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The positive connection between dark triad traits and leadership levels in self- and other-ratings

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Abstract

People with high dark triad tendencies are often found in leadership positions. Yet research is lacking on whether dark triad personality traits positively correlate with the height of leadership levels (no leadership position, low-level leaders, high-level leaders, head and founder of the company). To explore this relationship between the dark triad and these leadership levels, three studies ($N_{Germany} = 137$; $N_{Hungary} = 333$; $N_{BothCountries} = 355$) were conducted, to measure dark triad scores for each leadership level. The results reveal that people in higher leadership levels display both higher self-rated and subordinate-rated dark triad scores. Further research is needed to investigate whether this finding is replicable for more objective measures and longitudinal studies as well as cultural norms, which may discourage or support dark triad traits. As the organizations are an important factor in promoting ethic-oriented behavior in individuals, one practical implication could be increased focus on developing ethical behavior during the assessment and training of leadership positions.

Keywords Leadership · Dark triad · Leadership levels · Narcissism · Machiavellianism · Psychopathy

1 The positive connection between dark triad traits and leadership levels

Financial scandals and fraud cases within large corporations (e.g., Enron, Lehman Brothers, or Worldcom) have drawn the attention of organizational psychologists to the personality traits of leaders, particularly those heading a company (Jonason et al. 2015). As famous company heads and founders have been described as having both charismatic and dark personalities, often being referred to as narcissists or psychopaths (Ashcroft 2016; Isaacson 2011), higher-level leaders may score higher than other leadership levels for dark triad traits. While lower level leaders 'only' negatively affect their own team (Van Dijk and De Cremer 2006), the heads and founders impact on the company as a whole (Farrell and Whidbee 2003). Thus, narcissistic founders can damage the entire organization by, for example, making riskier decisions, manipulating policies, and using strategies like bullying, fraud, or the distorting of financial information (e.g., Cragun et al. 2020). This research therefore explores whether dark personality traits correlate with leadership position. First, however, the dark triad as a dark personality construct needs to be defined.

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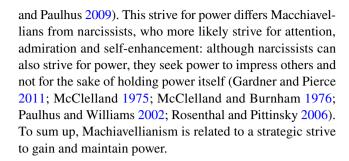
1.1 The dark triad of personality

The term 'dark triad' (DT) refers to three personality traits—narcissism, Machiavellianism, and psychopathy (Paulhus and Williams 2002). These personality traits are considered dark personality traits because of their destructive outcomes (Braun 2017; Paulhus 2014; Rauthmann 2012). In the work context, these personality traits are considered subclinical, meaning that they are not diagnosed or treated clinically. Therefore, they are all measured along a continuum and do not have prescribed cut-off values. As such, when we refer to DT leaders or employees in this paper, we mean individuals with comparably high values of the three dark personality traits. The distinctive characteristics of each DT trait are explained below.

1.1.1 Narcissism

Narcissism is characterized by a feeling of superiority and the seeking of attention and admiration (Gardner and Pierce 2011). For instance, narcissists still respond to social desirability due to their motivation to impress others and get their attention, while the so-called *Malicious Two* in terms of Machiavellians and psychopaths do not care about socially desirbale behavior (Kowalski et al. 2018; Rauthmann and Kolar 2012). In addition, narcissistic individuals show hypercompetitiveness (Watson et al. 1998), dominance (Corry et al. 2008) and entitlement (Raskin and Hall 1979). However, narcissism is not only about self-love, high self-evaluation, and holding a positive, egocentric self-image but also includes being hypersensitive and defensive (Morf and Rhodewalt 2001). In other words, narcissism is related to feelings of grandiosity, self-exhibition, and self-obsession as well as vulnerability (Miller et al. 2017). These two sides can be called narcissistic admiration and rivalry (Back et al. 2013). In addition, hypersensitivity can lead to a lack of empathy for others as well as amoral, irrational, and paranoid behavior (Rosenthal and Pittinsky 2006). In sum, narcissism is related to a highly inflated but highly vulnerable self-image with a strive for attention and admiration.

1.1.2 Machiavellianism

Machiavellianism refers to the tendency to maximize personal benefits and achieve individual goals by using other people as tools (Christie and Geis 1970; Bereczkei 2015). This personality trait can be characterized by a strong intention and ability to use manipulative tactics in interpersonal relations to gain and maintain power (Christie and Geis 1970; Bereczkei 2017). This striving to gain and maintain power can lead to calculating and reckless, unethical behavior in a self-serving manner (Christie and Geis 1970; Jones

and Paulhus 2009). This strive for power differs Macchiavellians from narcissists, who more likely strive for attention, admiration and self-enhancement: although narcissists can also strive for power, they seek power to impress others and not for the sake of holding power itself (Gardner and Pierce 2011; McClelland 1975; McClelland and Burnham 1976; Paulhus and Williams 2002; Rosenthal and Pittinsky 2006). To sum up, Machiavellianism is related to a strategic strive to gain and maintain power.

1.1.3 Psychopathy

Psychopathy is associated with high impulsivity, uncontrolled aggression, and thrill seeking (Cima and Raine 2009; Paulhus and Williams 2002). This high impulsivity leads to disinhibition, meanness, and boldness (Patrick et al. 2009) so that people with high psychopathic tendencies exhibit meanness and a low regard for others in addition to decreased levels of empathy, affect, guilt, and conscience (Babiak and Hare 2006; Patrick et al. 2009). In addition, psychopathy is associated with proactive aggression (Cima and Raine 2009). Their uncontrolled aggression for a thrill differs the psychopath from the impression-motivated narcissist: While both narcissists and Machiavellians would not show aggression in front of others, as for narcissists it could mean to make a bad impression and because Machiavellians are too strategic and controlled, psychopaths maintain their callous and unemotional affect when being watched by the suffering person (Lee and Gibbons 2017; Paulhus and Williams 2002; Rauthmann 2011; Vize et al. 2018). This behavior further shows their lack in not only empathy but also anxiety (Babiak and Hare 2006). To conclude, psychopathy is related to a highly impulsive, uncontrolled, and aggressive behavior.

