

Machiavellianism, Intrinsic Versus Extrinsic Goals, and Social Interest: A Self-Determination Theory Analysis

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We employ Deci and Ryan's self-determination theory of motivation in three studies to examine the goals and motivational orientation associated with Machiavellianism (MACH). Goals were classified as either extrinsic (e.g., financial success) or intrinsic (e.g., community feeling). The two types of goals are generally associated with different motivational experiences. Extrinsic goals are typically experienced as externally controlled, whereas intrinsic goals are experienced as self-determined. We predicted that MACH would be associated with an emphasis on the extrinsic goal of financial success specifically, and on a control motivational orientation in general. These predictions received support. Additional findings indicate that MACH is positively associated with alienation and antisocial behavior, but inversely associated with social interest (i.e., Adler, 1964/1938) and prosocial behavior.

Based on Deci and Ryan's self-determination theory of motivation (1985a, 1987; Ryan, 1995; Ryan, Sheldon, Kasser, & Deci, 1996), personal goals can be generally categorized as either *intrinsic* or *extrinsic*. Intrinsic goals involve behavior that is experienced as *self-determined*, whereas extrinsic goals involve behavior that is experienced as externally *controlled*. That is, the two types of goals tend to be associated with different experienced motivational states (for reviews see Deci, Koestner, & Ryan, 1999 with immediately subsequent critiques and an author response; Sansone, 1999; Vallerand, 1997). Technically, specific goals are neither intrinsic or extrinsic, as this instead depends on the personal cognitive meaning (i.e., functional significance) placed on the goal and related behavior. However,

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goals may be generally categorized according to whether they typically invoke a self-determined (i.e., intrinsic goals such as community feeling) or controlling (i.e., extrinsic goals such as financial success) functional significance. This is how goals were conceptualized in the present context (see Ryan *et al.*, 1996). Four goal domains were examined in the present study, and based on Kasser and Ryan (1993, 1996) they were categorized as either intrinsic (self-love and acceptance, community feeling, and family involvement) or extrinsic (financial success).

Self-determination theory predicts that an overemphasis on extrinsic relative to intrinsic goals may undermine personality integration and well-being. Consistent with this prediction, Kasser and Ryan (1993, 1996) documented an inverse relationship between the extrinsic-oriented goal of financial success and adjustment. Their results indicate that an overemphasis on the importance of financial success relative to intrinsic goals (e.g., community and family) is associated with decreased vitality but positively associated with depression and anxiety (but see also Carver & Baird, 1998). A subsequent report has provided a cross-cultural replication of Kasser and Ryan's findings in a Russian sample (Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999). Similarly, Emmons (1991) reports that an increased emphasis on the extrinsic goal of power (e.g., concern with establishing power, controlling others, competition, and domination) is associated with negative affect and both psychological and physical distress. The present study sought to extend these findings by examining the goal and motivational orientation associated with MACH, and integrating MACH into the literature on self-determination theory.

People scoring high on MACH (Christie & Geis, 1970) are characterized by distrust, cynicism, egocentricity, and a propensity for interpersonal manipulation (for a recent review see McHoskey, Worzel, & Szyarto, 1998). Although there is evidence that people scoring high on MACH are more likeable and interpersonally persuasive than their low-scoring counterparts (Fehr, Samsom, & Paulhus, 1992), the preponderance of the evidence suggests that MACH is associated with maladaptive outcomes. That is, MACH has deleterious consequences for both the people who possess these qualities and for those they contact. For example, MACH is positively associated with aggression and interpersonal coldness (Gurtman, 1991; Wiggins & Broughton, 1985), narcissism (McHoskey, 1995; see also Ickes, Reidhead, & Patterson, 1986), psychopathy (McHoskey *et al.*, 1998), anxiety (Fehr *et al.*, 1992), paranoia (Christoffersen & Stamp, 1995), interpersonal problems (Gurtman, 1992), and general personality dysfunction (McHoskey & Heinz, 1999), but inversely associated with self-esteem and subjective well-being (McHoskey *et al.*, 1999).

