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Fund manager narcissism

Abstract—Analysing verbatim transcribed interviews with mutual fund managers, we show that their individual level of narcissism is highly relevant for the delegated investment task they are entrusted with. First, supporting the notion that narcissists disregard agreements more often than others, we find that narcissistic fund managers are 34% more likely to deviate from the advertised investment style. Second, consistent with a myopic focus on rewards, highly narcissistic fund managers underperform their non-narcissistic peers by an average 1% annually. Third, while the impact of narcissism on style consistency is significantly mitigated in team-managed funds, this moderating effect of teamwork does not extend to the negative impact of narcissism on fund performance. Finally, a security-by-security analysis of the style-inconsistent funds suggests that fund manager narcissism can explain why these funds tend to make more growth and small-cap bets.

Keywords: Narcissism, mutual funds, style consistency, personality traits, risk-taking, retail finance

JEL-Classification: D91, G11, G41, G51

1. Introduction

The personality trait narcissism has been the focus of psychology studies for decades.[1] Specifically, prior research suggests that the decisions of narcissistic personalities are systematically influenced in at least two fundamental ways. On the one hand, a narcissist's inflated self-belief causes her to misjudge probabilities of failure, which tends to manifest in riskier decision behavior. On the other hand, narcissists perceive themselves to be superior to others, leading to a substantially higher likelihood of defying norms and rules.[2]

In this paper, we investigate the role of narcissism among mutual fund managers. We argue that narcissism is an important concept to study with active fund management because the above-mentioned behavioral implications of narcissism should be highly relevant to the outcome of the money management task.

First, with respect to biased probability weighting, we hypothesize the highly narcissistic fund manager to overrate an alternative deemed very risky by her peers in terms of its likelihood of payoff. All else equal, this should result in a lower risk-adjusted performance of funds run by narcissistic managers. Second, in light of narcissists' difficulties with adhering to conventions, we conjecture that highly narcissistic managers are more inclined to deviate from the officially communicated investment focus. Clearly, silently altering a fund's investment profile goes against its investors' strategic asset allocation and optimal risk profile. Hence, both excessive risk-taking and style inconsistency are potentially detrimental for fund shareholders.

Yet, even though the management and organization literature documents a meaningful impact of narcissism on the actions and decisions of corporate executives, research has not turned its attention to potential consequences of narcissism for professional money management.[3] Given that more than half of all American households are invested in at least one mutual fund and the majority of individual

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[1] In this study, we focus on narcissism as a personality dimension rather than a personality disorder. See section 2.1 for a distinction of the two concepts.

[2] See section 2.1 for a detailed discussion of the behavioral implications of narcissism.

[3] Note that Ten Brinke, Kish and Keltner (2018) study the influence of the dark triad traits—i.e. psychopathic, Machiavellian, and narcissistic tendencies—on the investment outcomes of money managers. However, they focus on the exclusive club of hedge fund managers, while we are concerned with fund managers investing the money of financially vulnerable retail investors.

investors' assets is held in actively managed funds (ICI 2020), this lack of evidence on the role of narcissism for mutual fund management is somewhat surprising. The present study fills this gap.

Drawing on a comprehensive dataset of verbatim interviews with fund managers published on The Wall Street Transcript (TWST) database, we apply text mining techniques to capture the narcissistic tendencies of each sampled fund manager by means of the only unobtrusive proxy of narcissism confirmed in experimental psychology. Moreover, we apply a cautious identification strategy and focus on single-managed funds for our main analysis. This allows us to unambiguously link individual fund manager narcissism to the relevant fund characteristics (i) style consistency and (ii) risk-adjusted performance.

To preview our main results, we find strong support for a negative impact of narcissism on the outcome of the delegated investment task fund managers are entrusted with by their shareholders. First, we document that the average level of narcissism among mutual fund managers is almost twice as high as the narcissism scores obtained for CEOs in prior research (e.g., Aktas et al. 2016, Chatterjee and Hambrick 2007). Second, our empirical evidence suggests that narcissistic fund managers are 34% more likely to deviate from the officially advertised investment focus after controlling for previously identified determinants of mutual fund investment style inconsistency. Third, we show that narcissism indeed has a negative impact on a fund's risk-adjusted performance: The annualized underperformance of highly narcissistic fund managers amounts to as much as 1% compared to their peers with low to moderate narcissism scores. Fourth, we examine the role of fund manager narcissism when the narcissistic individual collaborates on a team and find that teamwork significantly mitigates the average influence of fund manager narcissism on style consistency. Specifically, management teams with at least one highly narcissistic member are only 7% more likely to invest style-inconsistently. Unlike with style inconsistency, however, teamwork does not appear to alleviate narcissism-induced underperformance to a material extent. Fifth and finally, a supplementary investigation into the portfolio holdings of the subsample of style-inconsistent funds at the level of the individual security suggests that fund manager narcissism can explain why these funds tend to make significantly more growth and small-cap bets.

Our study contributes to at least three strands of literature. First, we extend prior research on managerial implications of narcissism. We are the first to show

that narcissism is a driver of both more pronounced style inconsistency and risk-taking among mutual fund managers. These results are consistent with extant evidence from the CEO literature which, on the one hand, documents a significant divergence from standards and rules. Chen (2010) demonstrates that CEO narcissism is at least partially able to explain manager's deviation from reporting standards. Rijsenbilt and Commandeur (2013) corroborate these findings and argue that narcissists' need for admiration is stimulated by engaging in bold managerial decisions overriding established conventions and rules. On the other hand, our findings in the mutual fund context echo prior research among CEOs documenting that corporate performance is significantly more volatile for firms led by narcissistic executives (e.g., Wiseman and Gomez-Mejia 1998, Chatterjee and Hambrick 2007).

Relatedly, we add to explaining heterogeneity in the execution and outcomes of the delegated money management task by proposing fund manager narcissism as a novel determinant of style inconsistency and excessive risk-taking. First, while prior research has focused on the consequences of fund style inconsistency (e.g., Chen, Chan and Lakonishok 2002, Wermers 2012), we shed light on what causes fund managers to disregard their investment focus to begin with. Moreover, while the mutual fund literature has uncovered a host of determinants of fund risk, the link between fund manager narcissism and excessive risk-taking has not yet been documented.

Third, we extend prior research on the influence of team management, versus independent management by a single individual, for mutual funds. Bär, Kempf and Ruenzi (2011) find a moderating influence of teamwork on the boldness of decisions at the fund level. We document that at least style inconsistency is substantially mitigated once highly narcissistic managers collaborate in a team, i.e. corroborating the evidence obtained in Bär, Kempf and Ruenzi (2011). Moreover, Patel and Sakissian (2017) find that team-managed funds earn higher average returns than single-managed funds. We show that this result is affected by narcissism. While risk-adjusted performance is significantly impaired by narcissism among single managers, this relationship is somewhat mitigated when narcissistic fund managers work in teams. More broadly, our findings are in line with prior evidence supporting the opinion diversification theory among top executives (Adams and Ferreira 2009).

We conclude that, on average, fund manager narcissism not only increases shareholders' likelihood of asset misallocation and suboptimal risk exposure, but also leads to inferior risk-adjusted fund performance. Given the detrimental role of narcissism on the money management task, fund companies might want to elicit proxies of narcissism and generally include aspects of personality in their recruitment processes. Moreover, teamwork seems to mitigate the negative impact of manager narcissism on style conformity. This finding highlights a benefit of collaborative decision making and might serve as a nudge for fund companies to further promote team-managed funds.

2. Related research and hypothesis development

2.1. Definition and behavioral implications of narcissism

Narcissism is a multifaceted personality trait which was first included in psychological models by Freud (1914) and ever since has been the focus of research in the field. The major manifestations of narcissism include an exaggerated sense of self-importance and entitlement, a lack of empathy and a constant need for attention and admiration (Bogart, Benotsch, and Pavlovic 2004). These characteristics serve as a self-protection mechanism in that they hide the narcissist's lack of self-confidence behind feelings of superiority. While, in its essence, narcissism can be described as a personality disorder, evidence in psychology has shown that it can be conceptualized as a personality dimension, too, and that individuals can be assigned scores along that dimension (Emmons 1987, Raskin and Terry 1988).[4] In this study, we focus on the personality trait narcissism – also referred to as 'normal' or 'grandiose' narcissism – as defined by Raskin and Hall (1979) and Raskin and Terry (1988) in their Narcissistic Personality Inventory (NPI).

Grandiose narcissism has relevant behavioral implications. First, narcissistic fund managers can be expected to favor strategic dynamism. New strategic directions or campaigns likely feed the narcissistic manager's need for self-display in

[4] The American Psychiatric Association provides a description and a list of diagnostic criteria pertaining to the narcissistic personality disorder. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Ed. (DSM-V), pathological narcissism refers to a pervasive pattern of grandiosity (in fantasy or behavior) which causes individuals to overestimate their abilities and achievements, combined with an excessive need for admiration and a lack of empathy. Narcissism typically develops early in adulthood and remains a stable trait in later life (DSM-V; APA 2013).

that they attract the attention of a respected audience. While non-narcissists may be content with following or refining an existing strategy, the evidence on narcissistic sensation-seeking in Emmons (1981) and Wink and Donahue (1997) suggests that such incrementalism is too ordinary for the highly narcissistic fund manager. To obtain applause, the narcissist must regularly undertake challenging tasks that are highly visible and will earn admiration for their boldness (Wallace and Baumeister 2002).

