

Serving in College, Flourishing in Adulthood: Does Community Engagement During the College Years Predict Adult Well-Being?

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Colleges and universities are placing a renewed emphasis on the importance of service and community engagement. Although the short-term effects of these college experiences are fairly well understood, little is known about the long-term impact of college volunteering and participating in engaged forms of learning (e.g. service-learning). This longitudinal study examines 416 participants during their freshman year of college, their senior year, and 13 years after graduation. Results show that both college volunteering and service-learning have positive, indirect effects on several forms of well-being during adulthood, including personal growth, purpose in life, environmental mastery, and life satisfaction. Specifically, these college experiences are associated with subsequent behaviors (adult volunteering) and attitudes and values (prosocial orientation), which in turn are positively associated with well-being. Implications for research and practice are discussed.

Keywords: college students, community engagement, service-learning, volunteering, well-being

INTRODUCTION

College students are expected to receive numerous benefits from higher education, including academic knowledge and skills, personal growth, and awareness of the world. Increasingly, colleges and universities have emphasised (or reemphasised, for the calling is not new) that undergraduate education can and should help students develop ethically, examine social challenges, and discern a sense of purpose in life (Colby, Ehrlich, Beaumont, & Stephens, 2003; Sullivan & Rosin, 2008). Concurrently, over the last two decades, new initiatives and pedagogies of engagement have fostered significant increases in student volunteering and service, both within and beyond

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the curriculum. The current generation of college students has shed the label of Generation X, and is known for its willingness to serve and to engage in efforts to improve communities and the world (e.g. Pryor, Hurtado, Saenz, Santos, & Korn, 2007). Students who engage in service often remark that they learn a great deal about themselves as a result, and research has demonstrated that service and civic engagement are positively associated with various forms of personal development (e.g. Astin & Sax, 1998; Eyler & Giles, 1999).

Yet little is known about the lasting effects of such engagement into adulthood. Does service and civic involvement during college predict similar engagement during adulthood? Do the effects of service-learning on human flourishing (e.g. personal growth and a sense of purpose) last into early adulthood? This study addresses such questions longitudinally by examining data from participants who started college in 1990 and were followed until their mid-thirties.

WELL-BEING AND VOLUNTEERING

Well-being is a multi-faceted construct that has been used to refer to various outcomes. In their classic review, Ryan and Deci (2001) distinguish between two broad forms of psychological well-being. *Hedonic well-being* is defined by pleasure or happiness and is often operationalised in the literature as *subjective well-being*. According to Diener and Lucas (1999), subjective well-being has three components: life satisfaction, positive affect, and the lack of negative affect. However, others argue that hedonic or subjective well-being constitutes an incomplete definition of psychological wellness. In contrast to the hedonic view, *eudaimonic well-being* emphasises the importance of “doing what is worth doing” (Ryan & Deci, 2001, p. 145). That is, well-being is obtained from people’s living in accordance with their daimon, or true self; this occurs when individuals are engaged in activities that are personally meaningful, challenging, and fulfilling. Although hedonic well-being and eudaimonic well-being are correlated (Keyes, Shmotkin, & Ryff, 2002; Waterman, 1993), they represent empirically and conceptually distinct ways of being well.

Numerous studies have explored whether and how volunteer work contributes to psychological and physical well-being. The quality of research on this topic is mixed, ranging from analyses of cross-sectional data to longitudinal studies that control for previous well-being and various life experiences. Although causality cannot be definitively established without random assignment to volunteering and non-volunteering conditions, a number of large-scale longitudinal studies have demonstrated a positive relationship between volunteering and subsequent hedonic well-being, eudaimonic well-being, and physical health (Hao, 2008; Moen, Dempster-McClain, & Williams, 1992; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003; Musick, Herzog, &

House, 1999; Oman, Thoresen, & McMahon, 1999; Piliavin & Siegl, 2007; Van Willigen, 2000). Specifically, the number of hours spent volunteering and the number of organisations with which one volunteers are both positively associated with future well-being. However, this relationship is not perfectly linear; engaging in very high levels of volunteering (relative to moderate levels) does not yield additional benefits and may actually contribute to certain declines in health and psychological well-being (Luoh & Herzog, 2002; Musick et al., 1999; Van Willigen, 2000; Windsor, Anstey, & Rodgers, 2008). Moreover, the effects of volunteering are generally consistent across gender and race (Morrow-Howell et al., 2003).

The vast majority of published research on volunteering and well-being has focused on older adults; therefore, by necessity, this review primarily includes studies of older populations. This emphasis on older adults may be for a good reason: Some evidence suggests that the link between volunteering and well-being is weak or non-existent among adults in their midlife. Van Willigen (2000) finds that the impact of volunteering, whether defined as the number of hours spent volunteering or as having done any volunteer work in the past 12 months, yields greater improvements in life satisfaction and perceived health for adults who are at least 60 years old than for adults younger than 60. Further, Musick and Wilson (2003) show that there is no effect of volunteering on depressive symptoms for people under 65 years old, whereas volunteering is associated with lower rates of depression among those 65 and older. It is unclear whether these differences can be attributed to cohort effects or to different stages of lifespan development. One additional longitudinal study explores these processes among adolescents. Scales and colleagues (Scales, Benson, & Mannes, 2006) found that “developmental context assets” (a composite measure of involvement in youth programs, volunteering, and religious services) contributed to future “thriving” (a composite measure of self-reported grades, valuing diversity, delaying gratification, and helping others). However, this study confounds volunteering with other activities, and the measure of thriving is quite distinct from the psychological, physical health, and mortality outcomes that are examined in adult samples.

Some argue that the act of volunteering facilitates social connections and interaction, which may be a key mechanism that underlies the greater benefits among older adults. People’s social networks tend to shrink with old age, as seniors often have less opportunity to maintain social relationships and are more selective in the relationships that they do have (Fung, Carstensen, & Lang, 2001; Moen, 1995). As a result, volunteering may play a more important role in providing social outlets for seniors than for younger adults (Okun & Schultz, 2003). If this explanation accounts for the differential impact of volunteering by age, then volunteering should also have a stronger effect on well-being for people who are less socially engaged or who have weaker social networks. Some researchers do, in fact, find that people who have less social

support receive greater benefits from volunteering (Fengler, 1984; Musick et al., 1999; Piliavin & Siegl, 2007); however, others find no moderating relationship (Morrow-Howell et al., 2003), and still others find that people with greater social support benefit more (Oman et al., 1999). In sum, the findings are mixed regarding the impact of volunteering on well-being among socially isolated individuals.

