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Prosocial growth during college: Results of a national study

Jay W. Brandenberger^a and Nicholas A. Bowman^b

^aUniversity of Notre Dame, USA; ^bBowling Green State University, USA

Ethical growth and prosocial development are increasingly salient learning outcomes in higher education. Previous research has shown that the traditional college years facilitate moral development, especially with respect to moral reasoning. This research examined the impact of college experiences on students' sense of active responsibility for others—prosocial orientation—via a longitudinal, multi-institutional design through the Spirituality and Higher Education project at University of California, Los Angeles. Data from over 14,000 undergraduates show that key college experiences predict growth on prosocial outcomes. Especially salient predictors include active forms of learning, engagement with diversity and other means by which students encounter multiple perspectives. Implications for higher education are discussed.

Keywords: prosocial orientation, ethical development, higher education, college students, student outcomes, moral responsibility

The traditional college years are important from both developmental and public perspectives. Youth encounter the moral challenges of a complex world and are expected to navigate new ethical landscapes while preparing for positions of social responsibility. Although we know that moral development is a consistent outcome of higher education (King & Mayhew, 2002), most research to date has focused on moral *reasoning* (using measures such as the Defining Issues Test [Rest, Narvaez, Bebeau & Thoma, 1999]). Although a focus on rationality is natural within the academy, the field has moved beyond analyses of reasoning, and colleges and universities increasingly expect students to engage with the world responsibly and build prosocial *skills* (Brandenberger, 2005; Schneider & Hersh, 2005). Moreover, limited research has examined holistically—across college

Jay W. Brandenberger, Center for Social Concerns, University of Notre Dame, USA; Nicholas A. Bowman, Department of Higher Education and Student Affairs, Bowling Green State University, USA.

Correspondence concerning this article should be addressed to Jay Brandenberger, Center for Social Concerns, University of Notre Dame, Notre Dame, IN 46556, USA. Email: jbranden@nd.edu

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contexts—how commitment to prosocial goals unfolds developmentally during the college years. This study addresses such gaps while presenting data from a multi-institutional, longitudinal study.

Development during college: a broadening ethical sphere

Theory and research on moral and ethical development present a framework to examine students' prosocial orientation and change during college. For most students, the college years are a time for consolidating the cognitive and social gains of earlier development (Parks, 1986). Increasing abilities to think formally and abstractly provide a (sometimes heady) basis for exploring social and ethical challenges from the wider perspectives encountered in higher education. While some may believe that moral development is relatively fixed by college entry, research summarized by King and Mayhew (2002, 2004) and Pascarella and Terenzini (2005) indicates substantial development in moral reasoning over the college years. However, moral habits, emotions, conceptions of self, and the ability to regulate cognitive processes also play key roles in ethical responding (see for example Pascarella & Terenzini, 2005), and there is still much to be learned with respect to college environments that best foster moral development and related growth. Toward that end, Colby, Ehrlich, Beaumont, and Stephens (2003) provide a thorough analysis of both moral and civic responsibility during higher education. They emphasize that these constructs—both built on intellectual development—are intertwined conceptually and in practice.

Examining the links between moral and civic responsibility is instructive and extends the conception of the moral beyond private notions of personal conduct (Was an individual honest or fair?) to social responsibility (What is one's obligation to work for the common good?). Some have argued that conceptions of the *moral* need to be understood more fully in public terms (Berman, 1997; Brandenberger, 2005; Fowler, 1992). Such distinctions have implications not only for research but for practice in higher education: faculty and staff may be hesitant to prescribe or promote personal moralities but see a role in fostering social awareness and responsibility.

A longitudinal study by Astin (1993) provides an early view of college students' sense of social responsibility. He found that students who resonated with life goals related to helping, community action and influencing political structures were more likely to be majoring in social sciences, education, theology and similar fields, and were disproportionately of minority ethnic/racial status. College experiences that predicted higher scores on a measure of *social activism* included more frequent peer interactions, student-faculty interactions, diversity experiences and volunteer work.

Prosocial orientation

Theory and research regarding prosocial orientation provide a framework—one that augments moral development theory—for understanding efforts to promote

the public or common good. The term *prosocial* is defined broadly, with reference to voluntary commitment—either cognitive or behavioral—to the welfare of other persons or groups (Eisenberg, Cumberland, Guthrie, Murphy, & Shepard, 2005). Penner and Finkelstein (1998, p. 526) explain ‘prosocial personality orientation’ as ‘an enduring tendency to think about the welfare and rights of other people, to feel concern and empathy for them, and to act in a way that benefits them’. Related terms include compassion, caring, altruism and social responsibility. Such constructs are moral in nature and mirror the type of ideals put forward in college mission statements.