Relatedly, narcissism likely biases the fund manager's estimates of outcomes from actions which align with her narcissistic motives. This narcissism-induced mode of motivated reasoning implies that an alternative which nurtures a narcissistic need for attention will be rated more favorably than it would be by a less narcissistic fund manager. By default, the narcissist's elevated self-image leads to relative optimism and confidence about positive outcomes, i.e., shifting estimates of payoffs in an upward direction (Shapira 1995, Sanders 2001, Molden and Higgins 2005). Thus, the highly narcissistic fund manager might overrate an alternative deemed very risky by her peers in terms of its likelihood of payoff.

Taken together, narcissism is a compelling concept to study with active fund management because the decisions of narcissistic personalities are impaired in fundamental ways which are highly relevant to the outcome of the money management task.[5]

2.2. Narcissism and investment style consistency

Because strategic dynamism offers a great potential for attention and thus carries strong narcissistic supply (Kernberg 1975), narcissists have difficulties being persistent, unwavering in their pursuit of a given course of action until their goal is achieved. Instead, they need on-going applause and will therefore engage in highly visible actions, perhaps even reversing their own prior decisions. Additionally, narcissists' inflated self-beliefs and feelings of uniqueness have been shown to manifest in a failure to adhere to rules (Brunell and Buelow 2017, Kets de Vries 2004, Morf

[5] Note that, while incidental to our study of fund manager narcissism, other behavioral implications of narcissism have been documented in the literature. Specifically, narcissists have been shown to take advantage of others because they lack feelings of empathy and guilt (Campbell and Foster 2007). Moreover, narcissists are more likely to display impulsivity (Vazire and Funder 2006, Miller et al. 2009) which also influences their decisions.

and Rhodewalt 2001). Narcissists perceive themselves to be superior to others, such that common norms and rules do not apply to them.

Indeed, prior research on the impact of grandiose narcissism among top executives documents a significant divergence from standards and rules. Chen (2010) demonstrates that CEO narcissism is at least partially able to explain manager's deviation from reporting standards.[6] Rijsenbilt and Commandeur (2013) corroborate these findings and argue that narcissists' need for admiration is stimulated by engaging in bold managerial decisions overriding established conventions and rules. In a recent meta-analysis of the literature, Cragun, Olsen and Wright (2020) confirm that, generally, narcissistic managers tend to deviate from rules and status-quo behavior in attempts to seek out attention, grandiosity and fame.

Given this evidence, we hypothesize that highly narcissistic fund managers are more inclined to defy convention by deviating from the advertised investment strategy. Specifically, we presume that style deviation breeds narcissistic utility, because taking higher risks in order to face more lottery-like payouts increases the probability of attention and admiration for the narcissistic fund manager. In the vein of, e.g., Wermers (2012), this behavior should translate into a fund portfolio composition featuring a higher proportion of small cap versus large cap stocks and growth versus value stocks, respectively.

2.3. Narcissism and risk-adjusted fund performance

As outlined in section 2.1., narcissists' inflated self-beliefs cause them to misjudge probabilities of failure. This in turn leads them to disregard the necessity of preventing negative outcomes. Such a myopic focus on reward tends to manifest in riskier decision behavior excessively driven by potential short-term gains (e.g., Lewellen 2006, Campbell, Goodie and Forster 2004, Patel and Cooper 2014). Foster, Shenesey and Goff (2009) provide evidence that narcissists favor aggressive investment strategies and are more likely to invest in individual and volatile stocks. Lakey et al. (2008) find that narcissists display a pronounced proclivity for risky bets: They not only gamble more frequently, but also invest larger amounts when they do so.

[6] Chen (2010) investigated the determinants of financial misreporting by applying simulation modelling tools and further taking into account the extent of misreporting (measured as the difference between the real and stated asset values).

Again, the literature on CEO narcissism documents that, for firms run by narcissistic executives, corporate performance is significantly more volatile. Early on, Lubatkin (1987) and Fowler and Schmidt (1988) have shown that the large acquisitions favored by narcissists are known to increase performance volatility. Similarly, big, quantum initiatives and bold actions by top executives have been found to give rise to relatively unstable performance patterns (Bromiley 1991, Wiseman and Gomez-Mejia 1998). This conjecture is corroborated in Chatterjee and Hambrick (2007), who show that narcissistic CEOs are more likely to deliver big wins or big losses, i.e., extreme performance.

Accordingly, we conjecture that narcissistic fund managers tend to be attracted by bold and rather risky investments which result in a higher volatility of returns. Based on extensive research discarding the notion that increased fund risk is rewarded by higher returns (e.g., Pastor and Vorsatz 2020 for recent evidence), we expect that the increased risk incurred by narcissistic fund managers is not persistently compensated by superior performance but instead hypothesize that, after adjusting for risk, funds managed by narcissistic managers feature lower returns.

2.4. Team-managed funds

Because narcissists perceive themselves to be exceptional and avoid sharing attention and applause with others, it is unlikely that narcissistic fund managers are willing to cede any autonomy in fund management to other team members. What happens, however, if a fund manager is bound to collaborate? Given that most mutual funds are managed by teams (e.g., Patel and Sarkissian 2017), it seems worthwhile to examine the impact of narcissism on the outcomes of team-managed funds.

Prior research on teamwork suggests that team decisions often differ from the decisions of individuals and offers two opposing theories to explain these differences. On the one hand, the opinion diversification theory suggests that extreme opinions of some team members are offset by the opinion of others on the team, such that the team eventually reaches a rather moderate consensus (Sah and Stiglitz 1986). Bär, Kempf and Ruenzi (2011) document empirical evidence in support of the moderating effect of teamwork on extremeness of fund managers' decisions. Under the opinion diversification theory, the opinion of a manager with a narcissistic personality, which is associated with opting for bold, visible and at

times even extreme actions (Wallace and Baumeister 2002), should thus be counterbalanced by the remaining team members' opinions, ultimately leading to a less pronounced impact of narcissism on the key parameters of team-managed funds.

On the other hand, the group shift theory (e.g., Moscovici and Zavalloni 1969, Kerr 1992) proposes that the dominant member of the team typically has a strong opinion and is eventually able to convince the team of her opinion. Thus, under the group shift theory, the views of highly narcissistic team members should be of particular influence to team outcomes.

We investigate if narcissistic tendencies among members of team-managed mutual funds alter the results of Bär, Kempf and Ruenzi (2011) regarding the management's consensus decisions. This is a worthwhile exercise, since, ex ante, narcissism is more likely to promote group shift behavior. Decision-makers with narcissistic tendencies who continuously seek admiration and approval make it difficult for co-workers and employees to work with them. Hence, all else equal, narcissists should generally be a liability to teamwork (e.g., Chatterjee and Pollock 2017). Moreover, highly narcissistic individuals are rather poor negotiators as they tend to behave intransigently and typically fail to compromise (Greenhalgh and Gilkey 1997). By the same token, narcissism strongly correlates with what others often perceive as charismatic leadership (Brunell et al. 2008) and the visionary boldness of many narcissistic persons can add to their persuasive power (Galvin, Balthazard and Waldmann 2010). In sum, this evidence suggests that pronounced narcissism of members of team-managed funds should decrease the likelihood of consent.

3. Data and methodology

3.1. Capturing narcissism

Raskin and Hall (1979) reconceptualize narcissism as a personality dimension rather than a clinical syndrome and their Narcissistic Personality Inventory (NPI) has become the standard instrument for measuring non-pathologic narcissism.[7] However, the NPI does not lend itself for our case. Questions about constructs as

[7] The NPI is a questionnaire derived from the diagnostic criteria for narcissistic personality disorder which returns an individual narcissism score. The NPI gauges narcissism along the four dimensions (i) exploitativeness/entitlement, (ii) leadership/authority, (iii) superiority/arrogance, and (iv) self-absorption/self-admiration.

sensitive as narcissism would likely generate very low response rates, a biased sample systematically tilted towards fund managers willing to participate in the NPI survey and answers would likely be obstructed by social desirability bias (cf., e.g., Chatterjee and Hambrick 2007).

