Reciprocal Relationships between Narcissism and Agentic versus Communal Work Activities across the First Six Years of the Career

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Reciprocal Relationships between Narcissism and Agentic versus Communal Work Activities across the First Six Years of the Career

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Abstract

The vast majority of studies on trait narcissism have adopted a static unidirectional approach, documenting the mainly detrimental effects of this trait on a variety of work outcomes. The current study contributes to this literature by adopting a novel bidirectional perspective, investigating how trait narcissism shapes and is shaped by our experiences at work. Specifically, this study examines how trait narcissism develops during the first six years after the transition from college to work, and how agentic versus communal work demands may either enhance or diminish the development of this trait. Reciprocal relationships between narcissism and subjective and objective work activities are examined in a sample of 1,513 college alumni who were assessed four times across a time period of six years. Both selection (i.e., narcissism shapes work activities) and socialization effects (i.e., narcissism is shaped by work activities) were examined using bivariate latent change score models. Results showed that trait narcissism prior to the college-to-work transition positively predicted the selection of agentic work activities at the beginning of the career, but not future changes in these activities. Importantly, the results regarding socialization effects indicated that engagement in communal activities, particularly those that require relating with others at work (e.g., to help them), diminished trait narcissism over time.

Keywords: narcissism, work demands, agency, communion, reciprocal relationships, maladaptive traits
In the past decade, narcissism has received increased attention in the organizational behavior (OB), careers, and management literatures (Hirschfeld & Van Scotter, 2019; LeBreton et al., 2018; Smith et al., 2018), where it is commonly portrayed as a mixed blessing. On the one hand, narcissism predicts quicker career advancement (e.g., Rovelli & Curnis, 2021; Wille et al., 2019) and leader emergence (e.g., Grijalva et al., 2015; Nevicka et al., 2011) while narcissistic leaders are also more likely to be seen as charismatic than their less narcissistic counterparts (Galvin et al., 2010). On the other hand, narcissism has been linked to adverse outcomes because it undermines people’s own performance at work (e.g., Judge et al., 2006) while also causing harm to the people they are working with (e.g., Braun et al., 2019; O’Boyle et al., 2012) and the organization as a whole (e.g., O’Reilly et al., 2018).

Given its importance for a variety of organizational and career-related matters, an important question concerns the developmental properties of trait narcissism, particularly because awareness is growing that narcissism development might be influenced by one’s work experiences (e.g., Grijalva & Harms, 2014). For instance, Campbell et al. (2011) raise the theoretical possibility that certain professional positions, and more specifically positions of power, might stimulate growth in narcissism (p. 273). So far, however, research has mainly adopted a static and unidirectional perspective in which narcissism is considered a (stable) predictor of work outcomes rather than an outcome of one’s work experiences. Indeed, with only a few exceptions (i.e., Wetzel et al., 2020; Wille et al., 2019), the focus has been on predicting the outcomes of this dark trait, without considering work-related factors leading up to the development of trait narcissism. The main purpose of the current study is to challenge this predominant unidirectional perspective and supplement it with a new and much-needed perspective that explicitly acknowledges not only the effects from narcissism to work but also from work to narcissism. Specifically, the current study addresses the
unanswered question to what extent specific work demands and narcissism development are interrelated over time.

Narcissism is a complex personality construct that has been conceptualized in various ways (for an overview, see for instance Campbell et al., 2011). In the current study, we focus on grandiose narcissism (in contrast to vulnerable narcissism; Wink, 1991), which is the most common conceptualization of narcissism in organizational literature. Hallmark characteristics of this form of narcissism are a grandiose self-concept, feelings of superiority, a strong need for power, self-centeredness, a sense of entitlement, and a lack of empathy (Ackerman et al., 2011; Back et al., 2013; Urbonaviciute & Hepper, 2020). Further, a commonality in definitions of (grandiose) narcissism is that it is conceived as a relatively stable individual difference variable (Campbell et al., 2011), which also explains why it is predominantly conceptualized as a predictor rather than an outcome.

Importantly, personality research in organizational contexts has recently evolved towards a more dynamic approach to personality wherein the focus lies not only on understanding how personality predicts work-related phenomena but also on the reversed effects from work to personality change (Sosnowska et al., 2021). Recent evidence supports the idea that personality continues to develop throughout adulthood (Denissen et al., 2019), and that individual developmental trajectories can be shaped by one’s work and career, including – but not limited to – job attitudes (e.g., Wille et al., 2014a), work characteristics (e.g., Wu et al., 2020), vocational interests (e.g., Wille & De Fruyt, 2014), and career success indicators (e.g., Hirschi et al., 2021) such as the attainment of leadership positions (e.g., Li et al., 2021; Nieß & Zacher, 2015). Indeed, this view of personality as a construct that is in constant development has deepened and expanded research on personality in the work context (Tasselli et al., 2018).
Importantly, systematic reviews of this literature (e.g., Woods et al., 2019) have indicated an exclusive focus on so-called bright-side (e.g., Big Five) traits when investigating personality development in work-related contexts, which means that the development of dark-side traits such as narcissism in conjunction with work experiences is still poorly understood (Wille et al., 2023). Although there is by now substantial evidence that also narcissism continues to develop and change once adulthood is reached (Barlett & Barlett, 2015; Carlson & Gjerde, 2009; Chopik & Grimm, 2019; Foster et al., 2003; Grosz et al., 2019; Klimstra et al., 2020; Orth & Luciano, 2015; Roberts et al., 2010; Wetzel et al., 2020; Wille et al., 2019), scant research has explored the role of work-related experiences in this developmental process.

So far two prior studies have provided initial insights into this matter. First, Wille et al. (2019) examined the long-term reciprocal relationships between trait narcissism change and upward job mobility. Although they demonstrated that trait narcissism indeed changes in adulthood, and that part of this change can be (positively) linked to upward job changes, their study did not allow for a deeper understanding of the precise work demands that explain these developmental effects on trait narcissism. Similarly, Wetzel et al. (2020) investigated the effects of a broad range of (retrospectively evaluated) life events and circumstances on trait narcissism development, reporting that decreases in narcissism were smaller for individuals in supervisory positions than for non-supervisors. Although informative, these results again raise important unanswered questions about the exact nature of these effects. For instance, it is unclear to what extent such personality changes reflect pervasive socialization

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1 A third study, by Giacomin and Jordan (2014), also takes a dynamic approach to narcissism, but focuses on short-term variability in narcissism states rather than long-term change in trait narcissism. Specifically, these authors showed in a series of lab experiments how priming participants with a communal focus influences their state of narcissism at that specific point in time. We do not discuss this work extensively here given the significant differences with the current study which looks at the long-term impact of work experiences on trait narcissism in a naturalistic setting rather than a lab context. However, given the potential connection between recurring state expressions and trait change (see further), we do mention this study later when we hypothesize on socialization effects.
to particular (supervisory) work role demands (e.g., leading others; Woods et al., 2019), or rather a kind of adaptation to positions generally characterized by higher prestige. Taken together, studies on how people’s work life affects their trait narcissism are still scarce and limited to the potential effects of leadership role occupancy. The current study addresses this void by zooming in on a broader set of work-related demands that people may encounter as part of but also beyond supervisory positions and that have the potential to either enhance or diminish trait narcissism across time.

Our study adds to the literature in several important ways. In terms of empirical contributions, this is one of the very few true longitudinal studies in the organizational sciences which investigates trait narcissism at multiple timepoints, thus documenting the developmental properties of this personality trait during peoples work lives. Our study complements earlier work on narcissism development and extends it in several ways. First, the current study documents the development of narcissism during a clearly delineated and particularly relevant time period, namely the first six years of the professional career following the college-to-work transition. The first years of early career establishment have been proven to be of critical importance to adult personality development because, in this particular time frame, people need to select and selectively expand the number and types of roles that they hold (e.g., Golle et al., 2019; Reitz et al., 2020; Wille et al., 2012). In addition, and in contrast to the work by Wille et al. (2019) which examined changes in trait narcissism between three time points across a 22-year interval, the current study takes a more fine-grained approach by considering four measurement points across six years. Given the potentially volatile nature of people’s occupational environments during this stage of the career (e.g., Biemann et al., 2012), it is important to track (changes in) these occupational characteristics in sufficient detail while also avoiding flawed retrospective assessments of these occupations (e.g., Wetzel et al., 2020). Four assessment points distributed equally over
the course of the six-year period provide sufficient information to capture the presumed
differences in both work environments and personality (Ployhart & Vandenberg, 2009).

At the conceptual level, the current study contributes to the literature by theorizing on
the nature of work environments and their impact on trait narcissism development.
Specifically, the present study is the first to specify and subsequently test the psychologically
relevant conditions at work that can be hypothesized to diminish and enhance trait narcissism.
As summarized by Woods et al. (2019), the effect of work on personality development can be
understood by considering work demands as the factors that activate or inhibit the expression
of personality traits (e.g., Tett & Burnett, 2003) which can then, over time, be brought into a
developmental cycle. However, to date, there exists a glaring lack of knowledge about the
specific factors at work that may diminish or foster the development of narcissism. Indeed,
previous research has been limited to the effects of notable events during the career, more
specifically upward transitions (Wetzel et al., 2020; Wille et al., 2019). Although it is hereby
assumed that supervisory roles come with a specific set of work-related demands that can
influence narcissism development, these demands have not yet been clearly defined, let alone
been tested empirically. Moreover, impactful experiences at work may be much more diverse
than only reflecting those work demands (e.g., leading others) that are characteristic of
supervisory positions. To develop a more holistic understanding of how work influences trait
narcissism development, the current study considers a broader set of work demands that are
not specific to supervisory positions. We specifically propose that, given their conceptual link
with narcissism, the distinction between agentic and communal work demands may be a
particularly useful framework in this context.