Research on prosocial orientation has examined both contextual and personality factors that may predict positive outcomes (see Hay, 1994 for an early review). Genetic factors and gender differences have been identified, while peer influences may also play a considerable role in prosocial orientation (Gregory, Light-Häusermann, Rijdsdijk, & Eley, 2009). Developmentally, enhanced prosocial functioning seems to be built, in part, on cognitive maturation through, for example, enhanced understanding of reciprocity (Eisenberg, Carlo, Murphy, & van Court, 1995) and perspective-taking abilities (Eisenberg et al., 2005). Although prosocial tendencies generally increase with age, individual differences are somewhat persistent over time (i.e. people who are relatively more prosocial than others tend to stay that way; Eisenberg et al., 2005).

Limited research has examined prosocial *development* specifically during the college years, though many have used college samples to explore constructs such as altruism and caring (Randall & Wenner, 2014). Research on empathy, for example, by Myyry and Helkama (2001) indicates that gender and college major may play a role in predicting prosocial orientation among students. A study by White, Fleming, Kim, Catalano, and McMorris (2008) suggests that prosocial engagement during college may facilitate lower rates of alcohol use.

Various higher education studies have examined prosocial and civic attributes using elements on the Cooperative Institutional Research Program (CIRP) Freshman and Senior Surveys. Items include the importance placed on participating in a community service program and helping others who are in difficulty. Previous studies have provided several different names to describe this construct, including ‘prosocial orientation’ (Bowman, Brandenberger, Lapsley, Hill, & Quaranto, 2010), ‘importance of social action engagement’ (Nelson Laird, Engberg, & Hurtado, 2005), ‘social agency’ (Nelson Laird, 2005), ‘commitment to activism’ (Vogelgesang, 2001), ‘civic engagement’ (Herrmann, 2005), and ‘citizenship engagement’ (Gurin, Dey, Hurtado, & Gurin, 2002).

The existing literature has identified several significant predictors of gains on such measures of prosocial orientation. For instance, participation in service-learning and college volunteering were positively associated not only with increased prosocial orientation during the college years (see for example Astin, Vogelgesang, Ikeda, & Yee, 2000; Sax, 2000; Vogelgesang & Astin, 2000), but also with prosocial orientation and volunteering well after graduation (Bowman et al., 2010; Yamamura & Denson, 2005). Interpersonal interactions and curricular/

cocurricular engagement with diversity were consistently associated with increases in prosocial orientation and related constructs (for a meta-analytic review, see Bowman, 2011).

In contrast, the evidence in relation to undergraduate major is mixed. Sax (2000) found that engineering majors had reduced prosocial orientation relative to other majors, but Knox, Lindsay, and Kolb (1993) found no direct effect of major. Furthermore, taking courses that examine diversity-related issues (which are often housed within the social sciences) is associated with diminished racial bias and improved attitudes toward social justice (Astin, 1993; for systematic reviews see Denson, 2009; and Engberg, 2004).

Institutional characteristics may also impact prosocial orientation. A meta-analysis by McNeel (1994; see also Pascarella & Terenzini, 2005) examined gains over time on the Defining Issues Test, a measure of principled moral reasoning, across three types of institutions. Results show greater gains among students at liberal arts colleges (even though their pretest scores were higher), followed by those at public universities, with lower gains associated with students at Bible colleges. In other research, attending a religiously affiliated institution (relative to a non-sectarian institution) was associated with increases in prosocial orientation (Astin et al., 2000; Rhee & Dey, 1996). However, some of the most commonly studied institutional attributes, including selectivity, size and type, are often unrelated or weakly related to prosocial orientation (Astin, 1993; Padgett, 2011).

Many students come to college expecting to find a sense of purpose during their studies (Astin, Astin, & Lindholm, 2011b). Research by Hill, Burrow, Brandenberger, Lapsley, and Quaranto (2010) explored students' sense of prosocial purpose during the undergraduate years and beyond. Using large scale data from three time points—college entry, graduation and 13 years after college—they documented four distinct purpose orientations: creative, financial, prosocial and personal recognition. While each of the purpose orientations was modestly predictive of perceived personal development during college, prosocial purpose was an especially salient predictor of positive outcomes in early/mid-adulthood. A prosocial orientation at graduation was the only salient predictor on measures of generativity, personal growth, purpose in life and integrity 13 years later. A related study (Bowman et al., 2010) found that participating in service-learning courses (i.e. courses that integrated service with academic content) predicted greater prosocial orientation in the senior year of college, which in turn was positively related to engagement and well-being in mid-adulthood. These studies indicate that a sense of prosocial purpose may play an important role not only in engaging students in efforts to improve the world around them, but in enhancing their own development and long-term well-being.

While the research described above has demonstrated the effects of several college experiences on prosocial attitudes and values, little is known about whether and how college experiences contribute to prosocial self-perceptions and, importantly, prosocial behavior. We believe that having a prosocial orientation not only predicts support for actions/policies that help others, but also has important

implications for personal development. Reciprocally, we argue that ongoing prosocial engagement is a primary source for the development of prosocial orientations: we do not learn to care simply via inherited precepts and logical arguments. Research needs to account for the interaction between orientation and behavior in context: what is taking place in students developmentally? Do students sort themselves by college or major according to prosocial orientation? How do multiple experiences serve to reinforce or dampen prosocial growth? To examine such questions, researchers need to use longitudinal methods, examine development in broad contexts at multiple levels, and use large-scale studies that can control for institutional effects (King & Mayhew, 2004).