To mitigate such methodological issues, Webb et al. (1966) advocate examining observable traces such as written and spoken words to learn about individuals' preferences, perceptions, and personal characteristics. Raskin and Shaw (1988) embrace this approach and document that the share of first-person singular pronouns to first-person plural pronouns which a given person uses when communicating verbally is a strong predictor of her NPI score. Specifically, the correlation between first-person pronoun usage and NPI scores is found to be robust to age, gender, and the content of the speech analyzed and is shown to persist even after accounting for other personality traits (extraversion, neuroticism, psychoticism, and locus of control). Moreover, while the co-movement between NPI scores and personal pronoun usage is observed for first-person pronoun usage, it vanishes for peoples' use of second- or third-person pronouns. Thus, the extent to which a person uses first-person singular pronouns, reflecting self-absorption, is a theoretically well-grounded measure of individual narcissism in large samples which has been validated by research in psychology.[8]

While not all traces of an individual's speech lend themselves equally well as indicators of personality characteristics, *verbatim statements*, unlike other means of communication, include several impromptu and unscripted components and therefore carry valuable information about the speaker's most distinct and inherent traits (Ramsay 1968, Hogben 1977).

3.2. Verbatim fund manager speech

Thus, we search for unedited instances of fund manager speech and find it by means of digital transcripts of interviews with fund managers (conducted by journalists or financial analysts) archived in The Wall Street Transcript (TWST) database. As of end-2019, TWST features transcripts of more than 25,000 interviews with CEOs and top-level corporate executives, money managers, equity analysts

[8] While various different empirical narcissism proxies have been proposed in the literature (cf., e.g., Chatterjee and Hambrick 2007, p.362ff., for a brief survey), Aktas et al. (2016, p.16) highlight the sound theoretical foundation of the first-person pronoun indicator developed by Raskin and Shaw (1988).

and has approximately 200,000 monthly readers. TWST interviews are *de facto* verbatim in the sense that the interviewee may only correct factual errors prior to their publication. To the best of our knowledge, we are the first to analyze TWST interviews conducted with fund managers. These interviews are usually scheduled to allow fund managers to discuss a fund's investment strategy, explain the investment environment or provide expert insights on a funds' management philosophy including ideas for specific stock picks.[9]

3.3. Key variables

Fund manager narcissism

For each TWST interview, we extract the fund manager's words and obtain the proportion of first-person singular pronouns (I, me, mine, my, myself) to the total of first-person singular pronouns and first-person plural pronouns (we, us, our, ours, ourselves) that the fund manager employs.[10] Straightforwardly, a proportion of 100% denotes the maximum attainable level of narcissism. Note that a continuous measure of narcissism is consistent with the modern conceptualization of the personality trait in psychology which discards a dichotomous approach (Campbell and Foster 2007). As in Chatterjee and Hambrick (2007), continuity in narcissism matters in this study, too. One the one hand, just like most CEOs, the average fund manager is a successful professional which in turn is hard to square with dysfunctional narcissism. On the other hand, a continuous measure implies that even low levels of narcissism can be relevant.

Fund style consistency and performance

Next, we merge the TWST interviews with the relevant fund data which we obtain from Morningstar Direct. To this end, we use each sampled manager's name as the unique identifier. Moreover, the TWST data includes the name of the fund company which the manager currently works for, and provides a briefing of her professional career. This description, combined with the item *Fund Manager History* in Morningstar, provides us with the timestamps indicating when the

[9] See Table A2 in the appendix for several different interview excerpts.

[10] Following Raskin and Shaw (1988), the narcissism score is thus formalized as $\widetilde{Narcissism_j} = \sum_{j=1}^{n} \frac{\sum 1st\ Person\ Singular\ Pronouns}{\sum 1st\ Person\ Singular\ Pronouns + \sum 1st\ Person\ Plural\ Pronouns}$.

managers under review started and ceased to be in charge of managing a given fund. Linking the data sources allows us to retrieve an individual time series of fund characteristics for every fund manager in our sample.[11] The most recent fund data is as of December 31st, 2018 and approximately 90% of the sampled fund managers were employed by the end of our investigation period. Variables at the share class level are converted to fund level aggregates by value-weighting their respective contribution to the fund's total net assets (c.f., e.g., Doshi, Elkamhi and Simutin 2015).[12]

We measure a given fund's style consistency by using the Morningstar Style Consistency Metric (SCM), which measures the degree of overall portfolio movement for a given fund along both the value-growth and size dimensions. Specifically, the SCM is calculated as the Euclidian distance between the Value-Growth Metric (ValueScore) and the Size Metric (SizeScore).[13] Morningstar classifies funds with a SCM of more than 29 as featuring low style consistency, whereas funds with a SCM of smaller than 9 are characterized as holding portfolios with a high style consistency. Medium-style consistent funds feature SCM scores between 9 and 29. The breakpoints of 9 and 29 are static following a 20-60-20 rule, i.e., roughly 60% of all funds covered in Morningstar are reported to have medium style consistency and 20% each feature low and high style consistency.

Finally, our second key independent variable, $\alpha_{i,j,t}^{Carhart}$, denotes the Carhart four-factor alpha of fund *i* managed by fund manager *j* in month *t*.

3.4. Sample and summary statistics

We retrieve a total of 507 fund manager interviews published biweekly on the TWST database between 2012 and 2018 which can be unambiguously matched with the Morningstar data.

We sample the data as follows. First, we anticipate that the proportional use of first-person singular pronouns should be significantly higher among interviewees

[11] To illustrate, the earliest fund data obtained from Morningstar dates back to January 1, 1982, although the manager with whom we match these fund characteristics was interviewed as recently as September 2013.

[12] Moreover, 315 of the 424 managers under review have managed multiple funds at some point during our sample period.

[13] Formally: SCM = $\sqrt{\text{ValueScore}^2 + \text{SizeScore}^2}$. The SCM for a fund is calculated based on all available portfolios from the past three years. In case there are less than six eligible portfolios, Morningstar Direct reports a missing value.

speaking as the sole manager of a given fund versus speaking as one member of a team managing a fund in a joint effort. To avoid any distortions of our narcissism metric, we thus restrict our sample to single-managed funds to produce the initial set of results. To examine the role of narcissists on fund management teams, we subsequently match our sample of single-managed funds using team-managed funds which are comparable with respect to fund characteristics shown to impact style consistency and fund performance, respectively. Section 4.1 provides details on the propensity score matching. Second, for assignment purposes, we focus on interviews with only one interviewee. Third, we aim at investigating the impact of narcissism on fund managers' investment decisions and thus focus on actively managed equity mutual funds.[14] Fourth and finally, we exclude years in which there were personnel changes to the fund management which might potentially bias our results.

Our final sample comprises 196 interviews with 90 individual fund managers who manage a total of 425 funds over the course of their tenure.[15] In terms of aggregate holdings, we sample roughly 6% of total AUM in actively managed US equity funds as of 2018.

[Please insert Table 1 about here.]

Table 1 reports the corresponding summary statistics.[16] Panel A describes our sample of fund managers. The average fund manager in our sample is in charge of managing a given fund over a period of roughly five years, features a *Narcissism* score of 0.41, and is male. Interestingly, our results suggest that, on average, fund managers display significantly higher levels of narcissism than CEOs (Capalbo et al. 2018: 0.26; Chatterjee and Hambrick 2007: 0.21; Aktas et al. 2016: 0.22 for the acquirer CEO and 0.19 for the target CEO).

[Please insert Figure 1 about here.]

[14] We identify and exclude all other mutual fund types using the on-board Morningstar filter. In addition, we screen the remaining fund names for words that include ''index'' ''idx'' ''S&P'', and variations of these words and omit all index funds left in the sample (cf., e.g., Solomon, Soltes and Sosyura 2014).

[15] 315 of the 424 managers under review have managed multiple funds at some point during our sample period.

[16] Table A1 in the appendix provides detailed descriptions of all variables.

Moreover, Figure 1 depicts the distribution of fund manager narcissism as measured by *Narcissism* and indicates that, while most fund managers do not exhibit particularly pronounced narcissistic tendencies, some do so substantially.

Panel B of Table 1 provides descriptive statistics of the sampled mutual funds. We retrieve fund characteristics for a total of 425 funds, which implies that, over the course of her career, our average fund manager manages about five funds. The average sampled fund has existed for about ten years and holds 787 million US dollars in assets under management. Moreover, the average fund charges 1.35% in total fees, thereof 0.80% in management fees, provides a yearly return of 0.52% during the period under review and turns over approximately 54% of its assets in a given year under review.

Finally, while our average fund under review just about classifies as holding a portfolio with a moderate style consistency (16.37), we observe substantial variation in the extent to which fund portfolios are aligned with the advertised investment style. Specifically, the maximum (minimum) style consistency measured in the sample corresponds to a SCM score of 51.45 (2.74). For ease of interpretation, we dichotomize *Style Consistency* in subsequent analyses. We use the proposed methodology by Morningstar to do so, i.e., $d\_Style\ Consistency_{i,j,t}$ assumes a value of one if fund *i*'s SCM exceeds a score of 29 in month *t*, indicating low style consistency, and zero for the remainder of fund managers whose portfolios exhibit medium and high style consistency (SCM 29).

