Toward a Differentiated Assessment of Narcissism in Forensic Contexts: Validating the Narcissistic
Admiration and Rivalry Questionnaire Short Scale (NARQ-S) in a Forensic Sample

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We embrace the values of openness and transparency in science (Schönbrodt et al., 2015; osf.io/4dvkw). We therefore follow the 21-word solution (Simmons et al., 2012) and refer to complete project documentations in the OSF. There, we provide scripts for all data analyses reported in this manuscript, a codebook summarizing all materials and the supplemental material (<http://go.wvu.de/m2l53>).

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Abstract

Grandiose narcissism is a multidimensional construct consisting of agentic and antagonistic aspects with markedly distinct correlates and consequences. However, this complexity has not been reflected in how grandiose narcissism is measured and investigated in forensic contexts. To provide a more nuanced picture of narcissism in a forensic context, we harnessed the Narcissistic Admiration and Rivalry Concept. More precisely, we investigated the psychometric properties of the Narcissistic Admiration and Rivalry Questionnaire short scale (NARQ-S) in self- and informant reports of 199 male prisoners. Results confirmed the two-dimensional structure, acceptable internal consistency, moderate self-other agreement, and a differentiated nomological network for the NARQ-S. Admiration and rivalry showed distinct associations with criminal history, institutional misbehaviors, and social status in the group of prisoners. Together, the findings provide initial evidence for the validity and utility of self- and informant reports of the NARQ-S in forensic contexts and its contribution to security and treatment recommendations.

Keywords: narcissism, personality assessment, validation, forensic sample, prisoners, self/informant reports

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A prisoner's personality traits and the behavioral manifestations of these traits are crucial aspects of prognostic and therapeutic issues as well as for risk assessments and decisions in daily prison life. However, a differentiated assessment of personality traits is somewhat difficult in correctional psychology because, so far, scientifically substantiated and psychometrically validated multisource tools have been scarce. This is unfortunate because forensic psychologists and psychiatrists need to obtain valid information about personality and personality development in order to assess risk precisely (e.g., regarding level of security, probation, or paroles; Andrews & Bonta, 2017; Caspi et al., 1994; Gendreau et al., 1996; Miller & Lynam, 2001; Schwind et al., 2009) or deliver individually adjusted therapeutic treatments (see Risk-Need-Responsivity-Model; Andrews & Bonta, 2017; Andrews et al., 1990). Thus, a reliable and valid way to measure personality traits in forensic populations is crucial for facilitating scientifically substantiated and professional assignments with respect to paroles, correctional surroundings, and treatments. In the current study, we evaluated a nuanced but nevertheless economic method for assessing the personality trait of narcissism in a forensic context. We investigated the psychometric properties of the NARQ-S in a forensic sample by using both self- and informant reports and by considering its factor structure, reliability, nomological network, and criterion-related validity. We focused on narcissism because this trait is associated with several forms of antisocial behavior and interpersonal conflict (e.g., Lambe et al., 2018; Schoenleber et al., 2011).

The Relevance of Narcissism in a Forensic Context

Research on the association between personality and antisocial behavior has a long tradition. Antagonistic personality traits are associated with a range of antisocial behaviors (Andrews & Bonta, 2017; Miller & Lynam, 2001; Steiner et al., 1999) including (serious) delinquency (e.g., White et al., 1994), recidivism (Gendreau et al., 1996; Steiner et al., 1999), and institutional misconduct (Holsinger et al.,

2006). In recent years, research has begun to examine the role of narcissism in antisocial behaviors. Studies of adolescents have found that narcissistic traits are associated with delinquency (Barry, Frick, et al., 2007; Barry, Grafeman, et al., 2007; Krusemark et al., 2018; Lau & Marsee, 2013; Lau et al., 2010) as well as with hostility and antagonism (Rhodewalt & Morf, 1995). Narcissism was shown to predict violence in clinical and forensic samples, especially when the violence was severe (Lambe et al., 2018). According to the Narcissistic Reactance Theory of Rape and Sexual Coercion, narcissistic cognitive distortions, a need for admiration, an inflated sense of entitlement, and an exploitative and nonempathic interpersonal style all increase the likelihood that men will react aggressively when rejected by women (Baumeister et al., 2002; Bushman et al., 2003). Furthermore, past research has presented several associations between narcissism and externalizing behaviors or misconduct, especially for aggressive behaviors following ego-threats (Barry et al., 2006; Bushman & Baumeister, 1998; Bushman & Baumeister, 2002; Lau & Marsee, 2013; Martinez et al., 2008; Miller & Campbell, 2010; Schoenleber et al., 2011). Given these findings, it is not surprising that several studies have reported a higher incidence of narcissism among offenders compared with nonoffenders (Blickle et al., 2006; Bushman & Baumeister, 2002; Hepper et al., 2014). Despite the higher prevalence of narcissistic personality traits in forensic contexts and their relevance for antagonistic behavior, intensive studies on narcissistic personality traits, their criminogenic relevance, and implications for forensic settings and treatments have yet to be conducted (Krusemark et al., 2018). Here, we aim to shed more light on the measurement of narcissistic personality traits in self- and informant reports, the psychometric qualities of these measurement tools, and their behavioral correlates in offenders.

The Two Faces of Grandiose Narcissism: Admiration and Rivalry

In taking a closer look at the ingredients and structure of narcissism, it can be seen that past research in the areas of personality, social, and clinical psychology has agreed that narcissism should be conceptualized as a multidimensional construct that includes vulnerable and grandiose aspects (Cain et al., 2008; Miller et al., 2011; Wink, 1991) as well as subclinical and pathological manifestations (Pincus et al., 2009; Pincus & Lukowitsky, 2010). This paper focuses on grandiose narcissism as entitled grandiosity

(Krizan & Herlache, 2018), which is characterized by high self-esteem, entitlement, and assertiveness as well as by low agreeableness and high interpersonal dominance (Miller et al., 2011). More detailed analyses of the content, structure, and dynamics of grandiose narcissism have indicated that the construct includes agentic and antagonistic aspects (Brown et al., 2009; Küfner et al., 2013) that are formalized in a two-dimensional conceptualization: the Narcissistic Admiration and Rivalry Concept (NARC; Back, 2018; Back et al., 2013). The NARC differentiates two related but distinct dimensions of narcissism, namely, narcissistic admiration and rivalry. Both emerge from the overarching aim to maintain a grandiose self. Yet, as the two narcissism dimensions illustrate, a grandiose self can be pursued by two different strategies that trigger different behavioral dynamics with distinct social consequences: (a) The assertive self-enhancement strategy (“Show others how special you are!”) is played out by striving for uniqueness, having grandiose fantasies, and behaving in a self-assured and expressive way that is typically perceived as charming and assertive (i.e., narcissistic admiration). This self-promotional pathway typically leads to “getting ahead” types of social outcomes (e.g., status, leadership) in nonforensic populations (Back et al., 2018; Leckelt et al., 2015). (b) The antagonistic self-protection strategy (“Don’t let others tear you down!”) is played out by striving for supremacy, devaluing others, and behaving in a hostile, annoyed way that is perceived as aggressive (i.e., narcissistic rivalry). This self-defensive pathway typically leads to a lack of “getting along” types of social outcomes (e.g., rejection, unpopularity).