Accordingly, this study utilizes a unique data set that includes indicators (described below) corresponding to three aspects of prosocial orientation: behaviors, attitudes and self-perceptions. Research on ethical development in college has often been limited to single-institutional designs and narrow samples. Those studies that were multi-institutional have generally used multiple regression analyses, which can lead to incorrect estimates of the relationship between independent and dependent variables (Raudenbush & Bryk, 2002). Instead, this study employs a pre–post design with an extensive sample, and applies hierarchical linear modeling to appropriately disentangle the effects of various student and institutional predictors. In short, this study explores the following general research question: to what extent do student demographics, college experiences and institutional characteristics predict changes in prosocial orientation during college?

Method

Data source and participants

Data from the Spirituality in Higher Education project—conducted by the Higher Education Research Institute (HERI) and sponsored by the Templeton Foundation—were used for this study. HERI is based at the University of California, Los Angeles, United States (US), and is the home of the CIRP, which seeks to understand the entering characteristics, experiences and outcomes of college students. CIRP has administered surveys since 1973; it is the largest and oldest empirical study of higher education (Higher Education Research Institute, 2014). Some CIRP surveys are conducted annually (most notably, the Freshman Survey and College Senior Survey), while some special surveys are also conducted. In autumn 2004, an expanded version of the CIRP Freshman Survey was administered to 112,232 entering first-year students. Along with the regular CIRP items, this survey contained numerous items regarding students' attitudes, beliefs and behaviors pertaining to spirituality, religion and (most relevant to the present study) prosocial orientation. In spring 2007, a subset of the original sample was invited to complete a follow-up survey. A total of 36,703 students were eligible for the second wave of data collection. Of these students, 14,527 participants from 136 institutions responded to the follow-up survey, yielding a response rate of

40%. Depending upon the campus, either paper or online surveys were administered. The institutions were diverse in terms of their religious affiliation: 41 were non-sectarian, 39 were evangelical Christian, 34 were Catholic and 22 were other Christian. A weighting algorithm was employed to make the data more representative of first-year students at four-year US American colleges and universities (as with many surveys within and outside of higher education, women and Whites/Caucasians were overrepresented among respondents). In the weighted sample, 55% of participants were female, 9.4% were Asian/Pacific Islander, 6.5% were Latino/Hispanic, 5.3% were Black/African American, 2.2% were American Indian/Alaskan Native, 3.8% were from another racial/ethnic group, and 2.1% were non-traditional age (defined as being 21 or older on December 31 of their first year in college).

Measures

Three prosocial measures drawn from the larger HERI study were used as dependent variables in the analyses (for detailed descriptions see Astin, Astin, & Lindholm, 2011a). *Charitable involvement* is a seven-item index (Cronbach's alpha = .71) that indicates the frequency of prosocial behaviors, such as 'donat[ing] money to charity' and 'perform[ing] volunteer work'. These items generally used a three-point response scale (1 = not at all, to 3 = frequently). *Ethic of caring* reflects students' prosocial attitudes and values, such as the importance placed on 'helping others who are in difficulty' and 'becoming a community leader'; this construct was measured with an eight-item index ($\alpha = .82$). This perceived importance was rated on a four-point scale (1 = not important, to 4 = essential). *Compassionate self-concept* consists of four items ($\alpha = .78$) regarding students' self-perceptions of their prosocial attributes: 'compassion', 'kindness', 'forgiveness' and 'generosity'. Students were asked to rate themselves relative to people of a similar age (1 = lowest 10%, to 5 = highest 10%). The correlations among these three outcomes differed considerably, ranging from $r = .20$ between compassionate self-concept and charitable involvement, to $r = .51$ between ethic of caring and charitable involvement (in addition, $r = .28$ between compassionate self-concept and ethic of caring).

Several precollege variables were used, including gender (0 = male, 1 = female), age (1 = 16 or younger, to 10 = 55 or older), and parental education (mean of mother's and father's education; 1 = grammar school or less, to 8 = graduate degree). Because high school grade point average (HSGPA) was strongly skewed, dummy-coded variables were created for students who reported a 'B' average (B- to B+) and a 'C' average or less (C+ or lower); students with an 'A' average (A- to A+) served as the referent group (throughout this study, when measuring constructs with multiple dummy variables, the numerically largest category was used as the referent group). Several dichotomous variables were also used to indicate race/ethnicity: African American/Black; American Indian/Alaska Native; Asian American/Asian and Native Hawaiian/Pacific Islander (a combination of two

categories from the CIRP survey), Mexican American/Chicano, Puerto Rican and Other Latino (combination of three CIRP categories), and Other. White/Caucasian served as the referent group. The pretest values of charitable involvement ($\alpha = .67$), ethic of caring ($\alpha = .82$) and compassionate self-concept ($\alpha = .78$) at the beginning of the first year were used so that the corresponding coefficients would represent changes in these constructs during college.