Given that personal goals serve to organize day to day activities (Cantor *et al.*, 1991), the interpersonal problems and maladjustment associated with MACH may reflect a relative deemphasis of intrinsic goals (e.g., family, community) relative to extrinsic goals (e.g., money). This general pattern of results was anticipated, and specifically a positive association was predicted between MACH and aspirations

for financial success. Acquiring power was of course the guiding motive behind Machiavelli's (1481/1513) initial exposition of *The Prince*, and aspirations for financial success represent a viable and popular form of power-seeking in contemporary society (c.f., Falbo, 1977). Support for this prediction would add to a growing body of evidence that indicates that MACH is associated with maladjustment as outlined above. More importantly, support for our prediction that MACH is associated with an overemphasis on the extrinsic goal of financial success would explicate some of the motivational foundations for associations between MACH and maladjustment. We examined our predictions in three studies. All three examined the goals associated with MACH. Study two also investigated relations between MACH and measures of social interest (Adler, 1964/1938). Study three examined relations between MACH and alienation (Seeman, 1991), general causality orientations (Deci & Ryan, 1985b), and also prosocial and antisocial behavior.

STUDY ONE

Method

Participants and Procedure

The participants included 58 psychology students who received extra course credit for their optional participation (26 women and 32 men). Participants completed questionnaires anonymously in groups of five or less and received an oral and written debriefing at the conclusion of the study.

Measures

Machiavellianism. The Mach-IV (Christie & Geis, 1970) is a 20-item inventory that measures agreement with Machiavellian statements espousing cynical attitudes and the use of interpersonal manipulation (i.e., Machiavelli, 1481/1513, 1 = strongly disagree, 7 = strongly agree). The validity and reliability of this popular scale are well documented (see Geis, 1978; Wrightsman, 1991, for summaries), as are its limitations (McHoskey *et al.*, 1998). A Cronbach's alpha of 0.69 was obtained for the Mach-IV in this sample.

Goal-Importance Indices. Participants were asked to report the importance of their aspirations in four goal domains by recording their agreement with each of the following items (1 = strongly disagree, 9 = strongly agree): *financial success*, "The most important goal in life is financial success"; *community*, "The most important goal in life is making a contribution to one's community"; *self-love*, "The most important goal in life is being able to love and accept yourself"; and *family*, "The most important goal in life is having friends and family whom you love, and

whom love you.” We employed these measures in all three studies reported in this paper, and the fact that they are single-item indices inherently presents reliability and validity limitations. However, the correlations observed between them in all three studies supports our separation of them into intrinsic and extrinsic goal indicators. The item assessing financial success was either inversely associated or unassociated with the other three items in all three studies, whereas the three intrinsic goal items were positively associated with one another in all three studies. In addition, note that we did not actually assess which goals participants are actually working toward, but rather the importance that they assign to these particular goals. It seems reasonable to presume that this is correspondent with participants’ actual goal directed activity, but our results would be qualified by the extent to which rated importance is discrepant from participants’ actual goal-directed activity.

Results and Discussion

In the interests of brevity we present descriptive statistics in all studies for only the goal importance indices.² The following means and standard deviations (respectively) were obtained for the goal-importance indices: financial success (4.0, 2.3), self-love (7.1, 1.5), community (5.9, 1.6), and family (7.5, 1.4). Thus, with respect to a comparison of group means, financial success is identified as the least important of the goals.

To examine relations between MACH and the goal-importance indices we computed semi-partial correlations controlling for general goal importance (i.e., the summation of the four goal-importance indices, see Kasser & Ryan, 1993). MACH isn’t associated with general goal importance ($p > .05$, *n.s.*). However, as predicted, MACH is positively associated with aspirations for financial success (*semi-partial* $r = .52$, $p < .001$). In contrast, MACH is inversely associated with all of the intrinsic goal indices: community (*semi-partial* $r = -.40$, $p < .001$); family (*semi-partial* $r = -.31$, $p < .05$); self-love (*semi-partial* $r = -.22$, $p = .08$).

The Importance of Money Relative to Other Goals

Additional analyses were conducted based on Kasser and Ryan’s (1993, 1996) appraisal of the relationship between aspirations for financial success and adjustment. Specifically, a key aspect of their analysis is that aspirations for financial success are not necessarily maladaptive. Instead, aspirations for financial success are maladaptive when they are overemphasized relative to intrinsically oriented goals (i.e., family, community, self-love). Kasser and Ryan’s (1993, 1996) analytic strategy involved comparing participants’ rank-ordering of the importance of their aspirations in the four goal domains to identify those who ranked financial success

²Details concerning other descriptive statistics are available from John W. McHoskey upon request.

as their most important goal. They then compared these respondents to others who had identified an intrinsic goal as most important. However, because we didn't explicitly ask participants to rank order their aspirations in this manner, we had to employ an alternative analytic procedure to address this issue.

