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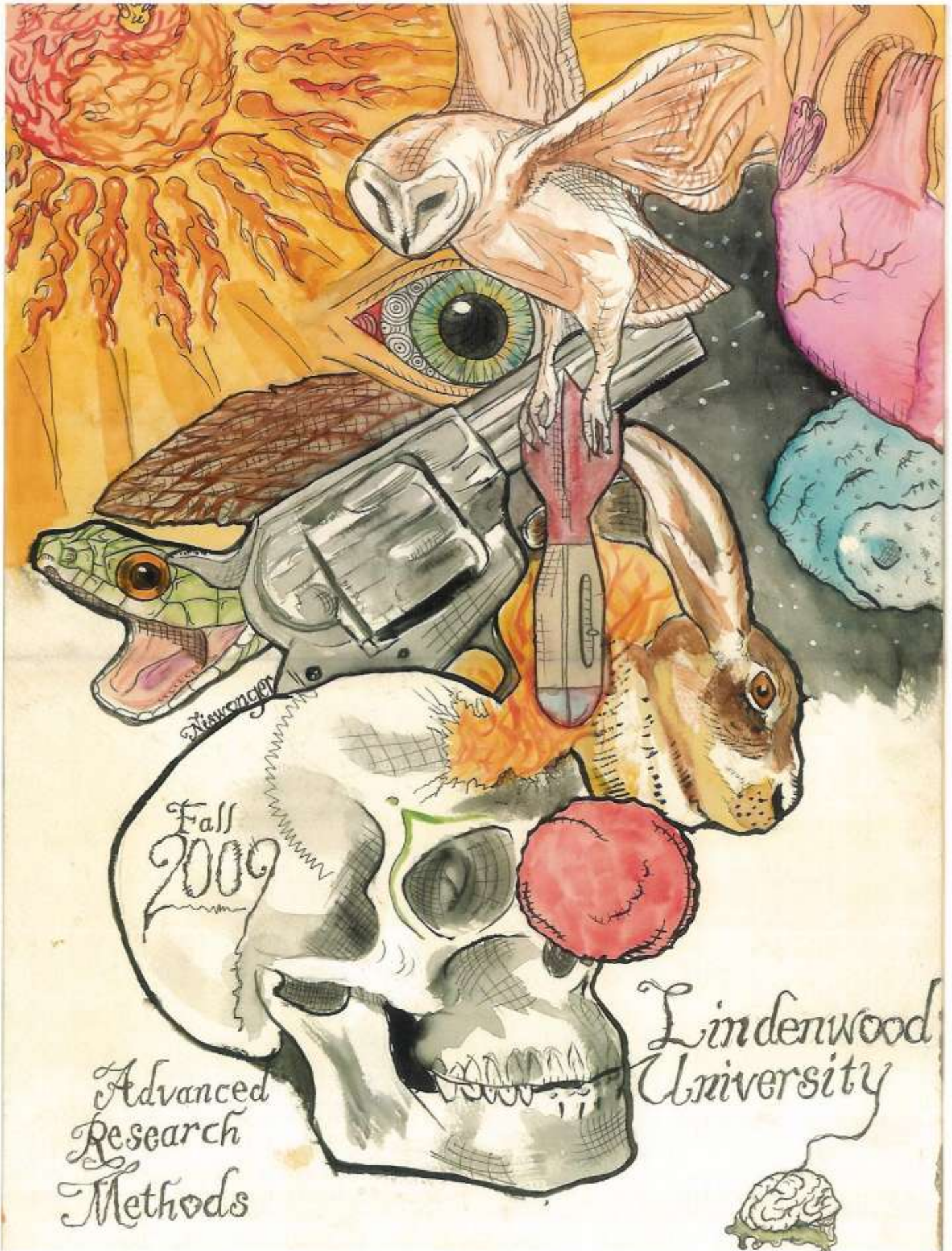
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### **Prologue**

Of all of the semesters I have been teaching this course, this semester was one of the most exciting because Lindenwood University hosted the Fifth Annual Missouri Undergraduate Psychology Conference (MUPC) on her campus, and all of the students in this class participated in the event as volunteer staff, preparation crew, and even as presenters!

I am especially proud of the students who bravely presented their research proposals in the non-empirical sessions of the MUPC conference. I am equally proud to announce that each one of them did a marvelous job at representing our class and university in the best light possible. I believe that this unique experience will stay with the students forever as some of the fondest memories at Lindenwood.

This year's journal cover design was submitted by Danielle Strasser. On behalf of the class, I would like to thank Amanda Vance for taking the time to assist in editing this journal.

*Michiko Nohara-LeClair*

Course Professor

## The Power of Dance: How Dance and Emotion Connect

Krista Blankenship<sup>1</sup> and Chastin Oliver<sup>2</sup>

*The purpose of this study was to test whether or not audiences could experience emotions portrayed by dance performances. The researchers hypothesized that if the audience can identify the emotion being expressed, then they would experience that same emotion. The researchers also predicted that music would cause a greater level of emotional reaction to the performance. The participants watched two dance videos, one portraying a sad emotion and the other a love/passion emotion and rated their emotional reactions. After analyzing the data, the hypothesis was proven only partially correct. The participants who correctly identified the emotion portrayed in the video had a strong emotional reaction, but those who identified the emotion incorrectly had a strong emotional reaction as well. Contrary to expectations, the results showed that music did not influence the identification of the emotion of the dancers, and those participants who viewed the performances without music rated the experience of that emotion with more intensity than those who viewed the dance videos with music. These results could be due to the music causing cognitive overload, so those viewing the videos without music were able to focus more intently on the emotion being portrayed.*

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We would like to thank Dr. Nohara-LeClair for helping and advising us with our study and the Lindenwood University Participant Pool Office for booking our rooms.

Randee Lawrence (2008) describes her experience of watching the dance “Cry”, by the Alvin Ailey American Dance Theater, as a moment that greatly changed her view on dance. The piece is about a black woman’s suffering through slavery, and Lawrence (2008), being neither black or having any affiliation with slavery, had an emotional reaction to the dance. She felt a deep sadness come about her, like the sadness the dancer herself was portraying (Lawrence, 2008); in other words, an audience member was able to experience the emotion portrayed in the performance. This idea was what sparked the interest for this study.

The purpose of this study was to examine the relationship between the emotions that the dancers portray and the emotional reaction of the viewers. The hypothesis stated that if the participant was able to identify the emotion displayed in a dance, then that participant would be able to experience that emotion that he or she identified. The rationale for this hypothesis is based on the idea of mirror neurons.

Mirror neurons are active in the brain when an action is being both performed and observed by an individual (Molnar-Szakacs & Overy, 2009). For an example, if a child were playing dodge ball and then watching other children play dodge ball, the same area of the brain is active in both situations. These are the mirror neurons at work. Mirror neurons also help with the understanding of human communication and human empathy (Molnar-Szakacs & Overy, 2009). Mirror neurons could display a relationship between the performer and the audience member.

The art of dance is growing, meaning that more people are becoming involved with it. Dance Movement Therapy (DMT) has also become more popular. This technique uses music, light, and movement as treatments for mild depression and

recovery from other diseases such as cancer (Hong, Jeong, Kim, Lee, Park, & Suh, 2005). Those involved in DMT are able to release negative emotions through movement in a fun environment. People are also able to view dance on a more regular basis through television and theater. There are many popular dance television shows such as *Dancing With the Stars*, *So You Think You Can Dance*, and *America's Best Dance Crew* that people get excited about. Watching dance involves a lot more thought process than one assumes, because the audience member has to be ready to engage intellectually with the dance (Ambrosio, 2008). Each viewer needs to keep an open mind as well as be ready to interpret the piece (Ambrosio, 2008).

In this study, 100 participants were given a survey asking mainly about their dance experience. In a previous study, ballet dancers, capoeira, which is an Afro-Brazilian art form that combines elements of martial arts, music, dancers, and dance, and non-dancers were shown videos of ballet and capoeira moves (Dombrowski, Heil, Jansen-Osmann, & Orgs 2008). The dancers showed the most activation in the premotor and parietal cortices when viewing the moves they were familiar with; ballet dancers with ballet moves and capoeira dancers with capoeira moves (Dombrowski, et al.,2008). Subsequently, having some background in the dance field could spark more emotion while watching a performance.

The music may also play into the audience's emotions. The Shared Affective Motion Experience suggests that music is not only perceived through sound but expressive motor acts (Molnar-Szakacs & Overy, 2009). This means that the participant's emotional state could lead to an emotional response to the song (Molnar-Szakacs & Overy, 2009). The music, itself, can also influence the listener. The

harmonies, phrases, and complexity of the music are related to perceiving artistic tension as well (Frego, 1999). Emotional reactions also vary based on the situational context. For example, the same tune can be played at weddings and funerals but provoke different emotions like joy and sorrow (Baraldi, 2009). The participant's reaction to the videos could be provoked by a memory rather than identifying with the dancers' emotions. Therefore, the groups in this study will observe dances with and without music.

By testing if an audience member can experience the same emotion the dancers are displaying, certain benefits arise. Viewing the different forms of dance allows the participants to become more culturally sound. This type of study can also better the communication between the audience and performers.

## **Method**

### **Participants**

Participants consisted of 48 undergraduate students from Lindenwood University. There were 15 male students and 33 female. These participants were between the ages of 18 and 24. The average participant was 19 years old, with a standard deviation of 1.633. All the participants were fluent in English and had no sight or hearing impairments. Participants were recruited through the Lindenwood Participant Pool. The participants that were recruited were students in an entry-level Psychology, Sociology, and Anthropology course, where their professor rewarded them with extra credit. These students were also given candy for their participation.

### **Materials and Procedure**

The materials used in this study consisted of a computer and a projector, along with a projection screen, which are commonly found in the classrooms at Lindenwood



University. The computer and projection system were used to display the visual/audio of *So You Think You Can Dance* (Lythgoe, N., 2003-2008) videos from [www.YouTube.com](http://www.YouTube.com). Since the study was performed in a classroom setting, desks were used.