Undergraduate major was measured with a series of dummy-coded variables: arts/humanities, natural sciences, engineering/technology, business, professional majors (e.g. education, nursing) and other majors (i.e. 'other field' or 'undecided'). Social sciences (e.g. psychology, anthropology) served as the referent group. Several college experiences were also included. Participating in a study abroad program was gaged with a dichotomous variable (1 = yes, 0 = no). The frequency of socializing with someone from a different racial group and performing community service as part of a class (i.e. service-learning) were each gaged with a three-point scale (1 = not at all, to 3 = frequently). The number of hours per week students spent socializing with friends and participating in student clubs/groups was also included (for both items, 1 = none, to 8 = more than 20 hours). Engaged classroom learning was gaged with an eight-item index ($\alpha = .78$); this measure indicated the proportion of courses taken that involved cooperative learning, class discussions and other active learning practices (1 = none, to 4 = all). Personal faculty interactions were measured with four items ($\alpha = .77$), such as 'assisted you in your career decisions' and 'taken an interest in your personal welfare' (1 = not at all, to 3 = frequently). Religious engagement represented the frequency with which students attended a religious service, read sacred texts and/or engaged in prayer/meditation (measured using a nine-item index with multiple response scales, $\alpha = .88$).

Institution-level variables were also included. Institutional religious affiliation was indicated with a dichotomous variable representing Catholic colleges and another representing other religious (non-Catholic) college. Non-sectarian colleges served as the institutional referent group. In addition, institutional selectivity was measured by the average SAT score of incoming students. Descriptive statistics for all variables are presented in the [Appendix](#). Charitable involvement and compassionate self-concept both decreased slightly during college (Cohen's d s = $-.12$ and $-.11$, respectively), whereas ethic of caring increased during college ($d = .35$).

All continuous independent and dependent variables were then standardized with a mean of zero and a standard deviation of one for inclusion in the analyses. Because the independent and dependent variables were both standardized, unstandardized regression coefficients for continuous variables are analogous to standardized coefficients, so the magnitude of effects across these variables can be compared.

Analyses

Because the current sample contained students nested within institutions, hierarchical linear modeling (HLM) analyses were used. The nesting of students within institutions violates a key assumption of ordinary least squares multiple regression;

HLM accounts for this issue by partitioning the variance within groups and between groups and adjusting standard errors accordingly. Four HLM models were examined for each prosocial outcome. Independent variables in Model 1 contained gender, age, race/ethnicity, parental education, HSGPA, the initial value of the dependent variable at level 1; Catholic institution, non-Catholic religious institution and institutional selectivity were modeled at level 2. This initial model explored the relationships for these variables without any college experiences that might serve as mediators. Two subsequent models added different sets of college experiences since any potential effect of academic major (which was added in Model 2) may be explained by students' experiences with specific pedagogical practices or curricular/cocurricular involvement (which were added in Model 3). Finally, Model 4 included all independent variables used in Models 2 and 3 so as to further explore these relationships in a fully identified model. Service-learning was not included in the analyses predicting charitable involvement, because service-learning experience is contained as part of the charitable involvement scale. Despite the large number of predictors in Model 4, preliminary regression analyses showed that the variance inflation factors for all independent variables were less than 1.7, which suggests that multicollinearity was not a problem. In the HLM analyses, continuous variables were grand-mean centered, and dichotomous variables were uncentered. We chose not to center the dichotomous variables so that the intercept would represent prosocial outcomes for the referent groups (e.g. social science majors).

Preliminary analyses showed that a non-trivial proportion of variance in the dependent variables occurred between colleges and universities. The interclass correlation coefficients (ICCs) for charitable involvement, ethic of caring and compassionate self-concept were 10.5%, 5.2% and 1.1% respectively. Although the ICC for compassionate self-concept was low, significant differences across institutions were observed for all three dependent variables, $p < .0001$, which further suggests the importance of accounting for this between-institution variation through multilevel analyses.

Results

The results for HLM analyses predicting growth in charitable involvement are shown in Table 1. Attending a non-Catholic religious college was associated with greater gains in charitable involvement than attending a non-sectarian college, but these effects were much smaller when college experiences were included in Models 3 and 4. Institutional selectivity was positively associated with gains in charitable involvement in Model 1, whereas this pattern was non-significant in the other models. In addition, female students showed greater gains in charitable involvement than male students, and black students had greater gains than white students in Models 1 and 2. No other student background characteristics were significant predictors. Relative to majoring in the social sciences, majoring in most other fields was associated with smaller gains in charitable involvement, with a particularly