To examine this issue we conducted a cluster analysis to determine if we could isolate specific groups based on the goal-importance ratings. Cluster analysis is a technique similar to the more well-known discriminant function analysis procedure. However, whereas with discriminant function analysis one begins with defined groups and determines which measures successfully discriminate one group from the other, with cluster analysis groups of subjects are actually formed based on differences between them on the measures of interest (Aldenderfer & Blashfield, 1984). We combined the three importance ratings for the intrinsic goals into a single composite, and employed this composite along with participants' rating of the importance of financial success as a basis for the cluster analysis. Both measures were converted to z-scores prior to the analysis to place them on a common metric. We requested a two-group solution and employed an agglomerative combination strategy based on squared Euclidean distance with Ward's clustering method (Ward, 1963; cited in Aldenderfer & Blashfield, 1984).

One of the two groups is clearly identifiable as the one that emphasizes financial success as their primary goal (*money-emphasizing*, $n = 27$; *money-deemphasizing*, $n = 31$). The money-emphasizing group scores higher on aspirations for financial success (Mean = 5.63, 2.55, respectively; $t(56) = 6.8$, $p < .001$). Moreover, the money-emphasizing group scores higher on MACH (Mean = 76.8, 71.4, respectively; $t(56) = 1.9$, $p = .06$, two-tailed). Thus, the study one results provide support for our predictions and indicate that MACH is correlated with acquisitiveness generally, and also with a tendency to emphasize the extrinsic goal of financial success relative to intrinsic goals.³

STUDY TWO

Study two was designed to replicate and extend the findings of study one. The use of one-item goal aspiration indices inherently presents measurement limitations, and for this reason it seemed important to replicate the study one results. In addition, study two integrated Adler's social interest construct into the investigation (Adler, 1964/1938).

³Women reported greater importance ratings for the community, family, and self-love aspirations in study one. To further assess these sex differences each of the goal domains was regressed on MACH with participant sex as a control variable. However, this analysis didn't substantively alter the pattern of associations already reported, and there was no evidence of an interaction between participant sex and MACH. Moreover, none of the findings for participant sex and the goal domains replicated, and therefore participant sex will not be addressed further. We should also note that an endorsement of the importance of self-love and acceptance may reflect a healthy and adaptive orientation, or a maladaptive and narcissistic orientation (Freud, 1957). However, the 1-item self-love and acceptance measure does not allow for the differentiation of adaptive and maladaptive aspects of self-love.

Adler's Concept of Social Interest

Adler's (1964/1938) social interest construct represents the cornerstone of the final formulation of his personality theory, with those scoring high demonstrating an identification with others and objects outside themselves. Thus, the capacity for social interest involves an ability to transcend personal focus and instead demonstrate care and concern for others, and is manifested in qualities such as friendliness, empathy, and cooperation. In the context of Adler's theory, social interest is necessary for adjustment in terms of coping with life's major challenges (e.g., work, relationships, general disappointments), and the empirical evidence supporting this aspect of Adler's theory is impressive. In general, a lack of social interest is associated with maladjustment (see Crandall, 1980, 1981).

Social interest was included in the present study for two reasons. First, we sought to integrate MACH into a broad and established personality theory, and an inverse association was anticipated between MACH and social interest. Interpersonally high MACHS adopt an emotionally detached and pragmatic style, and tend to be task rather than person oriented (Geis, 1978). Moreover, analyses of the interpersonal behaviors and problems associated with MACH indicate an arrogant, narcissistic, and domineering stance (Gurtman, 1991, 1992; McHoskey, 1995; Wiggins & Broughton, 1985). This interpersonal stance is clearly antithetical to social interest.

Second, we employed measures of social interest as proxy indicators of adjustment (Crandall, 1980, 1981). An inverse association was anticipated between MACH and social interest, and by implication adjustment. Although Christie and Geis (1970) originally conceptualized MACH as unrelated to psychopathology, subsequent evidence indicates this characterization requires modification as outlined above (see McHoskey *et al.*, 1999).