Four groups of participants, both male and female, were gathered in a classroom setting where they were seated at a desk to watch two particular dance videos. Writing utensils were available for the participants at the beginning of the study.

First, the participants were given two informed consent forms, explaining they had the option to withdraw from the study at anytime. One was for the researchers and the other for the participant to keep. Then a general survey asking the participants of their gender, age, and dance experience was given (See Appendix A).

The four groups watched two particular dance videos. The videos were shown in a particular viewing sequence in order to counterbalance the experiment so that confounding variables would be eliminated. The dance videos portraying sadness and love/passion were found on [YouTube.com](http://YouTube.com) from the TV series *So You Think You Can Dance* (Lythgoe, N., 2003-2008). The dance videos were displayed on a projection screen from a computer. Group 1 watched the dance portraying sadness first and the love/passion dance second. Group 2 watched the love/passion dance first and the sadness dance second. All of the dance videos in both Groups 1 and 2 were shown without music. Group 3 watched the dance portraying sadness first and the love/passion dance second. Group 4 watched the love/passion dance first and the sadness dance second. All of the dance videos in both Groups 3 and 4 were shown with music. The dance portraying the sad emotion was a dance choreographed by Tyce Deorio to the song "This Woman's

Work” by Maxwell. The dance portraying the love/passion emotion was a dance choreographed by Mia Michaels to the song “When You Look at Me” by Celine Dion.

Following each video, the participants were asked to identify the emotion they felt was being portrayed as well as rate on a scale from 1-5 (1 being the least and 5 being the most) on how strongly the participant felt and/or experienced that same emotion (See Appendix B).

Finally, the participants were debriefed on the study and were handed a feedback letter with the researchers’ contact information. The participants could then contact the researchers if they had any questions or interest in the results once the experiment was presented to and evaluated by the professor of the Advanced Research Methods course. Candy was also given to the subjects in thanks for their participation.

### **Results**

When analyzing the information from the demographic survey it was found that 75% of the participants had never taken a dance class prior to the study. There was one participant who had taken around 1,000 dance classes in the past year, which became an outlier in the results. There were three individuals who did not provide this information. When the participants were asked how many live dance performances they had watched over the past year, 18.8% had never seen a live performance and 18.8% had seen at least three. Two of the participants did not provide this information. The majority of the participants rated that they “sometimes” watched a dance television series such as *So You Think You Can Dance* (Lythgoe, N., 2003-2008). When asked to rank their enjoyment of watching dance on a scale from 1-5 (1 being the least and 5 being the most), 47.9% rated 5 for their response.

A two independent samples t-test was used to analyze whether music influence the participants' identification of the emotion being portrayed. Twenty-seven participants received the dance videos without music and showed no significance,  $t(46) = -.620$ ,  $p > .05$ . Twenty-one of the participants saw the dance videos with music and also showed no significance,  $t(45.3) = -.630$ ,  $p > .05$ . This suggests that music has no influence on identifying an emotion during a dance performance.

During the analysis on how music affects the intensity of the participants' emotional response, the participants that saw the dance videos without music showed a greater intensity level than those who watched the videos with music. In the analysis groups 1 and 2, which received the videos without music, were combined. The participants in these groups who did not correctly identify the emotions portrayed in the dance videos had a mean score of 8.6 and a standard deviation of 1.52; those who correctly identified only one emotion from either dance video had a mean score of 8.1 and a standard deviation of 1.54; the participants who identified both emotions correctly had a mean score of 8.2 and a standard deviation of 1.46. In the analysis groups 3 and 4, which received the videos with music, were also combined. These participants who did not correctly identify the emotions portrayed in the dance videos had a mean score of 7.5 and a standard deviation of 0.707; those who correctly identified only one emotion from either dance video had a mean score of 8.0 and a standard deviation of 1.31; the participants who identified both emotions correctly had a mean score of 7.5 and a standard deviation of 1.04.

The results found supported the idea that music does not influence an individual's capability to identify the emotional communication between performers and

their audience. It is also assumed that no matter what emotions are being portrayed by dance performers, some kind of emotional response is intensified.

### **Discussion**

After analyzing the results, our hypothesis, that those who identified the emotions in the dance videos correctly be able experience that emotion, was shown to be partially correct. Those who correctly identified the emotions did have an emotional response to the dance videos; however, the participants who did not identify the emotions correctly rated around the same intensity of emotional response as those who portrayed the emotions accurately. We also anticipated that music would cause a greater emotional reaction. This, however, was not the case. Those participants who watched the dance videos without music rated their emotional reaction with a greater intensity than those who watched the videos with music.

We have several different outlooks on why these results occurred. One reason could be that the intensity of the emotional reaction was done on a rating scale. The participants' personal values of the numbers on the scale could differ. The participants also could have been anticipating what the research would want them to answer, therefore altering their actual true response to the questions. Since the groups without music rated their emotional response with a higher intensity than the groups without, we thought the theory of mirror neurons may be taking place. The groups without music could have been focusing more on the dancer's emotion because there was no music, which may have been a distraction. With the participants focusing on the dancers' emotion and movement alone, the participants may have been more in tune with the dance mentally,

allowing the theory of mirror neurons to take place. All of these ideas could have influenced the results shown.

Something else we found interesting was the comparison of the accuracy of identifying the emotions. Forty one of the responses from all the groups identified the love/passion emotion correctly; however, only 24 of the responses identified the sad emotion correctly. We think that the emotion of love/passion is hard to define, which could be a limitation to the study. When a person thinks of love, all sorts of thoughts could come to mind. Love could be a mixture of emotions. For example, heartbreak is sad, but could still be considered love. So it is possible that the participants could have mistaken the sad emotion as such.

Throughout the study, some limitations were brought to attention. The experiment had a smaller sample size than intended. Also, because of the recruitment from the Lindenwood Participant Pool, there was only a small representation of the population. If the sample size had been larger and the recruitment could have been through the entire university, then the results may have differed. Another limitation was that some of the participants were missing data, which they simply did not fill out. The participants also watched videos of dance performances which could be a limitation in itself. If the participants had seen live performances, the emotional responses may have different intensities than those in this experiment.

Even with the limitations and the hypothesis being partially disproven, this study holds a great importance for future research. This study can help further the understanding of a performer's and audience's relationship and how it works. The study of mirror neurons and music and their effects on human emotion could also be continued,

maybe looking at auditory signals rather than visual signals. The participants in this study were also able to experience dance, allowing them to become more exposed to this art form. This could possibly lead to more of an interest in dance in the world of psychology.

Here are some ideas for future research on the subject. Instead of using videos for the dance performances, use actual live dance performances. By using live dance performances, the participants could have different emotional responses. Also, having a dancer actually in front of the participant could help the participant visually in determining the emotion. Different emotions besides sad and love/passion could be tested as well. Another interesting suggestion would be to try different styles of dance and see how the styles affect the audience's response. All of these ideas would add a lot to this study and would add to the research of human emotion.

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## Appendix A

### Survey

GROUP NUMBER \_\_\_\_\_ SUBJECT ID NUMBER: \_\_\_\_\_

Male \_\_\_\_\_ Female \_\_\_\_\_ Age \_\_\_\_\_

1. How many dance classes have you participated in the past year?

2. How many live dance performances have you viewed in the past year?

3. Rate on a scale how often you watch a dance TV series, such as *So You Think You Can Dance*.

Never----Rarely----Sometimes----Often----Always

4. On a scale from 1-5 (1 being the least and 5 being the most) how much you enjoy watching dance?

1-----2-----3-----4-----5



## **Appendix B**

### **Questionnaire**

GROUP NUMBER \_\_\_\_\_ SUBJECT ID NUMBER: \_\_\_\_\_

1. What emotion do you think this dance video #1 is portraying?

- a. Love/Passion
- b. Sad
- c. Happy
- d. Neutral

1a. Rate (1 being the least and 5 being the most) how strongly the emotion was portrayed in dance video # 1

1----2----3----4----5

2. What emotion do you think this dance video #2 is portraying?

- a. Love/Passion
- b. Sad
- c. Happy
- d. Neutral

2a. Rate (1 being the least and 5 being the most) how strongly you felt the emotion identified in the video. For example, if you thought the emotion portrayed in the dance was anger, rate how angry you felt while watching.

1----2----3----4----5

### **Videos**

(watch with and without music)

Love/Passion dance: [http://www.youtube.com/watch?v=vOVfa\\_SGojE&feature=related](http://www.youtube.com/watch?v=vOVfa_SGojE&feature=related)

Sad dance: <http://www.youtube.com/watch?v=OrILXIASpSM>

## The Sense of Smell and its Effect on Attraction

Grant Perkins<sup>3</sup>

*The effect of cologne/perfume on attractiveness was examined, as well as the differences between the effect of cologne/perfume and sex. Twenty-seven participants ranging from 18-22 years of age were recruited for the experiment. The purpose of this study was to determine if putting cologne/perfume on an individual will make that person more attractive to the opposite sex than if he/she did not put on cologne/perfume. The rationale behind this is that there are a lot of advertisements about cologne and perfume that portray the people in the advertisements as more desirable after he/she sprays cologne on their skin. The hypothesis for this experiment is that the presence of cologne/perfume will increase an individual's attractiveness. There was a significant difference between no fragrance and fragrance and the effect it had on attractiveness, as well as the perfume having a higher influence on men than the cologne had on women. Together, these findings suggest that cologne and perfume have an influence on the attractiveness of the person who has the fragrance on.*

It seems that commercials and advertisements for cologne or perfume are seen every day. The advertisements usually depict some suggestive themes, trying to entice consumers to purchase their product. The manufacturers also add extracts from fruit and flowers to their product, pheromones, and some even add musk, which is a natural

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I would like to thank Dr. Nohara-LeClair for critiquing this experiment; my roommates for letting me use the house uninterrupted while conducting an experiment, and my fellow classmates for reviewing my project throughout its development.

chemical found in animals and plants. According to Rimkus (2004) musk is a naturally and synthetic substance and it produces a very distinct smell.

