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Entrepreneur narcissism and unethical pro-organizational behaviour: an examination of mediated-moderation model

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ABSTRACT

Drawing on research taking narcissism as a 'dark' side of personality traits, we examine how and when narcissistic entrepreneurs are more likely to engage in unethical pro-organizational behaviours (UPBs). We collected data from 347 entrepreneurial teams in three entrepreneurial parks of China. The results show that entrepreneur narcissism is positively related to entrepreneurial goal difficulty and UPBs, and entrepreneurial goal difficulty mediates the relationship between entrepreneur narcissism and UPBs; and these positive associations are stronger when external environment is more complex. Theoretical and practical implications as well as research limitation of this study are also discussed.

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1. Introduction

In recent years, growing incidents of unethical behaviours by entrepreneurs have caught increased attention in the media and the literature. As a most recent case, Elizabeth Holmes, the founder of Theranos, claiming to revolutionize the blood testing and diagnostic industry, was found not only seriously exaggerated her technical capabilities, but also involved in serious fraudulence (Carreyrou, 2018). Faraday Future and Hyperloop One were also sued for misleading the public and over-publicity (Griffith, 2017). According to Griffith's (2017) investigation of 150 early startups, three-quarters of companies have deliberately offered incomplete or deceptive information to their constituencies. It seems to be common in the entrepreneurial world that entrepreneurs pretend to be successful through unethical pro-organizational behaviours (UPBs) before they actually succeed. UPBs are unethical behaviours or actions to potentially benefit the firm but violate general social norms (Cullinan, Blin, Farrar, & Lowe, 2008; Umphress

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& Bingham, 2011; Umphress, Bingham, & Mitchell, 2010; Warren, 2003). UPBs refer to 'actions that are intended to promote the effective functioning of the organization or its members and violate core societal values, norms, laws or standards of proper conduct' (Umphress & Bingham, 2011).

The entrepreneurial process is a complex one not only requiring tangible knowledge, skills, and innovative capabilities, but also is shaped by the entrepreneur's personality and behavioural tendencies, such as personal motivation and cognitive bias (Baron, Zhao, & Miao, 2015). Due to the uncertain and complex environments, entrepreneurs always need to take initiatives by playing multiple roles in management, R&D, marketing and public relations (Zhang, & Arvey, 2009; Kramer, Cesinger, Schwarzinger, & Gelléri, 2011). As such, their psychology in personality, motivation and prejudice have a critical impact on their subsequent decisions and outcomes. Of the psychological factors, narcissism is identified as a key element particularly relevant to entrepreneurship (Rijsenbilt & Commandeur, 2013).

Narcissism is a personality trait characterized by individuals' inflated sense of self, perceptions of entitlement, excessive arrogance and psychological need for sustained attentions by others (Gerstner, König, Enders, & Hambrick, 2013). Narcissism can motivate individuals to become entrepreneurs, to achieve self-fulfilment and drive them to gain the status of authority, power and self-admiration (Resick, Whitman, Weingarden, & Hiller, 2009). Because narcissists have a strong drive and desire for achievement, they are more likely to engage in deviant behaviours and challenge conventional social and organizational norms (Zhang & Arvey, 2009). For this reason, the literature referred narcissism to the dark side of leaders' personality trait (Resick et al., 2009).

Several studies reported that the entrepreneur is more likely to be narcissistic than an average person (Mathieu & St-Jean, 2013; Obschonka, Andersson, Silbereisen, & Sverke, 2013; Zhang & Arvey, 2009). Research also reveals that individuals with high tendency of narcissism are more likely to engage in unethical behaviours (Amernic & Craig, 2010; Duchon & Drake, 2009; Rijsenbilt & Commandeur, 2013). This is because the pattern of unethical behaviours is related to personality traits, values and norms that affect goal setting (Barrick, Mount, & Strauss, 1993). Narcissistic entrepreneurs as primary decision makers were often observed participating in UPBs that can have a significant effect on organizational strategy and outcomes and benefit their firms (Olsen, & Stekelberg, 2016).

Through a meta-analysis, Kish-Gephart, Harrison, and Trevino (2010) find that when 'bad apples' as individual characteristics interact with 'bad barrels' as external environments, it tends to influence individual unethical choices. In the literature, narcissism as a 'bad personality' was often used to predict unethical behaviours (Rijsenbilt & Commandeur, 2013), and narcissistic individuals were found more likely to engage in radical actions in a threatening environment (Penney & Spector, 2002).

However, the relationship between entrepreneurial narcissism and UPBs has not been clearly specified for a focused investigation in the literature. In particular, the mechanisms that connect and facilitate the relationship between entrepreneurial narcissism and UPBs have not been identified (Rijsenbilt & Commandeur, 2013). To bridge the research gap, this study examines the relationship between entrepreneur

narcissism and UPBs, and potential mechanisms through which entrepreneur narcissism leads to more UPBs.

By investigating this relationship, we intended to make three contributions to the literature. First, we empirically test a type of unethical behaviour that has been overlooked in the entrepreneurship and organizational behaviour literature. Theorists argued that some unethical behaviours can benefit organization (Brief, Buttram, & Dukerich, 2001; Chen, Chen, & Sheldon, 2016; Umphress et al., 2010; Vardi & Weitz, 2005); however, only a limited number of empirical evidence were available. In fact, studies on unethical behaviours (Brief et al., 2001) usually do not consider whether these behaviours are beneficial to organizations or not (Froelich & Kottke, 1991). Our study singles out UPBs for a focused study that may offer new insight into this important aspect to advance the entrepreneurship literature.

