

*The Effects of Higher Education on Tolerance:
An Investigation of Political and Cultural Attitudes of College Students*

Leah Webb-Halpern

Abstract

The purpose of the study was to determine whether a correlation existed between increasing years of higher education and tolerance toward women, immigrants, Islamic people, and homosexuals. A survey questionnaire containing twenty opinion statements about the four groups was constructed, with options of disagreeing or agreeing, either strongly or somewhat, and no opinion. The respondents were 95 Henderson State University students in four randomly selected classes. Student responses were analyzed using the Statistical Package for the Social Sciences. Summary variables were created from the average of the responses to the statements on tolerance toward each of the four groups. Averaging the responses to all opinion statements created an overall summary tolerance variable. For each of the five summary tolerance variables, the mean tolerance increased from freshman to sophomore or junior year but declined for seniors. The correlation between the overall tolerance summary variable and years of education was .063. This correlation, although positive, was not statistically significant at the 0.05 level. When demographic variables were controlled for, the correlation coefficient was .147, a value that remained statistically not significant. The hypothesis, tolerance increases with additional years of higher education, could not be supported. A statistically significant correlation was observed for two opinion statements, which suggested that higher education may increase tolerance on specific issues. When only the cases of non-seniors were selected, the result was a statistically significant correlation of class with overall tolerance of .234. Seniors

tended to more conservative, white, and male than the rest of the sample.

Introduction

The United States of America has become an increasingly diverse country ethnically in recent years. The proportion of Asian and Pacific Islanders (API) and Hispanics, for example, has increased dramatically in the last thirty years. The United States has also become more religiously diverse, with an increase in the number of followers of Islam and other religions, which had few adherents in earlier periods of United States history. The practice of alternative lifestyles, which had earlier been hidden, is more visible and accepted in today's society. Public affirmation of gay, lesbian, and bisexual identities is now common. In addition to significant changes in ethnic, religious, and sexual identities, the women's movement that began in the 1960s introduced new ideas and a new reality regarding women's place in society. The modern women's movement advocates equal treatment in the family and workplace and equal opportunity in employment, government, and education. Many people look positively upon such changes in ideas and the increasing diversity in the United States, but some do not.

There are numbers of individuals and organizations, particularly those involved in conservative movements, which oppose these different lifestyles, people, and ideas. Many conservatives lament that the growing population of API and Hispanics is causing a shift away from the predominantly English-speaking, white, European-American nature of our society and thereby undermining what they view as a historic "Americanism" which is predominately white and European-American. Peter Brimelow, one supporter of this idea, "argued in *Alien Nation* (1995) that non-white immigration posed a threat to the country's historical cultural identity (Foner 329)." Another aspect of cultural identity for many Americans is religion. They therefore oppose the spread of non-Christian religions, and inclusion of those who identify with

such religions. In the wake of September 11, 2001, the Islamic religion has been a special target. The idea that the Islamic religion is universally violent and backward is a common one. Kenneth Adelman, who serves on President George W. Bush's Defense Policy Board, has described the religion as "militaristic." Another member of the board, Eliot Cohen, depicts the Islamic religion as "deeply aggressive and dangerous (Milbank)."

The conservative movement is not only opposed to the spread and increasing prevalence of diverse ethnicities and religions, it is also against the practice of alternative lifestyles.

Conservatives have campaigned against the efforts of gay rights groups to secure protection against discrimination under civil rights laws similar to that accorded minorities and women. In their campaigns, conservatives often argue that homosexuality and bisexuality are unnatural and immoral. Nor do they believe homosexuals should have the right to marry or to adopt children. Such arguments have met with some electoral successes. In the 2000 election, voters in Maine voted against an amendment to ban discrimination on the basis of sexual preference, and voters in Nevada and Nebraska approved anti-gay, lesbian, and bisexual legislation (Gajewski).

As the non-heterosexual preference offends the conservative stance on "family values," in a similar fashion, so do the ideas of the women's rights movement. Although polling data indicate that the majority of the population is in favor of equal rights for women, some conservative segments of the population and political groups regret that change in favor of women's rights has proceeded as far as it has in undermining the traditional male-dominated household and society (NES).

Although there is an effective movement against diversity and change, there are also significant forces in American society that favor diversity and tolerance. These forces argue that a society that is more accepting to all individuals regardless of their ethnicity, religion, sexual

identity, or gender, will make the country a better home for all of its inhabitants. Intolerance both leads to misery for the people of the affected groups and, at the same time, denies to everyone opportunities to learn about others' cultures, languages, and ideas. To benefit everyone, the question of what increases tolerance becomes important.

Some studies have shown that one of the major creators of tolerance is higher education. In their analysis of the 1984 General Society Survey Data, Lawrence Bobo and Frederick C. Licari focused on the effects of cognitive reasoning and the level of a person's education on political tolerance. They examined whether more education increased tolerance even in the case where the individual disliked the group in question. They found a strong correlation between years of education and tolerance. The more years of education an individual experienced, the more tolerant the individual became. The correlation was *less* strong if the individual did not like the group in question, but the analysis still showed "that the highly educated are more tolerant than the less well educated even when the analysis is restricted to respondents who are likely to have negative attitudes toward the target group (Bobo and Licari 300)." Their study also found that cognitive sophistication contributes significantly to tolerance.

In an investigation of procedural norms, "rules governing the way in which political decisions are made," and tolerance, David G. Lawrence analyzed the National Opinion Research Center's survey data for 1976. He chose to examine the survey by dividing the responses to questions related to tolerance into two categories: soft issues and hard issues. Lawrence defined soft issues as those that did not arouse strong feelings, while hard issues were those in which strong emotions were involved. He found education was a small factor in the tolerance of an individual on soft issues, such as pollution. However, on harder issues, such as legalization of marijuana or racial discrimination, he found a strong correlation between tolerance and higher

education (Lawrence 86-89).

While there are many studies whose results indicate that education increases tolerance toward nonconformist groups, there are some studies that indicate the opposite. John L. Sullivan, James Pierson, and George E. Marcus proposed an alternative idea of political tolerance. Their survey differed from others in that they permitted the individual to choose the political group from which their own views were believed to differ greatly, and only then were questions asked to discover their level of tolerance toward the chosen group. When study participants were surveyed in this manner, Sullivan, Pierson, and Marcus found that there was little correlation between higher education and tolerance. While there was a positive relationship, it was not to a statistically significant degree (Sullivan, Pierson, Marcus 781-792).

As a follow-up to earlier studies, this paper will examine the role of higher education in influencing students to become more tolerant and accepting toward some of the most controversial groups in society today. It is hypothesized that the tolerance toward each identified group, by the student population surveyed, will increase with additional years of college education. Since September 11, 2001, many civil libertarians and other commentators have expressed concern that actions tending to promote intolerance have increased. Given that reality, whether higher education has concurrently contributed to increased acceptance of diversity under these conditions is of interest. If U.S. society, as a whole, embraced diversity and tolerance as essential principles, we would benefit from living in a friendlier nation.

Materials

- Gateway P.C. Computer
- SPSS
- Microsoft Excel
- Microsoft Word
- Assistance of Henderson State University students and faculty

Methods

To determine whether the average level of tolerance increases with each year at college, a survey questionnaire was composed for distribution to Henderson State University (HSU) classes. (See Appendix 1 for a copy of the survey instrument.) Using a random number table and the HSU course record number, four undergraduate courses were randomly selected from HSU's list of classes for the spring semester according to the following requirements:

1. Two lower-level courses and two upper-level courses. The purpose of this criterion was to obtain a sample of students from the first to fourth year of study to facilitate testing the hypothesis of change over time in student tolerance.
2. Lower-level courses selected at the 1000 level and 2000 level met the university's general education requirement. The purpose of this criterion was to ensure participation by a diverse group of students.
3. Classes selected had a minimum early-registration enrollment of 15 students. Early registration was completed November 22, 2002. Regular registration began on January 13, 2003. The purpose of this criterion was to ensure an adequate number of students in each class selected.