Method

Participants and Procedure

The participants were 129 psychology students who received extra-credit for their optional participation (95 women and 34 men). Participants completed questionnaires in groups of five or less under conditions of anonymity and received a written and oral debriefing at the conclusion of the study.

Measures

As in study one, participants completed the Mach-IV (Christie & Geis, 1970; Cronbach's alpha = .79 for this sample) and the four goal importance indices.

Participants also completed measures of social interest, which are described below. In contrast to study one, a 5-point response format was employed for all items. Participants recorded their responses on scanner forms, which were read by an optical scanner and entered directly into a computer.

Social Interest. Participants completed both the social interest scale (Crandall, 1975) and the social interest index (Greever, Tseng, & Friedland, 1973). Crandall's social interest scale presents participants with 24 pairs of traits and asks them to choose which they would rather possess. Some traits reflect social interest, whereas others do not, and the total score is the number of traits selected that exhibit social interest. Greever *et al.*'s social interest index requires participants to indicate their degree of endorsement for 32 statements that embody social interest (e.g., "I enjoy being in clubs"; 1 = not at all like me, 5 = very much like me; some of the items are reverse-scored). The two social interest measures were combined into a composite score based on the recommendations of Leak, Millard, Perry, and Williams (1985). Their findings indicate that the two measures tap different aspects of social interest, and that combining the two measures provides the most comprehensive measure of social interest available. We obtained a Cronbach's alpha of 0.90 for the social interest scale in this sample.

Results and Discussion

The following means and standard deviations (respectively) were obtained for the goal importance indices: financial success (2.1, 1.0), self-love (4.0, 1.0), community (3.5, 1.0), and family (4.4, 1.0). Thus, with respect to group means financial success is again identified as the least important of the goals.

To examine relations between MACH and the goal-importance indices, we again computed semi-partial correlations controlling for general goal importance. As in sample one, MACH is unassociated with general goal importance ($p > .40$, *n.s.*). However, as predicted MACH is positively associated with aspirations for financial success (*semi-partial* $r = .37$, $p < .001$). MACH is also again inversely associated with aspirations pertaining to community (*semi-partial* $r = -.22$, $p < .05$) and family (*semi-partial* $r = -.33$, $p < .001$), but MACH is unassociated with aspirations pertaining to self-love (*semi-partial* $r = .04$, *n.s.*). Also as predicted, MACH is inversely associated with social interest ($r = -.57$, $p < .001$). This latter finding substantiates the general pattern of associations observed between the goal indices and MACH, and, more importantly, links MACH (inversely) to an established proxy measure of adjustment.

The zero-order correlations between the goal-importance and social-interest measures are consistent with their theoretical foundations and conceptually replicate previous findings (Leak & Williams, 1989). Specifically, social interest is positively associated with all three of the intrinsic goal indices (self-love, .27; community, .27; family, .50; all $p < .01$), but inversely associated with aspirations

for financial success ($-.21, p < .05$). We also computed semi-partial correlations between social interest and the goal importance indices that control for overall goal importance (social interest is associated with general goal importance, $r = .29, p < .01$). The results reveal that social interest is positively associated with an endorsement of the importance of family aspirations (*semi-partial* $r = .43, p < .001$), but inversely associated with aspirations for financial success (*semi-partial* $r = -.41, p < .001$). Surprisingly however, social interest isn't associated with the community or self-love indices after controlling for overall goal importance (*semi-partial* $r = .08, .07$, respectively; each $p > .30, n.s.$).

The Importance of Money Relative to Other Goals

Additional analyses were again conducted based on Kasser and Ryan's (1993, 1996) appraisal of the relationship between personal aspirations for financial success and adjustment. We again conducted a cluster analysis to isolate specific groups based on the goal importance ratings, and we used the same clustering procedures as were described previously. One of the two groups is again clearly identifiable as the one that emphasizes financial success as their primary goal (*money-emphasizing*, $n = 29$; *money-de-emphasizing*, $n = 103$). The money-emphasizing group scores higher on aspirations for financial success ($M = 3.9, 1.7$, respectively; $t(130) = 15.8, p < .001$). Moreover, the money-emphasizing group scores higher on MACH ($M = 58.4, 52.2$, respectively; $t(130) = 3.2, p < .01$), but lower on social interest ($M = 133.0, 139.7$, respectively; $t(130) = -2.7, p = .06$, two-tailed).