Another possible explanation for the particularly strong impact of volunteering on seniors' well-being comes from role theory (Sieber, 1974). Many who enter retirement tend to experience the loss or sustained absence of certain roles (e.g. employee, partner). Volunteering may provide an important role that substitutes for an alternative unfulfilled role. In support of this assertion, Greenfield and Marks (2004) show that role-identity absences (i.e. the absence of a particular role) contribute to reduced psychological well-being, and role-identity absences moderate the effect of volunteering on purpose in life. However, other analyses indicate that role absences do not moderate the relationship between volunteering and depressive symptoms (Musick & Wilson, 2003) or between volunteering and positive or negative affect (Greenfield & Marks, 2004). Although volunteering may not compensate for role absences, the free choice involved with adopting a volunteering role may differentiate older and younger adults, some argue. Since older people are better able to choose their volunteer opportunities (Herzog & House, 1991) and because freely choosing one's experiences may be necessary for experiencing subsequent benefits (Midlarsky & Kahana, 1994), older adults should be more likely to benefit from volunteer work than younger people. Perhaps as a result, older people have more favorable attitudes toward volunteering than do younger people (Midlarsky & Kahana, 1994).

Importantly, social attitudes may also play an important role in promoting well-being. For example, having a prosocial orientation (i.e. a desire to help others and improve society) is positively associated with psychological well-being, whereas orientations toward financial success and personal recognition are unrelated to well-being (Hill, Burrow, Lapsley, & Brandenberger, in press). A prosocial orientation may be the result of volunteering, a mediator of the relationship between volunteering and well-being, or a cause of both volunteering and well-being. To date, no study has examined the unique and/or related effects of prosocial attitudes and values in shaping well-being.

ENGAGEMENT DURING COLLEGE: OPPORTUNITIES FOR GROWTH

A developing research literature examines the potential for volunteer engagement during college to promote personal development and social concern. Brandenberger (1998, 2005) provides a theoretical framework, examining the developmental implications of service-learning and pedagogies of experience,

while Eyler and Giles (1999) and Hart, Matsuba, and Atkins (2008) outline relevant empirical findings. Engagement during young adulthood, whether through direct volunteer service or service-learning, has been shown to predict identity development (Youniss & Yates, 1997), moral development (Boss, 1994), feelings of personal or political efficacy (Reeb, Katsuyama, Sammon, & Yoder, 1998), and civic responsibility (Ehrlich, 2000).

It is not surprising that service engagement and related pedagogies show a variety of positive outcomes during the college years. Engaged forms of learning provide opportunities for students to explore complex issues directly—with concomitant elements of risk and potential—in a manner consistent with their developing abilities (as the length of schooling has extended, youth feel the pull of engagement to test their nascent potentials). Similarly, engaged learning places students in moral contexts, in a “web of cooperative relationships between citizens” (Brehm & Rahn, 1997, p. 999) where life goals and a sense of purpose may develop. The next steps in this line of research are to examine how lasting such outcomes may be, and whether traits such as prosocial orientation and purpose become part of young adults’ life trajectories.

PRESENT STUDY

This study explores the impact of college volunteering and service-learning on the well-being of college graduates in their mid-thirties. This project expands upon previous research in several ways. First, the longitudinal impact of volunteering on well-being among young adults has received very little attention. College students engage in volunteer work and service-learning at an age in which they are likely to form lasting identities and values. Thus, unlike the relationships observed among “younger” adults (typically ages 30–60) in previous studies, college graduates’ future behavior and well-being may be substantially shaped by their early engagement. Second, this study seeks to disentangle previous volunteering behavior, orientation toward prosocial behavior, and intended behavior, each of which may be associated with subsequent volunteering and well-being. Thus far, the role of prosocial orientation in promoting well-being—particularly as an intermediary variable between community engagement and well-being—has not been considered, even though this orientation promotes several forms of well-being (Bowman, Brandenberger, Hill, & Lapsley, in press; Hill et al., in press). Third, we consider the impact of a specific joint curricular and co-curricular intervention—service-learning courses—on subsequent volunteering and well-being. Although these courses occur over a short period of time (typically two or three months), the structured nature of this engagement provides students with a valuable opportunity to reflect upon their interactions with

the community and share their experiences with one another. The following specific research questions were addressed:

1. To what extent do college community engagement, prosocial orientation during college, and intention to volunteer after college predict volunteering behavior in young adulthood?
2. To what extent are volunteering and prosocial orientation in young adulthood associated with well-being?
3. To what extent do college volunteering and service-learning coursework have an indirect effect on well-being in young adulthood?

METHOD

Participants

College students at a medium-sized, Catholic university in the Midwest completed the College Institutional Research Program (CIRP) Freshman Survey at the beginning of their first year of study (Fall 1990). These same students completed the CIRP College Senior Survey at the end of their senior year in Spring 1994. The CIRP surveys contain items pertaining to demographic characteristics, attitudes, values, and a variety of precollege experiences (on the Freshman Survey) and college experiences (on the Senior Survey). Because completing the Senior Survey was a requirement for receiving tickets to the university's graduation, the retest response rate for graduating seniors was 100 per cent (1,541 out of 1,542). Thirteen years later, the researchers requested contact information for these former students from the university's alumni office, and the email and/or postal addresses for 1,076 graduates were obtained. In 2007, these respondents were invited to complete an online survey, and 416 graduates, now in their mid-thirties, agreed to participate in this third data collection. The exact response rate between senior year and 13 years post-college is unknown, since numerous emails and letters were returned to sender. That is, we attempted to contact 1,076 people, but it is unclear how many of them actually received the materials. The 416 respondents who participated in all three surveys constituted the sample for this study. Of these, 57 per cent were male, 86 per cent were White (6% Latino/Hispanic, 4% Asian, 2% Black, 1% American Indian, and 1% non-US citizen), and 100 per cent were traditional college age at the beginning of their freshman year (all were 17–19 years old).