4. Courses selected had an enrollment cap to the course of no more than 40 students. The purpose of this criterion was to prevent one class from skewing the data.

Henderson State University's list of classes for the spring semester contained a four-digit, unique number for each class, the REC number. A list of four-digit numbers was created from the numbers in a random number table, starting at a random spot in the table. Classes were included in the sample if they met criteria two and four for lower-level classes and criteria three and four for upper-level classes. A total of two lower-level classes were selected and two upper-level classes. In addition, two back-up classes, one lower-level and one upper-level, were selected. Faculty members teaching the selected classes were approached at the beginning of the spring semester with information on the purpose of the project. They were provided the questionnaire to be used and a copy of the consent form for students to sign. (See Appendix 2 for a copy of the consent form.) The faculty were asked to administer the questionnaire sometime in the first two weeks of classes. (See Appendix 3 for a copy of the letter given to the professors.) The professors in the four selected classes agreed to participate and the back-up classes were not needed.

List of the selected classes with course code, early registration enrollment, and cap:

Selected Classes	Early registration enrollment	Enrollment cap
MTH1243 College Algebra	30	30
PHI2013 Intro to Philosophy	35	35
EDU3042 Instructional Tech	25	20
PSC4163 Public Policy	20	19

Academic Forum 21 2003-04

Back-up Classes:

CHM1004L Intro to Chem Lab	24	24
COM3133 Rhetorical Theory	15	30

On the day the questionnaires were distributed one hundred and ten students were enrolled in the four classes. Ninety-six questionnaires were returned, one was incomplete, one student declined to participate, and thirteen students were not present. The incomplete survey response was not included in the data set. Thus, the data set includes ninety-five students, an eighty-six percent response rate.

A list of selected classes with course code, enrollment on date survey was distributed, and number who completed survey:

Selected Classes	Enrollment on date of survey	# of completed surveys
MTH1243 College Algebra	27	22
PHI2013 Intro to Philosophy	42	35
EDU3042 Instructional Tech	23	20
PSC4163 Public Policy	18	17

The survey began with seven questions to identify the student sex, age, class, religious preference, ethnic background, political views, and parent work status. The next twenty statements on the survey were devised in order to discover student tolerance toward immigrants, Islamic people, homosexuals, and women. Some of the questions and statements were based on those used in the Cooperative Institutional Research Program (CIRP) Freshman Survey. Five statements about each selected group of four constituted the twenty total statements. The responses to each of the twenty opinion statements included disagreeing or agreeing, either strongly or somewhat, and no opinion. Statements were designed to assess whether the student

agreed with both intolerant and tolerant statements.

A data set was created from the student responses and analyzed using the statistical program Statistical Package for the Social Sciences (SPSS). The data were coded so that, for each statement, one represented the least tolerant response and five the most tolerant. Responses to one of the statements were discarded because of a printing error in which the choice Agree Strongly was not listed, leaving nineteen opinion statements. New summary variables were created from the average of the responses to the statements on tolerance toward each of the four groups. An overall tolerance variable was created by averaging the responses to all of the opinion statements.

Results

Of the 95 respondents in the sample population, 14.7 percent were freshmen, 32.6 percent were sophomores, 32.6 percent were juniors, and 19 percent were seniors. Data on Henderson student enrollment for spring 2003 indicated 27.0 percent of HSU undergraduate students were freshmen, 21.9 percent were sophomores, 23.0 percent were juniors, and 28.0 percent were seniors. The sample may have had a lower percentage of freshmen due to the fact that the two general education courses sampled included many sophomores, juniors, and even some seniors. Philosophy was thought of as a sophomore level course and many students delayed taking college algebra because of difficulties with math performance. The percentage of seniors may have been small in the sample because many seniors were in off-campus teaching internships or in small, upper-level courses excluded from the sample design.

Forty percent of the respondents were male and 60 percent were female, compared with a HSU overall student population of 44 percent male students and 56 percent female students. Of

the students in the sample, 86.3 percent were White/Caucasian and 13.7 percent were African American/Black. Seventy-eight percent of Henderson’s student population was White and 15.0 percent was Black. The respondents who were younger than twenty years of age made up 37.9 percent of the total sample population, while 52.6 percent ranged from age twenty to twenty-four and 9.5 percent were over age 24. Thirty percent of Henderson students overall are younger than twenty, 51.9 percent range from twenty to twenty-four and 18.4 percent are over twenty-four (Table 1) (Henderson). The sex, race, and age distribution was similar to that of the overall Henderson student population.

Table 1. Demographic comparison of Henderson and sample populations

Demographic comparison

<i>Demographic Group</i>	<i>Sample Population</i>	<i>Henderson Population</i>
<i>Class</i>	14.7%	27.0%
Freshmen	32.6%	21.9%
Sophomores	32.6%	23.0%
Juniors	20.0%	28.0%
Seniors		
	86.3%	78.3%
<i>Race</i>	13.7%	15.0%
White		
Black	37.9%	29.7%
	52.6%	51.9%
<i>Age</i>	9.5%	18.4%
Younger than 20		
20-24	40.0%	44.0%
Over 24	60.0%	56.0%
<i>Sex</i>		
Male		
Female		

Fifty-six percent of the students in the sample identified themselves as Baptists, 12.6 percent as Methodist, 9.5 percent as Roman Catholic, United Church of Christ, Eastern Orthodox or Presbyterian. Sixteen percent identified themselves as “Other Christian,” while 4.2 percent identified as “Other Religion,” and 2.1 percent had no religion (Table 2).

Table 2. Religious affiliation of the sample population

		Religion			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Baptist	53	55.8	55.8	55.8
	Eastern Orthodox	1	1.1	1.1	56.8
	Methodist	12	12.6	12.6	69.5
	Presbyterian	1	1.1	1.1	70.5
	Roman Catholic	4	4.2	4.2	74.7
	United Church of Christ	3	3.2	3.2	77.9
	Other Christian	15	15.8	15.8	93.7
	Other Religion	4	4.2	4.2	97.9
	None	2	2.1	2.1	100.0
	Total	95	100.0	100.0	

The majority (53.7 percent) of the students in the sample described their political views as “Middle-of-the-Road.” Twenty-six percent of the respondents identified as Liberal and 16.8 as Conservative (Table 3).

Table 3. Political views of the sample population

		Political views			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Far left	1	1.1	1.1	1.1
	Liberal	25	26.3	26.3	27.4
	Middle-of-the-Road	51	53.7	53.7	81.1
	Conservative	16	16.8	16.8	97.9
	Far right	2	2.1	2.1	100.0
	Total	95	100.0	100.0	

When questioned about parent work status, about two thirds of the students responded that both their father and mother were employed or looking for work. Fifteen percent of the students responded that only their mother was employed or looking for work, while 14 percent responded that only their father was employed or looking for work (Table 4).

Table 4. Parent work status of the sample population

		Parents' work status			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Father and mother are employed or looking for work	63	66.3	66.3	66.3
	Only father is employed or looking for work	13	13.7	13.7	80.0
	Only mother is employed or looking for work	14	14.7	14.7	94.7
	Neither father not mother is employed or looking for work	5	5.3	5.3	100.0
	Total	95	100.0	100.0	

Of the nineteen statements eliciting responses on specific views, the statement with the strongest affirmation of tolerance was “Women are equal to men in intellectual potential.” Seventy-seven percent of the students in the sample strongly agreed with this statement. There were two statements that elicited the greatest percentage of intolerant responses (51.6 percent). The majority of the respondents disagreed strongly with the statement, “Homosexual couples should be allowed to adopt children,” and agreed strongly with the statement, “Homosexuality is immoral and unnatural.” (See Appendix 4 for tabular data showing responses to each of the specific statements.)

