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AN INVESTIGATION OF BROAD AND NARROW PERSONALITY TRAITS IN RELATION TO GENERAL AND DOMAIN-SPECIFIC LIFE SATISFACTION OF COLLEGE STUDENTS

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Based on a sample of 532 undergraduates at a Southeastern U.S. university, Big Five and narrow personality traits were examined in relation to a measure of satisfaction with specific domains of college experience (College Satisfaction) and a measure of General Life Satisfaction. Four of the Big Five traits—Agreeableness, Conscientiousness, Emotional Stability and Extraversion—as well as the narrow traits of Aggression, Career Decidedness, Optimism, Self-Directed Learning, Sense of Identity, and Work Drive were positively, significantly related to both satisfaction measures. Results of hierarchical regression analyses showed that the Big Five traits accounted for 45% of Life Satisfaction variance with Sense of Identity contributing an additional 7%, and College Satisfaction, 6%. It was suggested that who students become in college and how satisfied they are with different aspects of collegiate experience may be primarily determined by who they are when they enter college. Similarities were noted to findings of personality traits and academic performance, job performance, and adult career and life satisfaction. Implications were discussed in terms of Chickering and Reisser's major vectors for college development as well as for admissions decisions and enhancing student-environment fit in advising, orientation, counseling, and career planning, among others.

KEY WORDS: Big Five personality traits; narrow personality traits; life satisfaction; college students; campus satisfaction; college student development; Chickering.

Life satisfaction has been viewed as an overarching criterion or ultimate outcome of human experience and, variously, as an indicant of personal well being, happiness, and personal quality of life, with many

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studies devoted to its antecedents, consequences, and relationships with a wide variety of other constructs and demographic variables (see, e.g., Andrews, 1974, Andrews and Withey, 1976; Campbell, Converse and Rodgers, 1976; Emmons and Diener, 1985; Huebner, Suldo, Smith and McKnight, 2004).

In the context of higher education, the life satisfaction of college students has frequently been a topic of research, analysis, and theorizing. Most commonly, student life satisfaction has been examined as a precursor of withdrawal or dropout (Edwards and Waters, 1982, 1983; Griffin, 1991; Kowalski, 1982; Timmons, 1978; Tyler and Small, 1990); an outcome variable for or correlate of campus services, programs, interventions, and experiences (Benjamin and Hollings, 1995; McWhirter, 1995); an attribute or goal of the overall collegiate experience (Astin, 1997; Grayson and Meilman, 1999; Jensen, 1996), and as a key outcome of higher education (e.g., Astin, 1977, 1993). As noted by Benjamin and Hollings, "Student satisfaction is an important outcome variable because it appears related to a variety of other variables in which educators place great value..." (p. 213). A common assumption in many of these approaches is that overall or global life satisfaction of students is determined by satisfaction with specific domains of experience such as living arrangements, social life, workload, finances, security, academic performance, professors, and so forth (see, e.g., Tross, Harper, Osher and Kneidinger; 2000; Benjamin and Hollings, 1995). A similar model is commonly invoked in research on life satisfaction of working adults in relation to specific life domains (Andrews and Withey, 1976; Campbell et al., 1976). However, as noted by Lounsbury, Park, Sundstrom, Williamson and Pemberton (in press), personality precedes life satisfaction and the domains of experience that are posited as leading to life satisfaction. To examine the effects of satisfaction with a specific domain of experience on overall life satisfaction, the role of personality (as measured by personality traits) should first be considered. Applied to the collegiate context, it is important to examine jointly the relationships among domains of satisfaction (such as satisfaction with social life and academic performance), overall life satisfaction and personality traits of college students.

There has been research on the personality traits of college students in relation to their life satisfaction (e.g., Cha, 2003; Emmons and Diener, 1985; Harrington and Lofredo, 2001: Pavot, Diener and Fujita, 1990). The main findings of these studies are that particular traits are significantly related to life satisfaction. Thus, for example, we know that collegiate subjective well-being is positively related to: extraversion (Pavot, Diener and Fujita, 1990; Harrington and Lofredo, 2001), self-esteem and

optimism (Cha, 2003); and the 16 PF extraversion-related traits of warmth, surgency, and social boldness (Emmons and Diener, 1985).

In the present study, we looked first at the role of the Big Five personality traits in relation to life satisfaction of college students. There is currently a broad consensus among personality researchers that the Big Five model represents a unified and parsimonious theoretical framework for personality (Digman, 1990; Digman, 1997; Wiggins and Trapnell, 1997). Numerous empirical studies in many different settings have verified the overall factor structure and construct validity of the Big Five constructs (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) in a wide variety of research settings based on many different demographic and cultural characteristics of individuals studied (Costa and McCrae, 1994; De Raad, 2000). Accordingly, in the current study we assessed Agreeableness, Conscientiousness, Extraversion, Neuroticism, and Openness in relation to overall life satisfaction and domain-specific satisfaction of college students.

On the other hand, recent research in other areas has demonstrated that narrow personality traits can add significant incremental validity to the Big Five personality traits in some settings and populations (Ashton, 1998; Lounsbury, Sundstrom, Loveland and Gibson, 2003d; Paunonen, 1998; Paunonen, Rothstein and Jackson, 1999). By way of example, Lounsbury, Tatum, Gibson, Park, Sundstrom, Hamrick, and Wilburn (2003e) found that the narrow traits of Aggression and Work Drive added significantly to the prediction of student grade point average above and beyond the Big Five traits. Although we are not aware of any studies which have looked at the incremental validity of narrow traits beyond the Big Five traits in predicting life satisfaction of college students, we do know that a number of narrow personality traits have been related to life satisfaction among adults—including Work Drive, Tough-Mindedness, and Optimism (Lounsbury, Gibson and Hamrick, 2004a; Lounsbury et al., in press) and among college students—including Optimism (Cha, 2003) and Career-Decidedness (Lounsbury, Tatum, Chambers, Owens and Gibson, 1999). Accordingly, the present study investigated Big Five traits as well as narrow personality traits in relation to the life satisfaction of students. The narrow traits we examined included the five narrow traits listed above that have been found to be related to satisfaction as well as two other narrow traits that the first and fourth authors found to be positively related to adolescent life satisfaction and academic performance (Lounsbury and Gibson, 2003)—Sense of Identity and Self-Directed Learning. Following the conceptual distinction of Benjamin and Hollings (1995), we measured both satisfaction specific to the domain

of college experience (''College Satisfaction'') and satisfaction with one's life in general not contextualized to college experience (''General Life Satisfaction'').