Second, we identify and highlight the role of entrepreneurial goal difficulty as a plausible underlying mediator that helps explain the relationship between entrepreneur narcissism and UPBs. Although some studies reported that narcissism promotes unethical behaviours (e.g., fraud; Rijsenbilt & Commandeur, 2013), little has been found to empirically examining the mediating mechanism between narcissism and unethical behaviour. Narcissistic entrepreneurs strive to obtain status through taking aggressive goals and actions as they have an inflated self-concept. We posit that the degree of entrepreneurial goal difficulty as a mediator explains the tendency of narcissistic entrepreneur engages in more UPB. This mechanism may shed light on the theoretical rationale on why entrepreneur narcissism affect UPBs.

Third, this study advances our understanding on how entrepreneur narcissism influences UPBs by identifying environmental complexity as a moderator to explain the strength of the relationship. In response to a recent call by Kish-Gephart et al. (2010) for more research to integrate multiple sets of predictors simultaneously to fully understand the individual unethical decision, we test the interactive effect of entrepreneur narcissism and environmental complexity on UPBs. Our study thus examines the boundary condition of entrepreneur narcissism, which enhances our understanding of the relationship between entrepreneur narcissism and UPB.

2. Literature and hypothesis

2.1. The narcissistic personality

Narcissism was initially observed over a century ago (Ellis, 1898; Freud, 1957); it refers to a clinical symptom characterized by excessive self-admiration, self-aggrandizement and a tendency to believe others as an extension of one self (Gerstner et al., 2013). Although clinical scholars believe that narcissism is of a pathology or related to personality disorder, personality scholars view narcissism as a personality trait, referred to the extent to which an individual inflated sense of self, and focus on strengthening self-view constantly (Campbell, Goodie, & Foster, 2004; Emmons, 1984; Gerstner et al., 2013; Judge, LePine, & Rich, 2006).

Narcissistic individuals have a strong sense of superiority (Emmons, 1984; Gerstner et al., 2013) and perceive themselves as smart with a strong confidence in their abilities (Campbell et al., 2004; Judge et al., 2006). They also tend to lead their

surrounding environments (Raskin, Novacek, & Hogan, 1991). For example, narcissists are likely to lead others and show high expectations or set difficult goals for their peers or followers (Emmons, 1984). They have high level of demand for attentions and applauses (Buss and Chiodo, 1991). Viewing the world as a stage for self-display, they continuously look for roles of a protagonist for themselves (Bogart, Benotsch, & Pavlovic, 2004). From a cognitive perspective, narcissistic individuals are confident that they can be successful in challenging settings; from a motivational perspective, they are eager to reaffirm their egos and superiority (Gerstner et al., 2013). Thus, they tend to set the bar high to achieve success in challenging circumstances (Bogart et al., 2004). Conversely, if they perceive they cannot accomplish the goal they set, they are more likely to engage in unethical behaviour for the purpose of goal-accomplishment and superiority reaffirmation (Gerstner et al., 2013).

2.2. Entrepreneur and narcissism: a natural connection

Existing literature has noted that narcissism is at the core of entrepreneurship (Mathieu & St-Jean, 2013) such that 'individual who hopes to rise to the top of a startup should have a solid dose of narcissism' (Kets de Vries, 2004, p. 188). Psychologically, entrepreneurs are as fallible as anyone who may show narcissism more or less. They are often at a more influential position, which may further reinforce their awareness of self-esteem (Raskin et al., 1991). Millon (1981) argues that narcissism is a response to overestimation in which a person is treated as an individual who is lovable and perfect. Unrealistic self-evaluation leads to unsustainable self-illusion (Rijsenbilt & Commandeur, 2013). Entrepreneurs have a sense of uniqueness because of their superior positions in a firm. Under such circumstance, an inflated ego or self-overestimation may occur. The superiority of an entrepreneurial status and motivation to extend influence and attain power induce a stable flow of applause and affirmation that satisfies the narcissistic needs of the entrepreneur (Mathieu & St-Jean, 2013; Raskin et al., 1991; Rijsenbilt & Commandeur, 2013).

2.3. Entrepreneur narcissism and UPB

This concept of UPBs reveals two important properties of ethical behaviours: to help the focal organization and to deviate from social moral standards (Chen et al., 2016). Entrepreneurs may fabricate or exaggerate their firm performance to enhance their reputations or maintain their competitive advantages, or forge company financial reports to attract investors (Cialdini, Petrova, & Goldstein, 2004). Because these actions or behaviours do bring benefits to the organization, they are more favourable than self-centred behaviours based on organizational norms and values (Brief & Motowidlo, 1986; Chen et al., 2016; Penner, Dovidio, Piliavin, & Schroeder, 2005), or than narrow explanation of utilitarianism (Chen et al., 2016). According to the concept of UPB, neither ethical norms nor utilitarian criterion is inadequate (Chen et al., 2016; Umphress et al., 2010). For any pro-organization behaviour to be truly ethical, it must meet the social moral standards, known as the 'hyper-norms' (Warren, 2003). The concept of UPBs thus expands extant business ethics studies by directing

considerations to ethical challenges posed by otherwise positive values, motives and behaviours (Chen et al., 2016).

