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Grandiose and Vulnerable Narcissistic States in Interpersonal Situations

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Abstract

Clinicians have noted that narcissistic individuals fluctuate over time in their levels of grandiosity and vulnerability. However, these fluctuations remain poorly understood. Interpersonal theory asserts that interpersonal situations are central to the expression of personality and psychopathology, and therefore are a key context in which to understand the dynamic processes underlying narcissistic states. The present study is the first to examine narcissistic states assessed during interpersonal situations. Specifically, perceptions of others' warmth and dominance, momentary grandiosity and vulnerability, and one's own warm and dominant behavior were assessed across situations in daily life in a large sample (person N=286; occasion N=6,837). Results revealed that more grandiose individuals perceived others as colder and behaved in a more dominant and cold fashion, on average. But in the moment, relatively higher grandiosity was associated with perceiving others as warmer and more submissive and resulted in more dominant and warm behavior. On the other hand, trait vulnerability was associated with perceptions of coldness and cold behavior, and these effects were only amplified in momentary spikes of vulnerability. This study provides much-needed insight into the contexts that contribute to fluctuations in grandiosity and vulnerability.

Keywords

Narcissism; Grandiosity; Vulnerability; Interpersonal Theory; Ecological Momentary Assessment

The study of narcissism has been a popular topic across the fields of clinical psychology, psychiatry, and social/personality psychology (Pincus & Lukowitsky, 2010). Clinical psychology and psychiatry have often placed greater emphasis on pathological or maladaptive manifestations of narcissism, whereas the basic social/personality literature has placed relatively greater emphasis on potentially adaptive manifestations of narcissism. Further, the clinical literature generally recognizes that narcissism is multifaceted and manifests in grandiosity and vulnerability (Wink, 1991; Pincus & Lukowitsky, 2010; Cain, Pincus, & Ansell, 2008; Miller et al., 2017). Narcissistic grandiosity is associated with feelings of entitlement, self-importance, and exploitative behavior (Miller et al., 2017; Krizan & Herlache, 2017; Wright & Edershile, 2018). Despite its maladaptivity, grandiosity also tends to be positively associated with self-reports of self-esteem, positive affect, and

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extraversion (e.g., Cain et al., 2008; Miller et al., 2018; Paulhus & Williams, 2002). Individuals high in grandiosity are likely to be overtly immodest, self-promoting, and self-enhancing (Miller et al., 2017). Narcissistic vulnerability shares associations with entitlement and antagonism but is also characterized by shame and negative emotionality (Miller et al., 2014). Further, vulnerability tends to exhibit negative associations with self-esteem, positive affect, and extraversion. Thus, rather than manifesting in reward seeking behavior, like grandiosity, vulnerability is reflected in motives such as avoidance of embarrassment and tends to be broadly associated with other forms of personality pathology (Edershile, Simms, & Wright, in press).

Although contemporary research has often operationalized grandiosity and vulnerability as separate but correlated traits, researchers have recently proposed models that suggest narcissism manifests as more of a dimension (e.g., Aslinger et al., 2018), anchoring on antagonistic features, like entitlement, with grandiosity and vulnerability serving as "peripheral" dimensions (Miller et al., 2017; Krizan & Herlache, 2017). These theories argue that it is the antagonistic core that drives the dysfunction, particularly interpersonal dysfunction, associated with the disorder (e.g., Ro et al., 2017). This type of model theoretically allows for narcissistic individuals to fluctuate in their levels of narcissism across time while maintaining an antagonistic core. Indeed, clinically it has long been suggested that grandiosity and vulnerability are not exclusively dimensions of individual differences, and in fact fluctuate within the same narcissistic individual over time (Pincus & Lukowitsky, 2010; Wright, 2014; Pincus et al., 2014; Ronningstam, 2009, 2011; Kernberg, 1975).

Despite the strong emphasis on the dynamics of grandiosity and vulnerability in the theoretical and clinical literatures on narcissism, systematic empirical research into these processes remains rare. To date it has been shown that individuals considered to be typically grandiose exhibited periods of marked vulnerability at some point in time (Gore & Widiger, 2016; Hyatt et al., 2017). Giacomin and Jordan (2016) found evidence for daily within-person fluctuations in adaptive and maladaptive grandiose features. Maladaptive features were associated with reported feelings of shame and guilt whereas adaptive features were associated with greater life-satisfaction, greater positive affect, and greater hostility. A larger literature has examined the link between trait narcissism and fluctuations in self-esteem, with mixed findings (see Bosson et al., 2008). However, recent findings by Geukes and colleagues (2016) suggest that how narcissism is operationalized matters, such that more maladaptive features predict low and more variable self-esteem.

Partially as a function of the variety of fields interested in different manifestations of narcissism, the study of narcissism has suffered from definitional inconsistency. Consequently, an array of measures has been developed to assess different components of the construct. Many of these measures capture the grandiose aspects of narcissism and have been shown to also specifically associate with dominance (e.g., Johnson et al., 2012). More clinically oriented measures of narcissism typically capture a blend of grandiose and vulnerable components. Given none of these dispositional scales examine how grandiosity and vulnerability co-occur within the same individual over time, these scales fail to capture key component of clinical theory regarding manifestations of pathological narcissism. More

recently, single self-report scales aimed at capturing fluctuations in grandiosity and vulnerability within an individual (Oltmanns et al., 2018) as well as scales that can serve as either momentary or trait-based assessments of narcissism (Crowe et al., 2018; Crowe et al., 2016; Rosenthal & Hooley, unpublished manuscript; Edershile et al., 2019) have been developed. Having scales that can assess dynamic patterns within narcissism is important as researchers strive to align clinical theory with supporting empirical evidence.

