

The dark and not so humble:
School-type effects on the Dark Triad traits and intellectual humility

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Abstract

The Dark Triad traits (i.e., narcissism, psychopathy, and Machiavellianism) are strongly associated with organizational misbehavior, and some argue that high levels of these traits in the corporate and financial elite are causing the corporate scandals exposed and ever present in the media. Individuals high in the Dark Triad traits are indeed more likely than others to select academic majors suited for corporate careers (e.g., business). However, individuals characterized by the Dark Triad traits may have particular educational trajectories starting before university. We compared ($N = 924$) rates of the Dark Triad traits in those who went to (British) private schools and state schools and how this might lead to individual differences in intellectual humility and academic performance. Privately educated students had higher Dark Triad trait scores than state-schooled students. Also, privately educated students had less intellectual humility and poorer academic performance than state-schooled students. There was a negative relationship between the Dark Triad traits and intellectual humility, and this relationship was stronger for privately schooled students. Furthermore, the Dark Triad traits mediated the relationship between participant's schooling and intellectual humility and also mediated the relationship between participant's sex and intellectual humility.

Keywords: Dark Triad; Psychopathy; Machiavellianism; Narcissism; Intellectual Humility; Academic Performance; Schooling; Sex Differences

1. Introduction

The 2008 global financial crisis caused millions of families to lose their homes (Cutshaw, Woolhandler, Himmelstein, & Robertson, 2016) and trillions of dollars to be wiped off the value of stock (Beder, 2009). As a result, public opinion and economic experts alike turned on the financial sector, arguing that greed, hubris, and risky decision-making in this sector and among policymakers were largely the drivers of the crisis (Weitzner & Darroch, 2009). Adding to this, some argued the crisis was partly the result of “corporate psychopaths” in the financial sector, the so-called *snakes in suits* (Babiak & Hare, 2006; Boddy, 2011), making risky and unethical decisions with no regard for the potential adverse consequences. Organizational misbehavior has become a major research field (Vardi & Weitz, 2016), and the media is full of potential “cases”; from Tesco’s accounting fraud to Volkswagen’s emission scandal. Business schools are often accused of creating cynical students, promoting self-serving behavior, emphasizing self-interest and neglecting ethics - ultimately leading to such organizational misbehavior (Elegido, 2009). And critics have advocated the introduction of training programs aiming to increase ethics and empathy in business schools and prevent future financial crises (Gudmundsson & Southey, 2011).

1.1. The Dark Triad traits in education

However, some research suggests the student population *entering* business schools is simply different from other student populations in terms of “dark” personality traits, clearing business schools of at least some of the responsibility. The Dark Triad traits, consisting of narcissism (i.e., grandiosity, entitlement, and dominance), Machiavellianism (i.e., manipulateness, cynicism, and emotional coldness), and psychopathy (i.e., thrill-seeking, low empathy and anxiety; Paulhus & Williams, 2002), have all been strongly associated with different aspects of organizational misbehavior (LeBreton, Shiverdecker, & Grimaldi, 2018), and high scores on all three traits have been found among business students (Vedel &

Thomsen, 2017). Importantly, these high scores were present at enrolment, rendering university socialization unlikely to be the primary cause. Instead, self-selection presumably results in these higher Dark Triad scores. A major in business paves the way for a corporate career and “high status occupations” (Macmillan, Tyler, & Vignoles, 2015), and the need for power and status of individuals characterized by high Dark Triad levels (Lee et al., 2013) will steer them towards this subject and away from others (Jonason, Wee, Li, & Jackson, 2014; Vedel & Thomsen, 2017).

Individuals high on the Dark Triad traits may have particular educational trajectories starting before university. In the UK, primary and secondary educational systems are split between state and private schools. State schools currently educate 93% of the UK’s population (Independent Schools Council [ISC], 2019) free of charge, while private schools educate 7% with annual fees of day schools averaging £14,300 per student and substantially higher fees at prestigious boarding schools (ISC, 2019). Private schools have a strong focus on grooming their pupils for leadership compared to state schools (Brooke-Smith, 2019), and large-scale cohort studies show that privately schooled students more often choose academic subjects leading to “high status” occupations, such as business, than state-schooled students (Crawford & Vignoles, 2014; ISC, 2019; Macmillan et al., 2015). Privately educated individuals also dominate UK leadership positions in business and politics (Sutton Trust, 2019). Given these occupational achievements and career choices are in part driven by the desire for status and power (Jonason et al., 2014; Vedel & Thomsen, 2017), it follows that privately schooled students should be characterized by higher levels of the Dark Triad traits than state-schooled students. In the present study, we predict that *privately schooled students will score higher on the Dark Triad traits than state-schooled students (H1)*.