Previous studies unveil that narcissistic entrepreneurs are often overconfident in their ability (Campbell et al., 2004; Judge et al., 2006), and with high psychological needs to obtain external and attentions (Buss & Chiodo, 1991). First, overconfident entrepreneurs are more inclined to engage in UPBs because of their unrealistic beliefs in future positive organizational performance (Rijsenbilt and Commandeur, 2013;). Such unrealistic beliefs may lead them to further believe that future organizational performance can compensate for any earnings management and avert detection. Second, narcissistic entrepreneurs strive to obtain status through aggressive actions as they have an inflated ego or self-concept. Narcissistic entrepreneurs constantly look for a key role as the protagonist under spotlights (Bogart et al., 2004). Therefore, they are likely to take bold actions to attract attentions, such as exaggerate and fabricate firm performance, or forge company financial reports to obtain investors' attention (Griffith, 2017). Scholars have argued that managers with higher level narcissism are more likely to engage in unethical behaviours (Amernic & Craig, 2010). Summarizing the literature concerning the recent examples of UPB disclosed in the public domain, it is highly likely that there is a positive association between entrepreneur narcissism and UPB. Therefore, we propose the following hypothesis:

Hypothesis 1: Entrepreneur narcissism is positively associated with UPB.

2.4. Entrepreneur narcissism and entrepreneurial goal difficulty

Entrepreneurs are motivated innovators who often set ambitious goals for themselves and their employees (Shane, Locke, & Collins, 2003). According to the goal-setting theory (Locke and Latham, 1990, 2002), setting appropriate challenging goals contributes to higher and better task performance. Conversely, research showed that 'people with unmet goals were more likely to engage in unethical behaviour than people attempting to do their best' (Schweitzer, Ordóñez, & Douma, 2004, p. 423). We define entrepreneurial goal difficulty as the degree of difficulty with which entrepreneurs achieve their performance goals.

Narcissists exaggerate self-concept of their importance and influence (Resick et al., 2009; Wales, Patel, & Lumpkin, 2013). They are eager to accomplish grand and admirable goals (Maccoby, 2006, 2012). This may inspire and drive their dedication and commitment to achieve higher performance (Wales et al., 2013). Narcissistic entrepreneurs thus are highly motivated to pay efforts to external self-affirmation. The conscious self-image reinforcement suggests narcissistic entrepreneurs desire constantly praise and admiration (Buss & Chiodo, 1991). In order to do so, entrepreneurs tend to take ambitious and adventurous actions. They view their firms as a tool to meet their needs in applauses and attentions. Consequently, for entrepreneurs with a high level of narcissism, they are more likely to take bold actions to accentuate attention to their vision (Judge, Piccolo, & Kosalka, 2009; Wales et al., 2013).

Further, narcissists are driven by strong desire for competition (Maccoby, 2006, 2012; Rosenthal & Pittinsky, 2006). According to the upper-echelon theory (Hambrick & Mason, 1984), narcissistic entrepreneurs tend to lead their firms to

make an aggressive strategic decision for bold organizational actions, characterized as setting difficult entrepreneurial goals. We argue that by taking their firms toward more difficult goals focused strategic posture (Rauch, Wiklund, Lumpkin, & Frese, 2009), narcissistic entrepreneurs can improve their personal prestige and achieve their desires for praises and attentions. Therefore, we hypothesize the following:

Hypothesis 2: The higher degree in narcissism an entrepreneur is, the more difficult entrepreneurial goal the person will set for the firm.

2.5. Mediating role of entrepreneurial goal difficulty

As a positive relationship between top manager's narcissism and unethical behaviour has been reported recently (Rijsenbilt and Commandeur (2013), we can expect that narcissistic entrepreneurs are more likely to engage in UPBs. However, little is known about how narcissistic entrepreneurs manifest themselves with increased UPBs through setting their ambitious goals. It is necessary to examine entrepreneurial goal difficulty as a mediator in the relationship between entrepreneur narcissism and UPBs.

Our rationale for entrepreneur narcissism leading to a more difficult entrepreneurial goal and promote more UPB is based on the viewpoint that narcissism entrepreneurs are striving for obtaining status through setting challenging goals (Rosenthal & Pittinsky, 2006). They are overconfident in their ability (Campbell et al., 2004; Judge et al., 2006), and are focused on obtaining grand and admirable achievements (Maccoby, 2006, 2012). From the theory of upper echelons (Hambrick & Mason, 1984), entrepreneurs have a significant influence on their firm strategies. Given these findings, the narcissistic entrepreneur may be bold in pursuing business goals with their exaggerated ability. To achieve aggressive and difficult goals, they are more likely to undertake bold and deviant behaviour (Schweitzer et al., 2004; Welsh & Ordóñez, 2014). As such, they may engage in some unethical conducts, such as inflated expression of their production, or financial reporting fraud to investors, to fulfil the difficult entrepreneurial goals. Taken together, although both entrepreneur narcissism and setting difficult entrepreneurial goal are likely to drive entrepreneur UPBs, we propose that some of the effects that entrepreneur narcissism has on UPBs occurs through setting difficult entrepreneurial goal. Yet, under unrealistic goals that outpace the capability of the performers, research showed that 'people with unmet goals were more likely to engage in unethical behaviour than people attempting to do their best' (Schweitzer et al., 2004, p. 423). Therefore, we hypothesize the following:

Hypothesis 3: Entrepreneurial goal difficulty mediates the relationship between entrepreneur narcissism and UPBs.

2.6. Moderating role of environmental complexity

Environmental complexity plays a significant role when top executives perceive a large variety of factors as relevant to their business operations (Miller & Friesen, 1983; Tan & Litsschert, 1994). This construct generally covers the elements of the number, diversification and distribution in the task–environment relationship (Tan &

Litsschert, 1994). Industries in a high degree of monopoly are generally considered less complex than those with a low degree of monopoly, such as the ones filled with competitors (Williamson, 1965). A basic assumption is that the variety in the number and distribution influence organizational information processing requirements as the complexity of the environment has been closely correlated to information uncertainty (Lawrence & Lorsch, 1967). This dimension significantly affects perceived uncertainty by entrepreneurs, and in turn influences their strategic decisional characteristics such as a propensity for risk taking, proactiveness and futurity (Miller & Friesen, 1982).

