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The Young and the Religious: Acceptance of Evolution among Millennials at an Evangelical Christian University

Jed T. Foster
Lee University

The theory of evolution has always been a subject of heated debate between the proponents of science and religion (Martin, 2010; Daniels, 2014; Maurer, 2009). As science continues to establish logical explanations and proof of humankind's development, religious institutions compete to provide an explanation for divine involvement in human origin (Paz-y-Mino-C, 2009a; Maurer, 2009). Furthermore, as postsecondary and postgraduate universities that are initially sponsored by religious institutions become more autonomous, students and faculty members grapple between both sides of the debate (Marsden, 1994). This debate resonates even more so today among Millennials in educational institutions that remain affiliated with Christian evangelical denominations (Ladine, 2009; Jelen, 2010; *The Tennessean*, 2014).

Evangelicalism is a branch of Protestant Christianity with which roughly 25% of Americans identify (Pew Research, 2015). Although widely varied in its expressions, Evangelicalism is characterized by its doctrines of scriptural infallibility, Christ's literal and physical crucifixion and resurrection, a life-transforming experience of conversion, and an active engagement with the rest of the world, especially through evangelism (Hankins, 2008, p. 1-3). Because of their more literalist interpretations of the Bible, Evangelicals largely associate themselves with political and cultural conservatism, and this includes skepticism toward notions that challenge the sovereignty of a Creator. The theory of evolution is seen as such a notion because of its refusal to literally adhere to the six-day creation narrative posited in the book of Genesis (Hankins, 2008, p. 52; Harris, 1998, p. 1-2, 9). While some rather progressive Evangelicals who are sympathetic to metaphorical interpretations of Scripture would classify this attitude as "fundamentalist" rather than "Evangelical," many religious scholars agree that the line distinguishing the two terms has become blurred over time (Hankins, 2008, p. 59, 66-69; Harris, 1998, p. 1-2, 9, 19).

However, even in light of the staunch convictions of American Evangelicals, the Millennial generation, consisting of those born between 1980 and 2000, is the least religious of any generation in modern American history (Rainer, 2010). According to Rainer, only 13% of Millennials view religion as important, and roughly 25% identify as atheist, agnostic, or nonreligious (2010). This surpasses Generation X and the Baby Boomers at their nonreligious peaks: 20% and 13%, respectively (Pew Research, 2010). Millennials should also be noted for their widespread acceptance of science. In a Pew Research study which surveyed Americans' opinions on evolution, the highest acceptance rate

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of evolutionary theory came from the 18 to 29 age group. The same study also shows that the overwhelming majority of Americans unaffiliated with any religious label accept evolution as fact (2013).

For college students, the relationship between the acceptance of evolution and religiosity is negatively correlated (Paz-y-Mino-C, 2013). Students are more likely to accept evolution as fact and less likely to adhere to faith. Studies show that although most college students will support evolution, those in secular institutions constitute a greater amount of support than those from religious institutions (Paz-y-Mino-C, 2009a; 2013). Unfortunately, the details regarding students at these institutions are vague at best. Our knowledge of Millennials' overall opinion of religion and science is substantive, but regarding college students, especially those attending Christian universities, our knowledge is very limited. The Pew Research Center has performed in-depth studies of the American public's perception of evolution and Millennials' religious beliefs, stratifying their independent variables into religious denomination, political affiliation, and education level (2010; 2013). Biologist Guillermo Paz-y-Mino-C has performed significant studies on the correlation between biology and non-biology majors and their acceptance of evolutionary theory, also taking into account their academic year and the type of academic institution in which they are enrolled (2009b). But even in the midst of such comprehensive studies, virtually none have been performed on Christian universities and colleges using these in-depth methods.

A thorough examination of students in Christian universities will shed some light on their acceptance of evolutionary theory and support for creationism and intelligent design. While it would be understandable to assume that most students at a Christian university are of a conservative persuasion, the diversity can be surprising. Not all students attending Christian universities should be compiled into one stereotype. There are some Christian universities that completely reject the exposition of evolution in classrooms, while others consider it to be

perfectly compatible with the Christian faith (*The Tennessean*, 2014; Schuman, 2010).

Because of the acceptance of evolution within certain denominations of the church coupled with a staggering antipathy toward religion within the Millennial generation, it is important for us to know the extent of secularization among Millennials in Christian universities, especially those associated with conservative Evangelical denominations (Martin, 2010; Jelen, 2010; Pew Research, 2010). Thus, the purpose of this paper is to test the theory of secularization—the idea that religious influence over society is weakening due to increasing modernity, namely science—among Millennials attending an Evangelical Christian university by measuring their support of evolutionary theory as opposed to creationist theory (Pickering, 1984/2009). As students' opinions are measured, this study takes their backgrounds into account as independent variables (e.g., religious practice, institutions of secondary education, academic discipline, academic year, and political affiliation).