To examine the reciprocal relationships between trait narcissism and work demands,
we propose a novel approach to conceptualize agentic and communal work demands.
Specifically, we posit that work demands can be conceptualized through concrete work
activities that can be mapped on the agency-communion framework. By including a sufficiently broad set of work activities, this approach allows covering both demand dimensions in a nuanced manner, differentiating between relevant subdimensions of agency and communion. In addition, a limitation of the previous work on narcissism development and life/career events (e.g., promotion) is that these studies relied exclusively on (subjective) self-reports of these events, which may be colored by the narcissist’s grandiose mindset and affected by bias such as cognitive dissonance (Rauthmann, 2016). To remedy these problems, the present study relies on both subjective self-reports and externally rated work role demands, which allows for a stringent test of the reciprocal relationships between trait narcissism and work.

Finally, insights into the malleability of trait narcissism and the particular work demands that may foster or diminish this trait are highly relevant from a practical point of view. In addition to “screening for this trait” in selection contexts (e.g., De Fruyt et al., 2009), such knowledge could potentially open the door for coaching interventions aimed at influencing the development of this trait through the increase and/or reduction of specific day-to-day work activities. The idea of targeted personality change interventions has gained significant attention over the past several years with promising effects for various traits within the framework of the Big Five (e.g., Hudson et al., 2020). Extending these applications to narcissism might become a promising new way of dealing with this trait, especially in job contexts where it is known to be problematic (e.g., leadership).

**Theoretical Background and Hypotheses**

We propose that for making predictions about narcissism development at work, we can build on theoretical frameworks that explain pervasive trait changes in a bottom-up manner. According to this perspective, trait change can be understood as the result of enduring personality states.
State-Trait Models of Personality

Contemporary theoretical perspectives on personality functioning converge on the idea that traits can be understood as tendencies to be in certain emotional, motivational, cognitive, and behavioral states. As an example, Fleeson (2001) conceptualized personality as “density distributions of states” and showed that people’s average levels of states as measured through the experience sampling method align with their trait scores as obtained through standard personality questionnaires. In addition, a second important feature of contemporary trait definitions is that traits are strongly tied to the situation in which they are expressed. For example, according to Cybernetic Big Five Theory (CB5T; DeYoung, 2015), traits describe responses to specific classes of stimuli, such that only in situations where people are exposed to trait-relevant stimuli, individual differences in the corresponding trait will become apparent (Corr et al., 2013). Finally, and of particular relevance for the current study, these state-trait models also posit that the accumulation of state expressions can, over time, result in more pervasive changes in the associated traits. Put differently, the repeated activation of personality states by situational features has been theorized to translate into long-term change in personality traits (Wrzus & Roberts, 2017).

Building on those frameworks, a critical question becomes: Which situational features at work have the potential to “activate” narcissism development? For the current study, we rely on the Demands-Affordances TrAnsactional (DATA) model which outlines the different levels of work-related situational features that may impact upon personality development (Woods et al., 2019). Specifically, we build on the notion that work demands require individuals to respond adequately using their dispositions (i.e., affordances) such that an optimal level of person-work fit remains safeguarded over time. Arguably the most straightforward way to operationalize these demands is by describing what people are
actually doing in their jobs and categorizing these work activities as demands that can either inhibit or enhance the development of a trait.

**Narcissism and Agentic versus Communal Work Demands**

As indicated above, little is currently known about the specific demands at work that have the potential to activate and – eventually – change trait narcissism. In the current study, we turn to the framework of agentic versus communal behaviors (Bakan, 1966), which is among the most influential pairings of abstract psychological distinctions (Trapnell & Paulhus, 2012). When applied to the work context, agentic demands refer to activities that require assertive interaction and behaviors related to competence, achievement, uniqueness, separation, and focus on the self. Communal demands, conversely, refer to activities that require friendliness and warmth and behaviors directed toward relatedness, connection, and a focus on others (Bakan, 1966; Campbell & Foster, 2007; Gebauer et al., 2012). In socioanalytic theory (Hogan, 1982), the distinction between agency and communion is captured by the two primary motives underlying human behavior, namely “getting ahead” and “getting along”.

The concepts of agency and communion have already been linked to narcissism in other streams of research (e.g., Campbell & Foster, 2007; Gebauer et al., 2012; Giacomin & Jordan, 2014). For instance, when looking at associations with Big Five traits, Crowe et al. (2019) found that narcissism shows a particular (positive) association with the agentic aspects of extraversion (e.g., assertiveness and risk-taking), and much less with the communal components (e.g., warmth and positive emotions). In the extended agency model (Campbell & Foster, 2007), one of the four fundamental narcissistic qualities is a greater concern with agency than communion (see also Wiggins, 1991). Specifically, narcissists care more about themselves than about others, and the need to get ahead is more easily satisfied through agentic than through communal behavior. As we hypothesize below, one important way to
maintain such self-views of grandiosity, high importance, and entitlement is through the selection of work activities that accommodate their preferred agentic behaviors, while avoiding more communal situations. However, the bidirectional perspective that we introduce also entails reversed effects wherein the selection of agentic (communal) work activities has the potential to subsequently foster (inhibit) the development of trait narcissism. Below, we refer to these reversed effects (i.e., from work to personality change) as socialization effects.

**Selection Effects**

Our first set of hypotheses pertains to selection effects from personality to work demands. Selection effects have a long history in work psychology (e.g., Schneider, 1987) and generally refer to people opting for work environments that fit their personality (e.g., Schneider, 1987). Career entrance is a particularly relevant period in this regard, as it requires young college graduates to explore the labor market and find an environment—and accompanying demands—that fit their desires and needs.

Research investigating the effects of dark side personality on vocational choice is scarce (Hirschfeld & Van Scotter, 2019) and has mainly focused on the relationships with vocational interests. Based on two studies, Jonason et al. (2014) concluded that narcissism is associated with greater interest in enterprising and cultured (e.g., “acting in a play or film”) jobs, which offer opportunities to be socially dominant, admired, and/or in the center of attention. In the same vein, research has linked narcissism to potentially status-enhancing occupational choices, such as being self-employed (Harms et al., 2020; Leung et al., 2021) or occupying leadership positions (Grijalva et al., 2015). An important limitation of these studies, however, is the predominant use of cross-sectional designs which do not allow separating selection from socialization effects (see further).

Various theoretical frameworks help to understand the selection of work demands. Person-environment (P-E) fit theory posits that people are attracted to (and also tend to
perform better in) work environments that are comprised of challenges, values, and demands that are congruent with their idiosyncratic preferences and needs (Kristof-Brown et al., 2005). Along the same line, self-consistency theory predicts that people seek out roles that are consistent with their self-appraisals (Korman, 1970; Lecky, 1945; Tesser, 1988). The central tenet is that people develop an understanding of who they are and are motivated to subsequently select situations that allow them to act in a way that is consistent with this self-image. For people with grandiose self-concepts, this means that they will be inclined to seek work activities that are aligned with their agentic mindset, such as activities that offer opportunities to take the lead over others and activities directed toward personal achievement.

More formally, we hypothesize that:

**Hypothesis 1a:** College students’ trait narcissism scores prior to the college-to-work transition positively predict agentic work activities at the career start.

Based on the same mechanisms, we expect narcissistic individuals to shy away from communal work activities in which the focus lies on serving others instead of the self. Specifically, grandiose narcissism correlates negatively with agreeableness (Miller & Campbell, 2008), a trait that encompasses a “prosocial and communal orientation” (John & Srivastava, 1999, p. 121). Indeed, individuals high in narcissism do not consider communal traits to be self-descriptive (Campbell et al., 2002; Campbell & Foster, 2007), do not value being seen as communal as much as they value being seen as agentic (Grijalva & Zhang, 2016), and in general show little interest in genuine interpersonal connections (Campbell, 1999). Based on self-consistency theory, it can therefore be expected that narcissistic individuals are less inclined to select communal work activities that involve (deeply) connecting and relating with others, for instance, to help and/or coach them. This leads to the following hypothesis:
**Hypothesis 1b**: College students’ trait narcissism scores prior to the college-to-work transition negatively predict communal work activities at the career start.