The results for study two provide a replication and extension of study one. MACH is again positively associated with acquisitiveness in general, and also with a tendency to emphasize this extrinsic goal relative to intrinsic goals. The study two results also reveal the anticipated inverse association between MACH and social interest. All of these findings provide further evidence that MACH is correlated with a goal and motivational orientation associated with maladjustment.

STUDY THREE

In order to extend our motivational analysis of MACH with respect to self-determination theory, study three incorporated Deci and Ryan's (1985b) measure of general causality orientations. The general causality orientation scale is designed to assess the three motivational tendencies relevant to self-determination theory (impersonal, control, and autonomy). We predicted that MACH would be associated with a control orientation based on two considerations. First, the findings reported above link MACH to the control-oriented goal of financial success. Second, MACH is associated with an external locus of control (Mudrack, 1990). In addition, we examined relations between MACH and alienation. Alienation is

associated with a lack of intrinsic motivation (Maddi, Hoover, & Kobasa, 1982). We predicted that MACH would be positively associated with all six aspects of alienation identified by Seeman (1991). Finally, we sought to replicate the results of McHoskey *et al.* (1998) indicating that MACH is positively associated with antisocial action but inversely associated with prosocial action.

Method

Participants and Procedure

Seventy undergraduate students participated for optional extra-credit (48 females and 22 males). Responses were completed anonymously in groups of five or less, and participants received an oral and written debriefing.

Measures

Participants completed the Mach-IV (Christie & Geis, 1970), the single-item goal importance indices and other measures described below. All responses were recorded on 5-point scales. Participants recorded their responses on scanner forms, which were read by an optical scanner and entered directly into a computer.

General Causality Orientations Scale (GCOS). Deci and Ryan's (1985b) GCOS measures three causality orientations relevant to self-determination theory: autonomy, control, and impersonal. The GCOS presents respondents with brief scenarios (e.g., "You are discussing politics with a friend and find yourself in sharp disagreement."), and they are asked to evaluate the likelihood of their responding in a variety of ways (e.g., "Press forward with your viewpoint and try to get them to understand it," 1 = unlikely, 5 = likely). Deci and Ryan (1985b) present reliability and validity evidence.

Alienation. We administered scales to assess each of the six aspects of alienation identified by Seeman (1991). To our knowledge there is no existing measure that simultaneously assesses all six aspects of alienation, so we employed several measures to achieve coverage of the alienation domain. The six aspects of alienation, and the measures that we employed, are as follows: nihilism (i.e., meaninglessness, Maddi, Kobasa, & Hoover, 1979; cited in Seeman, 1991); social isolation; powerlessness (Neal & Groat, 1974; cited in Seeman, 1991); normlessness (Dean, 1961; cited in Seeman, 1991); cultural estrangement; self estrangement (Kohn & Schooler, 1983; cited in Seeman, 1991). These are all self-report measures that require respondents to either agree or disagree with a series of statements (1 = disagree, 5 = agree). Seeman (1991) summarizes all these measures and presents reliability and validity evidence. We also created an alienation total score by summing responses for all of the alienation items.

Self-reported Pro and Antisocial Behavior. Based on Levenson, Kiehl, and Fitzpatrick (1995) we asked respondents to self-report how frequently they engage in prosocial and antisocial behaviors typically found on a college campus (1 = I have never done this, 2 = once, 3 = twice, 4 = a few times, 5 = frequently). The *prosocial* (6 items) scale included the following items: lending money to someone else, letting someone copy your class notes, tutoring someone, doing volunteer work, being careful to return borrowed items, and driving carefully around bicyclists and pedestrians. The *antisocial* (7 items) scale included the following items: cheating on an exam, plagiarism, stealing, vandalism, getting drunk several nights a week, promiscuity, and being arrested for driving while intoxicated.

