A Cultural Comparison of Drug Use among American and South Korean College Students: An Application of Hirschi's Social Bond Theory

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Introduction

The United States faces a major drug problem. In 2001 the U.S. consumed 1606 metric tons of cocaine alone[1]. Adults who use drugs face many potential problems. The obvious problem is the threat of being arrested and prosecuted for the crime of possession or intent to sell/distribute, but the real cost of drugs is apparent in the lives of users. A promising future is often cast aside for the next "fix." One may find that the true problem is not the occasional user but the user whose life is engulfed by drugs. This perspective, however, does not leave the occasional user innocent. The money spent on drugs fuels the industry. For example, the American drug users purchased $10.6 billion in marijuana in 1999; an astonishing figure that testifies to drug dealers' determination to sell illicit drugs[2]. In addition, prescription drugs are being abused, adding to the almost insurmountable drug use problem.

In South Korea the drug problem does not seem to be as pronounced as it is in the United States. In general, the crime rate in South Korea is significantly lower. The homicide rate in 2006 for the U.S. per 100,000 was 5.9, whereas the rate in South Korea was 2.18[3]. To put this difference into perspective, the United States has a population density of 32.65 people per square kilometer, while South Korea's density is 498.02[4]. Therefore, South Korea has a population density over 15 times greater, yet has a homicide rate that is nearly two-thirds less than the US's rate.

One may attempt to explain the disparity by considering the obvious differences in cultures. Although South Korea is technologically advanced and globalization has affected the nation, the culture remains intact. Of particular interest to this study is the culture's strong informal social control. South Koreans have a deep respect for past generations. This is apparent in the Korean language: different sentence structures are required when speaking with those who are younger than, a peer of, or an elder to the speaker. In addition, the young will bow to an elder or those of great esteem, such as a professor or organizational leader. The reverence toward elders or those of great esteem is ubiquitous. For example, professors enjoy a number of

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[1] Barnes, Katherine Y. & Gross, Samuel P. 2002. "Road work: Racial Profiling and Drug Interdiction on the Highway." *Michigan Law Review* 101:651-754

[2] Office of National Drug Control Policy (2002). What Americans Need to Know About Marijuana: Important Facts About our Nation's Most Misunderstood Illegal Drug. Retrieved April 8, 2006, from http://www.whitehousedrugpolicy.gov/publications/pdf/mj_rev.pdf

[3] United Nations Office of Drugs and Crime (2006). Ninth United Nations Survey of Crime Trends and Operations of Criminal Justice Systems, Retrieved April 8, 2006 from www.unodc.org/pdf/research/9th_survey/CTS9ByIndicatorExtract.pdf

[4] CIA (2007). CIA World Factbook. Retrieved June 25, 2007, from https://www.cia.gov/library/publications/the-world-factbook/

customary procedures that allow students to express great admiration, including holding the door for a professor and allowing him or her to enter a room first. In sum, informal social control is pervasive in South Korea and may account for the country's low crime rate. Applying Hirschi's social bond theory may offer evidence to this presumption.

Before evaluation, a review of Hirschi's social bond theory is necessary; particularity how it pertains to young adult and college student drug use. Believing that crime is a naturally occurring behavior, social bond theory questions why individuals do not commit crimes rather than why they do[5]. Those who believe they should "obey the rules of society"[6] are less likely to commit deviant acts. Thus, to explain drug use one should understand why some do not participate. The theory has four concepts that make up the major premise. Attachment, involvement, commitment, and belief compose the social bonds that preclude a person from deviancy[7]. Attachment is the relationship between an individual and peers, school, and—of particular importance—parents. Involvement defines how much an individual participates in positive activities. A student who is a member of a student association is more involved than one who leaves campus after class. Commitment is the investment the student puts into his/her future or positive desires. An individual who wishes to become a medical doctor demonstrates a high level of commitment. Belief is the final concept and is the source of some confusion[8]. This study defines belief as a "respect for the moral validity of the rules of society"[9].

The purpose of this study is to investigate cultural differences by applying social bond theory to college student drug use. This study reviews previous literature investigating drug use among youth. In addition, the methodology and operationalization of variables of this study are discussed. The empirical results of the analyses follow. Finally, the findings and policy implications conclude the study.

Literature Review

Elifson et. al (1984) conducted a study to find the correlation of religiosity and drug use. The authors who wrote this study, entitled "Religious Involvement and Drug Use among Urban Adolescents," had two major concepts they intended to test. First, without outside sources of moral control, religion control participants will refrain from drug use. Second, religion's outlook on drug abuse has an impact on the values of the youth. That is, institutions other than church instill a basic moral compass, yet the authors believe that only religion can promulgate very strong convictions about drug use[10]. To test these concepts, the study interviewed 600 randomly chosen students out of a 23,289 person pool of students from the Atlanta, Georgia metro area. The participants were representative of the students' demographics in the total sample and were between the grades of 9 and 12; 301 were males, 299 were females.

