet approach proved valuable by revealing marked discrepancies between how narcissists self-evaluate their socioemotional cognition abilities (such as empathy, Theory of Mind, and emotional intelligence) and how narcissists actually perform in corresponding tasks. Specifically, whereas individuals high in agentic narcissism

tended to believe that they are “socioemotionally gifted”, their actual performance was below average. Individuals high in antagonistic narcissism also showed lower performance levels, which were, however, mirrored by their negative self-evaluations. Taken together, these results suggest that there does not seem to be a general association between narcissism and SECA but that one has to differentiate between both narcissism and SECA facets to yield meaningful and more robust insights. Previous findings based on associations between specific measures of narcissism and SECA must, therefore, be carefully reevaluated.

By including a measure of fluid intelligence, we were able to show that results seemed to be independent of effects of general cognitive ability. In addition, the inclusion of fluid intelligence contributed valuable information about the predictive validity of intelligence with regard to SECA, thereby further underlining the utility of a facet approach to SECA. Here, too, associations differed according to the respective conceptualization of SECA. A positive relation was found between intelligence and actual SECA, whereas intelligence tended to be unrelated to perceived SECA. Thus, it appears that intelligence and actual SECA overlap to a certain extent, but they are far from identical. These results are in line with findings that have shown that ability measures of socioemotional cognition display modest correlations with intelligence measures (e.g., Brackett, Mayer, & Warner, 2004; Mayer, Caruso, & Salovey, 1999; Mayer & Salovey, 1993; O'Connor & Little, 2003), whereas self-report measures of SECA display no or only very small correlations with intelligence measures (O'Connor & Little, 2003; Rindermann, 2009; Saklofske, Austin, & Minski, 2003; Schutte et al., 1998).

When considering the overall pattern of facet-specific results, we tend to conclude that future research is well-advised to apply the proposed differentiated facet approach instead of investigating overall associations between selected measures of narcissism and selected measures of SECA. For realizing such an approach, the present study highlights the importance of bringing together different research traditions and paradigms. For a comprehensive examination of narcissists' perceived and actual SECA, we aimed at capturing SECA-related aspects such as affective and cognitive empathy, Theory of Mind, and emotional intelligence within a broader framework that distinguishes between perceived and actual SECA. Similarly, with regard to narcissism facets, we provided robust findings by extracting agentic and antagonistic dimensions from more than one narcissism measure. It is our hope that future research applying the suggested differentiated facet approach will lead to a robust and fine-grained understanding of the between narcissism and SECA and their underlying processes.

Narcissism and the Prediction of Perceived Socioemotional Cognition Ability

Most previous research on narcissism and SECA (and on SECA in general) applied some sort of self-report measure to operationalize SECA. Here, we showed that (a) these self-report measures are only modestly related to performance-based measures of SECA, and (b) self-report

and performance-based measures of SECA show markedly distinct associations with measures of narcissism. The present results, thus, imply that it is of prime importance to differentiate these self-report SECA measures from performance based SECA measures. That is, studies looking at self-report measures of SECA do not necessarily inform us about how “good” more or less narcissistic individuals are in inferring others' cognitions and emotions but about their self-perceptions regarding the SECA domain. This does by no means suggest that effects of narcissism on perceived SECA are less relevant. People's perception of their SECA is meaningfully related to their personality and can have relevant intra- and interpersonal consequences. It does, however, show that self-report measures should not be confused with performance-based measures of SECA. Perceived and actual SECA are distinct constructs with distinct and sometimes even opposing correlates.

When focusing on the relation between narcissism and perceived SECA, we found effects that were remarkably similar, and thus, robust across samples within studies as well as across studies. We, thus, can provide a well-replicated answer to how narcissism relates to the self-perceived SECA. In contrast to previous research, these findings show that a differentiation of narcissism facets is indispensable: Agentic narcissism is positively related to perceived SECA, while antagonistic narcissism is negatively related to perceived SECA. General statements about narcissist's perceived SECA are, thus, not warranted without reserve. Applying the crucial differentiation between agentic and antagonistic narcissistic facets, however, a clear, theoretically straightforward and robust pattern emerges, which will constitute a reliable starting point for future research.