1.2. Intellectual humility in education

The hubris and the general arrogance ascribed to the corporate world and the political establishment may also be related to the concept of intellectual humility (or the lack of). Conceptualized as the antidote to intellectual arrogance (Church & Samuelson, 2016), intellectual humility encompasses the ability and willingness to question one's thinking (Roberts & Wood, 2003), something many argue is missing in the corporate and political world (Weitzner & Darroch, 2009). We know that intellectual humility is negatively associated with narcissism (Alfano et al., 2017; Krumrei-Mancuso & Rouse, 2016), but given the self-promotion inherent to *all* the Dark Triad traits (Paulhus & Williams, 2002), we predict that *intellectual humility will be negatively correlated with all the Dark Triad traits (H2)*. Sex and school-type might moderate the strength of this relationship, as personality traits do not necessarily unfold in the same way in men and women or across contexts, and we examined this possibility in the present study.

Though no research to our knowledge has examined intellectual humility across academic majors or school-types, research has found lower levels of the related Honesty-Humility personality trait in business majors - where privately schooled students are overrepresented - compared to the levels in other academic fields (Pozzebon, Ashton, & Visser, 2014). Also, the strong emphasis on leadership and self-confidence in private schools and a general elitist mentality (Brooke-Smith, 2019) is likely to manifest itself in intellectual arrogance. In the present study, we predict that *privately schooled students will score lower on intellectual humility than state-schooled students (H3)*.

Educational trajectories are not only shaped by preferences and interests, but also by academic performance, and academic performance has been linked to numerous cognitive and non-cognitive factors (Richardson, Abraham, & Bond, 2012). Given the modesty inherent to intellectual humility, one might expect individuals with high intellectual humility to strive for increased knowledge and, as a result, fare better academically than their less

humble counterparts. Intellectual humility is also positively correlated with openness (Leary et al., 2017) and conscientiousness (Alfano et al., 2017); traits that predict academic performance (Richardson et al., 2012). Previous research regarding intellectual humility and academic performance has been mixed. Krumrei-Mancuso, Haggard, LaBouff, and Rowatt (2019), for example, found that intellectual humility was positively associated with the possession of general knowledge, but negatively associated with GPA. However, Krumrei-Mancuso et al. (2019) used an 8-item intellectual humility scale that may not have been able to differentiate between intellectual humility and accurate assessment of one's knowledge, as some items of the scale tapped into self-perceived knowledge. Given the theoretical conception of intellectual humility and its positive correlations with predictors of academic performance, we predicted *a positive relationship between intellectual humility and academic performance (H4)*. Sex and school-type might moderate the strength of this relationship, and we examined this possibility in the present study. Given the sex differences in the Dark Triad traits (men consistently score higher than women; see Schmitt et al., 2017) and H2, we predict that *men will score higher than women on the Dark Triad traits and lower on intellectual humility (H5)*. Furthermore, sex differences in the Dark Triad traits may mediate sex differences in intellectual humility. Given the boastful nature of narcissism, we predict that *narcissism in particular will mediate sex differences in intellectual humility (H6)*. As sex differences in tertiary academic performance are generally modest in size (e.g., Farsides & Woodfield, 2007), we did not expect sex differences in academic performance.