Another way tolerance levels were compared for different statements was the mean for

each variable. The highest mean (4.62) was for the statement about the intellectual ability of women and men. The lowest mean (1.93) was for the statement “Homosexuality is immoral and unnatural.” The mean closest to the midpoint (3.0), or no opinion, was for the statement “It is important to have laws prohibiting homosexual relationships” (mean = 3.02). Overall, twelve statements were above the median, while seven statements were below it.

When the tolerance summary variables, the averaged data for all the statements within a group, were compared, the tolerance toward women variable had the highest mean (3.70). The variable with the lowest mean was the tolerance toward homosexuals (2.55). The mean of the tolerance toward immigrants variable was 2.78, while that for the tolerance toward Islamic people variable was 3.53 (Table 5).

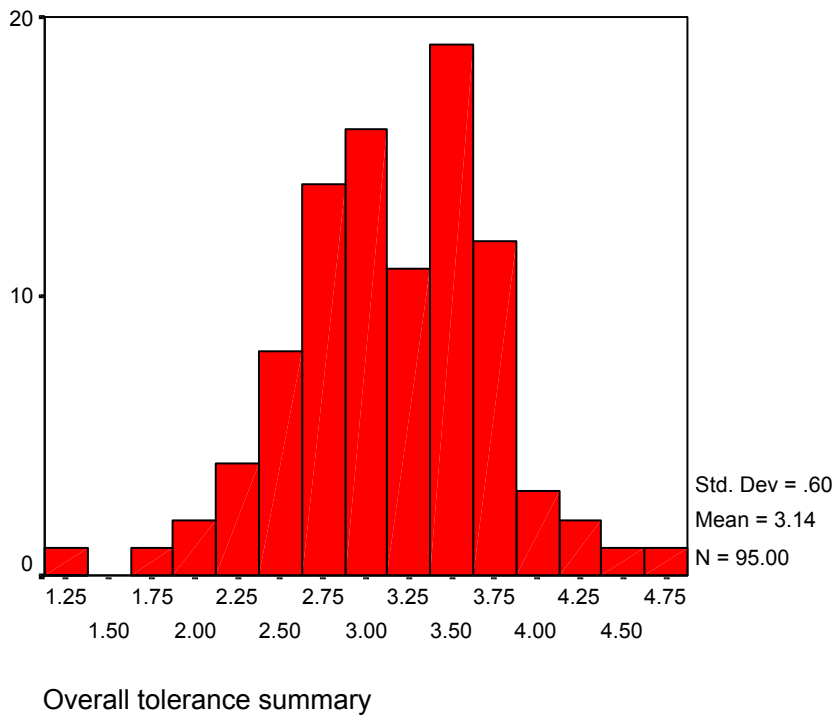
Table 5. Means for the tolerance summary variables

Descriptive Statistics		
	N	Mean
Tolerance toward homosexuals	95	2.5516
Tolerance toward immigrants	95	2.7789
Tolerance toward women	95	3.7000
Tolerance toward Islamic people	95	3.5347
Overall tolerance summary	95	3.1413
Valid N (listwise)	95	

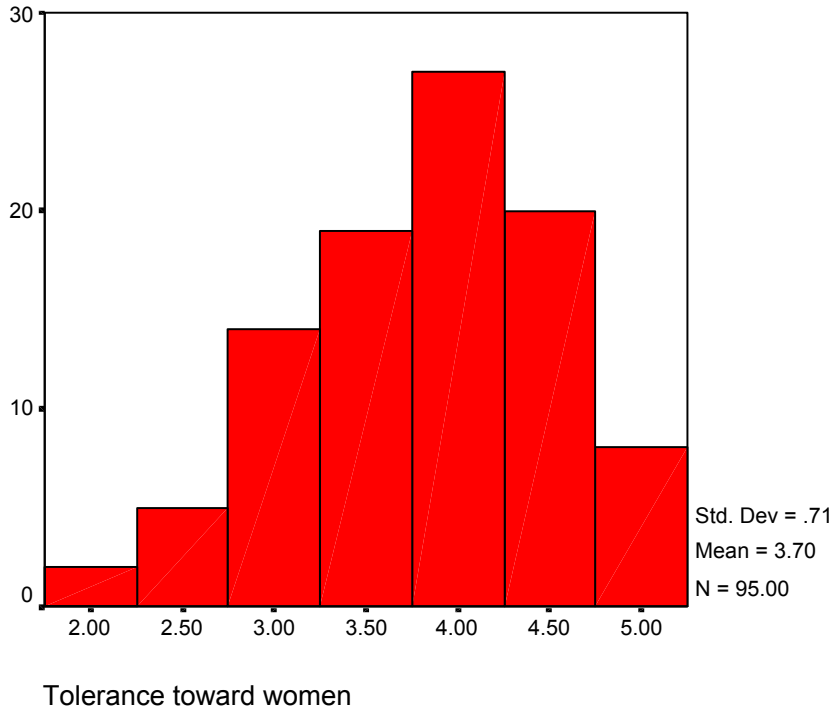
Graphs 1-5 present histograms of the overall tolerance variable and of the four summary tolerance variables. The overall tolerance summary histogram closely resembled a symmetric distribution. The histogram of the tolerance toward women summary variable (Graph 2) indicated the highest levels of tolerance as the graph was skewed to the left. The graph of the tolerance toward homosexual (Graph 4) showed the greatest amount of intolerance as the

distribution was skewed slightly to the right. The tolerance toward immigrants variable was a fairly symmetric distribution (Graph 3), while the data in the tolerance toward Islamic people histogram was slightly skewed to the left (Graph 5).

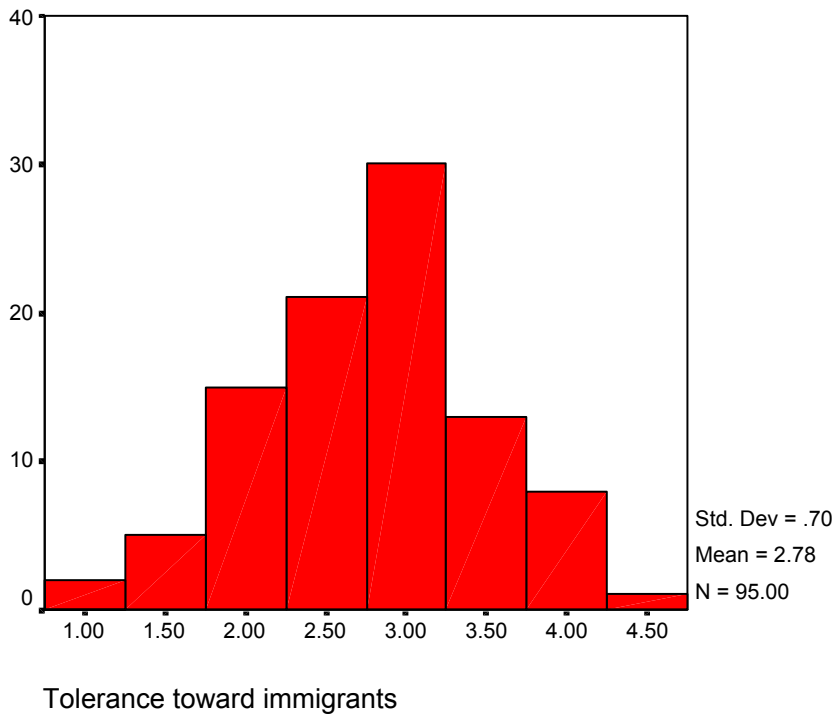
Graph 1. Histogram of the overall tolerance summary



