New Evidence on the Effects of Fraternity and Sorority Affiliation During the First Year of College

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We explored the effects of fraternity and sorority membership on first-year students' development across various liberal arts educational outcomes at 11 institutions. Although many educators perceive fraternities and sororities as anti-intellectual organizations, fraternity and sorority members in this study did not differ from their unaffiliated peers on the educational outcomes explored.

Fraternities and sororities have been a controversial feature of American higher education since their inception nearly two centuries ago (Horowitz, 1987; Rudolph, 1962; Syrett, 2009). Debate continues over whether sororities and fraternities foster or inhibit student development and educational gains. Educators familiar with fraternities and sororities tend to be supporters or detractors with strong views in either case. Supporters of fraternities and sororities point to the leadership, philanthropic, and community service experiences these organizations provide students, and to the fact that many political and corporate leaders joined these organizations as undergraduates (e.g., Binder, 2003; Gregory, 2003). Detractors argue that these organizations allow students to self-segregate into same-sex groups whose members share similar racial, religious, and socioeconomic characteristics, and that fraternities and sororities shift students' focus from academic to social pursuits incompatible with the educational goals of the academy (e.g., Maisel, 1990; Strange, 1986).

Somewhat surprisingly, given their controversial presence on campuses, researchers have conducted relatively few studies on the effects of fraternity and sorority membership on educational outcomes. As we discuss in the next section, earlier scholars have found that fraternity and sorority members differ significantly from their unaffiliated peers along several dimensions, but this limited body of research is dated, inconsistent, and lacks replicated findings. Membership in a fraternity or sorority appears to be beneficial to students in some ways and potentially detrimental in others. The purpose of this study was to use a longitudinal, national data set to explore the ways in which fraternity and sorority members compare to their unaffiliated peers during the first year of college on 5 outcomes of college: (a) moral reasoning, (b) cognitive development, (c) intercultural effectiveness, (d) inclination to inquire and lifelong learning, and (d) psychological well-being.

REVIEW OF RELATED LITERATURE

The research on fraternity and sorority affiliation and moral reasoning is inconsistent. Kilgannon and Erwin (1992) found that sorority women scored lower on a measure of principled moral reasoning than unaffiliated women after 2 years

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of college, but identified no difference between fraternity men and their unaffiliated peers. Neither Marlowe and Auvenshine (1982) nor Cohen (1982) found any differences among moral development between fraternity and sorority members and unaffiliated students during the first year of college. Distinguishing moral reasoning from moral behavior, there is a small body of research suggesting fraternity and sorority members may engage in higher levels of unethical behavior compared to their unaffiliated peers, including academic dishonesty (Kirkvliet, 1994; McCabe & Bowers, 1996; McCabe & Trevino, 1997; Storch, 2002); however, the general designs of these studies make it difficult to clearly determine if this is an actual effect of fraternity and sorority affiliation or merely the result of the kinds of students fraternities and sororities recruit.

Only two previous studies estimated the impact of fraternity or sorority affiliation on standardized measures of cognitive development, and those studies are based on the same sample of data collected nearly 15 years ago. In one study, fraternity men scored significantly lower on measures of reading comprehension, mathematics, critical thinking, and composite achievement than did unaffiliated men during the first year of college (Pascarella, Edison, Whitt, et al., 1996). A different study employing the same student sample 2 years later revealed that the negative effect of fraternity membership on critical thinking became smaller and nonsignificant during the third year of college, but the negative effect of fraternity membership on reading comprehension persisted in the second and third years of college (Pascarella, Flowers, & Whitt, 2001). In the same study, fraternity membership had a significantly negative effect and sorority membership had a significantly positive effect on students' self-reported cognitive growth.

The evidence on the impact of fraternity and sorority affiliation on intercultural effectiveness is consistent, but is based on only two studies using different measures of intercultural effectiveness. Pascarella, Edison, Nora, Hagedorn, & Terenzini (1996) reported that students affiliated with a fraternity or sorority scored lower than their unaffiliated peers on a scale measuring openness to diversity, even in the presence of a control for precollege openness to diversity. Similarly, Antonio (2001) found that fraternity and sorority members scored lower than unaffiliated students on scales measuring interracial interactions and promotion of racial understanding; however, without a pretest for interracial interactions and promotion of racial understanding, the design of the study makes it somewhat difficult to determine if the effect observed is actually attributable to fraternity and sorority affiliation.

Apart from a study by Pike and Askew (1990) that found fraternity and sorority members exerted greater academic effort than unaffiliated students, we found no research that directly addresses the impact of fraternity and sorority affiliation on students' inclination to inquire and lifelong learning. Similarly the literature appears virtually silent with respect to the effects of fraternity and sorority affiliation on psychological well-being.

According to Molasso's (2005) summary, the research on fraternity and sorority membership has primarily focused on alcohol, sexual assault, and hazing, often considered to be the three largest problem areas among fraternity and sorority communities. Overall, the body of research fails to adequately consider important educational outcomes of college with respect to fraternity and sorority membership. According to Molasso:

> While exploring alcohol and other drug abuse prevention is important, research on this topic should not preclude research on other issues relevant to fraternity/sorority membership. Psychosocial, cognitive and identity development issues are as important

> for this community as they are for the broader campus student body. (p. 7)

We sought to address these issues by investigating the net impact of fraternity and sorority affiliation on a comprehensive set of first-year cognitive, psychosocial, and personal outcomes associated with a liberal arts education.

