



# Machiavellianism and personality dysfunction

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## Abstract

Machiavellianism (MACH) is associated with a variety of traits in normals which, when extreme, may indicate personality dysfunction (e.g. psychoticism, extraversion, neuroticism, psychopathy, narcissism, paranoia, hysteria). Based on a dimensional conceptualization of personality and personality disorders we further examined in a student sample the extent to which MACH is associated with personality dysfunction. We employed the Personality Diagnostic Questionnaire-4+ (PDQ-4+) [Hyler, S. E. (1997). *PDQ-4 and PDQ-4+ instructions for use*. New York: New York State Psychiatric Institute] as a dimensional measure of the personality disorders included in the DSM-IV. As predicted MACH is positively associated with the PDQ-4+ total score, an index of general personality dysfunction. In addition, MACH is positively associated with most of the specific personality disorder scales, and most strongly with the borderline, paranoid, negativistic (i.e. passive-aggressive) and antisocial scales. Finally, although sex differences were obtained on some of the PDQ-4+ measures, there is no evidence that participant sex moderates relations between MACH and personality dysfunction. © 2001 Elsevier Science Ltd. All rights reserved.

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## 1. Introduction

The present study conceptualizes personality disorders dimensionally rather than taxonomically. The dimensional view of personality dysfunction contends that attributes related to the personality disorders can be measured within samples of normal people, and that hypothesis testing and theory-building related to the personality disorders can be based in part on research conducted with normal samples (Eysenck, 1994; Widiger & Costa, 1994; Wiggins & Pincus, 1989; see also Mook, 1983). In the present study we examined in a normal sample associations between scores on Machiavellianism (MACH) (e.g. Christie & Geis, 1970) and personality disorders assessed dimensionally with Hyler's Personality Diagnostic Questionnaire-4+ (PDQ-4+) (Hyler, 1997).

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MACH is associated with traits in normals which, when extreme, may indicate personality dysfunction (psychoticism and extraversion, Allsopp, Eysenck & Eysenck, 1991; neuroticism, Ramanaiah, Byravan & Detwiler, 1994; paranoia, Christoffersen & Stamp, 1995; narcissism, McHoskey, 1995; “hysteroïd-obsessoid,” Magaro & Smith, 1981; psychopathy, McHoskey, Worzel & Szyarto, 1998). On this basis we predicted that MACH would be positively associated with the PDQ-4+ total score which assesses overall personality dysfunction, and also several of the specific personality disorder scales. In addition, recent analyses have suggested that personality dysfunction may be manifested differently in men and women (e.g. Hamburger, Lilienfeld & Hogben, 1996; Mealey, 1995), so we also examined the possibility that participant sex may moderate relations between MACH and personality dysfunction (see McHoskey, 2001).

## **2. Method**

### *2.1. Participants and procedure*

We employed a student sample from a large public university in the Midwestern United States. The sample is disproportionately female (Total  $n = 287$ , 181 females, 106 males). The participants are all volunteers who received extra-credit towards a Psychology course for their optional participation. They participated in small groups (5–10 people), and received an oral and written debriefing at the conclusion of the study.

### *2.2. Measures*

#### *2.2.1. MACH*

Participants completed the Mach-IV (Christie & Geis, 1970) which is a 20-item self-report scale designed to assess MACH dispositions (“views”) and behaviors (“tactics”). The scale consists of statements advocating cynical attitudes about human nature and the use of manipulative strategies such as lying and calculated flattery (e.g. “The best way to handle people is to tell them what they want to hear,” 1 = disagree, 5 = agree). There is a large literature in Personality and Social Psychology documenting the reliability and validity of this measure (for a recent review see McHoskey et al., 1998). A particular strength of the Mach-IV is its well-documented criterion validity. People scoring high on the Mach-IV test are manipulative in experimental settings (Geis, 1978) and naturalistic settings (Shultz, 1993).<sup>1</sup>

#### *2.2.2. PDQ-4+*

Participants also completed Hyler’s (1997) PDQ-4+. The PDQ-4+ is a 99-item self-report inventory with a true/false response format which assesses the personality disorders included in the DSM-IV (APA, 1994). The subscales may be scored either dimensionally or diagnostically

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<sup>1</sup> We also administered an additional 30 MACH items from the original MACH item pool (see items marked with an asterisk in Christie & Geis, 1970, pp. 11–13) and combined these with the 20 Mach-IV items to create a 50-item measure of MACH dubbed the Mach-VII. However, a similar pattern of results was obtained for both measures, and we present only the results for the Mach-IV in the interests of brevity and historical continuity. Details concerning the other results are available from John W. McHoskey upon request.