Due to Durkheim and Weber's theory of secularization that suggests the dwindling influence of the church over society (Pickering, 1984/2009; Swatos & Christiano, 1999), the evidence that Millennials are leaving the church at a substantial rate (Barna, 2011), and the fact that certain major denominations of the church already accept aspects of evolutionary theory (Jelen, 2010; Martin, 2010), we ask, "to what extent do Millennials in an Evangelical Christian university accept evolutionary theory, and what are the variables that affect their opinions?" Our hypothesis is that:

1. Students who major in hard sciences (biology, chemistry, etc.) are much more likely to accept evolution as fact as opposed to non-science majors.
2. The greater the academic level of students, the more likely they are to accept evolution as fact. For example juniors and seniors in college are more likely to accept evolution than freshmen and sophomores.
3. College students who were previously educated in the public school system

are more likely to affirm evolution than those educated in private school or were homeschooled.

4. Students who adhere to liberal political ideologies and parties are more likely to accept evolution as fact than students who identify as political conservatives.

Secularization theory

Secularization theory, as propagated by sociologists Durkheim and Weber, states that religion diminishes as time passes and as science is better understood (Pickering, 1984/2009; Swatos & Christiano, 1999). The term “secularization” was coined by Max Weber (1930) as a concept caused by “rationalization,” the ability to explain events within this worldly experience, and “disenchantment,” the devaluation of all prospects of the supernatural. Weber held that “the mysterious” nature of the supernatural existed only to be conquered by science and human reason (Swatos & Christiano, 1999). Durkheim’s school of thought regarding secularization purports that religion fully permeated society in the beginning, but as time passes, societies free themselves from religious domination through both the acquirement of scientific knowledge and the church’s inability to suppress it. Religious conceptions of the general order, the “sacred” of which the church has been the guardian, has been “profaned” by scientific revelation (Pickering, 1984/2009). Evolution will be seen as that which profanes the sacred concept of creation, and the church cannot make evolution disappear. Religious leaders do not have the same political authority as they once did during the time of Galileo. Their inability to suppress scientific discovery renders their ability to protect the sacred obsolete. In fact, Durkheim measured the secularized state by the church’s inability to enforce rules relating to sacrilege. As he noted, “Once science came into being, it assumed a profane character, especially in the eyes of the Christian religion; consequently as it emerged it could not be applied to sacred things” (as quoted by Pickering, 1984/2009).

Background of the debate

For at least a generation before Charles Darwin

coined his infamous theory of natural selection in an attempt to explain how organisms evolved, Evangelicals were already framing ways to harmonize Scripture with the idea that the Earth was ancient (Hankins, 2008, p. 54). Many Evangelical scholars had little issue accepting an old-Earth view as well as the idea that the Earth had developed slowly over a long period of time. As Hankins writes, “There were ways of reading Genesis that were within the realm of evangelical Biblicism but did not rule out an ancient earth and a long period of time for creation to take place” (p. 54). Thus, many Evangelical intellectuals were content with working within this hermeneutical tradition. However, when Darwin released his 1859 magnum opus, *On the Origin of Species*, Evangelical thinkers took issue with his idea that variations in animals were random and did not appear to move toward a divine telos. Darwin posited that some of the most important changes in nature happened without an apparent purpose, and this subverted the notion of a God-ordained design for many Evangelicals (Hankins, 2008, p. 59; Livingstone, 1987, p. 39, 48-49).

At the same time, responses to *On the Origin of Species* were as varied in the late-nineteenth century as they are today (Daniels, 2014, p. 438). For about fifty years following Darwin’s famed publication, many Christian leaders were open to engagement with Darwinism, and authors of the Church of England’s *Lux Mundi* intended to examine traditional Christian doctrine through a hermeneutic sympathetic to Darwin’s claims (Daniels, 2014, p. 439). Hankins mentions that “a minority of Evangelical thinkers opposed evolution in any form, others accepted evolution while rejecting Darwin’s interpretation, and still others went a good distance toward accepting a slightly adjusted form of Darwinism” (Hankins, 2008, p. 59). Many of the Evangelicals who remained hostile to Darwin’s ideas viewed Scripture through a literal, fundamentalist lens, and opposition to Darwinism and evolutionary theory as a whole became a powerful political point for American fundamentalists. In 1919, the notorious three-time Presidential candidate and populist politician William Jennings Bryan adopted and widely publicized the

antievolutionist cause, and his fundamentalist crusade against Darwinism spread throughout the southern United States (Hankins, 2008, p. 60; Harris, 1998, p. 32).