Narcissism and the Prediction of Actual Socioemotional Cognition Ability

The Results for actual SECA pointed to negative associations between actual SECA and both narcissism facets. Some heterogeneity was found between Study 1 and Study 2 data depending on whether we controlled for the opposing narcissism facet or not. In fact, both narcissism facets consistently displayed negative associations to actual SECA when not controlling for the other narcissism facet (1-facet model) in both studies. The controlled effects (2-facet models) of both narcissism facets, however, differed between studies: Study 1 revealed a negative effect of antagonistic narcissism (and no effect of agentic narcissism), and Study 2 revealed a negative effect of agentic narcissism (and no effect of antagonistic narcissism). When integrating Study 1 and Study 2 data, however, the negative associations to both narcissism facets emerged again, both in the 1-facet-model and in the 2-facet-model. This pattern of results highlights that controlled effects should be interpreted with caution (e.g., Vize et al., 2018) especially with small to medium sample sizes. Instead, these samples should be integrated by means of mega- or meta-analytical techniques to render the estimation as accurate as possible. In our view, more joint collaborative action across laboratories around the world are needed

to collect and pool data sets to a degree that allows for more robust insights regarding the relations of narcissism facets and actual SECA and other cognitive and non-cognitive abilities. Continuing assembling sets of small studies with selected specific measures will not likely result in robust scientific progress. To sum up, the results of our mega-analytical integration speak in favor of a negative association of both agentic and antagonistic facets of narcissism with actual SECA, which is in line with theoretical accounts on the socioemotional deficits of both agentic and antagonistic narcissists.

Implications for the Study of Grandiose Narcissism

The present findings might also inform research about the structure and dynamics of grandiose narcissism more generally. Recent research has highlighted the two-dimensional nature of grandiose narcissism (agentic and antagonistic narcissism) and the utility to differentiate between these two dimensions when examining the correlates and consequences of narcissism (e.g., Back et al., 2013; Brown et al., 2009; Krizan & Herlache, 2018; Miller et al., 2017; Paulhus, 2001; Wright & Edershire, 2018). Although both narcissistic facets are related to each other (as evidenced by substantially positive correlations between them), they often diverge in terms of their associations with other variables. Such divergences have already been shown for a variety of outcome domains, including peer popularity (Küfner et al., 2013; Lange et al., 2016; Leckelt et al., 2015), envy (Lange et al., 2016), self-esteem level and fragility (Geukes et al., 2017), and romantic relationships (Wurst et al., 2017). The present study extends these findings by providing evidence for a differential association with individuals' level of SECA's. We argue that these differential associations are the result of underlying processes that are uniquely related to each facet of narcissism (Back et al., 2013). Research that seeks to elucidate the processes underlying the causes and consequences of grandiose narcissism is well advised to consider the heterogeneity of this construct.

With regard to agentic narcissism, the present results indicate that agentic narcissists see themselves as adept in SECA even though their actual ability appears to be deficient. We could also show that this pattern does not only reflect a positive self-view but indeed self-enhancement of SECA: Agentic narcissists had higher directed discrepancies between perceived and actual SECA. Various examples of narcissists holding an overly positive self-perceptions can be found in the narcissism literature in several domains (e.g., Ames & Kammrath, 2004; Farwell & Wohlwend-Lloyd, 1998; Furnham, Hughes, & Marshall, 2013; Gabriel et al., 1994; Goncalo, Flynn, & Kim, 2010; John & Robins, 1994; Robins & John, 1997) and might, for example, be an expression of hubristic pride (Tracy, Cheng, Robins, & Trzesniewski, 2009). A recent meta-analysis (Grijalva & Zhang, 2015) integrated the results of several studies on narcissistic self-enhancement and came to the conclusion that narcissists self-enhance their agentic characteristics more than their communal characteristics. The average corrected relationship between narcissism and self-enhancement for agentic characteristics amounted to .29

(95% CI = [.25, .33]), whereas for communal characteristics it was .05 (95% CI = [-.01, .10]). However, previous research on narcissistic self-enhancement was not able to cleanly distinguish between individual differences in self-enhancement and individual differences in a positive self-view (see Humberg et al., 2018 for an overview concerning this non-trivial differentiation). Disentangling these effects by means of a recently introduced condition-based regression approach (Humberg et al., 2018) provided clear evidence for the presence of self-enhancement in agentic narcissists beyond a mere positive self-view of SECA. This finding earns attention because it indicates that the self-enhancement tendencies, at least for the agentic narcissist, are not necessarily restricted to purely agentic domains such as leadership capability, intelligence, and creativity (as suggested by Grijalva & Zhang, 2015) but also encompass abilities that fall into a domain that is both communal and agentic in nature such as SECA.

