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Level of Self-Esteem and Contingencies of Self-Worth: Unique Effects on Academic, Social, and Financial Problems in College Students

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The unique effects of level of self-esteem and contingencies of self-worth assessed prior to college on academic, social, and financial problems experienced during the freshman year were examined in a longitudinal study of 642 college students. Low self-esteem predicted social problems, even controlling for demographic and personality variables (neuroticism, agreeableness, and social desirability), but did not predict academic or financial problems with other variables controlled. Academic competence contingency predicted academic and financial problems and appearance contingency predicted financial problems, even after controlling for relevant personality variables. We conclude that contingencies of self-worth uniquely contribute to academic and financial difficulties experienced by college freshmen beyond level of self-esteem and other personality variables. Low self-esteem, on the other hand, appears to uniquely contribute to later social difficulties.

Keywords: self-esteem; contingencies of self-worth; daily hassles; academic stress; social relationships; college students

Correlational data implicate low self-esteem in a host of social and academic problems, including poor school achievement, aggression, substance abuse, eating disorders, and teenage pregnancy (Dawes, 1994; Mecca, Smelser, & Vasconcellos, 1989; Scheff, Retzinger, & Ryan, 1989). However, reviews of the literature have yielded little evidence that low self-esteem is a cause, rather than merely a symptom, of most academic or social problems (Baumeister, 1998; Dawes, 1994; Smelser, 1989). Recent analyses of self-esteem suggest that academic and social problems are the result of contingent, unstable, or fragile self-esteem, rather than low

self-esteem (Baumeister, Smart, & Boden, 1996; Covington, 1984, 2000; Crocker & Wolfe, 2001; Deci & Ryan, 1995; Kernis, in press). The present study examines the unique effects of self-esteem level and contingencies of self-worth on academic, social, and financial problems experienced by college freshmen.

Costs and Benefits of Contingent Self-Esteem

More than a century ago, William James (1890) suggested that people are highly selective about the domains on which they stake their self-worth, concluding that "our self-feeling in this world depends entirely on what we *back* ourselves to be and do" (p. 45). For some people, self-esteem may depend on being attractive, loved, or good at school; for others, self-esteem may depend on being virtuous, powerful, or self-reliant. Because most people seek to protect, maintain, and enhance their self-esteem (see Baumeister, 1998, for a review), contingencies of self-worth serve an important self-regulatory role; people seek out situations and

engage in activities that provide opportunities for them to achieve success and avoid failure in domains on which they stake their self-worth (Crocker, 2002a, 2002b; Crocker & Park, in press; Crocker & Wolfe, 2001). For example, students who base their self-esteem on academic competence report spending more time studying, whereas students who base their self-esteem on their appearance spend more time exercising, grooming, shopping for clothes, and partying during their freshman year of college (Crocker, Luhtanen, Cooper, & Bouvrette, in press). Based on the assumption that basing one's self-worth on academic performance provides a powerful motivator for academic success (Steele, 1992, 1997), some psychologists have suggested that schools should be teaching or creating self-esteem that is "warranted," or contingent on academic achievement (Baumeister, 1999; Seligman, 1998).

Although contingencies of self-worth can be motivating, there may be high costs to regulating one's behavior according to what will increase or decrease one's self-esteem (Crocker & Park, 2003). Deci and his colleagues note,

> The type of ego involvement in which one's "worth" is on the line—in which one's self-esteem is contingent upon an outcome—is an example of internally controlling regulation that results from introjection. One is behaving because one feels one has to and not because one wants to, and this regulation is accompanied by the experience of pressure and tension. (Deci, Eghrari, Patrick, & Leone, 1994, p. 121)

Research stemming from the self-determination theory perspective indicates that behavior that is more externally controlled is associated with high levels of effort but more anxiety, maladaptive coping with failure, decreased persistence, decreased intrinsic motivation, lower levels of goal attainment, and the absence of the increase in well-being associated with attainment of intrinsic or internalized goals (see Deci & Ryan, 2000, for a review; Ryan & Connell, 1989; Sheldon & Elliot, 1998; Sheldon & Kasser, 1998). The self-worth theory of academic achievement motivation makes a similar argument (Covington, 2000). Basing self-worth on academic performance is hypothesized to lead to helplessness in the face of failure (Burhans & Dweck, 1995; Dweck, 2000), anxiety, self-handicapping, and in some cases, poor performance (Covington, 1984, 2000; Deci & Ryan, 2000). Students who base their self-esteem on academics also show greater fluctuations in affect and self-esteem in response to positive and negative academic events (Crocker, Karpinski, Quinn, & Chase, in press; Crocker, Sommers, & Luhtanen, 2002). In sum, being contingent on academic competence may be more critical than level of self-esteem in predicting academic problems.