2. Method

2.1. Participants and procedure

Participants were recruited with the assistance of Durham University staff who advertised the survey, and we also used institutional emails and student Facebook groups. Participants completed the survey on SurveyMonkey and in return entered a prize draw for

one of ten £25 vouchers. To obtain a sufficient sample of privately schooled individuals, we focused on the UK's most selective universities. The sample consisted of 924 student-volunteers (59% female) from Durham University in particular but also Bristol, Cambridge, Exeter, Lancaster, Newcastle, and York. Most of our participants were state (62%) as opposed to privately schooled (38%). An error in the data collection meant that age was not recorded. Based on the average age of students in the universities we sampled from (obtained from the university administrations), we estimate that our sample's mean age was between 20 and 22. As the study aimed to examine differences based on schooling in a British context, UK citizenship was an inclusion criterion. The minimum sample size was based on Schönbrodt and Perugini's (2013) guidelines ($N \approx 250$) based on the average effect size ($r \approx .20$) in social and personality psychology (Richard, Bond, & Stokes-Zoota, 2003). Participants reported their current degree classification (1 = *first class* [4.0 GPA], 2 = *upper second class*, 3 = *lower second class*, 4 = *third class*, and 5 = *ordinary* [1.0 GPA]) by averaging their end of year(s) performance (reversed for analyses as individual differences in academic performance). Participants were told the study was related to personality and, upon consent, completed several self-report measures and were thanked upon completion. Before data collection, we obtained ethical approval from the ethics board of the business department.

2.2. Measures

We assessed the Dark Triad traits with the Dirty Dozen scale (Jonason & Webster, 2010). Respondents reported their agreement (1 = *strongly disagree*; 5 = *strongly agree*) with four items for each trait, measuring individual differences in narcissism (e.g., I tend to seek prestige and status.), psychopathy (e.g., I tend to lack remorse.), and Machiavellianism (e.g., I tend to manipulate others to get my way.). Items were averaged to create indexes of narcissism (Cronbach's $\alpha = .75$), psychopathy ($\alpha = .80$), and Machiavellianism ($\alpha = .78$).

We assessed intellectual humility with the Comprehensive Intellectual Humility Scale (Krumrei-Mancuso & Rouse, 2016). Participants reported their agreement (1 = *strongly disagree*; 5 = *strongly agree*) with 22 statements (e.g., I welcome different ways of thinking about important topics.) capturing individual differences in intellectual humility. The items were averaged to create a score of intellectual humility ($\alpha = .90$).

3. Results

In Table 1 we report correlations and descriptive statistics for the variables. The Dark Triad traits were positively correlated with each other, and negatively with intellectual humility and academic performance. Academic performance was positively correlated with intellectual humility. Next, we attempted to determine if these correlations were moderated by participant's sex and school-type, adopting a slightly conservative exploratory approach ($p < .01$) using PROCESS V3.3 (Hayes, 2018).¹ We found moderation of the correlation between narcissism and intellectual humility by participant's sex ($b = 0.15$, $t[918] = 3.80$, $p < .001$, $\Delta R^2 = .01$) and school-type ($b = 0.28$, $t[918] = 6.79$, $p < .001$, $\Delta R^2 = .04$), suggesting that the relationship between narcissism and intellectual humility was stronger for men and privately schooled students (see Figure 1; $F[5, 918] = 67.90$, $p < .001$, $R^2 = .27$). There was marginal moderation for the relationship between Machiavellianism and intellectual humility for participant's sex ($b = 0.09$, $t[918] = 2.48$, $p = .014$, $\Delta R^2 = .01$) and moderation for school-type ($b = 0.27$, $t[918] = 7.33$, $p < .001$, $\Delta R^2 = .04$), suggesting the relationship was stronger for men and privately schooled students (see Figure 2; $F[5, 918] = 61.51$, $p < .001$, $R^2 = .25$). The relationship between psychopathy and intellectual humility was not moderated by participant's sex ($b = 0.06$, $t[918] = 1.69$, $p = .091$, $\Delta R^2 = .00$) but was moderated by school-type ($b = 0.33$, $t[918] = 10.04$, $p < .001$, $\Delta R^2 = .07$), suggesting the relationship between psychopathy and intellectual humility was stronger for privately schooled students (see

¹ Threeway interactions were tested also, but these did not increase R^2 ($p > .01$) and are not reported.

Figure 3; $F[5, 918] = 114.88, p < .001, R^2 = .38$). The relationship between intellectual humility and academic performance was neither moderated by participant's sex ($b = 0.01, t[918] = 0.06, p = .951, \Delta R^2 = .00$) nor school-type ($b = -0.08, t[918] = -0.60, p = .552, \Delta R^2 = .00$).