With regard to antagonistic narcissism, the negative relation to perceived SECA was in line with our predictions and might reflect a pronounced antagonistic self-image. Individuals high in antagonistic narcissism described themselves as less capable and interested with respect to SECA, and these self-evaluations corresponded with lower values in actual SECA. The self-evaluation of individuals high in antagonistic narcissism tends to be rather conservative and less prone to self-enhancement as compared to individuals high in agentic narcissism. The obtained pattern suggests that the antagonistic narcissist is unlikely to be a victim of the so-called "double curse of incompetence" (Dunning, Johnson, Ehrlinger, & Kruger, 2003): Potentially "cursed" once (with a deficient SECA), they at least would be spared from being incapable of SECA and also lacking an awareness of this fact. This pattern of results is also in line with findings that have shown that antagonistic narcissists are not only less interpersonally oriented (e.g., Carroll, 1987) but they readily accept this as part of their personality (e.g., Carlson, Vazire, & Oltmanns, 2011). Following this reasoning, one could assume that the possession of SECA skills (e.g., mentalizing, empathizing) is not as socially desirable for antagonistic narcissists as it is for agentic narcissists. Consequently, antagonistic narcissists did not self-enhance when asked about their perceptions of their own SECA skills. Agentic narcissists, in contrast, seem to be "cursed" twice, holding a rather deficient SECA and a positive self-perception of their SECA. Given that agentic narcissism has been shown to be related to more positively valued outcomes as compared to antagonistic narcissism in most other contexts (see Back, in press, for an overview), this is an interesting finding that deserves further investigation.

Limitations and Future Prospects

Three limitations of this investigation are important to note. The first limitation concerns sample characteristics. Across the five samples, the majority of study participants were university students. To increase the generalizability of the results, future research should additionally try to address nonstudent populations and to seek more representative study participants in general. To find out

whether our results are generalizable to the general population – and not only to WEIRD individuals (western, educated, industrialized, rich, and democratic; Henrich, Heine, & Norenzayan, 2010) – representative samples from all over the globe are needed.

The second limitation concerns the measures capturing actual SECA employed in this study. Although we relied on widely used and standardized tests, we obtained low reliabilities for some of these measures. Because this appears to be a general shortcoming of measures designed to assess actual SECA, we would like to emphasize that the research field would greatly benefit from the development of new, psychometrically sound measures. We sought to circumvent the issue of low reliability by aggregating a set of several specific SECA measures into a more general measure of SECA. By doing so, we accounted for the unreliabilities and idiosyncrasies of the single measures and thus produced a more generalizable representation of the construct in question. Although the range of the measures we employed captured various aspects of SECA and covered different modalities (i.e., visual and auditory), the inclusion of further measures would be desirable to substantiate our findings. We therefore encourage future research to expand on our set of measures by adding more reliable measures of SECA.

The third limitation is the correlational nature of this study, due to which the direction of observed effects could not be definitely determined. Our models were based on the notion that certain narcissism facets might cause differences in the domain of SECA. However, the correlational nature of our data precluded us from ruling out other possible causal relations such as that the association might be bidirectional or reversed. To reach more definiteness on the question of directionality and causal processes that link the various facets of narcissism to the aspects of SECA, experimental and longitudinal study designs are additionally needed.

Conclusion

Valuing and understanding other peoples' cognitive and emotional states is a crucial competency. Prior research has struggled with the question of how narcissism is related to this important capacity. The present study showed that the differentiation of facets of narcissism and socioemotional cognition is a *sine qua non* for elucidating this complex relation. Applying this twofold differentiation, marked discrepancies between self-report and performance-based measures of socioemotional cognition ability could be revealed for each narcissism facet. Specifically, whereas individuals uniquely high in agentic narcissism tended to regard themselves as "socioemotionally gifted", individuals high in antagonistic narcissism had a diametrically opposed self-view – despite the fact that higher scores in both narcissistic dimensions were related to deficient ability levels. Agentic narcissists self-enhanced their socio-emotional capacities while antagonistic narcissists self-views were more in line with their lower socio-emotional capacities. To sum up, the present study (1) revealed opposing effects of agentic and antagonistic narcissism on self-perceived socioemotional

cognition ability, (2) highlights that grandiose narcissists, regardless type, rather hold lower levels of actual socioemotional cognition ability, (3) informs the research community that any study with selected measures and considerably smaller sample sizes than presented here has to be interpreted with caution, especially when interpreting controlled effects, and (4) provides support for the need to distinguish between facets of narcissism and socioemotional cognition in general. We hope that researchers will profit from examining narcissism and socioemotional cognition from the perspective of the proposed differentiated facet approach.