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[5] Agnew, R., & Cullen, F. T. (1999). Criminological Theory Past to Present. Los Angeles, CA: Roxbury Publishing Company

[6] Hirschi, Travis. (1969). Causes of delinquency. Berkeley and Los Angeles: University of California Press. P. 26

[7] Agnew, R., & Cullen, F. T. (1999). Criminological Theory Past to Present. Los Angeles, CA: Roxbury Publishing Company

[8] Ibid.

[9] Bahr, Stephen J., Johnson, Richard E. & Marcos, Anastasios C. 1986. "Test of a Bonding/Association Theory of Adolescent Drug Use" *Social Forces* 65:135-161

[10] Elifson, Kirk W., Hadaway, Kirk C. & Peterson, David M. 1984. "Religious Involvement and Drug Use among Urban Adolescents." *Journal for the Scientific Study of Religion* 23:109-128

Interviews with the respondents inquired of their lifestyle and beliefs. One question asked about the frequency of use and type of drugs consumed, if any. The drug use of friends was also inquired of during the interview. Seven questions sought to find students' attitudes toward drug use. The seven questions had a very strong Cronbach's coefficient alpha of .91[11]. In addition, two questions asked about parental and personal church attendance. One question attempted to determine the influence of religion in the respondent's life. Belief in the power of prayer and the orthodoxy of their religion were also measured. The religious denomination of respondents was also recorded. Morality was quantified by asking respondents if they thought they should obey their parents. Attachment to their mother and the amount of disagreements they had with their parents was also gauged. Finally, to measure respondents' performance in school, a self-reported grade average was utilized[12].

In reviewing the data, several findings come to light. First, a fair to strong relationship exists between religiosity and drug use. Although the data seems to correlate these two variables, the authors caution that "blanket generalizations"[13] should not me made; the relationship may not be solely responsible for such attitudes and behavior. Also, a significant relationship was found between the importance of religion in a respondent's life and drug use. Eighty-three percent of respondents who found religion extremely important never used marijuana. Interestingly, Protestant participants were less likely to use drugs than Catholic participants. In terms of marijuana use, attachment to mothers had a fairly negative correlation[14].

When examining the results, an overdependence on religion's role should be avoided. The beliefs of respondents could be attributed to the morals of peers or parents who prescribe to a religious faith. Yet overall, religiosity was found to be negatively related to drug use. Even after controlling for competing explanations of the phenomenon found in this study, religion was nonetheless found to be a significant predictor of drug use. Religion had a slight effect on serious drug use and a significant effect on more mainstream drug use such as alcohol and marijuana[15].

Using Hirschi's Social Bond theory, Bahr et al. (1986) tested its concepts in the adolescent drug use medium. Hirschi's Social Bond theory had four ambiguous concepts as the foundation of youth criminality. The authors of this study operationalized the concepts and created four elements "(1)parental attachment, (2) religious attachment, (3) educational attachment- including educational involvement and commitment, and (4) belief in conventional values"[16]. The author also generated a temporal order to the elements. Parental attachment occurs first in the model, partially due to the fact that children are first exposed to their parents. In addition, parental ties promote the other elements. For example, if children are close to their parents, they are likely to go to church or become more involved in education. After parental ties, educational, religious, and conventional values can play a mitigating role on drug use. Peers

[11] Ibid.
[12] Ibid.
[13] Ibid, p. 117.
[14] Ibid.
[15] Ibid.
[16] Bahr, Stephen J., Johnson, Richard E. & Marcos, Anastasios C. 1986. "Test of a Bonding/Association Theory of Adolescent Drug Use" *Social Forces* 65:135-161, p. 138

are also added into the equation; this is the influence of differential association theory. Hirschi stated in his book that peers do play an important role in youth criminality, but this element was absent from his theory. This study takes peer influence into account[17].

The study utilized 2,626 participants who answered questionnaires in a southwestern United States metropolitan city. The study's observation spanned five schools, four of which were within the metropolitan area. The schools were not chosen randomly, but classes in which the survey was administered were randomly chosen. The sample of participants was 53% female and 47% male; 82% were white, 13% Hispanic, and 5% were of another minority. Age of the participants ranged from 14-19 years[18].

The dependent variable was measured by asking each student if they had ever used drugs and, if so to what extent. Parental attachment was measured using four questions which asked of the "affection and bonding between parent and child"[19]. Educational attachment was measured by gauging a student's resistance to school using five questions. Questions of students' church attendance and how principal religion is to them quantified religious attachment. Four questions attempted to measure conventional values. These questions regarded convictions about obedience and honesty. Differential association's concept of peer influence was measured by asking four questions on peer drug and alcohol use. To omit surveys in which students were not truthful, the authors paid attention to inconsistent answers and those who reported that they had used a non-existent drug the authors had included in the survey[20].