CONCEPTUAL FRAMEWORK FOR LIBERAL ARTS OUTCOMES

Pascarella, Wolniak, Seifert, Cruce, and Blaich (2005) noted the limited and fragmented nature of research on liberal arts education, acknowledging that studies generally lacked an integrated and holistic perspective. Since that study, King, Kendall Brown, Lindsay, and VanHecke (2007) developed a comprehensive model of liberal arts educational outcomes. This model includes seven broad outcome dimensions: (a) effective reasoning and problem solving, (b) well-being, (c) intercultural effectiveness, (d) moral character, (e) inclination to inquire and lifelong learning, (f) leadership, and (g) integration of learning. Outcomes such as these are central to the mission and purpose of many American colleges and universities (for example, see the taxonomy organizing college impact outcomes employed by Pascarella & Terenzini, 1991, 2005). What separates the outcomes of liberal education from other learning outcomes is their holistic nature and the connection between outcomes spanning cognitive, interpersonal, and intrapersonal aspects of development. Because of the interdependent nature of these outcomes, King et al. argue that educators who focus on only one aspect of student development "risk providing students with unidimensional experiences and measuring learning outcomes in unidimensional ways" (p. 7). They further challenge educators to integrate these learning outcomes in every aspect of professional work in higher education. The present study employs dependent measures representing five of these seven liberal arts outcomes. Unlike previous studies that have examined learning outcomes in isolation, the present study explores several educational outcomes, more accurately representing the holistic and interconnected ideals of a liberal arts education.

METHOD

Sample

The individuals who comprised the final sample in this study consisted of first-year undergraduate students attending 11 four-year institutions participating in the Wabash National Study of Liberal Arts Education (WNS). The WNS is a longitudinal, multi-institutional exploration of the effects of liberal arts experiences on educational outcomes associated with a liberal arts education. Using the 2007 Carnegie Classification of Institutions, our sample consisted of: 2 research universities, 3 regional universities that did not grant the doctorate, and 6 liberal arts colleges. We gathered the initial student sample in two ways. At larger institutions we randomly selected students from the incoming first-year class, but at the largest institution participating in the study, we selected students from the entering first-year class in the College of Arts and Sciences. At the smaller, liberal arts colleges, we sampled the entire first-year class. Seven of the 11 institutions had multicultural fraternities and sororities on campus; however, due to the low number of students of color in our sample, it is likely that most of the participants in this study are affiliated with either a sorority in the National Panhellenic Conference or a fraternity in the North American Interfraternity Conference (traditionally White sororities and fraternities).

Data Collection

The initial data collection occurred in the fall of

2006 with 4,501 students from 19 institutions. Each student received a $50 stipend for participating in a precollege survey that took approximately 90 minutes to complete. The collected data included student demographic and background characteristics as well as a series of instruments that measured aspects of cognitive and psychosocial development along such dimensions as moral reasoning, critical thinking, intercultural effectiveness, motivation toward lifelong learning, and psychological well-being.

The follow-up data collection was conducted in the spring of 2007. Participants received an additional $50 stipend for the session which lasted about 2 hours. Two types of data were collected during the follow-up: data on students' college experiences using the National Survey of Student Engagement (NSSE; Kuh, 2001) and the WNS Student Experiences Survey (WSES), and posttest data using the series of instruments measuring aspects of students' intellectual and personal development. The American College Testing Program (ACT) administered both data collections.

Out of the original sample of 4,501 students participating in the fall 2006 data collection, 3,081 students participated in the follow-up data collection in spring of 2007, for a response rate of 68.5%. For the present study, we used student responses from 11 of the original 19 institutions, resulting in usable data for 1,786 students. We selected these 11 institutions because each reported the presence of a fraternity and/or sorority community on campus. Of these 1,786 students, 62.8% indicated they were female (n = 1,122) and 37.2% indicated they were male (n = 664). Almost twenty percent (19.4% , n = 347) of the sample identified as students of color, with the remaining students (80.6%, n = 1,439) identifying as White. Because of the time involved in completing each instrument, only half of the sample completed the Defining Issues Test, version 2 (DIT2). This resulted in useable data for 819 students. The other half of the sample completed the critical thinking module from the Collegiate Assessment of Academic Proficiency (CAAP), resulting in useable data for 889 students. We created a weighting algorithm to provide some adjustment for potential response bias by sex, race, academic ability, and institution in the student sample. We used information supplied by the institution on sex, race, and ACT score (or SAT score equivalent) to weight students who participated in the spring follow-up up to the entering first-year undergraduate population of each institution by sex (female or male), race (White, African American/Black, Hispanic/ Latino, Asian/Pacific Islander, or other), and ACT quartile (or equivalent assessment). While using this weighting procedure has the effect of making the total sample more similar to the population from which it was taken and adjusts for attrition from each institution after the first semester of college, it cannot adjust for nonresponse bias.

Dependent Variables

Dependent variables in this study included posttest scores on the following liberal arts outcome measures specified by the King et al. (2007) conceptual model: moral reasoning (representing one dimension of moral character), critical thinking (representing one dimension of effective reasoning and problem solving), intercultural effectiveness, inclination to inquire and lifelong learning, and psychological well-being.