Based on our conceptual framework that personality precedes College Satisfaction and Life Satisfaction, that College Satisfaction leads to General Life Satisfaction, and in keeping with our goal of evaluating the incremental validity of narrow traits beyond the Big Five traits, the following research questions were examined:

(1) Are the Big Five personality traits of Agreeableness, Conscientiousness, Emotional Stability, Extraversion, and Openness as well as the narrow traits of Aggression, Career Decidedness, Optimism, Self-Directed Learning, Sense of Identity, Tough-Mindedness, and Work Drive significantly related to College Satisfaction and General Life Satisfaction?
(2) When considered as a set, which of the Big Five traits contribute uniquely to the prediction of General Life Satisfaction?
(3) Do the narrow personality traits add incremental validity beyond the significant Big Five traits in predicting General Life Satisfaction?
(4) What is the relationship between College Satisfaction and General Life Satisfaction?
(5) What is the relationship between College Satisfaction and General Life Satisfaction after controlling for the personality traits (Big Five and narrow)? Similarly, does College Satisfaction add incremental validity to the prediction of General Life Satisfaction after controlling for the personality traits (Big Five and narrow)?
(6) Considered as a set, which personality traits significantly account for variance in College Satisfaction and General Life Satisfaction?

METHOD

Overview of Research Setting

This study represents a field study with a single occasion of measurement. The sample is basically a convenience sample limited in scope to a single university and does not represent a broad sampling of colleges. However, as will be seen below, there is sufficient variability of the measures administered and covariation among measures to permit meaningful statistical inferences to be drawn.

Participants

Undergraduate students enrolled in an introductory psychology course ($n = 461$) and undergraduate student-mentors in a peer-mentoring program ($n = 91$) at a large southeastern state university were recruited to participate in this study. Of the 552 participants in this study, 40% were male (60% female). Fifty-five percent of the participants were Freshmen; 26%, Sophomores; 14%, Juniors; and 5%, Seniors. Eighty-four percent of the participants identified themselves as Caucasian, 9%–African-American, 2%–Hispanic, 2%–Asian, and 3%–other. The median age of participants was 18–19 years old.

Procedure

After obtaining human subjects approval from the university's Institutional Review Board, participants were solicited to take a personality inventory (described below) on-line. Upon completion of the report, each participant was provided a feedback report summarizing their personality characteristics and implications for a variety of areas related to being a student, including area of study, social life, managing stress, study habits, living situation, and using campus resources. Students in the introductory psychology course were offered extra credit for participation. Students in the Peer Mentoring program were invited to take the Personal Style Inventory as part of a training session. All data were collected between March and April of 2004.

Measures

Personality. The personality measure used in this study was the Resource Associates Adolescent Personal Style Inventory (APSI) for College Students. The APSI is a normal personality inventory contextualized for adolescents and has been used for early, middle, and late adolescents (Jaffe, 1998) from middle school through high school and college. Scale development, norming, reliability, criterion-related validity, and construct validity information for the APSI can be found in Lounsbury et al. (2004a); Lounsbury et al. (2003e); Lounsbury, Hutchens and Loveland (in press); Lounsbury, Loveland and Gibson, (2003b); Lounsbury, Steel, Loveland and Gibson (2004b); Lounsbury, Sundstrom, Loveland and Gibson, 2003c; and Lounsbury et al. (2003e). When considered collectively, the research reported in the preceding works shows that the APSI constructs are internally consistent; where appropriate, they generally display high convergence

with common traits on other, widely used personality inventories, including the 16 PF, NEO-PI-R, Myers-Briggs Temperament Inventory; and they significantly predict academic performance (reflected by course grades and cumulative GPA) in all grades from middle school through high school and all class levels in college, teacher ratings of behavior, school absenteeism, adjustment, at-risk behavior, sense of community, leadership, satisfaction in variety of areas, vocational interests, career decidedness, and wide variety of logically related (to specific APSI traits) psychological constructs, such as rule-adherence, vigilance, self-esteem, sensation-seeking, self-actualization, empathy, etc. Moreover, an adult version of the APSI has been found to be related to job performance, job satisfaction, and career satisfaction in a wide variety of occupations in many different business and industry settings (for further information, contact the first author).

The APSI for College Students has 118 items represented by statements with which respondents are asked to express agreement or disagreement on a five-point Likert scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral/Undecided; 4 = Agree; 5 = Strongly Agree). A brief description of the personality traits measured by the collegiate form of the APSI is given below.

Aggression—an inclination to fight, attack, and physically assault another person, especially if provoked, frustrated, or aggravated by that person; disposition to become angry and engage in violent behavior.

Agreeableness—being agreeable, participative, helpful, cooperative, and inclined to interact with others harmoniously.

Career Decidedness--the degree to which an adolescent knows what occupational field s/he wants to go into after leaving school.

Conscientiousness—being conscientious, reliable, trustworthy, orderly, and rule-following.

Emotional Stability—overall level of adjustment and emotional resilience in the face of stress and pressure. We be conceptualized this as the inverse of neuroticism.

Extraversion—tendency to be sociable, outgoing, gregarious, warmhearted, expressive, and talkative.

Openness—receptivity and openness to change, innovation, new experience, and learning.

Optimism—having an optimistic, hopeful outlook concerning prospects, people, and the future, even in the face of difficulty and adversity as well as a tendency to minimize problems and persist in the face of setbacks.

Self-Directed Learning—Inclination to learn new materials and find answers to questions on one's own rather than relying on a teacher; set-

ting one's own learning goals; and initiating and following through on learning without being required to for a course or prompted to by a teacher.

Sense of Identity—Knowing one's self and where one is headed in life, having a core set of beliefs and values that guide decisions and actions; and having a sense of purpose.

Tough-Mindedness—disposition to rely on facts and data to appraise information and make decisions; being analytical, realistic, objective, and unsentimental.

Work Drive—being hard-working, industrious, and inclined to put in long hours and much time and effort to reach goals and achieve at a high level.