Though it appears that the study of dynamics within pathological narcissism may be a fruitful next step in the literature, the lens through which to study these dynamics is not well-defined. Narcissism is considered a disorder of self and interpersonal dysfunction (e.g., Gurtman, 1992; Pincus et al., 2009). Further, much of the dysfunction that emerges from pathological narcissism centers around interpersonal problems (e.g., Thomaes et al., 2008; Wright et al., 2017; Paulhus, 1998; Orgodniczuk et al., 2009; Roche et al., 2013; Dickinson & Pincus, 2003; Miller et al., 2007; Dashineau et al., in press). Accordingly, interpersonal theory (Pincus & Ansell, 2013) may provide a valuable framework for understanding the momentary unfolding of grandiosity and vulnerability. Interpersonal theory posits that the most important expression of personality occurs during interpersonal situations. The two orthogonal dimensions of dominance and warmth serve to organize interpersonal functioning (e.g., perceptions, goals, behavior). As depicted in Figure 1, Hopwood and colleagues (Hopwood, 2018; Hopwood, Pincus, & Wright, 2019) have elaborated the conceptualization of interpersonal situations and, by extension, personality, through the interaction of “self” and “other” systems. The interplay among self-states, perceptions of the interacting partner’s behavior, one’s own behavior, and affect as they unfold over time comprise the key dynamic interpersonal processes. Personality pathology is expected to result in maladaptive interpersonal processes, which might include departures from normative expectations of behavior or amplifications of negative self-states across the dimensions of dominance and warmth (Hopwood et al., 2013; Pincus & Wright, 2011).

Though a number of studies have demonstrated narcissism’s association with dispositional ratings of dominance and dominance motivation (e.g., Johnson et al., 2012; Bradlee & Emmons, 1992; Patrick et al., 2002), these studies have all used trait-based assessments of narcissism and trait-based assessments of dominance. Only two studies have directly examined the link between narcissism and momentary behavior in naturalistic interpersonal situations. Roche and colleagues (2013) suggest that dispositionally assessed grandiosity and vulnerability are modestly associated with varying interpersonal styles, contingent on the perception of the other’s behavior. These results must be treated as tentative, given the primary finding occurred in a four-way interaction. Wright and colleagues (2017) found that narcissistic personality disorder features amplify the link between perceptions of others’ dominance and one’s own quarrelsome behavior and negative affect in the moment. In both studies, narcissism was assessed using static dispositional measures, so a direct assessment of the fluctuation in narcissistic self-states in interpersonal situations remains unexamined.

Current study

To understand the role of interpersonal context in the manifestation of narcissistic grandiosity and vulnerability, the current study was designed to sample momentary

perceptions, behavior, and narcissistic self-states in naturalistically occurring interpersonal situations. Unlike prior studies examining the effect of narcissism in interpersonal situations, we sample narcissism in the moment, using scales that were recently validated for this purpose (Edershile et al., 2019). Using Figure 1 as a template to develop a conceptual and statistical model to test, we treated perceptions of others (**A**) as predictors of self-states (**B**), which ultimately predicted one's own interpersonal behavior (**C**). Given that grandiosity tends to be associated with psychological variables such as positive affect, extraversion, and self-esteem, we broadly predicted that momentary grandiosity would be most affected by and affect dominant behavior in the moment. On the other hand, due to characterizations of vulnerability as a distress and shame-oriented variable (e.g., Pincus et al., 2009; Miller et al., 2014; Edershile et al., 2019), it was hypothesized that vulnerability would be more strongly associated with perceptions of and manifestations of cold behavior. Other paths were treated as exploratory.

Methods

Participants

Participants had to be 18 or older and users of a smartphone running iOS or Android software. Our a priori target between-person sample size was ≥ N=250, with a stopping rule of continuing to sample until the end of the semester in which we passed our goal. Undergraduate students (N=288) were recruited across two waves of data collection during the Spring semesters of 2017 and 2018. Participants were mostly male (60.8%, n=175) with an age range from 18–38 (M=19.22; SD=1.74). The majority of participants identified as white (70.8% Caucasian; 18.4% Asian; 8% Black; 1.4% multiracial). Further, 22.6% (n=65) had a lifetime history of mental health treatment, 64.6% (n=42) of which had received treatment during the prior year. Two participants provided no demographic information and are excluded from the prior calculations. Two additional participants did not indicate a racial category.

Procedure

Participants attended a baseline session and completed a one-week ambulatory assessment protocol. At baseline, participants received training in the study procedures, downloaded MetricWire, the application used for all ambulatory assessment surveys, onto their own smartphone, and completed questionnaires in a group setting. Baseline questionnaires covered demographic information and personality measures not relevant to this study. The ambulatory assessments included questions about perceptions, feelings, and behaviors during interpersonal interactions.

Baseline groups were randomly assigned to either an event-contingent or signal-contingent sampling frame. This design feature was unrelated to the current study's goals, and prior work with this sample found no significant differences in means, variances, and covariances across conditions (see Himmelstein, Woods, & Wright, 2018; https://psyarxiv.com/e6g3j/). Therefore, both conditions were collapsed for all analyses.[1]

In the event-contingent condition, participants (n=140) were instructed to initiate and complete a survey in MetricWire every time they experienced an interpersonal interaction. Interpersonal interactions were defined as real-time, direct conversations between the participant and one or more other individuals that lasted for at least five minutes. In-person, voice, video, and text-based conversations were all included provided they met these conditions. Participants in this condition completed an average of 43.66 assessments (SD=12.41).

The remaining participants (n=148) were instead delivered surveys on a randomly initiated schedule. Beginning on the day following baseline assessment, participants were delivered six surveys per day for seven days. Surveys were administrated through MetricWire at random intervals with a minimum of 90 minutes between surveys. Participants were prompted to answer surveys through push notifications on their smartphones. Due to technological errors in the third-party software, some participants may not have received exactly 42 surveys over the course of the study. Participants in this condition completed an average of 28.59 interpersonal interaction assessments (SD = 12.67).

Across both conditions 6,837 entries were obtained in total. Participants were given a portion of course credit for completion of the baseline questionnaires and full credit if they completed 67% or more of the 42 surveys during the study. Participants completing more than 85% of the ambulatory assessments were entered into a drawing for one of two Apple Watches.