There is sufficient reason to believe that entrepreneurial narcissists may provide a necessary strength to take UPBs in a more complex environment (Penney & Spector, 2002). Penney and Spector (2002) found that narcissists are most likely to engage in aggressive behaviour in response to external threats. In a complex environment, entrepreneurs encounter uncertain or even threatening information (Williamson, 1965), thus they are more likely to engage in exaggerating publicity or misleading investors to achieve their status or psychological needs for self-affirmation. In other words, compared to a less complex environment, it is more difficult for them to obtain investment in a more complex one. Therefore, we hypothesize the following:

Hypothesis 4: Environmental complexity moderates the relationship between entrepreneurial narcissism and UPB such that the positive relationship between the two will be stronger when entrepreneurs confront with more complex environment.

In a complex environment when considering the composition, diversification and distribution of task-environment elements, external information is always diverse, irregular and disorganized (Tan & Litsschert, 1994). Under this circumstance, causal relationship is often invisible or unidentifiable (Finkelstein & Hambrick, 1996), the resulting approaches-ends vagueness in decision making affords entrepreneurs even greater discretion and scope of action (Hambrick & Finkelstein, 1987). Therefore, entrepreneurs with high level narcissism are more likely to channel their behaviour preferences depending on their internal compasses (Waldman & Yammarino, 1999) and personal construal (Finkelstein & Hambrick, 1996).

Furthermore, entrepreneurs do not have sufficient time, resources or cognitive ability to comprehensively analyse the external environment when they face diverse and fierce competitors (Eisenhardt, 1989; Hambrick, Finkelstein, & Mooney, 2005). They are more likely to incline to what used to work, what they find familiar or comfortable, and what fits their cognitive schema (Hambrick et al., 2005). When individuals are ambiguous, they have a general tendency to pull their own psychological dispositions and personal interpretations into decision-making process (Mischel, 1977). We thus may expect that this tendency to be particularly strong in high narcissistic entrepreneurs operating in a complex context. Accordingly, narcissistic entrepreneurs may be more likely to take challenges or bold actions following their internal compasses or cognitive schema in complexity environment due to information diversity and uncertainty. Therefore, we hypothesize the following:

Hypothesis 5: Environmental complexity moderates the relationship between entrepreneur narcissism and entrepreneurial goal difficulty such that the positive relationship between the two will be stronger when entrepreneurs confront with more complex environment.

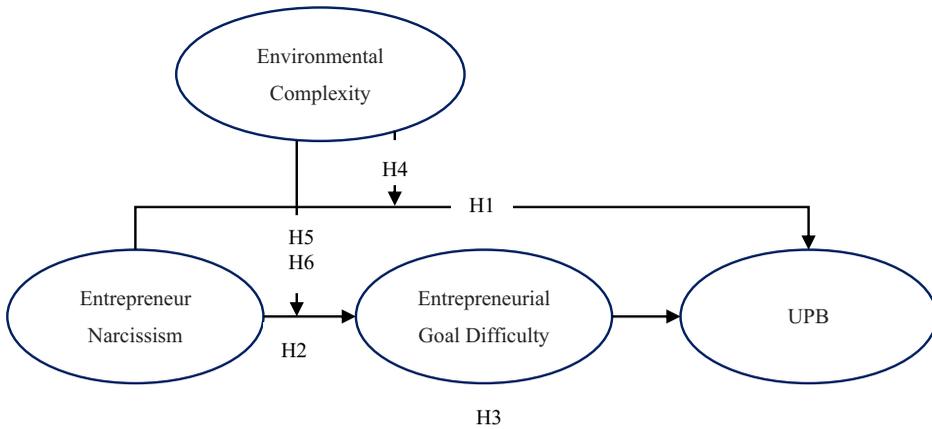


Figure 1. Research model. *Source:* Literature analysis-based conceptualization by authors.

Moreover, when the external environment is complex, entrepreneurs with stronger narcissism tend to set challenging goals, and followed by possibly subsequent UPBs because they make bold decisions according to their internal drives and compasses rather than external environmental information (Waldman & Yammarino, 1999). Therefore, we further propose that entrepreneurial goal difficulty mediates the moderating effect of environmental complexity on the relationship between entrepreneur narcissism and UPBs. We predict that environmental complexity moderates the positive relationship between entrepreneur narcissism and UPB in H4, and entrepreneurial goal difficulty mediates the relationship between entrepreneur narcissism and UPB in H3. Combining H3 and H4, we may logically hypothesize a mediated-moderations relationship informed by Edwards and Lambert's (2007) term of environmental complexity, entrepreneur narcissism, UPB and entrepreneurial goal difficulty as the following:

Hypothesis 6: Entrepreneurial goal difficulty mediates the moderating effect of environmental complexity on the relationship between entrepreneur narcissism and UPB, such that the indirect effect between entrepreneur narcissism and UPB through entrepreneurial goal difficulty is stronger when entrepreneurs confront with more complex environment.

Our hypothesized relationships are presented in Figure 1.

3. Methods

3.1. Sample and procedure

We collected data from four business incubation and entrepreneurial parks located in Beijing, Shanghai and Jiangxi province in China. These parks were established by the local government to encourage and support entrepreneurial innovations (Yu, Stough, & Nijkamp, 2009). We first contacted these parks' administrators and explained the purpose of this study to obtain their approval and assistance for accessing the respective entrepreneurial data sources. With their administrative assistance, we then contacted entrepreneurs and their team members and requested them to complete the questionnaires.