Measures

Alumni Survey (2007). Three dimensions of eudaimonic well-being from Ryff's (1989) psychological well-being scale were used. These

domains—personal growth, environmental mastery, and purpose in life—represent theoretically derived aspects of positive psychological functioning, and each was measured with a 14-item index. *Personal growth* (Cronbach's $\alpha = .88$) is defined by a quest and a desire to improve oneself (e.g. "For me, life has been a continuous process of learning, changing, and growth"). *Environmental mastery* ($\alpha = .87$) indicates control over one's life and events (e.g. "I am quite good at managing the many responsibilities of my daily life"). *Purpose in life* ($\alpha = .91$) captures having a sense of direction and working toward that purpose (e.g. "Some people wander aimlessly through life, but I am not one of them"). *Life satisfaction*, which constitutes one form of hedonic or subjective well-being, was measured with a five-item scale ($\alpha = .87$; from Diener, Emmons, Larsen, & Griffin, 1985). All reliabilities reported here (and below) are computed from the current sample. Importantly, these well-being scales have been validated among diverse age cohorts of American adults (e.g. Diener et al., 1985; Keyes et al., 2002; Ryff, 1989).

The frequency of volunteering in adulthood was gauged with a 13-item index ($\alpha = .76$). These items, all of which used a 4-point scale (0 = never, to 3 = frequently), asked how often people performed community service for various types of organisations and institutions (e.g. school or education-based, religious or faith-based, advocacy/issue group) since leaving college. In addition, religious engagement in adulthood was measured with a four-item index ($\alpha = .77$). Participants rated the frequency of engaging in religious activities (e.g. prayer, reading sacred texts) on a 6-point scale (1 = daily, to 6 = not at all); this index was reverse-coded so that higher values indicate greater religious engagement. Prosocial orientation was examined via a six-item index ($\alpha = .77$) for which participants rated the importance of engaging in socially meaningful activities (e.g. "help others in difficulty", "participate in community action") on a 4-point scale (1 = not at all, to 4 = essential). Full-time employment (0 = no, 1 = yes), current income (1 = no earned income, to 7 = more than \$150,000/year), highest degree attained (1 = bachelor's, to 7 = doctorate), marital status (0 = not married, 1 = married), and number of children (1 = none, to 4 = more than two) were also included.

Senior Survey (1994). Students reported the number of hours per week spent volunteering during the senior year of college on an 8-point scale (1 = none, to 8 = over 20 hours/week). The number of service-learning courses taken in college was also measured. Since the majority of participants did not take any service-learning courses, this variable was dummy-coded (0 = no courses, 1 = at least one course). Moreover, an index of prosocial orientation in the senior year was included ($\alpha = .76$), which contained the same six items as the alumni survey.

Other independent variables from the senior survey were college GPA (1 = C- or less, to 6 = A), studying abroad while in college (1 = no, 2 = yes),

taking an ethnic studies course (1 = no, 2 = yes), taking a women's studies course (1 = no, 2 = yes), and time spent in college student groups and clubs (1 = none, to 8 = over 20 hours/week). In addition, two variables were combined to create a single measure of religious engagement during college: frequency of attending church or religious services and frequency of engaging in private religious thought, prayer, or reflection (for both items, 1 = not at all, to 5 = almost daily). These college experiences served as control variables to examine whether college volunteering and service-learning, not other forms of student engagement, may be responsible for promoting subsequent volunteering behavior. A dichotomous variable regarding students' predicted volunteering in the fall after graduation (1 = no, 2 = yes) was also included.

Two indicators of well-being during the college years were used as predictors of adult well-being. These were a three-item index ($\alpha = .62$) that measured ill-being in college (i.e. feeling lonely or homesick, depressed, and overwhelmed) and a single item that gauged students' satisfaction with their overall college experience (1 = dissatisfied, to 4 = very satisfied). Each of these well-being items used a 3-point scale (1 = not at all, to 3 = frequently).

Freshman Survey (1990). Several demographic variables were assessed in the freshman year, including gender (1 = female, 2 = male), age (1 = 17 years old or younger at beginning of freshman year, 2 = 18 years old, 3 = 19 years old or older), race (0 = person of color, 1 = White/Caucasian), parental income (1 = less than \$6,000/year, to 22 = \$200,000/year or more), and mother's education (1 = grammar school or less, to 8 = graduate school degree). Mother's education was used because mothers typically play a much greater role in the development of their children than do fathers (Bradley & Corwyn, 2002; Mercy & Steelman, 1982). Finally, time spent volunteering in high school was also included (1 = none, to 8 = more than 20 hours/week).

Descriptive statistics appear in the Appendix. All continuous variables were subsequently standardised with a mean of zero and a standard deviation of one for inclusion in the analyses. This transformation allows unstandardised coefficients to be interpreted in terms of effect sizes (Cohen, Cohen, West, & Aiken, 2003), and it prevents ill scaling of covariance matrices within the structural equation models (Kline, 2005).

Statistical Assumptions

Preliminary analyses determined that the statistical assumptions of the analyses described below were generally met. Specifically, the distributions of all dependent variables were approximately normal, the variance inflation factors for all variables in all analyses were quite low (less than 2.0), residuals were normally distributed and independent of one another, and the variance of the residuals was fairly constant (i.e. homoscedastic).

RESULTS AND DISCUSSION

Predicting Volunteering in Adulthood

Blocked hierarchical ordinary least squares (OLS) multiple regression analyses were conducted to predict adult volunteering behavior. In Block 1, the independent variables were gender, age, race, parental income, mother's education, high school volunteering, college GPA, study abroad, ethnic studies course, women's studies course, college religious engagement, time spent in student groups and clubs, college volunteering, and service-learning. To determine to what degree college community engagement itself (vs. attitudes or behavioral intentions) predicts future volunteering, prosocial orientation in the senior year and predicted volunteering after college were added in Block 2.