So what exactly are pheromones? According to Woronczuk, Medwid, Neumann, and Eshelman (2009), “[p. 1]heromones are odorless chemicals that can signal an individual's identity, arousal or sexual receptivity.” Humans are typically considered visual beings because our sense of smell is not as dominant as our sight; however, since human reproductive biology has an effect on human behavior, recent studies show that our sense of smell is more important than previously known (Kohl, Atzmueller, Fink & Grammer, 2001). Is the inclusion of these chemicals worth the increase of the price of the cologne/perfume? Will a person who puts cologne or perfume on his/her skin be more attractive to the opposite sex than if he or she did not put any cologne or perfume on their skin?

A common theme to boost sales in the fragrance business is the addition of male pheromones in cologne. Some advertisements have very suggestive themes regarding this addition to the cologne, making it appear that purchasing the cologne will attract women. According to Fox (2009) male pheromones are not all attractive to the sense of smell. The problem with this is that the cologne manufacturers who do add male pheromones to their product could be adding non-attractive pheromones without explaining which pheromone it is. Fox (2009) further explains that there could be confusion with the names of two similarly spelled pheromones, androstenone and androstenol. “*Androstenol* is the scent produced by *fresh* male sweat, and is attractive to females. *Androstenone* is produced by male sweat after exposure to oxygen,” (Fox, 2009, p. 14). The spelling of each

pheromone is critical in determining the correct substance, and to the uneducated consumer it could be very confusing in recognizing the difference.

From the definition of pheromones it seems obvious why fragrance companies add pheromones. Mercola (2008) states that studies have found that cologne and perfume scents make you more appealing to the opposite sex. This statement supports the hypothesis for this study; putting on cologne/perfume will make that person more attractive to the opposite sex. Rimkus (2004) states that musk has been used as fragrance material for centuries. Since the musk deer (the animal where the musk fragrance was originally derived from) has been placed on the endangered species list, chemists have had to make synthetic musk; the synthetic musk is what is found in colognes and perfumes nowadays (Rimkus, 2004, p. 14).

In this study, instead of a person putting cologne or perfume on their skin, the cologne/perfume will be sprayed in the room where the female participants in the experimental condition will rate the photographs of five actors on separate scales and the male participants will rate five actresses on separate scales; additionally, a control group will be given the same scales, but will not have a cologne or perfume sprayed into the room they are in. The idea is that so long as the fragrance is detected, the pictures the participant is rating will increase in attractiveness. This study will hopefully determine, on a small scale, if purchasing and wearing cologne or perfume will increase the wearers' attractiveness to the opposite sex.

## Method

### Participants

The participants in this study were students from Lindenwood University. The participants were recruited by phone call and by word of mouth. The experimenter knew most of the participants, so access to his/her phone number was already known. Each participant was asked if he/she would be interested in taking a survey about his/her view of celebrity's attractiveness. The mean age of the participants ranged from 18-22 and the average age of the participants was 20.37; 37% of the students were seniors. Thirteen men and 14 women participated in the study. The students were all undergraduate students.

### Materials

There were two different scales used; each scale had five different rating sections used for rating the celebrities (see Appendices A and B). Each rating ranged from one to five, one represented "not attractive" and five represented "very attractive". There were five sheets of paper with different actor's pictures on it and five sheets of paper with different actresses on it. Each picture contained a number distinguishing each actor (see Appendices C-L). The papers containing the celebrity's picture were to be used during the rating process. The male participants rated each actress' (Keira Knightley, Sandra Bernhard, Joan Cusack, Emma Stone, & Beyonce Knowles) attractiveness and marked it on the rating sheet. The female participants rated each actor (Keanu Reaves, Common, Willem Dafoe, Danny Devito, John C. Reilly) on the rating sheet. In addition to the rating scales and pictures, the perfume Very Sexy by Victoria's Secret was used in the room for every other male participant before he rated the actresses, and the cologne Very Sexy for

Men by Victoria's Secret was used for every other female participant before she rated the actors. The cologne and perfume choice was made because the products are from the same company to reduce confounds and both contain musk and fruit and flower extracts.

The experimenter used three different rooms, two had a door, in the experimenters' house so the smell of the fragrances would not mix, and the control group would not be able to detect any smell. Additionally, a small desk fan was placed in each room to clear out any additional fragrance left over from the previous experiment. The fan also helped in diluting the smell, as to not overpower the sense of smell or irritate the nose. Two Informed Consent Forms were also used; one to be signed and returned to the experimenter and one for the participant to keep for their records. The Informed Consent forms contained information about the study and warned the participants of any potential dangers in the study; it also allowed the participants to opt out of the study without penalty. After taking the study, the participants were handed a Feedback Letter informing the participants about the true nature of the study; the Feedback Letter also contained the experimenters' contact information if the participants would like to inquire about the results after the study had been completed. Also, fruit (bananas, oranges, and apples) and candy (an assortment of Hersey's chocolate and Wonka brand treats) were used to compensate the participants for partaking in the study.

### **Procedure**

Prior to the participant entering the room, the experimenter decided that every other male participant would be in the experimental group and every other female would be in the experimental group. The experimenter guided each participant into the respective room; the men in the experimental group went in one room, the women in the

experimental group went in a separate room, and the men and women in the control group went in a third room. For the participants in the experimental group, the corresponding fragrance was sprayed into the room prior to their entry into their room. The participants in the control group did not have any fragrance in their room.

As the participant entered the room, he/she was handed the Informed Consent Form to be read, understood, and signed. Next, the participant was handed a rating scale to be used for selecting the celebrity's attractiveness. The men were handed five separate pictures of actresses, and each actress had a different number. The same procedure was done with the women; however the women received pictures of actors. Each participant received the pictures in a different order to help prevent confounds. In total, each participant was handed six sheets: one rating scale, and five pictures.

After the experiment each participant was debriefed. The participants were told what the experiment was created to discover and they were told which group they were placed in. The participants in the experimental group were also asked if they could detect the fragrance in the room. Finally, the participants were handed the Feedback Letter containing information about the study and the experimenter's information so they could contact the experimenter if they wanted to know the final results of the experiment.

### **Results**

Analyses focused on the ratings given by the 27 participants of the celebrities. There were four different categories: actors' pictures without a fragrance, actors' pictures with a fragrance present, actresses' pictures without a fragrance, and actresses' pictures with a fragrance present. The differences in the ratings of the attractiveness of the actors and actresses in the scented and unscented rooms were examined with a 2 (sex) x 2



(scent) analysis of variance (ANOVA). This ANOVA revealed significant main effects of sex,  $F(1,23) = 50.563, p < .05$ , and scent  $F(1,23) = 14.735, p < .05$ . Additionally, the men were influenced more than the women; the men had a mean total rating of 17.61 while the women had a mean total rating of 13.64. The results described above suggested that the fragrance was an influence on the attractiveness of the celebrities and also, there was a sex difference with the amount of influence the fragrance had.

### **Discussion**

The results of the study rejected the null hypothesis that the presence of a fragrance would have no effect on the participants. The findings agree with the earlier statement that human reproductive biology has an effect on human behavior and that recent studies show that our sense of smell is more important than previously known (Kohl, Atzmueller, Fink & Grammer, 2001).

Since men showed to be influenced more by the presence of the fragrance, it shows that the target of perfume commercials and advertisements is not just women, but men as well. Men may be more inclined to purchase a certain perfume for their significant other if they prefer the smell. This statement can also be reversed to say that cologne commercials and advertisements also target women so they will buy that specific cologne for their significant other.

The results of the study also agree with Mercola (2008, p. 1) that “some studies have actually found that people wearing these [cologne and perfume] scents are more interesting to the opposite sex.”

Although further work is required to show more significance, the small amount of participants has shown that there is a significant difference between having a fragrance

present and no fragrance. If participants were recruited through the Lindenwood Participant Pool (LPP), there would be more participants in this study. Additionally, if there was a third, unpleasant, smell there could be more evidence of the effect of the sense of smell on attraction. This study relied heavily on having three separate rooms with doors that could be closed so fragrances could not mix and also could not be detected by the control (no fragrance group). If this experiment was done differently, pictures of non-celebrities should have been used since the participants could have very easily detected who the celebrity was and could have potentially skewed the data or even made the fragrance insignificant. If all of the celebrity's pictures were black and white (or all in color) the results may have been different as well. Additionally, each celebrity had a different facial expression and some pictures were taken during a photo shoot while other pictures were taken from a Red Carpet event, so the clothes the celebrities in the Red Carpet event pictures are more formal than others. The participants may also be considered a biased sample because most of the participants knew the experimenter.

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### Appendix A

On a scale of 1-5 (1 the lowest; 5 the highest), rate the following actors' attractiveness.

Circle the ranking under the corresponding actors' number.

Actor 1

1-----2-----3-----4-----5

Actor 2

1-----2-----3-----4-----5

Actor 3

1-----2-----3-----4-----5

Actor 4

1-----2-----3-----4-----5

Actor 5

1-----2-----3-----4-----5

### Appendix B

On a scale of 1-5 (1 the lowest; 5 the highest), rate the following actresses' attractiveness.