Although it has received less attention in research, basing one's self-worth on physical appearance may lead to social problems. Physical appearance was rated by college students as the most superficial and the most dependent on others of seven domains of contingencies and, overall, was the least healthy domain of contingency (Crocker, Luhtanen, et al., in press). Basing one's self-worth on appearance is significantly correlated with narcissism and neuroticism (Crocker, Luhtanen, et al., in press) and highly correlated ($r = .65$) with public self-consciousness (Crocker & Luhtanen, 2002), suggesting that people whose self-worth is highly contingent on appearance are likely to be focused on how they appear to others during social interactions. Consequently, they may be less able to attend to and show empathy toward those with whom they are interacting. Based on these findings, we hypothesized that students who base their self-worth on their appearance are highly dependent on validation and approval from others and, consequently, experience more social pressure and stresses in college, just as students who base their self-worth on academics are hypothesized to experience more academic stresses and pressures. In sum, we hypothesize that the critical factor linking self-esteem to social and academic problems may not be its level, as many researchers and theorists have assumed, but the contingencies on which one's self-esteem is based.

Interactive Effects of Level and Contingency

Of course, it is possible that both level of self-esteem and contingencies of self-worth jointly contribute to the experience of stress in college, with the impact of contingent self-worth moderated by level of self-esteem. On one hand, it is possible that students who are low in self-esteem and highly contingent experience more stress and pressure in the domain of contingency. These low self-esteem, highly contingent students may chronically have negative views of themselves (Alicke, 1985; Brown, 1986; Campbell, 1986), particularly in important and highly contingent domains (Pelham, 1995; Pelham & Swann, 1989). This combination of basing self-worth on one's success in a domain, and having negative self-views in that domain, may contribute to higher levels of stress and problems in that domain.

Other research suggests that the combination of high and contingent self-esteem may be particularly problematic. Kernis and his colleagues, for example, have argued that it is individuals who have high but unstable self-esteem who engage in various self-protective or self-enhancement strategies, such as externalizing failure and derogating others who pose a threat to their self-worth (Kernis, in press; Kernis & Waschull, 1995).

Baumeister and his colleagues reviewed a wide range of evidence and concluded that fragile egotism, or high but vulnerable self-esteem, is associated with hostility and aggression (Baumeister et al., 1996). Because self-esteem is unstable and vulnerable when people experience positive and negative events in domains of contingency (Crocker et al., 2002; Crocker & Wolfe, 2001), people with high and contingent self-esteem may experience more stresses in domains of contingency. In the present study, we investigated the interaction between level of self-esteem and contingencies of self-esteem in predicting academic, social, and financial problems.

Limitations of Previous Research

Previous research on the effects of contingent self-worth on academic problems has not directly measured the extent to which students base their self-esteem on academic performance. Instead, contingent self-worth is inferred from other indicators, such as shame and anxiety (Covington, Omelich, & Schwarzer, 1986). Because researchers have not typically directly measured the degree to which self-worth is based on academic performance, they have also not addressed a host of questions about the nature of these effects. First, is basing self-worth on academics a specific vulnerability for academic problems or is it a general vulnerability for many types of problems, such as social or even financial problems? Second, do other contingencies of self-worth also lead to academic or other types of problems or is there something unique about basing self-worth on academics? Third, can the effects of basing self-worth on academics be explained by its association with other, well-established individual difference variables such as low level of self-esteem or neuroticism that have well-demonstrated associations with negative outcomes?

The present study examined the effects of contingencies of self-worth and level of self-esteem in college students on their experience of academic, social, and financial problems in the freshman year. In contrast to previous research, our study assessed several contingencies of self-worth prior to the beginning of college, and problems were assessed at the end of the freshman year. We also assessed personality variables to see if they could account for the effects of contingencies of self-worth on academic, social, and financial problems experienced during the freshman year of college. To investigate these issues, we analyzed data from the Adjustment to Collect Project (ATCP), a longitudinal study of an ethnically diverse sample of college freshmen. The ATCP is a complex data set with many variables assessed at various times. Initial analyses of the ATCP data were used in the development and validation of the Contingencies of

Self-Worth Scale (CSW) (Crocker, Luhtanen, et al., in press).

METHOD

Participants and Procedure

Incoming college freshmen were recruited in the summer of 1999 during freshman orientation; they were invited to participate in an Adjustment to College project consisting of three hour-long surveys in exchange for $50. Of 795 students who participated at Time 1, 642 (81%) completed all three surveys. The final sample included 258 men and 384 women; 279 Whites, 114 Blacks, 134 Asian Americans, 104 Asians, and 11 others of unknown ethnicity. For the present study, we eliminated the 11 students with "other" or unknown ethnicity; thus, the analyses presented here are based on 631 students (255 men and 376 women). We obtained demographic information and summer addresses (postal and electronic) from those who expressed interest in participating. The Time 1 survey was completed in August 1999, prior to the start of the freshman year of college, either by accessing a World Wide Web page or completing a paper version of the survey. The Time 2 survey was completed during January 2000 at the beginning of the second semester of college. The Time 3 survey was completed in April 2000, in the last 2 weeks of the freshman year. Details of the sample recruitment and retention are described in Crocker, Luhtanen, et al. (in press).