The selection effects described above take place initially after the college-to-work transition when people enter the labor market. However, it is unlikely that people’s initial job choices are based exclusively on their underlying motivational drivers, and/or that the concrete work activities in these initial choices already perfectly reflect their idiosyncratic needs and preferences. Career choice is a dynamic process that unfolds over time and attaining P-E fit is typically the result of people adjusting their work environments to make these gradually more aligned with their personal preferences (Nye et al., 2021; Wille et al., 2012; Wille et al., 2014b). This can be achieved during the initial career stage either by—drastically—changing jobs or—in a more subtle form—adjusting work role responsibilities within a given job (e.g., job crafting; Tims et al., 2012; Wrzesniewski & Dutton, 2001). In the theory of work adjustment (Dawis & Lofquist, 1984), this process through which environments change in reaction to people’s personal characteristics is called active adjustment or briefly activity. In the current study, it can generally be expected that the selection processes linked to narcissism will persist over time after people have selected their initial jobs. Either by changing jobs or by manipulating the content of their jobs, people will selectively amplify or reduce certain work activities in an attempt to heighten the level of P-E fit. This translates into the following hypotheses:

**Hypothesis 2a**: Trait narcissism at career start positively predicts increases in agentic work activities.

**Hypothesis 2b**: Trait narcissism at career start negatively predicts increases in communal work activities.
Socialization Effects

In addition to the selection effects from personality to (changes in) work characteristics, dynamic approaches to personality explicitly account for reversed effects from work to (changes in) personality. In the theory of work adjustment (Dawis & Lofquist, 1984), this process through which people change in reaction to their idiosyncratic work environments is called reactivity and is also referred to as socialization in work psychology (Frese, 1982; Wille & De Fruyt, 2014).

The state-trait models reviewed above allow us to hypothesize how agentic and communal work demands can influence trait narcissism development. Specifically, as people repeatedly engage in agentic activities (e.g., leading others), it can be expected that—through accumulated state activation—the personal tendencies or affordances that are expressed in these activities (e.g., social dominance) will gradually be strengthened (DeYoung, 2015; Woods et al., 2019; Wrzus & Roberts, 2017). The developmental process underlying this form of socialization is straightforward: people select work activities that fit a particular trait and the corresponding activation and expression of this trait in response to these situational demands eventually serves to strengthen and deepen this trait (e.g., the corresponsive principle; Roberts et al., 2003). Conversely, the expected negative selection effect between narcissism and communal activities implies that engagement in communal activities, where the focus lies on accommodating others rather than advocating for the self, should lead to decreases in narcissism over time. Here, socialization involves a different type of developmental process prompted by a situation in which a trait (i.e., narcissism) is not aligned with the environmental demand (i.e., communal focus), and where, in response, behavior needs to be deployed that runs counter to this trait. In line with this, previous work has shown that when a communal focus toward others is experimentally induced (e.g., by priming empathy), people indeed experience lowered levels of state narcissism shortly after
However, it is currently unclear to what extent work activities with a communal focus have the potential to diminish narcissism trait levels more pervasively, as shown over the time frame of several years. The following hypotheses are proposed to test these ideas:

**Hypothesis 3a:** Agentic work activities positively predict increases in trait narcissism.

**Hypothesis 3b:** Communal work activities negatively predict increases in trait narcissism.

**Method**

**Transparency and Openness**

We describe our sampling plan, all data exclusions, and all measures in the study, and we adhered to the Journal of Applied Psychology methodological checklist. Data were analyzed using Mplus 8.4 (Muthén, 2018). Code and data are available in the additional online material and can be accessed via this link. The design and analyses for this study were not preregistered. All research conducted in this study was approved by the Ethical Committee of the Faculty of Psychology and Educational Sciences of Ghent University (Project title: Narcissism at work: Toward a dynamic developmental perspective; Reference number: 2020/11)

**Design and Participants**

This study uses data collected as a part of a broader alumni follow-up project (Monitoring UGent Alumni; MUGentA) organized at Ghent University. Initiated in 2014, the purpose of the project is to document college students’ school-to-work transition and to monitor their early career development up to six years after graduation. Three months prior to graduation (i.e., March 2014 = Time 1; T1), all final-year students received an email in which the project was outlined. Students who were willing to participate could access the first online survey through a weblink. All participants were assured that their information would
be treated confidentially and that contact information would only be used to organize biannual follow-up assessments. Data for the current study come from the T1 assessment and three follow-ups conducted: after 2 years on the labor market (2016; T2), after 4 years (2018; T3), and after 6 years (2020; T4). At each wave, a broad set of variables were included tapping into individual differences and career choice and development. Prior research has used only (a small part of) the T1 data collected in this project for the purpose of instrument validation (Holtrop et al., 2020). The current study is the first to use data collected at all four waves. There is no overlap with variables used in previous research.

The sample at T1 included 1,513 participants (64% female) recruited from the 11 different faculties at Ghent University. The mean age of participants at T1 was 22.84 years ($SD = 1.44$; range 20 to 31). At every follow-up, all participants of this initial T1 sample were contacted and invited to participate.

The sample sizes across the four waves vary according to the variables that are considered, ranging between 467 and 1,317 (see Table 1). Selectivity in dropout was examined using independent samples t-tests (see additional online material). Specifically, continuers and dropouts were compared in terms of T1 narcissism scores for time points T2, T3, and T4. At every time point, continuers’ narcissism scores were not significantly different from dropouts’ scores. Next, the T2 work activities were used to compare continuers and dropouts at T3 and T4. For both subjective and objective work activities (see further), continuers’ scores were not significantly different from dropouts’ scores. Finally, we also ran Little's (1988) multivariate test using the SPSS Missing Values Analysis module (Howell, 2007). We could not reject the null hypothesis that missingness was completely at random (MCAR; $\chi^2 = 987.45$, $df = 943$, $p = .15$), which indicates the probability of nonresponse in this sample is unrelated to any of the assessed study variables.
Measures

Narcissism (T1, T2, T3, and T4)

Narcissism was assessed at each wave using the Short Dark Triad (SD3; Jones & Paulhus, 2014), which is a frequently used measure in organizational literature (e.g., Bernerth et al., 2021; Dierdorff & Fisher, 2021; Fehr et al., 2020). Although this instrument provides scores on all three dark triad traits (i.e., narcissism, Machiavellianism, psychopathy), the current study only focuses on SD3-narcissism which is measured using the nine SD3-items rated on a 5-point Likert scale whereby 1 = strongly disagree and 5 = strongly agree. An example item is (’I know that I am special because everyone keeps telling me so’ – item 4). Cronbach’s alphas were .67 at T1, .66 at T2, .62 at T3, and .69 at T4.

Although previous research already supported the validity of SD3-narcissism (e.g., Jones & Paulhus, 2014; Miller et al., 2017), we conducted an additional validation study (N = 400) which showed that our Dutch translation of this scale correlated .76 with the Narcissistic Personality Inventory (NPI-40; Raskin & Hall, 1979), .62 with the NPI-13 (Gentile et al., 2013), and .65 with the Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013). Regarding the subdimensions of these instruments, SD3-narcissism had the largest correlation with NPI-Leadership/Authority (r = .49, p < .05), NPI-Grandiose/Exhibitionism (r = .50, p < .05), and the Admiration subscale of the NARQ (r = .75, p < .05). Further details of this validation study can be found in the additional online material.

To test the measurement model for narcissism, we conducted a confirmatory factor analysis (CFA) on the T1 scores (i.e., the largest sample). Based on the modification indices and taking theoretical arguments into account (Cole et al., 2007), we added four residual correlations to the model (see Table 2). Specifically, these correlations can be logically explained by the underlying structure of the SD3 (Jones & Paulhus, 2014) given that the
respective items belong to the same subscale, namely Grandiosity for items 3, 4, 7, and 8 and Exhibitionism for items 2 and 6.

We tested for configural, metric, and scalar longitudinal measurement invariance of the narcissism scale using CFA (Vandenberg & Lance, 2000). The measurement errors for the same items were allowed to correlate over time (Finkel, 1995). Results show that constraining factor loadings to be equal over time did not significantly affect model fit. Regarding scalar invariance (i.e., invariance of the intercepts), we obtained partial scalar invariance, freeing six item intercepts (see additional online material). Based on these measurement invariance analyses, we decided to proceed with the partial scalar invariant model in the longitudinal analyses.

**Subjective work activities (T2, T3, and T4)**

Participants’ work demands were operationalized in terms of concrete work activities, which were assessed in two complementary ways. The first way was through subjective self-reports, requiring participants to rate how frequently each of 96 work activities (e.g., ‘show leadership’) needs to be performed at work (1 = rarely or never, 2 = sometimes, 3 = always). The Dutch proprietary instrument used for this purpose includes a broad and diverse range of work activities covering the entire span of Holland’s (1997) six (RIASEC) work environment types. For the current study, a selection of these 96 items was used to specifically gauge agentic and communal work activities. To make this selection, a two-step procedure was followed. First, two raters (i.e., the first and second author of this paper) independently coded

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2 This instrument is similar to more established proprietary instruments such as the Position Classification Inventory (Gottfredson & Holland, 1991) in the sense that it describes jobs using the same frequency response scale in combination with a different set of items that also span the six RIASEC work types. An advantage of sampling activities broadly across these six work types is that this ensures coverage of both agentic and communal occupational role demands (e.g., Koenig & Eagly, 2014). The items shown here (see Tables 3 and 4) are English translations of originally Dutch items and are reproduced with the permission of the test developer (Low Lands Assessment Systems).
each of the original 96 items as either “agentic”, “communal”, or “non-relevant”. Agentic work activities require assertive interaction and behaviors related to competence, achievement, uniqueness, separation, and focus on the self, whereas communal activities require friendliness and warmth and behaviors directed toward relatedness, connection, and a focus on others (Gebauer et al., 2012). The two raters agreed on 88 items (i.e., 91.67% absolute agreement): 21 agentic items, 12 communal items, and 55 non-relevant items. Eight items were coded as agentic by only one of the two raters, but after discussion between the two coders, both agreed to include the eight items in the set of agentic items.