Data Accessibility Statement

On our OSF page (osf.io/jtrfm/), we publish all raw data necessary to reproduce reported results and provide scripts for all data analyses reported in this manuscript.

Additional Files

The additional files for this article can be found as follows:

- **Supplement 1.** Intercorrelations between Specific Measures and Internal Consistencies. DOI: <https://doi.org/10.1525/collabra.174.s1>
- **Supplement 2.** Additional Information Concerning Data Collection and Analysis. DOI: <https://doi.org/10.1525/collabra.174.s1>
- **Supplement 3.** Condition based Regression Analysis. DOI: <https://doi.org/10.1525/collabra.174.s1>

Notes

- ¹ Although some researchers use the terms ToM and cognitive empathy synonymously (e.g., Ritter et al., 2011), others emphasize conceptual differences between these two constructs (e.g., Hepper, Hart, & Sedikides, 2014). In line with the latter perspective, we distinguish between ToM capacity and cognitive empathy.
- ² It should be emphasized that our descriptions and analyses focus on grandiose narcissism and its facets and not on vulnerable narcissism, a distinction that is also crucial when investigating pathological forms of narcissism (i.e., narcissistic personality disorder; Cain, Pincus, & Ansell, 2008; Miller & Campbell, 2008; Miller et al., 2011).
- ³ The socioemotional cognition tasks were framed differently in the two experimental conditions introduced in the second sample. The participants in the neutral condition were informed that the data collection served merely as a technical testing procedure for further experiments on this topic. Participants in the narcissistic condition were informed that outstanding performance in socioemotional cognition tasks was diagnostic of work-related and interpersonal success. Moreover, we offered three additional nonmonetary rewards to the best participants in this condition: (a) their names on the high-score list hung prominently on the wall of the laboratory, (b) an interview with an expert on empathy, and (c) the publication of a written account of this interview on the university's internet site.

⁴ See Table 7 of Supplement 2 (osf.io/2y34r/) for an overview of all measures assessed in the corresponding study samples of this research project.

⁵ Please note, however, that the hypotheses in this preregistration only referred to results derived from our combined narcissism facet models C and, unfortunately, did not include our expectations regarding the associations uncontrolled for the other narcissism facet. Also, in this preregistration we included a number of further measures that were conceptualized as potential mediators of the revealed associations. In a previous version of this manuscript, we included such mediational analyses but based on reviewer feedback and careful considerations, we excluded these analyses, particularly because the cross-sectional nature of our data does not allow us to derive strong causal conclusions. The additional variables are included in an additional extended openly available data set for Study 2 (see osf.io/jtrfm/).

⁶ See osf.io/jtrfm/ for all measures assessed in this research project.

⁷ Please note that in contrast to the main analyses reported above, narcissism is modelled as a dependent variable in the multiple regression model used for the CRA, and perceived and actual socioemotional cognition ability are treated as independent variables. This formal shift allows to estimate the association of the two socioemotional cognition ability variables with narcissism when the respectively other socioemotional cognition ability variable is controlled for, which is crucial information for testing whether narcissism is related to self-enhancement (see Humberg et al., 2018).

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Author Contributions

- Contributed to conception and design: all authors
- Contributed to acquisition of data: SM
- Contributed to analysis and interpretation of data: all authors
- Drafted and/or revised the article: all authors
- Approved the submitted version for publication: all authors

Author Information

We embrace the values of openness and transparency in science (Schönbrodt, Maier, Heene, & Zehetleitner, 2015; osf.io/4dvkw/). We therefore follow the 21-word solution (Simmons, Nelson, & Simonsohn, 2012), or refer to project documentations in the OSF. We furthermore publish all

raw data necessary to reproduce reported results and provide scripts for all data analyses reported in this manuscript (see osf.io/jtrfm/).

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