Satisfaction. Our general life satisfaction measure was developed from Andrews and Withey's (1976) conceptual model of overall life satisfaction and domain satisfaction and was previously used as an outcome measure by the senior author in a study of changes in life and job satisfaction following a vacation from work (Lounsbury and Hoopes, 1986). Our collegiate life satisfaction measure also followed Andrew and Withey's (1976) domain satisfaction model and was used previously by the senior author in a study of personality correlates of career decidedness and life satisfaction among college students (Lounsbury et al., 1999). A set of 22-items was used to measure the General Life Satisfaction and College Satisfaction scales. Fifteen General Life Satisfaction items asked respondents to rate their satisfaction with ''Yourself'', ''How much fun you are having'', ''the place where you live'', health and physical condition, financial situation, friendships, ''your love life'', social life as a whole, safety and security, ''Your level of personal maturity'', job (if applicable), prospects for the future, and ''Your Life as a Whole''. Seven College Satisfaction items asked respondents how satisfied they were with ''How much you are learning in school'', ''Your rate of progress toward a college degree'', ''The availability of courses you want or need'', ''The general quality of professors you have taken courses from'', ''The availability and quality of academic advisors'', ''Your academic major'' and ''Your GPA''. Responses for the satisfaction items were made on a seven-point Likert scale: 1–Very Dissatisfied, 2–Dissatisfied, 3–Slightly Dissatisfied, 4–Neutral, 5–Slightly Satisfied, 6–Satisfied, 7–Very Satisfied.

The on-line questionnaire also contained demographic questions pertaining to age, sex, race/ethnicity, year in school, type of residence, major, and grade-point-average (GPA).

TABLE 1. Descriptive Statistics and Intercorrelations for the Personality and Satisfaction Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Agreeableness	—	0.32**	0.22**	0.07	0.14**	−0.51**	0.12**	0.25**	0.04	0.28**	−0.35**	0.15**	0.23**	0.26**
(2) Conscientiousness		—	0.14**	0.06	0.05	−0.18**	0.20**	0.23**	0.20**	0.35**	−0.08	0.39**	0.23**	0.22**
(3) Emotional Stability			—	0.19**	0.06	−0.16**	0.21**	0.23**	0.20**	0.35**	0.18**	0.09*	0.38**	0.60**
(4) Extraversion				—	0.04	0.01	0.10*	0.34**	0.02	0.35**	−0.32**	0.01	0.06	0.38**
(5) Openness					—	−0.14*	0.05	0.24**	0.37**	0.14**	−0.17**	0.37**	0.21**	0.08
(6) Aggression						—	−0.08*	−0.21**	−0.06	−0.18**	0.19**	−0.12**	−0.20**	−0.18**
(7) Career-Decidedness							—	0.22**	0.15**	0.55**	−0.02	0.21**	0.40**	0.32**
(8) Optimism								—	0.26**	0.60**	−0.12**	0.19**	0.36**	0.54**
(9) Self-Directed Learning									—	0.20**	0.09	0.47**	0.32**	0.19**
(10) Sense of Identity										—	−0.19**	0.25**	0.34**	0.57**
(11) Tough-Mindedness											—	−0.14**	−0.04	−0.02
(12) Work Drive												—	0.46**	0.15**
(13) College Satisfaction													—	0.51**
(14) Life Satisfaction														—
Mean	3.71	3.43	3.03	3.75	3.67	2.12	3.40	4.06	3.14	3.99	2.31	2.95	4.75	5.21
Standard Deviation	0.63	0.67	0.75	0.68	0.63	0.82	1.14	0.62	0.70	0.67	0.68	0.72	1.20	0.85
Coefficient alpha	0.75	0.79	0.84	0.82	0.75	0.84	0.91	0.85	0.74	0.85	0.79	0.84	0.86	0.84

$n = 552$.
*$p < 0.05$, **$p < 0.01$.

RESULTS

The correlations between personality traits and satisfactions were generally not significantly different for peer-mentors and the other students, so the responses for both groups were combined for all results reported below. Table 1 presents the descriptive statistics and intercorrelations among the personality and satisfaction variables. The correlation between College Satisfaction and General Life Satisfaction was $r = 0.51$ ($p < 0.01$). All of the personality traits except Openness and Tough-Mindedness correlated significantly with both College Satisfaction and General Life Satisfaction. The traits most highly correlated with General Life Satisfaction were Emotional Stability ($r = 0.60$, $p < 0.01$), Sense of Identity ($r = 0.57$, $p < 0.01$), Optimism ($r = 0.54$, $p < 0.01$), and Extraversion ($r = 0.38$, $p < 0.01$). The traits most highly correlated with College Satisfaction were Work Drive ($r = 0.46$, $p < 0.01$), Career-Decidedness ($r = 0.40$, $p < 0.01$), Emotional Stability ($r = 0.38$, $p < 0.01$), Optimism ($r = 0.36$, $p < 0.01$), and Sense of Identity ($r = 0.34$, $p < 0.01$).

To assess the second, third, and fifth research questions, a multiple regression analysis was performed with three hierarchical steps: In the first step, the Big Five traits were allowed to enter in stepwise fashion to predict General Life Satisfaction. In the second step, the narrow traits were allowed to enter stepwise, and in the third step College Satisfaction entered. As can be seen in Table 2, the set of four Big Five variables--Agreeableness, Conscientiousness, Emotional Stability, and Extraversion—accounted for 45% of the variance in General Life Satisfaction. When the narrow traits were allowed to enter next, only Sense of

TABLE 2. Results of Multiple Regression Analyses for Big Five, Narrow Traits, and College Predicting General Life Satisfaction

Step	Variable	Multiple R	R^2	R^2 Change
1	Significant Big Five traits (Agreeableness, (Conscientiousness, Emotional Stability, Extraversion)	0.672**	0.451**	0.451*
2	Significant Narrow Trait –Sense of Identity	0.721**	0.519**	0.068**
3	College Satisfaction	0.761**	0.579**	0.059**

$n = 552$.
**$p < 0.01$.

Identity contributed significantly to the prediction of General Life Satisfaction, adding an additional 7% of the variance. Finally, College Satisfaction contributed an additional 6% of the predictive variance in General Life Satisfaction. Thus, over half of the variance in General Life Satisfaction (52%) was explained by five personality traits. As for College Satisfaction, whereas the bivariate correlation with General Life Satisfaction was 0.51, when the five personality traits were controlled for, the part correlation between College Satisfaction and General Life Satisfaction was only 0.24 ($p < 0.01$).

Table 3 presents the results of a stepwise multiple regression analysis of personality variables predicting College Satisfaction. Five variables entered the equation—Work Drive, Emotional Stability, Career Decidedness, Aggression, and Optimism, accounting for 40% of the variance in College Satisfaction.

Table 4 presents the results of a stepwise multiple regression analysis of personality variables predicting General Life Satisfaction. Four variables entered the equation—Emotional Stability, Sense of Identity, Extraversion, and Agreeableness–accounting for 52% of the variance in General Life Satisfaction.