To our knowledge, the NARC has not yet been applied in forensic settings. However, we believe that the self-promotional and self-defensive pathways are of major relevance for the understanding of offenders’ criminal careers, as well as their institutional behavior and social status. For example, admiration-specific aspects such as charmingness and interpersonal success might be prerequisites for confidence-building approaches to potential victims in subtypes of sexual or property offenses. They might also lead to rather well-adjusted profiles in daily prison life and higher levels of social status among prisoners. On the other hand, rivalry-specific aspects such as antagonism, aggressiveness, and social conflict might be more closely related to violent offenses, problematic behaviors in daily prison life, and

social problems. In line with the NARC, we expect that the distinct assessment of narcissistic admiration and rivalry will help provide a more nuanced picture of the behavioral manifestations and interpersonal consequences of narcissism in offenders.

The Narcissistic Admiration and Rivalry Questionnaire (NARQ)

The inventory designed to measure grandiose narcissism as conceptualized in the NARC is called the Narcissistic Admiration and Rivalry Questionnaire (NARQ). Both the full and short (NARQ-S) versions have demonstrated strong psychometric properties that have been validated in large convenience and national samples (Back et al., 2013; Leckelt et al., 2018). There is also initial evidence for the NARQ's validity in clinical contexts (Mota, Schaber, et al., 2019). Until now, however, its psychometric characteristics, correlates, and outcomes have not been validated in forensic populations. For people working in applied settings who need to make far-reaching decisions about their clients, it is crucial to know about an inventory's accuracy, validity, and possible existing biases. A nonreflective use of diagnostic inventories in diverging populations is subject to serious methodological concern because it remains unclear whether previously assumed psychometric properties can be transferred to these samples (Edens et al., 2018). For example, a study by Hosser et al. (2008) showed that the factor structure of a widely used personality inventory (FPI-R) could be only partially replicated in German inmates: Reliability subscales were lower than in the normative sample and not acceptable at all for two of the scales. Thus, a comprehensive investigation of the NARQ's factor structure, reliability, and validity is necessary to gain scientifically sound knowledge of narcissism, its behavioral manifestations, and implications in forensic settings. Concerning the outlined relevance of narcissism for antisocial behavior and the far-reaching consequences of decisions based on psychological assessment in this setting, heretofore, research and practice have lacked a psychometrically validated assessment tool that is appropriate for measuring narcissism in forensic contexts.

The Additional Utility of Informant Reports in a Forensic Context

People's explicit self-reports are prone to several method biases and response tendencies such as self-enhancement and socially desirable responding and, moreover, underly introspective limits (Back et al., 2009; Back & Vazire, 2012; Greenwald & Banaji, 1995; McCrae, 2018; Paulhus & Vazire, 2007; Vazire & Carlson, 2011). Regarding the individual importance of prognostic, therapeutic, or daily-prison-life decisions that are based on psychological assessments and the face validity of personality inventories, a particularly high prevalence of self-presentation biases (exaggerating, faking, lying) and dissimulation tendencies can be expected in forensic settings and for antagonistic traits (Carlson et al., 2013; Heilbrun, 2001; Ille et al., 2005; Kroner & Weekes, 1996; Scheurer & Richter, 2005). The abilities to describe oneself on cognitive, affective, and behavioral levels and to reflect on one's own interests, attitudes, beliefs, and feelings are not as trivial as they may seem (Scheurer & Richter, 2005). Thus, completing a self-report inventory concerning personality traits requires fundamental introspective skills, including self-reflection, attention, and concentration as well as sufficient language skills (Back & Vazire, 2012; Hosser et al., 2008; Scheurer & Richter, 2005). As past research has indicated that executive functions and language skills in particular might be less pronounced in offender samples (Anderson et al., 2016; Gannon, 2009; Kavanagh et al., 2010; LaVigne & Van Rybroek, 2010), this aspect has to be taken into account. All in all, considering the limited validity of the exclusive use of self-reports in forensic populations, the additional use of informant reports is strongly recommended (Anderson et al., 2014; Connelly & Ones, 2010; Markon et al., 2013; McCrae, 2018; Vazire, 2006; Vazire & Mehl, 2008). In particular, reports from different groups of informants contain useful information as such reports capture targets in different contexts and thus describe these targets from distinct and complementary perspectives (Connelly & Ones, 2010). Here, we validate the NARQ-S using both self- and informant reports.

The Present Study

With the current study, we sought to investigate the psychometric properties of the NARQ-S in an inmate sample by using one self-report and two informant reports for every inmate. In particular, our goals were to (a) confirm the two-dimensional factor structure of the NARQ-S, (b) analyze the inventory's reliability, and (c) examine its validity by investigating self-other agreement, the nomological network, and criterion-related behavioral correlates. We expected to replicate the two-dimensional structure, the reliability, and the nomological network of the NARQ-S (e.g., Leckelt et al., 2018). Additionally, we expected a moderate level of self-other agreement (Back et al., 2013). Also, on the basis of the NARC and previous research in related contexts, we expected to find that narcissism (especially narcissistic rivalry) would be related to a severe delinquent criminal history (higher number of previous convictions, lower age at first conviction, increased probabilities of committing violent and sexual crimes) and to the occurrence of maladjusted behaviors in prison. Finally, on the basis of the dual pathway model of the social interaction outcomes of narcissism (Back, 2018; Küfner et al., 2013; Leckelt et al., 2015), we expected a moderate positive (admiration) and negative (rivalry) link to the offender's social status in prison. We aimed to address these preregistered hypotheses by employing data from a multimodal study in sociotherapeutic departments of German prisons (for a detailed description of the full project, see <https://osf.io/eefvq/>¹). The analyses presented in the current paper comply with our preregistration (see the supplement; [go.wwu.de/m2l53](https://www.go.de/m2l53)), except for the following aspects. Because the final sample size was not sufficient for conducting informative IRT analyses on the NARQ-S scales (Hypothesis 2), we present preliminary results on this question only in the supplement (Figure S1; [go.wwu.de/m2l53](https://www.go.de/m2l53)). Findings regarding the hypothesis that self-rated previous socioeconomic status predicts self-reported status in the jail hierarchy (Hypothesis 15b) are only reported in the supplement because this hypothesis does not involve the NARQ-S ([go.wwu.de/m2l53](https://www.go.de/m2l53)). To further investigate the association of the NARQ-S scales with institutional misbehaviors, we considered a global behavioral rating as a complement to our

preregistered analyses. Finally, additionally to the preregistered analyses, we examined the incremental validity of self- and informant reports. We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study.

Method

Participants

Data were collected from 205 male prisoners of sociotherapeutic departments² in northern Germany. Six participants had to be excluded due to insufficient German language skills, self-reported dishonesty, or missing values on these variables. The final sample included 199 participants from 10 departments with a mean age of 37.56 years ($SD = 12.65$, Range: 18-68); 87.4% were German, 4.5% had dual citizenship (German and a second citizenship), and 8.0% were nationals of another country (35% Turkey). Most participants (42.7%) were convicted of violent offenses, 32.7% of sexual offenses, 10.6% had convictions for both, and 3.5% were convicted of other offenses (10.6% missing, for a detailed overview of the offenses, see the supplement, Table S1; [go.wvu.de/m2l53](https://www.wvu.de/m2l53)). On average, 3.64 convictions preceded the current conviction ($SD = 4.83$, Range: 0-28). The average age at first conviction was 25.8 years ($SD = 12.43$, Range: 14-62).