Results and Discussion

The following means and standard deviations (respectively) were obtained for the goal importance indices: financial success (2.7, 1.2), self-love (4.0, 1.0), community (3.4, 1.0), and family (4.7, 0.6). Thus, with respect to group means financial success is again identified as the least important of the goals. This finding replicated across all three studies and indicates that our participants generally reported that intrinsic goals are more important than the extrinsic goal of financial success.

All of the measures demonstrated sufficient reliability (Cronbach's alpha) for research purposes (range of .51 to .88) except the control subscale of the GCOS (alpha = .40). Only four significant associations were observed between the GCOS scales and the alienation measures: GCOS-impersonal and powerlessness $r = .33$ ($p < .01$); GCOS-impersonal and self-estrangement $r = .32$ ($p < .01$); GCOS-control and self-estrangement $r = .30$ ($p < .01$); GCOS-autonomy and nihilism $r = -.24$ ($p < .05$). Only one significant association was obtained between the GCOS scales and the prosocial and antisocial behavior measures, a positive association between control and antisocial behavior ($r = .24$, $p < .05$).

Correlations between MACH and our other measures are presented in Table I. The general pattern of findings is consistent with predictions. MACH is positively associated with a control causality orientation ($r = .30$, $p < .02$), but unassociated with the autonomy and impersonal orientations.⁴ Moreover, MACH is positively associated with the alienation total score, all six aspects of alienation and antisocial actions, but inversely associated with prosocial actions (see Table I).

⁴Adequate internal consistency has been reported for the control subscale of the GCOS previously. For example, Deci and Ryan (1985b) report an internal consistency of 0.69 (Cronbach's Alpha) and a test-retest reliability of 0.71 for the control subscale. However, we obtained a deficient Cronbach's alpha for this measure in our sample (.40), so the obtained association between MACH and the control scale probably underestimates the actual strength of the relationship between MACH and the control orientation. When the correlation between them is corrected for attenuation with the Cronbach's alphas for both measures set at 0.90 the correlation increases to 0.51 (see Nunnally & Bernstein, 1994, p. 257).

Table I. Study Three: Correlations Between Machiavellianism and Other Measures

Measure	<i>r</i>
Goal Indices	
Financial success	.35 ^b
Self-love	-.04
Community	-.45 ^c
Family	-.13
Alienation	
Total Score	.55 ^c
Nihilism	.45 ^c
Social isolation	.30 ^b
Powerlessness	.29 ^a
Normlessness	.49 ^c
Cultural estrangement	.26 ^a
Self-estrangement	.24 ^a
General Causality Orientations	
Impersonal	.14
Control	.30 ^b
Autonomy	-.12
Self-Reported Behavior	
Antisocial	.37 ^b
Prosocial	-.24 ^a

Note. *n* = 70.

^a*p* < .05.

^b*p* < .01.

^c*p* < .001 (all two-tailed).

We again computed semi-partial correlations between the goal importance indices and our other measures that control for overall goal importance, and these results are presented in Table II. MACH is again positively associated with aspirations for financial success as are most of the alienation measures and antisocial behavior, whereas prosocial behavior is inversely associated with aspirations for financial success. As in the previous two studies, few significant associations were obtained for the goal of self-love, but the findings for the community and family goal indices are consistent with their theoretical foundations (see Table II).

The Importance of Money Relative to Other Goals

As in the first two studies, we also examined how emphasizing the importance of financial success relative to intrinsic goals is related to MACH and our other measures. We again conducted a cluster analysis to isolate specific groups based on the goal importance ratings, and we employed the same clustering procedures as were described previously. One of the two groups is again clearly identifiable as the one that emphasizes financial success as their primary goal (*money-emphasizing*, *n* = 34, *money-deemphasizing*, *n* = 36). A MANOVA on all of the measures excluding the alienation total score (redundant with the subscales)

Table II. Semi-Partial Correlations Between Goal Indices and Other Measures That Control for General Goal Importance