In Table 2 we report results from independent 2 (i.e., participant's sex) \times 2 (i.e., school-type) ANOVA with the Dark Triad traits, intellectual humility, and academic performance as dependent variables. Men were higher on all the Dark Triad traits and less intellectually humble, and these sex differences represented small-medium effect sizes. Privately schooled students scored higher than state-schooled students on all Dark Triad traits and were less intellectually humble, representing medium-large effect sizes, and privately schooled students had lower academic performance. We also found two interactions suggesting that privately schooled men were lower on intellectual humility ($M = 3.25, SD = 0.70$) and academic performance ($M = 3.31, SD = 0.91$) than privately schooled women ($M = 3.47, SD = 0.54$ on intellectual humility; $M = 3.55, SD = 0.93$ on academic performance), while state-schooled men were higher on intellectual humility ($M = 3.77, SD = 0.40$) and academic performance ($M = 3.81, SD = 0.97$) than state-schooled women ($M = 3.70, SD = 0.37$ on intellectual humility; $M = 3.73, SD = 0.99$ on academic performance).

We conducted three mediation analyses (PROCESS V3.3; Hayes, 2018) with bootstrapped 99% CI's (5,000 samples) for indirect effects. First, we examined whether sex differences in the Dark Triad traits mediated sex differences in intellectual humility. In a multiple mediator model ($F[4, 919] = 117.60, p < .001, R^2 = .34$), sex differences in narcissism ($b = -0.04, BCI [-.07, -.02]$) and psychopathy ($b = -0.18, BCI [-.24, -.14]$), but not Machiavellianism ($b = -0.01, BCI [-.03, .02]$), partially mediated sex differences in intellectual humility ($\Delta R^2 = .33$). Second, we examined whether school-type differences in the Dark Triad traits mediated school-type differences in intellectual humility. In a multiple

mediator model ($F[4, 919] = 117.90, p < .001, R^2 = .34$), school-type differences in narcissism ($b = -0.09$, BCI $[-.14, -.04]$) and psychopathy ($b = -0.14$, BCI $[-.20, -.09]$) partially mediated school-type differences in intellectual humility ($\Delta R^2 = .22$), with no effect for Machiavellianism ($b = -0.00$, BCI $[-.05, .04]$). Last, we examined whether school-type differences in the Dark Triad traits mediated school-type differences in academic performance. In a moderated multiple mediator model ($F[9, 914] = 5.71, p < .001, R^2 = .05$) none of the school-type differences in the Dark Triad traits mediated school-type differences in academic performance, nor when participant's sex was included as a potential moderator.

4. Discussion

In the present study we provide the first evidence that students who went to private school are significantly higher on the Dark Triad traits and less intellectually humble than their state-schooled counterparts. We propose two different, though not mutually exclusive, interpretations of these group differences. It is possible that different socialization processes in private and state schools are causing the differences. If private schools are more competitive, this may manifest itself in increased Dark Triad traits and intellectual arrogance of the students. It is also possible that the group differences originate in selection. As private schooling is mainly an option for the affluent, any psychological characteristics associated with socioeconomic status (SES) may potentially create school-type differences. Research has indeed linked psychological differences to SES differences. High-SES individuals tend to be greedier, more unempathic and motivated by personal goals (Manstead, 2018). In addition, high-SES individuals are often overconfident and overestimate their ability more than others (Belmi, Neale, Reiff, & Ulfe 2019). Together, these findings suggest some of the differences in the Dark Triad traits and intellectual humility may stem from the socioeconomic selection present in schooling. Whether differences between high-SES individuals and others are innate or created over the life course is an open question. Some argue that abundant resources and

opportunities of the rich create contexts giving rise to solipsistic social cognitive tendencies (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). Research has also linked the Dark Triad traits to adversity and unpredictability in childhood (Jonason, Icho, & Ireland, 2016) and to dysfunctional attachment patterns (Jonason, Bethell, & Lyons, 2013). The moderate heritability of the Dark Triad traits (Vernon, Villani, Vickers, & Harris, 2008) and their relative stability (De Clercq, Hofmans, Vergauwe, De Fruyt, & Sharp, 2017) suggest some degree of innateness. But research on the heredity and stability of the Dark Triad traits is scarce.