Results of the survey found that drug using peers had the greatest effect on youths ($r = .68$, $p = .001$). Conventional values ($r = -.39$) had the second most significant correlation to drug use, followed by educational attachment ($r = -.37$), parental attachment ($r = -.30$), and finally religious attachment ($r = -.26$)[21]. When the use of marijuana, amphetamines and depressants was analyzed, peers had the strongest influence and other elements had little effect. Overall, peers were found to have a stronger influence than the concepts of social bond theory[22].

Using four theories, Greenley and Ginsberg (1978) tested marijuana use in their article entitled "Competing Theories of Marijuana Use: A Longitudinal Study." The four theories were the reference group, commitment, stress, and involvement. In this paper our attention focuses on the commitment and involvement theories. The commitment theory finds that a lower attachment to conventional norms and a lack of "…support of major societal institutions, institutionalized goals, and institutionalized forms of behavior…"[23] will result in youths committing more deviant acts. The involvement theory suggests that criminality is due to a lack of participation in activities. Those who are more involved have more to keep themselves busy and therefore commit crimes less often[24].

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[17] Ibid.
[18] Ibid.
[19] Ibid, p.146.
[20] Ibid.
[21] Ibid.
[22] Ibid.
[23] Greenley, James R. & Ginsberg, Irving J. 1978. "Competing Theories of Marijuana Use: A Longitudinal Study" *Journal of Heath and Social Behavior* 19:22-34, p.24

[24] Ibid.

The study utilized a self administered questionnaire answered by 1503 participants. The respondents were randomly chosen students of the University of Wisconsin-Madison in November of 1971. Fifty-eight percent of the sample were 19 years old or younger. After the survey in 1971, a second survey on January of 1974 was sent out to complete the longitudinal study. Respondents were asked if and how much marijuana they had consumed and if they admired or identified with persons who used marijuana. To measure commitment, reliance on societal norms was determined by asking questions that were political, religious, and ethical in nature. Involvement was measured by how much time a student was engaged in activities such as school, sports, and employment[25].

The study found that 25% of the originally surveyed class in 1971 used marijuana more than 12 times; by 1974 the percentage had risen to 36%. Conversely, in 1971, 46% reported never using marijuana, but by 1974 the percentage had dropped to 32%[26]. In reference to the involvement theory, the data prove that a significant relationship does not exist ($r = -.05$, $p = .05$; 1974 survey). Commitment theory, on the other hand, found some support. Those who believed in fewer conventional norms reported a higher frequency of drug use ($r = -.39$; 1974 survey). However, at the time of the original survey the significance of commitment was not strong; therefore, the authors suspect the follow-up (1974) data can be attributed to spurious variables. Overall, this study did not find support for either the involvement or commitment elements when relating to their mediating effect on drug use[27].

Bahr et al (1998) conducted a study investigating parental bonding and monitoring, family aggression and drug problems, and religiosity as independent variables to adolescent drug use. The study used a random sample of 13,250 students from Utah in 1994. The sample ranged in grade level from 7 through 12 and their demographics match that of the state; 83% white, 5% Native American, 3% Latino, and 9% African-American/ Asian/Pacific Islander/other[28].

To measure each element, questions in the survey inquired of the youth's environment. Personal and peer drug use were reported by the participants during the study's self report questionnaire. In addition, two questions were asked of each child on the religious nature of his or her family. Four questions inquired of their educational commitment; such questions asked about how important grades are and how important going to college is to them. Two questions gauged the closeness children had with their parents. To measure family conflict, youths were asked three questions about aggressive family behaviors. The study also asked if a family drug problem existed[29].

Upon receiving the surveys, the authors divided the entire sample into two randomly distributed halves. This was done to ensure the validity of the results. The results of the study found that a statistically significant positive relationship exists between personal drug use and peer drug use (marijuana: $r = .579$, $p = .001$). Religiosity was found to have a fair significance (marijuana: $r = -.171$). Religion did have an indirect effect on alcohol use but not a significant

[25] Ibid.
[26] Ibid.
[27] Ibid.
[28] Bahr, Stephen J., Maughan, Suzanne L., Marcos, Anastasios C. & Li, Bingdoa. 1998. "Family, Religiosity, and the Risk of Adolescent Drug Use." *Journal of Marriage and the Family* 60:979-992
[29] Ibid.

direct effect[30]. The authors found that children who are religious refrain from drug use because they do not have friends who participate in such behaviors. Involvement in social institutions may also decrease the chance of drug use by insulating the child from deviant peers and opportunities. Religious institutions may help to support the anti-drug feeling of a child and similar support may be offered by parents. The authors state that the study does have its faults, particularly the area in which the study was conducted. Utah has a strong religious community and therefore results of the study may only apply to this unique state. Overall, the study found only an indirect impact of social bond theory to adolescent drug use[31].