For many of these fundamentalists, evolution was a symbol of atheistic modernism. As fundamentalist intellectuals attacked evolution within denominations and seminaries, popular fundamentalists such as Bryan attacked the teaching of evolution in America's public schools. Bryan and his fellow crusaders held that Darwinism would brainwash America's youth and destroy American culture. They believed that Germany's downfall in World War I was associated with the rise of theological modernism and evolutionary science. Thus, in order for the United States to avoid a similar fate, it would have to purge itself from any and all adherence to modernist thought, including evolutionary science (Hankins, 2008, p. 59). Bryan held that teaching evolution in public schools would produce a new generation of atheists devoid of all morality. For him, the truth of evolution would assert that human beings were simply advanced animals without a standard by which they could be held accountable for their actions. Regarding Darwinism itself, he noted, "Darwinism is not science at all; it is guesses strung together" (as quoted by Hankins, 2008, p. 61).

The battle of American fundamentalism notably culminated with the Scopes trial of 1925 (Maurer, 2009, p. 64). As a result of the aforementioned antievolution crusades, several American states considered passing antievolution bills in their legislatures. Tennessee passed one of the first such bills, the Butler Act, in 1925. Following this new legislative action, John Scopes, a science teacher based out of Dayton, Tennessee, was arrested for teaching evolution. Bryan, who pushed for the passage of these antievolution bills, soon joined the prosecutorial team, and Clarence Darrow, a famed trial lawyer, came to Scopes' defense. The trial was an instant media spectacle as journalists and proponents of both sides of the debate flocked to Dayton to witness the ordeal (Harris, 1998, p. 33-34). Although Scopes was eventually found guilty and fined, the process proved to be an embarrassment to Bryan and

the entire fundamentalist camp, who were not able to reconcile the inconsistencies between Scripture and science as introduced by Darrow. The verdict was eventually reversed, and as time progressed, conservative states lifted their bans on the exposition of evolution in public schools (Maurer, 2009, p. 64).

The Scopes trial was largely considered fundamentalists' last stand. They retreated from mainstream culture, but Hankins notes that they did not disappear. He writes that as fundamentalists withdrew following their major embarrassment, "[they] began building their own denominations, Bible institutes, magazines and so forth. In conjunction with this realignment, they largely abandoned efforts to banish evolution from schools, just as fundamentalists after Scopes gave up on the effort to recapture the mainline Protestant denominations from the modernists" (p. 68-69). The battle against evolution was no longer primarily fought in American schools and courtrooms; instead, fundamentalists waged it among themselves in order to solidify their creationistic convictions, especially within the context of their new "Evangelical" denominations (Hankins, 2008, p. 68-69; Harris, 1998, p. 42-43). As mentioned above, there exists a certain degree of tension when referring to Evangelicals as "fundamentalists," but Harris notes, "New evangelicals occasioned a renaissance in fundamentalist scholarship" (p. 43). Much of today's Evangelical institutions come from fundamentalist descent, and as today's Evangelicalism varies amongst a broad spectrum of denominations, so too does it exude varying degrees of fundamentalist thought (p. 44).

At this point in history, there are those in the Christian church who will readily accept evolution as fact and will not contest it with their faith. It should be noted that the majority of Catholics and mainline Protestants (Methodist, Anglican, etc.) accept evolution as fact (Pew Research, 2013). Several Christian universities teach evolution and consider it "good science" that is compatible with Christian doctrine (Schuman, 2010). Not all agree, however, as 64% of white Evangelicals believe that human beings always existed in present form (Pew Research,

2013). Seventy-five percent of Evangelical ministers “strongly disagree” that evolution is the best explanation for the origin of life (Jelen, 2010). The board of trustees at Bryan College, a Christian school in Dayton, Tennessee, controversially clarified the school’s statement of belief to say that Adam and Eve were historical figures that were not created from previously existing life forms. This led to the departure of nine of the 44 full-time professors at Bryan, a vote of no-confidence in the college’s president, and a school-wide student protest (*The Tennessean*, 2014).