Whilst highly dysfunctional (Kaufman, Yaden, Hyde, & Tsukayama, 2019), the Dark Triad traits are also linked to personal success and career advancement (Furnham, Richards, & Paulhus, 2013) and may give insight into recent research by the Sutton Trust (2019) highlighting the continued domination of privately educated individuals in UK leadership. Our results could be interpreted to suggest that the substantially higher levels of Dark Triad traits in privately educated individuals may have facilitated comparatively more career success and their current leadership domination, but also potentially much organizational misbehavior given the strong association between the Dark Triad in leaders and organizational misbehavior (LeBreton et al., 2018).

Origins aside, the differences between private and state schooled students were substantial, representing moderate to large effect sizes and far exceeding the sex differences, except for psychopathy which yielded sex and school-type differences of the same magnitude. The sex differences in the Dark Triad traits replicate global patterns (Schmitt et al., 2017). We also found a small sex difference in intellectual humility, contrary to previous research. Sex by school-type interactions on intellectual humility and academic performance were modest in size and warrant tentative interpretation.

We provide the first evidence that intellectual humility is negatively associated with all the Dark Triad traits. Previous research corroborates this finding. First, both narcissism and psychopathy are associated with academic entitlement (Turnipseed & Cohen, 2015), a construct somewhat resembling intellectual arrogance, and narcissism is associated with overclaiming knowledge and overestimating one's intelligence (Paulhus & Williams, 2002). Second, the Dark Triad traits are associated with academic cheating (e.g., Williams, Nathanson, & Paulhus, 2010), a concrete manifestation of a lack of intellectual humility. Overall, the association between intellectual humility and the Dark Triad traits was much stronger for privately schooled students. It was also stronger for men, but especially for privately schooled men. One possible interpretation of these results is that a competitive environment in private schools might legitimize intellectual arrogance to a greater extent. Consequently, individuals high on the Dark Triad traits may display intellectual arrogance more than their equally "dark" state-schooled counterparts. Regarding the sex difference in the strength of the association, it may be due to potentially more negative consequences for women of displaying intellectual arrogance. Women are stereotypically viewed as communal (selfless and concerned with others) and may be judged harder than men for assertive and egocentric behavior (Eagly, 1987).

We found that sex differences in narcissism and psychopathy partially mediated sex differences in intellectual humility, and school-type differences in narcissism and psychopathy partially mediated school-type differences in intellectual humility. These results indicate that some of the sex- and school-type differences in intellectual humility stem from sex- and school-type differences in the Dark triad traits. The Dark Triad traits predict attitudes and behavior across a wide range of contexts (Furnham, Richards, & Paulhus, 2013), and intellectual arrogance might be one way that the Dark Triad traits unfold in the educational setting.

5. Limitations and Conclusions

There are some limitations to our study. First, we used a sample of students from British universities, an inherently W.E.I.R.D. (Western, educated, industrialized, rich, and democratic; see Henrich, Heine, & Norenzayan, 2010) sample, which might limit the generalizability of findings. Second, we used a natural groups design, which precludes conclusions regarding causality. We need longitudinal work to establish whether genetics or particular socialization in school years, for example, facilitates the development of Dark Triad traits and intellectual arrogance. Third, we relied on self-report and retrospective reports of grades, which creates issues of causality. Fourth, we used a brief measure of the Dark Triad traits, which may not provide measurement of the same depth as longer measures. We also examined intellectual humility as a general construct and did not examine its narrower facets. Finally, we did not examine the potential role of academic major in connection with academic performance relationships. Research using the Big Five traits has shown that trait-performance relationships vary across academic majors (Vedel, Thomsen, & Larsen, 2015), and similar variation pertaining to the Dark Triad traits and intellectual humility may exist.