Materials

Demographic information on participants' gender and ethnicity were collected during freshman orientation. Parents' combined annual income was assessed at Time 3 on a scale ranging from 1 (*less than $10,000*) to 14 (*$200,000 or more*). Mean parents' income was 10.37 on this scale, where 10 indicates an income of $60,000 to $74,999 (*SD* = 2.96). Participants also reported their Scholastic Aptitude Test (SAT) or American College Test (ACT) scores, or both, at Time 3. To create a single aptitude score based on either SATs, ACTs, or both, we converted the ACT composite scores to SAT (math + verbal) scores using a concordance table provided by the Office of Research and Development (Dorans, Lyu, Pommerich, & Houston, 1997). For all participants, we computed an aptitude score by taking the mean of their SAT sum and the ACT converted to SAT. For the 268 students who reported both SATs and ACT composites, the correlation between their SAT sum and converted ACT was .84. Self-reports of first semester grade point averages (GPAs) were obtained at Time 2. Academic transcripts also were obtained, with permission, for 490 of the participants; for those 459 who had valid GPAs (resi-

dential college students, who did not receive grades, were excluded), the correlation between recorded GPA and self-reported GPA was .97, giving us high confidence in the self-reports. To retain as many students as possible, we used the self-reported GPA in our analyses.

Contingencies of self-worth. The CSW (Crocker, Luhtanen, et al., in press) is a 35-item scale assessing seven contingencies on which many college students base their self-esteem. The subscales, with examples of items and Cronbach's alphas for the present sample, include physical appearance (e.g., "My self-esteem does not depend on whether or not I feel attractive," reverse scored, and "My self-esteem is influenced by how attractive I think my face or facial features are," $\alpha = .83$); approval from others (e.g., "I don't care what other people think of me," reverse scored, and "My self-esteem depends on the opinions others hold of me," $\alpha = .81$); outdoing others in competition (e.g., "Doing better than others gives me a sense of self-respect" and "My self-esteem is influenced by how well I do on competitive tasks," $\alpha = .88$); academic competence (e.g., "My self-esteem is influenced by my academic performance" and "I feel bad about myself whenever my academic performance is lacking," $\alpha = .79$); family support (e.g., "It is important to my self-respect that I have a family that cares about me" and "When my family members are proud of me, my sense of self-worth increases," $\alpha = .84$); virtue (e.g., "My self-esteem depends on whether or not I follow my moral/ethical principles" and "My self-esteem would suffer if I did something unethical," $\alpha = .83$); and God's love (e.g., "My self-esteem goes up when I feel that God loves me" and "My self-esteem would suffer if I didn't have God's love," $\alpha = .96$). Each of the subscales of the CSW has good test-retest reliability throughout 8.5 months (rs ranging from .51 to .88) and correlates in the expected direction with other personality measures (Crocker, Luhtanen, et al., 2002). In the present study, CSW was assessed at Time 1, prior to the beginning of the freshman year.

Personality measures. Global self-esteem was assessed at Time 1 (prior to college) with the well-validated and widely used Rosenberg Self-Esteem Inventory (RSE) (Rosenberg, 1965), which includes 10 items such as "On the whole, I am satisfied with myself." Responses were made on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), with the midpoint (4) labeled *neutral*, and the items were reverse scored where appropriate and averaged for each participant. Cronbach's alpha was .87. Narcissism was measured using a 40-item forced choice scale requiring respondents to pick the one statement out of two that better describes them (Raskin & Terry, 1988). The items for were averaged to create a score with

a theoretical range from 0 to 1. Internal consistency of this scale was .85.

The Big Five Personality Inventory (John, Donahue, & Kentle, 1992) was included at Time 2 (in January) to locate the subscales of the CSW in relation to the five major dimensions that have been proposed to underlie personality: extraversion (e.g., "is talkative"), agreeableness (e.g., "likes to cooperate with others"), conscientiousness (e.g., "does a thorough job"), neuroticism (e.g., "can be moody"), and openness (e.g., "is original, comes up with new ideas"). The stem for all the items is "I see myself as someone who . . . "; responses are made on scale ranging from 1 (*disagree strongly* to 5 (*agree strongly*). Responses to items for each subscale were averaged. The alphas for these scales for our sample were .86, .75, .79, .82, and .78, for Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness, respectively. Social desirability also was measured at Time 2 with the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964), a 33-item forced-choice scale designed to assess the extent to which individuals describe themselves in favorable terms to gain approval from others. The items were averaged to create a score with a theoretical range from 0 to 1. Internal consistency of this scale was .72.

Negative outcomes and experiences. At Time 3, at the end of the second semester of their freshman year, participants completed a 49-item daily hassles questionnaire (Kohn, Lafreniere, & Gurevich, 1990) that assessed various negative experiences during the second semester of college. These experiences ranged from social problems such as romantic and friendship problems to academic problems to financial burdens. In addition, we asked how much credit card debt the participants had accumulated over their freshman year in college. We created three outcome measures by selecting items indicative of academic (17 items), social (12 items), and financial (3 items) problems. For each outcome measure, responses to items were standardized and then averaged. The appendix presents the items for each outcome measure as well as the means and standard deviations. The alphas were .84, .82, and .67 for academic, social, and financial problems, respectively.