As shown in Table 1, college volunteering was a significant predictor of adult volunteering in Block 1 ($B = .19, p < .005$) and Block 2 ($B = .15, p = .01$). The presence of these direct effects is impressive, since these participants graduated from college 13 years earlier. The same patterns were evident for service-learning, but the effects were somewhat weaker. Taking at least one service-learning course was positively associated with adult volunteering in Block 1 ($B = .28, p < .05$) and Block 2 ($B = .23, p < .10$). Moreover, as shown in Block 2, prosocial orientation in the senior year was positively related to adult volunteering ($B = .13, p < .05$), and predicted volunteering after college had a marginally significant effect ($\beta = .30, p < .10$). Thus, previous behavior, intentions, and attitudes each have an independent effect on future volunteering, and a combination of the three is preferable to using any single measure by itself.

The control variables were generally ineffective at predicting volunteering. A few exceptions include college GPA, which was negatively associated with volunteering in adulthood in Blocks 1 and 2 ($Bs = -.12, ps < .05$), and college religious engagement, which was positively related to adult volunteering in Block 1 ($B = .12, p < .05$) but not in Block 2 ($B = .09, ns$). No other control variables were significant predictors, including high school volunteering.

Predicting Well-Being in Adulthood

Blocked hierarchical OLS multiple regressions were used to predict four well-being outcomes: personal growth, environmental mastery, purpose in life, and life satisfaction. Gender, age, race, full-time employment, income, degree attainment, marital status, number of children, college satisfaction, ill-being in college, religious engagement in adulthood, and adult volunteering served as independent variables in Block 1, and prosocial orientation was added as a predictor in Block 2. Since some research has shown a curvilinear

TABLE 1
Unstandardised Regression Coefficients Predicting Volunteering in Adulthood

<i>Independent variable</i>	<i>Block 1</i>	<i>Block 2</i>
Male	.10 (.12)	.13 (.12)
Age	.05 (.06)	.05 (.06)
White	.05 (.22)	.05 (.22)
Parental income	.02 (.06)	.03 (.06)
Mother's education	-.01 (.06)	-.01 (.06)
High school volunteering	.09 (.06)	.08 (.06)
College GPA	-.12* (.06)	-.12* (.06)
Study abroad	.13 (.14)	.06 (.14)
Ethnic studies course	-.04 (.14)	-.10 (.14)
Women's studies course	.24+ (.13)	.21 (.13)
College religious engagement	.12* (.06)	.09 (.06)
Time spent in college student groups	.06 (.06)	.08 (.06)
College volunteering	.19** (.06)	.15* (.06)
Service-learning coursework	.28* (.13)	.22+ (.13)
Prosocial orientation in the senior year		.13* (.07)
Predicted volunteering after college		.30+ (.16)
<i>R</i> ²	.153	.180

Note: Standard errors in parentheses.

+ $p < .10$; * $p < .05$; ** $p < .01$.

relationship between volunteering and well-being (Luoh & Herzog, 2002; Musick et al., 1999; Van Willigen, 2000), a squared volunteering variable was included as a predictor in preliminary analyses to capture potential non-linear effects. No such relationship was found in any model, so this variable was removed to reduce multicollinearity in the final analyses.

As shown in Table 2, adult volunteering was positively related to all forms of well-being, even when controlling for other relevant variables. The effect of

TABLE 2
Unstandardised Regression Coefficients Predicting Well-Being in Adulthood

Independent variable	Dependent variable							
	Personal growth		Environmental mastery		Purpose in life		Life satisfaction	
	Block 1	Block 2	Block 1	Block 2	Block 1	Block 2	Block 1	Block 2
Male	-.41** (.15)	-.29* (.14)	-.19 (.15)	-.20 (.15)	-.29+ (.15)	-.24 (.15)	-.25+ (.14)	-.21 (.14)
Age	-.00 (.06)	-.02 (.06)	.07 (.06)	.07 (.06)	.05 (.06)	.04 (.06)	-.05 (.06)	-.06 (.06)
White	-.20 (.24)	-.01 (.22)	.12 (.24)	.11 (.24)	-.22 (.24)	-.13 (.24)	-.23 (.22)	-.17 (.22)
Full-time employment	.21 (.20)	.18 (.19)	.00 (.20)	.00 (.20)	.22 (.20)	.20 (.19)	-.05 (.18)	-.06 (.18)
Income	.03 (.08)	.04 (.07)	.03 (.08)	.03 (.08)	.10 (.08)	.10 (.07)	.14* (.07)	.15* (.07)
Degree attainment	-.02 (.03)	-.04 (.03)	-.00 (.03)	-.00 (.03)	.02 (.03)	.01 (.03)	.02 (.03)	.02 (.03)
Married	-.29 (.18)	-.24 (.17)	-.00 (.18)	-.01 (.18)	.15 (.15)	.18 (.18)	.59*** (.03)	.61*** (.03)
Number of children	.10 (.08)	.06 (.07)	.11 (.07)	.11 (.08)	.09 (.07)	.07 (.07)	.20** (.07)	.19** (.07)
College satisfaction	.09 (.07)	.07 (.07)	.04 (.07)	.05 (.07)	.13+ (.07)	.12+ (.07)	.09 (.07)	.08 (.07)
Ill-being in college	-.01 (.07)	.00 (.07)	-.03 (.07)	-.03 (.07)	-.04 (.07)	-.03 (.07)	.00 (.07)	.01 (.07)
Adult religious engagement	.08 (.08)	.07 (.07)	.06 (.07)	.06 (.07)	.05 (.07)	.05 (.07)	.05 (.07)	.05 (.07)
Adult volunteering	.31*** (.07)	.14* (.07)	.21** (.07)	.22** (.07)	.27*** (.07)	.20*** (.07)	.16* (.06)	.11 (.07)
Adult prosocial orientation		.43*** (.07)		-.02 (.07)		.18** (.07)		.13* (.07)
R ²	.154	.299	.078	.079	.134	.163	.224	.239

Note: Standard errors in parentheses. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

adult volunteering was significant for all outcomes in Block 1 ($ps < .01$) and for three of the four well-being outcomes in Block 2 ($ps < .05$). Volunteering was not a significant predictor of life satisfaction when controlling for prosocial orientation in Block 2 ($p = .11$). This non-significant effect suggests that the impact of volunteering on life satisfaction, which was relatively weak, may be fully explained by the indirect path through prosocial orientation. Overall, volunteering behavior is uniquely associated with several diverse forms of well-being, since these relationships occur even when controlling for previous well-being, satisfaction with college, and several other factors. When prosocial orientation was added in Block 2, it was significantly related to personal growth, purpose in life, and life satisfaction in adulthood ($ps < .05$). Thus, prosocial behavior and orientation may play distinct roles in fostering well-being, and the combination of these may improve the prediction of well-being.