As a whole, both inside and outside the academy, Millennials should be noted for their significant acceptance of science. A 2013 Pew Research report shows a 68% support for evolution (rather than static human existence) among 18 to 29 year-old Americans. This surpassed all other age groups surveyed. A survey of public, private, and religious colleges in New England revealed that 69.8% of public college students, 59.7% of private college students, and 62.1% of college students in a religious setting openly accepted evolution. The average totaled to a 63.4% acceptance of evolutionary theory (Paz-y-Mino-C, 2013). Another, more localized, study by Paz-y-Mino-C on a secular, liberal arts university in the Northeast showed that 78% of students supported the teaching of human evolution. Seventy and one-half percent of biology majors valued evolution as factual while only 55.6% of non-biology majors agreed (2008). Regarding Millennial disillusionment with the church, Barna Group lists a major reason: “Churches come across as antagonistic to science.” Three out of ten Millennials with Christian backgrounds consider the church to be “out of touch with the scientific world we live in.” One in four goes so far to say that “Christianity is anti-science.” And ultimately, 23% have been “turned off by the creation-versus-evolution debate” (2011).

Even in light of the ensuing argument between creationists and evolutionists within the church and the overall Millennial view of science, little attention has been given to the opinions of Millennials within the sphere of Christian higher education. Among the few

studies of Christian universities, Ladine’s (2009) research at East Texas Baptist University investigates students’ attitudes toward the teaching of evolution. Three hundred and eleven students were given a 15-question survey pertaining to the definition of evolution, the students’ religious affiliation, major, academic year, and opinion on how evolution should be taught. Biology majors were more likely to respond with the correct definition of evolution, as were students of higher seniority regardless of major. Nonetheless, 89% of all students believed God played a role in the creation, and 64% agreed that God should be included in the definition of science (Ladine, 2009).

Paz-y-Mino-C compared perspectives of evolution, creationism, and intelligent design between a secular and a religious college in the northeastern USA. An average of 64% of biology majors combined in both institutions supported the exclusive teaching of evolution in science classes. Among non-biology majors, 42% opposed the exclusive teaching of evolution in the secular college and 62% in the religious college. In addition, the higher the academic level of the students, the more likely they were to accept evolution as fact (2009a). These studies make the lack of enthusiasm regarding evolution apparent within religious colleges, but their independent variables do not capture the target audience’s overall ethos. The question of why students in an Evangelical Christian university accept or reject evolutionary theory remains unanswered.

Methods

Source of Data

The overall design of this project takes a quantitative approach in order to explore the following question: “to what extent do Millennials in a Christian university accept evolutionary theory, and what are the variables that affect their opinions?” An online, cross-sectional, non-probable sampling survey was conducted through SurveyMonkey among a population of 169 students at an Evangelical Christian university in the Southeast. These students were recruited through introductory classes, social media, and word of mouth; all survey participation was

voluntary. Most independent variables lost three cases to missing data, measuring a sample size of 166. Few lost more, and we will expound upon each of these independent variables further in this paper.

Instrumentation

An online, ten-question survey consisting of nine sociodemographic questions that pertain to academic major, religious practice, academic level, and political affiliation was administered to the participants. These sociodemographic questions served as independent variables for this study, five of which surveyed the students' educational experience, academic level, political party, academic department, and whether their parents were affiliated with any religion. These five were tested as categorical independent variables, and because we used a binary logistic regression, we recoded each of these five variables into dummy variables to pinpoint values consistent with our hypotheses (see Table 1b). Three of the remaining four independent variables measured students' religious practice, that is, the frequency in which students participate in religious services, read sacred texts (e.g., Bible, Qur'an, Tanakh, etc.) outside of religious services, and pray outside of religious services. These religiosity variables were lumped in with one question regarding the students' political ideology as scale variables (see Table 2).

The dependent variable in this study was asked as a dichotomous variable, prompting the participants to choose which statement comes closest to their opinion: "humans have evolved, meaning they have developed over millions of years from less advanced forms of life" (supporting evolutionary theory) or "humans have existed in their present species, homo sapiens, since the beginning of time" (opposing evolutionary theory). The dependent variable was coded as a dummy variable, with 1 = supporting evolutionary theory and 0 = opposing evolutionary theory. The sentiment opposing evolution was overwhelming, with 85.9% of those surveyed opposing evolution as defined in this survey. Only 14.1% of this sample expressed support for evolution (see Table 1a). Among our categorical independent variables, one question asked

students to identify which educational medium comes closest to their experience before university. Our frequency data shows that the largest medium was public school (57.8%), with our smallest value being those who took the GED (1.2%; see Table 1a). Because we expected those who attended public school to be more likely to affirm evolution than those educated through other means, we recoded this question into a dummy variable. The value of 1 was attributed to those who attended public school; the value of 0 served as an "Other" category (including homeschool, private Christian, private secular, and General Educational Development (GED); see Table 1b).