Measure	Goal indices			
	Money	Self-love	Community	Family
Machiavellianism	.48 ^c	.02	-.52 ^c	-.11
GCOS-Impersonal	-.06	-.03	-.05	.23
GCOS-Control	.34 ^b	-.06	-.28 ^a	-.12
GCOS-Autonomy	-.09	.07	.08	-.05
Alienation total	.40 ^c	.07	-.38 ^c	-.26 ^a
Nihilism	.33 ^b	.04	-.31 ^b	-.20
Social isolation	.05	.27 ^a	-.06	-.37 ^b
Powerlessness	.24	-.11	-.24 ^a	.07
Normlessness	.39 ^c	.04	-.33 ^b	-.27 ^a
Cultural estrangement	.27 ^a	.05	-.17	-.29 ^a
Self estrangement	.25 ^a	.07	-.30 ^a	-.10
Prosocial behavior	-.43 ^c	.25 ^a	.32 ^b	-.02
Antisocial behavior	.42 ^c	.10	-.53 ^c	.04

Note. $n = 70$. Entering general goal importance at step one results in a nonsignificant R^2 for all measures.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

and goal indices (basis for creating the groups) is significant and indicates that the distinction between the two groups can account for 36% of the variability in these measures: Wilk's Lambda = .644, $F(12, 57) = 2.6$, $p < .01$. The results of independent samples t -tests comparing the two groups on the various measures are presented in Table III. These results are consistent with our predictions and a self-determination theory analysis of the characteristics of those who identify financial success as their primary goal. The money-emphasizing group scores higher on aspirations for financial success, although the two groups don't differ on the intrinsic goal indices. In addition, the money-emphasizing group scores higher on MACH, antisocial behavior, the control causality orientation, the alienation total score, nihilism, normlessness, and self-estrangement, but lower on prosocial behavior and the GCOS autonomy scale (see Table III).⁵

Machiavellianism and Alienation

Considerable redundancy was observed between the six measures of alienation. To further examine relations between MACH and the six aspects of alienation

⁵We also addressed the issue of contrasting those who rank financial success as their most important goal with other respondents in alternative ways, including an analysis of difference scores, and an examination of participants' implicit rank ordering of the goals based on their reported importance for each. The results of these analyses corroborate the cluster analytic findings. Details are available from John W. McHoskey upon request.

Table III. Means, Standard Deviations, and *t*-test Comparisons Between Money-Emphasizing and Money-De-Emphasizing Groups on Goal-Importance Ratings, Machiavellianism, General Causality Orientations, Alienation, and Frequency of Prosocial and Antisocial Behaviors

Measure	Money-emphasizing (<i>n</i> = 34)		Money-deemphasizing (<i>n</i> = 36)		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Financial success	3.7	0.5	1.7	0.6	15.5 ^d
Self-love	4.2	0.9	3.9	1.0	1.5
Community	3.3	0.8	3.4	1.1	-0.2
Family	4.8	0.5	4.6	0.7	1.4
Machiavellianism	58.7	7.7	53.8	8.8	2.5 ^b
GCOS-Impersonal	31.0	4.9	30.8	6.6	0.1
GCOS-Control	39.3	4.8	36.5	4.1	2.7 ^b
GCOS-Autonomy	48.5	7.5	51.5	7.1	-1.7 ^a
Alienation total	131.1	18.2	120.9	17.9	2.4 ^b
Nihilism	29.0	7.4	25.7	5.4	2.1 ^b
Social isolation	29.5	4.0	29.6	5.1	-0.1
Powerlessness	28.9	6.7	27.5	7.6	0.8
Normlessness	19.4	3.5	16.5	4.2	3.0 ^c
Cultural estrangement	11.8	3.7	10.5	3.3	1.5
Self estrangement	12.5	3.5	10.8	3.1	2.1 ^b
Prosocial behavior	25.8	2.9	27.3	1.7	-2.7 ^c
Antisocial behavior	16.8	4.6	14.3	5.9	1.9 ^a

Note. For the goal ratings, higher scores indicate greater importance, and for the behavioral measures higher scores indicate greater frequency.

^a *p* < .10.

^b *p* < .05.

^c *p* < .01.

^d *p* < .001 (all two-tailed).

we simultaneously regressed MACH on participant sex and the six separate alienation scores. The results reveal that alienation can account for 37% of the variability in MACH scores: $R^2 = .375$, $F(7, 62) = 5.3$, $p < .001$. Although all of the zero-order correlations between MACH and the six types of alienation are significant, in the simultaneous regression only nihilism (beta = .24, $p = .06$, two-tailed) and normlessness (beta = .35, $p < .01$) emerge as significant predictors. Thus, MACH's association with alienation is dominated by a sense of personal meaninglessness and a perceived erosion of shared social standards.