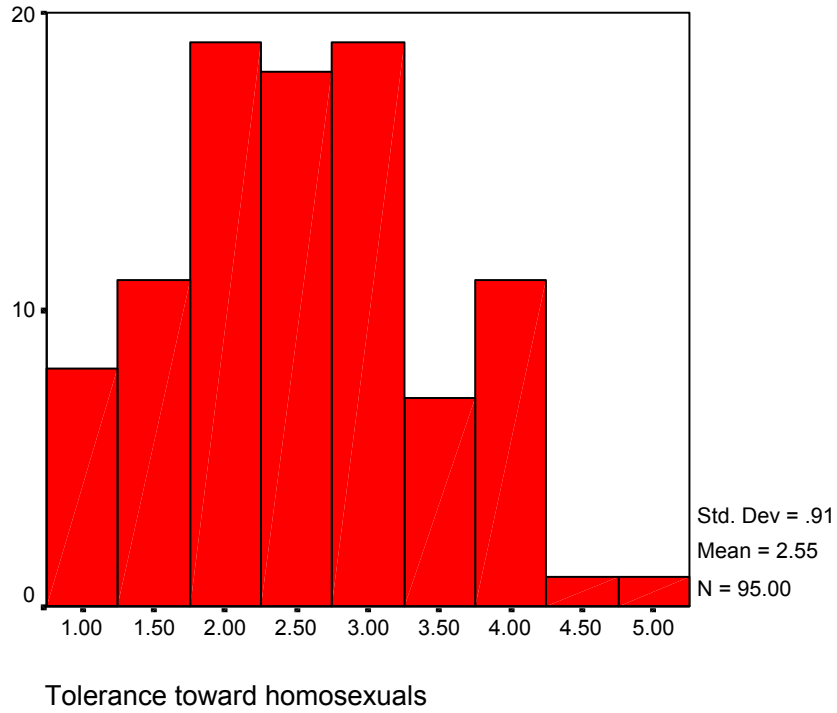
Graph 2. Histogram of tolerance toward women



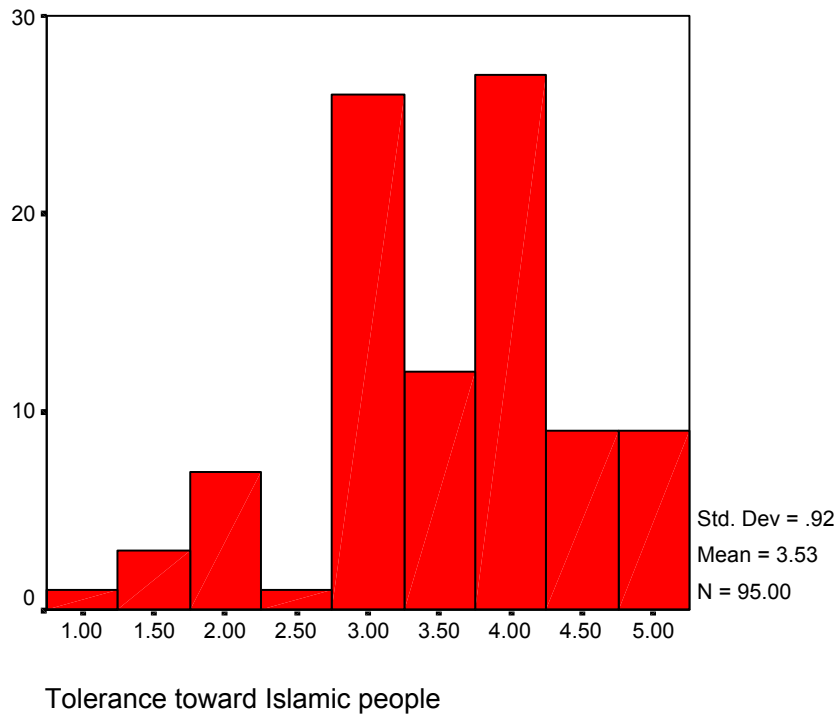
Graph 3. Histogram of tolerance toward immigrants



Graph 4. Histogram of tolerance toward homosexuals



Graph 5. Histogram of tolerance toward Islamic people



Most of the four tolerance summary variables were correlated positively with each other (Table 6). The strongest correlation was between that of tolerance toward homosexuals with tolerance toward women (.600). This correlation was significant at the 0.01 level (2-tailed test) as were the correlations between tolerance toward immigrants and Islamic people (.403), the tolerance toward women and Islamic people (.430), and the tolerance toward Islamic people and homosexuals (.438). The correlation between tolerance toward homosexuals and immigrants (.263) was significant at the 0.05 level. The only two variables whose correlation (.082) was not significant were tolerance toward immigrants and tolerance toward women.

Table 6. Correlations between the tolerance summary variables

Correlations

		Tolerance toward homosexuals	Tolerance toward immigrants	Tolerance toward women	Tolerance toward Islamic people
Tolerance toward homosexuals	Pearson Correlation	1.000	.263*	.600**	.438**
	Sig. (2-tailed)	.	.010	.000	.000
	N	95	95	95	95
Tolerance toward immigrants	Pearson Correlation	.263*	1.000	.082	.403**
	Sig. (2-tailed)	.010	.	.428	.000
	N	95	95	95	95
Tolerance toward women	Pearson Correlation	.600**	.082	1.000	.430**
	Sig. (2-tailed)	.000	.428	.	.000
	N	95	95	95	95
Tolerance toward Islamic people	Pearson Correlation	.438**	.403**	.430**	1.000
	Sig. (2-tailed)	.000	.000	.000	.
	N	95	95	95	95

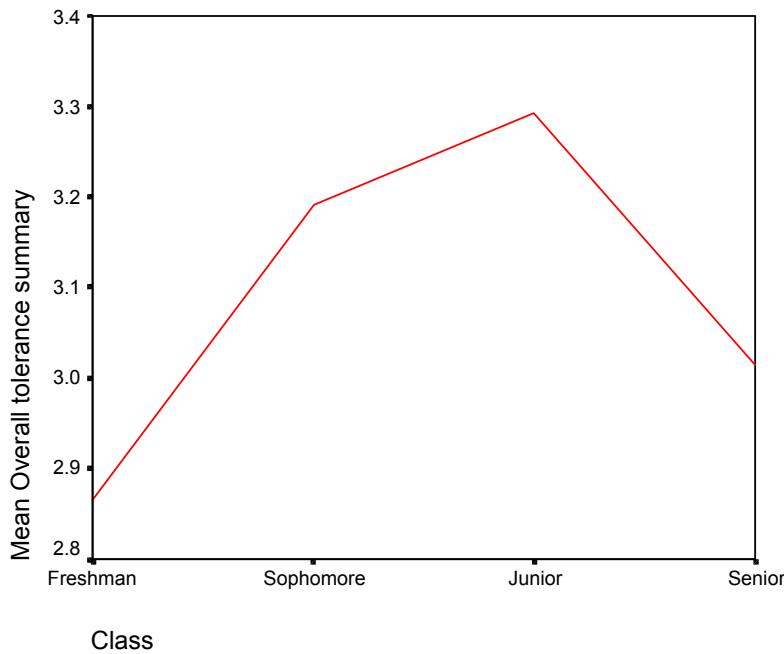
*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The overall tolerance summary variable was an average of all the responses to all of the statements. The mean of the overall tolerance summary was 3.11. Thus, on average, the respondents were slightly more tolerant than indicated by a no-opinion response.