For every prisoner, two informant reports were obtained: one made by the prisoner's psychologist (or social worker) and one made by a penal service officer. Data were provided by 51 different psychologists and 72 different prison officers; some informants were responsible for more than one inmate. Psychologists (58.8% female, 3.9% missing) had a mean age of 42.03 years ($SD = 10.75$, Range: 24-64), and prison officers (23.6% female, 5.6 % missing) had an average age of 42.42 years ($SD = 7.22$, Range: 28-57). Two informant reports were available for 177 prisoners, and in 22 cases, only one informant report was provided (21 informant reports made by prison officers and one informant report made by a psychologist were missing). Informants reported to know the prisoners quite well ($M = 3.91$

on a 6-point Likert-type scale from 1 to 6, $SD = 1.07$). They were in contact with inmates several times a week and worked about 1-4 hours per week with them. On average, informants knew the prisoners for about one and a half to two years ($M = 1.66$, $SD = 1.78$) and were their supervisors for more than one year ($M = 1.21$, $SD = 1.04$).

Procedure

The project was presented to prisoners and staff in two separate sessions in each department. Prisoners interested in participating in the study signed in and named their psychologist and their caregiver from among the prison officers. Prisoners were compensated for their participation with either a 10 € phone credit, two pounds of coffee, or two packets of tobacco. Participating prisoners filled out a self-report questionnaire in groups with a maximum of 15 people. Individuals with reading impairments received the questions in an auditory form in a one-to-one session: Questions were read aloud by the examiner, and participants answered the questions in writing on their own questionnaire. Informant reports were distributed on the day of the prisoners' group sessions. Psychologists and prison officers were asked to fill out the personality questionnaire within 2 weeks and send it by post to the University of Münster. Additionally, prison officers provided case file information regarding offenders' criminal histories, their current convictions, and records of their institutional misbehaviors. Informants worked on the questionnaires during office hours and did not receive any compensation.

To ensure anonymity, a random code was generated for each prisoner. All information was preceded by the use of this code. The list that was used to match the names and codes was deleted at the end of data collection. The informant report questionnaires were forwarded in sealed envelopes, which provided the target information. Informants were asked to remember who their target was, destroy the envelope, and work directly on the questionnaire. The questionnaire itself contained only the prisoner's code. The university's Institutional Review Board and the criminological service of Lower

Saxony approved all described procedures, which were also in line with the recommendations of the German Psychological Society (DGPs).

Measures

In the following, we present only the measures used to address the current research question. For information about all measures administered in the Durchblick project, please see the codebook in the supplement (go.wwu.de/m2l53).

Narcissism

Narcissism self- and informant reports were assessed with the short form of the Narcissistic Admiration and Rivalry Questionnaire (NARQ-S; Back et al., 2013; Leckelt et al., 2018). The NARQ-S consists of two three-item subscales, one pertaining to narcissistic admiration and the other to narcissistic rivalry. The three narcissistic admiration items measure the admiration facets of grandiosity (*Item content*: “I deserve to be seen as a great personality”), uniqueness (“Being a very special person gives me a lot of strength”), and charmingness (“I manage to be the center of attention with my outstanding contributions”). The three narcissistic rivalry items measure the facets of devaluation (“Most people are somehow losers”), supremacy (“I want my rivals to fail”), and aggressiveness (“I react annoyed if another person steals the show from me”). Items are answered on a 6-point Likert-type scale ranging from 1 (“does not apply at all”) to 6 (“applies completely”). Informant reports were collected using a third-party version of the NARQ-S and were aggregated using mean values ($r_{\text{admiration}} = .46, p \leq .001, r_{\text{rivalry}} = .41, p \leq .001$). An overview of the items and their categorization is presented in the supplement (Table S2; go.wwu.de/m2l53).

Big Five

The personality dimensions extraversion, openness, conscientiousness, neuroticism, and agreeableness were assessed with the BFI-S (Schupp & Gerlitz, 2008) in self- and informant reports. Each

dimension is measured with three items that are answered on a 7-point Likert-type scale ranging from 1 (“does not apply at all”) to 7 (“applies completely”). The descriptive statistics of all nomological network scales are presented in the supplement (Table S3; go.wvu.de/m2l53).

Self-Esteem

Self-esteem was measured by self-report with one item from the German version of Rosenberg’s Self-Esteem Scale (Collani & Herzberg, 2003) using a 10-point Likert-type scale ranging from 0 (“does not apply at all”) to 10 (“applies completely”). The item reads “On the whole, I am satisfied with myself”.

Dark Triad

We assessed the Dark Triad traits with a German short form of the Short Dark Triad (SD3; Jones & Paulhus, 2014), named the ultra-short Dark Triad (uSDT; Wehner et al., in press). The 9-item scale assessed each Dark Triad trait with three items. The items were answered on a 6-point Likert-type scale ranging from 1 (“strongly disagree”) to 6 (“strongly agree”) in self-and informant reports.

Maladaptive Personality Traits

To assess maladaptive personality traits in the forensic sample, we employed the forensic adaptation of the PID-5-SF (Maples et al., 2015), named PID-5-FSF (Niemeyer et al., 2020). It comprises five domains (Negative Affect, Detachment, Antagonism, Disinhibition, and Psychoticism) and 25 facets, each represented by four items. Items were answered on a 4-point Likert-type scale ranging from 0 (“very false”) to 3 (“very true”) in self-and informant reports.

Criminal History

Information about participants’ criminal history was provided by the prisoners’ case files. Prison officers filled out the number of former convictions ($M = 3.64$, $SD = 4.83$) and the age at first conviction ($M = 25.77$, $SD = 12.43$) for each prisoner. To assess the type of offense, we presented a list of 34 different offenses and added an open category for other offenses. Prison officers were asked to check all

offenses that resulted in the current incarceration. Assignment to the major categories of violent ($n = 106$, 53.3%) and sexual ($n = 86$, 43.2%) offenses took place for everyone with at least one delict from the category. Categories were primarily based on the classification of offenses by the Federal Office of Justice (Germany) in a nationwide recidivism study (Jehle et al., 2016). For a detailed overview of offenses and their categorizations, see the supplement (Table S1; [go.wvu.de/m2l53](https://www.wu.de/m2l53)).