**Circle the ranking under the corresponding actress' number.**

Actress 1

1-----2-----3-----4-----5

Actress 2

1-----2-----3-----4-----5

Actress 3

1-----2-----3-----4-----5

Actress 4

1-----2-----3-----4-----5

Actress 5

1-----2-----3-----4-----5

## Appendix C

ACTOR 1



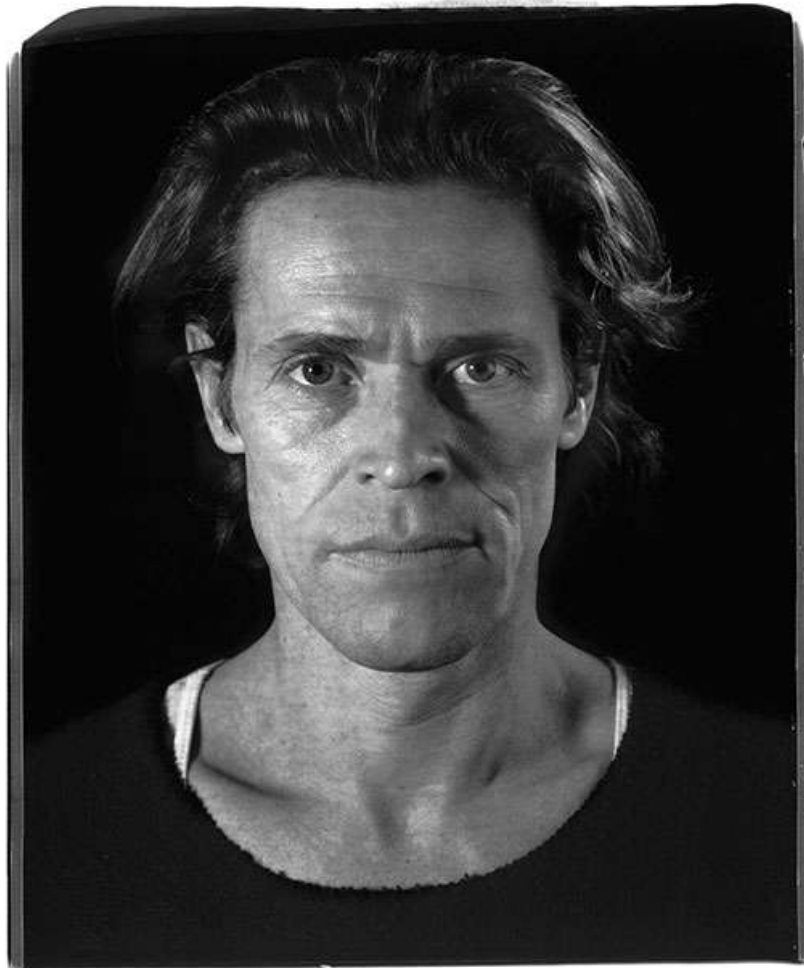
## Appendix D

ACTOR 2



## Appendix E

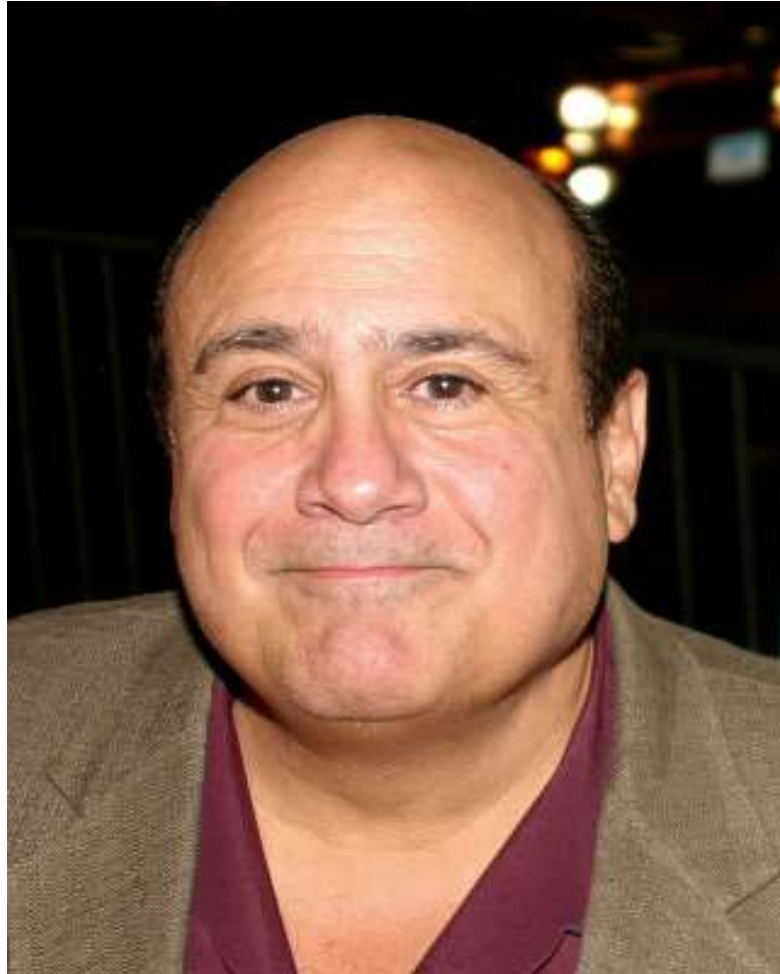
ACTOR 3





## Appendix F

ACTOR 4



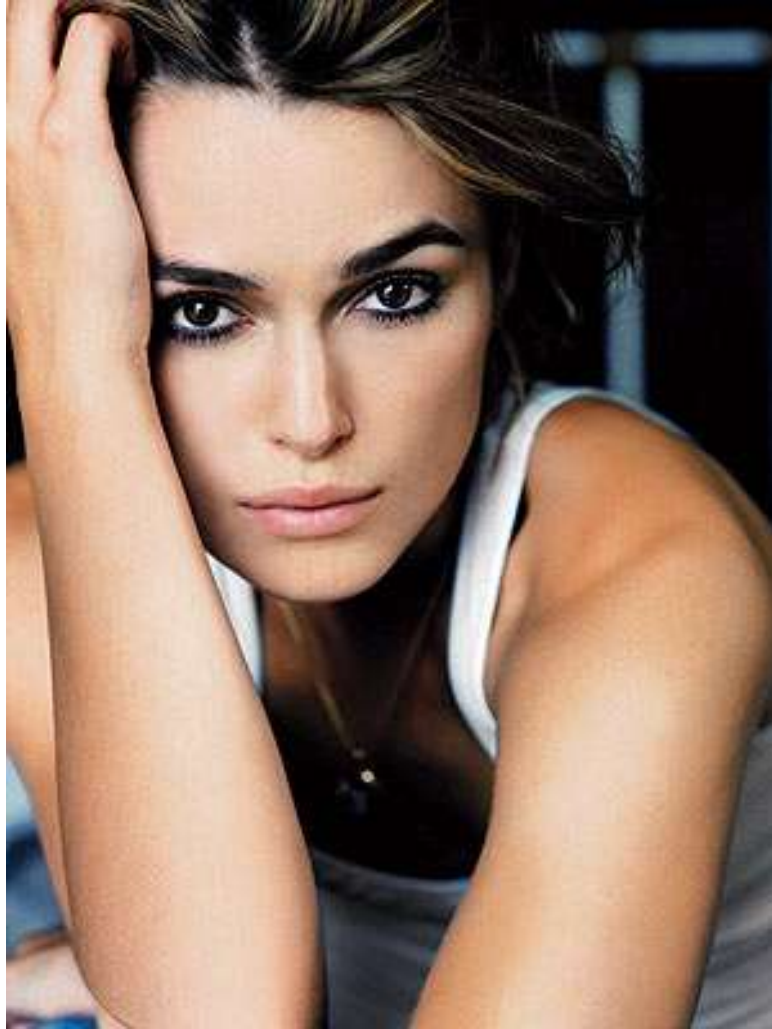
## Appendix G

ACTOR 5



## **Appendix H**

### **ACTRESS 1**



**Appendix I**

ACTRESS 2



## Appendix J

### ACTRESS 3



## Appendix K

### ACTRESS 4



**Appendix L**

ACTRESS 5



## Relationships between Electronic Communications and Interpersonal Relationships

Cindy Klimaszewski<sup>4</sup>

*With technology use on the rise, interpersonal communication is changing. The following study was intended to assess the relationship between the amount of time people spend engaging in electronic communications versus the amount of time they spend in face-to-face interaction. It was hypothesized that the two are inversely related. However, results showed that there is no relationship, but there were several other interesting observations made that were supported by previous research. Future studies should be conducted on a larger scale for a more accurate assessment.*

It is apparent as you walk through a store, a college campus or just down the street that technology use is on the rise. Originally intended to increase productivity and make life easier on those who are in the workforce or attending school, technology has now become the latest social medium as well. Young and old alike enjoy the ease of communication that technology affords. Now the question that everyone seems to be asking is, how is this change affecting our lives and in what direction?

In a study by Diamonduros, Jenkins, and Downs (2007), a group of undergraduate students were surveyed about their use of technology. It was found that the students were using technology to communicate about five and a half hours per day. This is no surprise

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I would like to thank all those who helped assist with this research. This includes Dr. Nohara-LeClair, for assisting me every step of the way and encouraging me with lots of support. Also, the participants who completed my survey and my fellow classmates all helped make this research possible.



considering that 98% of participants owned a cell phone and 84% owned a computer. Cell phone use, especially text messaging, was preferred for a quick message; however, face-to-face communication was still preferred over electronic communication if the topic was personal (Diamonduros, et al., 2007).

There are several concerns that go along with this increase in technology use. Editors at Psychology and Psychiatry Journal interviewed several researchers on this topic and while it is generally agreed that social networking sites (SNS) such as MySpace and Facebook can be useful for social development, they can also be tools used to fool others (Psychology & Psychiatry Journal, 2008). People often add hundreds or even thousands of people to their friend lists on these sites, but usually do not really know but a handful of these people. The concern is that this can lead to a disillusioned view of friendship, less face-to-face interactions, and false sense of self developed for the purpose of enticing new “friends” (Psychology & Psychiatry Journal, 2008).

In relation to presenting a false identity, many face the obstacle of trying to find legitimate romantic interests online. Without face-to-face interaction, it can be difficult to accurately assess another person. In a study conducted by Cornwell and Lundgren (2001), they assessed romantic relationships that existed either exclusively online or in person. They found that people that engaged in face-to-face relationships had more daily communications and felt more committed and serious about their romantic relationships than those that only communicated online (Cornwell & Lundgren, 2001). This could suggest that people do not take their online relationships as seriously as their real-life, face-to-face relationships.

Another concern researchers are raising is whether social divides that exist in real-life communications are crossing into the internet realm as well. For example, one researcher noted that there is an apparent income gap between users of Facebook and MySpace (Nielsen, as cited in CNN.com, 2009). Facebook users are typically more affluent, making substantially more money than MySpace users, but Twitter, the latest in SNS', has proven to have the most affluent members of all (Nielsen, as cited in CNN.com, 2009).