RESULTS

Correlations Between the CSW Subscales

Table 1 presents the intercorrelations between the CSW subscales. The highest correlations were obtained between academic competence and competition ($r = .49$) and between appearance and approval from others ($r = .48$). Virtue was not significantly correlated with appear-

TABLE 1:   Intercorrelations Among the CSW Scales

	Competition	Appearance	God's Love	Academics	Virtue	Approval
Family	.17***	.22***	.19***	.40***	.36***	.27***
Competition	—	.41***	−.13**	.49***	−.04	.36***
Appearance		—	−.03	.34***	.02	.48***
God's love			—	.04	.29***	−.05
Academics				—	.25***	.33***
Virtue					—	.11**

NOTE: CSW = Contingencies of Self-Worth Scale.
**$p < .01$. ***$p < .001$.

TABLE 2:   Personality Variables, GPA, and SAT/ACT Correlations With CSW Scales

	Contingencies of Self-Worth						
	Family	Competition	Appearance	God's Love	Academics	Virtue	Approval
Self-esteem	.06	−.10*	−.23***	−.05	−.06	.00	−.24***
Narcissism	−.03	.15***	.13**	−.05	.02	−.15***	−.07
Extraversion	.11**	−.08	−.02	.02	−.02	−.02	−.02
Agreeability	.16***	−.19***	−.11**	.19***	−.02	.18***	−.03
Conscientiousness	.05	−.07	−.05	.06	.11**	.15***	−.06
Neuroticism	.08	.13	.28***	.05	.22***	.08*	.25***
Openness	.05	−.11**	−.09*	−.01	.01	.13**	−.08
Social desirability	.03	−.16***	−.25***	.11**	−.04	.17***	−.15**
GPA	.13**	.10*	.07	−.14**	.12**	.18***	.20***
SAT/ACT	−.02	.15**	.05	−.23***	.04	.04	.22***

NOTE: GPA = grade point average; SAT = Scholastic Aptitude Test; ACT = American College Test; CSW = Contingencies of Self-Worth Scale.
*$p < .05$. **$p < .01$. ***$p < .001$.

ance and competition, whereas God's love was not significantly related to appearance and approval. Thus, although most of the contingencies were moderately correlated, they do not measure the same construct.

Variables Correlated With Contingencies of Self-Worth and Outcomes

Contingencies of self-worth have previously been shown to correlate with several established personality variables (Crocker, Luhtanen, et al., in press). Our goal was to determine whether contingencies of self-worth explain variance in freshman year problems that cannot be accounted for by their overlap with these personality variables. As seen in Table 2, the academic competence CSW correlated significantly with conscientiousness, neuroticism, and GPA, as expected. Of these, both neuroticism (positively) and conscientiousness (negatively) also were related to academic and social problems and GPA was negatively related to academic problems (see Table 3). Consequently, in analyses where we used the academic competence contingency to predict academic and social problems, we controlled for neuroticism and conscientiousness. In addition, when predicting academic problems, we controlled for GPA. Neuroticism and GPA also were correlated with financial

TABLE 3:   Personality Variables, GPA, and SAT/ACT Correlations With Outcomes (Problems)

	Outcomes			
	GPA	Academic	Social	Financial
Self-esteem	.00	−.18***	−.39***	−.08*
Narcissism	−.08*	−.01	−.04	.06
Extraversion	−.01	−.09	−.18***	.02
Agreeability	−.06	−.09*	−.25***	−.04
Conscientiousness	.13**	−.14**	−.16***	.02
Neuroticism	.03	.27***	.45***	.10*
Openness	.01	−.06	−.06	.05
Social desirability	−.04	−.22***	−.26***	−.06
GPA	—	−.17***	−.04	−.19***
SAT/ACT	.37***	−.08	.00	−.20***

NOTE: GPA = grade point average; SAT = Scholastic Aptitude Test; ACT = American College Test.
*$p < .05$. **$p < .01$. ***$p < .001$.

problems, so we controlled for them in analyses where we used the academic contingency to predict financial problems. The appearance CSW was significantly positively related to neuroticism and negatively to agreeableness and social desirability, each of which also was correlated with academic and social problems. Thus, we controlled for these three variables to see if they

accounted for the effects of the appearance contingency on academic and social problems. Due to its association with financial problems and the appearance contingency, neuroticism also was used as a control when testing the effects of the appearance contingency on financial problems.

It is noteworthy that contingencies of self-worth are not equivalent to level of self-esteem. In the present study, four of the seven contingencies (family support, God's love, academic competence, and virtue) were not significantly correlated with level of self-esteem, whereas competition, others' approval, and appearance were all significantly negatively related to self-esteem. The significant correlations, however, were not high: The strongest relationship was between approval of others and level of self-esteem at $r = -.24$. Thus, the CSW scales and the RSE do not measure the same construct.