In the next step, all 41 selected items (i.e., 29 agentic and 12 communal) were examined using exploratory factor analysis (EFA) using T2 data (i.e., the largest sample; note that participants were students at T1, which implies that we have no work activities data for that wave). Items with a communality lower than .30 and a factor loading below .30 were excluded (Costello & Osborne, 2005). Factor solutions were also inspected for internal theoretical consistency. This iterative process eventually resulted in a four-factor structure defined by 17 subjective work activity items (see Table 3). Two factors emerged that can be classified as agentic, labeled as Directing (e.g., ‘show leadership’) and Achieving (e.g., ‘achieve goals; score in short term’); and two factors of work activities represent the communal domain, labeled as Relating with others or briefly Relating (e.g., ‘helping people’) and Coaching (e.g., ‘coach or train others’). Cronbach’s alphas of the four work activities ranged between .60 and .86 (see Table 1).

To further examine the measurement model underlying these work activities, we conducted exploratory structural equation modeling (ESEM; Asparouhov & Muthén, 2009) based on the T2 scores. ESEM offers several advantages over traditional CFA in this context. First, ESEM provides an assessment of fit using goodness-of-fit available in traditional
structural equation modeling frameworks. Second, and most importantly, ESEM allows modeling cross-loadings, which can theoretically be expected for the type of work activities assessed here. Specifically, agency and communion have been theorized to represent two orthogonal axes shaping a circumplex structure (Wiggins, 1991), and the theoretical position of the work activities in this structure will represent a weighted combination of both agency and communion. Indeed, the results in Table 4 indicate several cross-loadings\(^3\), but items consistently have the highest loadings on their corresponding factor\(^4\).

Finally, we tested configural, metric, and scalar longitudinal measurement invariance of the subjective work activities. The ESEM results indicate that the measurement model is invariant across time (see additional online material).

**Objective work activities (T2, T3, and T4)**

A complementary way to assess participants’ work demands consisted of gathering objective information on their work activities using the Occupational Information Network (O*NET) database (Peterson et al., 2001). O*NET contains extensive quantitative information about almost 1,000 occupations and has been used in previous research to obtain objective assessments of the work environment (e.g., Burrus & Way, 2017; Le et al., 2011; Wille et al., 2013). We used participants’ self-reported job titles and main tasks reported at

\(^3\) As noted by an anonymous reviewer, one item (i.e., *Break the routine, use humor, create variation*) of the factor Relating is double-barreled (or even triple-barreled) and touches on different activities at once. This can also explain why this item showed stronger cross-loadings compared to all other items. However, its strong primary factor loading with Relating (.48) clearly indicates its association with this particular factor. The common theme is that a spontaneous and/or humoristic interaction style is used to establish a communal connection with others.

\(^4\) Based on a reviewer question, we also tested a measurement model which included both the narcissism items and the subjective work activity items (using T2 data). This model combined the ESEM model for the work activities with the one-factor model for narcissism. Factor loadings were constrained such that the narcissism items were not allowed to load on the work activity factors, and the work activity items did not load on the narcissism factor. The results showed a pattern of factor loadings for the subjective work activities which is comparable to the pattern reported in Table 4, with all activities loading primarily on their intended factor. All narcissism items also loaded significantly \((p < .05)\) on the narcissism factor in this combined model. Finally, the model fitted the data well \((\text{RMSEA} = .03, \text{CFI} = .95, \text{TLI} = .94, \text{SRMR} = .04, \chi^2(246, N = 717) = 440.9, p < .05)\).
T2, T3, and T4 to search for an equivalent O*NET title at each wave. This was done by two trained research assistants who acted as independent coders. The absolute agreement between the two coders across the three waves was 59.92%. This percentage of agreement should be evaluated keeping in mind that (a) the qualitative information provided by participants in many cases left some room for interpretation and (b) O*NET typically reports several potentially relevant job titles for often closely related jobs (e.g., “pharmacists” and “pharmacy technician”).

The O*NET content model specifies a large number of features that can be used to characterize individual jobs (see https://www.onetcenter.org/overview.html), including work activities (e.g. “selling or influencing others”, “training and teaching others”). All 41 job descriptors that are incorporated in the O*NET model were independently coded by two different coders as either “agentic”, “communal”, or “non-relevant”. The two coders agreed on 29 descriptors (i.e., 70.73% absolute agreement): three coded as agentic, five coded as communal items, and 21 coded as non-relevant. Only one of the two coders additionally coded six items as agentic and seven as communal. After discussion, it was decided to include these six agentic and seven communal items in subsequent analyses. For every job title, O*NET provides quantitative information for each of these job descriptors, and this is referred to as the objective work activities in the current study.

Analogous to the subjective work activities, in the next step, these 21 descriptors (i.e., 9 agentic and 12 communal) were examined using EFA (based on O*NET scores that were aggregated across the two raters, see next paragraph). This again resulted in a four-factor structure defined by 12 descriptors closely resembling the solution that was obtained for the subjective work activities: two factors (i.e., Directing and Achieving) that can be classified as agentic, and two factors (i.e., Relating and Coaching) that belong to the communal domain. Table 5 shows the 12 O*NET work activities included in these four factors.
A final step consisted of determining participants’ scores on each of the objective work activities. Interrater reliabilities (intra-class correlation coefficients; ICCs) were calculated for the two coders who coded the job titles using O*NET, to verify if their scores could be aggregated (Grosz et al., 2019). All ICCs for the four objective work activities scales and underlying descriptors at each measurement point can be found in the additional online material. Twenty-five ICCs (69.44%) at the item level and nine ICCs (75%) at the scale level were greater than .80, whereas the remaining ICCs ranged between .67 and .78. Based on this, we decided to use the aggregated scores. Cronbach’s alphas ranged between .67 and .88 (see Table 1).

Statistical Analyses

The longitudinal relationships between narcissism and work activities were tested using Bivariate Latent Change Score (BLCS; McArdle, 2001) models. Even though BLCS models often use scale scores as model indicators, there are at least two important disadvantages to this approach. First, being an average item score (or sum score), scale scores assume a simple structure in which each item loads on one and only one factor. This is at odds with the measurement model for the subjective work activities, which follows an ESEM structure that is characterized by a set of primary loadings and several cross-loadings. Second, because scale scores are computed by averaging the scores of all scale items, they assume full measurement invariance. Also this is at odds with our findings, which showed partial scalar invariance for narcissism. To preserve the measurement structure of our instruments (e.g., acknowledging the cross-loadings when modeling subjective work activities) and to work with the most invariant models, we modeled narcissism and work activities as latent variables. However, given the complexity of estimating all latent variables and structural relationships in one and the same model, a multistage procedure was adopted.
Specifically, the final (most invariant) measurement models for narcissism and objective and subjective work activities – as outlined above – were used to obtain factor scores, which were subsequently used in the BLCS models to estimate the hypothesized structural relationships between the variables (see Morin et al., 2016a, 2016b for a similar approach).

In the BLCS model (see Figure 1), the narcissism and work activities scores at time T (e.g., $N_{T2}$) are a function of an initial latent narcissism and work activities intercept and a linear accumulation of latent changes in narcissism and work activities leading up to time T. Those latent changes consist of three components: (1) a (linear) constant slope factor (S), (2) the impact of a variable at the previous state on itself (self-feedback, as captured by the $\beta$ parameters), and (3) the impact of the other variable at the previous state (coupling, as captured by the $\gamma$ parameters). Note that several paths in Figure 1 are unlabeled (e.g., between $N_{T1}$ and $N_{T2}$) which indicates that these are fixed to one. Other paths have the same label (i.e., $\beta_N$, $\gamma_N$) which indicates that these are constrained to be equal over time. For example, proportional change (i.e., the $\beta$ and $\gamma$ parameters) is assumed to be time-invariant in our model (see also Klopack & Wickrama, 2020).

Several parameters in this model are of key interest. First, the correlation between the latent intercepts tests the extent to which initial levels of trait narcissism (at T1) relate to initial levels of work activities (at T2). Because participants started working between T1 and T2 (they were still students at T1), this correlation captures the initial selection effect and can

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5 One reviewer questioned the impact of the four residual correlations included in the measurement model of narcissism, as well as the relatively low factor loading of item 9. Based on this reviewer’s suggestion, a sensitivity analysis was conducted in which the robustness of the results of the BLCS models was evaluated across three different specifications of narcissism: One in which narcissism was specified as shown in Table 2, one in which item 9 was not included in the measurement model, and one in which nor item 9, nor the four residual correlations were included in the measurement model. The results of these analyses showed that these different specifications had no meaningful effect on the structural relationships tested in the BLCS models (see additional online material). We therefore report the results obtained using the measurement model of narcissism as shown in Table 2.
therefore be used to test hypotheses 1a and 1b. Second, the $\gamma_N$ parameters capture the effect of trait narcissism on changes in work activities. Hence, they tap into more dynamic (or enduring) selection effects and therefore serve as a test of hypotheses 2a and 2b. Finally, the $\gamma_W$ parameters capture the effect of work activities on changes in narcissism. Hence, they test the socialization effects proposed in hypotheses 3a and 3b.