Turning now to a test of the hypothesis, a graphic depiction of the relationship between overall tolerance and class status showed tolerance rising in the sophomore and junior years and then declining in the senior year (Graph 6).

Graph 6. Mean overall tolerance summary by class status



The correlation between the overall tolerance summary variable and class, or level of education, was .063. This correlation, although positive, was not statistically significant at the 0.05 level (Table 7). When the decline in tolerance levels among seniors was taken note of, it was interesting to examine the correlation when only the cases of freshmen, sophomores, and juniors were selected. The result was a statistically significant correlation of .234 for the sub-set of freshmen, sophomores, and juniors (Table 8).

Table 7. Correlation between overall tolerance summary variable and class

Correlations

		Class	Overall tolerance summary
Class	Pearson Correlation	1.000	.068
	Sig. (2-tailed)	.	.512
	N	95	95
Overall tolerance summary	Pearson Correlation	.068	1.000
	Sig. (2-tailed)	.512	.
	N	95	95

Table 8. Correlation between overall summary tolerance variable and class for the sub-set of freshmen, sophomores and juniors

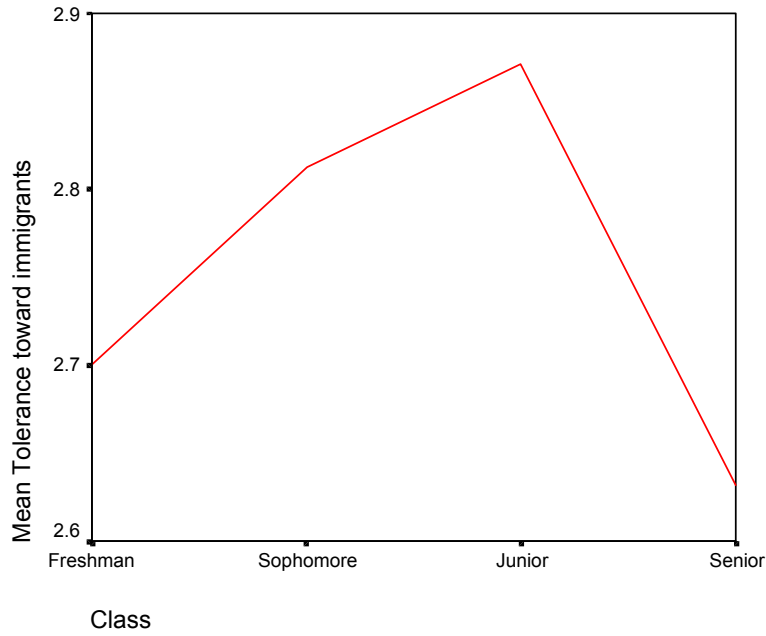
Correlations

		Tolerance summary	Class
Tolerance summary	Pearson Correlation	1.000	.234*
	Sig. (2-tailed)	.	.042
	N	76	76
Class	Pearson Correlation	.234*	1.000
	Sig. (2-tailed)	.042	.
	N	76	76

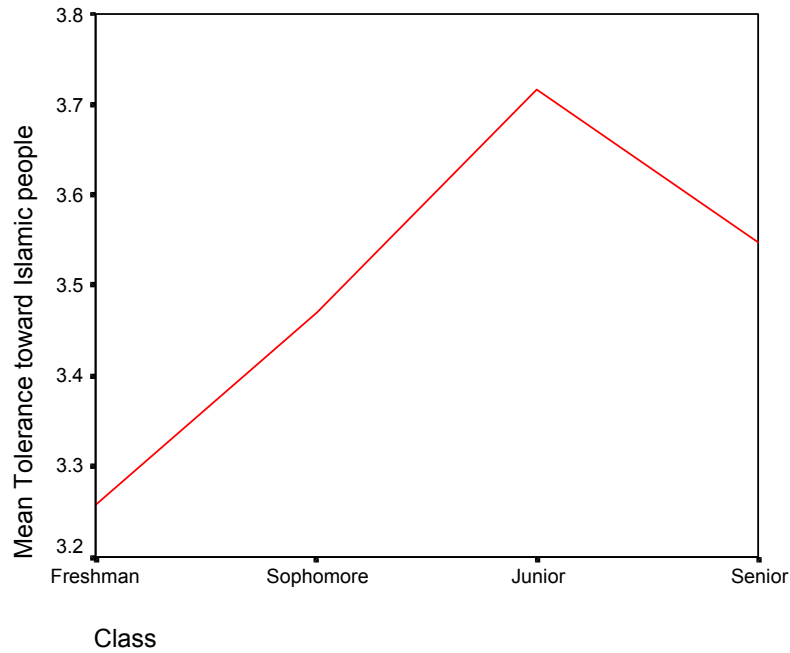
*. Correlation is significant at the 0.05 level (2-tailed).

The graphs of the other tolerance summary variables compared to class showed a similar relationship to that of the overall tolerance by class status (Graphs 7-10).

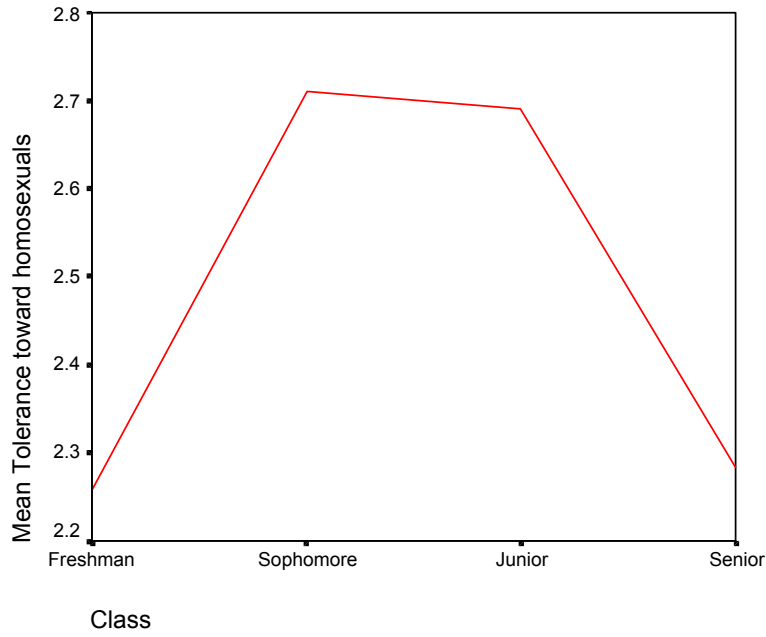
Graph 7. Mean tolerance toward immigrants by class status



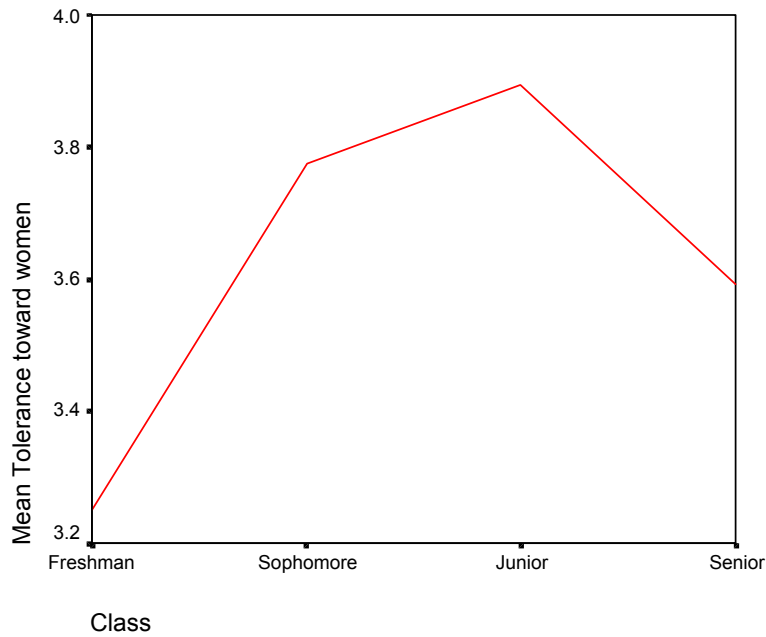
Graph 8. Mean tolerance toward Islamic people by class status