Previous research has primarily focused on adolescent drug use, but little research has applied social bond theory to college students. The behaviors of college students are valuable to research on social bond theory because bonds have been firmly established and deviant behaviors, such as drug use, are likely to be revealed. In addition, research comparing nations based on social bond theory has not been conducted; therefore, this research is exploratory in nature. This study is essentially a test of culture using Hirschi's social bond theory and the behavior of drug use. The following section uncovers the methodology of this study.

Methodology

The study's objective is to compare the social bonds between students in South Korea and the United States on the topic of drug use. To accomplish this, the researcher administered questionnaires on social bonds and drug use habits to students attending Dongguk University located in Seoul, South Korea, and American University located in Washington, D.C., during the 2007 and 2008 academic year. Students attending Dongguk University were approached by a researcher outside the library and asked to take the survey. Surveys were distributed during mid-terms, thus an ample number of students were approached. American University students were asked to complete the survey in class. Classes were chosen at random and the universe included all undergraduate classes available at the University. Only students who are pursuing an undergraduate degree at the time of the study were admitted respondents. Professors of each class were asked to leave the classroom for the five to ten minutes while students took the survey. Students then deposited the folded survey into an enclosed cardboard box. The researcher collected all the data after all selected classes had the survey administered.

The difference in administration of the survey between Dongguk University and American University is due to ease of administering the survey and expected response rate. Assistants at Dongguk University chose their method because they thought it would work best considering Korean student behaviors. The researcher at American University chose the other method to increase response rate and reduce non-random measurement bias.

The aforementioned methodology attempts to answer one major research question: *Does the difference in culture, measured in accordance with Hirschi's social bond theory, explain the difference between drug consumption in the United States and South Korea?*

The tested hypotheses are as follows:

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[30] Ibid.

[31] Ibid.

Hypothesis 1: As students' social bonds decrease, drug use in social situations will increase.

Hypothesis 2: As students' social bonds decrease, frequency of marijuana use will increase.

Hypothesis 3: Students with more social bonds are more likely never to have used any type of illicit drug.

Hypothesis 4: Korean students have stronger social bonds than do American students.

Operationalization of Variables

To operationalize social bond theory the concepts must become measurable. Each of the four concepts is discussed including how each is operationalized. The first concept is attachment. Attachment to parents is measured in this study since peer attachment can be positive or negative and can change over time. Three questions probe this relationship and are answered using a Likert Scale ranging from strongly agree to strongly disagree. The three questions are "I enjoy talking to my parents," "My parents understand me," and "My parents know where I am all the time." The answers to the questions are used in regressions individually and as a combined score.

Four questions measure the social bond of commitment. The questions attempt to quantify the students' aspirations. These aspirations are not restricted to academic pursuits but also include any type of learning and hobbies that lead to positive results. For instance, if a student enjoys horseback riding but it is not offered in his or her university, involvement in such an activity is still a commitment by the student that may preclude him or her from using drugs. Another question in the survey asks students to report their most recent grade in math or English/Korean. This variable does not use a Likert Scale; instead "A" through "F" is transformed into a GPA number. These GPA scores are then averaged; thus making the variable continuous. The following statements/questions are used to measure commitment: "I enjoy learning," "I have a hobby I enjoy," "What grade do you expect in math?" and "What grade do you expect in English/Korean?"

Involvement's operationalization involves three questions probing the student's free time. This variable measures if involvement in activities takes up much of the student's time, therefore precluding them from engaging in drug use. A Likert scale is used for all three questions. Just as with the other concepts, a scale of the three questions creates a composite score ranging from 3 to 15. The questions are "I have plenty of free time," "After class I have other commitments," and "I enjoy participating in campus associations." As with all of the major concepts tested, individual responses and a combination of responses are tested.

Belief is operationalized by asking three questions. Two of the questions deal with religion and the last question attempts to identify if the student believes in his or her parents' love. A Likert Scale is utilized to measure this concept as well. The three questions are, "I go to church/synagogue/temple regularly," "I pray when I need help," and "My parents will help me

when I need help." Again, each question and a composite score ranging from 3 to 15 are used in regressions.

Drug use is measured using several questions. The first question specifically measures marijuana use because it is believed to be the most prevalent illicit drug. It is written as such: "How many times have you used marijuana?" Possible responses are, "Never, 1-2, 3-5, 6-15, and 15 or more." The second question asks what type of drugs the student has used. A fictitious drug, "Nerve-X," is added so that surveys that over-report can be identified and removed from the sample. This question reads, "What types of drugs have you used?" Possible responses are "Never used drugs, amphetamines, barbiturates, heroin, LSD, hallucinogens, narcotic prescription drugs, cocaine, inhalants, and Nerve-X." For those categories that are not obvious, an example will be included within the possible answer. A third question uses a Likert scale to measure socially induced drug use. This question reads, "I use drugs at parties or in clubs."