4. Regression analysis

4.1. Model

To test our conjecture that highly narcissistic managers are more inclined to defy convention by deviating from the advertised investment strategy, we first regress $d\_Style\ Consistency_{i,j,t}$ on our key explanatory variable *Narcissism* as well as a battery of determinants previously shown to explain mutual funds' style consistency and risk profile and several variables controlling for observable variation across the interviews (see Panel C of Table 1). Analogously, to examine our hypothesis that funds managed by narcissistic managers feature lower risk-adjusted returns, we replicate the regression analysis plugging $\alpha_{i,j,t}^{Carhart}$ as the dependent variable.

While a fixed effects model isolates within-fund variation and thereby accounts for unobserved heterogeneity between funds, this only pertains to the time-varying effects. However, since our key independent variable *Narcissism* is time-invariant, we follow the standard methodological approach in the literature and estimate a hybrid model which combines both random and fixed effects. Specifically, we run a correlated random effects model which does not impose strict orthogonality of the time-invariant error term and the time-varying variables (cf., e.g., Schunck 2013), formalized as

$$d\_Style\ Consistency_{i,j,t} = \beta_0 + \beta_1 d\_Narcissism_j + \beta_2{}' \boldsymbol{f}_{i,t-1} + \beta_3 \bar{\boldsymbol{f}}_i + \beta_4 \boldsymbol{g}_j + \beta_5 \boldsymbol{c}_t + \mu_{i,j} + \varepsilon_{i,j,t} \quad (1a)$$

$$\alpha_{i,j,t}^{Carhart} = \beta_0 + \beta_1 d\_Narcissism_j + \beta_2{}' \boldsymbol{f}_{i,t-1} + \beta_3 \bar{\boldsymbol{f}}_i + \beta_4 \boldsymbol{g}_j + \beta_5 \boldsymbol{c}_t + \mu_{i,j} + \varepsilon_{i,j,t} \quad (1b)$$

where the dependent variable in Eq. (1a) is $d\_Style\ Consistency_{i,j,t}$ a binary variable indicating whether or not fund manager *j* in fund *i* commits to the investment style advertised in the fund prospectus in month *t*[17], and the dependent variable in Eq. (1b) is $\alpha_{i,j,t}^{Carhart}$ and denotes fund *i*'s Carhart four-factor alpha. On the right-hand side, $d\_Narcissism_j$ captures manager *j*'s individual narcissism score which we dichotomize via a median split for ease of interpreting the corresponding results.[18] $\boldsymbol{f}_{i,t-1}$ and $\boldsymbol{g}_j$ are vectors of variables controlling for fund characteristics and interview attributes, respectively. Note that, while interview characteristics are time-invariant[19], fund characteristics do vary with time. Thus, by including the respective variables' fund means $\bar{\boldsymbol{f}}_i$ as featured in a correlated random-effects model, we ensure that between-fund differences in $\boldsymbol{f}_{i,t-1}$ are controlled for. We further control for time fixed effects, captured by the vector $\boldsymbol{c}_t$. Finally, $\mu_{i,j}$ and

[17] Our results remain qualitatively unaltered when we employ the metric SCM measure instead of the binary variable $d\_Style\ Consistency_{i,j,t}$.

[18] Our findings remain virtually unchanged when applying the metric score of narcissism. The respective results are available upon request.

[19] Interview variables, as reported in Panel C of Table 1, are average values per fund manager *j*, for managers who gave more than one interview.

$\varepsilon_{i,j,t}$ represent the time-invariant and the time-varying unobserved error terms, respectively.[20]

Next, to examine the role of narcissists on fund management teams, we match our sample of single-managed funds using team-managed funds which feature similar. Specifically, we apply a 1:1 nearest-neighbor matching approach, such that each single-managed (treated) fund is matched with a team-managed (control group) fund based on its respective propensity scores.[21] Our selection of matching covariates is guided by extant evidence of fund characteristics which determine style consistency and fund performance, respectively.[22] To ensure that the difference in fund manager narcissism in teams compared to single-managed funds is not driven by on average higher *Narcissism* scores of single managers, we add *Narcissism* as an additional matching covariate.[23]

Formally, we estimate a modification of the generic linear regression model using the extended sample:

$$\begin{aligned} d\_Style\ Consistency_{i,j,t} = \\ &= \beta_0 + \beta_1 d\_Narcissism_j \\ &+ \beta_2 d\_Narcissism_j \times Team_{i,t} + \beta_3 Team_{i,t} + \beta_4{}' \boldsymbol{f}_{i,t-1} \\ &+ \beta_6 \boldsymbol{g}_j + \beta_7 \boldsymbol{c}_t + \mu_{i,j} + \varepsilon_{i,j,t} \end{aligned} \tag{2a}$$

$$\begin{aligned} \alpha_{i,j,t}^{Carhart} &= \beta_0 + \beta_1 d\_Narcissism_j \\ &+ \beta_2 d\_Narcissism_j \times Team_{i,t} + \beta_3 Team_{i,t} + \beta_4{}' \boldsymbol{f}_{i,t-1} \\ &+ \beta_6 \boldsymbol{g}_j + \beta_7 \boldsymbol{c}_t + \mu_{i,j} + \varepsilon_{i,j,t} \end{aligned} \tag{2b}$$

[20] Unreported analyses show that results do not hinge on running regressions at the fund level. We replicate our model and estimate the effect of fund manager narcissism on the Morningstar Style Consistency Metric (SCM) at the fund *manager* level and find that results are virtually unchanged. Results are available upon request.

[21] We re-estimate our results on a matched sample applying a caliper of 0.01 following e.g., Simintzi, Vig and Volpin (2015) and find qualitatively unchanged results. Results are available upon request.

[22] The matching covariates applied are fund size (Wermers 2012, Huang, Sialm and Zhang 2011), expense ratio (Brown et al. 2009, Huang, Sialm and Zhang 2011) and investment objective (Wermers 2012). Figure A1 plots the (standardized) mean covariate bias between treatment group and control group before and after matching.

[23] Note that, at 0.33 versus 0.41, the average *Narcissism* score among team managers is lower than for single managers.

where, additionally, $Team_{i,t}$, denotes an indicator variable which equals one if a fund is team-managed. The interaction term $d\_Narcissism_j \times Team_{i,t}$ captures the moderating effect of teamwork on style consistency and risk-adjusted performance of narcissistic fund managers, respectively.

4.2. Main results

[Please insert Table 2 about here.]

The left-hand side of Table 2 reports the main findings of our investigation into the effect of fund manager narcissism on investment style consistency. Specification (1) reports the unconditional effect of narcissism on style consistency and supports the hypothesis that highly narcissistic managers are significantly more likely to deviate from the investment focus they state in the fund prospectus. More importantly, however, this pattern persists once we include the fund- and interview-specific control variables in specification (2). While the effect size declines slightly, the negative impact of narcissism on style consistency continues to be economically meaningful: fund managers featuring an above-median level of narcissism are as much as 34% more likely not to adhere to their advertised investment style. [24]

Straightforwardly, altering a fund's investment profile goes against its investors' strategic asset allocation and optimal risk profile. One would assume that at least some of the investors disapprove of such conduct by, e.g., withdrawing their shares. However, given that information about a fund's disaggregated holdings is typically confined to the top ten investments in the mandatory shareholder reports (i.e., N-CSR, N-CSRS), we argue that the narcissism-induced style inconsistency which we document in this study goes unnoticed by the vast majority of shareholders.

Does fund manager narcissism drive fund performance? As can be inferred from regression specifications (4) and (5) on the right-hand side of Table 2, the findings support our conjecture that narcissism has a negative impact on a fund's risk-adjusted performance. Specifically, even after controlling for fund and interview characteristics, we document that the monthly risk-adjusted performance of

[24] Our results remain qualitatively unaltered when using the continuous metrics of style consistency and narcissism, respectively. Results are available upon request.

fund managers with above-median levels of narcissism is about 8 basis points (bp.) lower. This corresponds to an annual underperformance of highly narcissistic fund managers amounting to as much as 1% compared to their peers with below-median narcissism scores. Table A3 reports the results of a supplementary analysis which shows that narcissistic managers are associated with significantly higher risk levels, while raw returns are broadly similar across the entire sample of funds under review. Specifically, narcissistic fund managers are inclined to gamble on extreme outcomes and thereby tilt their asset allocation towards riskier stocks without compensating their shareholders by means of higher average risk-adjusted returns. This squares well with our conjecture that narcissism impacts a given fund's payout profile such that extreme, lottery-like events become more probable. Consistently, we document substantially larger performance amplitudes for funds managed by individuals with above-median narcissism scores.[25]

Next, we examine if and to what extent the results regarding the role of narcissism which we have obtained for solo fund managers change once we look at team-managed funds. Table 2 reports the corresponding results. Contrary to our expectations, specification (3) supports the conjecture that teamwork on average moderates the negative impact of fund manager narcissism on style consistency. While narcissism continues to be a significant determinant for deviating from a given fund's advertised investment focus even for team-managed funds, the magnitude of the effect is much smaller. Teams with a member featuring above-median narcissism scores are only roughly 7% more likely to disregard their investment style.