While these dark triad traits are distinct constructs, they also overlap in the areas of decreased moral and social emotions, the use of self-centered interpersonal strategies (exploitation and manipulation of others, duplicity), and decreased honesty and agreeableness (Jonason and Buss 2012; Jonason et al. 2010; Jones and Paulhus 2009; Lee and Ashton 2005; Paulhus and Williams 2002). Thus, DT traits not only have distinctive but also shared characteristics in terms of their low ethical, moral, agreeable, and interpersonal behavior (Erzi 2020; K. Lee and Ashton 2005; Paulhus and Williams 2002). Accordingly, previous research showed high intercorrelations between the three dark triad values (e.g., Paulhus and Jones 2015).

1.2 The effect of DT leaders on their work environment

DT leaders can seem inspiring, charismatic, and even trustworthy at first glance (Deluga 2001; Nohe and Michaelis

2016; Rosenthal and Pittinsky 2006) as well as display positive traits like extraversion or open-mindedness (Paulhus and Williams 2002). Furthermore, DT leaders can exhibit positive leadership qualities such as visionary thinking (narcissism; Rosenthal and Pittinsky 2006), strategic planning (Machiavellianism; Wilson et al. 1996) or courage (Psychopathy; Babiak and Hare 2006; Ray and Ray 1982). However, the effect of DT leaders can be disastrous. For instance, the narcissist's self-involved decision making and hypersensitive self-image can detrimentally influence job and company performance as well as interpersonal relationships (Ames and Kammrath 2004; Blair et al. 2008; Chatterlee and Hambrick 2007; Van Dijk and De Cremer 2006). To give another example, the Machiavellian's ruthless, disagreeable, and egoistic striving for power can lead to highly competitive workplaces and unethical work strategies (Jonason et al. 2015; Paulhus and Williams 2002). Similarly, psychopathy can lead to increased bullying, unfair supervision, and conflict, complicating interpersonal relationships at work and violating ethical standards (Boddy 2011, 2015; Boddy et al. 2010; Scherer et al. 2013). Overall, DT personalities can damage interpersonal work relationships and others' well-being (DeShong et al. 2015; Southard et al. 2015) as well as increase workplace bullying (Dåderman and Ragnestål-Impola 2019) and show counterproductive work behavior and poor job performance (O'Boyle et al. 2012). As leaders, these personalities exploit and emotionally exhaust their subordinates, leaving them tense, depressed, and less satisfied and engaged in their work (Ellen et al. 2017; Mathieu et al. 2014). To sum up, DT people can harm their work environment and, therefore, it needs to be explored how such people acquire positions of power.

1.3 The connection between DT traits and leadership

Although it may sound surprising, people with high levels of DT traits are commonly found in leadership positions (Babiak et al. 2010; Grijalva et al. 2015; Harms et al. 2011; Landay et al. 2019; Nai 2019; Wisse and Sleebos 2017). This connection of DT traits and leadership can be explained in two ways: Either DT people emerge as leaders or leadership positions negatively influence people's DT traits.

1.3.1 The leadership emergence of DT people

A plethora of studies have focused on the emergence of people with high DT traits as leaders (e.g., Harms et al. 2011). Previous findings suggest that people with high levels of DT traits employ less ethical but quite useful strategies to become leaders: for instance, they use manipulation to get what they want and are willing and able to fake their skills in job-relevant situations such as employment interviews

(Jonason et al. 2015; Paulhus et al. 2013). As an example, by acting prosocially, Machiavellians can be perceived as people who support their team members (Castille et al. 2016). This manipulation combined with talkativeness (communicating enthusiasm), effective self-promotion (Kowalski et al. 2018; Paulhus et al. 2013), and the ability to create a positive first impression (Back et al. 2010) can lead to getting the leadership position they want. In chaotic scenarios, for example, narcissists are forceful enough to speak up and guide their team with confidence (O'Reilly et al. 2014). Hence, their charismatic, manipulative behavior can shine due to select-in recruiting (i.e., recruiting based on the positive characteristics a person has), while the bad traits stay undetected due to a lack of select-out recruiting (i.e., recruiting based on the negative characteristics a person does not have; Wisse and Sleebos 2017). Particularly when no one else is in charge, DT people assume leadership positions (Brunell et al. 2008).

1.3.2 The influence of leadership levels on DT traits

Another idea and not that well-researched idea is that people in higher positions develop higher DT tendencies. For instance, the demands placed on executives in particular are high as they need to be strategic on an organizational level (Hambrick et al. 2005; Papadakis and Barwise 2002). Strategic and ethical behavior are often seen as two bipolar components, which could be a reason why strategic behavior sometimes prevails over ethics (Singer 2010). In other words, strategic behavior can sometimes be unethical (Machiavellianism; Jones and Paulhus 2014). For instance, Frank et al. (1993) explored the relationship between economics studies and cooperative behavior and found that one semester's economics training led to lower honesty in returning money. Furthermore, risk-taking is another competence common among founders, even being considered a driver of company innovation (Gilley et al. 2002). However, taking risks "may cause managers to de-emphasize responsiveness and accountability. Some managers are portrayed as loners or 'entrepreneurs' who are willing to do anything and use anybody in an egotistical pursuit of their goals" (p. 346). Put differently, taking risks may lead people to unethical decisions (Berman and West 1998). Such unethical risk-taking may be viewed as psychopathic behavior (Jones and Paulhus 2014). Another success factor for founding a company is charisma (Tosi et al. 2004). As charismatic people "are perceived by followers as having exceptional qualities and an extraordinary ability to foster loyalty and commitment" (p. 400, J. Lee et al. 2018), the perception of others may influence their self-esteem to a point that they become narcissistic because socializing experiences such as unconditional praise can influence narcissistic tendencies (Thomaes et al. 2009; see narcissism and charisma; Rosenthal and Pittinsky