Moral Reasoning. We assessed students' moral reasoning using the P score of the DIT2, a revised version of James Rest's original DIT measuring the moral reasoning component of moral development (Rest, Narvaez, Thoma, & Bebeau, 1999). The DIT2 presents several moral dilemmas about social issues. Following each is a series of 12 items representing a myriad

of issues that might be raised by that dilemma. The P score of the DIT2 measures the extent to which an individual uses higher order post-conventional moral reasoning in resolving the dilemmas presented in each scenario. Reliability measures for the P score range from .74 to .77 (Rest et al., 1999; University of Minnesota, n.d.). An extensive body of evidence supports the validity of the DIT2 P score in predicting principled ethical behavior in a number of areas (see Pascarella & Terenzini, 1991, 2005, for a synthesis of this evidence, including citations to original studies).

Critical Thinking. We used the critical thinking module of the Collegiate Assessment of Academic Proficiency (CAAP), a 32-item instrument developed by ACT to measure students' abilities to clarify, analyze, evaluate, and formulate arguments. The assessment consists of four passages, each containing a series of arguments supporting a general conclusion, followed by multiple-choice test items. The internal consistency reliabilities for the critical thinking module of the CAAP range from .81 to .82 (American College Testing Program, 1991). Prior research found that the CAAP critical thinking test correlates .75 with the Watson-Glaser Critical Thinking Appraisal (Pascarella, Bohr, Nora, & Terenzini, 1995).

Intercultural Effectiveness. We measured this dependent variable with two scales: the Miville-Guzman Universality-Diversity Scale (M-GUDS) and the Openness to Diversity/Challenge (ODC) scale. The M-GUDS consisted of 15 items measuring one's universal-diverse orientation (Miville et al., 1999). This orientation is characterized by an attitude of awareness and acceptance of differences among people. The reliability measure for the M-GUDS total scale score was .85 in the present study. In addition, the precollege M-GUDS total scale score correlated .47 with a measure of students' experiences and interactions with diverse others and ideas in the first year of college.

The ODC scale is a 7-item measure assessing an individual's openness to racial and cultural diversity and the degree to which an individual enjoys being challenged by a variety of perspectives, ideas, and values (Pascarella, Edison, Nora, et al., 1996). Reliabilities for the ODC in the present study ranged from .83 to .87. Prior research has shown that precollege ODC scores have been significant predictors of one's likelihood of participating in a racial/cultural workshop during the first year of college (Whitt, Edison, Pascarella, Terenzini, & Nora, 2001).

Inclination to Inquire and Lifelong Learning. We used two scales to measure students' inclination to inquire and lifelong learning: Need for Cognition Scale (NCS) and Positive Attitude Toward Literacy Scale (PATL). The NCS consists of 18 items measuring an individual's "tendency to engage in and enjoy effortful cognitive activity" (Cacioppo, Petty, Feinstein, & Jarvis, 1996, p. 197). People with a high need for cognition "tend to seek, acquire, think about, reflect back on information to make sense of stimuli, relationships, and events in their world" (p. 198). In contrast, those with a low need for cognition are more likely to rely on others, cognitive heuristics, or social comparison processes to make sense of their world. The reliability of the NCS ranges from .83 to .91 in samples of undergraduate students (Cacioppo et al.). Also with samples of college students, the NCS has been positively associated with the tendency to generate complex attributions for human behavior, high levels of verbal ability, engagement in evaluative responding, one's desire to maximize information gained rather than maintain one's perceived reality (Cacioppo et al.) and college grades (Elias & Loomis, 2002).

The PATL consists of 6 items measuring students' enjoyment of literacy activities such as reading poetry and literature, reading scientific and historical material, and expressing ideas

in writing, and it has an internal consistency reliability of .71. The PATL score at entrance to college correlated .36 with 3-year cumulative scores during college on a measure of library use, .48 with the cumulative number of unassigned books read during 3 years of college, and .26 with a measure of reading comprehension administered after 3 years of college (Bray, Pascarella, & Pierson, 2004).

Psychological Well-Being. We used the Ryff Scales of Psychological Well-Being (RPWB) to assess well-being in the first year of college (Ryff, 1989; Ryff & Keys, 1995). The RPWB is a 54-item instrument that measures six dimensions of psychological well-being: (a) positive evaluations of oneself, (b) sense of continued growth and development as a person, (c) belief in a purposeful and meaningful life, (d) quality of relations with others, (e) capacity to effectively manage one's life and surrounding world, and (f) sense of self-determination (Keyes, Shmotkin, & Ryff, 2002; Ryff; Ryff & Keyes). The six 9-item scales have internal consistency reliabilities ranging from .83 to .91 (C. Ryff, personal communication, August 2004). The six RPWB scales tend to have significant, positive associations with frequently used measures of happiness and satisfaction, and negative associations with depression (Ryff & Keyes). Due to recent concerns about the construct validity and interpretation of the six subscales (Springer & Hauser, 2006; Springer, Hauser, & Freese, 2006), the present study combined the six scales to obtain a total psychological well-being score. Internal consistency reliabilities for the total psychological well-being score in this study ranged from .87 to .89.

