



Relations between Machiavellianism, internalizing and externalizing behavior problems in adolescents: A one-year longitudinal study



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ABSTRACT

The social-emotional functions associated with Machiavellianism have been widely examined. However, most research on Machiavellianism is cross-sectional design, and has been conducted in adult populations. Using a sample of adolescents ($n = 454$), the current study employed a longitudinal design to examine how Machiavellianism relates to internalizing and externalizing behavior problems. The results indicated that (a) a significant increase in Machiavellianism scores and a significant decrease in difficulties scores were observed over the course of a year; (b) Machiavellianism shows significant positive associations, both cross-sectional and longitudinal, with nearly all categories of internalizing and externalizing behavior problems; (c) time 1 hyperactivity was a significant predictor of time 2 (one year later) Machiavellianism; and (d) over the course of a year, Machiavellianism still has a significant impact on subsequent conduct problems. The implications of these findings are interpreted and discussed.

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1. Introduction

Machiavellianism is one of the three socially aversive traits (the Dark Triad, namely, Machiavellianism, narcissism, and psychopathy; Paulhus & Williams, 2002), and is often characterized by cynical, pragmatic, misanthropic, and immoral beliefs, limited empathy, manipulation, exploitation, deception, and strategic planning (Ali & Chamorro-Premuzic, 2010; Christie & Geis, 1970; Sherry, Hewitt, Besser, Flett, & Klein, 2006). Consequently, an individual high in Machiavellianism is referred to as a “chameleon” or “a wolf in sheep’s clothing” in the literature (Pope, 2005; Sherry et al., 2006). In recent years, due to its prominence in subclinical populations and its influence on social-psychological functions, this trait has received increasing attention (Jonason, Li, & Teicher, 2010; Martin, Lastuk, Jeffery, Vernon, & Veselka, 2012; McHoskey, 1999; Paulhus & Williams, 2002; Vernon, Villani, Vickers, & Harris, 2008; Veselka, Schermer, & Vernon, 2012), and many results were obtained in research testing the correlates of Machiavellianism.

Previous research has noted associations between Machiavellianism and psychological problems, including greater internalizing behavior problems (e.g., anxiety and depression: Ali & Chamorro-Premuzic, 2010; Ain, Carre, Fantini-Hauwel, Boudouin, & Besche-Richard, 2013; Lau & Marsee, 2013), greater externalizing behavior problems (e.g., hyperactivity and conduct problems: Jonason & Tost, 2010; Stead, Fekken, Kay, & McDermott, 2012; Muris, Meesters, & Timmermans, 2013; Kerig

& Stellwagen, 2010), greater interpersonal relationship problems (Geng et al., 2016; Rauthmann & Kolar, 2013b), low empathy (Ali & Chamorro-Premuzic, 2010; Geng, Qin, Xia, & Ye, 2011; Jonason & Krause, 2013), high alexithymia (Jonason & Krause, 2013), personality dysfunction (McHoskey, 2001), and a rude derogatory style to mating competitors (Goncalves & Campell, 2014). These results mean that Machiavellianism was related to a number of maladaptive conditions.

However, from an evolutionary perspective, these maladaptive conditions may be the costs of pursuing a “fast” life history strategy (Carter, Campell, & Muncer, 2014a; Del Giudice, 2016; Furnham, Richards, & Paulhus, 2013; Giosan & Wyka, 2009; Hurst & Kavanagh, 2017; Jonason & Krause, 2013; Jonason & Tost, 2010; Rauthmann & Kolar, 2013a, 2013b). Life history theory is a mid-level evolutionary theory about resource allocation, and describes the adaptive choices made by people to optimize reproduction and survival on account of the environment (Figueredo et al., 2006). The fast life history strategy is produced by adverse environments encountered in childhood (Figueredo et al., 2006), is reflective of reproductive efforts over somatic efforts and mating efforts over parental efforts (Hurst & Kavanagh, 2017), and is adaptive under circumstances with a high mortality risk. Individuals engaging in this particular life strategy go at the expense of getting along, psychological well-being, and physical health to solve adaptive tasks (Carter et al., 2014a; Furnham et al., 2013). Recently, several studies identified Machiavellianism as parts of this fast life history strategy (Jonason, Koenig, & Tost, 2010; Jonason & Tost, 2010; Lang & Lenard, 2015). In other words, Machiavellianism might be an alternative life history strategy rather than a pathology requiring treatment (Jonason &

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Krause, 2013). If this is the case, it is reasonable to expect that Machiavellianism would be related to so-called maladaptive conditions across time interval. Therefore, the current study would examine the relations between Machiavellianism and psychological problems over the course of a year.

Preliminary evidence shows that the externalizing behavior problems in adolescents who are high in Machiavellianism may be based on their internalizing behavior problems. For example, Lau and Marsee (2013) have noted that antisocial behavior and aggression embodied by adolescents high in Machiavellianism result from their dysregulated emotions and the shared overlap with psychopathy and narcissism. Another recent research found that Machiavellian adolescents with high levels of emotional symptoms engage in more destructive behaviors than those low in Machiavellianism (Geng et al., 2016). These results suggest that the key part of interventions for adolescents with Machiavellianism is the skills in emotion regulation (e.g., relaxation skills), and that internalizing behavior problems mediate the effect of Machiavellianism on externalizing behavior problems (Geng et al., 2016).