Unlike with style inconsistency, however, teamwork does not appear to mitigate narcissism-induced underperformance to a material extent. The respective coefficient estimates reported for specification (6) with $\alpha_{i,j,t}^{Carhart}$ as the dependent variable suggest that, even after controlling for a host of fund- and interview-specific parameters, the negative impact of narcissism on fund performance is only slightly moderated by team management. If managers with above-median levels of narcissism collaborate, annualized fund performance of the team-managed funds they work with is only about 5 bp. better as compared to solo managers featuring above-median narcissism scores.

[25] The corresponding results are available upon request.

Taken together, the main finding of this study is that fund manager narcissism not only increases a given shareholder's likelihood of asset misalloction and suboptimal risk exposure, but also leads to inferior risk-adjusted fund performance. Moreover, while the negative impact of manager narcissism on style conformity is substantially mitigated when collaborating in a team rather than operating independently, this moderating effect of teamwork does not extend to the negative impact of narcissism on fund performance.

4.3. Further analyses

4.3.1. Style inconsistency and fund risk: a security-by-security analysis

In a first supplementary analysis, we address a research gap highlighted by Wermers (2012), who asks to shed more light on why style-inconsistent fund managers who divert from the officially advertised investment style tilt their portfolios towards riskier small-cap stocks and growth stocks. In order to explore if narcissism can explain why style-inconsistent fund managers overweight small-cap or growth bets, we first look at what type of stocks these managers tend to invest in. To this end, we focus on the subsample of funds flagged as being style-inconsistent according to the Morningstar methodology described in section 3.3 and run variations of the generic regression model introduced in section 4.1:

$$\%\,Small\text{-}Cap\ Stocks_{i,j,t} = \beta_0 + \beta_1 d\_Narcissism_j + \beta_2{}' \boldsymbol{f}_{i,t-1} + \beta_3\, \bar{\boldsymbol{f}}_i + \beta_4\, \boldsymbol{g}_j + \beta_5 \boldsymbol{c}_t + \mu_{i,j} + \varepsilon_{i,j,t} \quad (3a)$$

$$\%\,Growt\ \ Stocks_{i,j,t} = \beta_0 + \beta_1 d\_Narcissism_j + \beta_2{}' \boldsymbol{f}_{i,t-1} + \beta_3\, \bar{\boldsymbol{f}}_i + \beta_4\, \boldsymbol{g}_j + \beta_5 \boldsymbol{c}_t + \mu_{i,j} + \varepsilon_{i,j,t} \quad (3b)$$

where the dependent variable now denotes the relative proportion of small-cap stocks and growth stocks of portfolio *i* managed by fund manager *j* in month *t*, respectively. Clearly, a given fund's investment focus governs the proportions of the two stock types under review to a large extent. Hence, we include investment

category fixed effects to make sure we capture potential tilts towards riskier growth and small-cap stocks beyond the funds' various different investment strategies.[26]

[Please insert Table 3 about here.]

Table 3 reports the corresponding results. Specification (1) provides evidence that, regardless of a given fund's investment focus, highly narcissistic fund managers who display style-inconsistent investment behavior indeed feature a larger proportion of small-cap stocks. Specifically, we find that a given fund is invested in a larger percentage of small-cap stocks during periods in which it is run by a manager with an above-median narcissism score. The magnitude of this overweight is highly relevant and amounts to as much as 12.8 percentage points for the average fund.

As can be inferred from specification (2), the proportion of growth stocks for the average style-drifting fund is also higher for narcissistic fund managers. About 2.5 percentage points of the variation in the excess proportion in growth stock of funds deviating from their announced focus can be explained by fund manager narcissism. Taken together, the security-by-security analysis suggests that fund manager narcissism can explain why style-inconsistent funds tend to make more growth and small-cap bets. At this, we corroborate related evidence (e.g., Lakey et al. 2008, Patel and Cooper 2014), showing that the myopic focus on reward observed among narcissistic CEOs can be linked to more risky bets.

4.3.2. Alternative measurement of fund manager narcissism

Next, we check for the robustness of our main findings. Specifically, we test if the key results are sensitive to our measures of (i) fund manager narcissism and (ii) style inconsistency.

In this section, we first look at an alternative measure of our key explanatory variable $d\_Narcissism_j$. Prior research on CEO narcissism has shown that the length of their personal profiles published on the online business networking platform LinkedIn proxies for the level of narcissism of the individuals who author it

[26] Investment category fixed effects are included at the level of Morningstar's 'Broad Category Group'.

(Rijsenbilt and Commandeur 2013, Buchholz, Lopatta and Maas 2020).[27] Generally, an online networking platform, such as LinkedIn, facilitates narcissistic personalities to gain further attention and admiration from relevant peers, potential employers and the general public by illustrating milestones and accolades over the course of their professional lives. This arguably reinforces the narcissist's positive self-views and is an expression of entitlement, as a narcissist believes to be deserving of publicity (Rijsenbilt and Commandeur 2013). Thus, by constructing the measure *Lines of Bio*, we complement our main analysis in that we are able to overcome potential caveats of our main proxy *Narcissism*. First, unlike the narcissism score, the profile-based measure does not rely on context. Second, given that the fund manager independently chooses how to present herself on LinkedIn, *Lines of Bio* is an unambiguous manifestation of potentially narcissistic tendencies. Additionally, the length of a given fund manager's personal summary captures the exposure dimension of narcissism, i.e., whether she seeks public exposure as an opportunity to take pride in herself. Thus, we are able to provide a comprehensive characterization of fund manager narcissism by capturing the exposure dimension in addition to the dimension of self-absorption as measured by the narcissism score in our main analysis.

We retrieve the LinkedIn profiles of a total of 349 fund managers[28] and count the number of lines in their personalized profiles. We then re-estimate the generic regression model developed in section 4.1 using *Lines of Bio* as an alternative measure of fund manager narcissism which captures the natural logarithm of the number of lines in a given fund manager's LinkedIn biography. For ease of interpretation, we again dichotomize the *Lines of Bio* metric by means of a median split.

Table 3 reports the corresponding results. Supporting our main finding that narcissists are more willing to invest beyond the style advertised in the prospectus,

[27] Note that the CEO narcissism literature has produced a set of alternative narcissism proxies, including the dimensions of the portrait of a given CEO (Olsen et al. 2014) and her signature (Ham et al. 2018), respectively, in the annual report as well as the number of times she is mentioned in press releases issued by her employer (Hambrick and Chatterjee 2007). Unfortunately, data to control for these potential alternative measures of narcissism among fund managers is unavailable.

[28] We test if the group of funds for which we are able to access managers' LinkedIn pages are significantly different from the remainder of sampled funds. Table A4 reports the corresponding results and discards a potential selection bias.

the coefficient estimate pertaining to $d\_Lines\ of\ Bio_j$ in specification (3) turns our highly significant and the effect even increases in magnitude as compared to our main analysis. To illustrate: A fund manager with a personalized summary featuring an above-median length is on average 77% more likely to deviate from her officially marketed investment strategy. Moreover, we corroborate our second key result, i.e., the inferior risk-adjusted performance of funds run by relatively narcissistic managers (cf., specification (4)). While not as pronounced in magnitude as in the main specification, managers featuring a personalized summary section with above-median length underperform their peers with shorter bios by roughly one third of a percentage point. We conclude that our main results are robust to an alternative measurement of fund manager narcissism.

4.3.3. Alternative measurement of style consistency

In this section, we examine whether our findings are robust to altering the specification of our key dependent variable *Style Consistency*. First, we follow the approach of Bär, Kempf and Ruenzi (2011) who measure a given fund's deviation from average style benchmarks in the same market segment with respect to a specific investment style.[29] A fund's investment style is captured by the factor loadings on *Market*, *SMB*, *HML* and *MOM*, respectively. For comparability, the measure is normalized by average style difference in the respective market segment and year. Thus, a high deviation from the corresponding average factor loading in the segment would indicate that a fund would take a bet on the respective factor. We supplement the proxy proposed by Bär, Kempf and Ruenzi (2011) by the return-based measure 1-R^2 which follows Brown et al. (2009) and indicates the proportion of variation in a fund's returns that can be attributed to its style.[30]

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[29] Bär et al. (2011) formalize their measure 'style extremity' as $SE_{i,t}^F = \frac{|\beta_{i,t}^F - \bar{\beta}_{i,t}^F|}{\frac{1}{n}\sum_{j=1}^{n}|\beta_{i,t}^F - \bar{\beta}_{i,t}^F|}$, where $\beta_{i,t}^F$, represent fund factor loadings on the four factors (F=1,...,4) *Market*, *SMB*, *HML* and *MOM* for each fund *i* in year *t*. The style divergence is further normalized by the average style difference in the respective market segment and year, which allows for comparisons across time, segments and style.

[30] We follow Brown et al. (2009) and measure R^2 by estimating the Carhart four-factor model using a least squares model with two constraints: (i) factor loadings need to sum to one and (ii) factor loadings cannot be negative. The higher the share of variation in fund returns which can be attributed to style factors, the greater the R^2 and hence the more style-consistent the fund under review.