The models were tested in Mplus Version 8.4 using Maximum Likelihood estimation. Except for the correlations described above, all reported parameters represent unstandardized coefficients. We therefore caution against inferences with regard to the strength of the reported effects.

Results

Descriptive Analyses

The variable intercorrelations presented in Table 1 were first inspected to obtain some general insight into the data. The test-retest correlations for narcissism varied between .65 and .76, implying high rank-order consistency across the first six years of the career. The test-retest correlations for objective and subjective work activities tended to be somewhat lower (i.e., between .41 and .87) but still indicate moderate to high rank-order consistency in work activities.

Special attention was also given to the relationships between subjective and objective work activities. As shown in Table 1, corresponding activities generally showed positive and moderately sized relationships, except for Achieving. These correlations varied between .12 and .23 for Directing, between .47 and .57 for Relating, and between .17 and .45 for Coaching (all $p$s < .05). For Achieving, these correlations were mainly non-significant and ranged between -.10 and .11. Overall, this pattern shows that objective and subjective work
activities are only partially overlapping at best, which highlights their complementarity for the current study.

**Bidirectional Longitudinal Associations Between Narcissism and Work Activities**

BLCS models were used to test the reciprocal relationships between narcissism and work activities. As can be seen from Table 6, those models fitted the data well (all CFIs and TLIs ≥ .99 and all RMSEAs ≤ .02).

--- Insert Table 6 about here ---

**Selection Effects**

The correlations between the intercept of narcissism and those of the different work activities (i.e., $\rho_{IN,IW}$ in Table 6) were inspected to test for initial selection effects. Much in line with what was expected for agentic activities (hypothesis 1a), we found initial narcissism to be positively related to Directing (subjective: $r = .36, p < .05$; objective: $r = .20, p < .05$) and subjective Achieving ($r = .33, p < .05$) at the start of the career. Only for objective Achieving, no statistically significant selection effect was found ($r = .01, p = .90$). Conversely, no support was found for negative selection effects from narcissism to communal activities (hypothesis 1b), with initial narcissism being unrelated to Relating (subjective: $r = .05, p = .36$; objective: $r = -.02, p = .62$) and objective Coaching ($r = -.05, p = .36$). For subjective Coaching, a positive initial selection effect was even found ($r = .15, p < .05$).

Next, we tested whether selection effects endured over time by looking at whether narcissism at time T predicted change in work activities between T and T+1 (i.e., the coupling parameter $\gamma_N$ in Table 6). We generally found no support for the expectation that initial narcissism positively predicts change in agentic (hypothesis 2a) and negatively predicts change in communal (hypothesis 2b) work activities ($p$’s > .05). Only one significant effect was observed, which ran counter to what was expected: individuals higher on narcissism
gradually selected fewer (rather than even more) Achieving activities after initial selection had taken place, at least when objective data on participants’ work activities were considered ($\gamma_N = -4.51, p < .05$).

In sum, the results regarding (enduring) selection indicated that individuals higher on narcissism indeed tended to initially select more agentic work activities, but they did not systematically increase these activities further after initial selection. Individuals higher on narcissism did not systematically select fewer communal activities at the very start of the career, nor did they reduce these activities afterwards. Although these effects were fairly consistent across objective and subjective assessments of the work activities, some differences were observed, particularly for the Achieving work factor and, to a lesser extent, for Coaching.

**Socialization Effects**

Socialization effects are tested in the BLCS model by means of the coupling parameter which relates the level of a work activity at time T to change in trait narcissism between T and T+1 (i.e., $\gamma_W$ in Table 6). The results first indicate that agentic activities at time T generally had no significant effects on change in trait narcissism from time T to T + 1 ($p$’s > .05). There was only one exception: Achieving activities did have the expected positive effect on changes in narcissism (hypothesis 3a), but only when objective data on these activities were considered ($\gamma_W = .05, p < .05$).

Regarding the communal activities, engagement in Coaching had no significant effect on changes in trait narcissism. However, Relating did demonstrate the expected negative effect on narcissism (hypothesis 3b), and this effect was significant when both subjective and objective data on these activities were considered ($\gamma_W = -.05, p < .05$ and $\gamma_W = -.04, p < .05$, respectively).
In sum, the results regarding socialization showed that work activities do indeed predict changes in narcissism, with the evidence supporting diminishing effects from communal activities, and particularly from *Relating*, more clearly than enhancing effects from agentic activities (where only one out of four potential socialization effects was significant). Importantly, the diminishing effect from *Relating* was consistent across objective and subjective data sources.

**The Developmental Trajectory for Narcissism**

In the above, we focused on parameters of the BLCS models that were particularly relevant to our hypotheses. However, other model parameters also speak to the dynamics of narcissism and work activities. When looking at the linear rate of change, we found a nonsignificant slope for narcissism with little individual differences around the slope in each of the tested models. For the work activities, the results were similar in the sense that the linear slopes also failed to reach statistical significance, which was also mostly true for variation around these slopes. Such restricted variation in linear growth parameters implies that the unique shapes of the developmental trajectories of narcissism and the work activities are to a large extent defined by the self-feedback and coupling parameters. In Figure 2, we plotted the average developmental trajectory for narcissism, which shows little to no mean changes in trait narcissism over time. This predicted trajectory is estimated using all parameters of the BLCS model relating subjective *Achieving* to narcissism (i.e., intercept, linear growth parameter, and coupling parameters)\(^6\).

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\(^6\) Note that the average developmental trajectory for narcissism as predicted by the BLCS model is highly similar to the average developmental trajectory as predicted by a latent growth curve (LGC) model run on the trait narcissism factor scores, which shows nonsignificant linear (est. = .01; \(p = .390\)) and quadratic slope factors (est. = -.00; \(p = .472\)), but significant between-person variation in both the linear (\(Var = .08; p = .001\)) and quadratic effect (\(Var = .01; p = .004\)). As such, the BLCS model and the LGC model yield similar average developmental trajectories.
Discussion

Do specific work demands impact the development of trait narcissism over the course of years? The present study addressed this important unanswered question by examining long-term changes in trait narcissism and relating these changes to repeated assessments of people’s work activities across the first six years of the professional career. In light of the specific motivational drivers associated with this trait, we proposed the framework of agentic versus communal activities as work demands that could either enhance or diminish narcissism. To investigate these effects, we departed from a bidirectional perspective on narcissism and work which allowed separating selection from socialization effects.

The results of the current study extend our understanding of narcissism in the work context in several ways. First, the longitudinal data further document the developmental properties of this trait. Unlike previous longitudinal research which looked at long-term change in narcissism (i.e., spanning more than 20 years) using two or three measurement points (Wetzel et al., 2020; Wille et al., 2019), a unique feature of the current study is that a panel of young adults was followed more intensively across a specific and marking transition phase, namely from college to work (Golle et al., 2018). The results of the BLCS models revealed that trait narcissism develops during the first years of the career, but that the developmental trajectory is highly idiosyncratic and is influenced by the work activities one engages in. This finding is important because it suggests that the normative decline in narcissism during adulthood (e.g., Wetzel et al., 2020) actually conceals significant interindividual differences in developmental trajectories during early career establishment, which can be partly understood from the experience of different work-related demands in this phase of the career.

A second question addressed in the current study involves the specific work demands that can impact individual narcissism trajectories. In line with the corresponsive principle
(Roberts et al., 2003), our expectation was that occupational choices made at the very beginning of the career would set off a developmental chain whereby the selected work demands serve to further deepen the characteristics that led to choosing these demands in the first place. For this purpose, we focused on agentic and communal work activities given their clear conceptual linkages with grandiose narcissism (Campbell & Foster, 2007). Importantly, two complexities were taken into account when operationalizing these activities. First, given that agency and communion each represent relatively broad domains of work activities (see for instance Ohly & Schmitt, 2015, Figure 1), we departed from a sufficiently diverse set of activities that eventually resulted in four subfactors (i.e., two for agentic and two for communal). Second, each of these four work activities were operationalized using both subjective ratings and objective data extracted from O*NET. As further illustrated below, both these considerations provided important nuances in the patterns of reciprocal effects between trait narcissism and work activities.

The results largely confirmed our expectations regarding the positive initial selection effect of trait narcissism on agentic activities. The fact that individuals higher on trait narcissism sought out work roles at career start that involved a greater amount of directing others and (self-reported) opportunities for achievement is in line with self-consistency theory (e.g., Lecky, 1945), which posits that people select roles that are consistent with their self-appraisals. Contrary to our expectations, however, no evidence was found for enduring selection whereby more narcissistic individuals further increase these agentic activities after the initial selection was made. Several tentative explanations can be provided here. For instance, one possibility is that people already obtained acceptable levels of P-E fit (with respect to these aspects of the work role) at the beginning of the career. When people select an environment and experience an optimal level of fit between demands and affordances (cf.,
Woods et al., 2019), there might not be a strong need to further adjust the environment by selectively strengthening specific work activities.