Institutional Misbehavior

The prisoners' institutional misbehavior was measured in three ways: (a) with the number of official institutional penalties, (b) with the number of specific misconducts during the last 6 months, and (c) with a global rating of the prisoner's behavior during detention. The number of official institutional penalties ($M = 1.36$, $SD = 2.45$) was obtained from the prisoner's file and by asking an open-ended question. For those participants who were arrested more than 5 years ago, we asked the penal service officers to refer to the last 5 years because the files did not contain older information. The number of specific instances of misconduct during the last 6 months ($M = 1.7$, $SD = 4.10$) was assessed with a list of 14 typical institutional misbehaviors (adapted from Kroner & Mills, 2001). Example items are "threatening other prisoners," "drug/alcohol use," and "bargaining with other prisoners." Additionally, informants were allowed to add other misbehaviors. Penal service officers indicated how often each rule had been violated in the past 6 months on a 6-point rating scale ranging from 0 (0 times) to 6 (≥ 6 times). The total number of rule-violating behaviors (e.g., 2x threatening other prisoners and 1x drug/alcohol use = 3 rule violations) was used for the analysis. The global rating of the prisoner's behavior during detention ($M = 1.14$, $SD = 0.5$) was assessed with three items, adapted from the German version of the Level-of-Service-Inventory (Dahle et al., 2012). The Items read: 1. "How do you evaluate the prisoner's behavior (cooperation/trouble) during everyday life in prison?"; 2. "How do you evaluate the prisoner's relationships and interactions with other prisoners?"; 3. "How do you evaluate the prisoner's interactions with officers/authorities?" Items were answered on a 4-point-rating scale ranging from 0

(“completely satisfactory situation with no need for improvement”) to 3 (“completely dissatisfying situation with urgent and substantial need for improvement”). Both informants rated these items, and values were aggregated using mean values.

Social Status

To assess prisoners’ social status in the prisoner hierarchy, we used a graphical representation of a ladder with 10 steps that were designed to show a prisoner’s standing in the group of prisoners (adapted from the MacArthur Scale of Subjective Social Status; Adler et al., 2000). The ladder represented a 10-point rating scale ranging from 1 (“least respected, least influence”) to 10 (“most respected, most influence”). To examine prisoners’ social status with self- and informant reports, (a) we asked prisoners to show where they stand in the group of inmates ($M = 5.34$, $SD = 2.17$) and (b) we asked informants to rate where the prisoner stands in the group of prisoners ($M = 5.11$, $SD = 2.13$).

Results

Descriptive Analysis

The intercorrelations among all scale scores can be found in the supplement (Table S4; go.wvu.de/m2l53). Means, standard deviations, ranges, and intercorrelations of all NARQ items are presented in Table 1. On the subscale level, the self-reported mean values were 2.12 ($SD = 0.99$) for admiration and 2.00 ($SD = 0.94$) for rivalry. The aggregated informant reports showed an average value of 2.85 ($SD = 1.13$) for admiration and 2.67 ($SD = 0.94$) for rivalry. Informant reports showed significantly higher mean levels than self-reports for admiration and rivalry: ADM: $t(196) = -8.35$, $p \leq .001$, $d = 0.69$; RIV: $t(195) = -8.74$, $p \leq .001$, $d = 0.73$. For mean value differences between the two types of informant report, see the supplement (Table S5; go.wvu.de/m2l53).

Some of the NARQ-items had a skewed distribution (for response distributions, see Table S2; go.wvu.de/m2l53). This was the case for the rivalry items (e.g., the item “Most people are somehow

losers”) and one item from the admiration facet (“I deserve to be seen as a great personality”). Skewed distributions are due to difficulty of narcissistic items and have constantly been observed in previous studies in diverging populations (e.g., Leckelt et al., 2018). Comparing prisoners’ self-report data with those from the German national sample ($N = 4,433$) examined by Leckelt et al. (2018), prisoners showed significantly higher values on rivalry ($M = 2.12$) than people from the representative sample ($M = 1.77$), $t(210.39) = -3.36, p \leq .001$. The levels of admiration were comparable between prisoners ($M = 2.00$) and people from the national samples ($M = 2.03$), $t(217.66) = -1.24, p = .215$.

Factor Structure

We fit a one-factor model, a two-factor model with uncorrelated factors, and a two-factor model with correlated factors to the data and compared the fits of the three models (see Table 2). We used the WLSMV estimator for the self-report data because the NARQ-S items were ordinal and some showed floor effects (e.g., Flora & Curran, 2004) and the MLR estimator for the informant report data because the informant report items were averaged across informants and thus not suitable for the WLSMV. We report the comparative fit index (CFI), chi-square test, root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) as indices of model fit and followed the fit indices guidelines presented by Hu and Bentler (1999). Analyses were performed using the R package lavaan (Rosseel, 2012).

According to the chi-square difference tests, the best fitting model for the self- and informant reports was the two-dimensional model with correlated factors, compared with the one-factor model (self: scaled $\Delta\chi^2(1) = 16.30, p \leq .001$; informant: scaled $\Delta\chi^2(1) = 7.82, p = .005$) and the uncorrelated two-factor model (self: scaled $\Delta\chi^2(1) = 107.74, p \leq .001$; informant: scaled $\Delta\chi^2(1) = 114.91, p \leq .001$). The two latent factors were correlated $r = .81$ and $r = .93$ for the self- and informant reports, respectively. The overall fit of the correlated two-factor model from the self-reports (CFI = .99, SRMR = .06, RMSEA = .07, 90%CI [.02,.12]) and the informant reports (CFI = .94, SRMR = .05, RMSEA = .19, 90%CI [.15,.23]) showed acceptable to good CFI and SRMR fit indices whereas the RMSEA values were not satisfactory for

informant reports. All factor loadings for the self- and informant-reported NARQ-S (see Figure 1) were satisfactory, with the informant version consistently showing higher loadings. Item 1 (“I react annoyed if another person steals the show from me”) showed the lowest factor loading for the self-reports, and Item 5 (“He manages to be the center of attention with his outstanding contributions”) for the informant reports.

Reliability

We computed Cronbach’s alpha (α) to assess the reliability of the NARQ-S. Given the short scale lengths, the Cronbach’s alpha values for the three-item subscales admiration and rivalry were adequate for the self-reports (ADM: $\alpha = .68$; RIV: $\alpha = .62$) and for the informant reports (ADM: $\alpha = .90$; RIV: $\alpha = .83$). These α s for the self-reports are comparable to those reported for the NARQ-S in Back et al. (2013) (ADM: $\alpha = .76$; RIV: $\alpha = .61$) and those reported for the convenience sample in Leckelt et al. (2018) (ADM: $\alpha = .74$; RIV: $\alpha = .61$). Yet, the α s in the current prisoner sample were slightly lower than those from the national sample in Leckelt et al. (2018) (ADM: $\alpha = .84$; RIV: $\alpha = .70$). The mean interitem correlations for the self-reports were $r = .42$ for admiration and $r = .34$ for rivalry; for the informant reports, the admiration items were correlated $r = .74$ and the rivalry items $r = .63$. Admiration and rivalry showed strong manifest correlations for the self- and informant reports (self: $r = .51, p \leq .001$; informant: $r = .80, p \leq .001$).

Validity

Self-Other Agreement

We used the zero-order correlations to investigate the agreement between the NARQ-S self- and informant reports. Admiration and rivalry showed substantial positive self-other correlations (ADM: $r = .33, p \leq .001$; RIV: $r = .32, p \leq .001$). On the item level, small to large correlations ranging from .15 to .30 were observed (see Table 1). The lowest agreement was found for Item 4 (“Being a very special person gives me a lot of strength”).

Nomological Network

We analyzed the extent to which the NARQ-S was associated with the Big Five traits, self-esteem, Dark Triad traits and maladaptive personality traits with Pearson correlations (reflecting the raw associations) and multiple regression models with admiration and rivalry as independent variables (reflecting the unique associations), separately for the self- and informant reports (see Table 3)³. A table with exact p-values for the effects can be found at the supplement (Table S6; [go.wvu.edu/m2l53](https://www.wvu.edu/m2l53)). We considered effect sizes of .10 to be small, .20 to be medium, and .30 to be large, following recommendations made by Funder and Ozer (2019) as well as Gignac and Szodorai (2016).