Independent Variable

The independent variable of interest was fraternity or sorority affiliation. We collected information on this variable using the National Survey of Student Engagement (NSSE) that all participants completed in the Spring of 2007. This item asked if students were a member of a social fraternity or sorority (coded as 1 = yes, 0 = no). Approximately 20.7% of students (n = 369) in the study sample reported membership in a fraternity (n = 160) or sorority (n = 209). Of the 369 students reporting membership in a fraternity or sorority, 10.8% identified as students of color (n = 40) and 89.2% identified as White students (n = 329).

Control Variables

A particular methodological strength of the WNS is that it is longitudinal in nature. This permitted us to introduce a wide range of statistical controls, not only for student background and precollege traits and experiences, but also for other experiences during the first year of college. Our control variables used for various analyses in the present study included the following:

- A parallel precollege measure for each liberal arts outcome measure. According to Pascarella (2006), one of the most powerful ways to account for selection bias is through a longitudinal design employing pretests.
- Tested precollege academic preparation. This was the student's ACT score or SAT equivalent score. The score was provided by each participating institution.
- Sex (coded as 1 = male, 0 = female).
- Race (codes as 1 = White, 0 = other).
- Average parental education. This was computed as the average of the respondent's parents' education provided that the student gave a response for at least one parent. The item asked, "What is the highest level of education each of your parents/guardians completed?" The response

options were: 1 = *did not finish high school*, 2 = *high school graduate/GED*, 3 = *attended college but no degree*, 4 = *vocational/technical certificate or diploma*, 5 = *associate or other 2-year degree*, 6 = *bachelor's or other 4-year degree*, 7 = *master's degree*, 8 = *law degree*, 9 = *doctorate*).

- High school involvement. This was a 7-item scale with an internal consistency reliability of .58 that measured involvement during high school. Examples of constituent items include: "During your last year in high school, how often did you study with a friend?" "During your last year in high school, how often did you talk with teachers outside of class?"; "During your last year in high school, how often did you participate in extracurricular activities?" Response options were *very often*, *often*, *occasionally*, *rarely*, or *never*. Scores on the scale were obtained during the initial data collection in fall 2006.
- Precollege academic motivation. This was an 8-item, Likert-type scale in which respondents were asked to indicate the extent to which they agree or disagree (*strongly agree*, *agree*, *not sure*, *disagree*, *strongly disagree*) with statements about their academic motivation. These statements included: "a willingness to work hard to learn material even if it doesn't lead to a higher grade"; "the importance of getting good grades"; "reading more for a class than required"; "enjoyment of academic challenge"; and "the importance of academic experiences in college." The internal consistency reliability for the scale is .69, and scores on the scale were obtained during the initial data collection in fall 2006.
- Hours per week during the first year of college one worked both on and off campus. There were eight response options from *0* to *more than 30 hours*.
- Lived in campus housing (coded 1) versus elsewhere (coded 0) during the first year of college.
- Participated in an intercollegiate sport (coded 1) versus did not participate in an intercollegiate sport (coded 0) during the first year of college.
- The liberal arts emphasis on one's first-year coursework. The results were operationalized as the total number of courses during the first year of college taken in traditional liberal arts areas: Fine Arts, Humanities, and Languages (e.g., art, music, philosophy, religion, history); Mathematics/Statistics/Computer Science; Natural Sciences (e.g., chemistry, physics); and Social Science (e.g., anthropology, economics, psychology, political science, sociology).
- Institutional type. This was operationally defined as two dummy variables representing attendance at a research university or a regional university (each coded 1) with attendance at a liberal arts college always coded 0.
- Good practice measures. A major part of the WNS design was conceptually guided by a body of literature and evidence that identifies specific "good practices" in undergraduate education that are empirically linked to various measures of personal and intellectual growth during college (Astin, 1993; Chickering & Reisser, 1993; Kuh, Schuh, Whitt, & Associates, 1991; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Pascarella & Terenzini, 1991, 2005). To measure these good practices WNS selected and adopted empirically vetted scales and items from the National Study of Student

Learning (Cruce, Wolniak, Seifert, & Pascarella, 2006; Pascarella et al., 2005) and the National Survey of Student Engagement (Pascarella et al., 2006). We selected six good practice scales from the WNS data that we anticipated would influence first-year liberal arts outcomes. These six good practice scales were titled "cooperative learning," "academic challenge and high expectations," "diversity experiences," "good teaching and high quality interactions with faculty," "interaction with faculty/staff," and "influential interactions with peers." The internal consistency reliabilities of the six scales ranged from .70 to .92. Complete descriptions of the six good practice scales, including all specific items and response options, can be found at http://www.education.iowa.edu/CRUE/publications/documents/RESEARCH_METHODS_Draft_March2008.pdf

Information on place of residence, intercollegiate athletic participation, hours worked on and off campus, and first-year coursework was obtained during the follow-up data collection conducted in spring 2007. We also added a cross product variable to our most specified model in order to explore any conditional effects of sex and fraternity/sorority membership.