As with the regressions predicting volunteering in adulthood, few control variables were significant predictors of the well-being outcomes. In both blocks of the regressions, men had lower levels of personal growth than women ($ps < .05$), and income, marital status, and the number of children were all positively associated with life satisfaction ($ps < .05$). No other control variables were significant.

Effects of College Volunteering and Engaged Coursework on Well-Being in Adulthood

In sum, college volunteering and service-learning were positively related to adult volunteering, which in turn predicted adult well-being. Additional analyses were conducted to examine the nature of the relationship between college experiences and adult well-being. First, Pearson correlations between college community engagement experiences and the well-being outcomes were conducted. College volunteering was significantly correlated with personal growth ($r = .13, p < .05$), environmental mastery ($r = .18, p < .005$), purpose in life ($r = .14, p < .05$), and life satisfaction ($r = .15, p < .01$). Service-learning was positively associated with environmental mastery ($r = .12, p < .05$), and it was marginally associated with personal growth ($r = .10, p < .10$), and life satisfaction ($r = .10, p < .10$). The correlation between service-learning and purpose in life was not statistically significant ($r = .05, ns$).

Second, structural equation modeling (SEM) analyses were conducted to explore the process through which college experiences may affect subsequent well-being. We did not conduct the type of mediation analyses proposed in Baron and Kenny (1986) because the data did not conform to the conditions described in that article. The models in the current study contained several intermediate variables and several indirect paths between college experiences and well-being—these relationships are much more complex than those

measured by Sobel tests and other traditional mediation analyses. In addition, two of the intermediate variables were measured at the same time as the final outcome variable, and as noted above, some direct effects were not significant. In more recent work, Kenny and colleagues (e.g. Kenny, Kashy, & Bolger, 1998) have argued that a significant direct effect is not necessary to establish mediation; instead, mediation can be established by showing that the initial variable is significantly related to the intermediary variable(s), and the intermediary variable(s) significantly predict the outcome. To demonstrate complete mediation, the direct path from the initial variable to the outcome variable should equal zero when controlling for the intermediary variable(s).

SEM is ideal for modeling complex indirect relationships because it not only provides fit indices that gauge the statistical adequacy of the model, but it also computes the overall significance of the indirect paths. Four structural equation models were created using the software program EQS Version 6.1 to examine covariance matrices of the data; each model had one form of well-being as the final outcome variable. We felt that it was conceptually preferable to conduct separate analyses for each well-being outcome (as opposed to creating a single composite measure) because eudaimonic and hedonic well-being are theoretically distinct, and the significant predictors of the two forms of well-being sometimes differ (Waterman, 1993). All models included college volunteering, service-learning, prosocial orientation in the senior year, college GPA, college religious engagement, prosocial orientation in adulthood, and one of the well-being outcomes. Given the need for parsimony when creating structural equation models, only covariates that were significant predictors in the multiple regression models were added ($p < .05$). Consequently, two of the four models included additional variable(s) that contributed to well-being. The model predicting life satisfaction contained marital status and number of children (with a correlational path linking these two predictor variables), along with income, whereas the model predicting personal growth contained gender.

Since the sample size is reasonably small by SEM standards, only observed (not latent) variables were used. Kline (2005) recommends that SEM analyses have at least a 10:1 ratio of cases to free parameters; the current models meet this criterion when using observed variables, but the ratio in this study would be too small if latent variables were used. Because the analyses contained only observed variables, there was no need to create measurement models. To identify the models properly, the direct paths from the disturbances (i.e. error terms for endogenous variables) to their respective observed variables were set equal to one (Kline, 2005). Several common goodness-of-fit indices were used to judge the adequacy of the models: the non-normed fit index (NNFI), the comparative fit index (CFI), and the ratio of the chi-square statistic to degrees of freedom (χ^2/df). Reasonable goodness-of-fit statistics are above roughly .90 for the NNFI and CFI, and less than 2 or 3 for the χ^2/df ratio

TABLE 3
Unstandardised Regression Coefficients for the Indirect Effects of College Volunteering and Service-Learning Coursework on Well-Being in Adulthood

Independent variable	Dependent variable			
	Personal growth	Environmental mastery	Purpose in life	Life satisfaction
College volunteering	.09*** (.02)	.05** (.02)	.07*** (.02)	.06** (.02)
Service-learning	.12** (.04)	.07* (.03)	.10** (.04)	.08* (.03)
R^2	.20	.04	.09	.23
NNFI	.95	.92	.97	.96
CFI	.97	.96	.99	.98
χ^2/df	1.37	1.60	1.22	1.17

Note: Standard errors in parentheses. NNFI = non-normed fit index; CFI = confirmatory fit index; χ^2/df = ratio of chi-square to degrees of freedom.

* $p < .05$; ** $p < .01$; *** $p < .001$.

(Bentler & Bonett, 1980; Bollen, 1989; Hu & Bentler, 1999). The data fit all of the models quite well. The fit indices were the following: personal growth (NNFI = .95, CFI = .97, $\chi^2/df = 1.37$), environmental mastery (NNFI = .92, CFI = .96, $\chi^2/df = 1.60$), purpose in life (NNFI = .97, CFI = .99, $\chi^2/df = 1.22$), and life satisfaction (NNFI = .96, CFI = .98, $\chi^2/df = 1.17$). Furthermore, the chi-square statistics were nonsignificant for personal growth ($\chi^2 [23] = 31.43$, *ns*), purpose in life ($\chi^2 [16] = 19.54$, *ns*), and life satisfaction ($\chi^2 [39] = 45.72$, *ns*), and only marginally significant for environmental mastery ($\chi^2 [16] = 25.67$, $p = .06$).

