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Shawn Gaulden

University of Central Florida, [sgaulden@knights.ucf.edu](mailto:sgaulden@knights.ucf.edu)

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# Exploring Cognitive Dissonance between College Students' Religious and Spiritual Beliefs and Their Higher Education

By: Shawn Gaulden

Faculty Mentor: Dr. David Gay

UCF Department of Sociology

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**ABSTRACT:** With perceptions of conflict between religion and science often appearing in popular discussions and academic writings, cognitive dissonance may result if college students find their epistemological beliefs challenged during their undergraduate education. The purpose of this study is to explore whether students experience cognitive dissonance between their religious and spiritual identity and their college education and experiences, as well as whether certain factors in college life lead to cognitive dissonance. College students (N = 272) from the Central Florida area were surveyed with measures exploring the dimensions of college life that affect the likelihood of students experiencing tension between their religious and spiritual beliefs, and their course material and college experiences. Results from binary logistic regressions reveal that the level of a student's religiosity and/or spirituality bears no relation to experiencing cognitive dissonance. Involvement in fraternities and sororities, partying, and church attendance were associated with a decrease in the likelihood of experiencing cognitive dissonance. These results may suggest a social factor that mitigates cognitive dissonance for students.

**KEYWORDS:** religion, spirituality, college, cognitive dissonance

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## INTRODUCTION

A common assumption anticipates an epistemological conflict between religion and science (Evans and Evans 2008). This perception of conflict, or conflict narrative, appears in popular discussions, as well as scholarly writings (Evans and Evans 2008; Russell 1997; Ecklund and Park 2009; Scheitle 2011). These discussions address conflict over respective claims of truth and reality. A perception of inherent and consistent conflict often results when these two systems differ in their claims of truth. The controversy spans from as far back as Galileo, Newton, and Darwin (Evans and Evans 2008; McGrath 1999) to current debates on Intelligent Design in public schools (Slack 2008) and from social scientists and philosophers. Hence, this conflict is understood within both historical and cultural contexts.

Evans and Evans (2008) suggest that this conflict is found in the social sciences. In the study of sociology, for instance, this conflict can be traced to some of the founders of the discipline, such as Comte, who supposed that modern religion would be replaced by sociology (Evans and Evans 2008). Some definitions or operationalizations of religion can pit these two systems at odds. Since religion deals with the sacred, some contend it is concerned with “irrationalities” and matters that are ultimately “not science” (Evans and Evans 2008). In other words, these two ontological systems are fixed and in part incompatible.

These interpretations are, of course, neither representative of the whole of scholars in sociology or the social sciences, nor are they meant to paint the field of sociology as taking any position. Durkheim operationalized religion as social distinctions between the sacred and the profane (Durkheim 1915). A more recent conceptual framework of religion, proposed by Hill et al. (2010) to conceptualize religious and spiritual constructs for workable definitions for future social research, extends the considerations and variations in definitions of religion. This framework, not carrying a conflict narrative, proposed a criteria for religion, as well as spirituality. The criteria for spirituality given were “the feelings, thoughts, experiences, and behaviors that arise from the search for the sacred.” Combining the criteria for spirituality, the criteria for religion also include the search for the non-sacred to facilitate the search for the sacred and/or the means and methods of the search for the sacred (Hill et al. 2000).

The conflict narrative between science and religion is not exclusive to sociology, nor is it reserved for academia. Albeit by no means ubiquitous, it can also be found in, or perceived to be in, institutions of higher learning. For the purpose of this paper, “conflict” refers to differing claims of truth and reality, especially in terms of scientific versus religious explanations.

Further, those who hold a conflict perspective perceive this conflict or assume the “conflict narrative.” While the majority of academic scientists do not hold a conflict perspective (Ecklund and Park 2009), professors in the sciences, as well as engineering, are more likely to hold a conflict perspective (Scheitle 2011). Most students do not hold a conflict perspective, and of those who do, most move away from this view in their subsequent collegiate years (Scheitle 2011). For students espousing a conflict perspective, those in the fields of education and business are more likely to adopt a more “pro-religion conflict perspective” (Scheitle 2011). The orientations students take towards the conflict model, or the simple awareness of the debate, may affect their personal religious or spiritual beliefs. Therefore, the study assesses the extent to which experiences in higher education affect feelings and/or thoughts toward their original religious and spiritual beliefs.

