

DRINKING AND DRIVING: A PILOT STUDY OF
SUBJECTIVE NORMS, ATTITUDES AND BEHAVIORS OF
GERMAN AND AMERICAN STUDENTS

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Drinking and driving is increasingly becoming a detrimental behavior, especially amongst college-aged students in the U.S. and other countries. Additionally, research shows that college-age students in the U.S. are more likely to drink and drive, than college-age students in Germany. Fishbein and Ajzen's Theory of Reasoned Action asserts that subjective norms and attitudes signify behavioral intentions. In order to test the TRA and understand the drinking and driving differences and similarities in the U.S. and Germany, focus groups of German and American college-age students were conducted to discuss subjective norms and attitudes surrounding drinking and driving behaviors, followed up by an electronic pilot study survey regarding same. The data collected illustrated that college-age drinking and driving is occurs more frequently in the U.S., and that American and German students differ in their attitudes and subjective norms surrounding drinking and driving. Future research would benefit the continued use and circulation of the electronic surveys for larger cross-cultural samples of college-age students to more effectively and quantitatively assess actual drinking and driving behaviors as it relates to subjective norms and attitudes, as suggested in the TRA.

Elizabeth M. Goering, Ph.D., Chair

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Introduction and Overview

The dangerous, and sometimes fatal, behavior of drinking and driving is increasingly becoming common among college-age students (Usdan, et al, 2005; Quinn, et al, 2012) in the United States of America (“U.S.”) and Europe (Steptoe, et al, 2004) (Ahlström, et al, 2004/2005).

According to the U.S.’ National Highway Traffic Safety Administration, more than 10,000 deaths occur annually due to alcohol-related traffic accidents (2010), and prior studies indicate that individuals between the ages of 21 and 24 have the highest percentage of alcohol and/or drug related traffic accidents (National Highway Traffic Safety Administration, 2002). Additionally, approximately 1,800 college-age students suffer from alcohol-related deaths annually (Hingson, et al, 2009), and that number is increasing every year. Similarly in the Europe approximately 1/3 of all road traffic fatalities are related to drinking and driving, and those losses are commonly caused by young drivers (German Centre for Addiction Issues, 2008).

Various factors contribute to college-age drinking and driving such as culture (how society and environment define appropriate behavior), subjective norms (how one’s family/friends define appropriate behavior) and attitudes (an individual’s definition of appropriate behavior). Culture contributes to drinking and driving through the law, such as the legal age to consume and/or purchase alcohol (21 in the U.S. and 16 in most European countries (Ryan, 2006)) and the legal age to drive a car (approximately 15 in the U.S. (differs from state to state) and 18 in most European countries). For example, by the time students are legally able to consume alcohol in the U.S., even though they would have some experience driving, the inexperience of drinking coupled with driving leads to

accidents. Similarly, the lack of driving experience among European paired with minimal drinking experience causes auto accidents. Generally, the lack of experience and immaturity due to the young legal age requirements for both consuming alcohol and driving lead to drinking and driving instances.

College-age drinking and driving fatalities are linked to lack of experience with alcohol consumption in the U.S. and Europe (Ahlström, et al, 2004/2005). In the U.S., the issue of college-age drinking and driving is exacerbated by the fact that college-age students are usually just coming-of-age to legally consume alcoholic beverages (Fromme, et al, 2010), paired with the social pressures of their peers to drink and the sought after “true college experience” to do so (Fisher, et al, 2007). In one study, it was reported that approximately 90% of American college students will consume alcohol at least once a year (Shirachi & Spirrison, 2006), which is evidence that alcohol consumption is a natural part of the college culture (Romo, 2012), so it would seem that college-age drinking is inevitable and widely accepted.

In Europe, however, the hidden culprit of college-age drinking could be linked to the age of accessibility (Ahlström, et al, 2004/2005). If the age of accessibility occurs during a vulnerable and impressionable young age, without proper alcohol education, alcohol abuse is likely forthcoming. Thus, the onset of drinking issues would have started well before college education.

Also, each European country has a unique culture that contributes to and creates subjective norms and attitudes towards drinking. For example, Italy (predominately wine consuming) and Germany (predominately beer consuming) might have more of a relaxed

attitude toward college-age drinking due to the fact that wine and beer consumption plays an important role in their respective cultures, and is frequently consumed with meals.

Currently, there is little research that assesses college-age drinking and driving behaviors between the U.S. and Europe, specifically Germany. Additionally, past research does not assess drinking and driving attitudinal and subjective norms between American and German college-age students and their reported behaviors. As more students begin their college careers, the importance of understanding individual attitudes and subjective norms will be vital in order to decrease college-age drinking and driving related fatalities. The previous American and German drinking and driving statistics provide a glimpse of what the future of college-age drinking and driving will look like which, if ignored, could lead to more fatalities. As such, a clearer understanding of attitudes and subjective norms, as well as the culture that contributes to both, will be crucial to the future prevention of college-age drinking and driving.

Literature Review

In a past cross-cultural comparison study that assessed annual drinking and driving norms of college-age men and women in 25 countries (Step toe, et al, 2004), the U.S. had the highest percentage of students who reported drinking and driving behaviors. In the U.S., 50% of men (N=515) and 35% of women (N=1157) reported drinking and driving within the past year. In comparison, Germany, one of the lowest reported drinking and driving countries, returned 13% of men (N=335) and 7% of women (N=395) reporting the same (Step toe, et al, 2004).

The independent variables assessed included the legal blood alcohol concentration (“BAC”), access to tertiary education and the legal age for purchasing alcohol (Step toe, et al, 2004). First, the BAC variable showed that countries with a higher legal BAC had a lower percentage of drinking and driving incidents whereas countries with a lower legal BAC had a higher percentage of drinking and driving accounts. Second, access to tertiary education provided that countries which offered students access to universities resulted in higher drinking and driving incidents. Finally, the legal age for purchasing alcohol was not significantly related to drinking and driving behavior.

Amongst the 25 countries that were surveyed, approximately 70% of college students reported their agreement with the importance of not drinking and driving, which coincided with the relatively low percentage of students’ drinking and driving reports. Additionally, students who reported weak beliefs regarding the importance of obeying speed limit laws, as well as restraining their alcohol consumption, were more likely to have exhibited drinking and driving behaviors within the past year as opposed to students who reported strong beliefs and were less likely to exhibit drinking and driving

behaviors. As such, personal attitudes and beliefs pertaining to drinking and driving were influential in behavioral intentions.

Attitudes and beliefs are the subjective norms and societal expectations that a country, social and/or familial culture teaches. The difference between American and German students' drinking and driving reports can be explained through subjective norms created through culture.

For example, American students' high reports of drinking and driving compared to German students' low reports could be due to the fact that most American students are likely to own and depend on personal automobiles instead of using public transportation (Stephoe, et al, 2004), whereas German students are offered more public transportation options. This is due to the fact that most points of interest in the U.S. are far apart; so many Americans must own a vehicle to get from place to place where most public transportation would not venture. In this case, cultural constraints due to issues with public transportation in the U.S. can lead to more instances of drinking and driving.

Additionally, strict public intoxication laws in the U.S. might also be linked to higher reports of drinking and driving among American students, wherein students run the risk of being fined and/or arrested if caught intoxicated in public, resulting in their decision to get behind the wheel. Conversely, Germany does not have public intoxication laws, so Germans might feel more free to walk home drunk without worrying about being fined and/or arrested. Laws such as public intoxication are culturally defined and are influential in creating attitudes and subjective norms to which people behave accordingly.