Analyses

We conducted the analyses in two stages using ordinary least squares regression procedures. In the first stage, we estimated the direct effect of fraternity or sorority affiliation on each first-year liberal arts outcome. Each liberal arts outcome measure was regressed on the dichotomous variable representing fraternity or sorority affiliation versus no affiliation plus institutional type and all the control variables previously described (i.e., the parallel pretest, tested academic preparation, personal and family demographics, high school involvement, academic motivation, place of residence and work responsibilities, the liberal arts emphasis of student's first-year coursework, and good practice measures). In the second stage of our analyses, we added a cross-product term between the fraternity/sorority affiliation variable for sex (male vs. female) to determine if the magnitude of the effect of fraternity/sorority affiliation on each dependent measure was different for male students versus female students. We added the cross-product term to the direct effects model specified above. However, because the cross-product term was not significant across any of the dependent outcomes measures, we report only those results based on the aggregate sample which combined men and women.

For each significant net effect of our model variables we computed an effect size by dividing the metric regression coefficient by the pooled standard deviation of the liberal arts outcome measure. Only effect sizes associated with significant metric regression coefficients were computed. All others were considered zero. All analyses we report are based on the weighted sample estimates adjusted to the actual sample size to obtain correct standard errors.

LIMITATIONS OF THE STUDY

As with most research, this study has several limitations that should be taken into consideration when interpreting the findings. First, our sample consists of students from 11 different institutions. While we controlled for between-institution variance by including control variables for institutional type in our regression models, we did not take into account within-institution variance, or put another way, the fact that students within an institution tend to be more similar than students across institutions. Not accounting for the homogeneity of students nested with an institution increases our probability of Type

I errors. In an attempt to guard against this increased probability of Type I errors, we opted to use a more conservative level of statistical significance ($p < .01$).

Another limitation is that not all students who participated in the first data collection in the fall of their first year participated in the follow-up data collection the following spring. The 68.5% return rate in the WNS is consistent with other multi-institutional longitudinal studies requiring a substantial amount of participation in terms of time and intellectual effort (see for example, the National Study of Student Learning, Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1998). The weighting procedures we employed adjusted our sample for respondent bias by sex, race/ethnicity, and tested precollege academic ability; however, these procedures in no way guarantee that those students who did not return for the follow-up data collection would have responded in the same way as their counterparts who chose to remain in the study.

A final noteworthy limitation is the way in which fraternity and sorority students were modeled in the WNS data. The item used in these analyses only asked students if they were members of a social fraternity/sorority. Thus, we were unable to distinguish whether students were members of predominantly White organizations or whether students were members of multicultural organizations.

RESULTS

Table 1 provides descriptive data for all variables in the fully specified regression model employed in our study. To assess multicollinearity, we reviewed correlations of the independent variables used in our analyses. Table 2 shows low to moderate correlations between the independent variables with the highest associations found between the good practice challenge scale and the good practice good teaching scale ($r = .53$), the good practice cooperative learning scale ($r = .49$), and the good practice interaction with faculty/staff scale ($r = .49$); however, all of our model variables fall below the .60 level, indicating that they are not too correlated for inclusion in our analyses. Further, the variance inflation factors (VIF) were all under 2.5, well below the suggested VIF limit of 10.0 (Stevens, 2002).

Table 3 summarizes the estimated direct effects of fraternity and sorority affiliation on each first-year liberal arts outcome. The first thing that becomes apparent from the table is that fraternity and sorority affiliation does not appear to have any significant unique impact on these liberal arts outcomes during the first year of college. In the presence of statistical controls for a battery of confounding influences, we found no evidence to suggest that fraternity and sorority members differed in more than chance ways from unaffiliated students in first-year critical thinking skills ($\beta = -.050$), moral reasoning ($\beta = 3.157$), need for cognition ($\beta = -.000$), positive attitude toward literacy ($\beta = -.063$), awareness and appreciation of differences (MGUDS $\beta = .000$), openness to diversity/challenge ($\beta = -.004$), and psychological well-being ($\beta = .219$). In other words, fraternity and sorority members are neither advantaged nor disadvantaged along these educational outcomes. Also in Table 3 we see that the regression coefficients for the conditional effect of sex and fraternity or sorority membership are nonsignificant across all dependent outcome measures. In other words, these findings indicate that there are no differences between men and women in the sample.

DISCUSSION

Summary

This study analyzed data from students attending 11 four-year colleges and universities