## RELIGIOSITY AND SPIRITUALITY ON COLLEGE CAMPUSES

Recently, students on college campuses have increased their spirituality (Bryant, Choi and Yasuno 2003; Hartley 2004; Cherry, Deberg and Porterfield 2001), interest in religious activities (Hartley 2004; Cherry et al. 2001), religious behavior (McFarland, Wright and Weakliem 2011), and strengthened their religious beliefs (Lee 2002). These trends contradict a long held assumption that higher education had a negative or secularizing effect on students’ religious beliefs. About a decade ago, this assumption was challenged by studies that found students experienced a strengthening of their religious beliefs in college. Cherry et al. (2001), in their ethnographic study of campus religious life, found that student religious activities were more active and pervasive on campus, more pluralistic, incorporated more options, and were more respectful of religious difference than previously assumed.

Students also preferred to identify with “spirituality” instead of “religion.” This preference aligns with a trend among younger individuals to identify as “spiritual but

not religious” (Marler and Hadaway 2002; Zinnbauer et al. 1997). Following studies sought to re-explore the effects of higher education on religious beliefs.

A study by Lee (2002) found similar results—more students experienced a strengthening of their beliefs (about a third) than a weakening (13.7%). Subsequent studies found mixed results, partially due to researchers employing different methodologies when approaching the subject of religion and higher education (Mayrl and Oeur 2009). On the one hand, some researchers reported that students showed an interest in integrating spirituality more into their lives (Bryant et al. 2003), an increase in church attendance, and an increase in the frequency of prayer among students involved in religious denominations with strong “network closure,” such as evangelical Protestants and Black Protestants (McFarland et al. 2011). Network closure is the connectedness of an individual to a network that disseminates information and gives them a “means to develop trust and accountability” (McFarland et al. 2011). Although secular theories have been found to have a liberalizing effect on an individual’s beliefs during college and after graduation for religiously orthodox students (Reimer 2010), McFarland et al. (2011) argued that religious denominations with high levels of “network closure” buffered the effects of secular theories on students’ beliefs. On the other hand, studies have also reported diminished religious activities for college students compared to their high school involvement (Bryant et al. 2003; Uecker, Regenerus and Vaaler 2007) and an attenuation of students’ religious beliefs for those in religious denominations with weaker “network closure,” such as mainline Protestants and the non-affiliated (McFarland et al. 2011). These studies point to a mitigating or buffering effect of network closure on secularization. Not all studies, however, found religious beliefs to be affected by college.

Clydesdale’s (2007) research contradicts these studies and finds that most students’ religious beliefs do not change over their college career. Clydesdale argues that most students place their personal identities in a “lockbox” during their college years, instead of further exploring them. Forgoing challenging their personal identities, students instead focus on gaining acceptance into the mainstream culture and playing the “life management game,” whereby they focus on managing their daily lives. According to Clydesdale, students only slowly open their personal “lockbox” after college, unless they are strongly religious, in which case they open it for religious services, only to seal it shut for school. Conditional results for

the effects of religiosity and spirituality on students’ academics have also been found. Studies have found positive effects of religiosity on students’ academics, but if those beliefs are challenged it can have emotional ramifications. Religious students in the most selective colleges and universities in the U.S. report higher levels of satisfaction with college, the college nonacademic environment, and report higher GPAs (Mooney 2010). Religious students also report studying more, dedicating more of their time to extracurricular activities, and partying less (Mooney 2010). If a student’s faith is challenged, though, they may report higher levels of anger and stress (Winterowd et al. 2005). If we define stress as feelings of being overwhelmed or “unable to handle or deal effectively with people or events in one’s life” (Winterowd et al. 2005), this may have a negative impact on a student’s academics. Winterowd et al. (2005) conclude that challenges to a student’s spiritual or religious views previously held as fact could result in feelings of stress and/or anger, which may have a negative impact on a student’s academics.

A large part of the college experience involves the extracurricular and nonacademic activities in the college community, which may range from club involvement to partying. Students who engage in normative deviance may experience religious decline and cognitive dissonance if they are aware that their religious teachings run counter to their behavior (Uecker et al. 2007). In Uecker et al.’s (2007) study on religious decline in young adults, normative deviance, such as frequent alcohol consumption, was positively associated with cognitive dissonance. This cognitive dissonance experienced by students when religious or spiritual beliefs conflict with college experiences or new ‘knowledge’ is the basis of this study.