The survey contained two separate questionnaires: one for entrepreneurs and the other for entrepreneurial team members or business partners. The two questionnaires were sealed in two separate envelopes with pre-addressed and postage-paid return envelopes. The two sets of questionnaires were then placed in a package and mailed to each park's administrator, respectively, with clear instructions on survey distributions. The surveys were distributed to the targeted participants by the administrators. Upon the completion of the questionnaires, the filled questionnaires were sealed and mailed back to the researchers. The two sets of questionnaires were coded separately with matching coding for analysis. All measurements were published scales in English. We translated the scales following back-translation procedure recommended by Brislin (1970). Entrepreneurs self-reported the construct of narcissism and UPBs, and the entrepreneurial team members rated entrepreneurial goal difficulty and environmental complexity.

We distributed 389 sets of questionnaires and received 360 sets of questionnaires. After deleting invalid responses, we obtained 347 sets of completed responses. Of the 347 sets of entrepreneur data used for analyses, 58.79% were males, 2.02% received high school or vocational education, 11.53% had associate degrees, 58.21% had bachelor degrees, 25.94% held graduate degrees and 2.81% with doctoral degree. The average age and position tenure of the respondents were 32.98 (SD = 6.18) and 10.26 (SD = 6.46), respectively. The firms' average number of employees was 2.41 with Log transformation (SD = 1.23), and the average year of the firms' age was 9.20 (SD = 9.18). Firms' industries, according to industry classification of China, 16.14% in broadly defined advertising and media, 22.48% in craft and design, 27.95% in manufacturing and the remaining 33.43% in software and computer services.

3.2. Measures

3.2.1. Narcissism

Narcissism was self-reported by the respondents using an eight-item scale developed by Resick et al. (2009). This items included eight adjectives: 'arrogant', 'self-centred', 'assertive', 'boastful', 'conceited', 'egotistical', 'show-off' and 'temperamental'. Entrepreneurs were asked to evaluate the extent to which each word captures their personality toward the narcissism orientation on a six-point scale, from 1 - *Definitely Not Applicable* to 6 - *Definitely Applicable*. The Cronbach alpha coefficient of this scale is .92.

3.2.2. Entrepreneurial goal difficulty

Core entrepreneurial partners or team members were asked to assess the entrepreneurial goals difficulty set by the founder(s) or managers of the firm with a three-item scale by Mawritz, Folger, and Latham (2014). A sample item is 'The entrepreneurial goals set by founder/manager are too difficult'. The items were rated from 1 = *Strongly Disagree* to 6 = *Strongly Agree*. The Cronbach alpha coefficient of this scale is .79.

3.2.3. Environmental complexity

We adopted the eight-item scale to measure environmental complexity developed by Tan and Littschert (1994). The respondents rated the extent to heterogeneity and

diversity of external environment in the following eight aspects: (1) competitors, (2) customers, (3) suppliers, (4) technology, (5) regulations, (6) economy, (7) social-culture and (8) international. Core entrepreneurial partners or team members were asked to evaluate the extent to each item based on a six-point scale ranging from 1-Very Simple to 6-Very Complex. The Cronbach alpha coefficient of this scale is .91.

3.2.4. Unethical pro-organizational behaviour

UPBs were measured by a six-item scale developed by Umphress et al. (2010). Sample items included 'If it would help my organization, I would misrepresent the truth to make my organization look good'. Entrepreneurs were asked to self-rate the items from 1 = *Strongly Disagree* to 6 = *Strong Agree*. The Cronbach alpha coefficient of UPB is .90.

3.2.5. Control variables

We controlled for age, size and industry sectors of the firms. The reason was that with the increase in firm size and years in operations, they tended to develop more formal routines and procedures that limit individual entrepreneur's bold actions. As for the industry sectors, due to the different nature of the industries, some unethical behaviours may be more common than others, which affect the entrepreneur's moral decision-making. The industry sectors were coded as three dummy variables. Additionally, we controlled for age, gender, education and tenure as demographic variables. Age may impact on individual risk-taking proclivities. Males may be more inclined to aggressive behaviours than their female counterparts. Entrepreneur tenure and education level may also have influences on their risk orientations.

4. Results

4.1. Data verification

Before testing the hypotheses, we conducted confirmatory factor analyses (CFAs) in AMOS 21.0 to examine the validity of the four constructs: narcissism, difficult entrepreneurial goal, environmental complexity and UPB. We compared a baseline model (four-factor) to six alternative models to examine the fitting indices through testing the differences of chi-square between baseline model and alternative models (Anderson & Gerbing, 1988). As shown in Table 1, the baseline model provided the best fit to the

Table 1. Comparison of measurement models.

Model	Factor	χ^2	df	$\Delta\chi^2/df$	IFI	TLI	CFI	RMSEA	SRMR
Baseline Model	Four factors	789.71	269	–	.91	.90	.91	.07	.05
Model 1	Three factors	1148.53	272	119.61***	.85	.83	.85	.10	.10
Model 2	Three factors	1971.51	272	393.93***	.70	.67	.70	.13	.14
Model 3	Three factors	1007.61	272	72.63***	.87	.86	.89	.09	.09
Model 4	Two factors	2055.18	274	421.82***	.68	.65	.68	.14	.14
Model 5	Two factors	2499.40	274	569.89***	.61	.57	.60	.15	.19
Model 6	One factor	3518.04	275	909.44***	.43	.37	.42	.19	.21

Note: Model 1: narcissism and entrepreneurial goal difficulty were combined; Model 2: narcissism and UPB were combined; Model 3: entrepreneurial goal difficulty and environmental complexity were combined; Model 4: narcissism, entrepreneurial goal difficulty and UPB were combined; Model 5: narcissism, entrepreneurial goal difficulty and environmental competition were combined; Model 6: all constructs were combined.