(i.e. based on established cutoffs), but we examined only the dimensional scores for this project. The PDQ-4+ provides a total score indicative of general personality dysfunction, separate scores for each of the personality disorders recognized in the DSM-IV, and also the two provisional personality disorders provided as criteria sets for further study (i.e. depressive and negativistic). We also computed total scores for each of the three clusters identified in the DSM-IV by summing the personality disorder scale scores within each cluster. The PDQ-4+ is intended for use in clinical settings as a screening measure, and also for use in research, and cannot substitute for an assessment provided by a trained clinician (Fossati et al., 1998). However, validity studies show that scores on the forerunner of this test are consistent with assessments provided by trained clinicians (Hyler, Rieder, Williams, Spitzer, Hendler & Lyons, 1988; Maffei, Fossati, Lingiardi, Madeddu, Borellini & Petrachi, 1995). Note that the PDQ-4+ also includes validity scales designed to assess invalid responding. In the present study we dropped five respondents who answered true to the following item on the PDQ-4+ suspect scale: “I have lied a lot on this questionnaire.”<sup>2</sup>

### 3. Results

Descriptive statistics and reliabilities for the PDQ-4+ measures are presented in Table 1. (Mach-IV:  $M = 55.4$ ,  $S.D. = 8.1$ , Cronbach's  $\alpha = 0.70$ ). A high internal consistency (KR-20) was observed for the PDQ-4+ total score (0.87). However, the internal consistency estimates for some of the PDQ-4+ subscales are extremely low (range of 0.29 for obsessive–compulsive to 0.81 for antisocial), which will attenuate the magnitude of observed correlations. Note that a zero reliability was obtained for the PDQ-4+ suspect scale due to zero variance on one of the items. The low internal consistency estimates for the PDQ-4+ subscales are not surprising since this measure was not designed to achieve internal consistency but rather to correspond closely in a checklist manner to the symptoms included in the DSM-IV for each of the personality disorders.

#### 3.1. Sex differences

Men score higher on MACH in this sample (male  $M = 57.6$ , female  $M = 54.2$ ,  $t(285) = -3.5$ ,  $P < 0.001$ ). We also examined sex differences on the PDQ-4+ subscales because differential incidence rates have been observed on the personality disorders for men and women (Hartung & Widiger, 1998). A multivariate analysis of variance for participant sex on all of the PDQ-4+ personality disorder scales is significant and indicates that participant sex can account for 21% of the variability in these scores, Wilk's  $\Lambda = 0.788$ ,  $F(12,277) = 6.2$ ,  $P < 0.001$ . Men score higher on the paranoid, schizoid, schizotypal and antisocial scales (all  $F_s > 8.9$ , all  $P_s < 0.05$ , male and

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<sup>2</sup> The present research also examined the psychometric properties of the PDQ-4+ and in particular the susceptibility of the PDQ-4+ to socially desirable responding. For this reason we were reluctant to drop respondents based on the standard PDQ-4+ validity scale instructions, and instead employed the more conservative approach outlined in the text. To examine the susceptibility of the PDQ-4+ to socially desirable responding we also had participants complete Paulhus' (1991) balanced inventory of desirable responding. However, we do not present these results in the present context in the interests of brevity because controlling for social desirability does not alter the pattern of findings which we report pertaining to MACH. A conference report which summarizes the findings bearing on the BIDR is available from John W. McHoskey upon request.

Table 1

Descriptive Statistics for the Personality Diagnostic Questionnaire-4+ (PDQ-4+) and Correlations with Machiavellianism (Mach-IV)<sup>a</sup>