Overview of Main Regression Analyses

To examine the association between contingencies of self-worth and freshman year outcomes and problems, we conducted several sets of hierarchical regression analyses. In all of our analyses, we first entered gender (coded as 1 = male, 2 = female), ethnicity (entered as three dummy variables: Black, Asian American, and Asian, with 1 in each case indicating membership in the particular ethnicity with 0 = other, yielding Whites as the reference group), and family income as controls at Step 1. We also entered at Step 1 the contingency of self-worth hypothesized to predict the outcome (academic CSW for academic problems, appearance CSW for social problems). To determine whether the other contingencies also predict the outcome, we entered them into the regression equation at Step 2. To determine whether level of self-esteem predicted the outcomes over and above the contingencies, and whether level of self-esteem would account for the effects of the contingencies on the outcomes, we entered RSE scores at Step 3. Last, at Step 4, we entered those personality variables that might explain the association between contingencies of self-worth and outcomes, that is, that were related to both the significant contingency (or contingencies) and the outcome, to test whether the personality variable(s) mediated the effect of the contingency on the outcome.

We later performed another set of regression analyses testing for interaction effects between level of self-esteem and contingencies of self-worth. These are described after the main analyses.

Contingencies of Self-Worth Predicting Outcomes

Our first hypothesis was that being contingent on academic competence would positively predict GPA because students highly contingent on academics are highly motivated to perform well at school. At Step 1 of

TABLE 4:   Statistics From GPA Regression Analyses

	Standardized Betas			
	Step 1	*Step 2*	*Step 3*	*Step 4*
Academic competence	.09*	.02	.02	.00
Family support	.05	.04	.05	
Competition	−.01	−.01	.01	
Appearance	.00	.01	.03	
God's love	−.08	−.07	−.08	
Virtue	.17***	.17***	.15***	
Approval	.05	.06	.05	
Level of self-esteem			.05	.03
Narcissism			−.09*	
Conscientiousness				.16***

Step 1 $R^2 = .167$, $F(6, 592) = 19.71$, $p < .001$
Step 2 $\Delta R^2 = .034$, $\Delta F(6, 586) = 4.18$, $p < .001$
Step 3 $\Delta R^2 = .002$, $\Delta F(1, 585) = 1.36$, ns
Step 4 $\Delta R^2 = .025$, $\Delta F(2, 583) = 9.60$, $p < .001$

NOTE: GPA = grade point average. Analysis controls for gender, race (Black, Asian American, and Asian dummy variables), and parental income.
*$p < .05$. ***$p < .001$.

the regression equation, we entered the academic contingency into the equation along with the demographic controls (see Table 4). As expected, the academic CSW significantly predicted GPA. When the six other contingencies were entered at Step 2, the virtue contingency emerged as a significant predictor of GPA, with the academic contingency becoming nonsignificant. Level of self-esteem did not predict GPA beyond the contingencies at Step 3. At Step 4, we entered narcissism and conscientiousness into the equation because they were significantly related to both the virtue contingency and GPA, but these did not explain the effect of virtue on GPA. Virtue remained as a highly significant predictor of GPA.

Our second hypothesis was that the academic CSW predicts academic problems and that other contingencies do not predict these problems beyond it. We reasoned that students highly contingent on academics subjectively feel stressed and pressured about academics, regardless of how well they actually do in school. Table 5 presents the results of the regression analysis testing this. The academic CSW predicted higher levels of academic problems at Step 1. It continued to be a significant predictor at Step 2 when the other contingencies were entered. Contrary to expectations, basing self-esteem on appearance also predicted academic problems. Level of self-esteem emerged as a significant negative predictor of academic problems at Step 3 but did not eliminate the effects of the two contingencies. At Step 4, we entered conscientiousness, neuroticism, agreeableness, social desirability, and GPA into the equation because they were correlated with either the academic CSW or appearance CSW, or both, as well as with academic problems. Social desirability and GPA negatively predicted academic problems, and neuroticism positively pre-

TABLE 5:   Statistics From Academic Problems Regression Analyses

	Standardized Betas			
	Step 1	Step 2	Step 3	Step 4
Academic CSW	.15***	.17**	.17**	.16**
Family CSW		.00	.03	.02
Competition CSW		−.08	−.08	−.08
Appearance CSW		.15**	.12*	.07
God's love CSW		.08	.07	.06
Virtue CSW		−.07	−.07	−.01
Approval CSW		−.05	−.08	−.08
Level of self-esteem			−.15**	−.03
Conscientiousness				−.01
Neuroticism				.18***
Agreeableness				.05
Social desirability				−.19***
GPA				−.20***

Step 1 R^2 = .047, $F(6, 593)$ = 4.89, $p < .001$
Step 2 ΔR^2 = .023, $\Delta F(6, 587)$ = 2.41, $p < .03$
Step 3 ΔR^2 = .019, $\Delta F(1, 586)$ = 11.97, $p < .002$
Step 4 ΔR^2 = .091, $\Delta F(5, 581)$ = 12.87, $p < .001$

NOTE: CSW = Contingencies of Self-Worth Scale; GPA = grade point average. Analysis controls for gender, race (Black, Asian American, and Asian dummy variables), and parental income.
*$p < .05$. **$p < .01$. ***$p < .001$.

dicted academic problems; with these variables entered, the appearance CSW became nonsignificant. The academic CSW, however, continued to significantly predict academic problems beyond the other variables.