### COGNITIVE DISSONANCE AND BELIEFS

According to cognitive dissonance theory, when two or more cognitive elements (such as behaviors and attitudes) are inconsistent, psychological tension develops, which individuals seek to resolve (Festinger 1962; Dunford and Kunz 1973; DeLamater and Myers 2007; Mahaffy 1996; Elkin and Leippe 1986). Dissonance theory supposes three kinds of relationships between cognitions: consonant, dissonant, or irrelevant (Festinger 1962). A consonant relationship occurs when cognitions logically follow one another, and a dissonant relationship occurs when they contradict or oppose one another. Dissonance can occur when new events, knowledge, or behaviors

conflict with a current cognitive schema (Festinger 1962) and these new behaviors are believed to have been chosen voluntarily (Linder, Cooper and Jones 1967). This often produces psychological tension (Festinger 1962), as well as a physiological response (Elkin and Leippe 1986).

Since dissonance is uncomfortable, individuals seek to reduce the tension by changing their behaviors, seeking new information, adding new cognitive elements (Festinger 1962), or by changing the importance of the elements (DeLamater and Myers 2007). The magnitude of the dissonance may relate to the importance of the cognition (Festinger 1962) or the level of commitment to the counter-attitudinal behavior (Joule and Azdia 2003). The higher the level of commitment, the higher the level of dissonance in forced compliance situations that result in counter-attitudinal behavior (Joule and Azdia 2003).

The purpose of this study is to explore the dissonant relationship between students' beliefs and counter-attitudinal behavior or contradictory information. Festinger (1962) explains cognitions as containing knowledge, which includes "opinions, beliefs, values or attitudes, which function as 'knowledge.'" So if students perceive their religious or spiritual beliefs to be a truth, then behavior or information that runs counter may produce a dissonance effect. An example of this type of dissonance is a study by Mahaffy (1996) that looked at how Christian lesbians resolved cognitive dissonance when their religious teachings contradicted their sexual identity. Mahaffy found that lesbians who experienced an internal conflict between their religious beliefs and their sexuality were more likely to change their cognitions, unless they became a Christian in their adulthood, in which case they just lived with the tension. Further, the later that the respondents became aware of their homosexuality, the more likely they were to change their beliefs or leave the church. Mahaffy argues that these individuals may have constructed beliefs that support and allowed for both of their identities to coexist.

In conjunction with the awareness or adoption of a conflict model, if a students' beliefs are challenged at an institution of higher education by conflicting epistemological theories, such as secular theories, that contrast their preconceived beliefs, stress may result (Winterowd et al. 2005). This resulting stress may stem from cognitive dissonance. Certain college experiences, such as partying, may also result in cognitive dissonance as well, if those experiences involve normative deviance and conflict with religious doctrine (Uecker et al. 2007).

Although, if first year students are still acclimating to their new environment and social networks, religious students may not have engaged in significant counter-attitudinal behavior or normative deviant behavior that may result in cognitive dissonance. Conversely, if Clydesdale's (2007) "lockbox" argument is correct, then students have disassociated their religious identities in their first year. If so, then they probably do not experience cognitive dissonance, unless the "lockbox" is "semi-permeable," as Reimer (2010) contends. As well, most students espousing a conflict perspective move away from that perspective in subsequent years (Scheitle 2011). Therefore, progressive years in college may or may not have an effect on cognitive dissonance incurred in relation to their religiosity and spirituality, when those years of college introduce conflicting "truths" and experiences.

In sum, literature points to an increase in spirituality (Bryant et al. 2003; Hartley 2004; Cherry et al. 2001), religious behaviors (McFarland et al. 2011), and strengthened religious beliefs (Lee 2002) for college students. In addition, studies also argue that there is a current perception of a conflict narrative between science and religion (Evans and Evans 2008; Russell 1997; Ecklund and Park 2009; Scheitle 2011), and that while not widespread, a conflict perspective is present for some students (Scheitle 2011). If a students' religious beliefs are challenged, they may feel anger or stress (Winterowd et al. 2005). Currently, no literature explores whether students experience cognitive dissonance between their religious and spiritual beliefs and their higher education. This study seeks to address this gap, as well as exploring other college factors that may have an effect on this type of cognitive dissonance.

## METHODS

This study examines whether students experience cognitive dissonance between their religious and/or spiritual beliefs, and their course materials and/or college experiences. Also examined are some factors in college life that can lead to cognitive dissonance between students' religious and spiritual beliefs and their course materials and college experiences. This research addresses the following hypotheses:

### *Hypotheses*

H1) Students who report higher levels of religiosity (subjective and behavioral) and spirituality (subjective)

will report experiencing higher levels of cognitive dissonance from their course material and college experience than those who report lower levels of spirituality and religiosity.

H2) Students in their upper division years will report experiencing more cognitive dissonance from their course material and college experience than those in their lower division years.

H3) The higher the level of involvement in college experiences characterized with normative deviance or counter-attitudinal behavior (partying), the higher the level of cognitive dissonance in course materials and college experience compared to those who report lower levels of involvement.