Our frequency data shows that the majority of students surveyed in this study were sophomores (34.3%). The smallest group surveyed were graduate students (.6%; see Table 1a). From our hypothesis, it was suggested that the higher students' academic level, the more likely they are to affirm evolution. For this reason, we recoded the value of seniors (with a valid percent of 14.2%) as 1, with the rest of the values recoded as 0 (see Table 1b). Because of the low output of graduate students, they were not used as the reference value for our dummy variable.

The students were further asked to select the political party with which they most closely identify. Our highest valid percentage came from those identifying with the Republican Party (45.0%); our lowest was the Democratic Party (9.5%; see Table 1a). Because we have hypothesized that those of a more liberal political persuasion are more likely to accept evolution, and that Democrats are statistically more likely to affirm evolution than Republicans or independents (Pew Research, 2013), we recoded this value as Democratic Party = 1, with the Republican Party, Independent/Other, and "Don't know" = 0 (see Table 1b).

Students were asked whether either of their parents identify with any religion, with possible answers being "Yes," "No," or "Uncertain." Our highest value was an overwhelming "Yes" at 94.9%, and "Uncertain" being the lowest at 1.9% (see Table 1a). Like the other categorical variables, this was also recoded as a dummy variable but under a different criteria. With

Table 1a: Frequency of Categorical Variables

Variables	Frequency	Valid Percentage
Evolution (Dependent Var.)		
Humans have evolved	22	14.1
Humans have always existed in present form	134	85.9
Educational Experience		
Homeschool	25	15.1
Public School	96	57.8
Private Christian	40	24.1
Private Secular	3	1.8
General Educational Development (GED)	2	1.2
Academic Level		
Freshman	49	29.5
Sophomore	57	34.3
Junior	35	21.1
Senior	24	14.5
Graduate	1	0.6
Political Party		
Democrat	16	9.6
Republican	76	45.8
Independent/Other	48	28.9
Don't know	26	15.7
Are either parents affiliated with any religion?		
Yes	150	94.6
No	5	3.2
Uncertain	3	1.9
Academic Department		
Behavioral & Social Sciences	19	11.4
History, Political Science, and Humanities	7	4.2
Business	17	10.2
Communication Arts	21	12.7
Language & Literature	11	6.6
Natural Sciences & Mathematics	18	10.8
Early Childhood, Elementary, and Special Education	27	16.3
Health, Exercise Science, and Secondary Education	6	3.6
Music	4	2.4
Nursing	6	3.6
Christian Ministries	14	8.4
Theology	10	6.0
Undeclared	6	3.6

Table 1b: Categorical Dummy Variables

Variables	Frequency	Valid Percentage
Educational Experience (1 = Public School)	96	57.8%
Academic Level (1 = Senior)	24	14.5%
Political Party (1 = Democratic Party)	16	9.6%
Academic Department (1 = Natural Sciences & Mathematics)	18	10.8%
Religious Parents (1 = Yes)	150	94.6%

all our other dummy variables, we chose the reference point (1) value to be consistent with our hypotheses, but for the sake of clarity, we chose to use “Yes” = 1 and “No”/“Uncertain” = 0 (see Table 1b). This was done to remain consistent with a binary yes/no (1/0) criteria, even though using “No” as our reference point would have been consistent with our hypotheses regarding secularization.

Finally, we asked students to identify the academic department to which their field of study belongs. There is a limitation here because we did not list every specific major that this university offers, and leaving the question open-ended could have resulted in ambiguous and missing data. So, for the sake of convenience, we listed each academic department for students to select based on their major. Thirteen academic departments were provided as options with the highest frequency output resting on Early Childhood, Elementary, and Special Education (16.3%). The lowest was Music at 2.4% (see Table 1a). Because one of our hypotheses states that hard science majors are much more likely to accept evolution than non-hard science majors, we recoded Natural Sciences and Mathematics = 1 and all other departments = 0 (see Table 1b).

Political ideology among students was measured as a scale variable, with each value attributed as 1 = “Very Liberal,” 2 = “Liberal,” 3 = “Moderate,” 4 = “Conservative,” and 5 = “Very

Conservative.” The value of 6 is attributed to the “Don’t know” category. As a whole, the political ideology variable has a mean (M) of 3.7711 and a standard deviation (S) of 1.11546, showing us that the highest frequency rests largely on “Conservative” and “Moderate” students (see Table 2). This is not without limitations, however, as self-descriptive political ideology may vary by arbitrary characteristics. The term “liberal” means different things to different people (Campbell, 2015). Nonetheless, this serves to test the hypothesis that those of a more liberal political persuasion are more likely to affirm evolution.