Demographic data were also attained to be used as control for the statistical analyses. Responses to age range from 17 to 24+ years. In addition, the question, "what is your gender?" is also included. The operationalization of the previously mentioned variables is displayed in Table 1.

Descriptive Statistics:

Table 2 represents the descriptive statistics for the aforementioned independent and dependent variables and represents both American and Korean students. Cronbach Alpha (α) scores are tabulated for those variables within a social bond factor. *Attachment* followed by *belief* attained the highest scores, .694 and .654 respectively. Therefore, questions within those categories attempted to measure a similar characteristic. A greater number of South Korean respondents were included in the study than American respondents. However, when the populations of the Universities are taken into account, the sample of American students is approximately proportional to South Korean students. Each sample accounts for about 5% of the students attending the university.

Students with high levels of social bonds recorded answers closer to 1. As recorded values progress to 5, it is hypothesized that drug use increases. Data from two variables, *extent of free time* and *social use of drugs*, have been recoded to coincide with the value of the other variables. Therefore, a 1 for either of these variables means "strongly disagree," a 5 means "strongly agree." Korean values are represented after the slash unless both American and Korean scores were identical.

Based on mean responses, American students seem to have reported slightly higher levels of social bonds. Americans reported considerably higher levels of *parental social attachment, willingness to learn, possession of a hobby, academic based grades, extracurricular activities, and belief in parents' concern.* It should be noted that the grading method used at Dongguk University is suspected to me more rigorous than at American University. Other measures of social bonds were found to be fairly comparable in consideration of their standard deviation.

Table 1. Operationalization of Variables

Concept	As Measured:	Level of Measurement
Attachment		
Parental social attachment	1-5	Ordinal
Parental connectivity	1-5	Ordinal
Parental control	1-5	Ordinal
Commitment		
Willingness to learn	1-5	Ordinal
Possession of a hobby	1-5	Ordinal
Intellectual commitment*	1-5	Continuous
Involvement		
Extent of free time	1-5	Ordinal
Extracurricular activities	1-5	Ordinal
Enjoyment of activities	1-5	Ordinal
Belief		
Attendance to religious Inst.	1-5	Ordinal
Use of prayer	1-5	Ordinal
Belief in parent's concern	1-5	Ordinal
Drug Use		
Social use of drugs	1-5	Ordinal
Marijuana consumption	Never, Once or twice, 3 to 5 times, 6 to 15 times,15 or more times	Categorical
Types of drugs used	Never used drugs, Amphetamines, Barbiturates, Heroin, LSD Hallucinogens, Narcotic prescription drugs, Cocaine Inhalants, Nerve-X	Categorical
Demographics		
Age	17, 18, 19, 20, 21, 22, 23, 24+	Categorical
Sex	Male, Female	Categorical

*An average of each student's last math and English/Korean grades

Table 2: Descriptive statistics (American/Korean)

	N	Mean	Std. Dev.	Min	Max
Attachment α=.694					
Parental social attachment	468/716	1.662/2.82	.773/.996	1	5
Parental connectivity	468/716	2.139/2.767	.856/.965	1	5
Parental control	467/716	3.317/3.103	1.111/.895	1	5
Average attachment	467/716	2.368/2.897	.787/.723	1	5
Commitment α=.479					
Willingness to learn	466/716	1.642/2.788	.628/.897	1	4/5
Possession of a hobby	467/716	1.486/2.88	.653/.925	1	5
Intellectual commitment					
Math Grade	414/716	1.594/2.879	.682/.958	1	3/5
English/Korean Grade	427/716	1.370/2.845	.534/.953	1	3/5
Average Grade	438/716	1.484/2.862	.486/.81	1	3/5
Average commitment	467/716	1.538/2.843	.43/.592	1	3.5/4.7
Involvement α=.501					
Extent of free time*	468/716	2.942/2.974	1.071/.904	1	5
Extracurricular activities	464/716	1.841/3.203	.877/.907	1	5
Enjoyment of activities	468/716	2.462/3.145	.937/.976	1	5
Average involvement	465/716	2.414/3.107	.683/.533	1/1.3	4.3/5
Belief α=.654					
Attendance to religious Inst.	466/716	3.785/3.623	1.259/1.097	1	5
Use of prayer	467/716	3.274/3.479	1.435/1.175	1	5
Belief in parent's concern	467/716	1.595/3.011	.768/1.275	1	5
Average Belief	464/716	2.884/3.371	.897/.9108	1	5
Drug Use					
Social use of drugs*	465/716	1.998/1.077	1.312/.372	1	5/4
Marijuana consumption	467/716	2.589/1.092	1.727/.42	1	5
Range 1-5 (Never - 15 times or more)					
Types of drugs used (dummy variables, 0=no 1=yes)					
Never used drugs	467/716	.465/.934	.499/.248	0	1
Amphetamines	468/716	.032/.011	.176/.105	0	1
Barbiturates	468/716	.521/.060	.5/.238	0	1
Heroin	468/716	.006/.008	.08/.091	0	1
LSD	468/716	.045/.001	.207/.037	0	1
Hallucinogens	468/716	.077/.007	.267/.083	0	1
Prescription drugs	468/716	.111/.004	.315/.065	0	1
Cocaine	468/716	.068/.007	.253/.083	0	1
Inhalants	468/716	.019/.024	.138/.152	0	1
Demographics					
Age	468/716	3.54/6.27	1.407/1.874	1	8
Sex	454/716	.577/.352	.495/.478	0	1