#### *Sample and Procedure*

The sample consisted of college students (N = 272) in the Central Florida area. Online surveys from a university (N = 260), as well as paper surveys from a state college (N = 22), were used for the research. Respondents were predominantly female, with 162 females (66.4%) and 82 males (33.6%). Students were referred to the online survey either through their professors or by other students. Paper surveys were distributed during class. Students were asked questions on their college education and experience, subjective religiosity and spirituality, religious service attendance, and tension experienced from their college education and experience.

#### *Dependent Variables*

Two measures for tension were used to tap cognitive dissonance. One item asked respondents to report if they “experienced any tension between [their] religious or spiritual beliefs and [their] college experience” (No = 0, Yes = 1). A second item asked respondents to report if they “experienced tension between [their] religious or spiritual beliefs and [their] course material” (No = 0, Yes = 1). In both cognitive dissonance question items, the operative word “tension” was used to refer to the psychological tension between their religious or spiritual beliefs (knowledge) and either college experiences (counter-attitudinal behavior), or course materials (new knowledge). Since this study required the students to identify the cognitive dissonance that they were aware of, at least subjectively, this study was limited to examining recognized cognitive dissonance.

#### *Independent/Control Variables*

In seeking elements of college experience and education that may produce cognitive dissonance with students’ religious and spiritual beliefs, multiple aspects of student life were examined. Since cognitive dissonance could result if students are aware that their religious beliefs and normative deviant behavior conflict (Uecker et al. 2007), religiosity and spirituality were included as independent variables. Subjective spirituality was measured separately from subjective religiosity. This is to account for newer definitions that consider these two concepts to be separate but overlapping (Marler and Hadaway 2002; Zinnbauer et al. 1997). The lay definition of religion has been associated with “belief in God or a higher power, and organizational or institutional beliefs and practices such as church membership, church attendance, and commitment to the belief system of a church or organized religion” (Zinnbauer et al. 1997). The lay definition of religion is also associated with “a sense of community” and being “connected with others” (Schlehofer, Omoto and Adelman 2008). Spirituality has been associated with “mystical experiences, New Age beliefs and practices” and “a belief in God or higher power, or having a relationship with God or a higher power” (Zinnbauer et al. 1997). The students’ self-rated subjective religiosity and spirituality items were measured on a four point Likert scale, ranging from 0 (“Not religious at all” or “Not spiritual at all”) to 4 (“Very religious” or “Very spiritual”). To measure religiosity through religious behavior, respondents were asked how frequently they attend religious services, with a scale ranging from 0 (“Never”) to 5 (“A few times a week”).

The effects of higher educational attainment on cognitive dissonance between students’ religiosity and spirituality and their course materials and college experience were explored through class division. While it is argued that religious identities are locked away only to be reopened after graduation (Clydesdale 2007), spirituality has been found to increase during college years (Bryant et al. 2003). As well, college students’ espousal of a conflict perspective has been found to decline as their higher educational attainment increases (Scheitle 2011). Since the literature points to a change in students’ spirituality and perception of conflict during progressive years in college, an item to measure the students’ school year was included to explore a possible difference in experiencing cognitive dissonance between religiosity / spirituality and course materials / college experience. The students’ class status was measured as either “1st – 2nd Year,”

“3rd – 4th Year,” or “5th+ Year.” For the analysis, college class was collapsed into two groups (Lower division = 0, Upper division = 1), so that the lower division group consisted of students who reported as “1st – 2nd year,” while the upper division group comprised of students who reported as both “3rd – 4th year” and “5th year +.”

Four different items intended to measure elements of college activities included involvement in student organizations, involvement in a fraternity or sorority, partying, and volunteering.

#### *Student Organizations and Fraternities/Sororities*

Student organizations and fraternities and sororities were included to explore the effects of extracurricular activities and campus involvement. Respondents were asked if they were involved in a student organization or club, and if they were involved in a fraternity or sorority. Both items for involvement in student organizations or clubs and fraternity or sorority organizations were measured dichotomously (No = 0, Yes = 1). Follow-up questions to students’ involvement in student organizations or clubs and fraternity or sorority organizations asked if the organizations are religiously affiliated.

#### *Partying*

Since involvement in normative deviant behavior, such as excessive alcohol consumption, can contribute to cognitive dissonance in religious individuals (Uecker et al. 2007), partying was included to explore the effects of normative deviance behavior—in particular, a high frequency of partying. Partying has also been found to negatively affect students’ religiosity (Bryant et al. 2003). The question item simply asked the frequency of college partying, so forms of partying and alcohol consumption were not directly measured. Respondents were asked how frequently they attended college parties. Frequency of college partying was measured through a five-point Likert scale ranging from 0 (“Never”) to 5 (“Daily”).