A recent study was conducted by Tufekci (2009) to determine if there is a relationship between amount of social support received and amount of time spent on Facebook. It was found that social support increased for women as frequency of Facebook usage increased, but not for men (Tufekci, 2009). This is likely because women were found to use the site more to connect with friends who they see regularly while men use it more to meet new people with similar interests, suggesting that close friendships are more important for social support. However, this benefit for women only increased to a point; as Facebook usage climbed higher for women participants, the less social support they received (Tufekci, 2009).

It appears that these electronic communications are more important to some than others. In another study by Orr, Sisic, Ross, Simmering, Arsenault, and Orr (2009), the relationship between shyness and Facebook usage was examined. As predicted, the researchers found a positive correlation between shyness and amount of time spent on Facebook. Furthermore, the more shy an individual, the fewer friends they had on their Facebook profiles. The researchers suggest that shy individuals gravitate to these social

networking sites because there is less social pressure and more anonymity than in face-to-face interaction (Orr, et. al., 2009).

In a study conducted by Subrahmanyam and Greenfield (2008), researchers seem to be coming to the defense of electronic communications, suggesting young adults are using technology primarily to strengthen their already-existing relationships. They noted that most teens do not feel that SNS have a negative impact on their social lives. However, the researchers also acknowledged that the use of such technology is changing the way people approach relationships and could potentially lead to fewer face-to-face interactions, although this question has been largely remained unanswered (Subrahmanyam & Greenfield, 2008).

The present study intends to examine if there is in fact a relationship between the amount of time people spend engaging in electronic communications and the amount of time they spend in face-to-face interaction. Given the findings of previous research, it is predicted that there is an inverse relationship between the amount of time spent engaged in electronic communications and amount of time spent in face-to-face interaction.

## **Method**

### **Participants**

There were a total of 71 participants, ages 18 to 32, with an  $SD=2.376$ , pooled in the present study. The average age was 20.2 years, with freshman and sophomores making up more than 70% of the participants pooled. The sample consisted of 35 men and 36 women. Participants were recruited through the Lindenwood Participant Pool and were compensated with extra credit points in their eligible classes that they were enrolled in. The Lindenwood Participant Pool consists of several psychology, sociology,

anthropology, athletic training, and exercise science undergraduate classes that have the option to participate in research studies in exchange for extra credit.

### **Materials**

Participants were asked to complete a survey with 20 questions regarding their internet and cell phone usage (Appendix A), as well as their socialization habits. The survey took approximately 10 minutes to complete. The questions in the survey were designed to assess the amount of electronic communications the participant engages in versus the amount of socializing they do in person. There were also questions regarding online gaming, online self-misrepresentation, and the participants' overall feelings about electronic communications. The participants were also be given two informed consent forms (Appendix B), one to keep and one to return to the researcher, and a feedback letter (Appendix C) containing the researcher's contact information incase of any questions following the study. Receipts were given to participants to ensure they were rewarded with their extra credit points. Pens and pencils were available to those who needed them.

### **Procedure**

Participants who signed up for the study met at the assigned room at their designated time and were asked to sign in on the sign-in sheet. Next, they were presented with two copies of the informed consent form which they were asked to read over and sign. One copy was for the participants to keep and the second copy was returned to the researcher for their records. The informed consent outlined the participant's rights, including their right to withdraw.

Once informed consent was obtained, the researcher administered the survey to the participant. The participant sat at a desk or table and quietly filled out the survey,

which took no longer than 10 minutes. Participants were surveyed in groups similar to a regular classroom setting. Upon completion of the survey, the participants were debriefed about the purpose and hypothesis of the study and given a feedback letter. This served as a chance to answer any questions the participants may have had and also give them contact information in case they found later that they still had unanswered questions or were interested in viewing the results of the study. Finally, participants were given a receipt acknowledging their participation in the study so they could claim their extra credit points.

### **Results**

A Pearson's correlational analysis was conducted using SPSS to test the relationship between the amount of time spent on social networking sites and the amount of time spend socializing in person. The results did not show a relationship, with  $r=-.048$ .

Nearly 96% of participants were found to own cell phones. Of those participants, nearly 92% use their phones for text messaging and nearly 37% use them for internet usage. The average number of texts sent in a day was around 72 with an ( $SD=78$ ) and the average number of texts received in a day was approximately 78 and an ( $SD=83$ ).

Over 94% of participants were found to own a computer and almost 96% use social networking sites. Those that use SNS had an average of 502 friends listed on their profile and reported spending at least an hour and a half on SNS each day, but they still found time for socializing in person an average of 18 hours per week. Online gaming was reported as less popular, with only 32% of participants playing games online, and for only about a half hour per day.

Attitudes toward SNS were mostly positive, with nearly 80% of participants claiming that they lead to more social interactions at least sometimes. Still, More than half of participants admitted to using SNS at least sometimes to avoid face to face contact with others and approximately 13% reported using SNS to portray less-than-accurate information about themselves. When asked why they lied, the most common responses were to hide personal information, to avoid certain people, or just for fun. Those that reported being truthful cited reasons such as being an honest person and having no reason to lie. Overall, 52% of participants believe that SNS' do not hinder social relationships, with another 18% feeling unsure.

### **Discussion**

The hypothesis for the present study was not supported by the results of the data; however, some interesting observations were made regarding technological usage. It is not a total surprise that the analysis revealed such results considering that previous researchers have found that SNS use can strengthen pre-existing relationships and also lead to more social interactions. As Subrahmanyam and Greenfield (2008) noted, technology is changing the way we interact with one another.

Some possible limitations of the study include the small sample size and a biased sample. While measures were taken to obtain a random sample through the Lindenwood Participant Pool, a significantly larger group of freshmen and sophomores signed up for the study as compared to juniors and seniors. Also, undergraduate students are not the most representative sample of SNS users in general. Being that SNS are open to everyone, it would be interesting to conduct an internet-based survey open to all users of SNS. This would target a broader population and thus result in a vastly different sample.

Another limitation was the design of the survey. Many participants did not write in specific numbers in the blank spots given for questions such as “How many friends do you have listed on your profile?” and instead gave ranges, which was unhelpful in data analysis. In a revised version of the survey, perhaps choices of specific intervals should be given instead, as in a multiple choice test.

One area for possible future research would be to examine sex differences in technology usage. Despite the stereotype that men are more technologically inclined than women, it seemed that in the present study, females were spending more time texting and socializing online than males. Perhaps this is due to women being more socially inclined than men.

Overall, it can be seen that there is an increasing trend in technology usage. People are using SNS to keep in touch with family and friends that live out of town as well as make plans with those that live on campus. Cell phones are useful to keep in touch and send quick messages throughout the day, and with cell phone companies making data plans more affordable, it appears that people are using them to log onto the internet more frequently as well. Perhaps this study has suggested that technology is having more of a positive impact on our social lives than a negative one.

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### Appendix A

- 1) Sex: Male or Female (circle one)
- 2) Age: \_\_\_\_\_
- 3) Are you a: Freshman Sophomore Junior Senior (circle one)
- 4) Do you own a cell phone? Yes No (circle one-if no, skip to question 9)
- 5) Do you use your cell phone for text messaging? Yes No (circle one)
- 6) Do you use your cell phone for internet usage? Yes No (circle one)
- 7) On average, how many text messages do you send in a day? \_\_\_\_\_ per day
- 8) On average, how many text messages do you receive in a day? \_\_\_\_\_ per day
- 9) Do you own a computer (desktop or laptop)? Yes No (circle one)
- 10) Do you go on social networking sites (SNS) such as Facebook and MySpace?  
Yes No (circle one)
- 11) If you have an SNS account, how many friends do you have listed on your profile?  
\_\_\_\_\_
- 12) On average, how long do you spend on social networking sites per day? \_\_\_\_ per day
- 13) Do you use the internet to play interactive games? Yes No (circle one)
- 14) On average, how long do you spend playing games online per day? \_\_\_\_\_ per day
- 15) On average, how many hours per week do you spend socializing in person (face-to-face conversation) outside of organized activities like work and school? \_\_\_\_ per week
- 16) Do you ever use the anonymity of social networking sites to portray something about yourself that is less than accurate (this could be anything from lying about your current mood to giving a false name)?  
Never Rarely Sometimes Often Always (circle one)

17) In reference to #16, why or why not? \_\_\_\_\_

18) Do you ever use text messaging or social networking sites as a way to avoid face-to-face communication with someone?

Never Rarely Sometimes Often Always (circle one)

19) In general, do you feel that your electronic communications lead to more socializing face-to-face?

Never Rarely Sometimes Often Always (circle one)

20) In general, do you feel that your electronic communications hinder your social relationships?