TABLE 1.
Descriptive Statistics for Direct Effects Model Variables

Variables	Mean	*SD*	Min	Max
Dependent Variables				
Reasoning & Problem Solving (CAAP–Critical Thinking)	64.04	5.31	48.00	73.00
Moral Reasoning (DIT2)	40.40	14.56	2.00	86.00
Inclination to Inquire (NFC)	3.44	0.62	1.00	4.94
Inclination to Inquire (PALS)	3.23	0.79	1.00	5.00
Intercultural Effectiveness (M-GUDS)	4.54	0.66	1.33	5.00
Intercultural Effectiveness (ODC)	3.73	0.71	1.00	5.00
Psychological Well-being (RYFF)	27.19	3.52	9.33	36.00
Independent Variables				
Male (vs. Female)	0.37	0.48	0.00	1.00
Race (White vs. Other)	0.81	0.40	0.00	1.00
Parental Education	15.37	2.17	11.00	20.00
ACT Score (or equivalent)	26.42	4.06	14.00	36.00
Academic Motivation	3.59	0.55	1.63	5.00
High School Involvement	3.67	0.52	1.71	5.00
Reasoning & Problem Solving (CAAP–Critical Thinking) Pretest	63.40	4.97	49.00	73.00
Moral Reasoning (DIT2) Pretest	36.34	14.99	0.00	80.00
Inclination to Inquire (NFC) Pretest	3.47	0.60	1.22	4.94
Inclination to Inquire (PALS) Pretest	3.29	0.74	1.00	5.00
Intercultural Effectiveness (M-GUDS) Pretest	4.59	0.62	1.33	6.00
Intercultural Effectiveness (ODC) Pretest	3.88	0.62	1.29	5.00
Psychological Well-being (RYFF) Pretest	27.28	3.34	12.56	35.44
Regional University (vs. Liberal Arts Colleges)	0.26	0.44	0.00	1.00
Research University (vs. Liberal Arts Colleges)	0.27	0.45	0.00	1.00
Lived On Campus (vs. Off Campus)	0.89	0.32	0.00	1.00
Number of Hours Worked On Campus	1.71	1.22	1.00	8.00
Number of Hours Worked Off Campus	1.53	1.29	1.00	8.00
Number of Liberal Arts Courses Taken	6.43	1.86	0.00	17.00
Athlete (vs. Not an Athlete)	0.17	0.37	0.00	1.00
Member of a Fraternity/Sorority (vs. Unaffiliated)	0.21	0.41	0.00	1.00
Good Practice Challenge	–0.04	0.45	–1.61	1.34
Good Practice Good Teaching	–0.03	0.61	–3.46	1.40
Good Practice Cooperative Learning	–0.01	0.70	–1.91	1.68
Good Practice Interaction With Faculty/Staff	–0.03	0.64	–1.19	2.28
Good Practice Diversity Experiences	–0.06	0.61	–1.39	1.76
Good Practice Peer Interaction	0.01	0.67	–2.72	1.35

TABLE 2. Correlations Among Independent Variables

Variable	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Male (vs. Female)	–0.04	0.03	0.03	–0.09	–0.18	–0.11	–0.05	–0.13	0.01	–0.10	–0.03	0.15	0.07	0.03	0.05	0.06	0.05	0.06	0.01
2. Race (White vs. Other)	—	0.18	0.20	–0.05	0.04	–0.04	–0.03	0.12	–0.10	–0.08	0.12	0.12	0.11	0.02	0.08	0.01	–0.03	–0.19	0.17
3. Parental Education		—	0.30	–0.04	0.01	–0.11	0.17	0.15	–0.14	–0.16	0.14	–0.05	0.02	–0.01	0.04	0.03	–0.08	–0.01	0.05
4. ACT Score (or equivalent)			—	0.09	–0.04	–0.21	0.26	0.16	–0.08	–0.20	0.36	–0.12	0.00	–0.04	0.12	–0.01	–0.18	0.00	0.05
5. Academic Motivation				—	0.25	–0.04	0.01	–0.07	0.05	0.04	0.10	–0.06	–0.01	0.31	0.23	0.19	0.24	0.20	0.07
6. High School Involvement					—	0.00	0.05	0.07	0.03	0.02	0.01	0.07	0.10	0.25	0.09	0.21	0.25	0.13	0.24
7. Regional University (vs. Liberal Arts Colleges)						—	–0.37	–0.06	–0.09	0.20	–0.16	–0.17	0.09	–0.07	–0.11	–0.11	0.00	–0.07	–0.05
8. Research University (vs. Liberal Arts Colleges)							—	0.06	–0.10	–0.06	0.19	–0.22	–0.05	–0.12	–0.19	–0.04	–0.15	0.02	–0.07
9. Lived on Campus (vs. Off Campus)								—	0.01	–0.22	0.06	0.04	–0.12	–0.06	–0.04	–0.02	–0.02	–0.03	0.14
10. Number of Hours Worked On Campus									—	–0.11	0.00	0.03	–0.03	0.09	0.05	0.06	0.13	0.15	0.01
11. Number of Hours Worked Off Campus										—	–0.12	–0.07	–0.05	–0.01	–0.07	–0.05	0.04	–0.01	–0.10
12. Number of Liberal Arts Courses Taken											—	–0.10	–0.02	0.07	0.12	0.09	–0.05	0.05	0.01
13. Athlete (vs. Not an Athlete)												—	–0.03	0.06	0.03	0.06	0.04	–0.08	0.20
14. Member of a Fraternity/ Sorority (vs. Unaffiliated)													—	0.05	0.05	0.04	0.11	–0.01	0.21
15. Good Practice Challenge														—	0.53	0.49	0.49	0.47	0.26
16. Good Practice Good Teaching															—	0.36	0.33	0.27	0.32
17. Good Practice Cooperative Learning																—	0.41	0.33	0.30
18. Good Practice Interaction With Faculty/Staff																	—	0.48	0.20
19. Good Practice Diversity Experiences																		—	0.17
20. Good Practice Peer Interaction																			—

TABLE 3.