In conclusion, we provided the first evidence that privately schooled students are substantially more “dark”, less humble and achieve poorer academic performance at university than state-schooled students. And all the Dark Triad traits are negatively associated with intellectual humility, particularly among privately educated individuals. We also provided evidence that sex- and school-type differences in intellectual humility are partly mediated by sex- and school-type differences in the Dark Triad traits. Our findings indicate that the particular educational trajectories of individuals high on the Dark Triad traits begin before tertiary education. In the light of the dominance of privately educated individuals in UK leadership, the substantially higher levels of Dark Triad traits among privately educated

individuals are concerning given the strong connection between the Dark Triad and organizational misbehavior which so often causes irreparable harm to organisations and stakeholders. Our results also appear to question the value-for-money of private schools if their students have significantly higher levels of “dark” personality traits and intellectual arrogance, coupled with poorer academic performance at university.

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TABLES

Table 1. Descriptive statistics and correlations among study variables.

	Mean (SD)	1	2	3	4	5
1. Narcissism	3.09 (0.80)	--	.53**	.37**	-.41**	-.11*
2. Machiavellianism	2.74 (0.88)		--	.55**	-.39**	-.16*
3. Psychopathy	2.26 (0.88)			--	-.52**	-.17*
4. Intellectual Humility	3.59 (0.52)				--	.18*
5. Academic Performance	3.64 (0.97)					--

* $p < .01$, ** $p < .001$

Table 2. Accounting for individual differences in the Dark Triad traits, intellectual humility, and academic performance with participant's sex, school-type, and the interaction of the two.

	Mean (<i>SD</i>)		$F_{\text{sex}} (d)$	Mean (<i>SD</i>)		$F_{\text{school-type}} (d)$	$F_{\text{interaction}} (\omega^2)$
	Men	Women		Private	State		
Narcissism	3.23 (0.80)	3.00 (0.78)	9.51** (0.29)	3.47 (0.75)	2.86 (0.74)	131.77** (0.81)	0.27 (.00)
Machiavellianism	2.96 (0.92)	2.59 (0.83)	28.72** (0.43)	3.13 (0.86)	2.50 (0.81)	110.64** (0.75)	1.09 (.00)
Psychopathy	2.65 (0.96)	1.99 (0.72)	128.58** (0.79)	2.64 (1.01)	2.02 (0.70)	102.83** (0.71)	3.13 (.00)
Intellectual Humility	3.53 (0.62)	3.63 (0.44)	5.38* (0.19)	3.36 (0.64)	3.73 (0.38)	126.14** (0.70)	18.56** (.02)
Academic Performance	3.58 (0.97)	3.67 (0.97)	1.36 (0.09)	3.43 (0.93)	3.76 (0.98)	27.23** (0.35)	5.74* (.00)

Note. d is Cohen's d and ω^2 is omega squared for effect size.