Yes No Unsure (circle one)

**Appendix B**

## Informed Consent Form

I, \_\_\_\_\_ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about my text messaging and social networking site usage. I understand if I feel sensitive toward any of the material presented, I am able to withdraw from the study at any time. I understand that I should be able to complete this project within 15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

\_\_\_\_\_  
(Signature of participant)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature of researcher obtaining consent)

Date: \_\_\_\_\_

Student Researchers' Names and Numbers:  
Cindy Klimaszewski  
clk226@lionmail.lindenwood.edu  
(314) 603-9631

Supervisor: Dr. Michiko Nohara-LeClair Course Instructor (636)-949-4371 <a href="mailto:mnohara-leclair@lindenwood.edu">mnohara-leclair@lindenwood.edu</a>
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## Appendix C

### Feedback Letter

Thank you for participating in my study. The questionnaire was used in order to determine if there is a relationship between the usage of electronic messaging and the frequency of interpersonal contact in our relationships. As the primary investigator, I hypothesize that with electronic communications on the rise, there is a negative correlation between our usage of electronic messaging and the frequency of our interpersonal contact in our relationships. This information could be useful in the development of future technology and possibly lead to future research on the effects of technology on our relationships.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:  
Cindy Klimaszewski clk226@lionmail.lindenwood.edu  
(314) 603-9631

Supervisor:  
Dr. Michiko Nohara-LeClair (636)-949-4371 ([mnohara-leclair@lindenwood.edu](mailto:mnohara-leclair@lindenwood.edu))

**Comparison of GPA between Students Involved and Uninvolved in a Relationship**Jessica M. Vaeth<sup>5</sup>

*College is a journey full of living, failing, learning and experiences that brings an individual a little bit further along life. In today's society, relationships are existent in many universities, and some students may be faced with that exact same dilemma. I decided to do my research project on a comparison of GPA between students who are in a relationship and those we are not. A relationship is defined as follows: a romantic, committed bond between two people for a minimum of a month. I assessed this information by distributing a 10 question survey to 92 undergraduate college students. After inputting my findings into SPSS I discovered that my hypothesis was not supported. The results stating that there is not statistical significance to prove that relationship status has neither a negative or positive effect on one's GPA.*

In a study conducted by Kulm and Cramer (2006), researchers attempted to identify whether increased time on campus correlated with a student's success. Rather than looking at the possibility of finding a correlation between GPA and relationships, this study took employment while in college and tested to see if there was a correlation between employment and GPA. During this study, researchers examined a student's academics performance and social interaction levels, and observed the effect that employment played on those two factors. Kulm and Cramer (2006) tested approximately five hundred, 19-24 year old undergraduate students by using an online survey. In their study, Kulm and Cramer (2006) discovered that student's

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The researcher would like to give a special thanks to Dr. Nohara-LeClair for all her help during this study and to the registrar's office for their quick response with the GPAs.

academics were higher when more time was spent on campus rather than at work. They also discovered that employment had a negative effect on social interaction. The basic idea being that when there are more things going on in a student's life, areas like, academics, social interaction, and extracurricular activities suffer.

Crissey (2004), studied whether being involved in a romantic relationship had a negative or a positive correlation with academic activity. She also studied the difference between boys and girls involved in a relationship and whether the couples were involved in sexual activity and if that was related to academic activity. The rationale for this study was based on the statement from an article by Larson (1999), stating that research has shown relationships can be the largest source of stress for adolescents.

This study conducted by Crissey (2004), addressed the effect of romantic relationships on educational outcome, focusing on two specific courses: math and science. Crissey had three different hypotheses' that she was testing, those being: Involvement in a romantic relationship will be the reason for dropping out of math and science class, as well as an increase in other course failures, the effects from her previous hypotheses will be more detrimental for girls than boys and finally her third hypothesis in the study stated, relationships that are sexually active will have the same effects, except magnified and consequences will be worse.

Crissey (2004), used an in-home survey with a broad range of questions such as, family issues, peer networks, future aspirations and romantic and sexual activity and her sample size was 6,420 people. Her results stated that for both sexes, involvement in a romantic relationship was associated with an increased chance of dropping out of math and or science or just an overall increase in course failure. Girls had a higher percentage of drop out than did the boys in her study. For her hypotheses concerning sexual activity and academic outcome, both boys and girls

were at high risk for course failure or drop out when involved in a sexual relationship (Crissey, 2004).

In a study done by Giordano, Phelps, Manning and Longmore (2007), 572 currently dating teens were tested on nine different variables: Academic achievement, Dating partner's grades, respondent's academics orientation, friends' academic orientation, parents' school involvement, race, gender and age, family structure, parental education and parental monitoring. The study was done to explore if romantic partner's grades were significantly related to all nine variables. Concerning the relationship aspect, (Giordano et al., 2007), girls have a stronger relational orientation and center more time and energy into their romantic relationships than boys. In this study, the researchers hypothesized that romantic partners did contribute to adolescent's own grades. The results concluded that teens that have a romantic partner with higher grades are then in turn are more likely to have higher grades and visa versa.

A study done by Kopfler (2003), hypothesized that students involved in a romantic relationship would not perform as well academically in their undergraduate courses. What Kopfler discovered was that stress played into whether a student did was academically. Stress could be caused by a relationship but not necessarily. Thus, the hypothesis was not supported.

Malecki and Demaray (2006) were interested to see if social support had any effect on GPA. Social support is defined as, "one's perceptions of supportive behaviors from individuals in his or her social network that enhance functioning and/or may buffer him or her from adverse outcomes, (Malecki & Demaray, 2006, p. 2)." This could be anything from parents, teachers, classmates, close friends, boyfriends/girlfriends. The researchers did this by surveying one hundred and sixty-four students in grades 6-8 from a school in Illinois. From a separate study cited in this study by Rosenfeld, Richman and Brown (Rosenfeld, Richman & Brown, 2000),

found that students with a high support from at least three social support systems had better grades, those support systems being parents, teachers and friends. Unfortunately, when investigating the relationship between GPA and social support they found little to no significance, (Malecki & Demaray, 2006).

The purpose of this current study was to research if there is a correlation between a student's relationship status and college academics, defined by student's grade point average (GPA). In the studies above no research was done specifically on just relationship status and GPA. Research revealed that time spent on campus was helpful to GPA, social factors had minor effects on GPA and according to Crissey (2004), and students involved in sexual relationships had a negative impact on science and mathematics courses. Using this past research as a foundation, I wanted to investigate the students' relationship status and level of commitment as reported by students. The hypotheses for this study was that students involved in a romantic relationship will have a lower GPA than students who are single.

## **Method**

### **Participants**

Ninety-two participants were recruited by classroom. Out of the 92 participants 40 were male and 52 were female, consisting of 20 freshmen, 22 sophomores, 20 juniors and 30 seniors. Seventy-eight percent of that sample was single, four percent were engaged, 4.3 % of the students surveyed were married and 13 percent circled other. The mean for the age of subjects was 21 years old with a standard deviation of 2.518. According to demographics, 64.1 % of the 92 participants stated that they were involved in a romantic relationship in the spring of 2009 and 32 % stated they were not. Three participants did not circle either. Regarding the level of commitment, 8.7 % of the participants stated that according to their relationship status they were



not committed, 7.6 percent said they were somewhat committed, 12 % stated they were committed and 55.4 stated they were very committed. 16.3 % did not answer the question.

### **Materials and Procedure**

A computer, printer and a copy machine were used to make about 150 copies of the required forms. These include: the survey (Appendix A) (Alderson & Gruenloh, 2008), the informed consent form, and additional consent form (Appendix B) and feedback letter. The informed consent form had a brief description of the research project and asked for the participant's signature. The additional consent form (Appendix B) to have official GPA released, was used to attain the required permission from the participants to allow the researcher to verify their grade point average from the spring semester of 2009. The survey (Appendix A) had seven questions regarding age, sex, class level and additional questions concerning their current relationship status and their opinions regarding relationships and academics (i.e., Spring of '09 GPA).

Permission was gained from Professor Walsh, Dr. Tillinger, Dr. Plate and Professor Werhli to come into their class room and discuss the research project with the students in their classroom. Participants used a pen or a pencil to fill out the appropriate forms. (Consent forms and survey) Participants were handed two informed consent forms; one form was to be signed and handed back to the researcher and the other was for the participants records. The first one was to be signed and returned to the researcher, the signature granting the researcher permission to continue in the project. Then all participants received a second consent form (Appendix B). This form was to attain permission to verify student's grade point average from the spring semester of 2009 before taking the survey. All participants were informed that they did not have to participate and that they could exit the project at any time with no penalty. After all forms are

filled out students then received a short survey (Appendix A) concerning their current relationship status. Most of the questions were geared toward students currently involved in a relationship. However, students who are not in a relationship were also asked, "How much do you feel that a relationship is related to the level or outcome of your academics on a level of one to ten (One being the lowest amount while ten being the highest most)?" This was asked to get a more broad opinion and less biased data. Following the completion of the survey all participants were given a feedback letter and thoroughly debriefed. All participants were informed that if they have any questions or concerns they could feel free to contact the researcher and all contact information could be found on the feedback letter.

Finally after all the data was taken, all participant names and identification numbers was taken to the registrar's office to attain their grade point averages. From that point the faculty advisor for this project matched all GPA's with given identification codes and returned data to the experimenter with the participants' identifying information removed. Once all identifications were assigned and GPAs were collected all data was inputted into SPSS program and analyzed.

### **Results**

The hypothesis for this study was, students involved in a relationship would have a lower GPA than students what are single. A t-test was done to analyze the data GPA and relationship status. By doing an independent t-test my hypotheses was not supported. In the survey I asked each participant to give their self-reported GPA just in case I could not obtain all the GPA's from the registrar's office. This was helpful because I only was able to obtain 40 official GPA's from the 92 participants. According to the analysis there was no significance in GPA and relationship status for official GPA,  $t(38)=-.73, p>.05$  or the self reported GPA,  $t(79)=-.383, p>.05$ . The interesting thing about those results in that according to the participants 28.3 % stated that they

thought that being in a relationship would negatively affect their GPA. However, 38.0 % of the participants stated that it all depended on different factors, such as, the person's time management skills, the person's maturity level, and a significant amount of people stated that it depended on whether the relationship was a healthy relationship or not. Those participants stated that if the relationship was mature and a happy relationship that would better someone's GPA and if the relationship was unstable and unhealthy that would bring someone's GPA down. 16.3 % of those participants stated that in their opinion being in a relationship would better their GPA. No significant findings support either of those categories.

An interesting aspect about the GPA is the inflation in the self-reported GPA and the actual GPA. The mean of the self-reported GPA for the participants involved in a relationship was 3.0848 with a standard deviation of .52028 and the mean for the actual GPA was 2.7688 with a standard deviation of .54321. The inflation was .316 points difference. This happened for the students not involved in a relationship as well. Participants mean self reported GPA who was not involved in a relationship was 3.1317 with a standard deviation of .54321 and the actual GPA mean was 2.7194 with a standard deviation of .93873. The inflation for students not involved in a relationship was even higher with a .4123 difference.

### **Discussion**

The hypotheses to this study stated that students involved in a romantic relationship will have a lower GPA than students who are single. Unfortunately, after analyzing the statistical data, the present finding fail to support my hypotheses that relationships would negatively affect GPA. However, the study did show according to the open response questions on the survey that relationships can have some type of positive or negative affect depending on other variables that were unattainable for testing purposes.