Graph 9. Mean tolerance toward homosexuals by class status



Graph 10. Mean tolerance toward women by class status



Although Graphs 7-10 showed tolerance levels rising from freshman to sophomore or junior year, there was a consistent decline in tolerance among seniors, which created a parabolic distribution. Looked at another way, none of the summary variables, tolerance toward immigrants, tolerance toward Islamic people, tolerance toward homosexuals, or tolerance toward women, showed a statistically significant correlation with class (Table 9). The correlation when the seniors were excluded for the individual summary variables was only significant for tolerance toward women (correlation coefficient = .292). One of the individual statements, "I would be comfortable working alongside an Islamic person at my place of work," correlated significantly with class status for the sample as a whole (correlation coefficient = .223). Demographic variables were examined in order to detect a lurking variable that could have prevented the observation of a relationship between class and tolerance. When all of the demographic variables were controlled for, the correlation coefficient between class and the overall summary tolerance variable was found to be .147, a value that remained statistically not significant. The hypothesis was not, therefore, supported for the overall tolerance summary variable. It was, however, supported for one of the individual statements, "Women are equal to men in intellectual potential," (correlation coefficient = .210). One of the summary tolerance variables (tolerance toward women) showed a correlation with class of borderline statistical significance ($P = .063$) when the demographic variables were controlled. That correlation coefficient was found to be .198.

Table 9. Correlation between all of the summary tolerance variables and class

		Correlations				
		Tolerance toward homosexuals	Tolerance toward immigrants	Tolerance toward women	Tolerance toward Islamic people	Class
Tolerance toward homosexuals	Pearson Correlation	1.000	.263*	.600**	.438**	-.021
	Sig. (2-tailed)	.	.010	.000	.000	.842
	N	95	95	95	95	95
Tolerance toward immigrants	Pearson Correlation	.263*	1.000	.082	.403**	-.025
	Sig. (2-tailed)	.010	.	.428	.000	.806
	N	95	95	95	95	95
Tolerance toward women	Pearson Correlation	.600**	.082	1.000	.430**	.127
	Sig. (2-tailed)	.000	.428	.	.000	.219
	N	95	95	95	95	95
Tolerance toward Islamic people	Pearson Correlation	.438**	.403**	.430**	1.000	.119
	Sig. (2-tailed)	.000	.000	.000	.	.250
	N	95	95	95	95	95
Class	Pearson Correlation	-.021	-.025	.127	.119	1.000
	Sig. (2-tailed)	.842	.806	.219	.250	.
	N	95	95	95	95	95

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The one demographic variable that was significantly correlated with the summary tolerance variable was ethnicity. The correlation coefficient was found to be .230, significant at a 0.05 level (Table 10). Whites were coded with the number 1 and blacks were coded with the number 2. The positive correlation indicates that blacks in the sample were more tolerant toward the selected groups than whites. The correlation between ethnicity and tolerance was even stronger with the tolerance toward immigrants variable. The correlation coefficient was then found to be .388, significant at a 0.01 level. None of the other summary tolerance variables correlated significantly with ethnicity. It appeared that the high correlation between ethnicity and tolerance toward immigrants accounted for the significant correlation between the overall tolerance variable and ethnicity. The correlations with the overall tolerance summary variable of .159 for sex and -.159 for political views were suggestive but not statistically significant.

Table 10. Correlation between the demographic variables and the overall tolerance summary

Correlations

		Sex	Age	Religion	Ethnicity	Political views	Parents' work status	Overall tolerance summary
Sex	Pearson Correlation	1.000	.098	-.080	.138	-.225*	.265**	.159
	Sig. (2-tailed)	.	.344	.438	.184	.028	.009	.123
	N	95	95	95	95	95	95	95
Age	Pearson Correlation	.098	1.000	.011	-.040	.041	.372**	-.028
	Sig. (2-tailed)	.344	.	.917	.699	.691	.000	.790
	N	95	95	95	95	95	95	95
Religion	Pearson Correlation	-.080	.011	1.000	.171	-.009	-.070	.172
	Sig. (2-tailed)	.438	.917	.	.097	.934	.501	.096
	N	95	95	95	95	95	95	95
Ethnicity	Pearson Correlation	.138	-.040	.171	1.000	-.208*	.044	.218*
	Sig. (2-tailed)	.184	.699	.097	.	.043	.670	.033
	N	95	95	95	95	95	95	95
Political views	Pearson Correlation	-.225*	.041	-.009	-.208*	1.000	.094	-.159
	Sig. (2-tailed)	.028	.691	.934	.043	.	.365	.125
	N	95	95	95	95	95	95	95
Parents' work status	Pearson Correlation	.265**	.372**	-.070	.044	.094	1.000	-.049
	Sig. (2-tailed)	.009	.000	.501	.670	.365	.	.640
	N	95	95	95	95	95	95	95
Overall tolerance summary	Pearson Correlation	.159	-.028	.172	.218*	-.159	-.049	1.000
	Sig. (2-tailed)	.123	.790	.096	.033	.125	.640	.
	N	95	95	95	95	95	95	95

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Discussion

The overall tolerance variable was created to distinguish easily a correlation between level of education and level of tolerance. While there was a positive correlation, it was very small and, given the size of the sample, not statistically significant. Although a larger sample size might have resulted in a finding that was statistically significant, the low level of the correlation does not support the hypothesis that tolerance tends to increase with additional years of undergraduate education.

The graphs of the summary tolerance variables compared with class status showed an increase in tolerance between the first and third years of schooling but then a decline in the senior year (Graphs 7-10). When the sub-set of cases of freshmen through juniors was selected, this sub-sample showed a statistically significant correlation between the overall tolerance summary variable and class status. In an attempt to explain this phenomenon, the seniors, as a group, were examined in order to determine a difference between them and the students in other class levels. The seniors were found to be a more politically conservative group, as a whole, than the remainder of the sample. Thirty-seven percent of the seniors identified themselves as conservative or far right, while 14.5 percent of other students characterized their political views as conservative and none chose far right. As mentioned above, for the sample as a whole, the correlation coefficient between political views and overall tolerance was $-.159$, not a statistically significant value, but nevertheless suggestive (Table 10). The seniors were also more likely to be male (52.6 percent of the seniors compared with 36.8 percent of the remainder of the sample) and white (94.7 percent compared with 84.2 percent), though the differences were not statistically significant. For the sample as a whole, whites tended to be less tolerant, as did males. The difference, however, was only statistically significant for whites and not males.

A possible reason for the negative finding could be the fact that the current study compares a small difference in years of education experienced. While some of the earlier studies discussed above showed a strong positive correlation between tolerance and education, the education variable ranged from the “highly educated” to the less educated, which was not the case in the present study.