The EQS software conducts a significance test for the summative effect of all possible indirect paths leading from one variable to another (Bentler, 2006); this technique was employed to examine the indirect effects of college volunteering and service-learning on the well-being measure. For this analysis, the null hypothesis is that the various indirect paths have no net effect on the outcome, whereas the alternative hypothesis is that there is either a net positive or a net negative effect. As shown in Table 3, significant and positive indirect effects of college volunteering and service-learning on well-being were found for all four models ($ps < .05$). That is, the positive effects of volunteering and service-learning in college were apparent more than a decade after graduation. The complete results for the SEM analysis predicting purpose in life appear in Figure 1. (Note that the paths predicting variables other than the final well-being outcome are substantively identical across the four models; therefore, the full SEM diagrams for the other three models are not shown because they are largely redundant with Figure 1.)

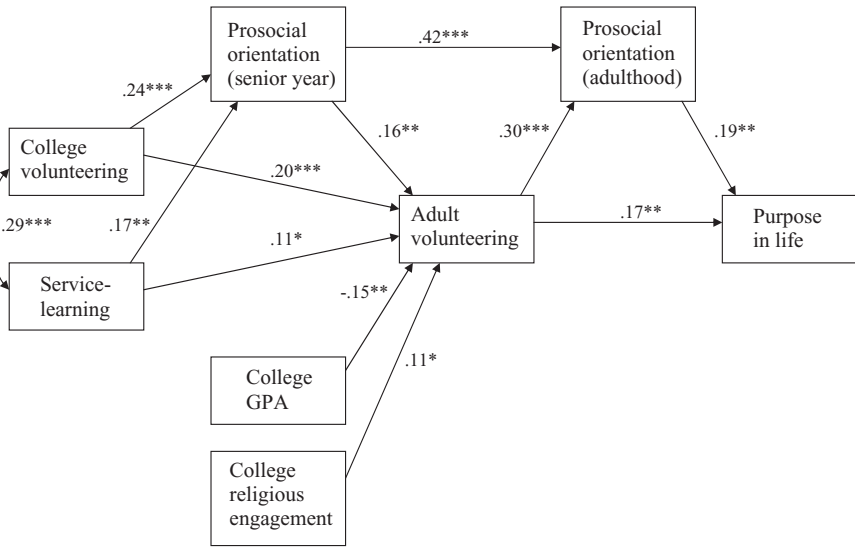


FIGURE 1. Standardised coefficients for structural equation model predicting purpose in life in adulthood.

Note: Disturbances (i.e. error terms) were included for all endogenous variables. To improve readability, disturbances and variances are not shown. * $p < .05$; ** $p < .01$; *** $p < .001$.

As shown in Figure 1, no direct paths between college experiences and adult well-being were included in the models, because no significant relationship was expected. Lagrange multiplier tests showed that the model fit for all four SEM analyses would not be significantly improved by adding direct paths from either college experience to well-being, with the exception of adding a direct path from college volunteering to environmental mastery, $p < .05$. In other words, with one exception, the direct paths would not be significant if added to the current models. Thus, the present models seem to adequately reflect the process through which college community engagement is associated with adult well-being.

GENERAL DISCUSSION

In sum, two separate forms of community engagement during college—time spent volunteering and taking at least one service-learning course—are positively related to well-being 13 years after college graduation. More specifically, these forms of community engagement contribute to future volunteer work and prosocial orientation, both of which are associated with greater

well-being. The indirect effects described here were observed for four different types of well-being: personal growth, environmental mastery, purpose in life, and life satisfaction. In some ways, these findings are quite surprising. As noted earlier, previous studies of “younger” adults (i.e. below 60 years old) have yielded mixed results for the effects of volunteering on well-being (Musick & Wilson, 2003; Van Willigen, 2000), whereas the results here were consistent across several outcomes. The amount of time covered in this longitudinal study is also substantially longer than in most previous research.

However, these findings for young adults are highly consistent with a developmental perspective. Erikson (1946, 1956) argued that early adulthood (i.e. during traditional college age) constitutes a critical stage for social and personal identity development. Over the next several decades, numerous studies illustrated the formative role of college in shaping students’ long-term values and identities (e.g. Alwin, Cohen, & Newcomb, 1991; Colby et al., 2003; Newcomb, Koenig, Flacks, & Warwick, 1967). Similarly, the current study has demonstrated the lasting effects of college experiences with community engagement on attitudes and values (prosocial orientation) and behaviors (volunteering) that are conducive to human flourishing. In contrast, adults in their midlife are likely at a different developmental stage, in which volunteering may not have the same sort of transformative impact.

In public discussions of resource allocation within colleges and universities, activities considered to be outside of the mainstream academic curriculum are often viewed as secondary or tertiary in importance. Simultaneously, the proportion of incoming college freshmen who report that increasing their earning potential was a very important reason for attending college has increased dramatically in the last 30 years (Pryor et al., 2007). In this context, community engagement would seem to be a low priority for both students and institutions. However, many people would be quite excited if colleges and universities could contribute to students developing a sense of purpose and meaning, being more satisfied with their lives, and working to improve society as a whole (Colby et al., 2003). This study has demonstrated that these are some of the long-term consequences of engaging in volunteer work and service-learning courses while in college. Therefore, even in times of financial strain, colleges and universities that utilise institutional resources to promote community engagement are making a solid investment in the well-being of their students. This is only one argument that higher education institutions can and should offer when emphasising the importance of community engagement. Other important outcomes include cognitive growth and attitude change among students (Eyler & Giles, 1999; Youniss & Yates, 1997), not to mention the benefits to local communities and society as a whole.