We further predicted that the effect of the academic CSW on problems experienced during the freshman year would be specific to academic problems, that is, it would not predict social and financial problems. When entered into the regression equation with the demographic controls at Step 1, academic competence predicted social problems (β = .13, $p < .003$, but not financial problems (β = .04, $p > .24$). However, as shown in Table 6, when other contingencies were controlled, the academic CSW did not significantly predict social problems, in line with our specificity hypothesis.

Our next hypothesis was that the appearance CSW would predict social problems because students whose self-worth is highly contingent on physical appearance may be preoccupied with their external selves and less attentive to others in their social interactions. Table 6 presents the results of these analyses. The appearance CSW did predict social problems, both as the only contingency in the model at Step 1 and when the other contingencies were entered at Step 2. The family CSW emerged as a negative predictor of social problems at Step 2, but the effect appears to be due to its shared variance with level of self-esteem; at Step 3, self-esteem emerged as a highly significant negative predictor of social problems and family CSW became nonsignificant. Step 4 indicated that neuroticism and social desirability

TABLE 6:   Statistics From Social Problems Regression Analyses

	Standardized Betas			
	Step 1	Step 2	Step 3	Step 4
Appearance	.20***	.15**	.10*	.04
Family support		−.11*	−.04	−.04
Competition		.03	.02	.02
God's love		−.02	−.05	−.04
Academic competence		.07	.07	.04
Virtue		.06	.05	.07
Approval		.07	.01	.00
Level of self-esteem			−.35***	−.17***
Neuroticism				.28***
Agreeableness				−.07
Social desirability				−.10**

Step 1 R^2 = .050, $F(6, 600)$ = 5.30, $p < .001$
Step 2 ΔR^2 = .018, $\Delta F(6, 594)$ = 1.95, $p < .08$
Step 3 ΔR^2 = .105, $\Delta F(1, 593)$ = 75.12, $p < .001$
Step 4 ΔR^2 = .094, $\Delta F(3, 590)$ = 25.15, $p < .001$

NOTE: Analysis controls for gender, race (Black, Asian American, and Asian dummy variables), and parental income.
*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 7:   Statistics From Financial Problems Regression Analyses

	Standardized Betas			
	Step 1	Step 2	Step 3	Step 4
Appearance	.09*	.12**	.12*	.11*
Family support		−.10*	−.08	−.08
Competition		−.09	−.09	−.09
God's love		.06	.05	.04
Academic competence		.10*	.10*	.10*
Virtue		−.04	−.05	−.03
Approval		−.02	−.03	−.03
Level of self-esteem			−.07	−.03
Neuroticism				.06
GPA				−.10*

Step 1 R^2 = .178, $F(6, 593)$ = 21.40, $p < .001$
Step 2 ΔR^2 = .016, $\Delta F(6, 587)$ = 1.95, $p < .08$
Step 3 ΔR^2 = .003, $\Delta F(1, 586)$ = 2.46, ns
Step 4 ΔR^2 = .011, $\Delta F(5, 581)$ = 4.13, $p < .02$

NOTE: GPA = grade point average. Analysis controls for gender, race (Black, Asian American, and Asian dummy variables), and parental income.
*$p < .05$. **$p < .01$.

largely accounted for the effects of the appearance contingency on social problems; at this last step, appearance became nonsignificant, whereas level of self-esteem remained significant (although the magnitude of its effect also was reduced by the introduction of the other personality variables).

Our last prediction was that the appearance contingency would predict financial problems because students contingent on physical appearance shop more for clothes (Crocker, Karpinski, et al., in press) and they may be more likely to spend money in various other ways to improve their looks. Table 7 presents the results testing

this hypothesis. The appearance CSW predicted financial problems, and these effects were not explained by neuroticism. Level of self-esteem did not predict financial problems. Contrary to our expectations, higher academic contingency also predicted more financial problems.

Our final set of regressions was conducted to examine whether level of self-esteem moderates the effects of the significant contingencies of self-worth on the various problems. We ran six regression analyses testing interaction effects between level of self-esteem and contingency. In all of these analyses, we entered the demographic controls at Step 1 along with the main effect terms (centered level of self-esteem and centered contingency) into the regression equation and entered the interaction effect (centered level of self-esteem multiplied by centered contingency) at Step 2. For GPA, we performed two such analyses: one involving the school competence contingency and another involving the virtue contingency. For academic problems, we ran one regression, testing the interaction effect between level of self-esteem and the school competence contingency. For social problems, we tested the interaction involving the appearance contingency. Finally, for financial problems, we ran two regressions, one involving the school competence contingency and the other involving the appearance contingency. In none of these analyses was the interaction effect significant (all βs < .06, ps > .17), indicating that level of self-esteem does not moderate the effects of contingencies on stress. Thus, level of self-esteem and contingencies of self-worth appear to have independent effects on the types of problems included in this study.