Table 1. Unstandardized coefficients for hierarchical linear modeling analyses predicting **charitable involvement** in the junior year

| Predictor | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---------------|----------------|---------------|----------------|
| Catholic college | .146 (.066) | .130 (.068) | .064 (.043) | .056 (.045) |
| Non-Catholic religious college | .389** (.058) | .368** (.061) | .139* (.049) | .128* (.048) |
| Institutional selectivity | .112* (.041) | .122 (.052) | .062 (.028) | .071 (.036) |
| Female | .289** (.046) | .225** (.050) | .254** (.038) | .202** (.039) |
| Age | .025 (.016) | .020 (.020) | .046 (.021) | .040 (.023) |
| Black/African American | .325* (.114) | .304* (.099) | .269 (.108) | .241 (.096) |
| American Indian/Native American | -.078 (.106) | -.036 (.084) | -.158 (.116) | -.110 (.091) |
| Latino/Chicano | .148 (.079) | .118 (.056) | .117 (.069) | .090 (.063) |
| Asian American/Pacific Islander | .115 (.058) | .117 (.056) | .095 (.052) | .087 (.050) |
| Other racial/ethnic group | -.008 (.069) | -.022 (.066) | -.001 (.080) | -.010 (.071) |
| Parental education | -.009 (.017) | -.015 (.017) | -.014 (.015) | -.020 (.014) |
| C average high school grade point average | -.136 (.091) | -.146 (.085) | -.053 (.116) | -.057 (.117) |
| B average high school grade point average | -.003 (.062) | -.022 (.055) | .016 (.053) | .002 (.047) |
| Arts/humanities major | | -.190* (.056) | | -.202** (.047) |
| Natural sciences major | | -.126* (.043) | | -.078 (.048) |
| Engineering/technology major | | -.497** (.060) | | -.415** (.056) |
| Business major | | -.241** (.045) | | -.220** (.044) |
| Other professional major | | -.210 (.084) | | -.188* (.057) |
| Other major | | -.292 (.136) | | -.154 (.178) |
| Study abroad | | | .100** (.024) | .096** (.023) |
| Cross-racial interaction | | | .076** (.009) | .071** (.009) |
| Socializing with friends | | | .020 (.014) | .022 (.015) |
| Student clubs/groups | | | .218** (.023) | .216** (.021) |
| Engaged learning | | | .076* (.023) | .080* (.025) |
| Personal faculty interactions | | | .104** (.022) | .093** (.021) |
| Religious engagement | | | .168** (.025) | .170** (.026) |
| Charitable involvement in first year | .397** (.014) | .392** (.013) | .285** (.016) | .283** (.014) |

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

Standard errors are given in parentheses.

strong negative relationship for engineering/technology majors. These patterns were generally similar in Model 2 (which contains only background and institutional characteristics) and Model 4 (which adds college experiences). Numerous college experiences were associated with gains in charitable involvement, including study abroad, cross-racial interaction, participation in student clubs/groups, engaged learning, personal faculty interactions and religious engagement. Time spent socializing was not a significant predictor.

Table 2 displays the results for ethic of caring. Attending a non-Catholic religious college was positively associated with ethic of caring in Models 1 and 2, but negatively associated with this outcome in Models 3 and 4 (when college

Table 2. Unstandardized coefficients for hierarchical linear modeling analyses predicting **ethic of caring** in the junior year

| Predictor | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---------------|----------------|---------------|----------------|
| Catholic college | .092 (.050) | .072 (.048) | -.012 (.034) | -.017 (.034) |
| Non-Catholic religious college | .139** (.035) | .114* (.033) | -.085* (.030) | -.094* (.031) |
| Institutional selectivity | -.004 (.017) | .001 (.012) | -.022 (.015) | -.015 (.013) |
| Female | .045 (.027) | -.018 (.033) | -.025 (.029) | -.074 (.034) |
| Age | .039 (.017) | .038 (.014) | .042 (.017) | .040 (.015) |
| Black/African American | .116 (.079) | .113 (.080) | .012 (.066) | -.006 (.065) |
| American Indian/Native American | -.149 (.095) | -.115 (.085) | -.108 (.102) | -.076 (.099) |
| Latino/Chicano | .101 (.096) | .065 (.094) | .044 (.094) | .012 (.090) |
| Asian American/Pacific Islander | .032 (.049) | .032 (.046) | .031 (.047) | .025 (.048) |
| Other racial/ethnic group | .017 (.133) | .024 (.135) | .120 (.162) | .133 (.165) |
| Parental education | .012 (.017) | .005 (.016) | .010 (.017) | .003 (.015) |
| C average high school grade point average | -.129 (.163) | -.136 (.159) | -.040 (.194) | -.041 (.185) |
| B average high school grade point average | -.022 (.028) | -.040 (.028) | .020 (.026) | .004 (.026) |
| Arts/humanities major | | -.117 (.050) | | -.156* (.044) |
| Natural sciences major | | -.154* (.049) | | -.126* (.036) |
| Engineering/technology major | | -.445** (.037) | | -.379** (.032) |
| Business major | | -.251* (.070) | | -.222* (.084) |
| Other professional major | | -.151* (.057) | | -.166* (.058) |
| Other major | | -.320* (.088) | | -.171 (.078) |
| Study abroad | | | .156** (.028) | .143** (.027) |
| Cross-racial interaction | | | .117** (.021) | .112** (.019) |
| Service-learning | | | .077* (.026) | .069* (.026) |
| Socializing with friends | | | -.049* (.018) | -.049* (.016) |
| Student clubs/groups | | | .041 (.029) | .042 (.026) |
| Engaged learning | | | .053* (.016) | .058* (.017) |
| Personal faculty interactions | | | .113** (.014) | .104** (.015) |
| Religious engagement | | | .097** (.013) | .099** (.014) |
| Ethic of caring in first year | .506** (.017) | .490** (.017) | .440** (.017) | .427** (.018) |