As an interesting sidenote, college grade point average was negatively associated with adult volunteering. This finding was certainly unexpected, but some explanations (though speculative) may account for this

relationship. For example, college students who graduate with high college GPAs may choose professions that require working long hours, which reduces the amount of time available to help others. In addition, students who have engaged in volunteering and service-learning during college may be more likely to enter occupations that are focused on community engagement. Even within the same job, people who were more academically focused during college may concentrate more on their primary vocational pursuits after graduation. In sum, although some scholars have called for social responsibility to be a central learning outcome of the college experience (e.g. Colby et al., 2003; Sullivan & Rosin, 2008), this finding suggests that academic and community-related pursuits may be competing (rather than complementary) goals for many students and young adults.

Limitations and Future Directions

Some limitations with the current study should be noted. Most importantly, the well-being variables during college were less than ideal proxies for the types of well-being that were gauged during adulthood (though they may be somewhat more useful for life satisfaction and environmental mastery than the other two outcomes). The survey that was administered to seniors in 1994 did not include sophisticated well-being measures, so we cannot conclusively assert that community engagement is associated with changes in well-being. In addition, the items that assessed adult volunteering asked participants to report their volunteering behavior over an extended period of time (i.e. since leaving college). Although this practice has the benefit of gauging long-term trends in volunteering behavior (as opposed to simply the past month), participants' estimates of these long-term behaviors may be more prone to error. In addition, the current sample consisted of graduates from a single religiously affiliated institution with a strong public commitment toward service and community engagement. It is possible that these graduates place a greater importance on community engagement and helping others, on average, than do graduates of other institutions. However, it is not obvious why this sampling would lead to greater differences among people who graduated from such an institution; in fact, the overall importance placed on service could actually reduce differences between students who were relatively more or less engaged with the community during college.

Future research should attempt to replicate the current findings with more heterogeneous samples and superior early measures of well-being. With a larger and more diverse sample, subgroup analyses could be conducted to examine whether and how the effects of community engagement vary across demographic groups (e.g. race, gender, and social class) or by institutional type (e.g. faith-based versus secular). College constitutes just one possible setting in which the benefit of service among young adults may be observed.

Anecdotal evidence suggests that those who participate in national service programs, such as AmeriCorps, find their experiences to be highly meaningful and sometimes even life changing. A systematic, long-term comparison of young people who do and do not participate in these programs could give valuable insight into the impact of these all-encompassing experiences. Given the potential benefits of community engagement for participating individuals and for society, this topic certainly merits further attention.

REFERENCES

- Alwin, D.F., Cohen, R.I., & Newcomb, T.L. (1991). *Political attitudes over the life span*. Madison, WI: University of Wisconsin Press.
- Astin, A.W., & Sax, L.J. (1998). How undergraduates are affected by service participation. *Journal of College Student Development, 39*, 251–263.
- Baron, R.M., & Kenny, D.A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.
- Bentler, P.M. (2006). *EQS program manual*. Encino, CA: Multivariate Software, Inc.
- Bentler, P.M., & Bonett, D.G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588–606.
- Bollen, K.A. (1989). *Structural equation models with latent variables*. New York: Wiley.
- Boss, J.A. (1994). The effect of community service work on the moral development of college ethics students. *Journal of Moral Education, 23*, 183–198.
- Bowman, N.A., Brandenberger, J.W., Hill, P.L., & Lapsley, D.K. (in press). The long-term impact of college diversity experiences: Well-being and social concerns 13 years after graduation. *Journal of College Student Development*.
- Bradley, R.H., & Corwyn, R.F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371–399.
- Brandenberger, J.W. (1998). Developmental psychology and service-learning: A theoretical framework. In R.G. Bringle & D.K. Duffy (Eds.), *With service in mind: Concepts and models for service-learning in psychology* (pp. 68–84). Washington, DC: American Psychological Association.
- Brandenberger, J.W. (2005). College, character, and social responsibility: Moral learning through experience. In D.K. Lapsley & F.C. Power (Eds.), *Character psychology and character education* (pp. 305–334). Notre Dame, IN: University of Notre Dame Press.
- Brehm, J., & Rahn, W. (1997). Individual-level evidence for causes and consequences of social capital. *American Journal of Political Science, 41*, 999–1024.
- Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd edn.). Mahwah, NJ: Lawrence Erlbaum.
- Colby, A., Ehrlich, T., Beaumont, E., & Stephens, J. (2003). *Educating citizens: Preparing America's undergraduates for lives of moral and civic responsibility*. San Francisco, CA: Jossey-Bass.
- Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.

- Diener, E., & Lucas, R.E. (1999). Personality and subjective well-being. In D. Kahnemann, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 213–229). New York: Sage.
- Ehrlich, T. (Ed.) (2000). *Civic responsibility and higher education*. Phoenix, AZ: Oryx Press.
- Erikson, E. (1946). Ego development and historical change. *Psychoanalytic Study of the Child*, 2, 359–396.
- Erikson, E. (1956). The problem of ego identity. *Journal of American Psychoanalytic Association*, 4, 56–121.
- Eyler, J., & Giles, Jr., D.E. (1999). *Where's the learning in service-learning?* San Francisco, CA: Jossey-Bass.
- Fengler, A.P. (1984). Life satisfaction of subpopulations of elderly: The comparative effects of volunteerism, employment, and meal site participation. *Research on Aging*, 6, 189–212.
- Fung, H., Carstensen, L.L., & Lang, F. (2001). Age-related patterns in social networks among European Americans and African Americans: Implications for socioemotional selectivity across the life span. *International Journal on Aging and Human Development*, 52, 185–206.
- Greenfield, E.A., & Marks, N.F. (2004). Formal volunteering as a protective factor for older adults' psychological well-being. *Journal of Gerontology: Social Sciences*, 59B, S258–S264.
- Hao, Y. (2008). Productive activities and psychological well-being among older adults. *Journal of Gerontology: Social Sciences*, 63B, S64–S72.
- Hart, D., Matsuba, M.K., & Atkins, R. (2008). The moral and civic effects of learning to serve. In L. Nucci, & D. Narvaez (Eds.), *Handbook of moral and character education* (pp. 484–499). New York: Routledge.
- Herzog, A.R., & House, J.S. (1991). Productive activities and aging well. *Generations*, 15, 49–54.
- Hill, P.L., Burrow, A.L., Lapsley, D.K., & Brandenberger, J.W. (in press). Purpose orientations and development in emerging and middle adulthood. *Journal of Applied Developmental Psychology*.
- Hu, L.-T., & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Kenny, D.A., Kashy, D.A., & Bolger, N. (1998). Data analysis in social psychology. In D.T. Gilbert, S.T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (Vol. 1, 4th edn., pp. 233–265). New York: McGraw-Hill.
- Keyes, C.L.M., Shmotkin, D., & Ryff, C.D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82, 1007–1022.
- Kline, R.B. (2005). *Principles and practice of structural equation modeling* (2nd edn.). New York: Guilford Press.
- Luoh, M., & Herzog, R.A. (2002). Individual consequences of volunteer and paid work in old age: Health and mortality. *Journal of Health and Social Behavior*, 40, 344–359.
- Mercy, J.A., & Steelman, L.C. (1982). Familial influence on the intellectual attainment of children. *American Sociological Review*, 47, 532–542.