Measures

Narcissistic Grandiosity Scale (NGS; Rosenthal et al., 2007; Crowe et al., 2016).—A subset of the 16-item NGS scale was administered as part of the ambulatory assessment protocol. Specifically, narcissistic grandiosity was measured with the adjectives "Brilliant; Envied; Glorious; Powerful; Prestigious; and Superior." A factor analysis completed in this and other data sets (Edershile et al., in press; https://osf.io/89t6x/) indicated complex factor loadings for *Envied*. As such, it was not included for analyses here. The NGS has demonstrated strong psychometric properties a momentary assessment of grandiose narcissistic states. Further, this measure has been shown to be strongly associated with other measures of grandiose narcissism at the between-person level (Edershile et al., in press). Participants were asked questions in the following forms: *"During the interaction, to what degree did you feel [ADJECTIVE]?"* Ratings were made on a visual analogue slider bar ranging from 0 (Not at all) to 100 (Extremely). Internal consistency for the NGS was α_{within}=.79 and $\alpha_{between}$=.98.

Narcissistic Vulnerability Scale (NVS; Crowe et al., 2018).—A subset of the 12-item NVS scale was administered as part of the ambulatory assessment protocol. Narcissistic vulnerability was measured with "Envious; Ignored; Insecure; Resentful; Misunderstood; and Underappreciated." A factor analysis completed in this data set (Edershile et al., in press) indicated complex factor loadings of *Envious*. As such, it was not included for

[1]Estimating in separate groups (i.e., event-contingent and signal-contingent) returned highly consistent results for all main coefficients of interest.

analyses here. The NVS has been shown to be a unidimensional measure of vulnerability (Crowe et al., 2018), has demonstrated associations with other vulnerability measures, and tends to be positively associated with theoretically related constructs, such as negative affect (Edershile et al., in press). Further, the NVS has demonstrated strong psychometric properties for a momentary assessment of vulnerable narcissistic states (Edershile et al., in press). Items were assessed using the same stem and scale as the NGS. Internal consistency for the NVS was α_{within}=.82 and $\alpha_{between}$=.97.

Visual Interpersonal Analogue Scale (VIAS; Woods et al., in preparation).—The VIAS (https://osf.io/cz968/) was developed to efficiently assess dominant and affiliative behavior during social interactions. Existing scales that assess dominance and warmth tend to do so using behavioral checklists or Likert scales. Rather than using extant multi-item measures to assess dominance, submissiveness, warmth, and coldness, the VIAS allows for the capture of such behaviors using just two items. These two items are theorized to capture the assumed bipolar dimensions of dominance and affiliation of the Interpersonal Circumplex. The two items of the VIAS have demonstrated expected associations with such constructs as dispositional measures of interpersonal functioning and momentary positive and negative affect and perform similarly to other measures of dominance and affiliation (Woods et al., in preparation), while also minimizing participant burden. Dominant behavior was assessed using a visual analogue slider bar ranging from −50 (“Accommodating/Submissive/Timid”) to 50 (“Assertive/Dominant/Controlling”). Affiliative behavior was rated on a similar visual slider bar ranging from −50 (“Cold/Distant/Hostile”) to 50 (“Warm/Friendly/Caring”). The use of visual analogue scales, such as this one, have been shown to be at least as effective as Likert-type scales in the study of social behavior (e.g., Reips & Funke, 2008; Kuhlman et al., 2017).

Data Analytic Plan

The processes of interest involving perceptions of interacting partner’s behavior (**A** in figure 1), state grandiosity and vulnerability (**B**), and one’s reciprocated behavior (**C**) are thought to play out within-person and across situations. Thus, we used multilevel structural equation modeling in Mplus 8.1 (Muthén & Muthén, 2018) to estimate a within-person path analysis, where the within-person variability in ratings reflects the momentary departure from each individual’s average score on each variable. In our model, one’s own ratings of their momentary interpersonal behavior were regressed on state narcissism ratings, and one’s own behavior and state narcissism were all regressed on perceptions of others’ behavior, as depicted in Figure 4. Each of the paths depicted in Figure 4 were estimated as randomly varying across participants. Because we had no a priori hypotheses about the structural relations among variables at the between-person level, all random intercepts and slopes were allowed to freely co-vary, and associations were treated as exploratory. Sex and age were included as between-person covariates at Level 2. This model was estimated using the Bayes estimator with uninformed priors. Standardized estimates are reported, including point estimates and 95% credibility intervals (CIs). Parameters for which the 95% CIs do not include 0 were interpreted as statistically significant.

Results[2]

Open data and syntax for all models are provided at: https://osf.io/tskga/

To provide an overview of this form of data, a subset of 20 individual participant's data across dimensions of grandiosity and self-ratings of dominance are presented in Figure 2 and Figure 3. Due to the large number of results, a subset is summarized here. For complete results please refer to the tables, figures, and supplementary material.

Intraclass Correlations (ICCs)

ICCs estimate the proportion of variance that is due to individual differences (i.e., between-person). The majority of the variance in perceptions of others' behavior (others' dominance ICC=.20; others' warmth ICC=.31) and ratings of one's own behavior (dominance ICC=.25; warmth ICC=.34) was within-person and across situations. The variance in narcissism was more evenly split (grandiosity ICC=.63; vulnerability ICC=.48).

Within-Person Associations

Pooled within-person correlations among the variables can be found in the upper right of Table 1. Before examining results of the full path model, we examined associations of cross-situational fluctuations in interpersonal variables without including narcissism. We found evidence for interpersonal complementarity (Carson, 1969), such that perceptions of others dominance modestly predicted one's own ratings of submissiveness (β=−.10, [−.13, −.07]) and perceptions of other's warmth strongly predicted ratings of one's own warmth (β=.65, [.63, .67]). Perceptions of other's warmth significantly predicted one's own dominance, though the effect size was negligible (β=.03, [.01, .06]). We found significant heterogeneity (i.e., random effects) for each of these paths.