Students’ prayer lives outside of religious services served as one of our three religious practice variables. Measured at a scale, the question asks, “How often do you pray outside of religious services?” The values were appropriated as follows: 1 = “Never,” 2 = “Seldom,” 3 = “A few times a month,” 4 = “At least once a week,” and 5 = “Every day.” The mean (M) is shown to be at 4.5096 with a standard deviation (S) = 1.11546. Thus, we see that students at this university pray more often than less outside of religious services (see Table 2). Regarding actual attendance of

Table 2: Means of Scale Variables

Political Ideology	M = 3.7711	S = 1.11546
Prayer outside religious services	M = 4.5096	S = .82910
Attendance of religious services	M = 5.2975	S = .97425
Reading of sacred texts	M = 3.9304	S = .99756

services, our values are appropriated as follows: 1 = "Never," 2 = "Seldom," 3 = "A few times a year," 4 = "Once or twice a month," 5 = "Once a week," and 5 = "More than once a week." The mean (M) = 5.2975, and standard deviation (S) = .97425. Again, we see a higher inclination towards religiosity among this sample of students. Our final religiosity variable measured how often students read their sacred texts. The question itself asks, "How often do you read sacred texts (Bible, Quran, Tanakh, etc.) outside of religious services?" The values are appropriated as follows: 1 = "Never," 2 = "Seldom," 3 = "A few times a month," 4 = "At least once a week," and 5 = "Every day." The mean (M) = 3.9304 and standard deviation (S) = .99756. Although this variable shows that students have a slightly lower propensity toward religious behavior in comparison to the other religiosity variables, the tendency is still positive (see Table 2).

Data Analysis

Analysis of the data was conducted using SPSS. As mentioned above, nine independent variables pertaining to students' backgrounds were split into five categorical variables and four scale variables. The five categorical variables (educational experience, academic level, political party, parents' religion affiliation, and academic department) were recoded as dummy variables and analyzed via Pearson's chi-square test to determine significant correlation between these variables and acceptance of evolution. The chi-square test can be expressed as follows:

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

In order to determine significance among our scale variables (political ideology, prayer, religious service attendance, and reading of sacred texts), we used an independent samples t-test to compare means with the dependent dummy variable serving as the grouping variable. The independent t-test can be expressed as follows:

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (-1 - -2)}{S_{\bar{x}_1 - \bar{x}_2}}$$

The dependent variable of acceptance (or lack thereof) of evolution was measured as a dichotomous variable (a binary, "yes or no" answer), and, for this reason, the overall survey was analyzed via binary logistic regression to determine which of the students' socialization variables predict acceptance of evolution. The logistic regression models can be expressed as follows:

$$\ln\left(\frac{p}{1-p}\right) = B_0 + B_1X$$

Results

Table 3 shows us the results of our chi-square analysis of the categorical independent dummy variables in this study. Two variables were significant (p < .001): Political Party and Academic Department. Therefore, from this table we can conclude that a student's favored political party and the academic department to which he or she belongs has a significant correlation to his or her affirmation of evolution.

As shown in Table 4, all three religiosity variables are revealed to be significant factors in relation to the dependent variable. The most significant variables (p = .000) were Religious Service Attendance and Reading of Religious Texts. These were closely followed by Prayer (p = .001). Thus, we can conclude that a student's religious practices are important measurements to consider regarding his or her opinion of evolution. Next, Table 5 will show us predictor values utilizing all independent variables via binary logistic regression.

Table 5a expresses the predictor value of the religiosity variables: Prayer, Religious Service Attendance, and Reading of Sacred Texts. Focusing on these three alone, the Sacred Texts variable was significant (p < .001). Table 5b introduces political variables to our religious ones: Political Ideology and Political Party (1 = Democratic Party). Of these five independent variables, Reading of Sacred Texts remains the most significant variable (p < .001) followed by Political Party (p < .05). Table 5c introduces all the remaining independent variables in this study along with the aforementioned, including Academic Level (1

Table 3: Chi-Square of Basic Demographic

Variables	Pearson Chi-Square Test (* p<.05, ** p<.01, *** p<.001)
Educational Experience	.477
Academic Level	3.547
Political Party	14.741***
Academic Department	11.908***
Parents' Religious Affiliation	.145

Table 4: Comparison of Means by Political Ideology and Religious Variables

Variables	T-test (sig.) (* p<.05, ** p<.01, *** p<.001)
Political Ideology	-1.019 (.310)
Prayer	-3.506 (.001)***
Religious Service Attendance	-3.822 (.000)***
Reading of Sacred Texts	-5.665 (.000)***

= Senior), Academic Department (1 = Natural Sciences & Mathematics), Parents' Religiosity (1 = Yes), and Educational Experience (1 = Public School). Among all variables, students' Academic Department expressed the highest significance ($p < .001$), followed by the frequency of their reading Religious Texts ($p < .01$), and the Political Party with which they identify ($p < .05$).