The underlying psychological mechanisms of previous research are theoretically important for advancing our understanding of the relations among Machiavellianism, internalizing behavior problems, and externalizing behavior problems. Nevertheless, the cross-sectional design limits the ability of such research to test causal relations among Machiavellianism, internalizing behavior problems, and externalizing behavior problems. Therefore, by using a longitudinal design, the present study would examine the associations between Machiavellianism, internalizing behavior problems, and externalizing behavior problems, and predict that emotional symptoms have longitudinal mediating effects on the relations between Machiavellianism and externalizing behavior problems.

In previous research, findings regarding the associations between age and Machiavellianism were inconsistent. Specifically, some studies have shown a negative correlation between age and Machiavellianism (Barlett & Barlett, 2015; Kavanagh, Signal, & Taylor, 2013; Mudrack, 1989; O'Boyle, Forsyth, Banks, & Story, 2013), suggesting that individuals have a decrease in negativity as they get older. In contrast, in the case of children and adolescents, Sutton and Keogh (2001) found that age is positively but marginally correlated with Machiavellianism, thus indicating a trend that children get more cynical as they get older. Additionally, Carter et al. (2014a); Carter, Campell, and Muncer (2014b) argued that a younger age is correlated with a riskier life-style, so Machiavellianism might be expected to be most apparent at younger ages. In the present study, we would compare Machiavellianism scores between pretest and post-test (a year later) to directly test the correlation between age and Machiavellianism.

In summary, most research on Machiavellianism has been conducted in adult populations so far, while youth populations are neglected. The current study though, with a large sample of adolescents and a one-year longitudinal design, aims to extend prior works to gain a deeper understanding of the relations between Machiavellianism and psychological problems. Based on findings of other studies, we predict that (a) over the course of a year, a significant increase in Machiavellianism will be observed; (b) time 1 Machiavellianism has a significant impact on time 2 (one year later) psychological problems; and (c) mediating effects of internalizing behavior problems on the relations between Machiavellianism and externalizing behavior problems may exist across time intervals.

2. Method

2.1. Participants and procedure

In October 2014 (time 1), a total of 541 adolescents were sampled from two middle schools in Zhengzhou in exchange for extra course credit in their psychology class. Participants were asked to complete

questionnaires and demographics including sex, age and class. In October 2015 (time 2), the same participants were recruited again to complete the same questionnaires. Of the initial 541 students, 454 were in both waves. The age range of the final sample was from 11 to 14 ($M = 12.56$, $SD = 0.95$) in wave 1, including 236 boys (51.98%; $M = 12.52$, $SD = 0.97$) and 218 girls (48.02%; $M = 12.60$, $SD = 0.62$). There was no significant difference in age between boys and girls, and there was no significant difference in the demographics among the students who were included in the study and those who were excluded.

After the school boards' permissions and the participants' consents were obtained, the students completed the survey during regular class hours. Students were allowed to clarify the meaning of some questions, but their responses to the items were not influenced by the four trained researchers. Additionally, they were thanked and assured that their answers were completely confidential.

2.2. Measures

2.2.1. Kiddie Machiavellianism Scale

The original Kiddie Machiavellianism Scale is a 20-item, self-rating and validated questionnaire that assesses children and adolescents' attitudes towards human nature, trust and honesty in interpersonal relationships (Sutton & Keogh, 2001). Each item is rated on a 4-point scale anchored by 5: agree very much and 1: disagree very much. All items are summed to create a total score (range 20–100), higher scores are indicative of higher levels of Machiavellianism. The Chinese version of the Kiddie Machiavellianism Scale has been documented elsewhere (Geng et al., 2011). In this study, the Cronbach's α was 0.77 for the entire T1 scale, and 0.74 for the entire T2 scale.

2.2.2. Strengths and difficulties questionnaire (SDQ for students)

The SDQ is a 25-item, self-rating, and well-validated questionnaire (Goodman, 1997) that assess pro-social behaviors and psychological problems of 3–16-year-olds on five scales: 5 items for pro-social behavior (PB), 5 items for hyperactivity (HY), 5 items for emotional symptoms (ES), 5 items for conduct problems (CP), and 5 items for peer relationship problems (PRP). Each item has three possible responses, 0, 1 or 2. The score for each scale is generated by adding the scores of the five items within that scale (range 0–10), and score for a total measure of difficulties is generated by adding the scores of each of the four difficulties subscales (range 0–40). A higher score for PB is the indicative of higher levels of strengths, and higher scores for HY, ES, CP, and PRP are indicative of higher levels of difficulties. The psychometric properties of the Chinese version of SDQ have been described elsewhere as satisfactory (Kou, Du, & Xia, 2007). In the present study, we used the difficulties questionnaire from SDQ, Cronbach's α was 0.83 for HY, 0.84 for ES, 0.81 for CP, and 0.87 for PRP.

3. Results

3.1. Development of Machiavellianism

As shown in Table 1, the results indicated that Machiavellianism scores were significant higher at time 2 than at time 1 [$F(1, 452) = 8.33$, $p < 0.01$]. There were no main effects for sex [$F(1, 452) = 1.24$, $p > 0.05$], and no interaction between measurement time and sex [$F(1, 452) = 0.166$, $p > 0.05$]. Additionally, difficulties questionnaire were found to score lower at time 2 than at time 1 [$F(1, 452) = 10.68$, $p < 0.01$].

3.2. Intercorrelations

As shown in Table 2, the pretest-post-test correlations were 0.452 for Machiavellianism, 0.545 for hyperactivity, 0.557 for emotional symptoms, 0.387 for conduct problems, and 0.454 for peer relationship problems. At both time 1 and time 2, Machiavellianism was positively

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