Table 3 reports coefficient estimates pertaining to our key dependent variable $d\_Narcissism_j$ and supports our main findings. Specifically, we find that narcissistic fund managers take significantly more bets on all factors capturing explicit style dimensions (i.e., *SMB, HML, WML*). Finally, the negative effect of narcissism on style consistency continues to turn out highly statistically and economically significant if we employ the returns-based measure of style deviation proposed by Brown et al. (2009). Taken together, the results of this second robustness check suggest that our main findings do not hinge on the construction of our key dependent variable style consistency but instead are qualitatively unchanged for alternative specifications.

5. Discussion and concluding remarks

In this paper, we document evidence supporting a negative impact of narcissism on the outcome of the investment task mutual fund managers are entrusted with by their shareholders. Consistent with the notion that the behavioral implications of narcissism should be highly relevant to delegated money management, we first find that narcissistic fund managers are as much as 34% more likely to deviate from the advertised investment style. Second, we document that, adjusting for risk, highly narcissistic fund managers underperform their non-narcissistic peers by an average 1% annually.

The altered investment profile of style-inconsistent funds likely runs counter to their investors' strategic asset allocation and optimal risk profile. As a result, parts of the investor base face a reallocation need and should be willing to withdraw their shares in funds defying their investment focus. However, funds' shareholder reports typically limit information about a fund's holdings at the level of the individual security to its top ten investments and it is therefore unlikely that the respective fund investors will be able to learn about the misaligned investment focus. Thus, to alleviate the negative consequences of narcissism-induced style inconsistency, one path could be to enhance transparency about the actual holdings of mutual funds by mandating fund providers to itemize them in the shareholder report.

Moreover, our key results highlight the importance of teamwork in money management. We document that the negative impact of narcissism on style conformity is significantly mitigated in team-managed funds. The corresponding

evidence points to a benefit of collaborative decision making in order to alleviate detrimental effects of fund manager narcissism. This result might encourage fund providers to further promote teamwork and opinion diversification in fund management. However, we fail to observe a moderating effect of teamwork when it comes to the negative impact of narcissism on fund performance. Given this evidence, fund companies might want to address the issue of potential narcissism among their managers at yet an earlier stage. Specifically, fund companies could consider eliciting indications of narcissism already during the recruitment process. More broadly, such an approach would complement the common practice of integrating personality tests as a component in the hiring processes (see, e.g., Ishan and Furnham 2018 and Marcus et al. 2007 for comprehensive reviews of the related literature). We hope to spark further research investigating the role of the personality trait narcissism for both job fit and job performance of affected fund managers.

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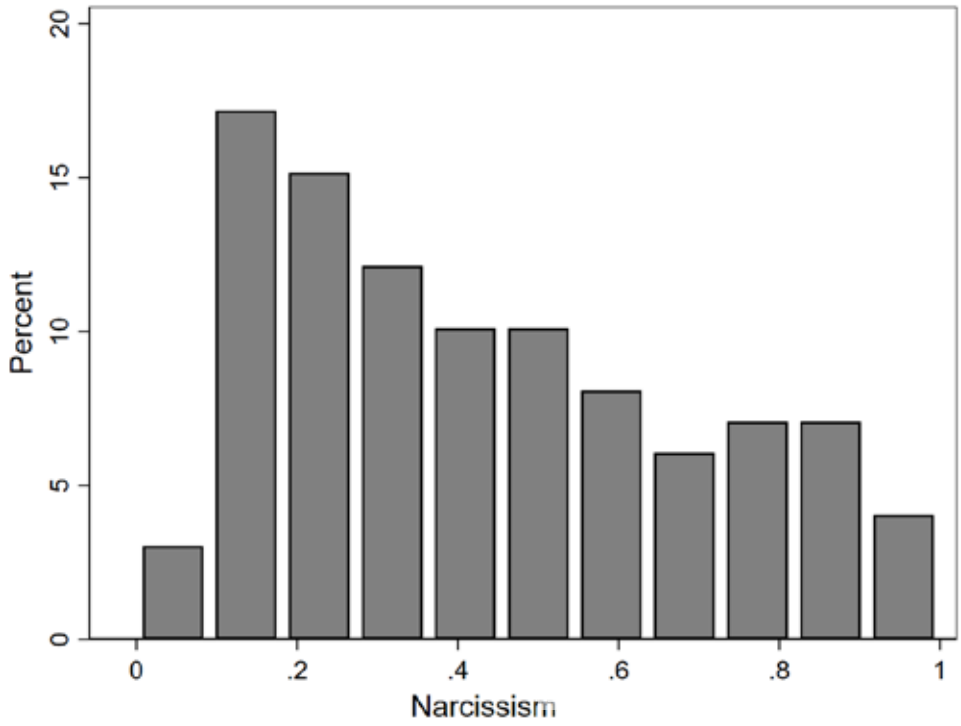
Tables and figures

Figure 1

Frequency distribution of *Narcissism*



Notes: This figure illustrates the distribution of our main independent variable, *Narcissism*. See section 3.3 for a description of the variable.

Table 1

Summary statistics

	N	Mean	SD	Min	25th	Median	75th	Max
Panel A: Fund manager characteristics								
Tenure (avg. tenure, in years)	90	4.993	3.007	0.070	2.732	4.741	6.709	15.50
Narcissism	90	0.410	0.237	0.000	0.188	0.345	0.606	1.000
Female	90	0.074	0.261	0.000	0.000	0.000	0.000	1.000
Panel B: Fund characteristics								
$\alpha^{Carhart}$	425	0.159	0.875	-3.078	-0.359	0.107	0.639	5.056
Fund Age (in months)	425	13.48	9.061	0.126	5.647	11.89	20.64	37.52
Fund Size (TNA in mio. USD)	425	787.1	1,790	0.580	51.00	173.0	705.0	13,300
Expense Ratio (%, annually)	425	1.349	0.597	0.250	0.830	1.150	1.490	11.910
Return (%, monthly)	425	0.519	4.120	-25.13	-1.298	1.000	3.123	18.92
Style Consistency (SCM)	425	16.371	8.159	2.736	7.771	10.32	16.71	51.45
Team Size	425	0.793	0.405	0	1	1	1	1
Turnover (%, annually)	425	53.57	51.35	0.520	19.00	40.00	79.00	247.0
Panel C: Interview attributes								
# Words	196	2,685	774.7	341	2,119	2,623	3,114	5,451
# Sentences	196	151.9	42.39	23	125	147	173	340
Tone	196	0.218	0.258	-0.65	0.046	0.229	0.416	0.867

Notes: This table reports descriptive statistics of our main sample of N=196 interviews conducted with N=90 fund managers, who manage N=425 funds. Panel A reports fund manager characteristics and fund characteristics in Panel B reflect observations at time *t*, the time the interviewed fund manager is managing the fund(s). Interview variables reported in Panel C are average values per fund manager *j*, for managers that gave more than one interview. Table A1 in the appendix provides detailed descriptions of the variables. Section 3.4 describes the sample selection.

Table 2

Main results

	Dependent variables					
	d_Style Consistency			$\alpha^{Carhart}$		
	(1)	(2)	(3)	(4)	(5)	(6)
d_Narcissism	0.550***	0.343***	0.469**	-0.101***	-0.084***	-0.029**
	(6.26)	(4.13)	(2.24)	(-2.68)	(-2.62)	(-2.37)
Team			-0.026			0.112
			(-1.09)			(0.50)
d_Narcissism ×			-0.400**			0.004*
Team			(-2.16)			(1.70)
Fund specific control variables						
Mgr Tenure (ln)		-0.048	-0.026		-0.082***	-0.035
		(-1.24)	(-1.09)		(-4.80)	(-1.04)
Fund Age (ln)		0.339***	0.223***		0.125***	0.053
		(4.99)	(4.76)		(3.93)	(0.85)
Turnover		0.000	0.001		-0.001***	-0.001*
		(0.06)	(0.99)		(-4.10)	(-1.85)
Expense Ratio		-0.015	-0.060		-0.083***	-0.141***
		(-0.15)	(-1.04)		(-5.04)	(-2.79)
Fund Size (ln)		-0.031	0.025		0.008***	0.077**
		(-0.75)	(1.16)		(3.28)	(2.37)
Return		0.000	0.001		0.081***	0.014***
		(0.35)	(1.14)		(4.82)	(9.85)
Interview control variables						
# Words (ln)		0.119	-0.162		0.068	0.155
		(0.46)	(-0.43)		(0.92)	(0.26)
# Sentences (ln)		-0.163	0.030		0.008	-0.329
		(-0.38)	(0.11)		(0.09)	(-0.76)
Tone		-1.464***	-0.013		-0.016**	0.914*
		(-2.75)	(-0.07)		(-2.32)	(1.65)
Time FE	YES	YES	YES	YES	YES	YES
Fund FE	YES	YES	YES	YES	YES	YES
Clustered SE	YES	YES	YES	YES	YES	YES
R^2 (adj.)	0.056	0.154	0.100	0.007	0.203	0.152
N	6,351	6,351	12,012	9,279	9,279	17,594