2006). Thus, the leadership context can have an influence on people. Furthermore, personality can change according to context. For example, Nilforooshan and Salimi (2016) discovered the mediating role of adaptability in their research on how personality can influence career engagement. In addition, DT traits are possibly less stable than other personality traits (Schreiber and Marcus 2020). To be precise, "evidence from modern behavioral genetics suggests that antisocial tendencies develop through a complex interplay of genes and environmental factors, which partially manifest in stable individual differences" (p. 4; Furtner et al. 2017). In sum, holding a higher leadership position could increase people's DT tendencies.

1.4 The present research: DT traits and different leadership levels

While there is a clear connection between DT trait and leadership, the different leadership levels remain unexplored. However, DT people strive for more and more success, even though they may already have a leadership position (Bruk-Lee et al. 2009), as well as have a higher intention to be the head of their own company (Akhtar et al. 2013; Brown et al. 2013; Cragun et al. 2020; Young and Pinsky 2006). Thus, it is likely that people with high DT tendencies not only emerge as leaders but also advance to higher leadership positions. Similarly, high-level leaders are more likely to display DT-related traits—such as a low agreeableness but also high-risk propensity, autonomy need, and persuasive communication (Al-Jubari et al. 2017; Jonason et al. 2015; Jones and Paulhus 2014; Paulhus 2014). Thus, it is likely that high-level leaders may have acquired higher DT values than low-level leaders. This connection between *higher* DT traits and *higher* leadership levels compared to lower leadership levels has been indicated in previous literature: It has been estimated that people with high DT tendencies are three times more likely to be at senior organizational levels (Babiak et al. 2010; Brunell et al. 2008; O'Reilly et al. 2014). In addition, a study in which coaches were asked about their DT clients found that coaches attributed higher DT values to people in higher leadership positions (Diller et al. 2020a, b). To conclude, leadership levels and DT tendencies might positively correlate.

This exploration of different leadership levels is an essential step, as there are differences between low-, middle-, and top-level management in terms of power over the organization and the people in it (Antonakis et al. 2003; Chen and Bliese 2002; DeChurch et al. 2010). Therefore, the following research explores whether dark triad personality traits positively correlate with the height of leadership levels (no leadership position, low-level leaders, high-level leaders, heads and founders of a company), hypothesizing the following:

Hypothesis: There is a positive correlation between leadership level in a company and

(a) narcissism (H1a)
(b) Machiavellianism (H1b)
(c) psychopathy (H1c).

To explore this research question, three studies were conducted in two countries. In a Pre-Study in Germany ($N_1 = 137$), participants with different leadership levels (no leadership position, low-level leaders, high-level leaders, heads and founders of a company) provided self-assessments with regard to narcissism and Machiavellianism. Study 1 was conducted in Hungary ($N_2 = 333$) and consisted of self-assessments with regard to the three dark triad traits. In Study 2 in Germany and Hungary ($N_3 = 356$), leaders and their subordinates were asked to assess the leader regarding all three DT traits. In all three data sets, work-attitude measures were included. These measures were included due to the primary research project on the dark triad's people work attitude and how this may differ between narcissism, Machiavellianism, and psychopathy (Diller et al. 2021). Due to the different theoretical focusses, research purpose, and samples, it was suggested by reviewers to split the data set into two projects based on the argumentation of clarity and no relevant overlap, according to Fine and Kurdek (1994). To provide independence for each manuscript (APA 2018; JOB 2018), it is stated that the primary research project explores the relation between dark triad values and work attitude measures, independent of leadership level, leadership topics, and without reporting any statistical data on different leadership levels.

2 Pre-study

In the Pre-Study, the role of narcissism and Machiavellianism among leadership levels was investigated. It was hypothesized that there is a positive correlation between leadership level and DT traits in terms of narcissism (H1a) and Machiavellianism (H1b). While research about psychopathy in the workplace has just started to appear in the area of time this study started (Smith and Lilienfeld 2013), we were not aware of and therefore did not include psychopathy as a trait that could occur in the workplace.

2.1 Method

2.1.1 Sample

The sample of this study consisted of 137 working people (110 male, 27 female) of different occupational backgrounds

and industries, who had German as their first language. The working people were 30 employees without a leadership position, 40 low-level leaders, 47 high-level leaders, and 20 heads and founders of a company, who had been in their position for less than one year to 45 years. The participants were from different occupational fields. Appendix A provides an overview of the sample of this study.

2.1.2 Design

To test the hypotheses, a self-assessment questionnaire—officially on work attitude—was handed out with a stamped and addressed envelope at entrepreneurship events, at fast lanes at an airport, at golf courses, at expensive cafés, and to some companies. At the beginning, the questionnaire stated that it was an anonymous evaluation and not an assessment

of performance. It also said that all data would be treated strictly confidentially. Therefore, the participants were asked to answer conscientiously and straightforwardly.