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

Standard errors are given in parentheses.

experiences are included). No student background characteristics were significantly related to ethic of caring. Once again, majoring in a non-social science discipline was negatively associated with ethic of caring, and these patterns were generally similar in Models 2 and 4. Moreover, interactions with difference (i.e. study abroad, cross-racial interaction and service-learning) significantly predicted gains in ethic of caring, as did personal faculty interactions, engaged learning and religious engagement. Time spent socializing was negatively related to ethic of caring, whereas participation in student clubs/groups was not significant.

Very few independent variables significantly predicted changes in the third outcome: compassionate self-concept. As shown in Table 3, cross-racial interaction,

Table 3. Unstandardized coefficients for hierarchical linear modeling analyses predicting **compassionate self-concept** in junior year

| Predictor | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---------------|---------------|---------------|---------------|
| Catholic college | .008 (.038) | -.012 (.036) | -.027 (.031) | -.039 (.031) |
| Non-Catholic religious college | -.011 (.041) | -.023 (.042) | -.123 (.048) | -.123 (.051) |
| Institutional selectivity | -.023 (.013) | -.009 (.016) | -.018 (.018) | -.007 (.022) |
| Female | -.055 (.036) | -.080 (.042) | -.078 (.040) | -.098 (.046) |
| Age | -.009 (.023) | -.006 (.020) | -.012 (.020) | -.011 (.017) |
| Black/African American | .077 (.094) | .100 (.072) | .019 (.090) | .037 (.071) |
| American Indian/Native American | .007 (.107) | .016 (.093) | -.102 (.091) | -.086 (.093) |
| Latino/Chicano | .077 (.063) | .082 (.057) | .067 (.061) | .072 (.057) |
| Asian American/Pacific Islander | .057 (.073) | .057 (.069) | .060 (.068) | .060 (.064) |
| Other racial/ethnic group | .208 (.132) | .201 (.120) | .257 (.159) | .246 (.143) |
| Parental education | -.014 (.049) | -.014 (.048) | -.008 (.046) | -.008 (.044) |
| C average high school grade point average | .071 (.112) | .044 (.106) | .135 (.129) | .111 (.120) |
| B average high school grade point average | .031 (.043) | .020 (.040) | .031 (.040) | .023 (.036) |
| Arts/humanities major | | -.091 (.040) | | -.106 (.042) |
| Natural sciences major | | -.055 (.035) | | -.050 (.040) |
| Engineering/technology major | | -.139 (.055) | | -.111 (.047) |
| Business major | | .050 (.033) | | .042 (.030) |
| Other professional major | | .094 (.067) | | .083 (.070) |
| Other major | | -.212 (.124) | | -.191 (.128) |
| Study abroad | | | -.025 (.032) | -.014 (.033) |
| Cross-racial interaction | | | .060** (.014) | .063** (.013) |
| Service-learning | | | .003 (.017) | -.002 (.016) |
| Socializing with friends | | | .006 (.015) | -.002 (.016) |
| Student clubs/groups | | | -.018 (.015) | -.016 (.013) |
| Engaged learning | | | .046* (.015) | .040* (.015) |
| Personal faculty interactions | | | .020 (.015) | .017 (.016) |
| Religious engagement | | | .108** (.012) | .105** (.010) |
| Compassionate self-concept in first year | .458** (.017) | .455** (.017) | .441** (.018) | .439** (.018) |

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

Standard errors are given in parentheses.

engaged learning and religious engagement were all positively related to this outcome; the only other significant predictor was compassionate self-concept at the beginning of the freshman year.

Discussion

This study examined the impact of precollege, institutional and college experience variables on prosocial outcomes in a national study of undergraduates (followed from college entry through junior year). Precollege variables, overall, were less

salient predictors: age, parental education and HSGPA were not associated with long-term gains, although female and black students showed increases on the measure of charitable involvement. Institutional characteristics and college experiences were more frequent predictors of prosocial outcomes. The fact that religious engagement during college was also a salient predictor may explain, in part, why students attending colleges classified as religious showed greater gains on two of the three prosocial variables. Students who majored in the social sciences showed a pattern of high prosocial outcomes compared with students from other identified majors. Such a result is not surprising since social science students may often be exposed to social and public issues within their coursework.