* recoded for data analysis

Drug consumption by American and Korean students is considerably different. Ninety-three percent of Korean students have never used drugs, whereas only 46% of American students can claim they have not used drugs. Fifty-two percent of American students from this study's sample have used marijuana, whereas only 6% of Koreans have consumed this drug. Interestingly, more Korean students have used inhalants than American students, but both populations consisted of less than 3% of their totals. When comparing demographic information,

male American students constituted almost 58% of the sample population whereas only 35% of male Korean students were included in the sample. In addition, American students tended to be younger than their Korean counterparts. The mean age for American students is between 19 and 20 years old. The mean for Korean students is about 22 years of age.

Empirical Results:

The survey instrument used to acquire data utilized, in part, a Likert Scale. Therefore, much of the data is categorical, thus requiring a befitting regression model. An ordinal logistic regression is employed for models that used data from a Likert scale as the dependent variable. The Brant Test for odds proportionality was conducted and the data was found to meet the requirements of the ordinal logistic model. The third hypothesis requires the use of a logistic regression since a dichotomous variable serves as the dependent variable. The fourth hypothesis requires a Wilcoxen test to compare the non-parametric variables.

Tables 3 and 4 present the data from the ordinal regressions. The dependent variable in Table 3 is social drug use. Independent variables include all variables within all four social bonds and the combined score for each social bond. Therefore, in Model 1 all independent variables are included. In Model 2 only the combined score of the social bond is regressed as an independent variable. This regression attempts to take into account the social bond itself without breaking in into operationalized parts. That is, the combined score attempts to test a respondent's attachment rather than some part of attachment. Table 5 follows the same pattern with different dependent variables.

Table 3 represents American students' responses and attempts to ascertain a relationship between social bonds and social drug use (drug use during parties or clubs). Two variables are significant, *parental supervision* and *use of prayer*. Therefore, those participants with parents that knew of their activities were less likely to use drugs in social situations. Furthermore, parents that did not have such supervisory control were more likely to have children who participated in social drug use. In addition, American participants who prayed when they needed help were less likely to use drugs socially, whereas those who did not pray were more likely to use drugs socially. When the variables for each social bond were consolidated, attachment and belief proved to be the greatest predictors. Both factors had a significance of .01 or less. The pseudo r-square for Models 1 and 2 indicate that a small proportion (4% and 2% respectively) of the variance of social drug use is explained by the measured social bonds. The likelihood ratio (LR) chi-square indicates an adequate model despite the low r-square.

For Korean students the results are far different. Two variables are significant in Model 3, *willingness to learn* and *possession of a hobby*. Both of these variables are part of the social bond of commitment, but in this test *possession of a hobby* was negatively related. That is, when Korean students in our sample had a hobby, they were more likely to participate in social drug use. The results of Model 4 indicate that none of the combined measures of social bonds were significant. This may allude to the fact that social bonds are not critical to Korean students' drug consumption.

Table 3: Ordinal Logistic Regression Results for Social Drug Use Reported

Dependent Variable: Social Drug Use

	US		SK	
Independent Variable	(1)+	(2)	(3)+	(4)
Attachment		1.505***		1.102
Parental social attachment	.754		1.446	
Parental connectivity	1.141		.877	
Parental supervision	1.63***		.908	
Commitment		1.078		1.536
Willingness to learn	1.054		1.885**	
Possession of a hobby	1.008		.568**	
Intellectual commitment	1.337		1.464*	
Involvement		.981		.803
Extent of free time	1.061		.885	
Extracurricular activities	.992		.954	
Enjoyment of activities	.891		.965	
Belief		1.372***		1.033
Attendance to religious inst.	.987		.825	
Use of prayer	1.227**		1.087	
Belief in parent's concern	1.062		1.281	
Observations	407	457	708	716
Pseudo R-square	.043	.023	.055	.01
LR Chi-square	45.16	26.58	18.45	3.18
LR Chi-square p-value	.000	.000	.187	.5276