#### *Volunteering*

In contrast, volunteering was included to explore non-normative deviant college activities. Respondents were asked how frequently they volunteered in their community. A follow-up question for students’ involvement in community volunteering asked if the volunteer organization was religiously affiliated. Frequency of community volunteering through the

school was measured through a five-point Likert scale ranging from 0 (“Never”) to 5 (“A few times a week”).

#### *Gender*

Women consistently report higher levels of religiosity than men. This tendency has been attributed to such theories as women having a “feminine outlook” (Thompson 1991); gender orientation (Sherkat 2002); men having a higher propensity or preference for “high risk behavior” regarding diminished religiosity and “divine punishment” (Miller and Hoffman 1995; Miller and Stark 2002); and to physiological differences related to risk preferences (Stark 2002). In any case, gender (Male = 0, Female = 1) was included as an independent variable to explore if the gender demographics relate to cognitive dissonance when a conflict is perceived.

## ANALYSIS AND RESULTS

Analyses were conducted using binary logistic regression equations to explore dimensions of college life that affect the likelihood of whether students experience tension between their religious and spiritual beliefs and (1) their course materials and/or (2) their college experiences. The dimensions of college life explored include student religiosity and spirituality, college class division, college normative deviant behavior, gender, and the likelihood of cognitive dissonance. Table 1 (See Appendix) reveals the means and standard deviations for all independent variables included in the analyses (religiosity, spirituality, class division, college activities, and gender).

For subjective religiosity ( $\bar{x} = 1.151$ ,  $\sigma = 1.031$ ) and subjective spirituality ( $\bar{x} = 1.712$ ,  $\sigma = .338$ ), students responded on average as “Not very religious” and “Not very spiritual.” A majority of the students were upperclassmen ( $\bar{x} = .568$ ,  $\sigma = .496$ ), about half were involved with a student organization ( $\bar{x} = .490$ ,  $\sigma = .5$ ), and roughly a quarter were involved with a fraternity or sorority ( $\bar{x} = .260$ ,  $\sigma = .439$ ). For partying ( $\bar{x} = 1.215$ ,  $\sigma = .99$ ) and volunteering ( $\bar{x} = 1.099$ ,  $\sigma = 1.133$ ), students on average participated “A few times a year” respectively. For gender ( $\bar{x} = .663$ ,  $\sigma = .473$ ), the sample was predominantly female (66.4 %). For religious service attendance ( $\bar{x} = 2.158$ ,  $\sigma = 1.649$ ), students on average attended “A few times per year.”

*Course Materials and Cognitive Dissonance*

Table 2 (See Appendix) shows the results for the logistic regression analysis of course materials and cognitive dissonance. The model was statistically significant ( $\chi^2 = 27.696, p < .01$ ) with pseudo r-squares of .169 (Cox & Snell) and .238 (Nagelkerke). There was no support for Hypothesis 1, since a significant relationship was not found between either students' reported level of subjective religiosity or subjective spirituality, and whether they experienced tension between their course materials and their religious/spiritual beliefs. Contrary to Hypothesis 1, a significant negative relationship was found for religious service attendance and experiencing tension between course materials and religious/spiritual beliefs ( $p = .02$ ). As religious attendance increased, the odds of experiencing cognitive dissonance between course materials and religious/spiritual beliefs decreased.

Contrary to Hypothesis 2, a marginally significant ( $p = .08$ ) negative relationship was found between students' class division and whether students experienced tension between their course materials and religious/spiritual beliefs. The odds of experiencing cognitive dissonance between course material and religious/spiritual beliefs were greater among lower division students. Contrary to Hypothesis 3, a marginally significant ( $p = .08$ ) negative relationship was found between college partying and experiencing tension between course materials and religious/spiritual beliefs. Results indicated that as college partying increased, likelihood of cognitive dissonance between college materials and religious/spiritual beliefs decreased. Surprisingly, a significant negative relationship was found between involvement in fraternities and sororities and tension experienced between course materials and religious/spiritual beliefs ( $p = .02$ ). The results indicate that involvement in fraternities and sororities relate to a decrease in cognitive dissonance between course materials and religious/spiritual beliefs. Involvement in student organizations and volunteering did not yield a significant relationship.