As previously mentioned, points of interest in the U.S. (compared to Germany) are usually further distances apart, resulting in a personal vehicle being the most

convenient and most likely to be used instead of relying on public transportation which may or may not reach the desired point of interest. Specifically, in the State of Indiana, public transportation (i.e. bus, as a train is not an option) usually remains in or around metropolitan areas and does not travel statewide. Also, the cost associated with a taxi cab or private transportation (i.e. limousine) can be very expensive and most college-age students do not have a disposable income to spend on taxi cabs and limousines. Conversely, Germany is recognized for its small towns and villages that make it easier for individuals to walk and/or take their desired pick of the local modes of public transportation. Additionally, the German train system (Deutschebahn) offers time-flexible, safe, dependable and cost-effective means of transportation across the country.

Finally, the location where drinking occurs influences drinking and driving intentions. In their study, Usdan, et al (2005) found a significant number of college students who reported drinking and driving behaviors when they were leaving a friend's house (41%) as opposed to those who were leaving a public place (i.e. restaurant, pub, or bar) (27%). This finding illustrates that college students are prone to control their alcohol intake if they are in a public institution where they know they will have to get home later versus when they are at a friend's house, as the possibility of being able to stay the night is more realistic.

This study also found that students who resided on campus were less likely to drink and drive than those students who lived off campus and have to drive to campus. The availability of bars and restaurants within walking distance of college campuses makes it easier and safer for students who live on campus to walk to the bar without use of a vehicle. Similarly, college parties usually occur on or close to campus, resulting in

students living on campus having the luxury of walking to and from the party, whereas those students living off campus will most likely drink and then drive home afterward.

However, it is important to note that while Germany may not have as many reported college-age drinking and driving instances, it does have alcohol abuse issues by its young citizens. In their survey report, Friese, et al, found that 75% of Germans ages 15-16 consumed alcohol within the last 30 days, compared to 33% of Americans of the same age. Additional reports illustrated that 22% of Germans had been intoxicated within the last 30 days, compared to 18% of Americans and that 14% of Germans reported having been intoxicated before the age of 13, compared to 8% of Americans respectively. These numbers demonstrate that even though Germany might not specifically have an issue with “college-age” drinking and driving, its younger population has alcohol abuse issues and these issues begin at a younger age than Americans. These alcohol abuse issues will more than likely continue through the age when they obtain a driver’s license and well into their college career.

Given the differences between American and German students’ self-reports of drinking and driving behaviors, a communicative construction of attitudes and subjective norms could be used to measure these differences, as well as to predict future drinking and driving behavioral intentions. The previous research offers culturally-based explanations of why American and German college students do or do not drink and drive. Specifically, geography, laws and public infrastructure are directly related to drinking and driving intentions. While these factors are relevant to college-age drinking and driving, they do not specifically address the impact of subjective norms and attitudes on drinking and driving. Subjective norms and attitudes forecast behavioral intentions, as is

evident in American culture which socially promotes drunk driving more-so than German culture. In this way, attitudes and subjective norms are reliable indicators of behavioral intentions.

Fishbein and Ajzen's Theory of Reasoned Action ("TRA") (1975) asserts that subjective norms and attitudes encourage and predict behavioral intentions. An attitude is an individual's perspective toward a behavior, and a subjective norm is an individual's interpretation and perception of their social, cultural and/or familial expectations toward a behavior (Parker, et al, 1992). If one can understand and predict drinking and driving attitudes and subjective norms of college students, then they can better predict drinking and driving intentions. As previously noted in the Steptoe, et al (2004) article, students who reported weak belief patterns surrounding drinking and driving were more likely to drink and drive than those with strong belief patterns. If a student believes that drinking and driving is destructive behavior, they will be less likely to drink and drive. The opposite will occur with the student who does not believe drinking and driving is a detrimental behavior, and they will be prone to drink and drive.

In his study concerning the TRA and the intention to drive while intoxicated ("DWI"), Gastil (2000) found that the TRA was positively correlated with DWI behaviors. Specifically, it was found in the research that subjective norms were more indicative of DWI behavioral intentions than were attitudinal influences. More specifically, with respect to his four research questions, Gastil found that a mixture of subjective norms and attitudes positively influence DWI intentions, that perceived severity of punishment of being convicted of a DWI was negatively correlated with DWI intentions, the perception of friends' disapproval had a significant effect on DWI

intentions, and that ethnicity (Caucasian v. Hispanic) and annual income (greater or less than \$30,000) had a positive correlation with DWI intentions (Hispanics with an annual income less than \$30,000 were more likely to be convicted of DWI). At the time, Gastil's (2000) study was the first of its kind to assess both the TRA and drinking and driving issues.

RQ1. Does the Theory of Reasoned Action provide an accurate foundation to predict drinking and driving behavioral intentions of German and American students?

The communicative construction of subjective norms and attitudes through the TRA offers a better understanding of behavioral intentions, which can also assist in understanding and predicting drinking and driving intentions. Additionally, moderating effects related to subjective norms and attitudes, such as the legal drinking age, the legal driving age, the availability of public transportation and the financial cost associated with obtaining a driver's license also assist in understanding behavioral intentions. Assessing drinking and driving subjective norms and attitudes, as well as moderating effects, between the U.S. and Germany will be imperative to recognizing cultural differences and similarities, as well as methods to prevent future drinking and driving.

RQ2. Do attitudes influence American and German students' behavioral intentions to drink and drive?

RQ3. Do subjective norms influence American and German students' behavioral intentions to drink and drive?

It is predicted that utilization of the Theory of Reasoned Action will provide an outcome illustrating that attitudes and subjective norms influence behavioral intentions, specifically German and American students' intentions to drink and drive. If attitudes

and subjective norms are understood, then the prevention of future drinking and driving can become more realistic.

RQ4: Are there differences in drinking and driving attitudes, norms and behaviors between German and American students?

In my thesis, I hope to discover what American and German students' drinking and driving attitudes and subjective norms are which influence their behavior, referencing the Theory of Reasoned Action as the foundation. Additionally, I hope to uncover what the attitudes and subjective norms are attributed to and the cultural differences. With this knowledge, the gap between German and American students' drinking and driving reports (as presented in the Steptoe, et al (2004) article) will be filled in with the missing pieces, as well as offering future proposals to prevent college-aged drinking and driving.

Methods

i. Participants

Participants were male and female college-age students who were enrolled at a university in the U.S. or in Germany. Students were recruited to participate voluntarily in two phases of data collection: focus groups and survey.

Approval from the Institutional Review Board (“IRB”) was obtained and for protection of human subjects in this project.

ii. Procedure

Beginning in July of 2013, I reached out via email to professors at the University of Regensburg in Germany, outlining my research project and requesting their assistance gathering students for focus groups (conducted in English) to test my research questions. Additionally, I provided them with an explanation of the study.

This same email was then to be emailed to their current students enrolled in their respective courses regarding participating a focus group setting to discuss their views and opinions on drinking and driving with a graduate student interested in same for a thesis research project. Extra credit options were available to those students only at the professor’s discretion. The students were then responsible for contacting me and/or working with their respective professor to express interest in participating in the focus group. The focus group in Germany consisted of three groups containing approximately 7 to 15 students in each group, and the focus group in the U.S. took place in one sitting with approximately 30 students. During these focus groups, a semi-structured interview (following my interview schedule) was conducted regarding drinking and driving attitudes and subjective norms. (See Appendix 1).

The process of gathering students to volunteer to participate in focus groups took approximately six months. At the beginning of January of 2014, the focus groups were put together and the dates for same were set for early February.

On January 29, 2014, approximately two weeks before I traveled to Germany to conduct the focus groups, I conducted a large focus group with the students at Indiana University Purdue University of Indianapolis (“IUPUI”). I was able to set up this large focus group through the assistance of a professor at IUPUI and she allowed me to take approximately 30 minutes of class time to speak with the students.