TABLE 3. Results of Stepwise Multiple Regression for Big Five and Narrow Personality Traits Predicting College Satisfaction

Step	Variable	Multiple R	R^2	R^2 Change
1	Work Drive	0.458**	0.209**	0.209**
2	Emotional Stability	0.570**	0.325**	0.131**
3	Career Decidedness	0.623**	0.388**	0.063**
4	Aggression	0.630**	0.397**	0.008*
5	Optimism	0.634**	0.402**	0.005*

$n = 550$.
*$p < 0.05$, **$p < 0.01$.

TABLE 4. Results of Stepwise Multiple Regression for Big Five and Narrow Personality Traits Predicting General Life Satisfaction

Step	Variable	Multiple R	R^2	R^2 Change
1	Emotional Stability	0.594**	0.353**	0.353**
2	Sense of Identity	0.696**	0.485**	0.131**
3	Extraversion	0.716**	0.512**	0.028**
4	Agreeableness	0.719**	0.517**	0.004*

$n = 550$.
*$p < 0.05$, **$p < 0.01$.

DISCUSSION

The present results indicate that the College Satisfaction measure used in this study is a quite reliable composite of satisfaction–comprised specific, important domains of collegiate experience—and is substantively related to Life Satisfaction, which provides further support for the approach of other researchers who have used a domain-based composite measure of the overall student satisfaction (e.g., Benjamin and Hollings, 1995, 1997; Michalos, 1991). Moreover, the relatively high coefficient alpha of 0.86 suggests that there is considerable homogeneity of specific satisfactions. Students satisfied with one domain of their college experience are likely to be satisfied with other domains, and vice-versa. This result should be kept in mind by counselors, parents, and other interested parties who are trying to understand and relate to dissatisfied college students. Also, it does not appear that simply measuring more aspects of satisfaction with college experience would substantially increase the internal consistency reliability of the measure much, nor change its relationships with other variables measured in this study. For example, using the Spearman-Brown prophecy formula (Nunnally and Bernstein, 1994), we can estimate that if we had doubled the number of the items in the College Satisfaction measure, the coefficient alpha for the expanded scale would be only increased to 0.92. Conversely, if we had used only four items to measure College Satisfaction, the estimated coefficient alpha would still be a respectable 0.78. Accordingly, one methodological observation which we make for future researchers in this area is that they can represent overall satisfaction of students with college experience by a relatively small set of items.

The finding of a significant, positive correlation between satisfaction with specific domains of experience on campus—College Satisfaction—and General Life Satisfaction is consistent with previous research in the college setting (e.g., Benjamin and Hollings, 1995) as well as findings for specific domains of experience in relation to global life satisfaction for the general population (e.g., Andrews and Withey, 1976; Campbell et al., 1976). In fact, Benjamin and Hollings' (1995) finding that college satisfaction accounts for 30% of the variance in life satisfaction is quite similar to the result in the present study that College Satisfaction by itself accounts for 26% of the variance in General Life Satisfaction. If one were to follow the usual interpretation of such a result, one would conclude from the present study that a student's satisfaction with such factors as quality of professors, availability of courses, GPA, major, and progress toward a degree are related to, and presumably affect, overall life satisfaction. Moreover, researchers and policy

analysts working in this area often make recommendations for programming and intervention based on the correlations between specific factors and overall life satisfaction. For example, based on their results for correlates of student satisfaction, Benjamin and Hollings draw practical implications concerning orientation programs, advising, counseling, housing, and improving grades as ways to enhance student satisfaction. The problem with such interpretations and recommendations is that they are based on analyses which do not take into account antecedent personality factors and, thus, from the outset, may lack predictive validity or be unable to produce changes in the life satisfaction of students.

The results of our study suggest that while factors representing different aspects of college experience contribute to the overall life satisfaction of students, their role is minor compared to that of personality traits. Specifically, when considered in combination, personality traits accounted for six times as much variance in General Life Satisfaction as College Satisfaction. While the relationship between College Satisfaction and General Life Satisfaction is of fairly high magnitude when just these two variables are considered, the magnitude of the relationship is greatly diminished when personality traits are taken into account. Before considering some of the implications of our results, we should note that the pattern of results for personality and life satisfaction is not unique to college students or to this sample, as research in other areas involving adults in a variety of occupations at different stages of the life cycle have found significant correlations between personality traits and life satisfaction (Boland and Cappeliez, 1997; DeNeve and Cooper, 1998; Hart, 1999; Herringer, 1998; Lounsbury et al, in press; Ramanah, Detweiler and Byravan, 1997). For example, Lounsbury et al. (in press) found that Assertiveness, Conscientiousness, Extraversion, Emotional Stability, Openness, Optimism, and Tough-Mindedness were significantly related to Life Satisfaction. Similar to the present study, they found that the two highest correlates of Life Satisfaction were Emotional Stability ($r = 0.50$, $p < 0.01$) and Optimism ($r = 0.51$, $p < 0.01$). Other studies examining selected personality traits have found results similar to ours in the case of correlations between life satisfaction or well being and Emotional Stability and Conscientiousness (Hayes and Joseph, 2003), Optimism (Cha, 2003), and Extraversion (Harrington and Loffredo, 2001; Pavot, Diener and Futra, 1990). Moreover, many of the personality traits found to be related to student satisfaction in the present study have also been found to be related to course grades and overall GPA of college students (e.g., Brown, 1994; Lounsbury et al., 2003b; Ridgell and Lounsbury, in press; Wolfe and Johnson, 1995). In

addition, several of these traits have found to be predictive of college dropout and attrition (Heilbrun, 1962, 1965; Tross et al., 2000).

The present results can be interpreted within the framework of Chickering's psychosocial theory of college student development (Chickering, 1969; Chickering and Reisser, 1993), which describes the key tasks confronting late adolescents as they make the transition to adulthood. In particular, the correlational and regression results are consonant with four of Chickering and Reisser's (1993) seven major developmental vectors for college students. They describe one of the major student challenges as *managing emotions* and coping with such "toxic" affective states as anxiety, depression, fear, anger, guilt, and shame. These correspond directly to Emotional Stability as measured in the present study. Also, following Erickson (1959), Chickering and Reisser cite the fundamental importance to students of *establishing identity* which is directly analogous to our measure of sense of identity and *developing purpose*, particularly in the vocational domain, which relates to our Career Decidedness construct. They also emphasize the importance of *developing mature interpersonal relationships*, particularly friendships, social bonds, and connections with other students—which taps into Extraversion and Agreeableness as measured in our study. Chickering and Reisser conceptualize these vectors or dimensions of behavior in terms of student development, contending that they represent important goals for higher education and argue for "policies and practices to create higher education environments that will foster broad-based development of human talent and potential" in the areas represented by these vectors.