Interestingly, individuals higher on trait narcissism did not systematically seek out fewer communal activities at career start and also did not gradually reduce these activities after initial selection. This contradicts our expectation that communal activities – which involve deeply connecting with others – run counter to the narcissist’s self-oriented mindset and will therefore be actively avoided. Furthermore, the results even indicated a positive enduring selection effect for Coaching activities (self-reports only), which indicated that individuals higher on trait narcissism tend to gradually strengthen this specific communal activity. Previous work has already suggested that narcissists can also feed their need for admiration through particular interpersonal situations (e.g., communal narcissism; Gebauer et al., 2012). Coaching activities could possibly be seen as opportunities to showcase expertise and/or superiority, which are two attractive features for narcissists. The fact that this pattern was only observed for the subjective ratings could suggest that this effect is indeed more driven by how narcissists perceive these activities rather than the actual occurrence of these activities. At least, this finding illustrates that the link between narcissism and (the selection of) communal demands and activities requires further attention, both conceptually and empirically.

Next, by looking at the effects of work demands on change in narcissism, the current study was the first to empirically address the question: “To what extent (and in what direction) do work demands influence the development of trait narcissism over the course of people’s initial years on the labor market?” Although fewer socialization effects were observed than expected, these were all in the anticipated direction and clearly illustrated the differential effects of agentic and communal activities on narcissism. The least evidence was found for agentic activities enhancing narcissism, with (only) objective data on Achieving
showing the expected positive connection with narcissism change. This finding that activities focusing on personal achievement foster the development of narcissism aligns well with theoretical perspectives on the underlying agentic drivers of this trait, which center around self-realization and self-enhancement (e.g., Campbell & Foster, 2007). Regarding communal activities, the results showed negative effects of the factor Relating on change in narcissism, and this effect was found to be robust across subjective and objective data on this activity. The factor Relating emerged in the current study as set of activities covering those aspects of the communal domain that entail original (rather than routine) interaction with others to altruistically help them in a socially sensitive manner. Interestingly, previous research had already demonstrated how experimentally inducing a communal focus (e.g., by priming empathy) could reduce the momentous expression of state narcissism in a lab setting (Giacomin & Jordan, 2014). However, the current study is the first to show that communal work activities that require deeper investment in others (rather than in the self) can pervasively diminish trait narcissism over the course of years. In this regard, this finding provides some indirect evidence for theoretical frameworks explaining long-term trait development through the repeated activation of corresponding personality states (Wrzus & Roberts, 2017).

Next to these findings, other hypothesized socialization effects were not found in the current study. Specifically, no positive socialization effect was observed for Directing, whereas it was hypothesized that activities such as taking the lead over others could fuel the agentic motives underlying narcissism. It is interesting to compare this finding with previous research that provided some first indication that advancement into supervisory positions did foster trait narcissism (or at least buffered normative declines in this trait) (Wetzel et al., 2020; Wille et al., 2019). However, an unanswered question in previous work is to which extent these socialization effects are actually driven by the task demands in these positions, or
rather by other factors such as greater prestige or higher tangible benefits. In the current study, no evidence was found that Directing work activities, which involve leading and taking the responsibility over others, enhance trait narcissism. Similarly, the expected diminishing effect of communal activities was found for Relating, but not for Coaching. One explanation could be that, as argued above, to some coaching might be an opportunity for self-presentation rather than to serve (the development of) others. Together, these findings illustrate the importance of sufficiently differentiating between different types of activities within the broader agentic and communal domains, as these may have a different appeal to—and effect on—people with narcissistic tendencies.

Finally, identifying work demands that influence the development of trait narcissism opens the door for interventions aimed at mitigating this trait through job redesign. Specifically, the current findings suggest that stronger engagement in communal activities, particularly those requiring close and caring interactions with others, can potentially reduce trait narcissism in a pervasive manner. Evidently, introducing such changes into narcissists’ day-to-day work activities will be challenging, given that these typically run counter to their initial motivational drivers. However, prior research on the effectiveness of targeted trait change interventions outside work has already shown promising effects, and also pointed toward relevant boundary conditions. For instance, Hudson (2021) showed that certain traits can only be changed effectively when people are truly, autonomously motivated to do so. An important first step in coaching people to become less narcissistic will therefore consist of making people aware of their tendencies and convincing them that change is indeed needed.

Strengths, Limitations, and Future Research

The current study has several unique strengths that bolster the contribution of this work. Changes in narcissism were tracked across six years, covering a key transition period from college to work followed by four potentially defining years of early career orientation
and establishment. Work activities were assessed repeatedly to capture both initial selection effects at the career start as well as further changes in people’s professional activities after initial selection. Importantly, the availability of objective (O*NET-based) data on people’s work activities allowed cross-validating the effects found for subjective (self-reported) activities (and vice versa). One notable finding here was that objective and subjective ratings of *Achieving* work activities were generally unrelated, which also showed in different patterns of structural relationships in the BLCS models. Finally, the availability of two subfactors for each of the two broad domains of agentic and communal activities clearly enhanced our understanding of their bidirectional relationships with trait narcissism.

That said, several limitations of this study should also be acknowledged. First, the sample included only highly educated people, limiting the generalizability of the present findings. Further, due to the COVID-19 pandemic, the last wave (T4) of the panel study took place during the start of the first national lockdown in Belgium. When participants were contacted, it was clarified that the purpose of this study was not to investigate the effects of the pandemic. However, it is unclear whether and to which extent this situation may have had an effect on people’s responses. Looking at the test-retest correlations across the different measurement points, however, we are quite confident that the impact was relatively modest. In terms of the measures that were used, it needs to be acknowledged that the narcissism scale included in the SD3 is an undifferentiated measure of this complex trait which yields no reliable facet-level information. Given that subdimensions of narcissism have been shown to have differential effects on outcomes at work (e.g., Helfrich & Dietl, 2019), future research can also investigate differential socialization effects from work to these narcissism facets. For instance, one important distinction that is made in personality psychology separates the more agentic/extraverted aspects of narcissism from the more antagonistic/disagreeable aspects of grandiose narcissism (e.g., Back et al., 2013). It remains to be examined to which extent these
facets of narcissism also have distinct developmental trajectories, and whether different socialization effects could be observed for specific work demands. Finally, although we have a longitudinal design with four measurement points, there were only three repeated measurements of the work activities (i.e., T2, T3, and T4). This allowed us to reliably test our central hypotheses regarding the socialization effects using a temporal lag of one in our analyses (i.e., T2 to T3 and T3 to T4). However, as was brought up by an anonymous reviewer, future research could investigate whether socialization effects potentially vary according to the time frame considered. For instance, one hypothesis could be that socialization effects need a certain amount of time to accumulate and “sink in”, and comparing lag-one results with those obtained using a lag of two (or even three) could clarify this. Unfortunately, in the current design, the availability of lag-two data is restricted (i.e., only T2 to T4), which did not allow to reliably estimate such temporally distal effects.

**Conclusion**

This study is the first longitudinal examination of trait narcissism development in relation to work demands. By proposing and testing a bidirectional perspective on narcissism and work, we provided evidence for individual-level change in trait narcissism across the first six years of the professional career, and for work activities influencing these developmental trajectories. Contrary to what was expected, agentic activities involving directing and leading others were not found to enhance trait narcissism. Activities focused on the realization of personal achievements did demonstrate a positive effect on change in trait narcissism, but only when external ratings of these activities were used. Conversely, communal activities were consistently found to negatively affect change in trait narcissism over time, particularly those that involve relating with others. Such socialization effects still represent a largely unexplored area of research in applied psychology where the focus typically lies on studying the outcomes of narcissism rather than its antecedents. Future research can expand the
number and type of activities at work that can act as demands enhancing or diminishing this maladaptive trait. Similarly, these reciprocal effects can be examined in more diverse samples of employees as well as in targeted occupational groups where narcissism might be of particular concern (e.g., leadership; Grijalva et al., 2015). In closing, we hope that this article serves as compelling evidence that research on trait narcissism benefits from a dynamic and bidirectional perspective in order to better understand the functioning of this important trait in the work context.
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Table 1

**Descriptive statistics and correlations between all study variables.**

| Variable | Mean | SD  | n  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|----------|------|-----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T1       | 2.82 | 0.51| 157| (*|.67)| | | | | | | | | | | | | | | | | | | | | | | | | | |
| T2       | 2.82 | 0.48| 709| (*|.66)| | | | | | | | | | | | | | | | | | | | | | | | | | |
| T3       | 2.79 | 0.46| 567| (*|.73)| (.2)| | | | | | | | | | | | | | | | | | | | | | | | |
| T4       | 2.74 | 0.51| 574| (*|.76)| (.69)| | | | | | | | | | | | | | | | | | | | | | | | |