Perhaps the most salient and promising findings pertain to elements of the college experience that are broad-based and accessible to diverse student populations. We found that student participation in several key experiences was consistent with what have been labeled *high-impact practices* in higher education (Brownell & Swaner, 2010; Kuh, 2008) predicted prosocial growth. That is to say, students who studied abroad, participated more frequently in active forms of learning, engaged in cross-race discussions, interacted with faculty more frequently and participated in service-learning showed higher levels of prosocial orientation (on two or more of the outcomes) by their junior year in college (see Figure 1 for a summary of salient findings for college experiences predicting prosocial outcomes). This is good news: prosocial outcomes are not dependent on narrow ethics initiatives, but seem to parallel, at least in part, research-based effective practices for a wide range of students. High-impact practices (others that have been identified include writing intensive courses, learning communities and undergraduate research) enhance student involvement and have the potential to ‘elevate their performance across multiple’ domains and enhance ‘deep learning’ (Kuh, 2008, p. 14). Our findings (see Figure 1) parallel those summarized by King and Mayhew (2004, p. 104) regarding the broad impacts of college experiences on the development of moral reasoning: ‘It appears that the effectiveness of these interventions in promoting moral reasoning is not solely due to the content of the

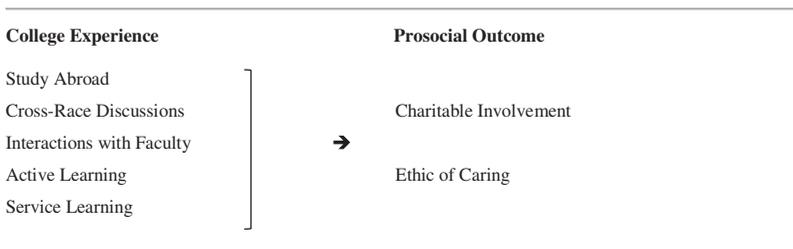


Figure 1. Salient findings: college experiences predicting prosocial outcomes
Note. Each college experience listed was associated with the noted prosocial outcomes at the $p < .01$ level or better. See text and Tables 1 to 3 for details.

courses; rather, it appears to be determined by the pedagogical strategies used within these courses, such as encouraging students to reflect, ... to wrestle with diverse perspectives, and to participate as agents in their learning experiences’.

Social capital theory may provide a related explanation of our findings that study abroad, service-learning, diversity interactions and active learning experiences predict prosocial outcomes. Putnam (2000) and Padgett (2011) emphasize the role of social capital—especially forms that engage persons in new social groups—in fostering altruism. Higher education is uniquely situated to engage students in novel social contexts of reciprocity, providing opportunities to experience new world views and care for those they come to know. Such interactions—sustained in a context of reflection—may provide the cognitive challenge and social support necessary for ethical and prosocial development. Consistent with such a view, studies suggest that education is one of the strongest predictors of altruism (Padgett, 2011; Putnam, 2000).

Musil (2009) has argued that there are currently three important reform elements in higher education: *diversity*, *global learning*, and *civic engagement*. She suggests that these present means to promote personal and social responsibility, for each involves a movement ‘from the self, to others, and finally to cooperating with others for a larger public good’ (Musil, 2009, p. 57). Similarly, the salient predictors of prosocial orientation in our study—faculty interaction, active forms of learning, study abroad, interaction with diversity and service learning—all involve engagement and perspective-taking. Such active interactions are fundamental to the constructive processes necessary to promote social and ethical development. Constructivist theories, and cognitive developmental theory in particular, emphasize that ethical development occurs through social interaction: individuals make meaning through engaging moral challenges that higher education can foster (Brandenberger, 1998). Our findings reinforce Musil’s claim that pedagogies that build on reciprocal perspective-taking have the potential to enhance prosocial development. Our results also have implications for general moral education during college. A focus on prosocial concerns can complement exploration of private or personal elements of morality (e.g. empathy, honesty), extending awareness to the public good, even collective responsibility (topics germane to higher education).

This study has certain limitations that should be noted. Firstly, many of the measures are based on college student self-reports, which are potentially subject to bias. Secondly, the large sample size can yield statistically significant outcomes for small relationships; therefore, as noted earlier, we standardized all continuous variables so that readers can discern the practical significance of these relationships. Thirdly, this large-scale survey demonstrates changes over time, but it does not lend itself to examination of developmental processes that may underpin such change. A recent publication by Padilla-Walker and Carlo (2014) provides grounding for further examination of prosocial *development*.

Of the three outcome variables in our study—charitable involvement, ethic of caring and compassionate self-concept—we found few predictors of the latter. The relationship between the pretest and posttest for compassionate self-concept was

similar to that for ethic of caring, so it does not appear that this self-concept is more resistant to change than the other outcomes in this study. However, participants' self-reports of compassionate self-concept may be suspect. Each item within this measure was indicated relative to people of the same age, ranging from 'lowest 10%' to 'highest 10%'. If participants were accurate in these self-assessments, then the average response would be close to 'average' (assuming that participants in this sample are not substantially more or less compassionate than others in their age group). However, for all four items that comprise this scale, participants generally rate themselves well above average in both the freshman and junior years (Astin et al., 2011a). Therefore, it seems reasonable to emphasize that research into ethical and prosocial attributes should focus on specific behaviors, values and attitudes in addition to well-developed measures of self-perception.