2.1.3 Measures

After the acquisition of personal data, there were questions about narcissism and Machiavellianism. We further inquired after work motivation, egoistic motivation, organizational identification, and psychosomatic complaints; however, these questions were not used in the analysis, as they were not relevant for the hypotheses. All items were answered both for *the present day* and for *5 years ago*. Retrospective items were collected to determine whether DT personality influences the leadership level or vice versa. As the results regarding the connection between leadership

Table 1 Descriptive statistics, inter-correlations, and reliabilities

	M(SD)	1	2	3	4	5	6	7
Pre-study ($N_{Germany}$ = 137)								
1. Age[a]	1.91 (0.88)							
2. Gender[b]	1.20 (0.40)	0.01						
3. Education[c]	1.80 (0.95)	−0.17*	−0.01					
4. Duration of position (in years)	7.82 (9.39)	0.66***	−0.16	−0.20*				
5. Narcissism	3.61 (0.77)	−0.20*	−0.14	0.03	−0.03	(0.74)		
6. Machiavellianism	4.34 (0.77)	−0.08	−0.20*	0.07	0.07	0.66***	(0.83)	
Study 1 ($N_{Hungary}$ = 333)								
1. Age (in years)	38.62 (11.16)							
2. Gender[b]	1.60 (0.49)	0.08						
3. Education[d]	3.73 (0.59)	−0.26**	0.01					
4. Duration of position (in years)	4.75 (2.53)	0.60***	0.03	0.02				
5. Narcissism	2.76 (0.62)	−0.15**	−0.24***	0.02	−0.01	(0.71)		
6. Machiavellianism	3.18 (0.65)	−0.16**	−0.14*	0.03	0.01	0.33***	(76)	
7. Psychopathy	2.13 (0.69)	−0.17**	−0.25***	−0.09	−0.09	0.40***	0.37***	(0.78)
Study 2 ($N_{BothCountries}$ = 355)								
1. Age (in years)	40.08 (11.66)							
2. Gender[b]	1.43 (0.50)	0.01						
3. Education[e]	3.99 (1.34)	−0.04	0.04					
4. Country[f]	1.42 (0.49)	−0.09	−0.21***	−0.16**				
5. Narcissism	3.23 (0.88)	−0.12*	−0.06	−0.04	−0.09	(0.66)		
6. Machiavellianism	2.47 (1.08)	−0.06	−0.01	0.02	0.15**	0.14**	(0.76)	
7. Psychopathy	1.29 (0.83)	−0.16**	0.06	0.06	−0.04	0.17**	0.37***	(0.70)

***p < .001, **p < .01, * p < .05. Correlational values in brackets resemble Cronbach alpha reliability

[a] 1 = below 35 years, 2 = between 35 and 50 years, 3 = over 50 years

[b] 1 = male, 2 = female

[c] Adapted to the German school system: 0 = no high school degree, 1 = high school degree, 2 = university degree, 3 = PhD degree

[d] Adapted to the Hungarian school system: 1 = less than elementary school, 2 = elementary school, 3 = vocational school, 4 = high school degree, 5 = university degree

[e] Adapted to fit both school systems: 0 = no school degree, 1 = nursery school, 2 = secondary school, 3 = technical/vocational diploma, 4 = high school degree, 5 = university degree, 6 = PhD degree, 7 = habilitation

[f] 1 = German, 2 = Hungarian

level and 5 years ago DT values was the same as for the present day, only the answers given for the present day were reported. Descriptives, correlations, and reliabilities can be found in Table 1.

2.1.4 Narcissism

Narcissism was measured with the German Narcissistic Personality Inventory Short Scale (NPI 15) by Schütz et al. (2004). Three items that referred to leadership motivation ("I like to have authority over others"; "It means a lot to me to be in a leadership position"; "I want to have a leading position") were excluded, as they could have interfered with the research question. The remaining 12 items, such as "I really enjoy being the center of attention", were answered on a Likert scale ranging from 1 (*fully disagree*) to 6 (*fully agree*).

2.1.5 Machiavellianism

As Machiavellianism is rather difficult to measure (Wilson et al. 1996), two different sources were used for item selection. The first source was the "Leistungsmotivationsinventar" (LMI; Schuler and Prochaska 2001), in which two scales—Dominance and Status Orientation—were derived from McClelland's (1975) definition of Machiavellian power motivation. Dominance is described as the tendency to exert power and influence over others for personal success. Status orientation is defined as the ambition to take over an important role and a high rank in social hierarchy in order to achieve high-ranking positions and an advanced occupational career. Nine items were selected, such as "For me, it is an incentive to attain a position of esteem" on the basis of their reported discriminability (Schuler and Prochaska 2001).

The second source was added because McClelland and Watson (1973) as well as Andresen (2002) found that Machiavellians make riskier decisions. Thus, two items of the Readiness to Assume Risk scale of the Hamburg Personality Inventory (HPI) by Andresen (2002) were included (e.g., "In dangerous situations I can be extremely cold-blooded"). The final Machiavellianism scale comprised 11 items that were answered on a Likert scale ranging from 1 (*fully disagree*) to 6 (*fully agree*). In an exploratory factor analysis, both the eigenvalues and the scree plot suggested a one-factor solution for all 11 items, explaining 37% of the variance with factor loadings from 0.184 to 0.729.

2.1.6 Statistics

IBM SPSS Statistics 24.0 (IBM Corporation, Chicago 2016) was used for computation, using correlations for the hypotheses. Moreover, it is important to note that there was no change in results when controlling for occupational background.

2.2 Results

In line with the hypotheses, there was a positive correlation between leadership level and narcissism (H1a) as well as Machiavellianism (H1b). In addition, it is important to note that narcissism and Machiavellianism also significantly positively correlated with each other (see Table 2). In addition, Table 3 provides information on the dark triad's means and standard deviations according to leadership levels.