**Subjective work activities**

| Activity | M    | SD  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|----------|------|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Coaching T2 | 1.86 | 0.59| 535| (*|.73)| (.83)| | | | | | | | | | | | | | | | | | | | | | | | |
| Coaching T3 | 1.99 | 0.62| 475| (*|.78)| (.85)| | | | | | | | | | | | | | | | | | | | | | | | |
| Coaching T4 | 2.08 | 0.61| 468| (*|.78)| (.86)| | | | | | | | | | | | | | | | | | | | | | | | |
| Achieving T2 | 2.05 | 0.46| 535| (*|.83)| (.93)| | | | | | | | | | | | | | | | | | | | | | | | |
| Achieving T3 | 2.05 | 0.45| 475| (*|.91)| (.96)| | | | | | | | | | | | | | | | | | | | | | | | |
| Achieving T4 | 2.15 | 0.56| 467| (.92)| (.99)| | | | | | | | | | | | | | | | | | | | | | | | |

**Objective work activities**

| Activity | M    | SD  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|----------|------|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Directing T2 | 2.99 | 0.43| 493| (*|.83)| (.94)| | | | | | | | | | | | | | | | | | | | | | | | |
| Directing T3 | 3.02 | 0.44| 470| (*|.84)| (.94)| | | | | | | | | | | | | | | | | | | | | | | | |
| Directing T4 | 3.16 | 0.56| 467| (*|.92)| (.96)| | | | | | | | | | | | | | | | | | | | | | | | |
| Achieving T2 | 3.86 | 0.33| 536| (*|.92)| (.94)| | | | | | | | | | | | | | | | | | | | | | | | |
| Achieving T3 | 3.88 | 0.32| 493| (*|.90)| (.94)| | | | | | | | | | | | | | | | | | | | | | | | |

**Note.** All statistics are based on sum scores. T1 = 2014; T2 = 2016; T3 = 2018; T4 = 2020. The values between brackets on the diagonal indicate the internal consistency of that variable. *p < .05.
### Table 2

**Confirmatory factor analysis of narcissism at T1**

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor loading</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td>.57</td>
<td>.03</td>
</tr>
<tr>
<td>Item 2 (R)</td>
<td>.60</td>
<td>.04</td>
</tr>
<tr>
<td>Item 3</td>
<td>.28</td>
<td>.03</td>
</tr>
<tr>
<td>Item 4</td>
<td>.35</td>
<td>.03</td>
</tr>
<tr>
<td>Item 5</td>
<td>.46</td>
<td>.03</td>
</tr>
<tr>
<td>Item 6 (R)</td>
<td>.31</td>
<td>.04</td>
</tr>
<tr>
<td>Item 7</td>
<td>.39</td>
<td>.04</td>
</tr>
<tr>
<td>Item 8 (R)</td>
<td>.45</td>
<td>.04</td>
</tr>
<tr>
<td>Item 9</td>
<td>.13</td>
<td>.03</td>
</tr>
</tbody>
</table>

**Additional residual correlations**

<table>
<thead>
<tr>
<th>Items</th>
<th>r</th>
<th>Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 3 – Item 4</td>
<td>.18</td>
<td>Grandiosity</td>
</tr>
<tr>
<td>Item 4 – Item 7</td>
<td>.17</td>
<td>Grandiosity</td>
</tr>
<tr>
<td>Item 4 – Item 8</td>
<td>.17</td>
<td>Grandiosity</td>
</tr>
<tr>
<td>Item 2 – Item 6</td>
<td>.18</td>
<td>Exhibitionism</td>
</tr>
</tbody>
</table>

*Note.* Item numbers reflect the item order as presented in the original SD3 (Jones & Paulhus, 2014). $\chi^2 = 91.47$ (23), CFI = .94, TLI = .91, RMSEA = .05.
Table 3

*Exploratory factor analysis of the subjective work activity items at T2*

<table>
<thead>
<tr>
<th>Factor 1: Directing</th>
<th>Items</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Show leadership</td>
<td>.69 .20 .02 .20</td>
</tr>
<tr>
<td></td>
<td>Direct people</td>
<td>.63 .21 .21 .20</td>
</tr>
<tr>
<td></td>
<td>Lead</td>
<td>.86 .13 .13 .22</td>
</tr>
<tr>
<td></td>
<td>Be responsible for the work of others</td>
<td>.55 .29 .15 .10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Achieving</th>
<th>Items</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Achieve goals; score in short term</td>
<td>.15 .53 -.04 .08</td>
</tr>
<tr>
<td></td>
<td>Arrange all kind of affairs</td>
<td>.22 .41 .38 .05</td>
</tr>
<tr>
<td></td>
<td>Quickly capitalize on opportunities</td>
<td>.10 .52 .10 -.04</td>
</tr>
<tr>
<td></td>
<td>Monitor progress</td>
<td>.26 .52 .18 .14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3: Relating</th>
<th>Items</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Helping people</td>
<td>.11 -.05 .78 .10</td>
</tr>
<tr>
<td></td>
<td>Be socially sensitive</td>
<td>.10 .16 .79 .08</td>
</tr>
<tr>
<td></td>
<td>Be helpful</td>
<td>.10 .01 .70 .17</td>
</tr>
<tr>
<td></td>
<td>Be altruistic</td>
<td>.07 .16 .55 .22</td>
</tr>
<tr>
<td></td>
<td>Break the routine, use humor, create variation</td>
<td>.13 .25 .48 .23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 4: Coaching</th>
<th>Items</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Want to teach others something</td>
<td>.20 .01 .18 .65</td>
</tr>
<tr>
<td></td>
<td>Teach</td>
<td>.09 -.01 .07 .74</td>
</tr>
<tr>
<td></td>
<td>Coach or train others</td>
<td>.23 .17 .29 .62</td>
</tr>
<tr>
<td></td>
<td>Guide trainees, newcomers, or students</td>
<td>.15 .09 .14 .56</td>
</tr>
</tbody>
</table>

*Note.* The extraction method was principal axis factoring with a Varimax (with Kaiser Normalization) rotation. Factor loadings above .35 are in bold.
**Table 4**

*Exploratory structural equation modeling factor of the subjective work activity items at T2: Standardized factor loadings (and SEs)*

<table>
<thead>
<tr>
<th>Items</th>
<th>Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Directing</strong></td>
<td>Show leadership</td>
<td>.53* (.03)</td>
<td>.03 (.02)</td>
<td>-.08* (.03)</td>
<td>.03 (.03)</td>
</tr>
<tr>
<td>Direct people</td>
<td>.47* (.04)</td>
<td>.05 (.04)</td>
<td>.07 (.03)</td>
<td>.02 (.03)</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>.70* (.04)</td>
<td>-.07* (.03)</td>
<td>-.00* (.01)</td>
<td>.00 (.02)</td>
<td></td>
</tr>
<tr>
<td>Be responsible for the work of others</td>
<td>.39* (.04)</td>
<td>.12* (.04)</td>
<td>.03 (.03)</td>
<td>-.03 (.03)</td>
<td></td>
</tr>
<tr>
<td><strong>Achieving</strong></td>
<td>Achieve goals; score in short term</td>
<td>.02 (.03)</td>
<td>.37* (.05)</td>
<td>-.12* (.04)</td>
<td>.03 (.03)</td>
</tr>
<tr>
<td>Arrange all kind of affairs</td>
<td>.04 (.04)</td>
<td>.27* (.05)</td>
<td>.19* (.04)</td>
<td>-.02 (.02)</td>
<td></td>
</tr>
<tr>
<td>Quickly capitalize on opportunities</td>
<td>-.02 (.03)</td>
<td>.32* (.04)</td>
<td>.01 (.02)</td>
<td>-.05 (.03)</td>
<td></td>
</tr>
<tr>
<td>Monitor progress</td>
<td>.08 (.05)</td>
<td>.42* (.05)</td>
<td>.01 (.03)</td>
<td>.06 (.04)</td>
<td></td>
</tr>
<tr>
<td><strong>Relating</strong></td>
<td>Helping people</td>
<td>.03 (.03)</td>
<td>-.10 (.06)</td>
<td>.61* (.03)</td>
<td>-.01 (.02)</td>
</tr>
<tr>
<td>Be socially sensitive</td>
<td>-.02 (.03)</td>
<td>.10 (.07)</td>
<td>.60* (.04)</td>
<td>-.01 (.02)</td>
<td></td>
</tr>
<tr>
<td>Be helpful</td>
<td>.01 (.03)</td>
<td>-.03 (.03)</td>
<td>.45* (.03)</td>
<td>.06 (.03)</td>
<td></td>
</tr>
<tr>
<td>Be altruistic</td>
<td>-.05 (.04)</td>
<td>.13* (.06)</td>
<td>.37* (.05)</td>
<td>.12* (.04)</td>
<td></td>
</tr>
<tr>
<td>Break the routine, use humor, create variation</td>
<td>.01 (.03)</td>
<td>.16* (.06)</td>
<td>.29* (.04)</td>
<td>.12* (.04)</td>
<td></td>
</tr>
<tr>
<td><strong>Coaching</strong></td>
<td>Want to teach others something</td>
<td>.04 (.03)</td>
<td>-.02 (.02)</td>
<td>.03 (.02)</td>
<td>.44* (.03)</td>
</tr>
<tr>
<td>Teach</td>
<td>-.04 (.03)</td>
<td>-.04 (.03)</td>
<td>-.06* (.03)</td>
<td>.57* (.04)</td>
<td></td>
</tr>
<tr>
<td>Coach or train others</td>
<td>.05 (.03)</td>
<td>.10* (.05)</td>
<td>.10* (.04)</td>
<td>.47* (.04)</td>
<td></td>
</tr>
<tr>
<td>Guide trainees, newcomers, or students</td>
<td>.02 (.03)</td>
<td>.04 (.04)</td>
<td>.01 (.03)</td>
<td>.43* (.04)</td>
<td></td>
</tr>
</tbody>
</table>