Source: Authors analysis.

data ($\chi^2 = 789.71$, $df = 269$, $\chi^2/df = 2.94$, $IFI = .91$, $TLI = .90$, $CFI = .91$, $RMSEA = .07$, $SRMR = .05$). The CFA results provided evidence that the four variables had satisfactory construct validity.

To provide further evidence on the construct validity of the four variables, we followed the methods recommended by Fornell and Larcker (1981). First, we calculated average variance-extracted (AVE) of the four constructs based on the factor loadings. The AVE value of narcissism, difficult entrepreneurial goal, environmental complexity and UPB were .63, .55, .57 and .61, respectively. It demonstrated that the four constructs had satisfactory convergent validity. Second, we compared the square root of the AVEs with the correlation coefficients among the constructs according to the method recommended by Fornell and Larcker (1981), the square root of the AVEs are greater than correlation coefficients among these latent variables, which suggested that the four constructs had satisfactory discriminant validity. These results, together with CFAs, offered evidence that narcissism, entrepreneurial goal difficulty, environmental complexity and UPB had acceptable construct validity.

4.2. Descriptive statistics

We reported the mean, standard deviants as well as their correlations of all major variables in Table 2. The results showed that entrepreneur narcissism was positively related to entrepreneurial goal difficulty ($r=.24$, $p<.001$) and UPB ($r=.38$, $p<.001$). Moreover, entrepreneurial goal difficulty was also positively related to UPB ($r=.29$, $p<.001$). These results showed initial support for the first three hypotheses.

4.3. Hypotheses testing

We conducted a set of multiple regression analyses to test our hypotheses with Stata 14.0, and the results were reported in Table 3. The results showed that entrepreneur narcissism was positively related to UPBs ($\beta=.39$, $p<.001$, Model 4) when controlling for control variables. Hence, Hypothesis 1 was supported. We also found that entrepreneur narcissism was significantly and positively associated with entrepreneurial goal difficulty ($\beta=.25$, $p<.001$, Model 1). Thus, Hypothesis 2 was supported.

To test the mediating effect of entrepreneurial goal difficulty in the relationship between entrepreneur narcissism and UPBs, we followed the steps recommended by Baron & Kenny (1986). The effect of narcissism on UPBs decreased to .34 ($p<.001$, Model 5) from .39 ($p<.001$, Model 4) after entrepreneurial goal difficulty was entered into the regression model, while the effect of entrepreneurial goal difficulty on UPBs was still significant ($\beta=.21$, $p < 0.001$, Model 5). These results showed that entrepreneurial goal difficulty partially mediated the relationship between entrepreneur narcissism and UPBs. Hence, Hypothesis 3 was supported.

To test H4, we followed the recommendation by Aiken & West (1991). Before testing the moderating effect of environmental complexity, we first centralized entrepreneur narcissism, entrepreneurial goal difficulty, and environmental complexity to generate an interactive term. We then entered entrepreneur narcissism, environmental complexity and the interactive term (entrepreneur narcissism \times environmental

Table 2. Mean, SD and correlations.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Gender	.42	.49													
2 Age	32.98	6.18	-.09												
3 Tenure	10.26	6.46	-.05	.89***											
4 Education	3.16	.72	-.07	.29***	.22***										
5 Size	2.41	1.23	-.04	-.02	-.05	.06									
6 Found	9.20	9.18	-.04	-.07	-.12*	.06	.00								
7 lnds 1	.22	.42	.07	-.07	-.10	-.03	-.02	.04							
8 lnds 2	.45	.45	-.10	-.07	-.09	.04	-.04	.00	-.34***						
9 lnds 3	.33	.47	.02	.14**	.18***	.08	.08	-.06	-.38***	-.44***					
10 NA	2.60	1.29	-.10	-.14**	-.11*	-.04	-.02	.00	.12*	-.10*	-.05	.92			
11 EGD	4.09	.86	-.04	-.19***	-.19***	-.08	.00	.10	-.02	.09	-.04	.24***	.79		
12 EC	3.96	1.03	.05	-.09	-.09	-.05	-.05	.07	.05	.02	-.01	.05	.41***	.91	
13 UPB	2.46	1.29	-.08	-.10	-.11*	-.02	-.02	.00	.08	-.06	-.03	.38***	.29***	.06	.90

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Abbreviations: NA, narcissism; EGD, entrepreneurial gold difficulty; EC, environmental complexity; UPB, unethical pro-organizational behaviour.

Source: Authors analysis.

Table 3. Regression results.

Variables	Goal difficulty			UPB				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Control variables								
Gender	-.01	-.03	-.03	-.05	-.05	-.05	-.04	-.03
Age	-.05	-.03	-.02	.06	.07	.06	.10	.10
Tenure	-.10	-.09	-.11	-.14	-.11	-.13	-.18	-.16
Education	-.05	-.04	-.02	.01	.02	.01	.03	.04
Firm Size	-.01	.01	.01	-.02	-.02	-.02	-.03	-.03
Found	.09	.06	.06	-.02	-.03	-.02	-.02	-.04
Industry 1	-.01	-.04	-.06	.01	.01	.01	-.01	-.00
Industry 2	.13	.08	.08	-.04	-.07	-.04	-.06	-.07
Industry 3	.06	.02	.00	-.01	-.02	-.01	-.05	-.05
Independent variable								
Narcissism	.25***	.23***	.17**	.39***	.34***	.39***	.29***	.26***
Mediator								
Goal difficulty					.21***			.18**
Moderator								
Environmental complexity		.41***	.42***			.05	.07	-.01
Interaction								
NA × EC			.16**				.30***	.27***
R^2	.13***	.29***	.32***	.23***	.26***	.23***	.30***	.32***
ΔR^2		.16**	.03*				.07*	

NA, narcissism; EC, environmental complexity.