*College Experience and Cognitive Dissonance*

Table 3 (See Appendix) shows the results for the logistic regression analysis of college experience and cognitive dissonance. The model was statistically significant ( $\chi^2 = 26.178, p < .05$ ) with pseudo r-squares of .160 (Cox & Snell) and .223 (Nagelkerke). Hypothesis 1 was unsupported because a significant relationship was not found between students' reported subjective religiosity

and subjective spirituality and experiencing tension between college experience and religious/spiritual beliefs. Contrary to Hypothesis 1, a significant negative relationship was found for religious service attendance and tension between college experience and religious/spiritual beliefs ( $p = .01$ ). As religious attendance increased, the likelihood of experiencing cognitive dissonance between college experience and religious/spiritual beliefs decreased.

Hypothesis 2 was unsupported because a significant relationship was not found for college class division and tension from college experience and religious/spiritual beliefs. As well, Hypothesis 3 was unsupported because a significant relationship was not found for college partying and tension from college experiences and religious/spiritual beliefs. Also unexpectedly, a strong significant relationship was found between involvement in fraternities and sororities and tension from college experience and religious/spiritual beliefs ( $p = .01$ ). The results indicate involvement in fraternities and sororities was associated with lower odds of experiencing cognitive dissonance between college experience and religious/spiritual beliefs. Again, involvement in student organizations and volunteering did not yield a significant relationship.

**CONCLUSION**

This study examines students' experience of cognitive dissonance between their religious and spiritual beliefs and their college education and experiences, as well as whether certain factors in college life can lead to cognitive dissonance. This study contributes to the literature on student religiosity and spirituality, higher education and cognitive dissonance, to which there is currently a gap. Students' degree of religiosity or spirituality had no significant relationship to any possible cognitive dissonance experienced between their beliefs and any course materials or experiences in college. Even though a majority of the students expressed some degree of subjective religiosity (63%) or spirituality (85.2%), and some expressed experiencing cognitive dissonance with course materials (23.3%) or college experiences (26.5%), their religiosity or spirituality did not contribute to it. Drawing from the literature, many factors could have contributed to this. First, as Clydesdale (2007) argues, students secure their religious identities in a "lockbox," thus buffering themselves from any conflicting "truths." Even though students may be religious, that identity is not presently salient. With that identity disassociated,

students may then not feel tension from any conflict between beliefs attached to their religious identity and conflicting course materials or college experiences. Second, students may adopt a non-conflict perspective, or “independent/collaborative” perspective (Scheitle 2011) early on. Results indicate that students experienced more cognitive dissonance in their first and second year than in their subsequent years, which may be due to abandoning a conflict perspective. In addition, similar to Mahaffy’s (1996) argument that Christian lesbians developed a system that allowed both identities to coexist, if students perceived a conflict and experienced tension, this may be a resolution method for cognitive dissonance that allows two competing systems to coexist. Finally, the items intended to tap cognitive dissonance asked if tension was experienced. Regardless of whether conflict was perceived, if students were not aware of any tension or did not experience tension, then cognitive dissonance was not recorded. Students “under-socialized in their religious faith” may also not perceive a conflict (Uecker et al. 2007) and therefore not experience any dissonance. Whatever the case, cognitive dissonance does not seem to stem from students’ religious or spiritual beliefs.

A social factor within partying, fraternity and sorority involvement, and church attendance may have an effect on cognitive dissonance. Even though an increase in partying may result in more normative deviant behavior, its definition was not explicit in the question item, which may have lead to ambiguity in interpretation. While increased partying may or may not have involved excessive alcohol consumption, it more likely increased socializing. The types of fraternities and sororities were not distinguished in the question item, so the kinds of activities and involvement cannot be ascertained. Socializing, though, is a common element in fraternities and sororities, whether they are social, academic, service and so on. While it is not surprising that increased religious service attendance related to a decrease in likelihood of cognitive dissonance, as studies have found it to have a buffering effect (McFarland et al. 2011; Reimer 2010), a strong sense of community is also often associated with religious services. Socializing then may have a mitigating effect on cognitive dissonance. Engaging in frequent social activities may, in addition to alleviating stress, make any tension from conflict less salient, ultimately preventing cognitive dissonance.

This study had some limitations worth considering. Mentioned earlier, the cognitive dissonance items measured relied on the awareness of the respondent of

his or her own tension between personal beliefs and either course materials or college experience. This study did not account for respondents’ religious preferences, so network closure identified by religious preference could not be used. Respondents’ majors were not measured, and while research indicates that some majors reveal more inclinations to a conflict perspective (Scheitle 2011), this study does not account for this possibility.