From this we can conclude that if a student identifies with the Democratic Party, he or she is roughly ten times more likely to affirm evolution as fact ($\text{Exp}(B) = 10.218$; see Table 5c). Regarding the reading of sacred texts, we see that the beta (β) value is negative (-1.121). This means that the less someone reads his or her sacred text (in this case, the Bible), the more likely he or she is to affirm evolution. And finally, if a student's major falls under the Department of Natural Sciences & Mathematics, the more likely he or she is to affirm evolution. This particular variable was by far the most significant, and the $\text{Exp}(B)$ value shows that Natural Sciences & Mathematics majors are 11.861 times more likely to accept evolution than those who are not members of

this department (see Table 5c).

Conclusion

Among the students surveyed, those who affirmed evolutionary theory were a small minority. This is not surprising, given past studies on Christian institutions. Within this minority, however, we may conclude from our results that students who read less of their sacred text (largely in this case, the Bible), those who identify with the Democratic Party, and those whose academic discipline falls under the Department of Natural Sciences & Mathematics, are all significantly more likely to affirm evolution as fact. Two of our four hypotheses were supported by our data, the first being that students who are hard science majors are more likely to accept evolution than those who are not. Since hard sciences are primary concentrations within the Department of Natural Sciences & Mathematics, we suggest that this renders our hypothesis plausible. The second supported hypothesis was that students of a more liberal political persuasion are more likely to accept evolution than those who lean conservative. Since the Democratic Party is traditionally associated with more liberal political values, and since, from the literature and from our data, Democrats are more likely to affirm evolution, we suggest this renders our other hypothesis plausible as well.

The significance of these three variables is unsurprising, especially in light of the literature. One can infer that those who do not regularly read Scripture are certainly more likely to affirm that which is widely considered to conflict with Scripture. Thus, the result that suggests those who do not regularly read Scripture are more likely to affirm evolution as fact is understandable. However, this result should not be misconstrued to promote the assumption that those who affirm evolution are biblically illiterate or irreligious. Such an assumption is false. It does, however, promote further discussion as to how Scripture is interpreted among those who partook in this survey. Since those who read Scripture more frequently were less likely to affirm evolution as fact than those who do not, does this suggest that the majority of frequent readers hold a more literalist interpretation

Table 5a: Binary Logistic Regression – Model 1

(* p<.05, ** p<.01, *** p<.001)

Variables	β	Exp(B)
Constant	2.988	19.848
Prayer	.298	1.347
Religious Service Attendance	-.443	.642
Reading of Sacred Texts	-1.071***	.343***

Table 5b: Binary Logistic Regression – Model 2

(* p<.05, ** p<.01, *** p<.001)

Variables	β	Exp(B)
Constant	3.007	20.217
Prayer	.393	1.481
Religious Service Attendance	-.463	.630
Reading of Sacred Texts	-1.082***	.339***
Political Ideology	-.143	.867
Political Party (1 = Democratic Party)	1.592*	4.912*

Table 5c: Binary Logistic Regression – Model 3

(* p<.05, ** p<.01, *** p<.001)

Variables	β	Exp(B)
Constant	3.276	26.470
Prayer	.458	1.580
Religious Service Attendance	-.517	.596
Reading of Sacred Texts	-1.121**	.326**
Political Ideology	-.115	.891
Political Party (1 = Democratic Party)	2.324*	10.218*
Academic Level (1 = Senior)	1.181	3.258
Academic Department (1 = Natural Sciences & Mathematics)	2.473**	11.861**
Religious Parents (1=Yes)	-.557	.573
Educational Experience (1 = Public School)	-1.239	.290

of the Genesis narrative? Inquiry exploring students' delegation of value to Scripture and exegesis would likely provide interesting answers in future research.

This study was not without limitations. To begin, our sample size was only 169 participants with missing cases attributed to all variables at different levels. Furthermore, regarding a few of our independent variables, precision proved to be difficult. Not every academic discipline was listed for students to choose from in the survey. For the sake of time, convenience, and neatness, we settled for the thirteen academic departments of the university studied. The political ideology variable was also difficult to measure. As stated above, self-descriptive political ideology may vary by individual arbitrariness. The terms "liberal" and "conservative" mean different things to different people. However, we are pleased with the categorical question asking participants with which political party they identify the most. We feel this offers a more detailed political criteria, for though people may arbitrarily refer to themselves as "liberal," "conservative," or "independent," identifying with a political party carries heavier implications.