Admiration showed moderate positive correlations with extraversion and openness and moderate negative associations with agreeableness and conscientiousness. These associations were generally even more pronounced for informant reports with the exception of conscientiousness, which was not related to informant-reported admiration. Rivalry showed moderate to large negative associations with agreeableness and conscientiousness. For the informant reports, the association between rivalry and agreeableness was even more strongly negative, whereas the association between rivalry and conscientiousness was not significant. Informant-reported rivalry additionally showed medium to large correlations with extraversion and openness. When considering the unique associations in the regression analyses across the self- and informant reports, admiration showed stronger unique associations with extraversion and openness than rivalry did, whereas rivalry showed stronger unique associations with conscientiousness and agreeableness. Self-esteem was positively related to admiration in the correlational and regression analyses. By contrast, no significant associations between self-esteem and rivalry were observed. Both, admiration and rivalry showed large positive correlations with the psychopathy, Machiavellianism and narcissism scales of the Dark Triad measure across self- and informant reports. When considering the unique associations, admiration showed stronger associations with Dark Triad narcissism, whereas rivalry showed stronger unique associations with psychopathy and Machiavellianism. Admiration showed moderate to large positive associations with antagonism and

psychoticism in the current sample. Rivalry was positively associated with all PID-5-FSF domains and had a particularly strong positive association to antagonism. Effects mainly seemed to be driven by rivalry.

Criterion Validity

We used zero-order correlations and multiple and logistic regression models to examine how admiration and rivalry were related to several criterion-related validity indicators: offender's criminal history, institutional misbehaviors, and self- and informant-reported social status in the group of prisoners (see Table 4)³. For exact p-values see the supplement (Table S7; go.wwu.de/m2l53). To additionally explore the incremental predictive validity of self and informant reports for the criterion-related validity analyses, we performed multiple regressions with self- and informant-reported narcissistic admiration as independent variables and multiple regressions with self- and informant-reported narcissistic rivalry (see Table 5). For exact p-values we again refer to the supplement (Table S8; go.wwu.de/m2l53).

Criminal History. Informant-rated rivalry—but not self-rated rivalry or either kind of admiration—was weakly positively related to the *number of former convictions* (Table 4). Admiration (self- and informant reports) and rivalry (informant reports) were negatively correlated with offenders' *age at first conviction*. Correlational analyses on the *types of offenses* revealed that admiration (self- and informant reports) and rivalry (informant reports) were positively associated with committing violent offenses, whereas admiration and rivalry constantly showed moderate negative correlations with sexual offenses. For violent offenses, none of these associations were unique to one of the narcissistic aspects, but for sexual offenses, the effect self-reports seemed to be driven by admiration. The models considering self- and informant reports simultaneously underlined the incremental validity of informant reports above self-reports in predicting the number of former convictions, the age at first conviction, and sexual offences. Furthermore, informant-reported rivalry but not informant-reported admiration explained variance in violent offences over and above self-reports (Table 5).

Institutional Misbehavior. Self- and informant-reported admiration and rivalry were positively correlated with the *number of institutional penalties* (Table 4). No differentiating effect of the dimensions emerged in the multiple regression model. Furthermore, the analyses revealed that admiration (informant reports) and rivalry (self- and informant reports) were positively associated with the *number of instances of institutional misconduct*. The regression models indicated that these correlations seemed to be driven primarily by rivalry. A similar pattern of results was observed for the *global rating*, consisting of the prisoner's behavior during everyday life in prison and his relations and interactions with other prisoners as well as with officers/authorities. Again, admiration's (informant reports) and rivalry's (self- and informant reports) positive associations with the global rating of the prisoners' behavior in daily prison life seemed to be driven primarily by rivalry (informant reports). Regression models considering self- and informant reports simultaneously indicated the incremental utility of informant reports above self-reports for institutional misconduct and the global behavioral rating. Additionally, we found informant-reported rivalry but not informant-reported admiration to substantially improve the explanation of institutional penalties beyond what can already be gleaned from self-reports (Table 5).

Social Status. Admiration (self- and informant reports) and rivalry (informant reports) were positively correlated with self-reported social status (Table 4). Regression analyses indicated that these correlations seemed to be driven primarily by the admiration facet. Whereas self-reported admiration and rivalry were not significantly related to informant-reported social status, informant-reported admiration and rivalry showed moderate associations with informant-reported social status. When the NARQ-S scales were considered simultaneously, these correlations seemed to be driven by admiration. Findings on the incremental validity of informant reports above self-reports again emphasized the relevance of informant-reported admiration and rivalry: Informant-reported admiration and rivalry explained variance in self-and informant-reported social status over and above self-reports (Table 5).

Discussion

The present study aimed to validate the Narcissistic Admiration and Rivalry Questionnaire short Scale (NARQ-S) in a forensic sample. We used self- and informant reports to overcome the validity issues of single-source self-reports and made use of the multifaceted theoretical framework for narcissistic admiration and rivalry to gain more nuanced insights into grandiose narcissism and its correlates in forensic populations. Results confirmed the two-dimensional structure and adequate internal consistencies of the NARQ-S in the present offender sample for self- and informant reports. Additionally, validity analyses showed moderate self-other agreement, confirmed the nomological network, and revealed meaningful links to behavioral manifestations and interpersonal consequences.

The Structure and Reliability of the NARQ in the Forensic Context

In line with previous work on the NARQ in convenience, national, and clinical samples (Back et al., 2013; Leckelt et al., 2018; Mota, Schaber, et al., 2019), the current data were best described by a model with two correlated factors, and this held for both self- and informant reports. It should be noted that the latent factors admiration and rivalry showed very high factor correlations for both the self- and informant reports (factor correlation = .81/.93), indicating that prisoners and prison staff did not separate the two factors admiration and rivalry as much as participants did in previous studies (Leckelt et al., 2018: .60/.74; Back et al., 2013: .61; Mota, Leckelt, et al., 2019: .51). Despite these high factor correlations, the correlated two-factor model represented the data significantly better than the one-factor model for both the self- and informant reports. This indicates that even in forensic samples in which individual differences in admiration and rivalry might be more strongly interwoven, the distinction between more agentic and more antagonistic aspects of narcissism still provided a more accurate description. Future research on narcissism in the forensic context is well-advised to differentiate between these two aspects of grandiose narcissism. The results also showed adequate reliabilities for the admiration and rivalry scales, particularly given the short scale lengths.