Notes: This table reports the coefficient estimates of variations of our generic linear regression model introduced in section 4.1. We regress the dependent variables Style Consistency ($d\_Style\ Consistency_{i,j,t}$) and Carhart alpha

($\alpha_{i,j,t}^{Carhart}$) on the narcissism proxy *Narcissism* and various fund and interview characteristics. *d_Style Consistency*$_{i,j,t}$ denotes Morningstar's measure of the degree of overall scatter of the holdings in the most recent portfolio along both the value-growth and size dimensions and is dichotomized using the proposed methodology by Morningstar assigning one to managers that on average exhibit values above 29, indicating highly style inconsistent portfolio management and zero otherwise. $\alpha_{i,j,t}^{Carhart}$ denotes estimated four-factor alphas (Carhart 1997) estimated on past 36 months of monthly data. *Narcissism* is calculated as: ($\sum_{J=1}^{n} \frac{1st\ Person\ Singular\ Pronouns}{1st\ Person\ Singular\ Pronouns + \ 1st\ Person\ Plural\ Pronouns}$) following Raskin and Shaw (1988) and denotes average values per manager *j*, for managers who gave more than one interview. We dichotomize *Narcissism* via a median split. All fund control variables are captured in *t-1* in order to mitigate potential endogeneity concerns. Table A1 in the appendix provides detailed descriptions of the variables. Section 3.4 describes the sample selection. *t*-statistics based on robust standard errors, clustered at the fund level, are provided in parentheses. Statistical significance, denoted by $*$, $**$, and $***$, corresponds to the significance levels of 10%, 5%, and 1%, respectively.

Table 3

Further analyses

	Dependent variable								
					BKR (2011)				BHZ (2009)
	% Small-Cap stocks	*% Growth Stocks*	*d_Style Consistency*	$\alpha^{Carhart}$	*Style Consistency (Market)*	*Style Consistency (SMB)*	*Style Consistency (HML)*	*Style Consistency (WML)*	*Style Consistency (1-RSQ)*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
d_Narcissism	12.752**	2.477**			-0.074	0.0340***	0.385**	0.028***	0.490***
	(2.83)	(2.48)			(-0.00)	(15.79)	(2.12)	(12.31)	(5.43)
d_Lines of Bio			0.777***	-0.030***					
			(2.63)	(-3.09)					
Fund controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Interview controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fund FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Clustered s.e. (fund level)	YES	YES	YES	YES	YES	YES	YES	YES	YES
R^2 (adj.)	0.085	0.199	0.150	0.126	0.063	0.066	0.060	0.034	0.113
N	3,285	2,580	5,462	8,099	11,339	11,339	11,339	11,339	11,339

Notes: This table reports the coefficient estimates of variations of our generic regression model introduced in section 4.1. The dependent variable *% Small-Cap stocks* denotes the proportion of small-cap stocks and the dependent variable *% Growth stocks* indicates the proportion of growth stocks in a given portfolio of fund *i*. The variable *Lines of Bio* captures the natural logarithm of the number of lines of the personalized summary section as published in the manager's LinkedIn profile. We dichotomize *Lines of Bio* via a median split. *Style Consistency* denotes two different measures of style deviation: first, four measures that denote a

fund's deviation in terms of factor loadings on the factors *Market*, *SMB*, *HML* and *WML* from a Carhart model from the average factor loadings of all funds in the same segment at time *t*, following Bär et al. (BKR, 2011) (specifications (5)-(8)). Second, following Brown et al. (BHZ, 2009), [1-RSQ] in specification (9), a return-based measure, which indicates the proportion of variation in a fund's returns that can be attributed to its style (cf., section 4.3.3 for a detailed description of the alternative measures). $d\_Style\ Consistency_{i,j,t}$ denotes Morningstar's measure of the degree of overall scatter of the holdings in the most recent portfolio along both the value-growth and size dimensions and is dichotomized using the proposed methodology by Morningstar assigning one to managers that on average exhibit values above 29, indicating highly style inconsistent portfolio management and zero otherwise. *Narcissism* is calculated as: $\left(\sum_{j=1}^{n} \frac{1st\ Person\ Singular\ Pronouns}{1st\ Person\ Singular\ Pronouns + 1st\ Person\ Plural\ Pronouns}\right)$ following Raskin and Shaw (1988) and denotes average values per manager *j*, for managers who gave more than one interview. We dichotomize the *Narcissism* via a median split. All fund control variables are captured in *t-1* in order to mitigate potential endogeneity concerns. Table A1 in the appendix provides detailed descriptions of the variables. Section 3.4 describes the sample selection. *t*-statistics based on robust standard errors, clustered at the fund level, are provided in parentheses. Statistical significance, denoted by $*$, $**$, and $***$, corresponds to the significance levels of 10%, 5%, and 1%, respectively.

Appendix

Table A1

Variable descriptions

Variable name	Description	Source
Interview-related variables		
# PP Pronouns	(Average) Number of first-person plural pronouns (we, our, ours, ourselves) said by fund manager *j* during the interview(s).	TWST
# PS Pronouns	(Average) Number of first-person singular pronouns (I, me, my, mine and myself) said by fund manager *j* during the interview(s).	TWST
# Sentences (ln)	(Average) Natural logarithm of the number of sentences said by fund manager *j* during the interview(s).	TWST
# Words (ln)	(Average) Natural logarithm of the number of words said by fund manager *j* during the interview(s).	TWST
Narcissism	(Average) Narcissism proxy for fund manager *j* following Raskin and Shaw (1988) calculated as $Narcissism_j = \sum_{J=1}^{n} \frac{1st\ Person\ Singular\ Pronouns}{1st\ Person\ Singular\ Pronouns + 1st\ Person\ Plural\ Pronouns}$	TWST
Tone	(Average) tone of fund manager *j* computed as $Tone_j = \sum_{J=1}^{n} \frac{(Positive\ words - Negative\ words)}{(Positive\ words + Negative\ words)}$ based on the Loughran and McDonald (2011) dictionary.	TWST, L&McD
Fund manager – personal characteristics		
Gender	Equals one if manager *j* is female and zero if manager *j* is male.	MoSt
Lines of Bio	Based on Rijsenbilt and Commandeur (2013) *Lines Of Bio* counts the lines of biography manager *j* publishes on LinkedIn.	LinkedIn
Tenure	Total tenure of mutual fund manager *j*.	MoSt
Fund manager – fund characteristics		
Fund Age (ln)	Natural logarithm of fund age computed as of fund inception, winsorized at the 1st and 99th percentile.	MoSt
Style Consistency (SCM)	The (average) degree of overall scatter of the holdings in the most recent portfolio along both the value-growth and size dimensions in fund *i*. The SCM is calculated as the Euclidian distance between the Value-Growth Metric	MoSt

	(ValueScore) and the Size Metric (SizeScore): SCM = $\overline{\text{ValueScore}^2 + \text{SizeScore}^2}$. The variable is winsorized at the 1st and 99th percentile.	
d_Style Consistency	Equals one if fund *i* features a Morningstar SCM greater than 29, i.e., indicating low style consistency and is zero for funds exhibiting medium and high style consistency (i.e., for SCM 29).	MoSt
Style Consistency (Market, SMB, HML, WML)	A fund's deviation in their investment style, which is computed following Bär et al. (2011): $SE_{i,t}^{F} = \frac{\lvert\beta_{i,t}^{F} - \bar{\beta}_{i,t}^{F}\rvert}{\frac{1}{n}\sum_{j=1}^{n}\lvert\beta_{i,t}^{F} - \bar{\beta}_{i,t}^{F}\rvert}$, where $\beta_{i,t}^{F}$ denotes the fund factor loadings on the four factors (F=1,…,4) *Market, SMB, HML* and *MOM* for each fund *i* in *t*. The style divergence is further normalized by the average style difference in the respective market segment and *t* and is winsorized at the 1st and 99th percentile. For interpretation purposes, we dichotomize the measure in the regression analyses via a median split.	MoSt, KF
Style Consistency ([1-RSQ])	A fund's deviation in their investment style based on Brown et al. (2009) computing RSQ by estimating the four-factor model using a standard constrained least squares model with two constraints: i) the factor loadings need to sum to one and ii) factor loadings cannot be negative. Subtracting RSQ from 1, subsequently, provides us with the measure [1-RSQ]. The variable is winsorized at the 1st and 99th percentile. For interpretation purposes, we dichotomize the measure in the regression analyses via a median split.	MoSt, KF
Fund Size (ln)	Logarithm of total net assets under management. The variable reflects observations at time *t*, the time the interviewed fund manager is actively managing the fund(s) and is winsorized at the 1st and 99th percentile.	MoSt
Return	Monthly return in excess of the fund *i*'s respective benchmark. The variable is winsorized at the 1st and 99th percentile.	MoSt
Turnover	A fund's annual turnover ratio in percent as reported in Morningstar Direct. The variable is winsorized at the 1st and 99th percentile.	MoSt
Expense Ratio	A fund's annual expense ratio in percent. The variable is winsorized at the 1st and 99th percentile.	MoSt
Team	Equals one if fund *i* is managed by a team and zero otherwise.	MoSt
$\alpha^{Car\ art}$	Performance alpha estimated using the extension of the Fama and French (1993) model by Carhart (1997) including factor returns for the *Market, HML, SMB* and *UMD* factors from the Kenneth French data library. The variable is estimated on past 36 months of monthly data and is winsorized at the 1st and 99th percentile.	MoSt, KF

Notes: This table defines the main variables used in the empirical analysis. The data sources are: (i) MoSt: Morningstar Direct Database (ii) TWST: The Wall Street Transcripts (iii) LinkedIn: Online profiles on LinkedIn (iv) KF: Kenneth French Data Library (v) L&McD: Loughran and McDonald (2011) dictionary.