*Note: $\chi^2 = 113.43$ (74), CFI = .99, TLI = .98, RMSEA = .03. *$p < .05.*
### Table 5

*Exploratory factor analysis of the objective work activities (O*NET) at T2*

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Factor 1: Directing</strong></td>
<td></td>
</tr>
<tr>
<td>Guiding, Directing, and Motivating Subordinates</td>
<td>.73</td>
</tr>
<tr>
<td>Organizing, Planning, and Prioritizing Work</td>
<td>.52</td>
</tr>
<tr>
<td>Selling or Influencing Others</td>
<td>.61</td>
</tr>
<tr>
<td>Staffing Organizational Units</td>
<td>.61</td>
</tr>
<tr>
<td><strong>Factor 2: Achieving</strong></td>
<td></td>
</tr>
<tr>
<td>Making Decisions and Solving Problems</td>
<td>.32</td>
</tr>
<tr>
<td>Judging the Qualities of Things, Services, or People</td>
<td>.36</td>
</tr>
<tr>
<td>Updating and Using Relevant Knowledge</td>
<td>.11</td>
</tr>
<tr>
<td><strong>Factor 3: Relating</strong></td>
<td></td>
</tr>
<tr>
<td>Assisting and Caring for Others</td>
<td>-0.20</td>
</tr>
<tr>
<td>Establishing and Maintaining Interpersonal Relationships</td>
<td>.54</td>
</tr>
<tr>
<td>Performing for or Working Directly with the Public</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Factor 4: Coaching</strong></td>
<td></td>
</tr>
<tr>
<td>Coaching and Developing Others</td>
<td>.48</td>
</tr>
<tr>
<td>Training and Teaching Others</td>
<td>.11</td>
</tr>
</tbody>
</table>

*Note.* The extraction method was principal axis factoring with a Varimax (with Kaiser Normalization) rotation. Factor loadings above .35 are in bold.
Table 6

Summary of parameters estimated in the bivariate latent change score models

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Directing</th>
<th>Subjective Work Activities</th>
<th>Relating</th>
<th>Coaching</th>
<th>Directing</th>
<th>Objective Work Activities</th>
<th>Relating</th>
<th>Coaching</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Latent changes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ((I_h))</td>
<td>Level of narcissism at the start of the study interval</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>(\text{Var}(I_h))</td>
<td>Inter-individual differences in narcissism at the start of the study interval</td>
<td>.16(^*)</td>
<td>.16(^*)</td>
<td>.16(^*)</td>
<td>.16(^*)</td>
<td>.16(^*)</td>
<td>.16(^*)</td>
<td>.16(^*)</td>
<td></td>
</tr>
<tr>
<td>Slope ((S_h))</td>
<td>Linear rate of change in narcissism across the entire study interval</td>
<td>.01</td>
<td>.01</td>
<td>.02</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>(\text{Var}(S_h))</td>
<td>Inter-individual differences in linear rate of change in narcissism</td>
<td>.02</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.02</td>
<td>.04(^*)</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>Intercept ((I_w))</td>
<td>Level of work activities at the start of the study interval</td>
<td>.01</td>
<td>.01</td>
<td>.02</td>
<td>-.01</td>
<td>-.00</td>
<td>-.01</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>(\text{Var}(I_w))</td>
<td>Inter-individual differences in work activities at the start of the study interval</td>
<td>.60(^*)</td>
<td>.42(^*)</td>
<td>.62(^*)</td>
<td>.58(^*)</td>
<td>.74(^*)</td>
<td>.82(^*)</td>
<td>.86(^*)</td>
<td></td>
</tr>
<tr>
<td>Slope ((S_w))</td>
<td>Linear rate of change in work activities across the entire study interval</td>
<td>.02</td>
<td>-.02</td>
<td>-.01</td>
<td>.01</td>
<td>.04</td>
<td>.05</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>(\text{Var}(S_w))</td>
<td>Inter-individual differences in linear rate of change in work activities</td>
<td>.12</td>
<td>.38</td>
<td>.32</td>
<td>.37(^*)</td>
<td>1.03</td>
<td>3.42</td>
<td>.80(^*)</td>
<td></td>
</tr>
<tr>
<td>(\rho_{Ih,SN})</td>
<td>Correlation between narcissism intercept and slope of narcissism</td>
<td>.70(^*)</td>
<td>.75(^*)</td>
<td>.72(^*)</td>
<td>.72(^*)</td>
<td>.68(^*)</td>
<td>.77(^*)</td>
<td>.72(^*)</td>
<td></td>
</tr>
<tr>
<td>(\rho_{W,SW})</td>
<td>Correlation between work activities intercept and slope of work activities</td>
<td>-.00</td>
<td>-.19</td>
<td>.71(^*)</td>
<td>.71(^*)</td>
<td>-.16</td>
<td>-.30</td>
<td>.88(^*)</td>
<td></td>
</tr>
<tr>
<td>(\rho_{Ih,SW})</td>
<td>Correlation between narcissism intercept and work activities</td>
<td>.36(^*)</td>
<td>.33(^*)</td>
<td>.05</td>
<td>.15(^*)</td>
<td>.20(^*)</td>
<td>.01</td>
<td>-.02</td>
<td></td>
</tr>
<tr>
<td>(\rho_{SN,SW})</td>
<td>Correlation between slope of narcissism and slope of work activities</td>
<td>.62</td>
<td>-.88(^*)</td>
<td>-.21</td>
<td>.42</td>
<td>.94(^*)</td>
<td>.93(^*)</td>
<td>-.18</td>
<td></td>
</tr>
<tr>
<td>(\rho_{Ih,SN})</td>
<td>Correlation between narcissism intercept and slope of work activities</td>
<td>.47</td>
<td>-.91(^*)</td>
<td>-.40</td>
<td>.36</td>
<td>.83(^*)</td>
<td>.89(^*)</td>
<td>-.36</td>
<td></td>
</tr>
<tr>
<td>(\rho_{W,SN})</td>
<td>Correlation between work activities intercept and slope of narcissism</td>
<td>.20</td>
<td>.25(^*)</td>
<td>.23(^*)</td>
<td>.12</td>
<td>-.10</td>
<td>-.13</td>
<td>.18</td>
<td></td>
</tr>
<tr>
<td><strong>Time-sequential dynamics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-feedback ((\beta_h))</td>
<td>The effect of narcissism at Time T on subsequent change in narcissism at Time T+1</td>
<td>-.34(^*)</td>
<td>-.41(^*)</td>
<td>-.38(^*)</td>
<td>-.35(^*)</td>
<td>-.34(^*)</td>
<td>-.45(^*)</td>
<td>-.37(^*)</td>
<td></td>
</tr>
<tr>
<td>Self-feedback ((\beta_w))</td>
<td>The effect of work activities at Time T on subsequent change in work activities at Time T+1</td>
<td>-.07</td>
<td>-.26</td>
<td>-.66(^*)</td>
<td>-.73(^*)</td>
<td>.24</td>
<td>.46</td>
<td>-.92(^*)</td>
<td></td>
</tr>
<tr>
<td>Coupling ((\gamma_h))</td>
<td>The effect of narcissism at Time T on subsequent change in work activities at Time T+1</td>
<td>-.42</td>
<td>1.78</td>
<td>.69</td>
<td>-.44</td>
<td>-.246</td>
<td>-.451(^*)</td>
<td>.77</td>
<td>-1.32</td>
</tr>
<tr>
<td>Coupling ((\gamma_w))</td>
<td>The effect of work activities at Time T on subsequent change in narcissism at Time T+1</td>
<td>.02</td>
<td>.00</td>
<td>-.05(^*)</td>
<td>-.01</td>
<td>.03</td>
<td>.05(^*)</td>
<td>-.04(^*)</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Model fit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\chi^2(\text{df}))</td>
<td>Chi-square (degrees of freedom)</td>
<td>32.16 (15)</td>
<td>31.64 (15)</td>
<td>27.85 (15)</td>
<td>28.39 (15)</td>
<td>27.80 (15)</td>
<td>24.77 (15)</td>
<td>27.17 (15)</td>
<td>28.47 (15)</td>
</tr>
<tr>
<td>CFI</td>
<td>Comparative Fit Index</td>
<td>.99</td>
<td>.99</td>
<td>.99</td>
<td>.99</td>
<td>.99</td>
<td>.99</td>
<td>1.00</td>
<td>.99</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root mean square error of approximation</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.02</td>
<td>.02</td>
<td>.03</td>
</tr>
</tbody>
</table>

*Note.* Except for the correlations, all parameter estimates are unstandardized coefficients. \(^*p < .05\).
Figure 1

The bivariate latent change score (BLCS) model connecting levels and changes in trait narcissism (N) to levels and changes in work activities (W)

Figure 2

Predicted developmental trajectory for narcissism based on the BLCS model

Note. The predicted developmental trajectory of narcissism based on all parameters of the BLCS model.