Coefficients reported in odds ratio, + Models control for age and gender
*** significant at 1%, **significant at 5%, *significant at 10%

In Table 4 the frequency of marijuana use is the dependent variable. Similar to the last set of models, U.S. students' drug consumption is influenced by *parental supervision* and *use of prayer*. Therefore, students who informed their parents of their whereabouts and who often used prayer in times of need used marijuana less frequently. In addition, American students who reported receiving better grades in math and English courses also used marijuana less frequently. When only the aggregate social bonds were considered, attachment and belief were significant ($p<.01$). For Korean students, represented in Models 7 and 8, *willingness to learn* and *possession of a hobby* were significant. Results indicate that *possession of a hobby* increased the likelihood of drug use. It is suspected that drug use was considered a hobby.

Table 4: Ordinal Logistic Regression Results for Frequency of Marijuana Use

Dependent Variable: Frequency of Marijuana Use				
	US		SK	
Independent Variable	(5)[+]	(6)	(7)[+]	(8)
Attachment		1.308**	1.1	
Parental social attachment	.761		1.47	
Parental connectivity	1.017		.721	
Parental supervision	1.646***		1.133	
Commitment		1.12		1.012
Willingness to learn	.849		1.648**	
Possession of a hobby	1.14		.541**	
Intellectual commitment	1.642**		1.251*	
Involvement		.905		.835
Extent of free time	1.004		1.076	
Extracurricular activities	.922		1.068	
Enjoyment of activities	.876		.827	
Belief		1.544***		1.349
Attendance to religious inst.	1.022		.885	
Use of prayer	1.295***		1.139	
Belief in parent's concern	1		1.256	
Observations	407	458	708	716
Pseudo R-square	.058	.025	.054	.01
LR Chi-square	63.91	30.44	21.62	3.83
LR Chi-square p-value	.000	.000	.054	.43

Coefficients reported in odds ratio, [+] Models control for age and gender
*** significant at 1%, **significant at 5%, *significant at 10%

Table 5 reports the results of logistic regressions utilizing non-drug use as a dependent variable. That is, respondents that did not use drugs were recorded as a 1 and those who had used any drugs in their past would be recorded as a 0. Therefore, variables with a coefficient above 1 are related with non-drug use. For American students, seen in Model 9, *parental supervision*, *possession of a hobby*, *intellectual commitment*, and *use of prayer* are all significantly related with non-drug use when each measure is considered. That is, as each of these indicators increases, so does the likelihood of non-drug use. Interestingly, *parental social attachment* decreases the likelihood of non-drug use. When each social bond is considered in their aggregate form, attachment and belief are once again significant. For Korean students in the sample, *parental social attachment* and *use of prayer* are significantly related with non-drug use. Korean students that possessed a hobby were found to be more likely to use an illicit drug at some point.

Table 5: Logistic Regression Results for Non-Drug Use

Dependent Variable: Non-Drug Use				
	US		SK	
Independent Variable	(9)+	(10)	(11)+	(12)
Attachment		.701**		.875
Parental social attachment	1.529**		.652*	
Parental connectivity	.831		1.246	
Parental supervision	.602***		1.019	
Commitment		.714		1.13
Willingness to learn	1.169		.721	
Possession of a hobby	.709*		1.653**	
Intellectual commitment	.528***		.885	
Involvement		1.213		1.338
Extent of free time	1.04		.935	
Extracurricular activities	1.26		1.027	
Enjoyment of activities 1.004			1.242	
Belief		.642***		.757
Attendance to religious inst.	1.072		1.074	
Use of prayer	.723***		.844*	
Belief in parent's concern	1.017		.732	
Observations	407	458	708	716
Pseudo R-square	.11	.052	.053	.012
LR Chi-square	61.84	33	18.16	4.08
LR Chi-square p-value	.000	.000	.2	.395

Coefficients reported in odds ratio, + Models control for age and gender
*** significant at 1%, **significant at 5%, *significant at 10%

Using a Wilcoxen test, a comparison can be drawn between American and Korean students' social bonds and drug use. Results of these tests are reported in Table 6. The tests indicate that American and Korean college students differ considerably in reference to their social bonds, but American students were found to have more social bonds overall. The two groups were most alike in their attendance of religious institutions. This is somewhat unsurprising, yet American students have stronger scores for other belief variables including use of prayer during times of need. The difference between Korean and American students was insignificant in extent of free time and parental supervision. In all other respects American students had greater social bonds, yet had higher reported drug use.