CONCLUSIONS

Our findings delineate some of the motivational foundations that underlie the cold, domineering, and manipulative MACH interpersonal style (Gurtman, 1991, 1992; McHoskey, 1995; McHoskey *et al.*, 1998; Wiggins & Broughton, 1985). Our high-scoring MACH participants reported a control-oriented motivational orientation that is manifested in aspirations for financial success and a relative deemphasis

on community, family, and self-love related goals. Moreover, they report a high degree of alienation and antisocial behavior, but little social interest or prosocial behavior. Our findings, in conjunction with those of Kasser and Ryan (1993, 1996), have an important historical poignancy, because increasing numbers of entering college freshman identify financial success as a primary goal in life (Gose, 1998). Although the correlational nature of all these findings present interpretive limitations, when considered simultaneously they suggest that increasing numbers of American youth are adopting goals and a corresponding motivational orientation that are associated with long-term maladjustment.

Our findings also link MACH to established (proxy) markers of maladjustment (i.e., focus on the extrinsic goal of financial success, a lack of social interest, control causality orientation, high alienation). Thus, our results are consistent with an emerging picture of MACH as a maladaptive orientation that is associated with interpersonal problems and psychopathology (Gurtman, 1991, 1992; McHoskey, 1995; McHoskey & Heinz, 1999; McHoskey *et al.*, 1998, 1999). Our findings suggest that MACH's association with maladjustment reflects an overemphasis on the extrinsic goal of financial success and a corresponding erosion of social interest (Adler, 1964/1938). Personal goals serve to organize one's day to day activities (Cantor *et al.*, 1991), and our results indicate that those scoring high on MACH devote their time to acquiring money rather than developing the meaningful social relationships that are critical for human well-being (Baumeister and Leary, 1995).

A study by Shultz (1993) indicates that people scoring high on MACH are more successful in relation to achieving financial success than their low-scoring counterparts when operating in a relatively unconstrained environment, and there are certainly benefits associated with material wealth. Moreover, previous studies document other benefits of MACH, especially in short-term social encounters (see McHoskey *et al.*, 1998). However, the literature on self-determination theory suggests that these successes will come with an attendant long-term cost. Self-determination theory identifies two aspects of personal goals related to personality integration that are critical for maintaining well-being (Sheldon & Kasser, 1995). The first is coherence between one's goals. When someone's goals are coherent they are complimentary and consistent with a general goal strategy. The second is congruence. Congruent goals are consistent with hypothesized innate organismic needs. Our study investigated only the latter of these two. Our results suggest that, in the language of self-determination theory, people scoring high on MACH focus their energies on goals that are inconsistent with innate human needs and actualizing tendencies (i.e., financial success) at the expense of goal-directed activity consistent with such needs and tendencies (i.e., community, family, self-love: see especially Ryan, 1995; and also Sheldon & Kasser, 1995; Baumeister & Leary, 1995; Cushman, 1990; Lasch, 1979). This type of goal-directed activity is associated in turn with maladjustment (Kasser & Ryan, 1993, 1996).

As mentioned, the correlational nature of our data presents serious interpretive limitations. In order to understand more fully the developmental processes involved, longitudinal data would be required. Future research might also examine the developmental origins of the MACH motivational orientation. For example, the goal orientation associated with MACH may reflect an inability to develop a sense of basic trust or to form secure attachments early in life (i.e., Erikson, 1963; Bowlby, 1969/1982). As a result, those scoring high on MACH may focus their energies on nonsocial objects that would seem to present a decreased capacity for betrayal (c.f., Gurtman, 1992). That is, their motivational orientation may reflect a defensive interpersonal style intended to avoid disappointment and hurt. Evidence consistent with this suggestion has recently been presented by Kasser, Ryan, Zax, and Sameroff (1995). Their results indicate that a lack of early maternal nurturance, an environmental situation linked to a lack of basic trust, is associated with an increased emphasis on materialistic goals later in life. However, additional evidence would be needed to establish the mediating factors. In addition, we examined only one type of extrinsic goal—financial success—but several other types of extrinsically oriented goals are probably also relevant to understanding MACH (e.g., fame). Future studies could extend our results by examining how MACH is related to other types of extrinsic goals.

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