Future studies should explore the effects that social activities have on cognitive dissonance. Studies that account for the different types of fraternities and sororities may find more nuanced results depending on the organization’s focus. As well, studies that account for partying behavior may explore which elements effect cognitive dissonance. Any further research on fraternities and sororities, partying and cognitive dissonance involving religious or spiritual beliefs would add to the current gap in literature.

## APPENDIX

Table 1. Descriptives: Higher Educational Experience and Course Material and Student Spirituality and Religiosity

Variable	Mean	Standard Deviation
Subjective Religiosity	1.1514	1.03198
Subjective Spirituality	1.7120	.338
College Class Division	.5682	.49627
Student Organizational Involvement	.4902	.50089
Fraternity/Sorority Involvement	.2609	.43998
College Partying	1.2157	.99038
Volunteering	1.0992	1.13355
Gender	.6639	.47333
Religious Service Attendance	2.1582	1.64925

N = 272

Table 2. Binary Logistic Regression Results: The Impact of Religiosity, Spirituality, and College Activity on Cognitive Dissonance

Independent Variable	Course Material Model
Subjective Religiosity	-.238 / .789 (.314)
Subjective Spirituality	.833 / 2.299 (.527)
Religious Service Attendance	-.350 / .705* (.143)
College Class Division	-.764 / .466† (.449)
Student Organizational Involvement	-.487 / .614 (.445)
Fraternity/Sorority Involvement	-.965 / .381* (.428)
College Partying	-.376 / .686† (.220)
Volunteering	.011 / 1.011 (.201)
Gender	-.018 / .982 (.456)
Constant	2.161
N	272
Chi-square	27.696
Cox and Snell R Square	.169
Nagelkerke R Square	.238

† ≤ .1, \*p ≤ .05

**Table 3. Binary Logistic Regression Results: The Impact of Religiosity, Spirituality, and College Activity on Cognitive Dissonance**

Independent Variable	College Experience Model
Subjective Religiosity	-.290 / .749 (.306)
Subjective Spirituality	.419 / 1.520 (.534)
College Class Division	-.130 / .878 (.434)
Student Organizational Involvement	-.362 / .696 (.441)
Fraternity/Sorority Involvement	-1.442 / .236** (.441)
College Partying	.268 / 1.308 (.213)
Volunteering	.197 / 1.218 (.438)
Gender	-.170 / .844 (.211)
Religious Service Attendance	-.376 / .686** (.137)
Constant	2.000
N	272
Chi-square	26.178
Cox and Snell R Square	.160
Nagelkerke R Square	.223