Three group interviews were arranged at the University of Regensburg which were conducted on February 4 and 7, 2014 in Regensburg, Germany. A professor at the University of Regensburg assisted in putting together said interviews with the students. As previously mentioned, one large group interview was arranged at Indiana University Purdue University of Indianapolis (“IUPUI”) on January 29, 2014.

During my discussion/interview with the focus group of students at IUPUI and the University of Regensburg, I explained that I was a graduate student pursuing a Masters in Applied Communication and was in the process of writing my thesis on drinking and driving attitudes and subjective norm differences between German and American college students. I also noted that I was seeking their opinions, thoughts, attitudes and stories regarding the same.

Following the focus groups of the German and American students, the identical professors then sent an email to their students (undergraduate and graduate) to participate in an electronic survey regarding drinking and driving. The results of this survey data were compiled online.

iii. Measures

First, in order to assess attitudes and subjective norms surrounding drinking and driving in their respective countries, a semi-structured and iPhone recorded focus group interview with the students from both American and German universities was conducted. These questions included, but were not limited to the following: “What is considered drinking and driving?”, “Is having one beer and then driving considered drinking and driving?”, “Have you ever drunken and then driven an automobile?”, “Why do college students drink and drive?”, “Why would or wouldn’t you drink and drive?”, “Do you know people who have drunken and then drove?”, and “What would your peers think if you drank and then drove?” Administration of the focus groups lasted approximately 20 to 40 minutes. The focus group interviews were digitally recorded in order to further analyze the responses from the interviews which were used as the foundation for the questions posed on the electronic surveys regarding drinking and driving.

A thematic content analysis of the data from those student focus group interviews was utilized in order to uncover student attitudes and subjective norms that surround drinking and driving. Some of the attitudes and subjective norms I looked for with respect to drinking and driving included the fear associated with killing someone, disappointing family and friends, societal acceptance because it is so common, apathy, etc. The attitude and subjective norm data found in the student focus group interviews was used as questions for the electronic surveys regarding drinking and driving behaviors. This was done in order to quantitatively analyze student attitudes and subjective norms surrounding drinking and driving to be able to compare and contrast American and German students’ drinking and driving behavioral intentions.

Second, after the focus groups were completed the data from the focus groups was analyzed and used as questions in the electronic surveys. The electronic surveys (via Qualtrics) were electronically distributed to the aforementioned American and German professors who then electronically distributed the same email, via university email, to students. (See Appendix 2). Students were asked to participate in an electronic survey regarding their opinions on drinking and driving. Again, extra credit for participating was at the discretion of the professors.

The survey utilized a Likert-type scale asking respondents to rate their personal opinions, attitudes and beliefs related to drinking and driving as well as assessing their subjective norms and expectations surrounding drinking and driving and actual reported drinking and driving behaviors. The students were asked to rate how much they agreed and/or disagreed with statements and how they felt about certain statements pertaining to drinking and driving. Some of these questions asked the student to rate: “How you feel about driving after drinking”, “My parents think I should drive after drinking”, “My best friend thinks I should drive after drinking”, “How you feel about not driving after drinking”, “Generally speaking, I want to do what my parents think I should do” and “Most people who are important to me think I should not drive after drinking.” Additionally, in order to obtain descriptive statistics of the students participating in the survey, their age, gender, location of residence, GPA, racial background (optional) and their membership in a fraternity or sorority on their college campus was also questioned, warranting a response.

Once the electronic surveys were returned, the data was compiled and descriptive analyses were performed. From this data, conclusions about the differences and

similarities between the students in the U.S. and in Germany, in relation to drinking and driving behavioral intentions due to student attitudes and subjective norms were made. Additionally, this data will be sufficient to answer my previous research questions, as well as provide for future research and evidence to avoid college-age drinking and driving.

Focus Groups

The goal of the focus groups was to explore drinking and driving attitudes and subjective norms, as well as other external and internal contributing variables of same. As such, different themes emerged from the conversations.

i. American Student Focus Group

To begin with, it is important to note that at the beginning of the focus group, the students were asked by a show of hands how many of them had previously drank and drove, and approximately 80% of the students' hands were raised. This is important to note because the data acquired from the focus groups was from college-age students with reported drinking and driving behaviors.

a. Theme 1: What is Drinking and Driving?

First, we discussed the student's definition of "drinking and driving" and the makeup of an individual who drinks and drives. The students agreed that consuming one drink and driving would not be construed as drunk driving; however, if the individual were "buzzed" (physiologically feeling slightly drunk, but not wholly drunk) from a single drink and had consumed more than a couple of drinks, then that would be "drunk driving." One student explained that "buzzed" driving is when you "*don't have full control of your body or mind.*"

Additionally, the students explained that getting drunk and/or "buzzed" is dependent on an individual's alcohol tolerance (i.e. gender, weight and frequency of alcohol consumption). For example, a petite female might get drunk off of one drink, whereas a larger male might require consumption of several drinks before reaching the

level of intoxication. This also is dependent on how much alcohol is consumed on a regular basis.

b. Theme 2: Contributing Factors

Another theme that emerged from the focus group was contributing factors to drinking and driving behaviors, which include the following: displeasure with getting stranded at a bar to get sober, fear of physically injuring others, family history of alcohol abuse, the cost of transportation, use of a designated driver, and education.

First, a couple of students expressed their desire with simply wanting to be at home and that they did not want to get “*stranded at the bar*” all night long to sober up. The idea of having to physically wait for their bodies to be sober enough to drive seemed “*painful*” and they would rather risk getting caught drinking and driving than sticking around a bar for an hour or so. One student explained that “*If it’s 3 a.m., no one’s awake or wants to get up and pick someone up.*” and “*It’s more convenient to be in your car.*” Several other students nodded their heads in agreement.

Second, one student explained that they do not drink and drive out of fear of physically injuring another person and said “*You could kill someone or yourself.*” Most students nodded their heads in agreement when another student stated that drinking and driving is just too dangerous.

Third, one student explained their family’s abuse of alcohol and how they experienced the negative effects alcohol abuse has on a family. This same student also explained how strongly they felt about keeping drunk drivers off of the road and would do anything in their power to do so; even if that meant getting up in the middle of the night to pick someone up from the bar to bring them home. However, the student went

on to explain that they received gas money from the people they picked up and if they did not receive payment they most likely would not continue to pick up their friends.

Fourth, another student mentioned that they would not want to pay a taxi cab to deliver them to their home because of the high cost associated with obtaining same. One student said “*Nobody wants to call a cab and pay for the cab.*” to which the other students nodded their heads in agreement in that they would rather drink and drive then pay the high cost of getting a taxi cab to take them home. The student continued to explain that it is so much more convenient to just get in your car, drunk, and drive home.

Fifth, when asked if they used a “designated driver” (“DD”) when they would visit a bar, several students nodded their heads in agreement. One student mentioned that they were almost always the designated driver for their friends because they did not want to see their friends getting hurt or hurting someone else if they were drunk driving. However, another student explained that they would only use a designated driver if they were attending a pre-planned event, such as a 21st birthday party, but that if it were a relaxed gathering they most likely would not use a designated driver. Another student stated that “*No one wants to be the DD.*” and that “*Finding an outside ride is way too inconvenient.*”

Finally, education contributes to college-age drinking and driving. One student explained stated that one issue with college-age drinking and driving is the fact that “*We are just poorly educated.*” They explained that they received drinking and driving education in high school from a very angry policeman who attempted to instill fear through scare tactics, and that student simply rejected the message. Another student explained they attended school at Indiana University (“IU”) in Bloomington, Indiana, and

that IU was encouraging “safe drinking” versus abstaining completely from drinking, and that they thought this was a more useful and realistic approach because IU understood that the students were going to drink as opposed to being in denial about college-age drinking.

c. Theme 3: Injunctive Norms

Injunctive norms were another theme that emerged from the focus groups, which include the following: peer influence, familial influence and social influence (i.e. college experience).