The Nomological Network and Criterion Validity of the NARQ in a Forensic Context

In addition to confirming the satisfactory structural psychometric properties of the NARQ-S, this study also examined several indicators of validity, namely, self-other agreement, the nomological network, and three different indicators of criterion validity (criminal history, institutional misbehavior, social status). Results concerning self-other agreement revealed moderate correlations on a dimensional level and small to moderate ones at the item level. Effects were comparable to those observed in Back et al. (2013) using the standard version of the NARQ. Results were also in accordance with prior studies that examined the agreement between self-reports and acquaintance reports and found moderate to large correlations for personality traits in general (Connelly & Ones, 2010) and for narcissistic traits specifically (Carlson, Vazire, & Furr, 2011; Carlson, Vazire, & Oltmanns, 2011). The observed effect sizes in the current study are comparable to the effect sizes found for short-term and long-term acquaintances with a medium level of intimacy in a meta-analysis (Connelly & Ones, 2010). This is in line with the purpose of prison staff and psychologists: to provide psychosocial care *and* regulation. Thus, very intimate and trustful relationships are not expected in this setting. Future research on narcissism in forensic contexts may take a closer look at moderators of self-other agreement (e.g., duration of therapy, cultural background) and at the implications of self-other consensus for prognostic issues (e.g., Does the degree of self-other agreement predict behavioral adjustment in prison, social rehabilitation, or recidivism rates?).

Analyses of the nomological network showed that admiration was primarily associated with extraversion and openness, whereas rivalry was primarily associated with low conscientiousness and disagreeableness. The patterns of the associations with neuroticism were less clear (i.e., rather negative associations with admiration and rather positive ones with rivalry). In sum, the associative patterns of the NARQ-S and BFI-S showed high congruence with the patterns found in previous studies with the NARQ and NARQ-S (Back, 2018; Back et al., 2013; Geukes et al., 2017; Leckelt et al., 2018; Rogoza et al.,

2016). As expected, self-esteem was positively associated with admiration, whereas—contrary to our hypothesis—no significant negative relation with rivalry was observed. Until now, the negative effect of rivalry on self-esteem has been shown in nonforensic populations and has been explained by the experience of negative interpersonal feedback following rivalry-specific behaviors, which negatively affect self-esteem levels (Geukes et al., 2017). Perhaps there was no negative association between rivalry and self-esteem because rivalry-specific behaviors (e.g., antagonistic reactions, aggression, low empathy, less warmth) were perceived to be adaptive or at least not maladaptive in the current forensic context and thus did not substantially affect the level of self-esteem. Otherwise, the effect sizes of the relations with self-esteem in our study were comparable to those observed with the NARQ-S (Leckelt et al., 2018) but smaller than reported in previous studies with the full NARQ (Back et al., 2013; Geukes et al., 2017; Rogoza et al., 2016). An explanation for these differences might come from the differences in reliability, given that the current study used the short version of the NARQ and a single-item scale to assess self-esteem. The correlational pattern of the NARQ-S scales with the Dark Triad scales was again highly comparable to those reported by previous research on the NARQ-S (Leckelt et al., 2018) and NARQ (Back et al., 2013; Rogoza et al., 2019). The strong associations of narcissistic admiration and rivalry with all three Dark Triad traits across self- and informant reports suggest that all scales share a common core of antagonism. In line with this interpretation, the PID-5-FSF antagonism scale showed a strong association with rivalry and admiration. The correlational pattern found in our forensic sample using the NARQ-S and PID-5-FSF was nearly identical to previous studies using the PID-5-SF and full NARQ (Mota, Schaber, et al., 2019). In sum, the correlation and regression analyses indicated theoretically plausible and diverging associative patterns for rivalry and admiration and thus strengthen the meaningful distinction between the two narcissism dimensions in forensic contexts.

The current study furthermore explored the relationship of the NARQ-S with several criterion-related indicators. Contrary to our expectations, there were no substantial effects of narcissistic

admiration or rivalry on the number of former convictions. We expected such an association on the basis of previous studies that showed that narcissism was associated with externalizing and aggressive behaviors (Barry et al., 2006; Bushman & Baumeister, 1998; Bushman & Baumeister, 2002; Krusemark et al., 2018; Lau & Marsee, 2013; Martinez et al., 2008; Miller & Campbell, 2010), and we expected the number of former convictions to be indicative of such antisocial behavior. However, the variable “number of previous convictions” was strongly influenced by (a) prisoners’ age and b) the time spent in prison. Following the age-crime curve (Loeber & Farrington, 2014), the prevalence of offending is not linear but has a peak in mid to late adolescence and declines with age; thus, this nonlinear course should be taken into account in future studies. Generally, we recommend that researchers control for age or create an index of former convictions and years of criminal responsibility (convictions per year) to clarify results. Additionally, researchers should take into consideration that offenders with long periods of imprisonment spend less time at risk for committing offenses so that the proposed index can be specified by assessing convictions per year of criminal responsibility not spent in prison. Thus, future research assessing all of these aspects in a large sample may clarify the association between narcissism and the number of former convictions.

In line with past results on the association of narcissistic traits and delinquency in adolescents (Barry, Frick, et al., 2007; Barry, Grafeman, et al., 2007; Lau & Marsee, 2013; Lau et al., 2010), we found that higher levels of narcissistic admiration and rivalry were associated with a younger age at first conviction. Perhaps narcissistic strategies influence early criminal behavior, as adolescents want to enhance their standing among deviant peers and want to be admired for their illegal acts. This explanation is in line with research showing that procriminal friends are strong correlates of criminal behavior (Andrews & Bonta, 2017; Gendreau et al., 1996) and that they promote antisocial behaviors (Wright et al., 2001).

Additionally, our results showed that admiration and rivalry were positively associated with violent offenses (vs. nonviolent offenses). These findings are in line with past research on narcissism and aggressive and violent behaviors (Barry et al., 2006; Bushman & Baumeister, 1998; Bushman & Baumeister, 2002; Lambe et al., 2018; Lau & Marsee, 2013; Martinez et al., 2008; Miller & Campbell, 2010). Admiration and rivalry were negatively associated with sexual offenses (vs. nonsexual offenses). Admiration seems to be driving the negative effect on sexual offenses. Yet, it is important to consider that most prisoners in our sample were convicted of child abuse (74.4%) among other offenses. This subgroup of sexual offenders is motivated by criminogenic needs (e.g. compensating or evading acts or pedophilia; Bosinski, 1997; Pfäfflin, 2009) that differ from offenders who engage in rape and sexual coercion (Baumeister et al., 2002). Thus, future research should differentiate across various sexual offenses in more detail to reveal the association between narcissistic traits and distinct subgroups of sexual violence. Nevertheless, the present results indicate that the diverging effects of narcissism may depend on the type of offense that was committed. We hope this will inspire future research that can help identify and treat criminogenic needs and improve prevention programs and recidivism rates.

Results on institutional misbehaviors have revealed that informant reports of admiration and rivalry were consistently associated with the number of institutional penalties, number of acts of misconduct, and global ratings of behavior. These effects seem to be primarily driven by rivalry. The self-reports showed a similar but less pronounced pattern: Admiration was moderately related to the number of institutional penalties, whereas rivalry showed significant associations with all three indicators of institutional misbehavior. In sum, the results indicate that high levels of rivalry (and less consistently, high levels of admiration) are linked to various misbehaviors in prison. These findings support past research that indicated associations of narcissism and several forms of externalizing behaviors and misconduct (Barry et al., 2006; Bushman & Baumeister, 1998; Bushman & Baumeister, 2002; Lau & Marsee, 2013; Martinez et al., 2008; Miller & Campbell, 2010) such as unprovoked attacks

on others or aggression against employees (Schoenleber et al., 2011). Additionally, our findings on the incremental validity of informant reports above self-reports in explaining criterion-related outcomes support previous research highlighting the utility of informant reports in general (Anderson et al., 2014; Connelly & Ones, 2010; Markon et al., 2013; McCrae, 2018; Vazire, 2006; Vazire & Mehl, 2008) and in forensic settings in particular (Hausam et al., 2018). In sum, the present findings support the differentiation of the Narcissistic Admiration and Rivalry Concept (Back et al., 2013) and stress the relevance of informant reports for anticipating misconduct in daily prison life and thus may prospectively affect daily life decisions (e.g., assignment to living groups) as well as security recommendations (e.g., probation) in forensic settings.