PDQ-4+ measure	<i>M</i>	S.D.	Kuder–Richardson 20	<i>R</i>
PDQ-4+ total score (120)	32.1	11.9	0.87	0.44***
<i>Cluster A: odd or eccentric</i>				
Total cluster score (23)	7.0	3.2	0.66	0.36***
Paranoid (7)	3.1	1.6	0.49	0.36***
Schizoid (7)	1.1	1.2	0.48	0.23***
Schizotypal (9)	2.7	1.5	0.37	0.20**
<i>Cluster B: dramatic, emotional or erratic</i>				
Total cluster score (55)	12.7	6.5	0.80	0.42***
Antisocial (23)	2.7	3.0	0.81	0.33***
Antisocial Behavior (16)	1.4	2.4	0.84	0.20**
Borderline (15)	4.5	2.8	0.56	0.40***
Impulsivity (6)	2.7	2.0	0.71	0.39***
Histrionic (8)	2.5	1.6	0.46	0.13*
Narcissistic (9)	2.9	1.7	0.48	0.22***
<i>Cluster C: anxious or fearful</i>				
Total cluster score (23)	7.1	3.3	0.66	0.17**
Avoidant (7)	2.5	1.8	0.62	0.18**
Dependent (8)	1.2	1.4	0.58	0.15*
Obsessive–compulsive (8)	3.3	1.4	0.29	0.03
<i>Provisional personality disorders</i>				
Depressive (7)	3.0	1.7	0.48	0.23***
Negativistic (7)	2.1	1.5	0.48	0.38***
<i>Validity scales</i>				
Too-good (4)	0.3	0.6	0.44	−0.23***
Suspect (2)	0.1	0.2	0.00	0.14*

<sup>a</sup>  $n = 287$ . The number of items included in each scale appears in parentheses after the scale name.

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$  (all two-tailed).

female means respectively: paranoid, 3.4 and 2.9; schizoid, 1.3 and 1.0; schizotypal, 3.0 and 2.6; anti-social, 3.8 and 2.0). Women score higher on the histrionic and avoidant scales (both  $F_s > 15.9$ , both  $P_s < 0.05$ , male and female means respectively: histrionic, 2.2 and 2.7; avoidant, 2.2 and 2.7). Note that the findings for the avoidant scale contradict the sex prevalence rates provided in the DSM-IV.

### 3.2. Associations between the Mach-IV and PDQ-4+

Zero-order correlations between the Mach-IV and the PDQ-4+ are also presented in Table 1. MACH scores are positively associated with the PDQ-4+ total score and also most of the specific PDQ-4+ personality disorder measures (Table 1).

To further clarify relationships between MACH and personality dysfunction, we conducted a series of multiple regression analyses. First we examined the possibility that participant sex may moderate relations between the MACH and PDQ-4+ scores with hierarchical multiple regression (McHoskey, 2001). We initially regressed each PDQ-4+ measure on participant sex and MACH, and then added the MACH $\times$ sex interaction term to determine if this would significantly improve  $R^2$ . However, there was no evidence of a significant MACH $\times$ sex interaction for any of the PDQ-4+ measures (all  $P$ s > 0.05, n.s.), so we report results collapsed across participant sex.

We next conducted a multiple regression analysis with stepwise selection predicting MACH based on all 12 of the PDQ-4+ personality disorder measures, and these results are presented in Table 2. Borderline scores emerge as the best predictor of MACH, and account for 18% of the variability in MACH scores. The paranoid, negativistic and antisocial measures also enter the prediction, although they make small contributions to predicting MACH relative to the borderline measure (Table 2).

The stepwise regression results indicate that disorders from multiple DSM-IV clusters are related to MACH. To further examine this issue we regressed MACH scores first on participant sex (see step one of Table 2), and then initiated a stepwise selection procedure with the three cluster total scores. The “dramatic” cluster score enters first, and accounts for an additional 16% of the variability in MACH scores over participant sex. The “odd” cluster score also enters the regression, but accounts for a relatively small additional portion of the variance (2.8%). The “anxious” cluster score does not enter the regression. Thus, these results indicate that MACH is most closely associated with the “dramatic” cluster disorders, but also with the “odd” cluster due primarily to the association between MACH and paranoia (c.f. Christoffersen & Stamp, 1995).

Table 2

Multiple regression with stepwise selection predicting Machiavellianism (Mach-IV) with PDQ-4+ personality disorder scales<sup>a</sup>

Step and predictor	Machiavellianism		
	Cumulative $R^2$	Change in $R^2$	Final beta
<i>Forced in first</i>			
1. Participant sex	0.042***	0.042***	0.16**
<i>Stepwise selection begins</i>			
2. Borderline	0.221***	0.179***	0.22***
3. Paranoid	0.260***	0.039***	0.16**
4. Negativistic	0.280***	0.020**	0.19**
5. Antisocial	0.293***	0.013*	0.14*

<sup>a</sup>  $n = 287$ . Participant sex was dummy coded: 0 = female, 1 = male.

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$  (all two-tailed).