First, when asked if the student’s friends would support them drinking and driving, and there was a unanimous “*No.*” around the room; however, when asked if they felt college pressure to drink and drive, one student responded that it “*Depends on your peers.*,” as if to say that if their friends drank and drove, then they would be more likely to do the same. A couple of students shared their stories of friends who drank and drove, and these were also some of the same students who admitted to drinking and driving in the past, so peer influence, while not admittedly is influential, is very influential.

Second, when asked if the student’s families would support them drinking and driving, again, there was a unanimous “*No.*” around the room. As previously mentioned, a student’s personal familiar experience with alcohol abuse issues was mentioned, and this was the sole reason they abstained from drinking and driving; however, that same student explained that if they ever did drink and drive, their family would be very upset and they felt there was a double standard in that sense. When asked if the students spoke about college-age drinking and driving with their parents, one student responded “*In*

college, you don't want to be open about it with your parents because they don't want you to drink."

Finally, when asked if the students thought that there was college pressure to drink and drive, the students did not think that they were pressured to do so; however, as previously mentioned, this can depend on the people one chooses to associate themselves with. Another student explained that college drinking and driving is a "*real culture*" in that "*...everyone is going to do it, but you know it's wrong.*" One student explained that the legal drinking age contributes to college drinking and driving. They stated "*They make you wait too long.*" and it is "*...so exciting*" when you get to college and are finally able to drink, so perhaps some students go a little overboard, which is linked to lack of experience consuming alcohol.

ii. German Student Focus Groups

During the focus groups, the German students were also asked if they had previously drank and drove, and approximately 30% of the students reported they had. Again, this information is important to note because the data acquired from the focus groups was from college-age students with reported drinking and driving behaviors.

a. Theme 1: What is Drinking and Driving?

To start off our discussion, the students were asked what their definitions of drinking and driving were and what constituted "drunk driving" and if "buzzed" driving was drinking and driving. The German students were not familiar with the "buzzed" term, so I explained it to them. One student agreed that "buzzed" driving was drinking and driving and they defined it as "*...not full mental activity*" and another described it as one who "*...can't control their actions.*" Another student disagreed and stated that being

“buzzed” and “drunk” was the same thing. The same student stated that consuming more than two beers would be drinking and driving; however, another student said that consuming more than one beer would be drinking and driving.

b. Theme 2: Contributing Factors

Another theme that emerged from the focus groups was contributing factors to drinking and driving behaviors, which include the following: no way to get home, fear of physically injuring others, financial considerations, living in the “countryside,” age and education and public transportation.

First, college-age drinking and driving would most likely occur if the student had zero way of getting home and had to solely depend on their car to get them home or there was no one around to drive them. One student explained they would drink and drive “...*only when I couldn’t get home any other way*” and this same student later stated they had never drunk and drove before.

Second, students were concerned with physically injuring other people and themselves, so they abstained from drinking and driving. One student explained it is just “*too dangerous*” and that the drinking and driving accidents they have seen “*looked very bad.*” In addition, one student explained there are special roads that drunk drivers use called “*Schleichwege*” (i.e. back roads), so they usually abstain from driving on those roads since they are notorious for drunk drivers.

Third, one student noted the high cost with obtaining a driver’s license in Germany (approximately 3,000 Euros) and what “*a waste of money*” it would be to get caught drinking and driving only to lose your license, in addition to all of the money that was spent in getting a driver’s license. Many of the students agreed that they would not

drink and drive because they would not want to lose out on the money used to obtain a driver's license, as well as losing their license. Additionally, one student mentioned their concern with getting a speeding ticket (which can range between 400 and 600 Euros), let alone a drunk driving offense. In this sense, there is a high concern and regard for the financial repercussions of breaking the law and losing one's license.

Fourth, another student mentioned that drinking and driving was an issue out in the "*countryside*" (the rural areas of town where most public transportation does not go), so those who live in the countryside must drive, walk and/or ride a bike to get around. The student explained that those individuals who live in the countryside are more likely to drink and drive than college-age students because they have no other mode of transportation to depend on; whereas, most college students utilize public transportation close to campuses. One student explained that they lived in the countryside and there were zero modes of public transportation, so the residents were almost forced to drink and drive because there were no other options.

Fifth, the students explained that age and education simultaneously played a role in drinking and driving, and that it was not really a problem with college students, but was more an issue with "*older adults*." One student explained that since the legal drinking age in Germany is 16, "*You're drinking earlier, you're used to it, you've experimented and you know how you'll react to it.*" Finally, one's education contributes to drinking and driving. This issue parallels that of age in that, as one student explained, some of their high school friends who did not go to college stayed in their hometown and they would frequently drink. While the student did not go into detail about education

contributing to drinking and driving, it was inferred that because these individuals did not have higher education, they were not privy to the consequences of drinking and driving.

Finally, public transportation contributes to drinking and driving in that it lessens the instances of it occurring. One student mentioned the social project “*Berufbus*” (i.e. call bus) that they would utilize while out drinking. This call bus program is a type of community service that some drunk driving offenders must contribute to in that they drive a bus around at all hours of the day and night. In exchange for paying for the gas, the bus will pick you up anywhere and drop you off anywhere. Another transportation mode mentioned were the public buses, which are plentiful in Regensburg. One student commented there was “*No need to drive around town, so you take the bus.*” Additionally, a couple of students mentioned they did not need to depend on the public buses because they could walk to the bars from where they lived.

c. Theme 3: Injunctive Norms

The final theme that developed from the focus groups was injunctive norms which influenced drinking and driving, which include the following: peer influence, familial influence and social influence (i.e. college experience).

First, when asked what role their friends and peers played in their drinking and driving behaviors, there was zero influence. One student explained that they would most likely end a friendship with someone if they discovered they were guilty of drunk driving. One student mentioned that when they went out with their friends they would gather in a group and decide who the designated driver would be, which suggested there was concern for drunk driving prevention.

Second, familial influence related to drinking and driving cessation. One student explained that their parents offered to pick them up if they were out drunk somewhere to prevent them from drinking and driving. Additionally, as previously mentioned, the cost of obtaining a license contributes to infrequent drinking and driving occurrences as one student explained that their parents paid two-thirds of the cost to get their license, and they would hate to have their parents pay all of that money for nothing.

Finally, when asked if they thought that attending college instigated drinking and driving behaviors, the German students unanimously replied with “*No.*” One student mentioned that when they were in high school they knew what their physical “*limit*” of alcohol consumption was, so when they started attending college they knew what their body could handle and what it could not. Due to their “*limit*” knowledge, the student explained they were less likely to drink and drive because they would not allow themselves to get severely intoxicated knowing they had to drive home later. While most students did not feel that being in college contributed to drinking and driving instances, one student agreed that the consumption of alcohol increased when they were in college because it was a fun part of college, but that did not necessarily mean an increase in drinking and driving. Additionally, unrelated to the college experience of drinking and driving, one student mentioned the social embarrassment that comes with getting caught drinking and driving. The student explained they come from a small town, so if they were caught drinking and driving, everyone in the town would know about it and that would be embarrassing. This might be enough to prevent that student from drinking and driving.

iii. German and American Students Comparison

Deriving from the aforementioned drinking and driving discussions, Table 1.0 represents the similarities and differences between American and German students' drinking and driving intentions and the contributing factors (attitudes and subjective norms). The "X" represents if a theme was present from the discussions and the blank defines there was no presence of the theme.