DISCUSSION

The results of this study indicate that contingencies of self-worth have a cost in terms of stress experienced during the freshman year of college. One goal of the research was to examine the specificity of the effects of contingencies of self-worth on freshman-year problems. We predicted that the academic contingency would predict academic but not social or financial problems and that the appearance contingency would predict social and financial but not academic problems. The results of the present study suggest less specificity than expected; basing self-worth on academics predicted academic and financial problems, even controlling for personality variables. The appearance contingency predicted academic, social, and financial problems, again indicating general rather than specific associations between contingencies of self-worth and types of stresses. However, after other personality variables such as level of self-esteem,

neuroticism, and social desirability were controlled, the appearance contingency only predicted financial problems. Thus, many of the difficulties experienced by students whose self-worth is tied to appearance can be explained by their personality characteristics. We now consider the academic, social, and financial difficulties in more detail.

*Contingencies of Self-Worth and
Academic Problems*

The results of this study indicate that students experience stress when their self-worth depends on their academic performance; time becomes scarce, perhaps because there is always more academic work to do; professors and teaching assistants become sources of conflict, perhaps because they are viewed as obstacles to good grades rather than allies or resources; intrinsic interest is undermined; and regardless of the reality of one's grades, one's performance in school is less satisfying. In sum, students who base their worth on their academic performance pay a price in terms of stress, as the self-worth theory of achievement motivation suggests (Covington, 2000).

They get little benefit in terms of academic performance; although the academic competence CSW was positively associated with GPA, this association was explained by their shared association with the virtue CSW. Students who base their self-esteem on academics tend to have goals associated with outperforming others and avoiding failure, but they are no higher in learning and mastery goals than students who score low on the academic contingency (Bartmess, 2002). Their focus on academic performance, without a concurrent focus on learning, may not lead to higher grades over the long term. Indeed, the additional academic stress associated with having self-worth contingent on academics may itself undermine achievement through its debilitating effects on strategizing for problem solving (Dweck, 2000). In particularly challenging academic situations, such as high-stakes testing situations, we suspect that the increased stress and anxiety associated with self-worth that is contingent on academics may have debilitating effects on performance (Covington, 2000; Deci & Ryan, 1995; Dweck, 2000; Steele, 1997). Thus, in contrast to the view that students who do not stake their self-worth on academics are likely to experience academic problems (Steele, 1992), our data suggest that highly contingent students experience high levels of stress but no improvement in performance over their less-identified peers.

The only contingency of self-worth that did predict GPA beyond other variables was virtue. Because we did not anticipate this effect, we can only speculate about its

meaning; perhaps basing self-worth on adhering to moral standards provides a motivational structure that supports academic work without connecting self-worth to performance and, therefore, without creating anxiety and stress.

These results, taken together with other research, suggest that students who base their self-worth on academics are caught in a compelling but ultimately unsatisfying quest for self-worth. They believe that good grades will validate their worth, they study long hours to obtain that validation (Crocker, Luhtanen, et al., in press), and they tend to have achievement goals that focus on performance rather than learning (Bartmess, 2002). The current results indicate that because they have so much at stake they are stressed, and the motivation they have to do well in school ultimately does not increase their grades. Pursuing self-esteem through academic performance ultimately does not increase their self-worth; although these students do get a boost to self-esteem on days that they receive good grades, the boost is temporary and a grade that is lower than they expected can make them feel worthless (Crocker, Karpinski, et al., in press). One way to stop the treadmill that these students are on might be to shift to a focus on learning rather than performance, even if learning goals require taking more risks and making more mistakes (Dweck, 2000). We suspect that taking this risk is very difficult for students whose self-worth is tied to their academic performance, as the correlation of this measure with the goal of avoiding failure suggests (Bartmess, 2002). Alternatively, these students might benefit from disengaging their self-worth from their academic performance.

Contingencies of Self-Worth and
Social Problems

Basing self-esteem on appearance predicted having more social problems, and basing self-esteem on family support predicted fewer social problems, but both of these effects were reduced to nonsignificance when controlling for established personality variables. The strongest predictor of social problems was neuroticism, with low self-esteem and low social desirability also significantly predicting social problems.

Perhaps different contingencies of self-worth than those included in our measure would predict social difficulties. For example, our measure does not include subscales for basing self-worth on being in a romantic relationship or having many friends; some students may base their self-worth on these domains and these contingencies might predict friendship or romantic problems. Attachment theory indicates that self-worth that is highly dependent on the regard of a romantic partner is associ-

ated with attachment insecurity, which in turn leads to relationship difficulties (Collins & Feeney, 2000). Future research should further investigate the effects of contingencies of self-worth on relationship problems (e.g., Kernis, in press).

Contingencies of Self-Worth and
Financial Problems

In contrast to social problems, financial problems were related to two contingencies of self-worth: appearance and academics; none of the personality variables accounted for these effects or explained additional variance. It is not clear why students whose self-worth is contingent on academics experience more financial problems. Perhaps students whose self-worth is linked to academics are more likely to attend college even if it is difficult financially, whereas students who are low on this contingency do not attend college if it is a financial burden. However, our analyses control for parents' income. The tendency for students whose self-worth is based on appearance to experience more financial problems may be explained by their tendency to buy more clothes and perhaps spend more money on other aspects of appearance than students whose self-worth is less tied to their appearance.