Results of the full path model can be found in Figure 4. Adding narcissism had a minimal impact on the interpersonal complementarity estimates. Turning to results through grandiosity and vulnerability, negligible, albeit significant, associations emerge between perceptions of others' submissiveness and one's own rating of grandiosity in the moment. Similar results, again with a small effect, emerge between perceptions of others' warmth and grandiosity. Vulnerability, on the other hand, was modestly associated with perceptions of others' dominance and moderately associated with perceptions of others coldness. As for one's own behavior, grandiosity modestly predicted ratings of one's own dominance, and though a small effect, significantly predicted reports of acting warmly in the moment. Vulnerability was modestly associated with reported cold behavior in the moment. We found significant heterogeneity (i.e., random effects) for each of these paths.

Between-Person Associations

Table 1 summarizes correlations among the random intercepts at the between-person level on the lower left. Between-person averages of these momentary variables have been shown

[2]Additional three-level analyses were run to examine the intraclass correlation coefficients (ICCs) among the variables at the daily level (compared to just the individual). The average ICC at the daily level is just .048, indicating that < 5% daily-level variance among these variables. As such, we limited the models to two levels, interactions nested within person.

to roughly correspond to trait-level assessments of existing narcissism and interpersonal measures (Edershile et al., in press; Woods et al., in preparation). Average ratings (i.e., random intercepts) of dominance were strongly correlated with average ratings of perceptions of others' dominance. Further, average dominance ratings were moderately associated with ratings of grandiosity. Average ratings of warmth were almost perfectly correlated with an individual's average ratings of perceptions of others' warmth and modestly negatively associated with ratings of grandiosity. Average ratings of warmth across time were also strongly negatively associated with an individual's average of vulnerability. Average ratings of perceptions of others' warmth were modestly negatively associated with average individual's ratings of grandiosity across time and strongly negatively associated with vulnerability ratings. In contrast to the within-person associations, individual average ratings of grandiosity and vulnerability were strongly associated.

Results of correlations between the random intercepts (i.e., between-person levels of each variable) and random slopes among the momentary variables can be found in Table 2. These results allow for an investigation of how averages of the momentary variables amplify or dampen links between the interpersonal and narcissism variables. We first focus on narcissism's impact on within-person processes. Referring to results contained in the green shaded area, grandiosity strengthened the association between perceptions of other's coldness and one's own vulnerability, perceptions of other's dominance and one's own warmth, and perceptions of others warmth and grandiosity. However, grandiosity weakened the link between ratings of perceptions of other's warmth and one's own warmth. Moving to associations in the red shaded area, higher scores on vulnerability strengthened the link between perceptions of other's dominance and perceptions of other's coldness and one's own vulnerability. Further, vulnerability was associated with the link between perceptions of warmth and one's own dominance, such that for those high in vulnerability, perceptions of other's coldness predicted one's own dominance. Finally, examining results within the blue shaded area, higher warmth scores decreased the effect of perceptions of other's dominance and one's own state narcissism and dominance.

Discussion

Clinicians have long noted that grandiosity and vulnerability fluctuate within narcissistic individuals (Pincus & Lukowitsky, 2010; Wright, 2014; Pincus et al., 2009; Pincus, Cain, & Wright, 2014; Ronningstam, 2009, 2011; Kernberg, 1975). Recent work in the narcissism literature has worked to reconcile how these two seemingly opposing components of narcissism can occur within the same individual. However, this has largely led to a vast dispositional literature with a number of available measures assessing different components of the construct. This has contributed to a more disjointed literature and the proposed processes in pathological narcissism (e.g., Grubbs & Exline, 2016) have not been adequately measured or understood. Interpersonal theory may be a particularly useful lens to examine narcissistic processes because of its focus on interpersonal situations, a key context for narcissistic expression. Interpersonal theory situates all interpersonal exchanges on the orthogonal dimensions of agency and communion. The present study expanded on existing literature by including not only momentary interpersonal assessments but also momentary

assessments of narcissistic states. This allowed us to examine temporally similar accounts of interpersonal exchanges and narcissistic responses.

Although our focus was on state grandiosity and vulnerability in interpersonal situations, we begin by reviewing the between-person associations, because they provide a context for understanding the situation-level results. We found that an individual's average grandiosity was associated with being more interpersonally dominant and colder on average. Whereas the finding that grandiosity tends to be associated with dominance is well-documented in the literature (e.g., Johnson et al., 2012; Bradlee & Emmons, 1992; Patrick et al., 2002; Rodebaugh et al., 2010), associations between warmth and grandiosity are less clear. Some research suggests that grandiosity may have modest positive associations with warmth (e.g., Miller et al., 2014). However, others suggest that grandiosity either associates with the colder and vindictive interpersonal traits (e.g., Pincus et al., 2009) or tends to have little association with warmth and, instead, is almost purely captured by the dominant/submissive axis (e.g., Pincus et al., 2009; Raskin & Terry, 1988; Thomas et al., 2012, 2016). Average vulnerability, on the other hand, was strongly associated with colder behavior. This aligns with previous dispositional research suggesting that vulnerability, unlike grandiosity, is associated with social withdrawal and coldness (Edershile et al., in press; Miller et al., 2014). In addition to results revealing the tendency for grandiosity and vulnerability to be associated with cold behavior, results also revealed that grandiosity (modestly) and vulnerability (strongly) were associated with perceiving others as cold. While this finding is a novel addition to the literature, the current design does not allow us to disentangle whether these are perceptual biases, situational selection, or evoked response from the environment. Finally, in terms of between-person averages, we found that grandiosity and vulnerability were strongly correlated, which suggests that for a given individual these two seemingly disparate dimensions hang closely together. This finding is in contrast to some dispositional narcissism measures (e.g., The Five Factor Narcissism Inventory; Glover et al., 2012) in which grandiosity and vulnerability are unassociated with each other.