#### **4. Discussion**

Several general conclusions are warranted based on the present results. First, consistent with McHoskey's (1999, McHoskey et al., 1999) analyses linking MACH to maladjustment, people scoring high on MACH are more likely than their low scoring counterparts to possess dysfunctional personality traits as indexed by the PDQ-4+ total score. Second, MACH scores are positively associated with several of the specific personality disorders as indexed by the PDQ-4+. These latter results indicate that MACH is associated with a variety of maladaptive personality processes, and suggest that the interpersonal manipulations characteristic of MACH arise for a variety of dispositional reasons. Finally, although previous reports have highlighted the importance of examining sex differences pertaining to MACH (e.g. Marusic, Bratko & Zarevski, 1995; McHoskey, 2001; Mealey, 1995; Rim, 1992; Wilson, Near & Miller, 1996) in the present context we found no evidence that participant sex moderates relations between MACH and personality dysfunction. It should be noted though that this null finding may reflect limitations of the PDQ-4+.

Our results indicate that a variety of personality processes underlie the interpersonal manipulations of people scoring high on MACH. Borderline scores in particular were the best predictor of MACH in the stepwise regression which indicates that, in contrast to the prototypical MACH features originally outlined by Christie and Geis (1970) (e.g. cool and calculating), some people scoring high on MACH are driven by emotional disturbance and explosiveness. However, our results also indicate that other personality disorder measures which are associated with different personality dynamics are associated with MACH (i.e. paranoid, negativistic and antisocial). This suggests that a variety of personality dynamics underlie the behavioral similarities of people who score high on MACH. That is, although people scoring high on MACH are markedly similar at a behavioral level (i.e. interpersonally manipulative and domineering), they are a dispositionally diverse group who manipulate for a variety of reasons (c.f. McHoskey et al., 1998).

Those advocating a dimensional view of personality and personality dysfunction contend that normal and abnormal personality can be conceptualized within a single framework. For example, Eysenck (1994) has suggested that people with personality disorders have an extreme score on one or more of the three basic personality dimensions (i.e. extraversion, neuroticism and psychoticism; c.f. Widiger & Costa, 1994). Moreover, Eysenck (1994) notes that the three personality disorder clusters identified in the DSM-IV correspond closely to his three basic personality dimensions; extraversion underlies the "dramatic" cluster, neuroticism underlies the "anxious" cluster and psychoticism underlies the "odd" cluster. The present results, when considered in conjunction with an earlier report by Allsopp et al. (1991), provide support for Eysenck's (1994) argument with respect to MACH. Allsopp et al. found that MACH was most closely related to the extraversion and psychoticism dimensions in Eysenck's three-factor model, which would suggest that personality dysfunction associated with MACH should be located in the "dramatic" and "odd" clusters (i.e. extraversion and psychoticism, respectively), and this is precisely what the present results indicate.

In closing, the findings demonstrate that MACH is positively associated with personality dysfunction as indexed by the PDQ-4+. The present results thus extend previous analyses linking MACH to maladjustment [e.g. Christoffersen & Stamp, 1995; Gurtman, 1992; Magaro & Smith, 1981; McHoskey, 1995, 1999; McHoskey et al., 1998, 1999; Ramanaiah et al., 1994; but see Smith

(1984, 1999) for a discussion of MACH and maladjustment]. More importantly, we delineate some of the maladaptive personality dynamics which underlie MACH manipulative tendencies. Of course, the present results are not the final word on this issue due to limitations of the present study. We employed a student sample which presents generalizability limitations. Moreover, we employed only one measure of personality dysfunction, and the PDQ-4+ is limited in several ways. For example, the PDQ-4+ is a self-report measure with all the attendant limitations. Moreover, the PDQ-4+ is not a pure trait measure, and although it demonstrates significant convergence with other personality disorder measures (e.g. Millon's Clinical Multiaxial Inventory-II; see Wierzbicki & Gorman, 1995), it also demonstrates significant divergence from other personality disorder measures with respect to its correlates (Trull, 1992). Additional research might examine MACH in other populations and with more varied measures of personality dysfunction to determine the generalizability of our findings. However, even if additional research qualifies some of the specifics concerning the relationships between MACH and personality dysfunction we have reported (i.e. specific disorders), our results pertaining to the PDQ-4+ total score, in conjunction with previous findings bearing on MACH and maladjustment outlined above, suggest our general conclusion that MACH is in some sense maladaptive and associated with personality dysfunction is quite robust.

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