* $p < .05$, ** $p < .01$

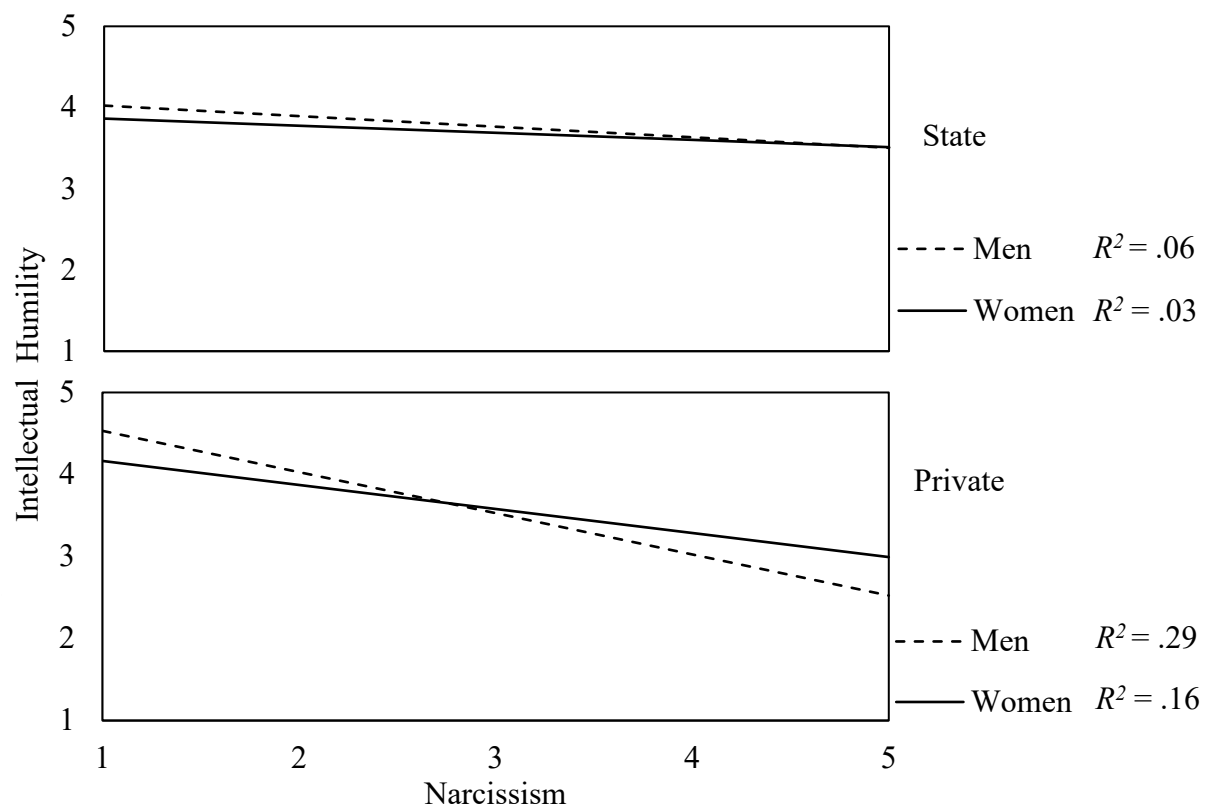
FIGURES

Figure 1. Relationship between narcissism and intellectual humility by participant's sex and school-type.