Table 1.0

Themes	U.S.	Germany
Buzzed driving is drunk driving	X	X
Fear of physically injuring others	X	X
Displeasure of getting stuck at bar	X	
Cost of obtaining driver's license		X
Financial loss of losing license		X
Location of residence	X	X
Availability of public transportation		X
Unavailability of public transportation	X	
Personal history	X	
Cost of public transportation	X	
Cost of a taxi	X	
Age		X
Education	X	X
Use of designated driver	X	X
Desire to go home	X	
College experience contributes to drinking and driving	X	
College experience does not contribute to drinking and driving		X
Legal age of alcohol consumption	X	X
Peer influence	X	
Familial influence	X	X
Access to a personal vehicle	X	

Pilot Study

Pilot studies are essential to survey research in that they can provide valuable insight into whether or not the research being conducted is actually effective, realistic, will support the theory and/or hypothesis and also assist the researcher to find the problem areas of their research and how to make it better (Van Teijlingen and Hundley, 2001). In addition, pilot studies are essential to the researcher because they shed light on whether or not the respondents actually understand the questions being asked and are answering those questions (Kelley, Clark, Brown and Sitzia, 2003).

Due to the overarching importance of pilot studies to optimize survey research, a pilot study was implemented to evaluate the accuracy and effectiveness of the survey to the students. This implementation would be able to fix and/or discover any issues arising from the survey (i.e. confusion, understanding, grammatical errors, comprehension, etc.), as well as to provide a well-rounded and effective survey of drinking and driving attitudes and behaviors for future researchers in this area of communication study. More importantly, a pilot study was executed in order to assess if future research was needed or if the information and data gathered from the focus groups and survey respondents would be sufficient. However, in this case, the information and responses were not sufficient to make broad conclusions about student populations pertaining to drinking and driving attitudes and behaviors, so it is the hope that future researchers are able to pull from this data and the proposed survey to further the research and conclude with more accurate findings and assessments.

A pilot study of the electronic survey was essential in providing the initial framework, foundation and utilization of the electronic survey for future research on

college-age drinking and driving. Additionally, the pilot study provides future researchers with the tools to measure validity and the effectiveness of the electronic survey through the pilot study conducted for this research, preventing additional and unnecessary survey creation.

To further understand the data provided in the focus groups, an online survey was created to better assess the data and results on a broader scale. As such, pilot testing the survey was used to assess issues brought up by focus groups.

i. Online Survey

In order to effectually test the information retrieved from the focus groups, online surveys were e-mailed out to American and German students. The template of the survey was founded from a prior study conducted by Rhodes, et al (2011) wherein age and gender differences were assessed with regard to risky driving. The goal of the online survey was to further explore and test drinking and driving subjective norms and attitudes, gather reported actual and potential behaviors, and to efficiently test the research questions. The survey consisted of twenty-eight Likert-type rating scales, multiple choice, and demographic questions.

First, the Likert-type rating scale questions included questions regarding subjective norms and attitudes, as well as suspected drinking behaviors of fellow students. The subjective norm questions asked the respondent to rate on a scale of 1-7 (1 = Strongly Disagree and 7 = Strongly Agree) what they think their significant others' (i.e. parents, friends, boyfriend/girlfriend, etc.) opinions of them drinking and driving and them not drinking and driving would be. The subjective norm questions also ventured out of the realm of significant others and asked the respondent to rate what they believe

their fellow students' comfort with drinking habits at the university would be (0 = Not Comfortable and 10 = Very Comfortable). The attitudinal questions asked the respondent to rate on a scale of 1-7 (1 = Bad, Harmful, Foolish, Boring, Not Fun and Favorable and 7 = Good, Beneficial, Wise, Exciting, Fun and Unfavorable) how *they* feel about drinking and driving and not drinking and driving. Additional attitudinal questions also asked the respondents to rate contributing factors to drinking and driving (i.e. owning a vehicle, cost to obtain a license, culture, education, college pressure, cost to pay for a taxi, etc.) and how much they agreed and/or disagreed with the statements. The attitudinal questions also asked respondents to rate how comfortable they felt with the drinking habits of fellow students (0 = Not Comfortable and 10 = Very Comfortable), and the frequency of fellow students' drinking habits (over the course of 30 days). Finally, students were asked the likelihood of them drinking and driving the next time they were at a party (1 = Extremely Unlikely and 5 = Extremely Likely) and the likelihood of them arranging transportation so they will not have to drink and drive (1 = Extremely Unlikely and 5 = Extremely Likely).

Second, multiple choice questions asked the respondents to report the following: if they had ever had a drink of alcohol, how many times they drank alcohol in the past 30 and 7 days, how many drinks they would usually consume, how many times they consumed more than five drinks in a row, how many times they drank to the point of feeling drunk, how many of their close friends drink alcohol, how many times they drank and drove in the past 30 days, how many times they arranged for a driver in the past 30 days so they would not have to drink and drive, how many times fellow students' drank and drove in the past 30 days, how many times fellow students' arranged for a driver in

the past 30 days so they would not have to drink and drive, how many times in the past 30 days has someone else's drinking disturbed them, and which of the following consequences have they experienced as a result of drinking (i.e. missing class, injuring oneself, fighting, arrested for DUI, etc.).

Finally, demographic questions asked the students what type of housing they live in (i.e. at home with parents, on-campus dorms, off-campus apartment, etc.), racial or ethnic heritage (i.e. Hispanic, Caucasian, African-American, Asian, European, etc.), if they are a member of a fraternity or sorority, their GPA, age, and which country they are responding from (US or Germany).

Results

i. Preliminary Analysis

Among the respondents, 11 responses from the U.S., 6 from Germany, and 3 incompletes (location unknown) were obtained ($n=20$); however, the 3 incompletes will not be included in the results of this study as fully-completed surveys will only be referenced.

Descriptive analyses revealed the mean age of the German and American students was 23 years of age, with the youngest reported age being 20 and the oldest reported age being 28 ($SD=1.43$). Approximately 94% of German and American students reported having had a drink of alcohol in their life. Thirty-six percent of American students reported drinking and driving in the past 30 days; however, none of the German students reported drinking and driving in the past 30 days.

The following preliminary results are significant differences between German and American students; however, due to the fact that they are pilot and based on a small sample, they are interpreted as *suggestive* significant findings intended to be expanded upon for future research.

ii. Differences in Attitudes

RQ4 questioned if there would be differences between Germans and Americans in their drinking and driving attitudes.

An independent t-test was conducted to determine if cognitive attitudes (good v. bad) differed between German and American students. The Levene's test for equality of variances was not significant ($F=3.80$, $p=.070$), so equality of variance can be assumed, $t(15)=1.02$, $p=.32$, indicating no significant difference in cognitive attitudes toward

drinking and driving between American students ($M=1.15$, $SD=.40$) and German students ($M=1.00$, $SD=.00$).

An independent t-test was conducted to determine if affective attitudes (fun v. not fun) differed between German and American students. The Levene's test for equality of variances was not significant ($F=.68$, $p=.42$), so equality of variance can be assumed, $t(15)=-.89$, $p=.39$, indicating no significant difference in affective attitudes toward drinking and driving between American students ($M=1.80$, $SD=.75$) and German students ($M=2.20$, $SD=1.10$).

Table 2.0 illustrates the attitude differences of RQ4.

Table 2.0

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Cognitive Attitudes					
Equal Variances Assumed	3.803	.070	1.023	15	.323
Equal Variances not Assumed			1.406	10.000	.190
Affective Attitudes					
Equal Variances Assumed	.680	.423	-.886	15	.390
Equal Variances not Assumed			-.794	7.736	.451

iii. Differences in Subjective Norms

RQ4 questioned if there would be differences between Germans and Americans in their drinking and driving subjective norms.