However, it may be that the major determinants of such behavior and of overall satisfaction are the personality characteristics of students, which, in large part, are antecedent to the students' college experiences and outcomes. Who students become in college and how satisfied they are with different aspects of collegiate experience may be primarily determined by who they are when they enter college. The personality traits of students may be the major determinants of their satisfaction with diverse college experiences and their life as a whole. Consequently, it may be less important to focus on ways to enhance programs, interventions, and environments than to concentrate on student personality characteristics that lead to valued outcomes such as their satisfaction and overall quality of life. This is admittedly a somewhat radical proposition, but it is at the very least one which merits further investigation and interpretation given the magnitude of the multiple correlations between personality traits and student satisfaction.

One of the most direct practical implications of these findings would be to incorporate personality measures into the admissions process for prospective college students, especially since personality traits are also predictive of academic success in college, as can be seen in the extensive and long-standing literature on personality traits predicting GPA and course grades (e.g., Flaherty and Reutzel, 1965; Furnham and Camorro-Premuzic, in press; Gulo and Lynch, 1973; Lounsbury et al., 2003d; Reutzel, 1965; Schuerger and Kuna, 1987; Shaughnessy, Stockard and Moore, 1994; Steininger, 1970; Wolfe and Johnson, 1995). Although using personality measurement in admissions decisions is an idea that has been suggested before (Wolfe and Johnson, 1995), there are few examples of colleges actually using personality measures to screen undergraduates students for admission (exceptions are Allik and Realo, 1997; Levine and Taub, 1979). Our own interpretation of this lacuna is that it stems from an overarching emphasis on cognitive abilities in higher education admissions procedures. Cognitive abilities (including general mental ability, intelligence, and intellectual capabilities) of students have always been considered a key factor in college admissions in Europe and the United States (see Katz, 1973; Snow and Yalow, 1982). The development of standardized college entrance examinations tapping cognitive abilities emerged in the U.S. in 1926 under the auspices of the College Entrance Examination Board and were followed by the Scholastic Aptitude Examination (SAT), which began to be used in 1937 (Snow and Yalow, *ibid*). The SAT, a cognitive ability measure geared for college applicants, is currently the most widely used college admission test in America (College Board, 2004). Ironically, one of the purposes of standardized college admissions tests like the SAT was to "even out the disparities in educational advantages between candidates from the wealthier, upper class families and those from more plebian backgrounds" (Carroll, 1982, p. 63), but such tests have been heavily criticized as being biased against societally disadvantaged groups, particularly racial and ethnic minorities (see Cronbach, 1975; Crouse and Trusheim, 1988; Sacks, 2000). In contrast, personality measures show little or no adverse impact on ethnic, gender, or national origin sub-groups (Hogan, Hogan and Roberts, 1996; Hough, Oswald and Ployhart, 2001). Thus, use of personality measures in the admission process could reduce demographic bias in assessment and lead to more ethnic and cultural diversity of the student population than would be achieved by focusing primarily on cognitive ability measures. In this regard, it should be noted that personality traits tend to be independent of cognitive ability (cf. Collis and Messick, 2001; Saklofske and Zeidner, 1995) and measure different aspects of academic performance than are

tapped by cognitive ability tests; thus, students scoring most highly on cognitive ability tests would be unlikely to be among those scoring most highly on the personality measures, and vice-versa.

From the standpoint of incorporating personality measurement into the admissions process, based on the regression analyses, we would recommend at a minimum using a Big Five personality inventory, since the Big Five traits of Agreeableness, Conscientiousness, Extraversion, and Emotional Stability accounted for over 45% of the variance in life satisfaction, and since Big Five inventories are commercially available in multiple forms by different vendors. It might also be useful to include measures of Sense of Identity and Career Decidedness since, to use Chickering and Reisser (1993) terms, they represent major developmental vectors for college students. Another advantage of using personality measures in college student admissions is that they are relatively inexpensive and do not take long to administer, compared to, say the SAT or ACT. Since personality measures have been fairly extensively validated by psychologists in business and industrial settings and as they are widely used by companies by many different organizational contexts, there are established ethical and practical guidelines for using personality measures as well as developed technologies for validation and administration of personality measures that college and university administrators could learn from and draw on to implement personality assessment in the overall student admissions process.

There are a number of other programmatic areas where information about the personality characteristics of students could be useful. These include the following where the personality traits of students have been found to be related to a program outcome: advising (Crockett and Crawford, 1989); leadership development (Posner and Brodsky, 1992), orientation (Buhr, Pelletier and Wark, 1987); and residence hall placement (Pope, 1987). Also, assessment of personality traits is often a first step in student counseling and career planning programs. We contend that personality information can be of benefit not only in helping students develop a better self-understanding, but it can be potentially useful in every major situation in college where the student makes a choice about involvement, membership, participation, or commitment, including: type of residence, roommate, adviser, major, electives, courseload, course format, clubs and voluntary student organizations, leisure and recreation activities, study habits, social activities, dating and intimate relationships, degree pacing, career planning, internships, and holding a part- or full-time job, among others. In all such applications, proper ethical guidelines would have to observed, particularly issues

pertaining to confidentiality, informed consent, and qualifications of individuals administering and interpreting the personality measures.

It should be noted that there are two different ways of dealing with individual differences in personality traits—trying to increase trait levels and trying to optimize person-environment fit. First, systematic attempts can be made to increase low scores. Thus, for example, a counseling psychologist working in the student counseling center may try to help students in distress become more emotionally stable or to increase their sense of identity. Or, career assessment workshops may be designed to increase students' levels of career-decidedness. As another example, social skills training programs may be able to increase the extraversion and agreeableness of participants. Some might question whether such trait modification is possible, given the stability of personality traits. In response, it should noted that there is more change in personality during the college years than either during the prior adolescent years of 12–18 or after college in adult life (McCrae, Costa, Terraciano, Parker, Mills, De Fruyt and Mervielde, 2002). Along these lines, Finn (1986) found that the median stability coefficient for personality traits of college students was only 0.38. Also, Siegler, Zonderman, Barefoot, Williams and Costa, McCrae (1990) estimated that only half of the variance in personality traits of college students was stable into later adult life. Thus, there is ample opportunity for systematic personality change at the individual level in college. It should be borne in mind that there is a trend during college for some traits such as Agreeableness, Emotional Stability, and Extraversion to increase from the first to the fourth years of college (Costa and McCrae, 1994). One possible reason for this increase is that individuals tend to select environments and to participate in situations that reinforce their traits (Pervin and John, 1997), and college offers many such opportunities.