\*\* $p \leq .01$

## REFERENCES

- Bryant, Alyssa N., Jeung Y. Choi, and Maiko Yasuno. 2003. "Understanding the Religious and Spiritual Dimensions of Students' Lives in the First Year of College." *Journal of College Students Development* 44(6): 723-45.
- Cherry, Conrad, Betty A. Deberg, and Amanda Porterfield. 2001. *Religion on Campus*. Chapel Hill: University of North Carolina Press.
- Clydesdale, Tim. 2007. *The First Year Out: Understanding American Teens after High School*. Chicago: University of Chicago Press.
- DeLamater, John D. and Daniel J. Myers. 2007. *Social Psychology*. Belmont: Wadsworth Publishing.
- Dunford, Franklyn W. and Phillip R. Kunz. 1973. "The Neutralization of Religious Dissonance." *Review of Religious Research* 15(1): 2-9.
- Durkheim, Emile. 1915. *The Elementary Forms of the Religious Life*. New York: Free Press.
- Ecklund, Elaine H. and Jerry Z. Park. 2009. "Conflict between Religion and Science among Academic Scientists?" *Journal for the Scientific Study of Religion* 48(2): 276-92.
- Elkin, Roger A. and Michael R. Leippe. 1986. "Physiological Arousal, Dissonance, and Attitude Change: Evidence for a Dissonance-arousal Link and a 'Don't Remind Me' Effect." *Journal of Personality and Social Psychology* 51(1): 55-65.
- Evans, John H. and Michael S. Evans. 2008. "Religion and Science: Beyond the Epistemological Conflict Narrative." *Annual Review of Sociology* 34: 87-105.
- Festinger, Leon. 1962. *A Theory of Cognitive Dissonance*. Stanford: Stanford University Press.
- Hartley III, Harlod V. 2004. "How College Affects Students' Religious Faith and Practice: A Review of Research." *College Student Affairs Journal* 23(2): 111-29.
- Hill, Peter C., Kenneth I. Pargament, Ralph W. Hood, Jr., Michael E. McCullough, James P. Swyers, David B. Larson, and Brian J. Zinnbauer. 2000. "Conceptualizing Religion and Spirituality: Points of Commonality, Points of Departure." *Journal of the Theory of Social Behavior* 30(1): 51-77.
- Joule, Robert-Vincent and Touati Azdia. 2003. "Cognitive Dissonance, Double Forced Compliance, and Commitment." *European Journal of Social Psychology* 33 565-71.
- Lee, Jenny J. 2002. "Religion and College Attendance: Change Among Students." *The Review of Higher Education* 25(4): 369-84.
- Linder, Darwyn, Joel E. Cooper, and Edward E. Jones. 1967. "Decision Freedom as a Determinant of the Role of Incentive Magnitude in Attitude Change." *Journal of Personality and Social Psychology* 6(3): 245-54.
- Mahaffy, Kimberly A. 1996. "Cognitive Dissonance and Its Resolution: A Study of Lesbian Christians." *Journal for the Scientific Study of Religion* 35(4): 392-402.
- Marler, Penny L. and C. K. Hadaway. 2002. "'Being Religious' or 'Being Spiritual' in America: A Zero-sum Proposition?" *Journal for the Scientific Study of Religion* 41(2): 289-300.
- Mayrl, Damon and Freeden Oeur. 2009. "Religion and Higher Education: Current Knowledge and Directions for Future Research." *Journal for the Scientific Study of Religion* 48(2): 260-75.
- McFarland, Michael J., Bradley R. E. Wright, and David L. Weakliem. 2011. "Educational Attainment and Religiosity: Exploring Variations by Religious Tradition." *Sociology of Religion* 72(2): 166-88.
- McGrath, Allister E. 1999. *Science and Religion: An Introduction*. Malden, MA: Blackwell.
- Miller, Alan S. and John P. Hoffmann. 1995. "Risk and Religion: An Explanation of Gender Differences in Religiosity." *Journal for the Scientific Study of Religion* 34(1): 63-75.
- Miller, Alan S. and Rodney Stark. 2002. "Gender and Religiousness: Can Socialization Explanations Be Saved?" *American Journal of Sociology* 107(6): 1399-423.

- Mooney, Margarita. 2010. "Religion, College Grades, and Satisfaction among Students at Elite College Universities." *Sociology of Religion* 71(2): 197-215.
- Reimer, Sam. 2010. "Higher Education and Theological Liberalism: Revisiting the Old Issue." *Sociology of Religion* 71(4): 393-408.
- Russell, Bertrand. 1997. *Religion and Science*. New York: Oxford University Press.
- Scheitle, Christopher P. 2011. "U.S. College Students' Perception of Religion and Science: Conflict, Collaboration, or Independence?" *Journal for the Scientific Study of Religion* 50(1): 175-86.
- Schlehofer, Michele M., Allen M. Omoto, and Janice R. Adelman. 2008. "How Do 'Religion' and 'Spirituality' Differ? Lay Definitions among Older Adults" *Journal for the Scientific Study of Religion* 47(3): 411-25.
- Sherkat, Darren E. 2002. "Sexuality and Religious Commitment in the United States: An Empirical Examination." *Journal for the Scientific Study of Religion* 41(2): 313-23.
- Slack, Gordy. 2008. *The Battle over the Meaning of Everything: Evolution, Intelligent Design, and a School Board in Dover*. San Francisco: Jossey-Bass.
- Stark, Rodney. 2002. "Physiology and Faith: Addressing the 'Universal' Gender Difference in Religious Commitment." *Journal for the Scientific Study of Religion* 41(3): 495-507.
- Thompson, Jr., Edward H. 1991 "Beneath the Status Characteristic: Gender Variations in Religiousness." *Journal for the Scientific Study of Religion* 30(4): 381-94.
- Uecker, Jeremy, Mark D. Regenerus, and Margaret L. Vaaler. 2007. "Losing My Religion: The Social Sources of Religious Decline in Early Adulthood." *Social Forces* 85(4): 1667-92.
- Winterowd, Carrie, Steve Harrist, Nancy Thomason, and Sheri Worth. 2005. "The Relationship of Spiritual Beliefs and Involvement with the Experience of Anger and Stress in College Students." *Journal of College Student Development* 46(5): 515-29.
- Zinnbauer, Brian J., Kenneth I. Pargament, Brenda Cole, Mark S. Rye, Eric M. Butter, Timothy G. Belavich, Kathleen M. Hipp, Allie B. Scott, and Jill L. Kadar. 1997. "Religion and Spirituality: Unfuzzifying the Fuzzy." *Journal for the Scientific Study of Religion* 36(4): 549-64.