At the within-person level, we were interested in the specific processes that unfolded with regard to initial perceptions of the interacting partner's behavior (**A** in Figure 1), the narcissistic response (**B**), and the consequential behavior of the individual (**C**). We hypothesized that momentary grandiosity would be most affected by perceptions of dominance and vulnerability by perceptions of coldness. Perceptions of other's behavior had significant, albeit only modest effects on state grandiosity. These paths suggest that when others are warmer and more submissive, one will experience greater grandiosity in the moment. Results additionally revealed that when one is experiencing grandiosity, they tend to act more dominant and warmer, although the effect on warmth was small. These momentary results for grandiosity are in stark contrast to the between-person averages, where, individuals who were higher on grandiosity tended to perceive others as colder and behaving more dominant and coldly. This suggests that when in a more grandiose self-state, individuals are likely to behave more dominantly and slightly more warmly than their average, though this has relatively modest association with the interacting partner's behavior.

Momentary vulnerability, on the other hand, was more strongly influenced by perceptions of others' behavior. In particular, when an individual perceived that others were more dominant and colder, they exhibited higher momentary vulnerability. In terms of one's own behavior, the vulnerability only predicted behaving more coldly, but not submissively. These findings are consistent with the between-person results, suggesting that momentary vulnerability amplifies one's average pattern of behavior. We also note that momentary grandiosity and vulnerability were positively associated, though the effect size was quite small. This emphasizes the differences between dispositional and dynamic approaches to understand the nature of grandiosity and vulnerability. In particular, it appears that individuals do not necessarily exhibit grandiosity and vulnerability at the same time, however on average, people who experience grandiosity also tend to experience vulnerability.

We found significant variability (i.e., random effects) for all within-person paths. Therefore, we also explored between-person associations between random slopes and the random intercepts. Because these were exploratory, these results in particular bear replication. However, we note several intriguing findings worthy of future research. Higher grandiosity strengthened the link between perceptions of others' warmth and one's own grandiosity and weakened the link between perceptions of others' warmth and one's own vulnerability. Grandiosity also weakened the link between perceptions of other's warmth and a warm response. Higher average vulnerability amplified the link between perceptions of other's dominance, other's coldness, and a vulnerable response.

Though not involving associations with narcissism, interesting findings with respect to the dominance and warmth variables also emerged. Associations between ratings of one's own dominance and perceptions of others' dominance are quite strongly positively associated at the between-person level. The same was true for associations between ratings of perceptions of others' warmth and one's own warmth. These values were unexpectedly large. This may be concerning, as it is possible this suggests that people tend to rate their interacting partner as nearly identical in dominance and warmth as they rate themselves, on average. In particular, people who tend to report that they are dominant, tend to interact with other's they perceive to be dominant, though in the moment, when one is dominant, they report that the other is submissive. Similarly, people who tend to be warm also tend to interact with people that perceive as warm, and the same pattern is evident in the moment. Between- and within-person correlation matrices have rarely been provided in similar prior studies. Wright et al. (2017) used different measures for assessing the interpersonal variables, resulting in a similar pattern with somewhat lower correlations. However, we also note that associations between one's own dominance/warmth and others' dominance/warmth were quite distinct at the within-person level. Therefore, although these associations were surprisingly large, the overall pattern matches similar published work engendering greater confidence in the results. As with the results involving narcissism, this continues to suggest the importance of examining these variables from a multi-level perspective.

Limitations and Future Directions

The results of this study should be interpreted with several limitations in mind. First, we used a sample of undergraduates. Although this is consistent with the overwhelming

majority of studies in the narcissism literature, it remains unstudied whether a similar pattern of results would be obtained in samples with greater dispositional representation of grandiosity and vulnerability (e.g., patient, executive, or forensic samples). Future research should examine these same momentary processes in other populations.

Second, we assumed that the dynamic process between these variables occur such that an individual perceives an interacting partner's behavior (**A**), responds with grandiosity or vulnerability (**B**), and ultimately responds across dimensions of dominance and warmth (**C**). However, as the dynamic associations are contemporaneous, we cannot determine whether this is the appropriate temporal ordering of variables and must rely on theoretical assumptions. By providing the within-person correlations in Table 1, readers could test alternative path models. Future work may wish to look within-situation at a higher level of resolution (i.e., shorter lengths of time between assessments) to help resolve these issues (e.g., Hopwood, 2018). However, although methods exist for assessing overt behavior in a situation, perceptions of others' behavior and self-states will prove challenging.