Also, although the students involved in a relationships GPA did not vary enough from the student's GPA's who were not in a relationship this does not mean that the student's GPA's would not be higher if they were not involved in a relationship. Therefore, one way to make this study more beneficial would be to do a more long term study and test the student's GPA before they were involved in a relationship, while they are in a relationship and then if possible, after the relationship ends if that happened to be the case. This would give me a more accurate result, more specific to each individual person.

Twenty freshmen were included in the study. Freshmen did not have a GPA on final yet and although their self-reported GPA was used it is from high school and I wanted to test undergraduate college students. For future research for this experiment a larger sample size would be nice and I would only recruit participants who had a GPA on file for me to use in my analysis.

Another variable that may have skewed the data was the marital status. Although 78.3 percent of the participants stated they were single, 13.0 percent stated they were other. Along with 4.3 percent were married and 4.3 percent were engaged. Married, engaged and other may have a completely different relationship style and may be in a different part of life than the single status that could include casual daters, serious relationships.

Although participants were notified that all answers from the survey were kept secret and kept anonymous participants may have felt like they could not be completely honest in case another student's saw their responses. I would hand out the survey in a different way, perhaps one on one by using the LPP (Lindenwood Participant Pool). This would allow for the participants feel that they could be much more honest and the results may have differed.

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## Appendix A

### Survey

SUBJECT ID NUMBER: \_\_\_\_\_ (Assigned by Researcher)

#### Definition for this study:

*Relationship:* A romantic committed bond between two people for a minimum of a month.

1) Are you:        MALE        FEMALE?

2) Martial Status: (Circle One)

Single    Engaged    Married    Divorced/Separated    Other

3) Age \_\_\_\_\_

4) What grade level are you:

FRESHMAN    SOPHOMORE    JUNIOR    SENIOR    OTHER

5) Were you involved in a romantic relationship in the spring semester of '09?

YES        NO

6) Rate the level of commitment (exclusive to one person) in your relationship

1	2	3	4
Not committed	Somewhat Committed	Committed	Very Committed

7) If you are in a relationship, how often do you see your significant other?

8) How much do you feel that a relationship is related to the level or outcome of your academics on a level of one to ten (One being the lowest amount while ten being the highest most).

9) Explain number 8.

10) What is your current G.P.A (Cumulative)?

## **Appendix B**

### Additional Consent

I, \_\_\_\_\_ (print name), give my consent to have my cumulative grade point average accessed by the registrar's office and presented to the experimenters anonymously. I also comprehend that once the experiment has been completed all records concerning my grade point average will be destroyed accordingly.

Finally I recognize that if at any point in time I feel stressed or concerned over this issue I can contact the experimenter and express these concerns or questions.

Participants Signature \_\_\_\_\_ Date: \_\_\_\_\_

Researcher's Signature \_\_\_\_\_ Date: \_\_\_\_\_

Students ID # or SNN: \_\_\_\_\_

(SNN # is needed for the researcher's instructor to get correct G.P.As regarding participants)



**Relationship of Cigarette Smoking and the Habits of a Smoker's Family**Danielle Strasser<sup>6</sup>

*The purpose of this study was to see if there is a co relational relationship between an individual's smoking habits and the smoking habits of his/her family. There were hopes of finding a relationship between people's habits and whether their smoking relative is biologically related or not. The hypothesis seeks to find a relationship between an individual's smoking habits and the smoking habits of their family. There were seventy-eight undergraduate students from Lindenwood University surveyed and only eight were smokers. Thirty-seven point five percent, or three out of eight, smokers in the study had a mom that smoked, and the same percentage goes for smokers who had a dad that smoked. Only one out of eight smokers had a biological brother, sister, or step parent that smoked which is twelve point five percent. The implications of the findings of the smokers' surveys found no statistical significance for any of the categories. What was found is that more smokers have family members that do not smoke, which is the opposite of the hypothesis stated.*

There are a lot of people around the world that smoke cigarettes despite the obvious negative effects. According to Hesman's (2004) article in the *St. Louis Post Dispatch*, cigarettes kill more people every year than all the majorly addictive drugs, murders, suicides, burning, smoke inhalation, car wrecks and STDs combined. According to Alexander Glassman (1997), smokers are usually considered to be more nervous by nature than people who do not smoke. He also mentioned how cigarettes and depression are highly correlated with one another. Like

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<sup>6</sup>Danielle Strasser, Psychology Department, Lindenwood University. The researcher would like to thank Dr. Nohara-LeClair, and Professor Colemire, Dr. Scupin, and Dr. Stein for lending ten minutes of their class time. Any questions that may concern this study can be addressed to Danielle Strasser at [drs097@lionmail.lindenwood.edu](mailto:drs097@lionmail.lindenwood.edu).

depression, literature suggests that there are genetic predispositions that make a person more likely to indulge in the questionable habit. At the same time, Bobo and Husten mentioned that literature also suggests that people begin smoking because of social and psychological factors.

According to Bobo and Husten (2000), adolescents whose parents smoke cigarettes are more likely to start and adolescents whose friends or siblings smoke are more likely to begin smoking at an earlier age than those whose peers refrain from smoking cigarettes. They also mention that factors in parent-child relationships affect whether junior high and high school aged individuals smoke. Bobo and Husten (2000) mentioned things like poor attachment, poor supervision, lack of punishment, and insufficient involvement in the child's life as contributory factors. They also mentioned that according to a study conducted by Conrad and his colleagues in 1992 lower socioeconomic status is related to cigarette smoking in adolescents. Bobo and Husten (2000) reviewed national students' surveys that indicate more white youngsters begin to smoke than African Americans and Hispanics. Thus there are many diverse reasons that people smoke. Both nature and nurture play a role in an individual's decision to smoke.

According to Lawton's study (1962), wanting to imitate others is a big reason why adolescents may begin to smoke. It also helps some of them figure out how to define who they are and who they want to be. This idea backs up what Bobo and Husten (2000) say about the influence of parents, siblings, and peers on an individual's decision to smoke. It is a way of identifying with certain other individuals and thus helping the adolescent decide who they are and who they would like to be like.

Lawton (1962) found that 40% of adolescent whose mom and dad smoke also smoke, 33% of those with one smoking parent smoke, and 23% of those whose parents do not smoke at all smoke cigarettes. Lawton (1962) also found that 44% of those whose older siblings smoked,

also smoke too, and only 22% of adolescents without smoking siblings smoked. At first glance one may think that this is due to genetic factors, but it is just as likely that it is due to learned behaviors and as Lawton said earlier, identifying with others to figure out who they are.

The present study found some answers to this conundrum by surveying individuals to see if they smoke and if their parents do, and also if they are their genetic parents or simply an unrelated guardian, step parent, or adopted parent. The outcome will show which factor has a stronger correlation, and thus how individuals can help prevent the start of their younger loved ones from the unhealthy habit.

Lawton (1962) also mentioned “striving for status” as an interpersonal need for those who decide to smoke. He believed that people begin smoking cigarettes because of “an inner feeling of lack, of inadequacy, or striving for self assurance” (p. 164). He also found smoking was more prevalent in those adolescents that could not obtain “normal peer group status”. Lawton mentioned how simply viewing older family members enjoying something would bring curiosity, thus he believes learned behavior is a factor. Plus, parents who smoke are less likely to chastise their kids for smoking cigarettes; therefore the rate of smokers whose parents smoke should be higher for a lot of reasons, not just genetics or imitation. Lawton (1962) also found that the prevalence of cigarette smoking is much lower among religious sects that prohibit the habit. Those who smoke in college, according to Lawton (1962), have lower grades than those who do not, but this may be due to the fact that more rebellious individuals smoke as well as get lower grades. It is a correlation, not causation that rebellious people tend to smoke and also to achieve lower educational status than those who are not considered to be rebellious. Lawton (1962) reviewed a study that found “low pulse and low blood pressure during adolescence were predictive of adult non-smoking” (p. 166). Although this study was done in 1962 the biological

aspects still ring true, and it is interesting to look at the statistics of smokers back then so that we may get an idea of how health consciousness has changed the numbers today. So there may be something physiologically different about those who smoke cigarettes that nicotine may fulfill or calm.

According to Hesman (2004), people biologically have different amounts of certain enzymes in their liver that break down the toxins found in cigarettes. This fact most likely helps researchers to understand the difference in the amount of cigarettes smoked by different ethnicities. Apparently African Americans are less likely to smoke and when they do smoke, they smoke fewer cigarettes than European Americans. Hesman (2004) also mentioned that individuals that have attention deficit disorder are a lot more likely to smoke cigarettes because it helps with concentration. Hesman (2004) is quick to point out though, that besides nicotine, there are over 4,000 other chemicals in cigarettes that could contribute to such a strong addiction for some people. For example, there is a chemical that is a byproduct of alcohol when it's broken down that may help people's addiction to grow strong. Sixty-two percent of adult smokers say they want to stop smoking according to Hesman (2004), and around 50% of smokers say they have quit at least one day in the past year.

Hesman (2004) explained how all addictions seem to trigger the same part of an individual's brain no matter what the addiction is. The nucleus accumbens, which controls pleasure and rewarding feelings in our brains, is responsible for organizing how an individual feels and what emotions are experienced. This is the part of the brain that is affected by the chemicals in cigarettes and this is because of a neurotransmitter called dopamine. Dopamine is our pleasure chemical and addictive substances affect the amount that's released in an individual's brain. Hesman (2004) mentioned how the flow of dopamine and a brain's reaction to

things is also affected by the genetics of that individual which in turn affects if some one becomes addicted to cigarettes. Rossing (1998) agrees by saying “nicotine operates through dopamine neurotransmission in the mesolimbic, ‘reward’ system of the brain” (p. 231), in the same way any addictive substance like cocaine, opiates, or alcohol would. “Nicotine increases extracellular dopamine by stimulating the firing of dopaminergic neurons.” Addiction could change how the human brain produces dopamine. If an individual suddenly stopped smoking, the levels of dopamine in their brain would change, thus causing symptoms of withdrawal. Rossing (1998) continued saying that there has been medicines developed that stimulate the release of dopamine which could help certain individuals stop smoking and also identify a genetic subgroup that would be positively helped by these types of medications. These medications could aid addictions and many other behavioral disorders according to Rossing (1998). Research of brain imaging has shown that those addicted to cigarettes have a swift increase in dopamine in their nucleus accumbens according to Hensman (2004), who also said that smoking gets a substance through the body within ten seconds, which is three times faster than injecting it. The first drag of the day, Hensman (2004) mentioned, makes an individual’s adrenaline and noradrenaline flow, restricting blood vessels and releasing sugars into their body. Hensman then went on to describe a study conducted in which a group of individuals were measured in the areas of blood pressure and pulse after smoking their first two cigarettes of the day. Each individual had an increase in their pulse and blood pressure quickly rose.