An independent t-test was conducted to determine if subjective norms (I care what friends, family, etc. want me to do) differed between German and American students.

The Levene's test for equality of variances was not significant ($F=.61$, $p=.45$), so equality of variance can be assumed, $t(15)=-.38$, $p=.71$, indicating no significant difference in subjective norms toward drinking and driving between American students ($M=1.10$, $SD=.18$) and German students ($M=1.15$, $SD=.24$).

Table 3.0 illustrates the attitude differences of RQ2.

Table 3.0

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Subjective Norms					
Equal Variances Assumed	.613	.446	-.379	15	.710
Equal Variances not Assumed			-.348	8.240	.736

iv. Differences in Beliefs

RQ4 questioned if there would be differences between Germans and Americans in their drinking and driving attitudes and subjective norms, and beliefs contribute to both attitudes and subjective norms.

Independent t-tests revealed significant differences between American and German students on endorsement of the following beliefs. A significant difference was obtained for the belief that availability of public transportation contributed to students not drinking and driving, $t(15)=-2.33$, $p=.03$. German students were more likely to endorse this belief ($M=4.83$, $SD=.41$) than American students ($M=3.64$, $SD=1.21$).

A significant difference was found between American and German students' belief that college pressures increased the likelihood of drinking and driving, $t(10)=3.15$, $p=.00$, indicating that American students ($M=2.20$, $SD=1.25$) are more likely to feel that

college pressure increases the risk of drinking and driving than German students ($M=1.00$, $SD=.00$) do.

An independent t-test was conducted to determine if lack of education increased the likelihood of drinking and driving, $t(10)=-2.80$, $p=.01$), indicating that German students ($M=4.20$, $SD=.40$) believe more strongly that a lack of education encourages drinking and driving than American students ($M=2.70$, $SD=1.60$).

An independent t-test was conducted to determine whether German or American students believe that drinking and driving is just not much of an issue with college students, $t(15)=-4.21$, $p=.001$. This analysis demonstrated that German students ($M=3.67$, $SD=1.51$) believe more strongly that drinking and driving is not an issue for students than American students ($M=1.45$, $SD=.69$).

An independent t-test was conducted to determine if living in the “country” (i.e. not within the city) increased the likelihood of drinking and driving, $t(15)=-3.00$, $p=.01$, indicating that more German students ($M=4.20$, $SD=.40$) than American students ($M=2.80$, $SD=1.40$) believe that living in the “country” increases drinking and driving instances.

An independent t-test was conducted to determine the respondent’s that the legal drinking age contributes to drinking and driving behavior. A significant difference was obtained, $t(15)=2.20$, $p=.04$, indicating that American students ($M=3.27$, $SD=1.35$) believe more strongly that the legal drinking age contributes to drinking and driving than German students ($M=1.83$, $SD=1.17$).

Table 4.0 illustrates the belief differences.

Table 4.0

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Cost of License					
Equal Variances Assumed	7.008	.018	.404	15	.692
Equal Variances not Assumed			.496	14.810	.627
College Pressure					
Equal Variances Assumed	33.285	.000	2.281	15	.038
Equal Variances not Assumed			3.135	10.000	.011
Lack of Education					
Equal Variances Assumed	13.435	.002	-2.113	15	.052
Equal Variances not Assumed			-2.792	12.140	.016
Living in "Country"					
Equal Variances Assumed	7.606	.015	-2.274	15	.038
Equal Variances not Assumed			-2.969	12.737	.011
Legal Drinking Age					
Equal Variances Assumed	2.30	.639	2.196	15	.044
Equal Variances not Assumed			2.296	11.786	.041

v. Difference in Behaviors

RQ4 questioned if there would be differences between Germans and Americans in their drinking and driving behaviors.

An independent t-test was conducted to determine how many times in the past 30 days one had consumed alcohol. The Levene's test for equality of variances was significant ($F=6.922$, $p=.02$), so equality of variance cannot be assumed, $t_{15}=1.70$, $p=.10$,

indicating that American students ($M=9.10$, $SD=8.40$) consumed more alcohol in the past 30 days than German students ($M=4.50$, $SD=2.70$).

An independent t-test was conducted to determine how many times in the past 30 days one had been drunk. The Levene's test for equality of variances was significant ($F=4.608$, $p=.05$), so equality of variance cannot be assumed, $t_{15}=2.10$, $p=.05$, indicating that American students ($M=4.30$, $SD=3.70$) had been drunk more in the past 30 days than German students ($M=1.70$, $SD=1.20$).

An independent t-test was conducted to determine within the past week if at least one drink was consumed. The Levene's test for equality of variances was significant ($F=4.625$, $p=.05$), so equality of variance cannot be assumed, $t_{15}=1.60$, $p=.10$, indicating that more American students ($M=2.80$, $SD=2.00$) drank at least one drink during the past week than German students ($M=1.70$, $SD=.80$).

An independent t-test was conducted to determine if more than five drinks were consumed in a row in the past week. The Levene's test for equality of variances was significant ($F=7.546$, $p=.02$), so equality of variance cannot be assumed, $t_{10}=2.70$, $p=.02$, indicating that more American students ($M=1.70$, $SD=.90$) consumed more than five drinks in a row in the past week than German students ($M=1.00$, $SD=.00$).

An independent t-test was conducted to determine if drinking and driving had occurred within the past 30 days. The Levene's test for equality of variances was significant ($F=5.172$, $p=.04$), so equality of variance cannot be assumed, $t_{10}=2.30$, $p=.05$, indicating more American students ($M=2.10$, $SD=1.60$) drank and drove in the past 30 days than German students ($M=1.00$, $SD=.00$).

An independent t-test was conducted to determine if the next time they are at a party if they will drink and drive. The Levene's test for equality of variances was significant ($F=13.503$, $p=.00$), so equality of variance cannot be assumed, $t_{10}=2.40$, $p=.04$, indicating that American students ($M=2.10$, $SD=1.50$) are more likely to drink and drive at the next party than German students ($M=1.00$, $SD=.10$).

Table 5.0 illustrates the behavioral differences.

Table 5.0

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Alcohol in 30 Days					
Equal Variances Assumed	6.922	.019	1.291	15	.216
Equal Variances not Assumed			1.665	13.293	.119
Drunk in 30 Days					
Equal Variances Assumed	4.608	.049	1.637	15	.122
Equal Variances not Assumed			2.115	13.231	.054
1+ Drinks Past Week					
Equal Variances Assumed	4.625	.048	1.341	15	.200
Equal Variances not Assumed			1.677	14.383	.115
5+ Drinks In Row					
Equal Variances Assumed	7.546	.015	1.940	15	.071
Equal Variances not Assumed			2.667	10.000	.024
Drink/Drive in 30 Days					
Equal Variances Assumed	5.172	.038	1.668	15	.116
Equal Variances not Assumed			2.292	10.000	.045
Drink/Drive at Next Party					

Equal Variances Assumed	13.503	.002	1.739	15	.102
Equal Variances not Assumed			2.390	10.000	.038

General Discussion

Due to the fact that the survey data results were solely for pilot study purposes, overarching assumptions and conclusions cannot be made about the responses. The responses, however, can lead to a better understanding of what the German and American students' drinking and driving behavioral intentions would be based on their reported subjective norms and attitudes. Additionally, these preliminary findings would assist in future research and predicting behavior. As such, the Research Questions were reexamined with the data provided from the pilot study surveys.