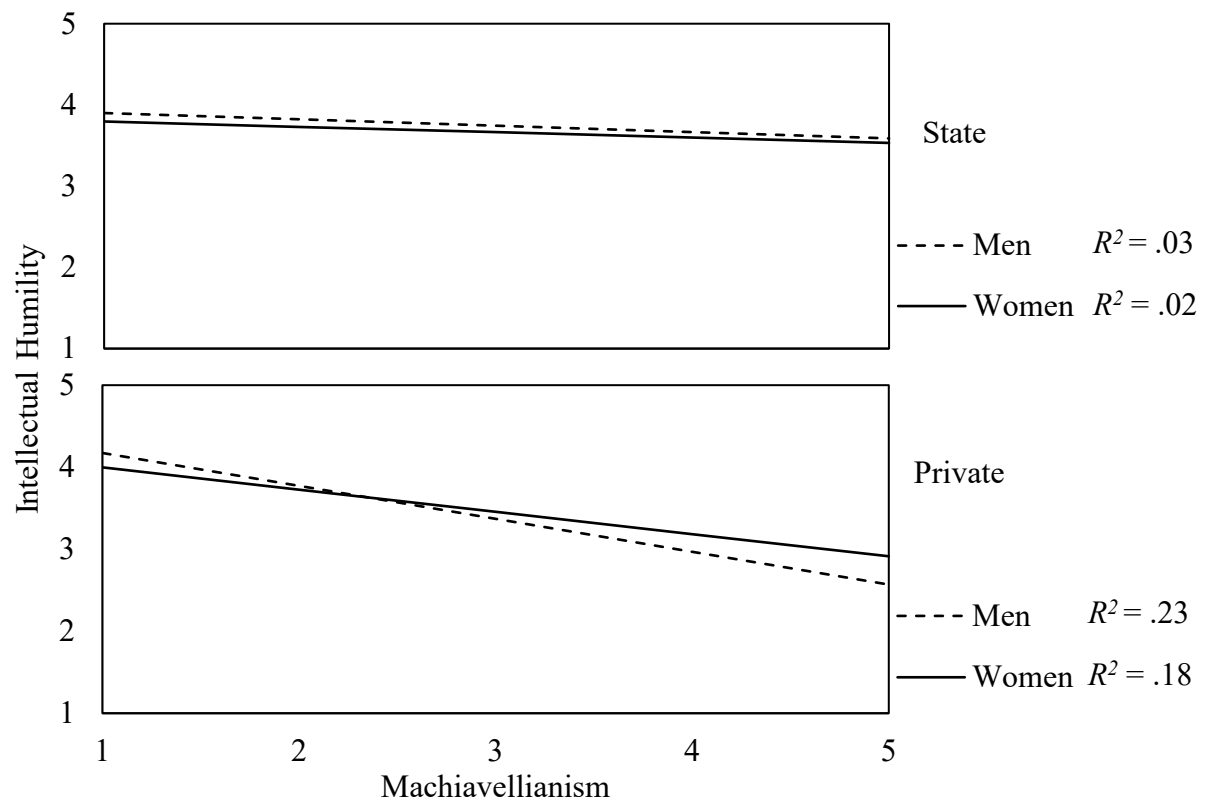


Figure 2. Relationship between Machiavellianism and intellectual humility by participant's sex and school-type.

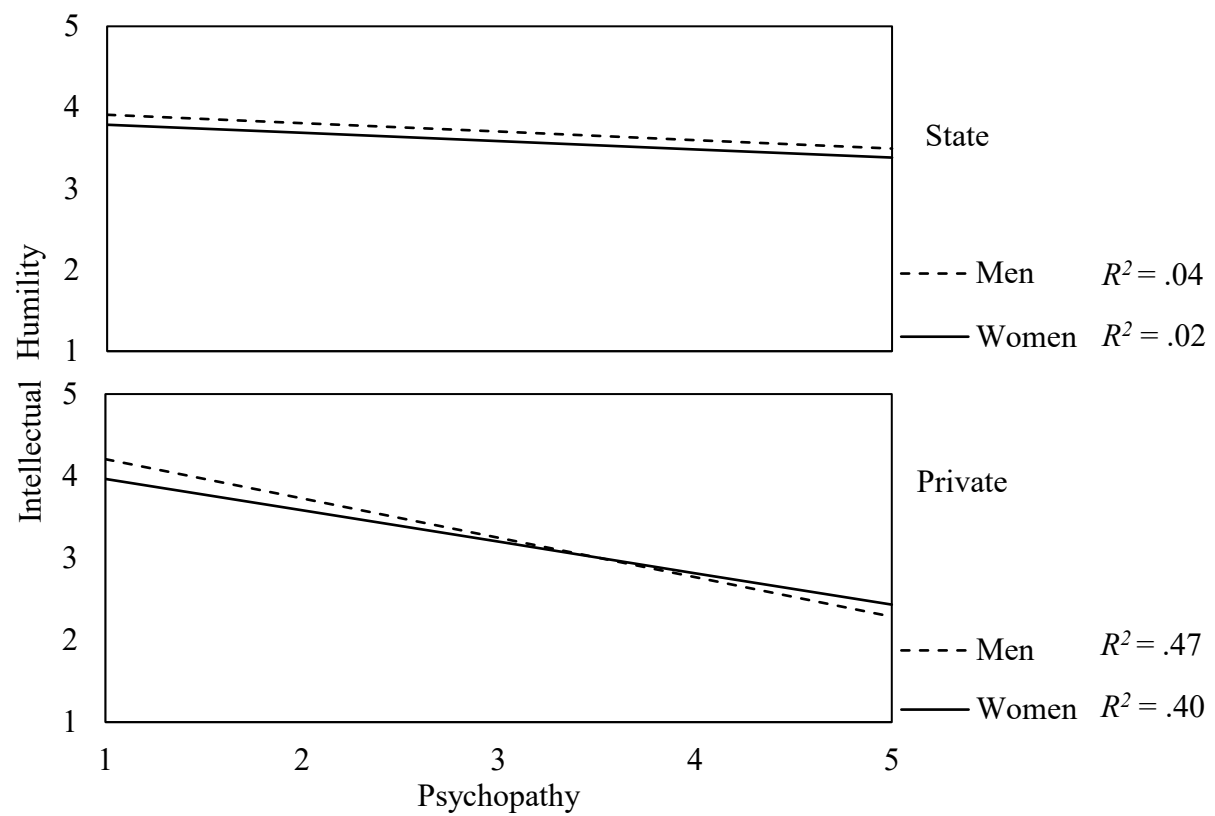


Figure 3. Relationship between psychopathy and intellectual humility by participant's sex and school-type.