Although one of the studies discussed in the introduction found a correlation between higher education and tolerance for more controversial issues rather than less, in the current study one issue, the intellectual potential of women, on which a correlation was found was the least controversial judged by the mean tolerance score. The failure to support the hypothesis may also be attributed to the complexity of many of the issues on which students were asked to offer their opinions. Most of the nineteen statements in the survey instrument were about highly controversial subjects. There was a broad range of responses given; the standard deviations were large. Although there were positive correlations between most of the summary variables, the correlations were not perfect and those individuals who were tolerant on one issue often were not tolerant on another. This suggested that opinions of the respondents might have been firm beliefs, not easily altered by additional years of education. Perhaps due to the fact that these were vigorously debated, complex issues, the existence of a significant subset of the sample that embraced a concept of tolerance in general is not evident. The histogram of the mean overall tolerance (Graph 1) showed that only two students had a mean score of 4.5 or above, the median between agreeing somewhat and strongly with tolerant statements.

While the hypothesis was not supported for overall tolerance, there were some findings of interest. The correlation with class for the statement, “Women are equal to men in intellectual potential,” was found when the demographic variables were controlled. This correlation may

have been the result of its less controversial nature. This statement was also the one with the highest tolerance mean. The hypothesis was also supported for the individual statement, "I would be comfortable working alongside an Islamic person at my place of work," with and without controlling for the demographic variables. One of the functions of higher education is to prepare college students for the world of professional work. Students with additional years of higher education may be more ready for a mature professional life, which includes working alongside people with diverse backgrounds.

Conclusion

The hypothesis, tolerance increases with additional years of higher education, could not be supported in this study. No statistically significant correlation was found between overall tolerance and class status. The correlation between tolerance and class status for tolerance toward women and for the specific question about working alongside an Islamic person are suggestive that higher education may increase tolerance on specific issues. A future study that could reveal such a relationship and would be of interest would be one in which a certain class of college students were surveyed upon graduation from high school and then in the spring of each of their four years of college in order to determine change in tolerance levels. This would help eliminate the error that could result from a difference in the character of each class cohort.

Another possibility for future study would be to include in the demographic information whether the student lived on or of campus and participated actively in campus life. This would take account of those students who commuted and therefore remained immersed in the overall, rather in the university, community. These additional questions might lead to a discovery of a relationship between active participation in university life and tolerance levels.

The change to a more tolerant attitude may take place when students are in graduate

school instead of during their undergraduate years. Another study that could be useful to conduct would be one that surveyed students receiving undergraduate college education and those receiving graduate level college education. The responses of the graduate and undergraduate students could be compared. This study might reveal a relationship, if it existed, between increased tolerance and graduate education.

Works Cited

- Bobo, Lawrence and Frederick C. Licari. "Education and Political Tolerance: Testing the Effects of Cognitive Sophistication and Target Group Affect" Public Opinion Quarterly 53 (1989): 285-308.
- Foner, Eric. The Story of American Freedom. New York: W.W. Norton & Company, Inc., 1998.
- Gajewski, Karen Ann. "Civil Liberties Watch." Humanist 61 (2001): 38-40.
- Henderson Office of Institutional Research. "HSU Enrollment Data." <http://www.hsu.edu/dept/irs/enr.html>. 17 Oct. 2002. 8 Feb. 2003.
- Lawrence, David G. "Procedural Norms and Tolerance: A Reassessment." American Political Science Review 70 (1976): 80-100.
- Milbank, Dana. "Hawks Chides Bush over Islam." Washington Post. 2 Dec. 2002.
- Sullivan, John, James Pierson, and George E. Marcus. "An Alternative Conceptualization of Political Tolerance: Illusory Increases 1950s-1970s." American Political Science Review 73 (1979): 781-794.
- The National Election Studies, Center for Political Studies, University of Michigan. Electronic resources from the NES World Wide Web site (http://www.umich.edu/~nes/nesguide/toptable/tab4c_1.htm). Ann Arbor, MI: University of Michigan, Center for Political Studies [producer and distributor], 1995-2000.
- Higher Education Research Institute, UCLA Graduate School of Education & Information Studies. The American Freshman: National Norms for Fall 2002. Dec. 2002.

Appendices

Appendix 1. Copy of survey instrument

Political and Cultural Attitudes among College Students
Arkansas School for Mathematics and Sciences Science Fair Project
January 2003

Student Researcher: Leah Webb-Halpern

Faculty Advisor: Walt Levissee

PLEASE CIRCLE YOUR RESPONSE TO THE FOLLOWING QUESTIONS.

1. Your Sex:

- a) Male
- b) Female

2. How old were you on December 31st of 2002?

- a) 16 or younger
- b) 17
- c) 18
- d) 19
- e) 20
- f) 21-24
- g) 25-29
- h) 30-39
- i) 40-54
- j) 55 or older

3. What year of schooling are you in?

- a) Freshman
- b) Sophomore
- c) Junior
- d) Senior

4. Current religious preference:

- a) Baptist
- b) Buddhist
- c) Eastern Orthodox
- d) Episcopal
- e) Islamic
- f) Jewish
- g) LDS (Mormon)
- h) Lutheran
- i) Methodist
- j) Presbyterian
- k) Quaker
- l) Roman Catholic
- m) Seventh Day Adventist

- n) United Church of Christ
- o) Other Christian
- p) Other Religion
- q) None

5. Please indicate your ethnic background:

- a) White/Caucasian
- b) African American/Black
- c) American Indian/Asian
- d) Native Hawaiian/Pacific Islander
- e) Mexican American
- f) Puerto Rican
- g) Other Latin American
- h) Other

6. How would you characterize your political views?

- a) Far left
- b) Liberal
- c) Middle-of-the-road
- d) Conservative
- e) Far right

7. Parents' work status:

- a) Father and mother are employed or looking for work
- b) Only father is employed or looking for work
- c) Only mother is employed or looking for work
- d) Neither father nor mother is employed or looking for work

8. It is important to have laws prohibiting homosexual relationships.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

9. Same-sex couples should have the right to legal marital status.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

10. Homosexual couples should be allowed to adopt children.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

11. Legislation should prohibit employment discrimination based on sexual orientation.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion

- d) Agree Somewhat
- e) Agree Strongly

12. Homosexuality is immoral and unnatural.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

13. Immigrants should have equal access to education and other governmental services regardless of their legal status.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

14. All immigrants without legal documents should be deported immediately.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

15. Immigrants contribute substantially to the economic well being of the United States.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

16. Immigrants should not be deprived of life, liberty, or property without due process.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

17. Protecting the country's security is more important than protecting the individual rights of immigrants.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

18. The activities of married women are best confined to the home and family.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

19. Women should have an equal role with men in running business, industry, and government.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat

20. Abortion should be legal.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

21. The deterioration of morals in today's society is due in part to women asserting their independence.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

22. Women are equal to men in intellectual potential.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

23. Islamic people should have the full protection of the United States' civil rights laws.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

24. Airline security personnel should target Islamic people for special screening.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

25. People of Islamic faith can become loyal citizens of the United States.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

26. Islam is an inferior religion.

- a) Disagree Strongly
- b) Disagree Somewhat
- c) No opinion
- d) Agree Somewhat
- e) Agree Strongly

Academic Forum 21 2003-04

27. I would be comfortable working alongside an Islamic person at my place of work.
- a) Disagree Strongly
 - b) Disagree Somewhat
 - c) No opinion
 - d) Agree Somewhat
 - e) Agree Strongly

Appendix 3. Copy of letter to professors

January 13, 2003

Henderson State University
1100 Henderson Street
Arkadelphia, Arkansas

Dear Professor _____,

Thank you for your willingness to assist me in the conduct of a study of Political and Cultural Attitudes among College Students. I am conducting the study as my Arkansas School for Mathematics and Sciences science fair project. Your class in Public Policy (PSC 4163, Record # 5045) was one of two upper level classes selected on a random basis for the study. Two general education classes were also selected.