3 Study 1

The findings from the Pre-Study support the assumption that individuals at higher leadership levels are more likely to be narcissistic and Machiavellian. As this could be country or time specific, Study 1 was conducted at a later time and in a country with a different cultural and economic background. This time, all three of the DT traits were measured, as Jones and Paulhus (2014) had published the Short Dark Triad (SD3) scale. Thus, Study 1 aimed to investigate the same hypotheses but in Hungary and with the inclusion of psychopathy as the third DT trait. It was again hypothesized that there is a positive correlation between leadership level and DT traits in terms of narcissism (H1a), Machiavellianism (H1b), and psychopathy (H1c).

3.1 Method

3.1.1 Sample

The sample of this study consisted of 333 working people (41% male, 59% female) of different occupational backgrounds who had Hungarian as their first language and were between 20 and 64 years old. Among these people, there were 266 employees without a leadership position, 47 low-level leaders, and 17 high-level leaders. As it is not uncommon for people in Hungary to found their own company, we included a question on whether they are the head and founder of a company: 34 of the 333 people founded their own company. Participants had held their position for less than one year to over 10 years and were from different

Table 2 Correlation analyses for DT traits and leadership levels

	DT correlates	Leadership level[a]		Study 1: heads and founders of a company (yes/no)[b]	
		r	p	r	p
Pre-study (self-rated)					
Narcissism	$(r_{nm}=0.66^{***}, p_{nm}<0.001)$	0.26**	0.002		
Machiavellianism		0.36***	<0.001		
Study 1 (self-rated)					
Narcissism	$(r_{nm}=0.33^{***}, p_{nm}<0.001$	0.20***	<0.001	0.20***	<0.001
Machiavellianism	$r_{np}=0.40^{***}, p_{np}<0.001;$	0.14*	0.010	0.08	0.149
Psychopathy	$r_{mp}=0.37^{***}, p_{mp}<0.001)$	0.04	0.480	0.11*	0.044
Study 2 (subordinate-rated)					
Narcissism	$(r_{nm}=0.15^{*}, p_{nm}=0.012;$	0.13	0.129		
Machiavellianism	$r_{np}=0.10^{**}, p_{np}=0.003;$	0.21**	0.008		
Psychopathy	$r_{mp}=0.32^{***}, p_{mp}<0.001)$	0.17*	0.010		
Study 2 (self-rated, not anonymous)					
Narcissism	$(r_{nm}=0.28^{**}, p_{nm}=0.008;$	0.06	0.598		
Machiavellianism	$r_{np}=0.29^{**}, p_{np}=0.005;$	0.19	0.065		
Psychopathy	$r_{mp}=0.33^{**}, p_{mp}=0.001)$	0.10	0.367		

$nm=$ narcissism correlating with Machiavellianism, $np=$ narcissism correlating with psychopathy, $mp=$ Machiavellianism correlating with psychopathy

[a]Pre-study: $0=$ no leadership level, $1=$ low-level leaders, $2=$ high-level leaders, $3=$ heads and founders of a company; Study 1: $0=$ no leadership level, $1=$ low-level leaders, $2=$ high-level leaders; Study 2: $1=$ low-level leaders, $2=$ high-level leaders, $3=$ heads and founders of a company

[b]Study 1: $0=$ non-founder, $1=$ heads and founders of a company. Pre-study: $N_{Germany}=137$; Study 1: $N_{Hungary}=333$, Study 2: $N_{BothCountries}=355$

$^{***}p<0.001$, $^{**}p<0.01$, $^{*}p<0.05$

Table 3 Descriptive statistics of DT traits by leadership level

	Leadership level					
	No leadership level	Low leadership level	High leadership level	Founder	Study 1: founder[a]	Study 1: non-founder[a]
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Pre-study						
Narcissism	3.31 (0.77)	3.59 (0.68)	3.69 (0.62)	3.89 (0.61)		
Machiavellianism	3.84 (0.88)	4.32 (0.77)	4.55 (0.61)	4.64 (0.57)		
Study 1						
Narcissism	2.71 (0.61)	2.83 (0.63)	3.28 (0.65)		3.11 (0.65)	2.71 (0.61)
Machiavellianism	3.14 (0.65)	3.28 (0.65)	3.53 (0.65)		3.33 (0.69)	3.16 (0.65)
Psychopathy	2.12 (0.70)	2.15 (0.68)	2.24 (0.68)		2.35 (0.62)	2.10 (0.70)
Study 2 (subordinate-rated)						
Narcissism		3.33 (0.65)	3.30 (0.76)	3.62 (0.73)		
Machiavellianism		2.33 (0.91)	2.37 (0.92)	2.74 (0.95)		
Psychopathy		1.19 (0.56)	1.23 (0.75)	1.46 (0.81)		
Study 2 (self-rated, not anonymous)						
Narcissism		2.79 (1.08)	2.91 (0.85)	2.92 (0.81)		
Machiavellianism		2.48 (1.03)	2.84 (0.93)	2.93 (0.87)		
Psychopathy		1.14 (0.64)	1.06 (0.62)	1.34 (0.85)		

[a]In Study 1, founder and non-founder were differentiated with a second question

company segments and occupational fields. Appendix B provides an overview of the sample of this study.

3.1.2 Design

To test the hypotheses, a self-assessment questionnaire—officially on work attitude—was again handed out to working individuals. The questionnaire stated at the beginning that it was an anonymous evaluation and not an assessment of performance. It also said that all data would be treated strictly confidentially. Therefore, the participants were asked to answer conscientiously and straightforwardly.