The second way consideration of personality traits may be useful in any college situation is to utilize information about a student's trait level to optimize *person-environment fit* (cf. Endler and Edwards, 1986; Hesketh and Gardner 1993; Magnusson and Endler, 1977; Witt and Handal, 1984). This would typically be achieved either by selecting students for the situation based on fit (e.g., choosing students for a "quiet" dorm who were more introverted) or by individuals relating to the students in a formal role capacity (e.g., advisors, counselors, teachers, mentors) adjusting their behavior to fit some personality attribute of the student. For example, an academic advisor would focus on different priorities for students who were high or low on career-decidedness. Or, a counselor might approach differently and make differential recommendations for students who were more introverted versus more

extraverted, or were lower versus higher on emotional stability. Students themselves may use personality information to guide their behavior in other areas such as dating and roommate selection. With respect to the latter, Fuller and Hall (1996) found that roommate conflict for first year college students was inversely related to personality congruence.

While most of the personality traits examined in this study were related to College Satisfaction and General Life Satisfaction, it is interesting to compare the somewhat different patterns of significant predictors in Tables 3 and 4. As noted above, Emotional Stability, Sense of Identity, Extraversion, and Agreeableness are directly related to Chickering and Reisser's major developmental vectors. Because of the behaviors associated with these traits, individuals higher on each of these four traits are more likely to manage their emotions effectively, establish an identity, develop a sense of purpose, and have mature interpersonal relationships. In each case, increased life satisfaction would be expected to occur because of the positive feelings associated with these outcomes. With respect to College Satisfaction, the three traits accounting for most of the variance were Work Drive, Emotional Stability, and Career Decidedness. Higher levels of Work Drive are associated with higher GPA's (Lounsbury et al., 2004a; Lounsbury et al., 2003d) which would lead to higher levels of satisfaction with two of the items in the College Satisfaction measure—"Your GPA" and "How much you are learning in school". Similarly, students who are higher in Career Decidedness might be more satisfied with two of the items in the College Satisfaction measure—"Your academic major" and "Your rate of progress toward a college degree". The relationship between Emotional Stability and College Satisfaction is less obvious, though students with higher levels of emotional stability would presumably be better able to cope with the stress associated with studying hard and achieving a high GPA, making good progress toward a degree, and dealing with not being able to obtain desired courses—which would increase College Satisfaction.

There are a number of areas for future research that could clarify and extend the results of the present study. A longitudinal study with repeated waves of measurement would reveal how personality traits change while students are in college and how these changes affect general life satisfaction and campus-specific satisfactions. It would also be interesting to see how participation in campus groups, activities, and events affect and are affected by personality traits and how these contribute to different forms of satisfaction. In addition, a broader sample of colleges and more comprehensive samples of students would allow researchers to see whether the current findings are generalizable across different demographic subgroups defined in terms of type of college

attended, age, year in school, major, ethnicity, sex, employment, membership in Greek organizations, and religious affiliation, among others.

There are several limitations of the current study which should be acknowledged. Since a single university in the Southeastern U.S. served as the study site, the generalizability of the findings to other colleges and universities in different geographic locales is unknown. Also, over four-fifths of the study participants were underclassmen and Caucasian which also leaves the generalizability of findings to upperclassmen and students of different races or ethnicities an open question. Then, too, we only examined seven items relating to campus-specific satisfaction, many other domains of college experience could have been assessed, such as recreational opportunities, tuition, grading policies, technological resources (e.g., computers labs), sense of community on campus, residence hall environment (where applicable), social-cultural diversity of the student body and faculty, typical class size, employment opportunities, and financial aid, to name but a few.

Nevertheless, the results of the present study are noteworthy insofar as they demonstrate that personality traits account for large portions of the variance in overall life satisfaction as well as satisfaction with college referenced against campus-specific domains of experience. Moreover, it would appear that although college satisfaction and overall life satisfaction are moderately related, much of their shared variance is accounted for by personality traits. Our confidence in the generalizability of a substantive relationship between personality traits and life satisfaction in the college student context is bolstered when we consider that similar results using many of the same traits have been obtained for working adults in a wide range of occupations (Lounsbury et al., 2003c). Moreover, given that several of these traits are also predictive of academic performance as well as job performance, one can readily envision using personality measures like the ones examined in this study to inform practice and policies in a variety of higher education functions, including admissions, orientation, advising, first-year studies programming, housing, counseling, leadership development, peer mentoring, career planning, and job placement.

REFERENCES

Allik, J., and Realdo, A. (1997). Intelligence, academic abilities, and personality. *Personality and Individual Differences* 23(5): 809–814.

Andrews, F. M. (1974). Social indicators of perceived life quality. *Social Indicators Research* 1: 279–299.

Andrews, F. M., and Withey, S. B. (1976). *Social Indicators of Well-Being*, Plenum, New York.
Ashton, M. C. (1998). Personality and job performance: the importance of narrow traits. *Journal of Organizational Behavior* 19: 289–303.
Astin, A. W. (1977). *Four Critical Years: Effects of College on Beliefs, Attitudes, and Knowledge*, Jossey-Bass, San Francisco.
Astin, A. W. (1993). *What Matters Most in College? Four Critical Years Revisited*, Jossey-Bass, San Francisco.
Astin, A. W. (1997). *What matters in college?: Four critical years revisited*, Jossey-Bass, San Francisco.
Benjamin, M., and Hollings, A. E. (1995). Toward a theory of student satisfaction: An exploratory study of the "Quality of Student Life". *Journal of College Student Development* 36(6): 574–586.
Benjamin, M., and Hollings, A. (1997). Student satisfaction: Test of an ecological model. *Journal of College Student Development* 38(3): 213–228.
Boland, A., and Cappeliez, P. (1997). Optimism and neuroticism as predictors of coping and adaptation in older women. *Personality and Individual Differences* 22(6): 909–919.
Brown, N. W. (1994). Cognitive, interest, and personality variables predicting first-semester GPA. *Psychological Reports* 74(2): 605–606.
Buhr, T., Pelletier, G., and Wark, D. (1987). An orientation program that increases the quality of student-advisor contact. *Journal of College Student Personnel* 28(5): 462–463.
Campbell, A., Converse, P. E., and Rodgers, W. L. (1976). *The Quality of American Life*, Russell Sage, New York.
Carroll, J. B. (1982). The measurement of intelligence. In: Sternberg, R. J. (ed): *Handbook of Human Intelligence*, Cambridge University Press, Cambridge, U.K., pp. 29–120.
Cha, K. (2003). Subjective well-being among college students. *Social Indicators Research* 62–63: 455–477.
Chickering, A. W. (1969). *Education and Identity*, Jossey-Bass, San Francisco.
Chickering, A. W., and Reisser, L. (1993). *Education and Identity*, Jossey-Bass, San Francisco.
College Board (2004). The College Board announces a new SAT. http://www.collegeboard.com/press/article/0,3183,11147,0.html.
Collis, J. M., and Messick, S. (2001). *Intelligence and Personality: Bridging the Gap in Theory and Measurement*, Lawrence Erlbaum, Mahwah, New Jersey.
Costa, P., and McCrae, R. (1994). Stability and change in personality from adolescence through adulthood. In: Halverson, C. F. Jr, Kohnstamm, G. A., and Martin, R. P. (ed.), *The Developing Structure of Temperament and Personality from Infancy to Adulthood*, Erlbaum, Hillsdale, NJ, pp. 139–155.
Crockett, J. B., and Crawford, R. L. (1989). The relationship between Myers-Briggs Type Indicator (MBTI) scale scores and advising style preferences of college freshmen. *Journal of College Student Development* 30(2): 154–161.
Cronbach, L. J. (1975). Five decades of public controversy over mental testing. *American Psychologist* 30: 1–14.
Crouse, J., and Trusheim, D. (1988). *The Case Against the S.A.T*, University of Chicago Press, Chicago Illinois.
De Raad, B. (2000). *The Big Five personality factors (The psycholexical approach to personality)*, Seattle, Hogrefe & Huber.
DeNeve, K. M., and Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin* 95: 542–575.
Digman, J. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology* 41: 417–440.