Conclusions

Clinical theory suggests that individuals fluctuate in their levels of grandiosity and vulnerability (Pincus & Lukowitsky, 2010; Wright, 2014; Pincus, Cain, & Wright, 2014; Ronningstam, 2009, 2011; Kernberg, 1975). Little systematic empirical research has examined these fluctuations, and accordingly they are not well understood. Interpersonal problems have been proposed to be at the core of these fluctuating patterns (e.g., Grubbs & Exline, 2016). The present study sought to provide contextual information surrounding momentary assessments of grandiosity and vulnerability using contemporary interpersonal theory (Hopwood, 2018; Pincus, 2005; Hopwood, Pincus, & Wright, 2019). These results have important implications for how we think about studying these momentary associations. Indeed, if individuals fluctuate between states of grandiosity and vulnerability, the interpersonal response may be a clue to such a change. This study was the first to include momentary assessments of grandiosity and vulnerability in the context of an interpersonal situation. Thus, this research serves as a baseline for future research seeking to examine fluctuations through a contextual lens in the field of narcissism.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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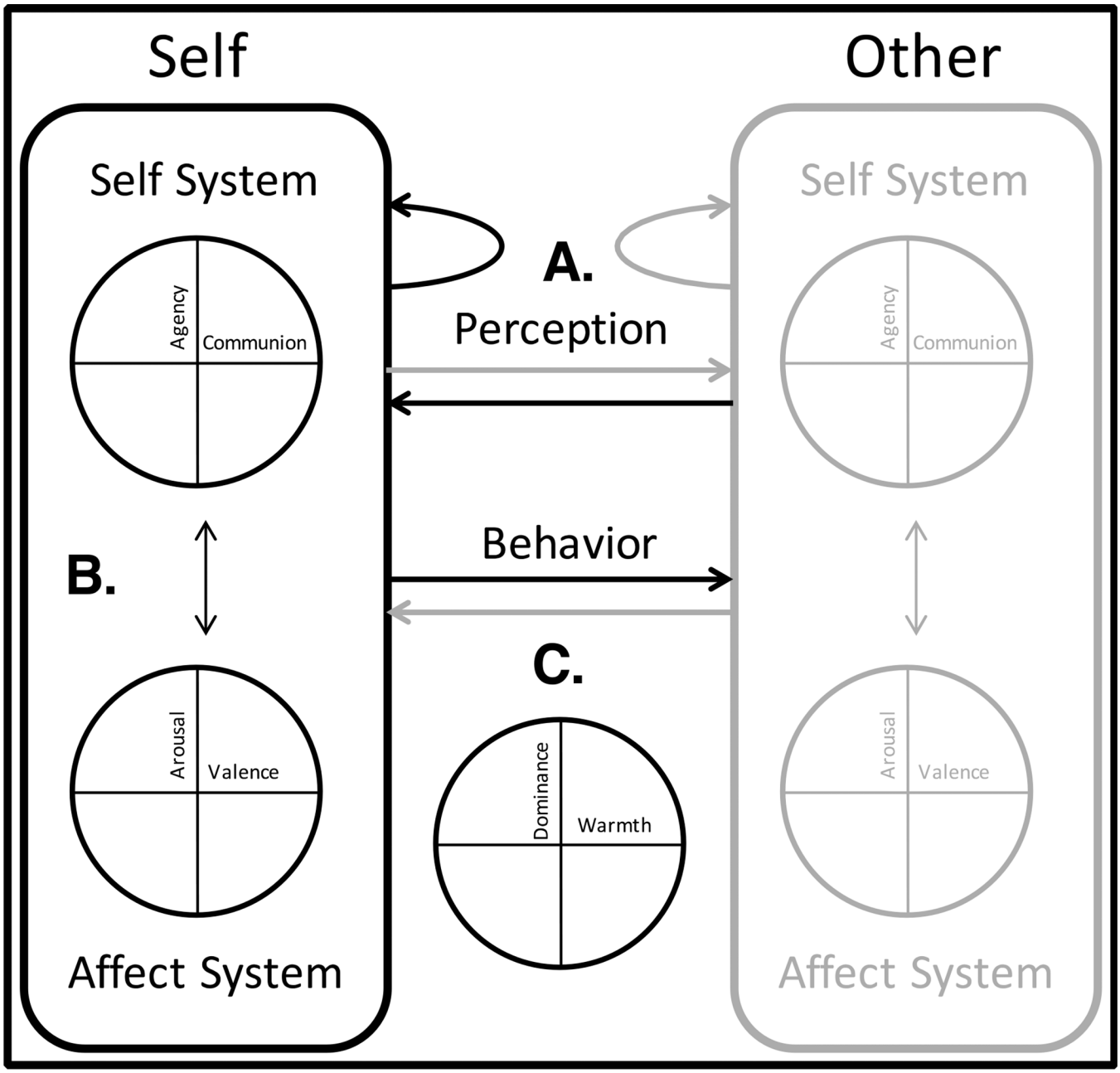

Figure 1.
The interpersonal Situation.