3.1.3 Measures

After the acquisition of personal data, there were questions about the DT traits, followed by questions on work attitude. The questions on work attitude, including work motivation, organizational identification, organizational commitment, job satisfaction, and turnover intention, were not used in the analysis but only for the background story. Descriptives, correlations, and reliabilities can be found in Table 1.

3.1.4 DT traits

To measure narcissism, Machiavellianism, and psychopathy, we used the SD3 scale (Jones and Paulhus 2014). The SD3 consists of 27 items (9 items per dimension), such as "I insist on getting the respect I deserve" for narcissism, "Most people can be manipulated" for Machiavellianism, and "People who mess with me always regret it" for psychopathy. All items had to be answered on a Likert scale ranging from 1 (*fully disagree*) to 7 (*fully agree*).

3.1.5 Statistics

IBM SPSS Statistics 24.0 (IBM Corporation, Chicago 2016) was to calculate correlations for the hypotheses. Furthermore, it is important to note that there was no change in results when controlling for occupational background.

3.2 Results

As shown in Table 2, in line with the hypothesis, there was a positive correlation between leadership level and narcissism (H1a) and Machiavellianism (H1b). The positive correlation for narcissism (H1a) was also significant when only using the leader sample ($n = 81$), $r = 0.25$, $p = 0.022$. With only this sample, Machiavellianism ($r = 0.09$) and psychopathy ($r = 0.16$) had a positive, but not significant, correlation. Regarding the difference between founders and

non-founders (heads and founders of a company), there was a positive correlation between leadership level and narcissism (H1a) and psychopathy (H1c). The positive correlation for narcissism (H1a) was also significant when only using the leader sample ($n = 81$), $r = 0.27$, $p = 0.016$. It was further marginally significant for psychopathy, $r = 0.21$, $p = 0.066$. With only this sample, Machiavellianism ($r = 0.10$) had a positive, but not a significant, correlation. Furthermore, the DT traits were again significantly, positively correlated with each other.

4 Study 2

In order to not only use self-assessments, Study 2 also evaluated assessments by subordinates. This additional perspective is essential, as those who are exposed to DT people are sometimes more capable of reporting these traits than the DT people themselves (Hogan and Hogan 2001; Thomas et al. 2003). Although the leader's self-assessment was also gathered in this study, it was not included in the analysis, as it was linked to the leader's name (influence of social desirability) while the subordinate-assessment was anonymous. It was again hypothesized that there is a positive correlation between leadership level and DT traits in terms of narcissism (H1a), Machiavellianism (H1b), and psychopathy (H1c).

4.1 Method

4.1.1 Sample

From all participants, we deleted ratings that were not assignable to a leader self-rating. The final sample of 355 people consisted of 91 leaders (German: 46; Hungarian: 45) and 264 subordinates (German: 160; Hungarian: 104). The leaders (46% female, 54% male) were between 22 and 64 years old, at different educational levels, and worked in different occupational areas (see Appendix C). The leaders were rated by 1–14 subordinates; subordinates' demographics can be found in Appendix C.

4.1.2 Design

The study was conducted via an online questionnaire (LimeSurvey GmbH, version 2.65.7). An information sheet was sent out to the participants with information about the purpose (research on leadership and work attitude) and the process of the study, requirements for participation, and details about compensation in the form of a feedback assessment for their participation. Importantly, the fact that it was clear from the beginning that leaders would receive feedback may have led to socially desirable responses. Participants sent an email and afterwards received a link to the questionnaire for themselves

and their subordinates. At the beginning of the online questionnaire, it was stated that the evaluation was anonymous and that all data would be treated strictly confidentially. Furthermore, the participants were asked to answer conscientiously and straightforwardly. After giving informed consent and stating that they had read the description, they could start the questionnaire.

4.1.3 Measures

The acquisition of personal data was followed by questions about the DT traits and again work attitude (work motivation, organizational identification, organizational commitment, and job satisfaction) for the background story as well as charismatic leadership and trust in the leader. Descriptives, correlations, and reliabilities can be found in Table 1.

4.1.4 DT traits

The SD3 scale (Jones and Paulhus 2014) to measure narcissism, Machiavellianism, and psychopathy consists of 27 items in total (9 items per dimension) such as "I insist on getting the respect I deserve" for narcissism, "Most people can be manipulated" for Machiavellianism, and "People who mess with me always regret it" for psychopathy. All items had to be answered on a Likert scale ranging from 1 (*fully disagree*) to 7 (*fully agree*).

4.1.5 Additional measures

In addition, the subscales Status Orientation and Dominance of the LMI (Schuler and Prochaska 2001) were used to measure power motivation, as this was used for measuring Machiavellianism in the Pre-Study. Each of the dimensions was measured by 10 items, such as "I want to be an important part of the community" for status orientation and "I assert myself against resistance" for dominance. Overall, power motivation was measured by 20 items ($\alpha = 0.85$). The questionnaire was available only in German and was later translated into Hungarian and back-translated for accuracy. All items had to be answered by the leader or the subordinate on a Likert scale ranging from 1 (*not at all*) to 7 (*very much*). Power motivation and the SD3 Machiavellianism scale significantly positively correlated with each other ($r = 0.32$, $p < 0.001$). For analyses, however, only the SD3 measure was used.

4.1.6 Statistics

The data was analyzed using MPlus version 8.1 (Muthén and Muthén 2017) to account for non-independence of observations due to cluster sampling that was obtained as different subordinate-assessments were made for different leader clusters. We further controlled for self- versus subordinate-assessment, as these two types of assessment are something different to take into the computation. Moreover, there was no change in results when controlling for occupational or cultural background.