With regard to RQ2, findings partially supported that attitudes (good v. bad) affect drinking and driving intentions. One-hundred percent of both American and German students agreed with the attitude that drinking and driving is bad, and 100% disagreed with the attitude that drinking and driving is good. However, when asked in the past 30 days if they drank and drove, while German students remained consistent in their attitudes (0% reported drinking and driving), it was a different story for the American students who drank and drove on an average of 2.09 days. As was mentioned in the American focus group, perhaps "real culture" plays a role in this statistic where students know that drinking and driving is "bad," but they still do it. This attitude could also be linked to the invincibility complex that most young college students have in that they do not think anything bad could ever happen to them if they were to participate in risky behaviors. These survey results are fairly consistent to what was discussed during the focus groups with both American and German students.

Additionally, with regard to RQ2, findings supported that affective attitudes (attitudes surrounding beliefs, feelings, attitudes and dispositions) related to drinking and

driving intentions. These affective drinking and driving attitudes include the following: harmful, beneficial, foolish, wise, boring, exciting, not fun, fun, favorable and unfavorable. When asked if they thought drinking and driving was exciting, 45% of both Americans and Germans agreed with the statement; however, when asked if they thought drinking and driving was unfavorable, 95% of both Americans and Germans also agreed. Even though the students acknowledge that drinking and driving is cognitively “bad,” their individual affective attitudes indicate that there is some excitement associated with drinking and driving, which could be the rush one feels when they are participating in a risky behavior because they know it is not acceptable. Further, this feeling of excitement could also be due to the fact that young college students are more prone to take risks due to the ideology of invincibility, and that there is a slim likelihood of getting caught.

Finally, while attitudes did not elicit significant results between the German and American students on the survey, there were many noteworthy attitudes discussed during the German and American focus groups, as well as the beliefs that contribute to these attitudes. There is suggestive evidence from the content of the focus groups that would assert that Germans have stronger beliefs against drinking and driving, while Americans have more relaxed beliefs. This is evident in the fact that more American students reported drinking and driving behaviors during the focus groups than did German students (and this was also evidence in the survey results). Additionally, generally, there was a lack of moral concern related to drinking and driving with the American students than with the German students. Specifically, American students’ reasons for not drinking and driving were more situational, while the German students’ reasons for not drinking and driving were more concerned with the welfare and safety of others. Again, in order

to more effectively evaluate these attitudes and beliefs, surveying a broader sample would be necessary.

With regard to RQ3, findings supported that subjective norms affect drinking and driving intentions. Specifically, the subjective norms that provided the most significant data related to the cost of obtaining a driver's license, college pressure, lack of education, living in the "country" and opinions on how much one thinks other college students drink.

First, contrary to the German focus group sessions, the cost of obtaining a driver's license did not provide support to not drinking and driving in the overall survey (55% reported that the cost did not influence drinking and driving); however, statistically the Germans showed more support for this notion. A possible explanation for this could be that the majority of students who responded to the survey were Americans, and they did not advise that the cost of obtaining a driver's license was a deterrent to drinking and driving. Nonetheless, 16% of the respondents did report that the cost to obtain a license was influential in their drinking and driving decisions. Had more German students responded to the survey, there would have been more support for the cost of obtaining a driver's license decreasing drinking and driving.

Second, 72% of student respondents disagreed that the pressures of drinking in college increase drinking and driving instances; however, as reported in the results section, statistically more American students agreed that there was college pressure to drink and drive. Again, this was contrary to what was discussed during the focus groups (mainly in the American student focus group), and it was assumed that this question would have received more support; however, it can be assumed that students might have

been uncomfortable to report and/or admit these social pressures. Even though this question did not receive much support (only 11% of students agreed), if this study were conducted on a larger scale, the results might be different.

Third, 55% of German and American students agreed that a lack of education increases drinking and driving, which was congruent with the focus group discussions with both the American and German students; however, statistically more German students believe that a lack of education influences drinking and driving. The phrase “lack of education” was not specifically defined in the study; however, it could be inferred (due to the fact that the discussions occurred with college students) that a “lack of education” pertained to an individual without a college degree. Perhaps some individuals “lacking in education” do not think ahead to the consequences of drinking and driving because they are not educated to think critically about their decisions and the consequences of their decisions. Again, this is not to say that *all* individuals without a college degree are in this category and are likely to drink and drive; however, this was a theme in the focus group discussions and was supported in the survey.

Fourth, living in the “country” was not overall supported, again, contrary to the focus group discussion with the German students; however, statistically more German students did agree with this notion. In fact, 55% of both German and American students disagreed with this concept in the survey. However, even though the students reported that living in the “country” does not influence drinking and driving, if a larger response rate were to have been collected, it is assumed that this response would have been the opposite; especially from the German students. It was obvious from the German focus groups that living in the “country” played a direct role on those who were culprits of

drinking and driving and those who were not. Additionally, perhaps some of the American students were unfamiliar with what “living in the country” means (as it was a theme in the German focus groups) and if the question had been defined, it might have received a different response.

Finally, college-age students’ perceptions of the quantity of alcohol other students drink might possibly influence reported drinking and driving behaviors, specifically pertaining to American students. When asked within the past 30 days, how many days did they think a typical student drank, the average response was 7.96 days which accounts for approximately 26% of the time in one month students are drinking. The lowest reported number of days was 4 and highest was 30. However, when asked within the past 30 days, how many days *they* drank, the average response was 7.47 days which accounts for approximately 24% of the time in one month the student was drinking. The lowest reported number of days was 0 and the highest was 25. From these results, students’ perceptions of how much students drink coincide with the amount they drink themselves. This result is surprising due to past subjective norms research which displays that college students usually overestimate the amount of alcohol other students consume, and therefore partake in larger amounts of alcohol (Fournier, et al, 2013). However, due to the insignificant number of respondents, this overall number was going to be small. As previously noted in the survey results, one student reported they believed other students consume alcohol 30 out of 30 days; however, in their self-report, the highest number was 25 (which may or may not have been an exaggeration), but nonetheless is still close to what the perception of other students’ drinking habits were. If the student who reported that they drank 25 out of 30 days, this would mean they drank

83% of the time of the month, which could even equate to 83% of the year. Additionally, 71% of students reported that their peers drank alcohol regularly. Overall, it can be assumed that most American college students perceive their peers to consume more alcohol than in reality and they, therefore, might justify the permissibility of consuming an equal to or greater amount.

Additionally, with regard to RQ3, it is important to note that while the subjective norm results did not appear as “statistically significant,” 100% of both American and German students unanimously agreed that their family (parents, brother and sister), friends and boyfriend/girlfriend would not support them drinking and driving. However, when asked if they usually behave in a way preferable to their parents’ opinion, 47% of both Americans and Germans agreed while 35% disagreed. When asked if they usually behave in a preferential way to their boyfriend’s/girlfriend’s opinion, 47% of both Americans and Germans agreed while 29% disagreed. Perhaps this variance accounts for the small percentage of students who reported drinking and driving in the past 30 days.

Given that both RQ2 and RQ3 were supported through the data, RQ1 would consequently be sustained. When asked if they drank and drove in the past 30 days, 36% of respondents reported that they had (perhaps they did not want to get stranded at a bar or pay the cost of obtaining a taxi cab), and when asked the likelihood of future drinking and driving at the next party with friends, 18% reported that they would likely drink and drive; possibly because they live in the “countryside.” The reported subjective norms and attitudes contributed to these students’ drinking and driving behaviors and their ultimate report of past and future drinking and driving. Additionally, when asked if the next time they were at a party with friends if they would arrange transportation to decrease the

likelihood they would drink and drive, 12% of respondents said it would be unlikely that they would, thus increasing the probability of them drinking and driving.

In further support of RQ1, the following statistically significant data collected provides an additional glimpse into drinking and driving behavioral intentions.