Self- and informant-reported social status in the group of prisoners was positively associated with both dimensions of narcissism in informant reports such that the effects were mainly driven by admiration. Again, we observed a similar but less pronounced and less clear pattern for self-reports. These findings are in line with the idea of a self-promotional pathway of admiration that fosters the “getting ahead” types of social outcomes (Back, 2018) and corresponds with previous research that showed that narcissistic admiration was positively associated with the average level of perceived status (Zeigler-Hill et al., 2019). In contrast to findings in the domain of peer popularity (liked by one’s peers; Leckelt et al., 2015), no negative effect of rivalry on social status was revealed. This might be explained by either the differential evaluation of offensive and aggressive behavior in prison and/or the difference between more communal (being liked) versus more agentic (being respected) social outcomes (Back & Vazire, 2015). Whereas the prison hierarchy has various other factors of influence such as age and local knowledge (Kreager et al., 2017), individual differences in narcissistic admiration might be a fruitful predictor to look at in future research.

As already mentioned, we observed particularly pronounced intercorrelations and effects sizes for informant reports (e.g., see Table 1 and 3). When interpreting these findings two aspects need to be taken into account. First, interpersonal social perception processes may be influenced by rater biases like

Halo effects (Forgas & Laham, 2009). This cognitive judgmental bias may be particularly activated in prison contexts, as one negative central trait of the target (e.g., delinquency) is obvious and may produce more negative evaluations in general. Thus, intercorrelations of negative traits may be inflated. Second, previous research found that informant-reports show higher average interitem correlations than self-reports. This might indicate that an individual's self-concept is more differentiated than the image of that person held by informants (Balsis et al., 2015; Beer & Watson, 2008).

Limitations and Future Direction

The present research examined several indicators of the psychometric quality of the NARQ-S and focused on criterion-related validity indicators that are highly relevant in forensic settings. Certainly, these first results on the NARQ-S in a forensic sample need to be replicated in a larger and more diverse sample of prisoners. Although the sample used here—containing 199 prisoner self-reports and 376 informant reports—is noteworthy, sample sizes of $N \geq 250$ are recommended for complex analyses such as confirmatory factor analysis (Hu & Bentler, 1999). Additionally, it should be mentioned that a self-selection bias cannot be ruled out, as individuals selected themselves into the sample. Furthermore, this research focused on male offenders from sociotherapeutic departments. In these departments, it is mainly prisoners who are convicted of crimes against sexual self-determination, life, physical integrity, or personal freedom who are treated. Thus, the range of offenses represented in this sample was restricted. Additionally, the social therapy institution aims to reduce prisoners' dangerousness through psychotherapy or social training (Ministry of Justice of Lower Saxony, 2011). According to how long offenders have been undergoing treatment, narcissistic manifestations may have substantially changed during their incarceration and could influence associations with criminal history variables or the number of institutional penalties. Additionally, psychometric properties and correlates of narcissism may differ in samples of female prisoners and should thus be studied separately. Due to limited time resources for testing and a limited attention span of many detainees (Kavanagh et al., 2010), we were unfortunately not able to use longer scales (e.g., of narcissism, Big Five, self-esteem, Dark Triad) in the current study.

Future studies might want to replicate our findings with more comprehensive measures and focus on a broader and more representative group of prisoners.

To better distinguish selection from socialization effects, researchers might want to extend the cross-sectional design of the current study to a longitudinal design in future work. A longitudinal study would be able to observe the development of narcissistic traits from offense to trial, to early and long-term imprisonment, as well as to resocialization and (potential) recidivism. A longitudinal study capturing this process along with several moderators (e.g., therapeutic treatments) and several informational sources (e.g., peer-ratings among offenders, objective ratings of interactions, behavioral ratings of prison officers, experience-sampling designs) could yield groundbreaking insights into the dynamics and development of personality traits and their relevance for understanding criminal careers, risk factors, and useful therapeutic strategies.

Conclusion

The current study examined the psychometric quality of the NARQ-S in a sample of offenders. Results confirmed the two-dimensional structure, an acceptable level of internal consistency, moderate self-other agreement, and a distinct nomological network for the two subscales of the NARQ-S. Analyses concerning the inventory's criterion validity showed that narcissism was related to several indicators of a prisoner's criminal history, institutional misbehavior, and social status. The differentiated theoretical framework of narcissistic admiration and rivalry provided a more nuanced picture of risk factors for maladaptive behaviors. Thus, a targeted assessment of the narcissistic components of each offender could provide valuable information about the tendency to engage in deviant behavior and may thus support decisions about paroles, correctional plans, and individually adjusted treatments. In sum, the current findings demonstrate the validity and utility of the NARQ-S in self- and informant reports in forensic contexts.

Notes

¹ In this manuscript we analyze a subset of data of a state-wide multimethodal and preregistered project. Recently, further research has been conducted on this project (Niemeyer et al., 2020). For a detailed overview of preregistration, manuscript and supplemental materials of this study, see go.wwu.de/zggc8.

² These departments aim to reduce prisoners' dangerousness through psychotherapy or social training. Prisoners convicted of crimes against sexual self-determination, life, physical integrity, or personal freedom are prevalent (Ministry of Justice of Lower Saxony, 2011).

³ Although our sample size was borderline for multilevel analyses, we additionally conducted analyses in which we accounted for the nested data structure (e.g., some informants rated multiple prisoners, the prisoners lived in the ten different departments). These multilevel analyses yielded similar results as analyses in which we did not account for the nested data structure (for details, see the supplement, Table S9; go.wwu.de/m2l53).

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Figure 1*Confirmatory Factor Analysis Model of the NARQ-S*

Note. $N = 199$. Results for the self- and informant versions are separated by a slash. All loadings are standardized. We used the WLSMV estimator for the self-report data and the MLR estimator for the informant report data. ADM = narcissistic admiration, RIV = narcissistic rivalry, Grand = grandiosity, Uniqu = striving for uniqueness, Charm = charmingness, Aggr = aggressiveness, Deval = devaluation, Supre = striving for supremacy. Overall model fit: CFI = .99, SRMR = .06, RMSEA = .07, 90%CI [.02,.12]) / CFI = .94, SRMR = .05, RMSEA = .19, 90%CI [.15,.23]) for the self- and informant versions, respectively.