- Midlarsky, E., & Kahana, E. (1994). *Altruism in later life*. Newbury Park, CA: Sage.
- Moen, P. (1995). A life course approach to post-retirement roles and well-being. In L. Bond, S. Cutler, & A. Grams (Eds.), *Promoting successful and productive aging* (pp. 239–256). Thousand Oaks, CA: Sage.
- Moen, P., Dempster-McClain, D., & Williams, R.M. (1992). Successful aging: A life-course perspective on women's multiple roles and health. *American Journal of Sociology*, *97*, 1612–1638.
- Morrow-Howell, N., Hinterlong, J., Rozario, P.A., & Tang, F. (2003). Effects of volunteering on the well-being of older adults. *Journal of Gerontology: Social Sciences*, *58B*, S137–S145.
- Musick, M.A., Herzog, A.R., & House, J.S. (1999). Volunteering and mortality among older adults: Findings from a national sample. *Journal of Gerontology: Social Sciences*, *54B*, S173–S180.
- Musick, M.A., & Wilson, J. (2003). Volunteering and depression: The role of psychological and social resources in different age groups. *Social Science & Medicine*, *56*, 259–269.
- Newcomb, T.L., Koenig, K.E., Flacks, R., & Warwick, D.P. (1967). *Persistence and change: Bennington College and its students after 25 years*. New York: John Wiley and Sons.
- Okun, M.A., & Schultz, A. (2003). Age and motives for volunteering: Testing hypotheses derived from socio-emotional selectivity theory. *Psychology and Aging*, *18*, 231–239.
- Oman, D., Thoresen, C.E., & McMahon, K. (1999). Volunteerism and mortality among the community-dwelling elderly. *Journal of Health Psychology*, *4*, 301–316.
- Piliavin, J.A., & Siegl, E. (2007). Health benefits of volunteering in the Wisconsin Longitudinal Study. *Journal of Health and Social Behavior*, *48*, 450–464.
- Pryor, J.H., Hurtado, S., Saenz, V.B., Santos, J.L., & Korn, W.S. (2007). *The American freshman: Forty year trends*. Los Angeles, CA: Higher Education Research Institute, University of California, Los Angeles.
- Reeb, R.N., Katsuyama, R.M., Sammon, Y.A., & Yoder, D.S. (1998). The Community Service Self-Efficacy Scale: Evidence of reliability, construct validity, and pragmatic utility. *Michigan Journal of Community Service Learning*, *5*, 48–57.
- Ryan, R.M., & Deci, E.L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141–166.
- Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1069–1081.
- Scales, P.C., Benson, P.L., & Mannes, M. (2006). The contribution to adolescent well-being made by nonfamily adults: An examination of developmental assets as contexts and processes. *Journal of Community Psychology*, *34*, 401–413.
- Siebert, S. (1974). Toward a theory of role accumulation. *American Sociological Review*, *39*, 567–578.
- Sullivan, W.M., & Rosin, M.S. (2008). *A new agenda for higher education: Shaping a life of the mind for practice*. San Francisco, CA: Jossey-Bass.

- Van Willigen, M. (2000). Differential benefits of volunteering across the life span. *Journal of Gerontology: Social Sciences*, 55B, S308–S318.
- Waterman, A.S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678–691.
- Windsor, T.D., Anstey, K.J., & Rodgers, B. (2008). Volunteering and psychological well-being among young-old adults: How much is too much? *The Gerontologist*, 48, 59–70.
- Youniss, J., & Yates, M. (1997). *Community service and social responsibility in youth*. Chicago, IL: University of Chicago Press.

APPENDIX

Descriptive Statistics for all Variables

<i>Variable</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
Male	1	2	1.57	.50
Age	1	3	2.16	.44
White	1	2	1.89	.31
Parental income	0	20	14.87	5.16
Mother's education	1	8	5.87	1.67
High school volunteering	0	8	2.45	1.28
College GPA	2	6	4.54	.80
Study abroad	1	2	1.23	.42
Ethnic studies course	1	2	1.23	.42
Women's studies course	1	2	1.26	.44
College religious engagement	1	5	3.53	.96
Time spent in student groups and clubs	1	8	3.21	1.76
College volunteering	1	8	2.39	1.25
Service-learning	0	1	.29	.46
Prosocial purpose in the senior year	1	4	2.54	.59
Predicted volunteering after college	1	2	1.15	.36
Full-time employment	1	2	1.81	.40
Income	1	7	4.74	1.65
Degree attainment	1	7	3.23	2.01
Married	0	1	.81	.39
Number of children	1	4	1.95	1.05
College satisfaction	2	5	4.46	.64
Ill-being in college	1	3	1.83	.42
Adult religious engagement	1	6	3.13	1.05
Adult volunteering	1	3.54	1.94	.48
Prosocial orientation in adulthood	1	4	2.56	.55
Personal growth	3.07	6	5.08	.60
Environmental mastery	2.5	6	4.50	.69
Purpose in life	1.93	6	4.91	.71
Life satisfaction	1.2	7	5.39	1.11

Note: Continuous variables were subsequently standardised for inclusion in multiple regression and structural equation modeling analyses.