The only additional predictor of financial problems was GPA. Possibly, students who receive poor GPAs are at risk of losing scholarships and consequently experience financial problems; alternatively, financial problems while in college may be highly distracting and result in worse academic performance.

Level of Self-Esteem and Academic
and Social Problems

Level of self-esteem was not as strong a predictor of academic problems as was the academic contingency of self-worth, and its effects were explained by other personality variables such as neuroticism and social desirability, whereas the effects of the academic contingency were not. Thus, the link between self-esteem and academic difficulties appears to be more a function of what self-esteem is based on than whether it is high or low.

These results indicate that our measure of contingencies of self-worth is not simply a proxy for global or domain-specific self-esteem. Furthermore, in a study of 5,000 incoming college freshmen, the correlation between the academic CSW and self-rated academic self-confidence was $r = .00$; the appearance contingency correlated $r = -.14$ with self-rated social self-confidence, and $r = .025$ with self-rated popularity (Crocker & Luhtanen, 2002). The degree to which one's worth as a person is based on academic performance is independent of

whether one's global self-esteem or domain-specific academic self-esteem is high or low.

The effect of level of self-esteem on social problems remained highly significant even after controlling for other personality variables correlated with self-esteem, such as social desirability and neuroticism. This is consistent with sociometer theory (Leary, 1990; Leary & Baumeister, 2000; Leary & Downs, 1995), which argues that low self-esteem is both caused by and causes perceived social exclusion. Although self-esteem was measured prior to the start of the freshman year in our study, our results cannot definitively address the causal direction of the link between low self-esteem and social problems. Nonetheless, we find it interesting that of the problems assessed in the current study, social problems are most strongly related to level of self-esteem.

Taken together, the pattern of strong effects of contingencies of self-worth on academic and financial problems, and level of self-esteem on social problems, suggests that both level and contingencies of self-esteem are important predictors of difficulties, but very different types of difficulties, during the freshman year of college.

Interactive Effects of Level of Self-Esteem and Contingencies of Self-Worth

The present study provided no support for the hypothesis that level of self-esteem interacts with contingencies of self-worth to increase the experience of stress and problems in college. Although previous research indicates that the combination of high and unstable self-esteem is related to defensiveness, hostility, and perhaps aggression (Baumeister et al., 1996; Kernis & Waschull, 1995), there was no evidence that the combination of contingent and high self-esteem creates more social, academic, or financial stress.

Caveats

Direction of causality. We interpret these results to mean that contingencies of self-worth causally contribute to the academic problems that college freshmen experience. Because we assessed problems at only one time, however, we cannot be assured of the causal direction of these effects. Several aspects of our study make some alternative interpretations implausible. It is not plausible to argue that academic and social problems at the end of the freshman year caused low self-esteem and contingencies of self-worth at the start of the freshman year, but it is possible that students who had academic and social problems in high school develop more contingent self-worth as a result and also have more problems in college. Alternatively, some unmeasured third variable might account for the observed effects, although we

controlled for GPA and many of the most obvious demographic and personality variables that could account for our results.

Self-report biases. Another limitation of the current study is the reliance on self-reports, which could be affected by social desirability concerns, self-deception, or inaccurate recall of experiences. Several of our effects remained significant even after controlling for neuroticism and social desirability. Nonetheless, inclusion of these measures does not entirely rule out concerns about the accuracy of self-report.

Conclusion

Although contingencies of self-worth represent the domains in which success could prove our worth and value, they also create stress because failure in these domains could prove our worthlessness. The hope of achieving self-worth by satisfying contingencies may come at a high price, in terms of the stress and psychological vulnerability that contingencies of self-worth engender.

APPENDIX
Academic, Social, and Financial Stresses

Academic Problems (M = −.067, SD = 9.06)

Lower grades than you hoped for
Struggling to meet your own academic standards
Struggling to meet the academic standards of others
Disliking your studies
Finding courses uninteresting
Finding courses too demanding
Dissatisfaction with school
Not enough leisure time
Too many things to do at once
Not enough time to meet your obligations
Not enough time for sleep
A lot of responsibilities
Conflicts with teaching assistant(s)/graduate student
  instructor(s)
Conflicts with professor(s)
Dissatisfaction with your reading ability
Dissatisfaction with your ability at written expression
Dissatisfaction with your mathematical ability

Social Problems (M = −.028, SD = 6.94)

Conflicts with boyfriend/girlfriend/spouse
Conflicts with friends
Having your trust betrayed by a friend
Being let down or disappointed by friends
Conflicts with your family
Disliking a fellow student
Being taken for granted

Being taken advantage of
Having your contributions overlooked
Social isolation
Social rejection
Loneliness

Financial Problems (M = .006, SD = 2.34)

Financial burdens
Financial conflicts with family members
Amount of credit card debt accumulated

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