Is the data consistent with what secularization theory propagates? Examining the three variables which have significant predictor value in regards to acceptance of evolution, we would suggest that the infrequency in reading sacred texts, studying an academic discipline within the hard sciences, and identifying with the Democratic Party all share traits consistent with secularization theory. If we take into account Durkheim's view of secularization as a deviation from overarching religious norms and values, we can see how each of these variables carry secular value within an Evangelical context. Failure to read one's Bible is a very secular thing to do, naturally. Identifying with the Democratic Party, which generally deviates from fundamentalist values and is not always looked upon fondly by the Evangelical world, carries a secular connotation within this conservative Christian context. And pursuing an academic discipline such as the hard sciences, which deviates from a fundamentalist creation narrative by its generally understood acceptance of evolutionary theory,

implies a certain degree of secular adherence. Let it be understood that we are not suggesting that those who rarely read Scripture, those who identify with the Democratic Party, and those who study the hard sciences cannot be people of faith. We would suggest, however, from a social scientific standpoint, adherence to certain "secularized" ideologies and behaviors can predict a positive disposition toward evolutionary theory, which is itself considered a secular value in the Evangelical world.

References

- Barna Group (2011). Six reasons young Christians leave the church. Retrieved from <http://tiny.cc/im8u5x>.
- Campbell, C., & Horowitz, J. (2015). Does college influence sociopolitical attitudes? *Sociology of Education*, 89(1), 40-58.
- Daniels, J. C. (2014). Christology, evolution, and cultural change. *Anglican Theological Review*, 96(3), 435-459.
- Faculty leaving Bryan College after change in beliefs. (2014, May 4). *The Tennessean*. Retrieved from www.tennessean.com.
- Hankins, B. (2008). *American Evangelicals: A contemporary history of a mainstream religious movement*. Lanham: Rowman & Littlefield Publishers, Inc.
- Harris, H. (1998). *Fundamentalism and Evangelicals*. Oxford: Clarendon Press.
- Livingstone, D. N. (1987). *Darwin's forgotten defenders: The encounter between Evangelical theology and evolutionary thought*. Grand Rapids: William B. Eerdmans Publishing Co.
- Jelen, T. G., & Lockett, L. A. (2010). American clergy on evolution and creationism. *Review of Religious Research*, 277-287.
- Ladine, T. A. (2009). Attitudes of students at a private Christian liberal arts university toward the teaching of evolution. *Evolution: Education and Outreach*, (3), 386.
- Marsden, G. M. (1994). *The soul of the American university: From Protestant establishment to established nonbelief*. New York: Oxford University Press.
- Martin, J. W. (2010). Compatibility of major U.S. Christian denominations with evolution.

- Evolution: Education and Outreach*, (3), 420.
- Maurer, S. (2009). A historical overview of American Christian fundamentalism in the twentieth century. In S. Hoover & M. Kaneva (Eds.), *Fundamentalisms and the media* (pp. 54-72). London: Continuum.
- Paz-y-Mino-C, G. & Espinosa, A. (2009a). Acceptance of evolution increases with student academic level: A comparison between a secular and a religious college. *Evolution: Education and Outreach*. (2), 655-675.
- Paz-y-Mino-C, G., & Espinosa, A. (2009b). Assessment of biology majors' versus nonmajors' views on evolution, creationism, and intelligent design. *Evolution: Education and Outreach*. (2), 75-83.
- Paz-y-Mino-C, G., & Espinosa, A. (2013). Attitudes toward evolution at New England colleges and universities, United States. *NE Science Public: Series Evolution*. 1(1), 1-32.
- Pew Research Center (2015, May 12). America's changing religious landscape.
- Pew Research Center (2013, December 30). Public's views on human evolution.
- Pew Research Center (February 2010). Religion among the Millennials: Less religiously active than older Americans, but fairly traditional in other ways.
- Pickering, W. F. (2009). *Durkheim's sociology of religion: Themes and theories*. Cambridge: James Clarke & Co. (Original work published in 1984).
- Rainer, T. S., & Rainer, J. W. (2010). *The Millennials: Connecting to America's largest generation*. Nashville: B&H Books.
- Schuman, S. (2010). *Seeing the light: Religious colleges in twenty-first century America* (p. 139). Baltimore: Johns Hopkins University Press.
- Swatos, W. & Christiano, K. (1999). Secularization theory: The course of a concept. *Sociology of Religion*, 60(3), 209-228.

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