Our findings suggest that multiple experiences at various levels within higher education contribute to prosocial development. This should serve both as a comfort and a challenge to practitioners: students do not have to be female social science majors at religious institutions to develop prosocially. Rather, educators need to be intentional with respect to prosocial opportunities, building questions of personal and social responsibility into the classroom and curriculum. With this end in mind, research-based educational practices offered by the Association of American Colleges and Universities (O'Neill, 2012), and a newly developed assessment index—the Personal and Social Responsibility Inventory—are instructive.

This study may prove instructive for those leading national efforts to promote civic responsibility in college: see *A Crucible Moment: College Learning and Democracy's Future* by The National Task Force on Civic Learning and Democratic Engagement (2012). Research by Hurtado, Ruiz, and Whang (2012) presents a relevant framework for such efforts. These authors argue, consistent with the results of our study, 'that there is a link between habits associated with student learning and civic learning outcomes. ... More complex social problems will require cognitive development [and] the acquisition of socio-cognitive skills to identify and negotiate solutions in a diverse democracy' (Hurtado, Ruiz, & Whang, 2012, p. 25).

Accordingly, further research should address how college experiences *interact* to promote optimal prosocial orientation, and what developmental processes are engaged throughout. Eisenberg et al. (2002) suggest, for example, that the relationship between moral reasoning and prosocial behavior, especially in young adulthood, warrants special attention; they posit that as young people mature, 'the motives and values reflected in individuals' moral judgment increasingly become a component of their prosocial dispositions (or lack thereof)' (Eisenberg et al., 2002, p. 1004). Another fruitful line of research may be an examination of how individual differences in moral emotions, empathy and temperament factor into prosocial development in the context of higher education. Finally, the integrative construct of *purpose* seems worthy of focused study. The college years provide a salient opportunity for goal setting (Hill, Jackson, Roberts, Lapsley, & Brandenberger, 2011). Because an active sense of prosocial purpose (distinct from less moral/social forms of purpose) developed during the college years can have a

lasting impact on adult well-being, personal growth, engagement and generativity (Bowman et al., 2010; Hill et al., 2010), research should examine how prosocial purpose may be enhanced and sustained through early adulthood and beyond.

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Appendix

Table A1. Descriptive statistics for all items

| | Mean | Standard deviation | Minimum | Maximum |
|---|--------|--------------------|---------|---------|
| Catholic college | .070 | .255 | 0 | 1 |
| Non-Catholic religious college | .107 | .310 | 0 | 1 |
| Institutional selectivity | 1126 | 106 | 870 | 1410 |
| Female | .550 | .497 | 0 | 1 |
| Age | 3.408 | .758 | 1 | 10 |
| African American/Black | .054 | .225 | 0 | 1 |
| American Indian/Alaska Native | .022 | .146 | 0 | 1 |
| Asian/Pacific Islander | .095 | .293 | 0 | 1 |
| Latino/Chicano | .066 | .248 | 0 | 1 |
| Other race/ethnicity | .038 | .191 | 0 | 1 |
| Parental education | 5.326 | 1.682 | 1 | 8 |
| C average high school grade point average | .041 | .199 | 0 | 1 |
| B average high school grade point average | .392 | .488 | 0 | 1 |
| Arts and humanities major | .121 | .326 | 0 | 1 |
| Natural science major | .159 | .366 | 0 | 1 |
| Engineering/technology major | .150 | .357 | 0 | 1 |
| Business major | .150 | .357 | 0 | 1 |
| Other professional major | .151 | .358 | 0 | 1 |
| Other major | .028 | .165 | 0 | 1 |
| Study abroad | .165 | .371 | 0 | 1 |
| Cross-racial interaction | 2.597 | .567 | 1 | 3 |
| Service learning | 1.645 | .719 | 1 | 3 |
| Socializing with friends | 5.674 | 1.561 | 1 | 8 |
| Student clubs/groups | 2.861 | 1.617 | 1 | 8 |
| Engaged learning | 2.183 | .412 | 1 | 4 |
| Personal faculty interactions | 1.953 | .518 | 1 | 3 |
| Religious engagement | 19.606 | 7.903 | 7 | 43 |
| 2004 charitable involvement | 14.291 | 3.377 | 7 | 27 |
| 2004 ethic of caring | 17.066 | 4.178 | 8 | 31 |
| 2004 compassionate self-concept | 15.292 | 2.529 | 4 | 20 |
| 2007 charitable involvement | 13.717 | 3.418 | 7 | 27 |
| 2007 ethic of caring | 18.619 | 4.500 | 8 | 31 |
| 2007 compassionate self-concept | 15.031 | 2.489 | 4 | 20 |

Note. Statistics are based on weighted values. All continuous variables were subsequently standardized with a mean of zero and a standard deviation of one for inclusion in the analyses.