When asked how many times in the past 30 days one had been drunk, American students were drunk on an average of 4.27 days, while the German students were drunk on an average of 1.67 days. When asked how many drinks one had consumed in the past week, American students' averaged 2.82 drinks while German students' averaged 1.67 drinks. When asked how many times in the past week more than 5 drinks were consumed, American students averaged 1.73 drinks and German students' averaged 0.00 drinks. As it shown in the numbers, Americans are almost two to three times more likely than Germans to engage in risky drinking behaviors as is evident in the reported number of drinks consumed and reported number of times drunk, which would promote drinking and driving. Again, from previous data, these findings continue to support and maintain that American students are more likely to drink and drive than German students.

Overall, the TRA was an excellent framework for guiding and the development of the focus group discussion guide and survey, and use of the TRA effectively elicited beliefs and norms that feed into drinking and driving to be able to evaluate and predict behavior.

Finally, with regard to RQ4 and the differences between German and American students' attitudes, subjective norms and behaviors regarding drinking and driving, overall and as was suggested in the statistical analyses, American students exhibited higher intentions of and reported instances of drinking and driving than German students.

Specifically, American students had higher reports of alcohol consumption (both within the past 7 and 30 days), the number of drinks consumed and intentions to drink and drive in the future. The fact that Americans drink more and drink and drive more could be related to a variety of reasons. Specifically, from the study, convenience and perception seem to be the biggest influences over American students' drinking and driving behaviors. As previously mentioned, in the American student focus groups, many students indicated the lack of desire to get stuck at a bar sobering up and the desire to just be at home at that moment. Also, American students' perceptions of how much alcohol other students consume might likely be skewed and, therefore, would negatively influence them to drink and drive because they would believe that many other students are participating in the same behaviors, so it would be acceptable if they did the same. Conversely, German students exhibited more responsible attitudes and behaviors toward drinking and drinking and driving, as their overall drinking and drinking and driving self-reports were usually half of what the American students were reporting. This might possibly be due to the fact that there is an abundance of public transportation available to German students and, due to the younger legal drinking age, have had more "tolerance" experience with drinking to know and respect what their limits are.

Limitations, Future Research and Conclusion

One of the limitations of this study was the short timeframe in which the research was conducted, analyzed and reported. As previously mentioned, it took approximately six months to set up focus groups in Germany, where it was expected to take less time. It proved quite difficult and time consuming to get an international buy-in for a study making “cold call” emails to professors and students in Germany. As a result of the unexpected additional time to arrange the focus groups, time was eliminated from the length that the electronic surveys were distributed. Originally, the surveys would be available for responses for approximately two months; however, the time had to be cut in half to one month due to desirable submission deadlines. Due to the short length in time that the electronic survey was online, there were only a small number of respondents to the online survey. Overall, there were 20 responses (11 from the U.S., 6 from Germany and three incomplete), which lead to the next limitation; small number of respondents.

Due to this small number of respondents, it is difficult, if not impossible, to generalize subjective norms, attitudes and behaviors of a population. It would be unreliable and invalid data if overarching assumptions and conclusions from the electronic survey responses were made because 20 responses from a student population does not represent the entire student population’s opinions, attitudes, etc. Perhaps, if extra credit had been offered to all students who participated in the online survey, then there might have been more responses. Additionally, another contributing factor to the low number of respondents, particularly in Germany, was due to the fact that the students were on a classroom break when the surveys were distributed so not many students were checking their emails during this time. If the surveys were distributed during a time

when the German students were in classes, the number of respondents would have been higher, or if the surveys were available to the students for longer than one month's time.

Finally, accuracy in reported drinking and drinking and driving behaviors is a limitation to the study in that the honesty of the German and American students' responses can be questioned. The nature of this study is of a personal and sensitive area and respondents, even though they are reported as anonymous, might feel insecure reporting socially unacceptable behaviors.

Additionally, due to the fact that a pilot study has been conducted and has proven to support its Theory of Reasoned Action theory-based framework, future researchers have a foundation for continuing the research in this area. Future research should survey American students nationally and German students countrywide. In the study, students from two universities were surveyed and in order to obtain a more accurate measure of subjective norms and attitudes of American and German college students, students from multiple universities should be surveyed. As previously mentioned, it is next to impossible to make an overarching assumption about college-age students' behavioral intentions from the survey results; however, it would seem more assumptive to make any conclusion about American or German college-age students having only collected data from one university in the U.S. and one university in Germany. The geographical location might also play a crucial role in determining behavior intentions, and would also supply knowledge about subjective norms and attitudes of that region. However, future research and use of the preexisting survey can be utilized to assess additional European countries, thus that future research is not restricted to continuing to compare German and American students.

Also, due to the higher percentage of American students who participated in risky drinking and driving behaviors, future research would benefit from learning more about the subjective norms and attitudes that contribute to this. Why are American college students putting themselves at such a risk when they acknowledge drinking and driving is bad, and those around them do not support it?

The Theory of Reasoned Action provides a theory-based framework for assisting to predict and understand behaviors through the assessment of subjective norms and attitudes. With regard to college-age drinking and driving, the Theory of Reasoned Action proved to be a good indicator and predictor of behaviors of German and American students based on the thematic content analysis of the focus groups discussions, and the responses provided in the electronic surveys. Future research and continued use of the electronic survey in a larger scale study would benefit academic understanding of college-age drinking and driving. This understanding is crucial in eliminating future drinking and driving instances, as well as continuing to keep the college experience in both the U.S. and Germany safer.

Appendix 1
Drinking and Driving (“D&D”) Student Focus Group Questions

1. What is D&D?
2. Is having one beer and then driving considered D&D?
3. Is D&D the same thing as drunk driving? What’s the difference?
4. Who would D&D and why?
5. When you drink, how do you get home?
6. Do you use a designated driver?
7. When your friends go out and drink, how do they get home?
8. Why **would** YOU D&D?
9. Why would you **NOT** D&D?
10. Do public intoxication laws encourage D&D?
11. Does availability of public transportation influence D&D?
12. Is D&D acceptable as long as no one gets hurt?
13. Does the legal drinking age influence D&D? Are most people who D&D over 21?
14. What does your **family** think about you D&D?
15. What do your **friends** think about you D&D?
16. Past experiences (death in the family, alcoholism, etc.) influence you to not D&D?

Appendix 2

Qualtrics Survey Email

Dear Student:

You are invited to participate in a research study concerning attitudes and social norms that predict drinking and driving behavior intentions. You were selected as a possible subject because you are a college student at the University of Regensburg (Germany) or Indiana University Purdue University of Indianapolis (USA). The study is being conducted by Bianca A. Dreyer, Graduate Student (Indiana University Purdue University of Indianapolis) as a part of Bianca A. Dreyer's MA thesis, and is being advised by Elizabeth M. Goering, Graduate Program Director (Indiana University Purdue University of Indianapolis).

If you agree to participate in this study, please click the link below and complete the survey, which should take approximately 10-15 minutes.

https://osucomms.qualtrics.com/SE/?SID=SV_3qOHSYe0gvYQDqd

We thank you, in advance, for your participation and contribution to academia.

If you have any questions or concerns, please do not hesitate to contact Bianca A. Dreyer at badreyer@uemail.iu.edu.

Sincerely,

Bianca A. Dreyer

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Prepared communication strategy for Indiana Department of Environmental Management (IDEM) regarding effective and productive communication between co-workers and external communication with non-IDEM employees.

Prepared communication plan for John H. Boner Community Center regarding university involvement with the Community Center and community outreach initiatives.

Prepared marketing plan for the International School of Indiana in order to maximize marketing and outreach for prospective students, as well as identify problem areas with current marketing plan.

Honors, Awards & Memberships:

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