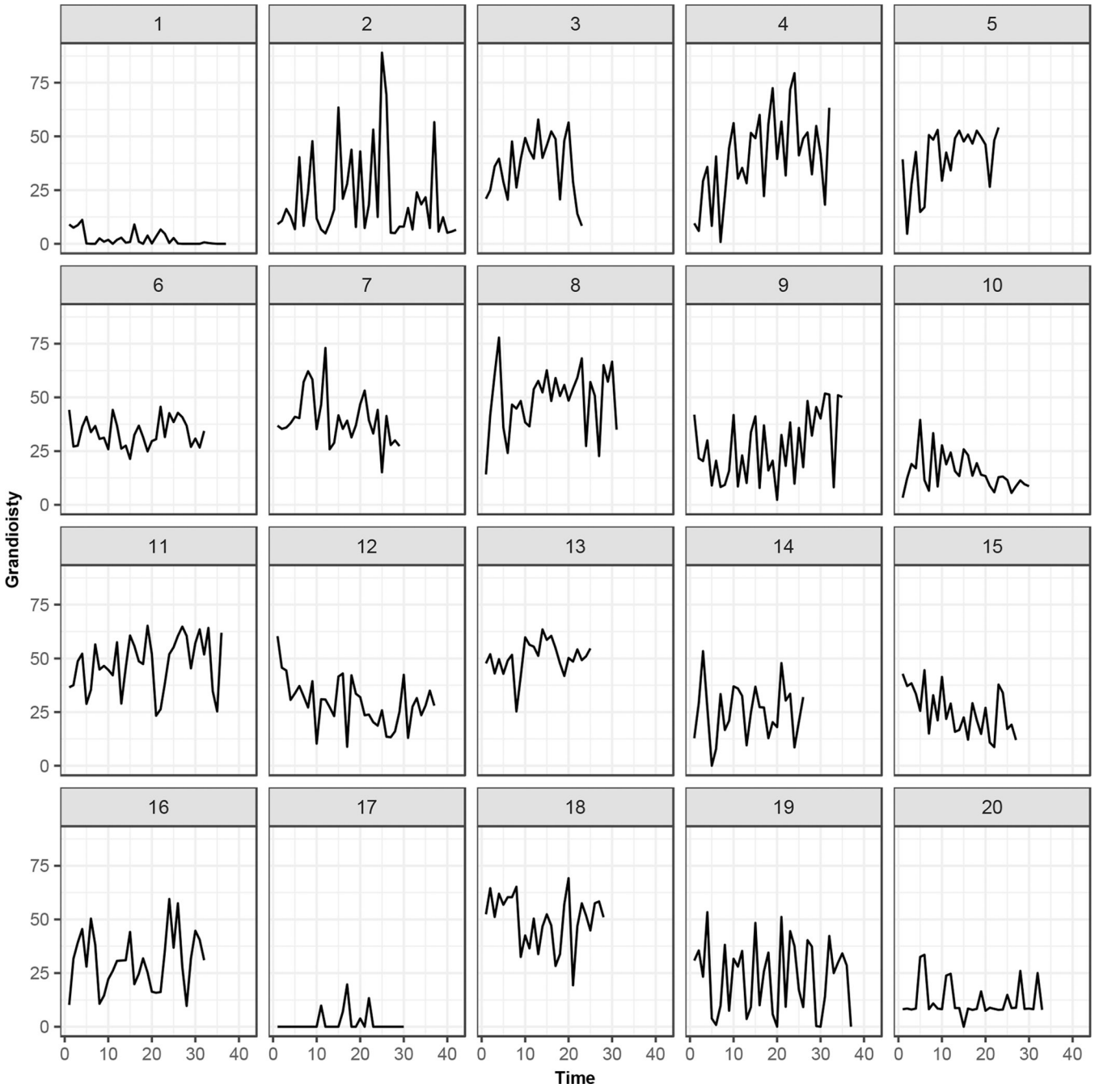

Figure 2.
A subset of participant's individual data across time for momentary grandiosity.

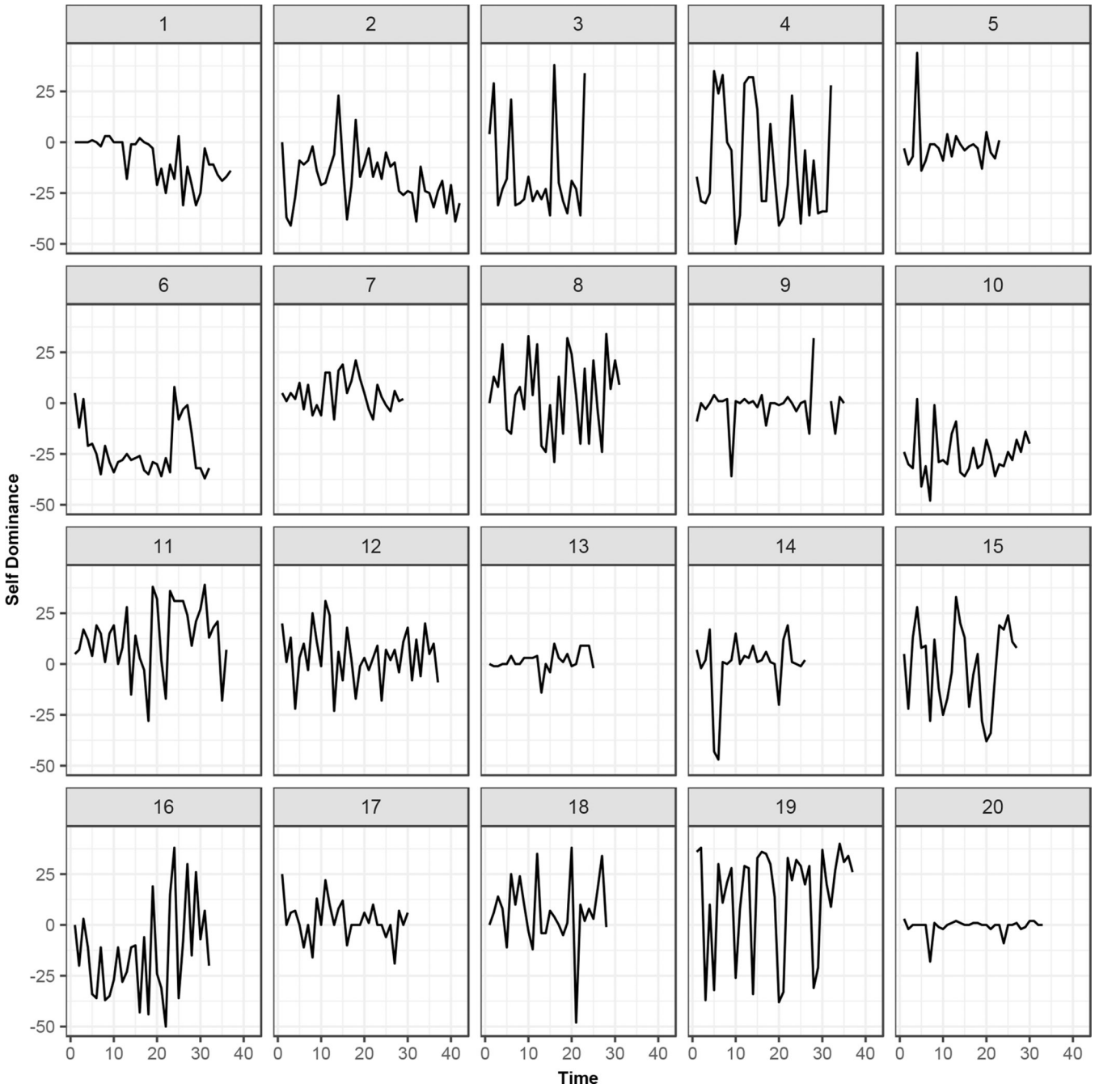

Figure 3.
A subset of participant's individual data across time for momentary ratings of self-dominance.