Included with this letter are copies of the Study Questionnaire and of an Informed Consent Form. The Informed Consent Form should be distributed first. Questionnaires should then be given to those students signing the consent form. Students complete the questionnaires anonymously.

Let me thank you again for your help in administering the questionnaires to students some time during the first two weeks of classes this semester. I will send you a copy of the results of my research upon completion of the study.

Yours truly,

Leah Webb-Halpern
Arkansas School for Mathematics and Sciences, Class of 2003

Appendix 4. Responses to each of the specific statements

Restrictive homosexual laws

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	20	21.1	21.1	21.1
	Agree Somewhat	16	16.8	16.8	37.9
	No opinion	18	18.9	18.9	56.8
	Disagree Somewhat	24	25.3	25.3	82.1
	Disagree Strongly	17	17.9	17.9	100.0
	Total	95	100.0	100.0	

Marriage rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	41	43.2	43.2	43.2
	Disagree Somewhat	17	17.9	17.9	61.1
	No opinion	16	16.8	16.8	77.9
	Agree Somewhat	14	14.7	14.7	92.6
	Agree Strongly	7	7.4	7.4	100.0
	Total	95	100.0	100.0	

Adoption rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	49	51.6	51.6	51.6
	Disagree Somewhat	11	11.6	11.6	63.2
	No opinion	16	16.8	16.8	80.0
	Agree Somewhat	17	17.9	17.9	97.9
	Agree Strongly	2	2.1	2.1	100.0
	Total	95	100.0	100.0	

Orientation discrimination

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	17	17.9	17.9	17.9
	Disagree Somewhat	6	6.3	6.3	24.2
	No opinion	20	21.1	21.1	45.3
	Agree Somewhat	18	18.9	18.9	64.2
	Agree Strongly	34	35.8	35.8	100.0
	Total	95	100.0	100.0	

Academic Forum 21 2003-04

View of homosexuality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	49	51.6	51.6	51.6
	Agree Somewhat	21	22.1	22.1	73.7
	No opinion	15	15.8	15.8	89.5
	Disagree Somewhat	3	3.2	3.2	92.6
	Disagree Strongly	7	7.4	7.4	100.0
	Total	95	100.0	100.0	

Immigrants access

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	32	33.7	33.7	33.7
	Disagree Somewhat	29	30.5	30.5	64.2
	No opinion	9	9.5	9.5	73.7
	Agree Somewhat	20	21.1	21.1	94.7
	Agree Strongly	5	5.3	5.3	100.0
	Total	95	100.0	100.0	

Deportation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	29	30.5	30.5	30.5
	Agree Somewhat	32	33.7	33.7	64.2
	No opinion	8	8.4	8.4	72.6
	Disagree Somewhat	24	25.3	25.3	97.9
	Disagree Strongly	2	2.1	2.1	100.0
	Total	95	100.0	100.0	

Immigrant contribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	6	6.3	6.3	6.3
	Disagree Somewhat	14	14.7	14.7	21.1
	No opinion	29	30.5	30.5	51.6
	Agree Somewhat	36	37.9	37.9	89.5
	Agree Strongly	10	10.5	10.5	100.0
	Total	95	100.0	100.0	

Academic Forum 21 2003-04

Due proces

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	4	4.2	4.2	4.2
	Disagree Somewhat	9	9.5	9.5	13.7
	No opinion	14	14.7	14.7	28.4
	Agree Somewhat	45	47.4	47.4	75.8
	Agree Strongly	23	24.2	24.2	100.0
	Total	95	100.0	100.0	

Country's security

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	33	34.7	34.7	34.7
	Agree Somewhat	36	37.9	37.9	72.6
	No opinion	9	9.5	9.5	82.1
	Disagree Somewhat	16	16.8	16.8	98.9
	Disagree Strongly	1	1.1	1.1	100.0
	Total	95	100.0	100.0	

Activities of married women

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	4	4.2	4.2	4.2
	Agree Somewhat	11	11.6	11.6	15.8
	No opinion	8	8.4	8.4	24.2
	Disagree Somewhat	23	24.2	24.2	48.4
	Disagree Strongly	49	51.6	51.6	100.0
	Total	95	100.0	100.0	

Abortion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	42	44.2	44.2	44.2
	Disagree Somewhat	15	15.8	15.8	60.0
	No opinion	9	9.5	9.5	69.5
	Agree Somewhat	13	13.7	13.7	83.2
	Agree Strongly	16	16.8	16.8	100.0
	Total	95	100.0	100.0	

Academic Forum 21 2003-04

Society's morals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	5	5.3	5.3	5.3
	Agree Somewhat	19	20.0	20.0	25.3
	No opinion	15	15.8	15.8	41.1
	Disagree Somewhat	19	20.0	20.0	61.1
	Disagree Strongly	37	38.9	38.9	100.0
	Total	95	100.0	100.0	

Intellectual potential

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	1.1	1.1	1.1
	Disagree Somewhat	4	4.2	4.2	5.3
	No opinion	3	3.2	3.2	8.4
	Agree Somewhat	14	14.7	14.7	23.2
	Agree Strongly	73	76.8	76.8	100.0
	Total	95	100.0	100.0	

Protection for Islamic people

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	8	8.4	8.4	8.4
	Disagree Somewhat	9	9.5	9.5	17.9
	No opinion	28	29.5	29.5	47.4
	Agree Somewhat	26	27.4	27.4	74.7
	Agree Strongly	24	25.3	25.3	100.0
	Total	95	100.0	100.0	

Airline security

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	7	7.4	7.4	7.4
	Agree Somewhat	25	26.3	26.3	33.7
	No opinion	17	17.9	17.9	51.6
	Disagree Somewhat	29	30.5	30.5	82.1
	Disagree Strongly	17	17.9	17.9	100.0
	Total	95	100.0	100.0	

Academic Forum 21 2003-04

Islamic citizens

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	6	6.3	6.3	6.3
	Disagree Somewhat	6	6.3	6.3	12.6
	No opinion	20	21.1	21.1	33.7
	Agree Somewhat	27	28.4	28.4	62.1
	Agree Strongly	36	37.9	37.9	100.0
	Total	95	100.0	100.0	

Opinion of the Islam

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree Strongly	11	11.6	11.6	11.6
	Agree Somewhat	8	8.4	8.4	20.0
	No opinion	38	40.0	40.0	60.0
	Disagree Somewhat	16	16.8	16.8	76.8
	Disagree Strongly	22	23.2	23.2	100.0
	Total	95	100.0	100.0	

Working with Islamic people

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	5	5.3	5.3	5.3
	Disagree Somewhat	10	10.5	10.5	15.8
	No opinion	18	18.9	18.9	34.7
	Agree Somewhat	34	35.8	35.8	70.5
	Agree Strongly	28	29.5	29.5	100.0
	Total	95	100.0	100.0	

Biography

Leah Webb-Halpern is a first year student at Smith College in Northampton, Massachusetts. She expects to major in history. She graduated in May 2003 from the Arkansas School for Mathematics and Science (ASMS) in Hot Springs. While a student at Arkadelphia High School, she took several classes in the departments of Biology and English and Foreign Language at Henderson. Her science fair paper, "The Effects of Higher Education on Tolerance: An Investigation of Political and Cultural Attitudes of College Students," received a third place in

Academic Forum 21 2003-04

the regional science fair and an honorable mention in the state science fair in 2003. Leah is the daughter of Martin Halpern, HSU Professor of History, and Helen Webb, who previously taught Spanish at Arkadelphia High School and currently teaches Spanish at the University of Pennsylvania.