Estimated Direct Effects of Fraternity and Sorority Affiliation (Coded 1) Versus No Affiliation (Coded 0) on First-Year Liberal Arts Outcomes[a] Dependent Variables

	Effective Reasoning and Problem Solving (CAAP–Critical Thinking)	Moral Reasoning (DIT-2)	Inclination to Inquire and Lifelong Learning (NFC)	Inclination to Inquire and Lifelong Learning (PALS)	Intercultural Effectiveness (MGUDS)	Intercultural Effectiveness (ODC)	Psychological Well-being (RYFF)
n =	889	819	1,786	1,784	1,784	1,784	1,784
Independent Variables	**β**	**β**	**β**	**β**	**β**	**β**	**β**
Male (vs. Female)	–0.371	–2.656* (–0.177)	0.060	–0.055	–0.060	–0.031	–0.464* (–0.132)
Race (White vs. Other)	0.626	0.797	0.027	–0.027	0.015	–0.085	0.449* (0.128)
Parental Education	0.027	–0.121	0.005	0.008	0.009	0.007	–0.057
ACT Score (or equivalent)	0.270** (0.203)	0.783** (0.217)	0.014** (0.091)	0.010	–0.002	0.003	0.006
Academic Motivation	–0.103	0.992	0.048	0.021	0.024	–0.054	–0.133
High School Involvement	–0.302	–0.092	–0.039	–0.097* (–0.063)	–0.112** (–0.088)	–0.071* (–0.051)	–0.190
Pretest	0.624** (0.584)	0.457** (0.444)	0.624** (0.609)	0.715* (0.671)	0.648** (0.613)	0.566** (0.495)	0.610** (0.580)
Regional University (vs. Liberal Arts Colleges)	–0.289	–0.451	0.015	0.014	0.003	–0.011	0.164
Research University (vs. Liberal Arts Colleges)	0.544	1.419	0.036	0.030	0.065	0.003	0.779** (0.221)
Lived on Campus (vs. Off Campus)	–0.778* (–0.147)	0.786	0.020	–0.097	–0.053	–0.098* (–0.137)	–0.425* (–0.121)
Number of Hours Worked On Campus	0.182	–0.782	–0.005	0.044** (0.055)	0.002	–0.026	0.005
Number of Hours Worked Off Campus	–0.146	–0.604	–0.001	0.011	–0.002	0.003	0.070
Number of Liberal Arts Courses Taken	0.061	0.053	0.008	–0.005	0.003	0.006	0.000
Athlete (vs. Not an Athlete)	0.472	–1.449	0.004	0.008	–0.027	–0.116* (–0.162)	–0.043

table continues

TABLE 3. *continued*

	Effective Reasoning and Problem Solving (CAAP–Critical Thinking)	Moral Reasoning (DIT-2)	Inclination to Inquire and Lifelong Learning (NFC)	Inclination to Inquire and Lifelong Learning (PALS)	Intercultural Effectiveness (MGUDS)	Intercultural Effectiveness (ODC)	Psychological Well-being (RYFF)
n =	889	819	1,786	1,784	1,784	1,784	1,784
Independent Variables	**β**	**β**	**β**	**β**	**β**	**β**	**β**
Member of a Fraternity/ Sorority (vs. Unaffiliated)	–0.424	0.947	0.015	–0.025	–0.005	–0.036	–0.103
Good Practice Challenge	0.121	4.034* (0.120)	0.143** (0.104)	0.132** (0.074)	0.066	0.264** (0.166)	0.667** (0.085)
Good Practice Good Teaching	1.053** (0.119)	0.561	0.086** (0.085)	0.136** (0.104)	0.100** (0.093)	0.060	0.776** (0.134)
Good Practice Cooperative Learning	–0.237	0.228	0.001	–0.007	0.008	–0.008	0.171
Good Practice Interaction With Faculty/Staff	–0.490	–0.157	0.027	0.011	0.013	0.027	–0.029
Good Practice Diversity Experiences	0.336	–0.374	0.039	0.114	0.202** (0.189)	0.253** (0.189)	–0.091
Good Practice Peer Interaction	–0.498* (–0.064)	0.307	–0.058** (–0.062)	0.015	0.006	0.041	1.069** (0.202)
R^2 for Direct Effects Model	0.692**	0.424**	0.556**	0.576**	0.583**	0.521**	0.584**

[a] The top number is the metric regression coefficient which represents the average statistically adjusted difference between fraternity/sorority–affiliated students and unaffiliated students on each dependent variable outcome. The number in parentheses is the effect size, or the metric regression coefficient divided by the pooled standard deviation of the dependent variable outcome. Thus, the effect size indicates that fraction of a standard deviation that affiliated students are advantaged or disadvantaged (depending on the sign) relative to unaffiliated students. Only effect sizes associated with statistically significant metric regression coefficients are reported; all others are considered zero.

*p < .01. **p < .001.

to estimate the effects of fraternity and sorority membership during the first year of college on a comprehensive range of measures representing a conceptual model of liberal arts outcomes (King et al., 2007). These analyses compared students who joined fraternities and sororities during their first year of college to students who did not join such organizations. The longitudinal nature of the data permitted us to introduce statistical controls for a wide range of potentially confounding influences. These included a parallel precollege measure

of each outcome, precollege tested academic preparation and academic motivation, student demographic characteristics and family background, high school experiences, institutional type, and other experiences during the first year of college such as place of residence, work responsibilities, the nature of one's coursework, athletic participation, and academic experiences measured through good practices in education.

Overall, we found that fraternity and sorority members demonstrated no differences compared to their unaffiliated peers on all seven liberal arts outcomes measures. Net of confounding influences, there were only chance differences between fraternity and sorority members and their unaffiliated peers.