Table 1*Means, Standard Deviations, Ranges, and Interitem Correlations for the NARQ-S Items*

	Dimension	<i>M</i>	<i>SD</i>	Min	Max	Item 2	Item 3	Item 4	Item 5	Item 6	<i>r</i> _{SO}
1	Rivalry	1.83/ 2.73	0.94/ 1.11	1/1	5/6	.21**/.73**	.31**/.69**	.22**/.69**	.40**/.62**	.18*/.50**	.24**
2	Admiration	1.81/ 2.81	1.20/ 1.30	1/1	6/6		.30**/.71**	.41**/.87**	.42**/.66**	.40**/.69**	.30**
3	Rivalry	2.10/ 2.76	1.40/ 1.12	1/1	6/5.5			.26**/.65**	.36**/.45**	.54**/.69**	.30**
4	Admiration	2.23/ 2.80	1.31/ 1.25	1/1	6/6				.42**/.71**	.24**/.68**	.15*
5	Admiration	2.32/ 2.93	1.29/ 1.19	1/1	6/6					.35**/.44**	.24**
6	Rivalry	2.08/ 2.53	1.36/ 1.00	1/1	6/5						.25**

Note. *N* = 196-198. Results for the self- and informant reports are separated by a slash. *r*_{SO} = self-other correlations.

* $p \leq .05$. ** $p \leq .01$

Table 2*Results of CFAs and Model Comparisons*

Source	Model	Model Fit						Comparison with two corr. factors model	
		CFI	RMSEA [90%CI]	SRMR	χ^2	df	p	$\Delta \chi^2$	p
Self-report	One factor	.98	.10 [.06; .14]	.07	25.80	9	$\leq .001$	16.30	$\leq .001$
	Two factors (uncorr.)	.57	.45 [.41; .49]	.26	361.14	9	$\leq .001$	107.74	$\leq .001$
	Two factors (corr.)	.99	.07 [.02; .12]	.06	16.57	8	.035		
Informant report	One factor	.93	.20 [.16; .24]	.05	77.31	9	$\leq .001$	7.82	.005
	Two factors (uncorr.)	.73	.37 [.34; .41]	.42	260.34	9	$\leq .001$	114.91	$\leq .001$
	Two factors (corr.)	.94	.19 [.15; .23]	.05	63.22	8	$\leq .001$		

Note. $N = 199$. CFI = robust comparative fit index, RMSEA= robust root mean square error of approximation, SRMR = standard root mean square residual, χ^2 = robust chi-square values, Δ CFI = absolute difference of the robust CFI-value to the next best fitting model, $\Delta\chi^2$ = difference to the next best fitting model based on Sattora-Bentler scaled chi-square difference test.

Table 3

NARQ-S Dimensions in Relation to the Big Five Traits, Self-Esteem, Dark Triad Traits and Maladaptive Personality Traits

	Admiration		Rivalry		Dunn and Clark's z
	r	β	r	β	
Big Five Traits					
Extraversion	.28**/.53**	.30**/.62**	.12/.38**	-.03/-.11	2.35*/3.73**
Openness	.25**/.44**	.29**/.65**	.05/.26**	-.10/-.26*	2.74**/4.30**
Conscientious	-.22**/-.02	-.12/.22	-.26**/-.13	-.20*/-.31**	0.67/2.37*
Neuroticism	-.09/-.11	-.18*/-.29*	.06/.00	.15/.23*	-2.01*/-2.34*
Agreeableness	-.22**/-.43**	-.02/.10	-.41**/-.58**	-.40**/-.66**	2.86**/3.99**
Self-esteem ^a	.24**	.27**	.07	-.06	2.34*
Dark Triad Traits					
Psychopathy	.35**/.56**	.11/-.02	.53**/.72**	.47**/.73**	-2.87**/-4.59**
Machiav.	.45**/.64**	.16*/.12	.64**/.74**	.56**/.64**	-3.39**/-3.35**
Narcissism	.55**/.88**	.50**/.71**	.38**/.79**	.13/.22**	2.81**/4.57**
Maladaptive Personality Traits					
Neg. Affect	-.02/.00	-.14/-.39**	.15*/.18*	.23**/.49**	-2.38*/-3.89**
Detachment	.11/-.13	-.01/-.32**	.22**/-.01	.23**/.24*	-1.55/-2.45*
Antagonism	.55**/.78**	.34**/.37**	.60**/.81**	.44**/.51**	-1.02/-1.12
Disinhibition	.13/.07	.02/-.32**	.22**/.24**	.21*/.50**	-1.29/-3.66**
Psychoticism	.26**/.23**	.11/.04	.35**/.27**	.30**/.24*	-1.36/-0.88

Note. *N* = 195-199. Results for the self- and informant reports are separated by a slash. *r* = zero-order correlations; β = standardized regressions coefficients; *Dunn and Clark's z* = Test of differences between correlations as described by Dunn and Clark (1969).

^a Self-esteem was measured by self-report only.

* $p \leq .05$. ** $p \leq .01$

Table 4*NARQ-S Dimensions in Relation to Offenders' Criminal History, Institutional Misbehavior, and Social Status*

	Admiration		Rivalry		<i>Dunn and Clark's z</i>
	<i>r</i>	β	<i>r</i>	β	
Criminal History					
Former Convictions					
Number	-.05/.14	-.01/.06	-.10/.15*	-.10/.11	0.62/-0.22
Age at 1 st	-.19*/-.26**	-.17/- .11	-.12/- .28**	-.03/- .19	-0.88/0.35
Type of Offense	OR		OR		
Violent	.18*/.20**	1.39/1.19	.14/.21**	1.15/1.37	0.61/-0.19
Sexual	-.24**/- .28**	.64*/.70	-.19*/-.27**	.82/.76	-0.8/-0.27
Institutional Misbehavior					
Institutional Penalties	.27**/.20*	.19/- .02	.27**/.25**	.16/.26	0.06/-0.95
Misconduct	.09/.20**	.01/- .05	.17*/.27**	.17*/.31**	-1.13/-1.62
Global Rating	.06/.35**	-.02/- .05	.15*/.45**	.16/.49**	-1.29/-2.62**
Social Status					
Self-reported Status	.18*/.25**	.17*/.31**	.11/.17*	.03/- .08	0.94/1.71
Informant-reported Status	.12/.34**	.15/.39**	.04/.26**	-.04/- .05	1.21/2.06*

Note. $N = 150-199$. Results for the self- and informant reports are separated by a slash. r = zero-order correlations; β /OR = standardized regressions coefficients/Odds ratios; *Dunn and Clark's z* = Test of differences between correlations as described by Dunn and Clark (1969).

* $p \leq .05$. ** $p \leq .01$

Table 5*Incremental Validity of Self- and Informant Report Version of Admiration and Rivalry*

	Admiration	Rivalry
	β_{self}/β_{inf}	β_{self}/β_{inf}
Criminal History		
Former Convictions		
Number	-.12/.18*	-.17*/.20*
Age at 1 st	-.12/-.22**	-.04/-.26**
Type of Offense	OR _{self/inf}	OR _{self/inf}
Violent	1.36/1.32	1.22/1.49*
Sexual	0.67*/0.65**	0.76/0.6**
Institutional Misbehavior		
Institutional Penalties	.24**/.13	.22**/.18*
Misconduct	.03/.19*	.10/.24**
Global Rating	-.07/.37**	.00/.46**
Social Status		
Self-reported Status	.11/.21**	.07/.15*
Informant-reported Status	.01/.33**	-.05/.27**

Note. $N = 150-199$. β_{self}/β_{inf} = standardized regressions coefficients for self-and informant reports when considered simultaneously; OR_{self/inf} = Odds Ratios for self-and informant reports when considered simultaneously.

* $p \leq .05$. ** $p \leq .01$