4.2 Results

At first, it should be highlighted that the leaders' self-ratings were not anonymous, which is why the subordinate-ratings were used. However, the leaders' self-rated DT values positively significantly correlated with the subordinate-rated DT value of the leaders ($r_{narcissism} = 0.45$, $p_{narcissism} < 0.001$; $r_{machiavellianism} = 0.34$, $p_{machiavellianism} = 0.001$; $r_{psychopathy} = 0.26$, $p_{psychopathy} = 0.014$). Unlike hypothesized, leadership did not predict narcissism. However, leadership did predict Machiavellianism and psychopathy, confirming H1b and H1c (see Table 2). Thus, there is a tendency in the direction of higher leadership levels predicting higher levels of DT traits. In addition, it should be noted that the three DT traits significantly correlated with each other (see Table 2).

5 Discussion

The three studies of this paper investigated whether dark triad personality traits positively correlate with the height of leadership levels (no leadership position, low-level leaders, high-level leaders, heads and founders of a company). In all three studies, the DT traits correlated positively with higher leadership levels. This result is in line with previous reports of coaches (Diller et al. 2020a, b) and indicates detrimental effects for the organization: Leaders' decisions could more likely be based on bolstering the own image than on fostering the organization's well-being (Van Dijk and De Cremer 2006), they would do anything to maintain this power (Christie and Geis 1970; Paulhus and Williams 2002), and short-term, impulsive goals could harm others (Boddy 2011). Thus, the fact that the higher one looks in the organizational hierarchy, the higher DT values will be found, can be very uncomfortable for subordinates due to the negative consequences mentioned above. A second finding underlines previous research that the three DT values intercorrelate (Paulhus and Jones 2015). In other words, people with high narcissistic tendencies likely display high Machiavellian and psychopathic tendencies as well.

5.1 Limitations

There are two main limitations to the studies. First, no conclusions can be drawn from the pre-study regarding psychopathy and leadership levels as it used different measures than Studies 1 and 2 for the DT traits. In the pre-study, Narcissism was measured with the NPI 15, which is a clinical scale and may not be ideal for a subclinical sample; Machiavellianism was measured with the power motivation items of the LMI, which is a scale that may only resemble the motivational aspect of Machiavellianism; and psychopathy was not measured at all, meaning that no conclusions can be drawn from the pre-study on psychopathy and leadership levels. Second, data was only collected via questionnaires, in only two countries and at only one time point. This restricts this research's validity. More objective measures can be beneficial when researching the personality (Ortner and Schmitt 2014). Furthermore, there may be cultural settings in which certain DT traits are destructive due to cultural norms (Grijalva and Newman 2014). For instance, countries with more embedded and hierarchical systems are more narcissistic (Jonason et al. 2020). Last but not least, narcissism can be advantageous for a limited period but have detrimental effects over time (Braun 2017; Rauthmann 2012). Future research could therefore benefit from using objective measures and longitudinal studies as well as from comparing countries from Western and Eastern cultures.

5.2 Theoretical implications

This research highlights the positive connection between DT traits and leadership levels. However, the role of gender is unclear in the interplay between DT traits and leadership levels. Men usually score higher on DT traits (e.g., Jones and Weiser 2014) and are usually much more likely found in higher leadership positions than women (e.g., Orser and Leck 2010; see also Appendices). It is also important to note that the (behavioral, emotional and personality-related) correlates of the dark triad traits seem to be different for the two sexes (e.g., Czibor et al. 2017, Jonason et al. 2014; Szabo and Jones 2019). Thus, future research could explore if dark triad traits influence the (leadership) career of men and women differently, and if men and women leaders with DT strong tendencies are evaluated in different ways by external raters (e.g. by their subordinates).

In addition, future research should investigate the role of the company in the interplay between DT traits and leadership levels. As mentioned in the introduction, the context can also shape people's personalities (e.g., Furtner et al. 2017; Frank et al. (1993). Thus, it is not only the leader and their 'victims' who must assume the responsibility of preventing victimization: companies that allow DT leaders to emerge must also be held accountable (dark triangle of DT leader, victims, and company; Wisse and Sleebos 2017). This investigation of the company's role is important, as previous findings on DT leaders suggest that for 'victims' there are only ways to buffer—but not entirely eliminate—this dark effect on themselves (Ellen et al. 2017). In addition, not only DT leadership emergence but also the influence of working conditions as well as company values and ethics have an affect on the development of a DT personality: for example, when employees with DT tendencies feel appreciated and supported by their organization, they reduce counterproductive work behaviors such as production deviance, theft, and sabotage (Palmer et al. 2017). Moreover, perceived accountability, which is a relevant component in regard to ethical behavior (Steinbauer et al 2014), has also been found to diminish deviant behavior (Martin et al 2010). A recent study by Mahmood et al (2021) was able to confirm these results for DT people. Contrarily, an individual-centered climate encourages employees to manipulate, cheat, and violate norms of the organization (Suar and Khuntia 2004). Similar results have been found for a competitive psychological work climate (Spurk and Hirschi 2018). Spurk and Hirschi (2018) even found that individuals DT tendencies increase when working under what they perceive as competitive conditions.