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Authors analysis.

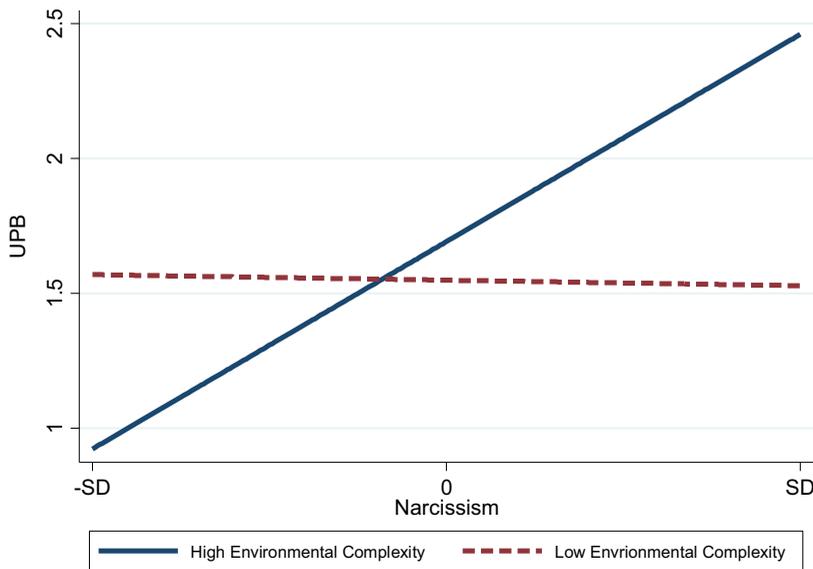


Figure 2. The moderating effect of environmental complexity on the relationship between entrepreneur narcissism and UPB. Source: Authors analysis.

complexity) into the regression equation (Model 7). This interaction term was positively related to UPBs ($\beta = .30$, $p < .001$, model 7), and the R^2 change was also significant ($\Delta R^2 = .07$, $p < .05$). The results indicated that the relationship between entrepreneur narcissism and UPB was stronger if entrepreneurs confronted with more complex environment. Hence, Hypothesis 4 was supported. Figure 2 depicted

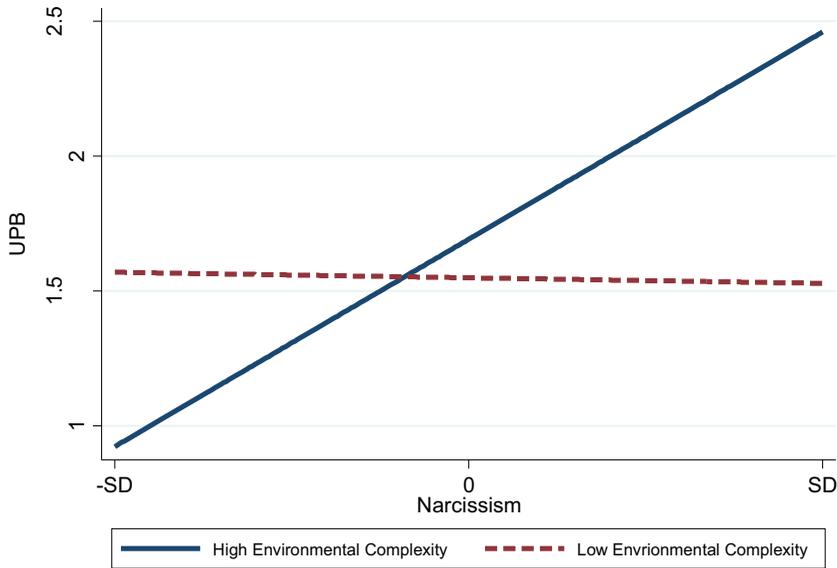


Figure 3. The moderating effect of environmental complexity on the relationship between entrepreneur narcissism and entrepreneurial goal difficulty. *Source:* Authors analysis.

Table 4. Results of the moderated path analysis.

	Narcissism → entrepreneurial goal difficulty → UPB				
	Stage		Effect		
	X → M PMX	M → Y PYM	Direct effect PYX	Indirect effect PMX × PYM	Total effect PYX+(PMX × PYM)
Low environmental competition (−1 s.d)	.03	.30*	.03	.01	.04
High environmental competition (1 s.d)	.21**	.28*	.45**	.06**	.51**
Difference	.18**	−.02	.42**	.05**	.47**

Note: * $p < .05$, ** $p < .01$.
Source: Authors analysis.

the moderating effect of environmental complexity on the relationship between entrepreneur narcissism and UPB.

Similar to Hypothesis 4, we found that the interaction term was positively related to entrepreneurial goal difficulty ($\beta = .16, p < .01$, Model 3), and the R^2 change was also significant ($\Delta R^2 = .03, p < .05$). This indicated that the relationship between entrepreneur narcissism and entrepreneurial goal difficulty was stronger when entrepreneurs faced more complex environment. Thus, Hypothesis 5 was supported. Figure 3 presented the moderating effect of environmental complexity on the relationship between entrepreneur narcissism and entrepreneurial goal difficulty.