Discussion and Implications

The results of this study indicate that membership in a fraternity or sorority does not have a significant unique influence on students' growth along key educational outcomes in the first year of college. The lack of difference between fraternity and sorority members and unaffiliated students on the moral reasoning measure supports previous research that found fraternity and sorority membership did not affect moral reasoning (Cohen, 1982; Marlowe & Auvenshine, 1982); however, because one earlier study found sorority members demonstrated lower moral reasoning than unaffiliated women after 2 years of college (Kilgannon & Erwin, 1992), future research should consider if fraternity and sorority membership has a unique impact on moral reasoning over the course of college attendance. Perhaps the most noteworthy finding of this study in relation to previous research is that fraternity/sorority membership did not negatively impact critical thinking. In an earlier and similarly designed study, fraternity men scored significantly lower on measures of critical thinking (Pascarella, Edison, Whitt, et al., 1996). The primary difference between the research designs of these two studies is that the present study controlled for students' exposure to good practices in undergraduate education. This more complete model may have accounted for factors that affected students' critical thinking skills but that were inappropriately attributed to fraternity/sorority membership in the earlier study. Another possible explanation for the lack of differences was that between the first and second data collections only a minor, though statistically significant, overall change in students' critical thinking occurred (Wabash College, n.d.). While fraternities may have implemented academic programs or emphasized scholarship that affected their members' critical thinking skills in the 15 years since the previous study, sorority membership continued to not affect students' critical thinking. Regarding psychological well-being, again, we found no significant unique impact of fraternity/sorority membership. This study is apparently the first exploration of the effect of membership on psychological well-being, so future research should consider if our findings hold true at other campuses or as students progress in college.

Fraternity and sorority members demonstrated a parity with their unaffiliated peers on both measures used to assess intercultural effectiveness. This finding contradicts prior research that found fraternity and sorority membership had a negative impact on students' openness to diversity and challenge in the first year of college (Pascarella, Edison, Nora, et al., 1996) and challenges assumptions that such membership inhibits efforts to promote diversity experiences on campus. One possible explanation for these findings is that although fraternities and sororities are often perceived as comprised of members with homogeneous identity characteristics, they may be developing into more diverse organizations, albeit still

primarily single-sex, in which people of different races, religious views, and sexual orientations feel more welcome than during the earlier study. Another plausible rationale is that perhaps few students, regardless of whether they are members of a fraternity or sorority or not, develop a desirable level of intercultural effectiveness in their first year of college.

Membership in a fraternity or sorority did not have a significant impact on students' growth during the first year on the measures used to assess the inclination to inquire and lifelong learning outcome. Countering the perception that fraternities and sororities attract students who are not academically motivated and then collectively reinforce anti-intellectual values, these findings may surprise individuals expecting less enthusiasm for learning and intellectual endeavors from fraternity and sorority members.

Some proponents of fraternities and sororities may be tempted to interpret these findings as purely positive by rationalizing that a lack of unique effects of fraternity and sorority membership on educational outcomes is, at the very least, not a negative effect; however, most fraternities and sororities purport to share in a pursuance of excellence in scholarship, high moral character, and deep friendships. Therefore, it seems reasonable that educators might expect a significant and positive unique impact of membership in such organizations on educational outcomes. Should we be asking more of fraternities and sororities than to simply not have a negative impact? For example, fraternities and sororities claim to value scholarship, yet fraternity and sorority members failed to demonstrate higher levels on critical thinking, need for cognition, or attitude toward literacy than their unaffiliated peers. Perhaps the most troubling feature regarding the lack of impact on educational outcomes is the amount of human and fiscal resources allocated to fraternities and sororities. Not only are these organizations supported financially through staff and programming initiatives on campus, but campus chapters also receive additional support from their (inter)national offices. Further, students pay extra to be a part of these communities and should be justified in expecting an enhanced educational experience in return. As educators, we should critically consider the educational benefits students receive from membership in these organizations in comparison to the cost at individual, institutional, and national levels. Campus fraternity/sorority advisors and national staff members might consider creating appropriate interventions to encourage the development of these educational outcomes among students. In particular, aligning fraternity and sorority programming and initiatives with key educational outcomes, such as those discussed in this study, offers an opportunity to close the gap between espoused and enacted values while also working to contribute to the overall mission of higher education.

Reviews of the impact of college literature highlight the first year as a vital time in the lives of students (Feldman & Newcomb, 1969; Pascarella & Terenzini, 1991, 2005). Because this is also the time that many students choose to join fraternities and sororities, it is important to understand the effect of membership on educational outcomes during the first year. Our findings suggest the possibility that differences among fraternities and sororities in their influence on student development may outweigh differences between fraternity and sorority members as a group and unaffiliated students—at least during the first year of college—however, replicated findings enhance both the internal validity and generalizability of college impact research (Pascarella, 2006). Therefore researchers should continue to explore moral reasoning, critical thinking skills, psychological well-being, intercultural effectiveness, and inclination to inquire and

lifelong learning in relation to fraternity and sorority membership in the first year of college. Future research should also explore the impact that fraternity and sorority membership has over the course of the college experience. Hopefully this and future studies will help fraternities and sororities develop into the organizations their supporters perceive them to be while reducing the criticisms of their detractors.

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