Table A2

TWST interview excerpts

Sample interview 1:

[...] *TWST: I thought perhaps to get started, maybe you could tell me a little bit about your process and the current makeup of your portfolio and maybe about the parameters that you use in terms of sectors and cap size.*

Mr. Montemaggiore: It's good to start here because everything comes back to philosophy and process. For me, essentially what I am trying to do is buy better-than-average or high-quality businesses when I think they are on sale or trading at valuations that are not indicative of their future earnings power. I'm trying to find the intersection of quality and price, and that's across geographies, across sectors, I really don't distinguish, and it's across market caps as well. So I don't have a whole lot of limits in terms of the size of the company. [...]

TWST: And tell me a little bit about the sectors in your portfolio at present and where you're overweight and where you're underweight.

Mr. Montemaggiore: From a sector perspective, I am overweight health care, technology and consumer discretionary. And then there are these groups of companies that I'm overweight called business services. They generally have a lot of the characteristics I look for. It's hard to categorize, and most of them are categorized as industrials. But essentially they are capital-light, they don't have big manufacturing plants, they tend to provide a service for companies, and they tend to lower a company's cost. So they are an outsourcing-type business, whether it'd be call centers, whether it'd be a chemical distributor, there are a number of these really interesting niche businesses that fall under business services that have fantastic characteristics that I found across the world, and I lump them together in business services. [...]

Vincent Montemaggiore - Portfolio Manager at Fidelity Management & Research Company. He co-manages Fidelity Advisor Overseas Fund with Andres Sergeant.

Sample interview 2:

[...] Ms. Kessler: We sold the last of our utility holdings recently and now have no exposure to what we perceive to be an overvalued sector. That's illustrative of the process of selling into momentum and stretched valuations, and redeploying gains into undervalued issues. We also sold a company that was a beneficiary of activist activity as well as merger discussions: Staples (NASDAQ:SPLS). We bought Staples a couple of years ago and sold it recently with a nice gain. [...]

TWST: You are at over 9%, and the S&P is at 8.25%. How have you been able to perform better than the S&P 500?

Ms. Kessler: Our goal is to outperform in strong markets while protecting client assets in down markets. We're now in our seventh year of a bull market, and our portfolio returns have been solid. But just as importantly, we

want to protect on the downside. That's where the attention to intrinsic value relative to valuation of an individual stock becomes critical to, we hope, build a cushion in challenging markets. [...]"

Marian L. Kessler - Portfolio Manager at Becker Capital Management, Inc. She co-manages, among others, the Becker Value Equity Fund with Blake Howells, Steve Laveson, Andy Murray, Thomas McConville and Sid Parakh.

Table A3

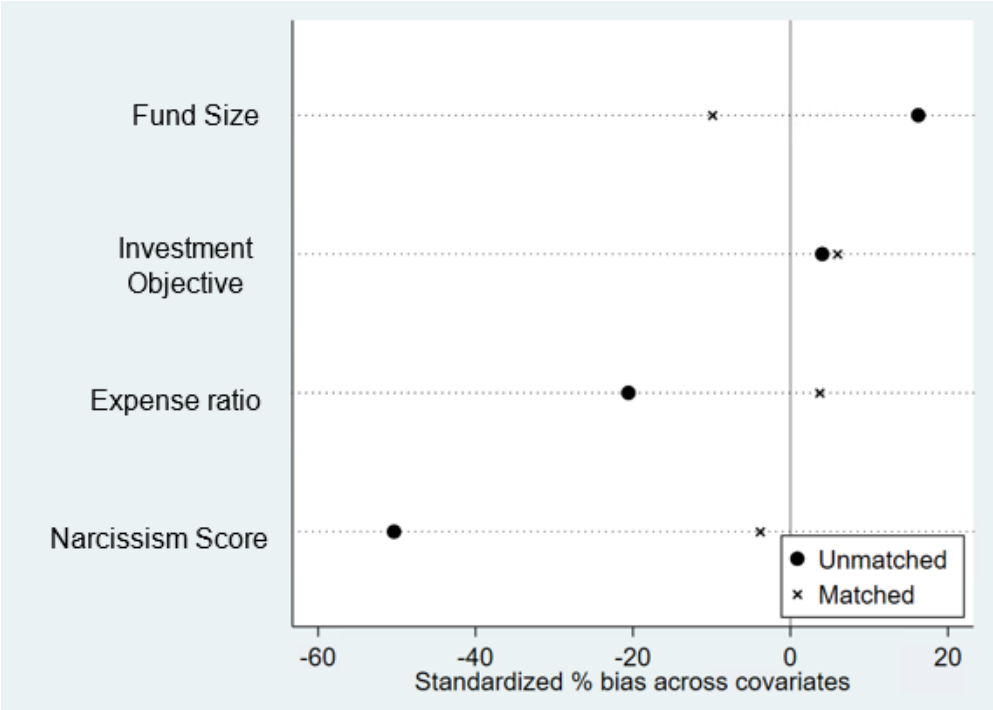
Additional analyses

	Dependent variables			
	Fund Risk		*Return*	
	(1)	(2)	(3)	(4)
d_Narcissism	0.253	0.477***	-0.298	-0.265
	(1.08)	(2.61)	(-1.56)	(-0.92)
Fund specific control variables				
Mgr Tenure (ln)		-0.157***		0.014
		(-4.30)		(0.23)
Fund Age (ln)		0.087		0.163*
		(1.57)		(1.75)
Turnover		0.001		-0.004***
		(1.24)		(-3.69)
Expense Ratio		-0.057		-0.116
		(-0.90)		(-0.88)
Fund Size (ln)		-0.150***		-0.350***
		(-4.67)		(-6.76)
Return		-0.025***		
		(-6.96)		
Interview controls	NO	YES	NO	YES
Time FE	YES	YES	YES	YES
Fund FE	YES	YES	YES	YES
Clustered s.e. (fund level)	YES	YES	YES	YES
R^2 (adj.)	0.007	0.318	0.008	0.092
N	7,024	7,024	11,396	11,396

Notes: This table reports the coefficient estimates of variations of our generic linear regression model introduced in section 4.1. We regress the dependent variables fund risk (*Fund Risk* $_{i,j,t}$) and raw fund returns (*Return*) on the narcissism proxy *Narcissism* and various fund and interview characteristics. *Narcissism* is calculated as: $\left(\sum_{J=1}^{n} \frac{1st\ Person\ Singular\ Pronouns}{1st\ Person\ Singular\ Pronouns + \ 1st\ Person\ Plural\ Pronouns}\right)$ following Raskin and Shaw (1988) and denotes average values per manager *j*, for managers who gave more than one interview. We dichotomize *Narcissism* via a median split. All fund control variables are captured in *t-1* in order to mitigate potential endogeneity concerns. Table A1 in the appendix provides detailed descriptions of the variables. Section 3.4 describes the sample selection. *t*-statistics based on robust standard errors, clustered at the fund level, are provided in parentheses. Statistical significance, denoted by $*$, $**$, and $***$, corresponds to the significance levels of 10%, 5%, and 1%, respectively.

Figure A1

PSM – Matching covariates



Notes: This figure illustrates the (standardized) mean covariate bias between Treatment and Control Group before and after matching for our comparison of single versus team-managed funds. While points visualize the pre-matching bias (Unmatched), crosses mark the after matching (Matched) covariate bias.

Table A4

Data retrieved from LinkedIn

	All	LinkedIn page accessible	LinkedIn page inaccessible	(2) - (3)	
	Mean	Mean	Mean	Diff.	*t*-stat.
	(1)	(2)	(3)		
Fund Risk	3.783	3.697	4.411	0.714	(1.337)
Fund Size	787.1	786.9	788.5	1.630	(0.011)
Expense Ratio	1.349	1.353	1.326	-0.027	(-0.361)
Return	0.519	0.531	0.451	-0.080	(-1.002)
Style Consistency	16.37	16.288	16.89	0.604	(0.448)
Turnover	53.57	53.62	53.29	-0.320	(-0.112)
N funds	425	374	51	425	

Notes: This table compares summary statistics of the sample of funds where the respective fund manager's LinkedIn profile is accessible with those, where LinkedIn profiles are not accessible. Table A1 in the appendix provides detailed descriptions of the variables.