To test Hypothesis 6, we followed the general path analytic framework proposed by Edwards and Lambert (2007). As shown in Table 4, the effect size difference in the indirect effect of entrepreneur narcissism on UPBs via entrepreneurial goal difficulty was .05, with the 99% confidence interval computed using bootstrap estimation excluding zero, which suggests that the moderating effect of environmental

complexity on the relationship between entrepreneur narcissism and UPB was mediated by entrepreneurial goal difficulty, Hypothesis 6 was supported.

5. Discussion and conclusions

This study found that entrepreneurial narcissism positively related to UPBs, and goal setting difficulty as a mediator link the relationship between entrepreneurial and UPBs. Furthermore, we found that environmental complexity strengthened the direct effect of entrepreneurial narcissism on goal setting difficulty and UPBs, and the indirect effect of entrepreneurial narcissism on UPBs through goal setting difficulty.

5.1. Theoretical implications

Our study makes several theoretical contributions. First, while unethical behaviours of entrepreneurs have been on the rise with increasing public attentions, insufficient research effort has been found in the literature (Baron et al., 2015). A few studies found on unethical behaviours were mainly focused on those motivated by self-interest irrelevant to firm performance (Baron et al., 2015). Research suggests that individuals engage in unethical behaviours to benefit organizations (Umphress & Bingham, 2011; Umphress et al., 2010). This study confirmed that entrepreneur narcissism can be an alarming source of unethical behaviour. In view of the growing interest in entrepreneurship, it is crucial to explore how entrepreneur narcissism can bring negative consequences, including pro-self and pro-organizational hazards.

Moreover, our results shed light on the mediating mechanism via which entrepreneur narcissism and UPBs were related. This finding helped explain how entrepreneur narcissism leads to UPBs. In their self-aggrandizing pursuit of 'greatness' (Wales et al. 2013), narcissistic entrepreneurs tend to push the envelope to the 'reckless' side for the benefit of firms. Such outcomes may be facilitated through setting difficult goals, which may pressure individuals to engage in UPBs when firms are fall short of achieving their overly-ambitious goals. Our findings show that it is not narcissism per se, but entrepreneurial goal difficulty that may lead the entrepreneur to engage in UPBs. In other words, entrepreneurial goal difficulty may offer a caveat to understanding the phenomenon that narcissistic entrepreneurs are more likely to engage in UPBs.

We also found that the moderating effect of environmental complexity on the relationship between entrepreneur narcissism and entrepreneurial goal difficulty as well as UPBs. Owing to the increased diversity related to greater environmental complexity and the resulting increased information uncertainty, entrepreneurial firm's strategic decision making is more likely to rely on entrepreneur discretion. Consistent with this expectation, we found that environmental complexity positively moderated the relationship between entrepreneur narcissism and difficult entrepreneurial goal as well as UPBs, such that these relationships were stronger when environmental complexity was high. These findings suggest that narcissistic entrepreneurs are more likely to impact themselves or their firms' entrepreneurial goal as well as UPB in a complex environment. When the environment confronted with entrepreneur was relatively

simple, the impact was negligible. Therefore, while complex environments are more likely to induce stronger narcissistic entrepreneurs with a specific suitable context in which to shape the degree of entrepreneurial goal difficulty, and in turn may conduct more UPB; less complex environments do not appear to induce such relationship.

5.2. Practical implications

The findings of this study have several practical implications related to the constituencies of entrepreneurial narcissists. First, the potential destructive UPBs derived from high degree of narcissistic entrepreneur, although potentially beneficial to organization, should be concerned by all related parties. This requires all the stakeholders to be mindful of the entrepreneur narcissistic traits and paying attention to potential UPBs. Second, practitioners need to emphasize the significance of organization governance and a fine ethical climate. Entrepreneurs with high level narcissistic trait are 'bad apple' or a dark side personality trait, which can lead to a toxic corporate environment. Firms should make concerted efforts in monitoring practices to decrease the negative effect of narcissism. Ethics cultivating may also be beneficial, as well as clearly define the norms of conduct for acceptable and unacceptable actions or behaviours in corporate. Third, decisive and immediate actions were taken if related parties speculate an increasing level of entrepreneur narcissism. We could use the measurement of narcissism adopted in this study or other measurement indicators proved to be valid to evaluate the narcissism to provide evidence for suspicions. Obviously, placing the entrepreneur under greater control of the entrepreneurial team or partner would depend on a more can-do entrepreneurial team monitoring. Shareowners should fully understand the constructive and the destructive effect of narcissism.

5.3. Limitations

Inevitably, there are several limitations in this study. First, this study adopted a cross-sectional design, the causal relationship cannot be derived. The interpretations of the results need to be cautious. Future research may use a longitudinal research design to test how entrepreneurial narcissism influence entrepreneurial goals and UPBs. Second, the data for the dependent variable was self-reported by entrepreneurs, because of the difficulty in collecting data related to unethical behaviours (Baron et al., 2015), self-reported data are likely to be biased. It is useful for future research to collect unethical behaviour data through entrepreneur object actions or rated by entrepreneurial partners for accurate testing the relationship between entrepreneur narcissism, difficult entrepreneurial goal and UPB. Third, we just consider entrepreneur narcissism as a power source of UPB. However, individual UPB is related to moral identification, moral stage. In future study, we will collect these dates and manipulate them as control variables to test the impact mechanism of entrepreneur narcissism on UPB.

Disclosure statement

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