Digman, J. (1997). Higher order factors of the Big Five. *Journal of Personality and Social Psychology* 73: 1246–1256.
Edwards, J. E., and Waters, L. K. (1982). Involvement, ability, performance, and satisfaction as predictors of college attrition. *Educational and Psychological Measurement* 42(4): 1149–1152.
Edwards, J. E., and Waters, L. K. (1983). Predicting university attrition: A replication and extension. *Educational and Psychological Measurement* 43(1): 233–236.
Emmons, R. A., and Diener, E. (1985). Personality correlates of subjective well-being. *Personality and Social Psychology Bulletin* 11(1): 89–97.
Endler, N. S., and Edwards, J. M. (1986). Interactionism in personality in the twentieth century. *Personality and Individual Differences* 7(3): 379–384.
Erickson, E. (1959). Identity and the life cycle. *Psychological Issues Monograph* 1(1): 1–171.
Finn, S. (1986). Stability of personality ratings over 30 years: Evidence for an age/cohort interaction. *Journal of Personality and Social Psychology* 50: 813–818.
Flaherty, E., and Reutzel, M. R. (1965). Personality traits of high and low achievers in college. *Journal of Educational Research* 58(9): 409–411.
Fuller, B. E., and Hall, F. J. (1996). Differences in personality type and roommate compatibility as predictors of roommate conflict. *Journal of College Student Development* 37(5): 510–518.
Furnham, A., and Chamorro-Premuzic, T. (2004). Personality and intelligence as predictors of statistics examination grades. *Personality and Individual Differences* 37: 943–955.
Grayson, P. A., and Meilman, P. W. (1999). *Beating the College Blues*, Checkmark, New York.
Griffin, O. T. (1991). Strategies for Black student retention: A conceptual review. *Western Journal of Black Studies* 15(4): 235–241.
Gulo, E. V., and Lynch, M. D. (1973). Interactive effects of personality variables as determinants of academic performance of undergraduate majors in an instructional television course. *College Student Journal* 7(3): 85–89.
Harrington, R., and Lofredo, D. A. (2001). The relationship between life satisfaction, self-consciousness, and the Myers-Briggs Type Inventory dimensions. *The Journal of Psychology* 135(4): 439–450.
Hart, P. M. (1999). Predicting employee life satisfaction: A coherent model of personality, work, and nonwork experiences, and domain satisfactions. *Journal of Applied Psychology* 84: 564–584.
Hayes, N., and Joseph, S. (2003). Big 5 correlates of three measures of subjective well-being. *Personality and Individual Differences* 34(4): 723–727.
Heilbrun, A. B. (1962). Prediction of first year college drop-out using ACL Need Scales. *Journal of Counseling Psychology* 9(1): 58–63.
Heilbrun, A. B. (1965). Personality factors in college dropout. *Journal of Applied Psychology* 49(1): 1–7.
Herringer, L. G. (1998). Facets of extraversion related to life satisfaction. *Personality and Individual Differences* 24(5): 731–733.
Hesketh, B., and Gardner, D. (1993). Person-environment fit models: A reconceptualization and empirical test. *Journal of Vocational Behavior* 42(3): 315–332.
Hogan, R., Hogan, J., and Roberts, B. W. (1996). Personality measurement employment decisions (Questions and answers). *American Psychologist* 51: 469–477.
Hough, L. M., Oswald, F. L., and Ployhart, R. E. (2001). Determinates, detection and amelioration of adverse impact in personnel selection procedures: Issues, evidence, and lessons learned. *International Journal of Selection and Assessment* 9(1–2): 152–194.
Huebner, E. S., Suldo, S. M., Smith, L. C., and McKnight, C. G. (2004). Life satisfaction in children and youth: Empirical foundations and implications for school psychologists. *Psychology in the Schools* 41(1): 81–93.

Jensen, E. (1996). *Student Success Secrets*, Barron's, Hauppauge, N.Y.

Katz, M. B (ed.). (1973). *Education in American History: Readings on the Social Issues*, Praeger, New York.

Kowalski, C. J. (1982). College dropouts: Some research findings. *Psychology: A Journal of Human Behavior* 19(2-sup-3): 45–49.

Levine, S., and Taub, D. (1979). Internal versus external locus of control and college admissions. *Psychological Reports* 44(3, pt 1): 1013–1014.

Lounsbury, J. W., and Gibson, L. W. (2003). *Personal Style Inventory: A Personality Measurement System for Work and School Settings*, Resource Associates, Inc, Knoxville, TN.

Lounsbury, J. W., Gibson, L. W., and Hamrick, F. L. (2004a). The development of a personological measure of work drive. *Journal of Business and Psychology* 18(4): 347–371.

Lounsbury, J. W., Gibson, L. W., Sundstrom, E., Wilburn, D., and Loveland, J. (2003a). An empirical investigation of the proposition that "School Is Work". A comparison of personality-performance correlations in school and work settings. *Journal of Education and Work* 17: 119–131.

Lounsbury, J. W., and Hoopes, L. L. (1986). A vacation from work: Changes in work and nonwork outcomes. *Journal of Applied Psychology* 71(3): 1–12.