Table 6: Wilcoxen Test Results for a Comparison of Social Bonds

	Wilcoxen Value	Sig.
Attachment		
Parental social attachment	-14.198	.000
Parental connectivity	-10.461	.000
Parental supervision	-1.477	.140
Commitment		
Willingness to learn	-15.988	.000
Possession of a hobby	-16.721	.000
Intellectual commitment		
Math	-15.008	.000
Verbal	-16.314	.000
Involvement		
Extent of free time	-1.301	.193
Extracurricular activities	-15.863	.000
Enjoyment of activities	-9.699	.000
Belief		
Attendance to religious inst.	-.208	.836
Use of prayer	-4.313	.000
Belief in parent's concern	-15.511	.000

Findings and Conclusions:

It is apparent that the sample of American students are more likely to use drugs than their South Korean counterparts, but the purpose of this study is to determine if social bonds are related to the drug consumption of students in either nation. This is essentially a test of the culture. It was suspected that South Korean culture would have imparted greater social bonds to their population and that these social bonds would prevent college students from consuming drugs. Based on the results of the previous section, each of the four hypotheses introduced in the methodology section are addressed below.

The first hypothesis is that as students' social bonds decrease, drug use in social situations will increase. The results of this study indicate that for American students in the sample, only *attachment* and *belief* were found to reduce the likelihood of social drug use. In particular, students that were exposed to greater levels of parental supervision and used prayer in times of need reduced this type of consumption. On the other hand, based on this study's sample, *commitment* seems to reduce the propensity for Korean students to engage in social drug use. In particular, students that indicated a greater willingness to learn used fewer drugs socially. Thus, students with fewer social bonds may consume more drugs in social situations, but for each nation particular social bonds are more influential. That is, all of Hirschi's social bonds may not decrease social drug consumption, but *attachment* and *belief* (for American students) and *commitment* (for Korean students) can reduce such behaviors.

The second hypothesis is that as students' social bonds decrease, frequency of marijuana use will increase. The results of this study indicate that, similar to drugs used socially, frequency of marijuana use is impacted by *attachment* and *belief* for American students and *commitment* for Korean students. It is quite apparent that American students in the sample used drugs more frequently than their Korean counterparts, but American students were likely to consume less marijuana if they enjoyed higher levels of parental supervision, received higher grades, and used prayer in times of need. Korean students that self reported higher levels of a desire to learn were less likely to consume more marijuana. In addition, Korean students that receive higher grades may also be related to a decrease in this type of drug consumption. Therefore, for American students, social bonds may be more crucial in deterring drug use than for Korean students.

The third hypothesis stated that students with more social bonds are more likely never to have used any type of illicit drug. This study's results indicate that for American students, three social bonds are related to non-use of drugs. Indicators of attachment, commitment, and belief were significantly related to this behavior. In particular, American students in the sample that had greater levels of supervision, possessed a hobby, had intellectual commitment, and used prayer in times of need were more likely not to have ever used drugs. For South Korean students, parental social attachment and use of prayer had a mild relationship ($p \leq .10$) with non-drug use. Thus, American students seem to be more influenced by social bonds that their South Korean counterparts.

The final hypothesis stated that Korean students have stronger social bonds than do American students. The results indicate that, instead, the opposite is true. Americans have greater levels of social bonds than their South Korean counterparts according to the results of the Wilcoxen test. Although U.S. students may have higher social bonds, they also are more likely to consume drugs and at greater levels than South Korean students. The results of the study indicate that the aspect of South Korean culture than reduces the level of drug consumption to near zero is not a matter of social bonds. Instead it is some other factor or variable that causes a nation that, in many respects, emulates American culture to escape drug use of its youth.

This study is exploratory in nature and, therefore, results should be taken with caution. The type of sample used in this study reduces the generalizability of the results. Students used in the study were from only two universities. In addition, political and legal frameworks of each nation were not taken into account. Yet the results are valuable in discovering policy that may deter or even prevent drug use. In addition, it recognizes that culture is powerful and has the potential to save or harm.

The results of this study indicate that in the U.S. social bonds can reduce the likelihood of drug use. Reducing the demand for drugs is a far more effective strategy than a supply side focused strategy, such as increasing the penalties of drug crimes. Therefore, parents should take an active role in the lives of their children. In addition, religious faith reduces the inclination of U.S. students to participate in the consumption of drugs. Therefore, faith based affiliations should be encouraged. For the South Koreans, such steps are not necessary. The culture alone may limit the extent of drug use. What should also be considered is the punishment and subsequent shame that would likely ensue after a drug conviction in a nation such as South Korea. Essentially, the potential costs of using drugs may far outweigh any benefit the user receives from the use. This deterrence strategy has notoriously been ineffective in the U.S., but

for South Koreans the culture may promote greater sensitivity towards such methods. Further research is necessary to make any conclusion of this nature. What this study can conclude is that South Korean culture dissuades drug use outside the framework of Hirschi's social bond theory. However, this framework is applicable to American students, whose higher levels of drug use indicate that they lack sufficient social bonds.