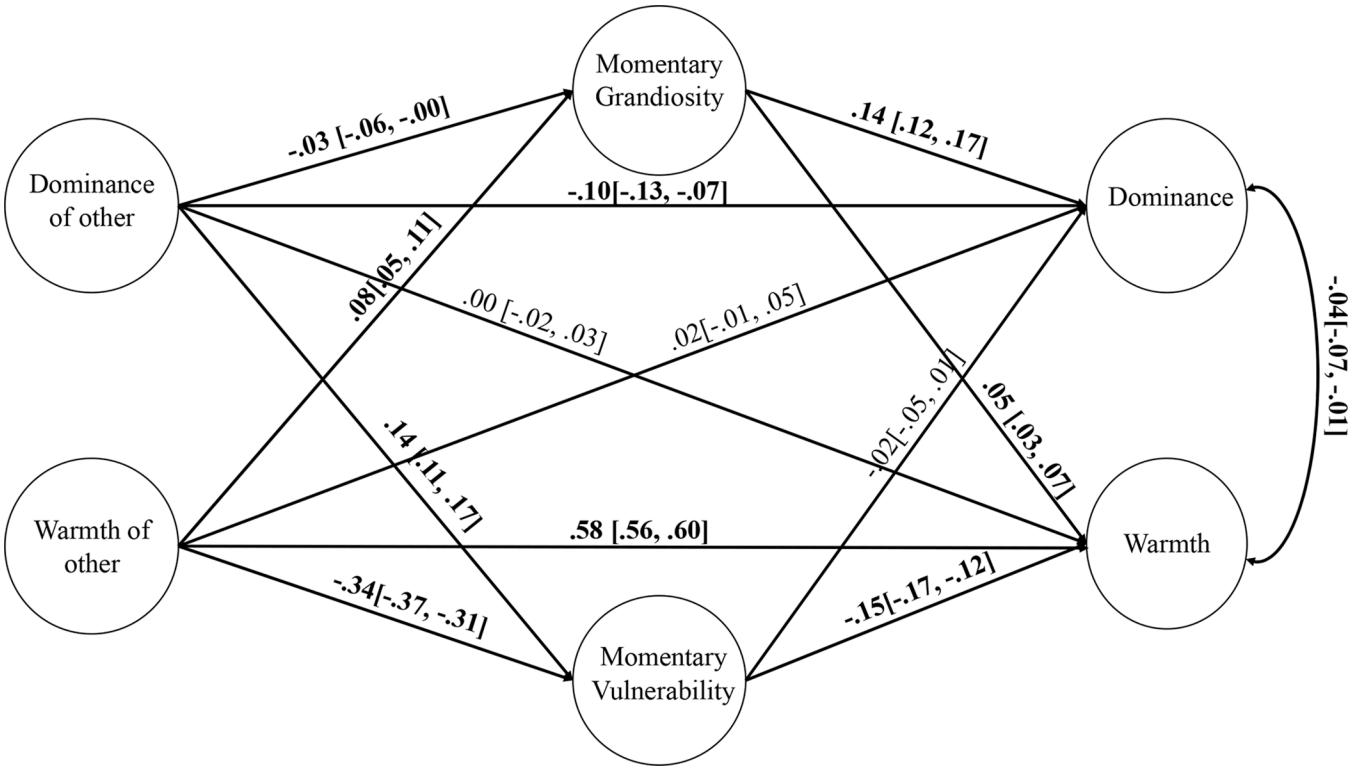

Figure 4.

Within-person model for examining the momentary relationship between perceptions of dominance and warmth, consequential narcissism, and one's own behavior. NGS = Narcissistic Grandiosity Scales; NVS = Narcissistic Vulnerability Scale. NGS and NVS were correlated at .08 (p<.001) in the moment. Bolded values represent those in which the credibility interval did not contain zero.

Table 1.

Correlations among interpersonal behavior, perceptions, and state narcissism

		1	2	3	4	5	6
1	Dominance (Self)	−	**.02**	**−.10**	**.06**	**.20**	−.01
2	Warmth (Self)	−.11	-	**−.13**	**.67**	**.11**	**−.36**
3	Dominance (Other)	**.73**	−.06	-	**−.16**	**−.03**	**.21**
4	Warmth (Other)	−.11	**.97**	−.11	-	**.09**	**−.40**
5	Grandiosity	**.20**	**−.16**	.09	**−.19**	-	**.03**
6	Vulnerability	.09	**−.54**	.07	**−.56**	**.64**	-

Note. Values above the diagonal are momentary (i.e., within-person) associations and values below are individual differences (i.e., between-person) associations. Values in bold are those for which the credibility interval did not contain zero.

Table 2.

Correlational associations with averages of random slopes and momentary variables.

	Dominance	Warmth	Dominance_Other	Warmth_Other	Grandiosity	Vulnerability
$B_{\text{Grandiosity}\rightarrow\text{Dominance}}$	−.07	.16	−.06	.20	−.02	−.03
$B_{\text{Vulnerability}\rightarrow\text{Dominance}}$	−.10	.02	−.19	.03	.11	.04
$B_{\text{Grandiosity}\rightarrow\text{Warmth}}$	−.13	−.14	−.10	−.12	.10	.02
$B_{\text{Vulnerability}\rightarrow\text{Warmth}}$	−.01	−.13	.07	**−.19**	.10	.18
$B_{\text{Dominance\_Other}\rightarrow\text{Grandiosity}}$	−.11	**−.26**	−.03	**−.27**	−.11	.15
$B_{\text{Dominance\_Other}\rightarrow\text{Vulnerability}}$	−.14	**−.28**	−.04	**−.24**	.11	**.22**
$B_{\text{Warmth\_Other}\rightarrow\text{Grandiosity}}$	.08	.04	.16	.02	**.34**	.02
$B_{\text{Warmth\_Other}\rightarrow\text{Vulnerability}}$	−.09	.10	−.13	.08	**−.24**	**−.38**
$B_{\text{Dominance\_Other}\rightarrow\text{Dominance}}$	−14	**−.20**	**−.27**	**−.20**	.10	.17
$B_{\text{Dominance\_Other}\rightarrow\text{Warmth}}$	**.23**	−.03	.19	−.08	**.23**	.20
$B_{\text{Warmth\_Other}\rightarrow\text{Dominance}}$	**.45**	−.16	**.48**	**−.22**	.11	.16
$B_{\text{Warmth\_Other}\rightarrow\text{Warmth}}$	−.04	.12	−.09	**.25**	**−.25**	**−.23**

Note. Bolded values are those for which the credibility interval does not contain zero.