5.3 Practical implications

The field of organizational psychology offers two directions to diminish the dangers of DT leaders. One direction is to have individual developmental opportunities, which could increase dark leaders' emotional intelligence and reactivity but at the same time decrease egocentric tendencies (Furtner et al. 2017; Nübold et al. 2017). However, interventions at the individual level such as coachings may not be as helpful (Diller et al. 2020a, b). Thus, a better direction might b to concentrate on the organizational level: as companies may have the power to change DT emergence (Wisse and Sleebos 2017), one practical implication for companies is to reinforce ethical values amongst leaders (Frey et al. 2010). An organizational culture with mutual respect and cooperation as core values, with transparent rules, requirements, and career routes can significantly decrease the counterproductive consequences of dark leadership (Crawshaw 2007). Establishing leadership based on ethical values can promote a great work attitude and improve problem-solving processes, teamwork, organizational citizenship behavior, trust and assurance, intrinsic motivation, and optimistic thinking (Ko et al. 2017). Thus, one practical implication is to implement systematic leadership development programs that focus on ethical leadership in order to minimize unethical leader behavior (Diller 2021). However, it seems almost impossible to be an other-oriented leader with DT tendencies, such as narcissistic ones (Peterson et al. 2012). Therefore, another option is to implement select-out recruiting criteria to avoid DT leaders in advance (Wisse and Sleebos

2017). In reality, however, the recruitment of leaders often takes place in a different less careful way (Jiménez 2015). Since finding an effective leader is time and cost-intensive, many employers often search for new leaders via private social platforms (McEntire and Greene-Shortridge 2011).

Appendix A Overview of the sample of the pre-study

Variable	Employees with no leadership position	Low-level leaders	High-level leaders	Heads and founders of the company
N	30	40	47	20
Percentage female	53%	15%	11%	0%
Age (years)				
Under 35	70%	33%	13%	95%
Between 35 and 50	7%	35%	30%	5%
Over 50	23%	33%	57%	0%
Education level[a]	$M = 1.80$ ($SD = 0.89$)	$M = 1.90$ ($SD = 0.87$)	$M = 1.49$ ($SD = 1.08$)	$M = 2.35$ ($SD = 0.49$)
Company size[b]	$M = 2.31$ ($SD = 1.20$)	$M = 2.68$ ($SD = 1.12$)	$M = 2.09$ ($SD = 1.11$)	$M = 1.00$ ($SD = 0.00$)

In terms of occupational domains, 28% were in information technology, 17% in education/gastronomy/tourism/service/public service, 15% in human resources/consulting/marketing/public relations, 11% in banking/insurance/financial services, 11% in production, 8% in skilled trades/architecture, 7% in medicine/health, and 4% in research/sciences

[a] 0 = no A levels, 1 = A levels, 2 = university degree, 3 = doctoral degree

[b] 1 = fewer than 100 people, 2 = between 100 and 1000 people, 3 = between 1000 and 25,000 people, 4 = more than 25,000 people

Appendix B Overview of the sample of study 1

Variable	Overall	Low-level leaders	High-level leaders	Founder	Non founder
N	266	47	17	34	298
Percentage female	61%	55%	35%	40%	61%
Age (years)					
Under 35	47%	30%	0%	17%	45%

Variable	Overall	Low-level leaders	High-level leaders	Founder	Non founder
Between 35 and 50	39%	47%	65%	54%	39%
Over 50	15%	23%	35%	29%	16%
Education level[a]	$M = 4.53$ ($SD = 0.72$)	$M = 4.53$ ($SD = 0.62$)	$M = 4.41$ ($SD = 0.87$)	$M = 4.54$ ($SD = 0.66$)	$M = 4.52$ ($SD = 0.72$)
Number of employees[b]	$M = 0.00$ ($SD = 0.00$)	$M = 2.34$ ($SD = 1.27$)	$M = 2.47$ ($SD = 1.33$)	$M = 1.09$ ($SD = 1.27$)	$M = 0.40$ ($SD = 1.05$)

Domains in which the company operates: corporate/public sector (46%), governmental institutions (41%), nonprofit sector (3%), and unspecified (10%). Occupational fields: 15% trade, 13% teaching and education, 13% public administration, 6% engineering, 5% information technology, 5% human resources, 5% art/entertainment/sports, 4% financial services, 4% health care, 3% administration, 3% research and development, 3% hospitality, 2% marketing/sales, 2% customer service, 2% logistics, 2% social/helping professions, 2% building industry, 2% food industry, 1% agriculture, and 7% unspecified

[a] 1 = less than elementary school, 2 = elementary school, 3 = vocational school, 4 = high school, 5 = university, college

[b] 1 = fewer than 5 people, 2 = 6–10 people, 3 = 11–15 people, 4 = 16 or more people

Appendix C Overview of the sample of study 2

Variable	Leaders			Subordinates
	Low-level leaders	High-level leaders	Heads and founders of the company	
N	35	33	23	264
Percentage female	51%	55%	26%	61%
Nationality (% German)	46%	52%	57%	61%
Age (years)	$M = 41.89$ ($SD = 9.93$)	$M = 42.58$ ($SD = 11.17$)	$M = 47.74$ ($SD = 8.74$)	$M = 38.87$ ($SD = 11.87$)
Education[a]	$M = 4.54$ ($SD = 1.01$)	$M = 4.03$ ($SD = 1.40$)	$M = 4.17$ ($SD = 1.47$)	$M = 3.89$ ($SD = 1.34$)

Of the 264 subordinates, 200 had no leadership position, 46 had a low leadership level, and 18 a high leadership level. Occupational areas of the participants: 6.6% banking/insurance, financial services, 4.1% production, 17.2% information technology, 2.9% human resources/consulting/marketing/public relations, 25.7% medicine/health, 12.0% education/public service, 3.3% gastronomy/tourism/service, 2.3% skilled trades/architecture, 4.1% research/sciences, 22.0% other

occupational area

[a]0 = no school degree, 1 = nursery school, 2 = secondary school, 3 = technical/vocational diploma, 4 = high school diploma, 5 = university degree, 6 = PhD, 7 = habilitation

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