Lounsbury, J. W., Hutchens, T., and Loveland, J. (2005). An investigation of Big Five personality traits and career decidedness among early and middle adolescents. *Journal of Career Assessment* 13: 25–39.

Lounsbury, J. W., Loveland, J. L., and Gibson, L. W. (2003b). An investigation of Big Five personality traits in relation to psychological sense of community. *Journal of Community Psychology* 31(5): 531–541.

Lounsbury, J. W., Loveland, J. M., Sundstrom, E. D., Gibson, L. W., Drost, A. W., and Hamrick, F. L. (2003c). An investigation of personality traits in relation to career satisfaction. *Journal of Career Assessment* 11(3): 287–307.

Lounsbury, J. W., Park, S. H., Sundstrom, E., Williamson, J., and Pemberton, A. (2004) Personality, career satisfaction, and life satisfaction: Test of a directional model. *Journal of Career Assessment* 12: 395–406.

Lounsbury, J. W., Steel, R. P., Loveland, J. M., and Gibson, L. W. (2004b). An investigation of personality traits in relation to adolescent school absenteeism. *Journal of Youth and Adolescence* 33: 457–466.

Lounsbury, J. W., Sundstrom, E., Loveland, J. M., and Gibson, L. W. (2003d). Intelligence, "Big Five" personality traits, and work drive as predictors of course grade. *Personality and Individual Differences* 35: 1231–1239.

Lounsbury, J. W., Tatum, H. E., Chambers, W., Owens, K., and Gibson, L. W. (1999). An investigation of career decidedness in relation to "Big Five" personality constructs and life satisfaction. *College Student Journal* 33(4): 646–652.

Lounsbury, J. W., Tatum, H., Gibson, L. W., Park, S. H., Sundstrom, E. D., Hamrick, F. L., and Wilburn, D. (2003e). The development of a Big Five adolescent personality scale. *Psychoeducational Assessment* 21: 111–133.

Magnusson, D., and Endler, N. S. (1977). *Personality at the Crossroads: Current Issues in Interactional Psychology*, Lawrence Erlbaum, Hillsdale, New Jersey.

McCrae, R. M., Costa, P. T., Terraciano, A., Parker, W. D., Mills, C. J., De Fruyt, F., and Mervielde, I. (2002). Personality trait development from age 12 to age 18 longitudinal, cross–sectional, and cross-cultural analyses. *Journal of Personality and Social Psychology* 83(6): 1456–1468.

Michalos, A. C. (1991). *Global Report on Student Well-Being Life Satisfaction and Happiness*, Vol. 1: Springer-Verlag, New York.

McWhirter, J. J. (1995). Emotional education for college students. *Journal of College Student Psychotherapy* 10(2): 27–38.

Nunnally, J. C., and Bernstein, I. H. (1994). *Psychometric theory*, McGraw-Hill, New York.

Paunonen, S. V. (1998). Hierarchical organization of personality and prediction of behavior. *Journal of Personality and Social Psychology* 74: 538–556.

Paunonen, S. V., Rothstein, M. G., and Jackson, D. N. (1999). Narrow meaning about the use of broad personality measures for personnel selection. *Journal of Organizational Behavior* 20(3): 389–405.

Pavot, W., Diener, E., and Fujita, F. (1990). Extraversion and happiness. *Personality and Individual Differences* 11(12): 1299–1306.

Pervin, L. A., and John, O. P. (1997). *Personality: Theory and Research*, Wiley, New York.

Pope, R. L. (1987). Wellness Life-Style: A residence hall housing option. *Journal of College Student Personnel* 28(1): 82–84.

Posner, B. Z., and Brodsky, B. (1992). A leadership development instrument for college students. *Journal of College Student Development* 33(3): 231–237.

Ramanah, N. V., Detwiler, F. R., and Byravan, A. (1997). Life satisfaction and the five-factor model of personality. *Psychological Reports* 80: 1208–1210.

Ridgell, S., and Lounsbury, J. W. (2004) Predicting collegiate academic success: General intelligence, "Big Five" personality traits, and work drive. *College Student Journal* 38: 607–618.

Sacks, P. (2000). *Standardized minds: The high price of American's testing culture and what we can do change it*, Perseus, Cambridge, Massachusetts.

Saklofske, D. G., and Zeidner, M. (eds). (1995). *International handbook of personality and intelligence*, Plenum, New York.

Schuerger, J. M., and Kuna, D. L. (1987). Adolescent personality and school and college performance: A follow-up study. *Psychology in the Schools* 24(3): 281–285.

Shaugnessy, M. E., Stockard, J., and Moore, J. (1994). Scores on the 16 Personality Factor Questionnaire and success in college calculus. *Psychological Reports* 75: 348–350.

Siegler, I. C., Zonderman, A. B., Barefoot, J. C., Williams, R. B. Jr., Costa, P. T., and McCrae, R. R. (1990). Predicting personality in adulthood from college MMPI scores: Implications for Followup studies in psychosomatic medicine. *Psychosomatic Medicine* 52: 644–652.

Snow, R. E., and Yalow, E. W. (1982). Education and intelligence. In: Sternberg, R. J. (ed.), *Handbook of Human Intelligence*, Cambridge University Press, Cambridge U.K., pp. 493–585.

Steininger, M. (1970). Aptitude, dogmatism, and college press as codeterminants of academic achievement. *Journal of Social Psychology* 80(2): 229–230.

Timmons, F. R. (1978). Freshman Withdrawal from college: A positive step toward identity formation? A follow-up study. *Journal of Youth and Adolescence* 7(2): 159–173.

Tross, S. A., Harper, J. P., Osher, L. W., and Kneidinginger, L. M. (2000). Not just the usual case of characteristics: Using personality to predict college performance and retention. *Journal of College Student Development* 41(3): 323–333.

Tyler, D., and Small, J. M. (1990). Persistence of college transfer students. *Alberta Journal of Educational Research* 36(2): 181–188.

Wiggins, J. S., and Trapnell, P. D. (1997). Personality structure: The return of the Big Five. In: Hogan, R., Johnson, J., and Briggs, S. (ed.), *Handbook of Personality Psychology*, Academic, San Diego, CA, pp. 737–765.

Witt, P. H., and Handal, P. J. (1984). Personal-environment fit: Is satisfaction predicted by congruency, environment, or personality?. *Journal of College Student Personnel* 25(6): 503–508.

Wolfe, R. N., and Johnson, S. D. (1995). Personality as a predictor of college performance. *Educational and Psychological Measurement* 55(2): 177–185.

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