Hesman (2004) continued with more genetic options for cigarette addiction. Smoking cigarettes lessens how much monoamineoxidase (MAO) is in the human brain. The MAO enzyme reduces an individual’s dopamine levels, thus with less MAO due to cigarettes, the more the dopamine gets to hang around longer and more intense it would allow the individual to feel

the pleasure. Rossing (1998) agreed, saying “monoamine oxidases A and B, which are involved in the oxidation and degradation of dopamine, are partially inhibited in the brains of smokers due to a tobacco constituent other than nicotine” (p. 232). This may strengthen how addictive nicotine is because the dopamine reuptake is inhibited by the MAO. Another chemical beta-carboline, according to Hesman (2004), found in the smoke of cigarettes, also slows down the enzyme in the brain that breaks down dopamine, and may have an effect on smoking’s addictiveness. In conclusion, Hesman (2004) believes that cigarette addiction reconditions the human brain and that smoking is not people’s lack of will power or concern for their health, but a genetic trap of swirling pleasure causing chemicals.

Another genetic reason for some people smoking and other not, according to Hesman (2004), is because of an enzyme called CYP2A6 that is responsible for breaking down nicotine and the toxins found in cigarettes. This enzyme is concentrated differently in different individuals and the lower the concentration; the more difficult it is for that person to process all the toxins in cigarette smoke. The lack of this enzyme to break those toxins down causes some people to become nauseous, and thus they smoke less or not at all. Hesman (2004) said that the study done showed that African Americans have less of the enzyme and thus smoke less because they felt the negative affects faster and stronger than European Americans. Hesman (2004) continued to say only 5% of the white people in the study had the variation that makes the enzyme low, while 12% of blacks did. She continues saying that 30% of Asians tested in cigarette studies also have it. This is possibly the explanation for an ethnic difference in smoking habits. Along with that variation comes another surprising difference. According to Hesman’s (2004) research, African Americans also, start smoking at a later age, suffer more from diseases

like chronic obstructive pulmonary disease, and develop the diseases on average at an earlier age than European Americans. Thus, genetics can definitely play a role in why an individual smokes.

Another reason genetics is thought to play a role in the habit and addiction of cigarette smoking has to do with nicotine receptors in the brain and attention deficit disorder. Since attention deficit disorder and attention deficit hyperactivity disorder children have different genetic causes, Hesman (2004) mentioned a study that found the difference of DNA in both groups of kids. There was a difference in the receptor for nicotine called CHRNA4. Nicotine sticks to the human brain's cells that receive dopamine and that may help people concentrate. Ninety percent of ADD kids have the variant, while the ADHD children were not at all more likely than anyone else to have it. Thus, Hesman (2004) explained how drugs that affect the nicotine receptor in the brain may be a way of treating individuals with ADD.

Many twin studies have found, according to Rossing, "a common genetic influence on smoking, alcohol, and coffee use with 36% of the heritability of smoking attributed to a shared susceptibility to these substances" (p. 231). Patrick Zickler (2004) mentioned that in a study conducted of 3,356 twin pairs and found 61% of nicotine addiction was related to genetics, while 55% is found to relate to the individual's environment. The National Institute for Drug Abuse has found that different alleles, being a small variation in a specific gene, seem to match with different behaviors in smoking. Zickler (2004) continued saying that one allele in a gene may show a predisposition to nicotine addiction, while another may show that an individual is genetically more likely to be able to quit smoking. Specifically, "smokers are less likely to have an allele designated SLC6A3-9 (46.7%) than were nonsmokers (55.8%)." An individual was least likely to smoke when they had both the alleles SLC6A3-9 allele and the DRD2-A2 allele.

Smokers with the SLC6A3-9 allele were found to have begun smoking at a later age, and to have an easier time when trying to quit smoking.

In conclusion there are many reasons to contribute to whether a person smokes cigarettes or not. There are multiple reasons on both sides of the fence for an individual to start smoking, become addicted, quit smoking, or keep smoking. From family and peer influence, learning who one is, or just wanting to look cool or fit in, to liver enzymes, dopamine management, and general predispositions to smoking, there are hundreds of reasons that people smoke.

The present study sought to find a relationship between an individual's smoking habits and the smoking habits of their family. Participants were asked questions pertaining to when they began smoking and if they were adopted, or had step families that indulged in cigarette use. The questions were meant to shed light on whether more people smoke when their parents smoke, or whether more individuals smoke when their parents do not.

## **Method**

### **Participants**

There were 78 participants with a mean age of 20.45 years old and the standard deviation for age was 1.937. There were 29 men and 48 women and one participant did not answer this question. Seventy-nine point five percent of participants were from the U.S.A., while three were from Germany, and every other country of origin was mentioned only once. Only one participant was adopted and eight had step parents. Only eight out of seventy-eight were cigarette smokers. They were all recruited from Lindenwood University Undergraduate classes. These classes included one sociology class, one anthropology class, and a couple composition classes.



## **Materials and Procedure**

Each participant was given a short survey about their demographics and their cigarette smoking habits, along with questions about their families smoking habits and history. Attached to the survey was two consent forms they were to sign, one for them and one for the researcher. Both consent forms were removed right away. Also attached was a feedback letter giving them contact information in case they wanted to know the outcome of the study.

## **Results**

Out of the seventy-eight participants only eight were smokers. There were twenty-nine men and forty-eight women. The average age of smokers began was 17.29 years old. Of the eight smokers in the study only three had parents that smoked. There were very few other relatives of smokers that smoked. Fourteen and a half non-smokers had moms that smoked and twenty-six point one percent of non-smokers had a dad that smoked.

## **Discussion**

The results were interesting because it was thought that there are many reasons why children of smokers would be more likely to smoke cigarettes. Maybe in today's society people are more health conscious than ever. Maybe those whose parents smoke find it "uncool" and thus refrain. Only one out of the eight smokers had a biological brother, biological sister, step mom, or step dad that smoked. Out of the non-smokers 9.8% of biological brothers smoked, while 9.7% of biological sisters smoked. It seems that parents and children smoking has a negative correlation, to the dismay of the hypothesis. Not very many of the participants had step families, and only one was adopted for sure. This may be due to the fact that all the participants were recruited from a private university which may not be a representative example of the real American population.

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## Appendix A

### Feedback Letter

Thank you for participating in the study. The questionnaire was used in order to determine if there is a relationship between people deciding to smoke and whether their parents or other family members smoke cigarettes. The point was to see if there is a relationship and help individuals either avoid smoking, or stop smoking, and to understand what reasons may have helped lead them to smoking. The hypothesis was stated that those who have parents that smoke cigarettes are more likely to engage in the habit than those who have parents that are non-smokers. The outcome of this study could prove beneficial in finding that there is a genetic predisposition to smoking, or maybe that it is a learned behavior through operant, social, or classical conditioning and maybe parents will begin to think of their child's well being instead of their own cravings.

Please note that the study is not interested in your individual results; rather, the study is only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. The contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact the researcher and the researcher will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Danielle Strasser 636-279-5596 ([drs097@lionmail.lindenwood.edu](mailto:drs097@lionmail.lindenwood.edu))

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 ([mnohara-leclair@lindenwood.edu](mailto:mnohara-leclair@lindenwood.edu))

**Appendix B**

## Cigarette Study Informed Consent Form

I, \_\_\_\_\_ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about me and my families smoking preference and habits. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

\_\_\_\_\_  
(Signature of participant) Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature of researcher obtaining consent)  
Danielle Strasser Date: \_\_\_\_\_

## **Appendix C**

### Smoking survey

ID# \_\_\_\_\_

Demographic and smoking survey for the smoking research. Please answer all questions.

If at any time a question causes you discomfort you may stop the survey or leave the question blank.

**All the information collected will be confidential, and the surveys will not have names on them to ensure that all the information used is anonymous.**

- 1.) How old are you? \_\_\_\_\_
- 2.) Male/ female? (circle one)
- 3.) Are you adopted, to your knowledge? Yes/ No/ I don't know
- 4.) What country were you born in? \_\_\_\_\_
- 5.) If your parents are divorced, do you have step parents? Yes/No
- 6.) If so, check mark the ones you have? Step-Mom\_\_\_\_\_ Step-Dad\_\_\_\_\_
- 7.) What is your ethnic background? (circle one)  
European Latino/a African Asian Middle Eastern Other
- 8.) Do you smoke cigarettes? Yes/No
- 9.) If so, what age did you start? \_\_\_\_\_
- 10.) If you quit, what age did you quit? \_\_\_\_\_

11.) Put the number of the type of family member you have and then put tally marks for them under either the smoking or non-smoking section. For example, for the space next to biological brother you put the number of blood related brothers you have. Then make tally marks for whether each smokes cigarettes or not under the section the mark belongs.

Smoker

non-smoker

Mom

Dad

Adopt/step mom \_\_\_\_\_

Adopt/step dad \_\_\_\_\_

Biological brother \_\_\_\_\_

Biological sister \_\_\_\_\_

Adopt/step brother \_\_\_\_\_

Adopt/step sister \_\_\_\_\_

Include if raised by: (grandparent, aunt, uncle, other non-related guardians)

Other legal guardian 1 \_\_\_\_\_

Other legal guardian 2 \_\_\_\_\_

## Coffee Preferences and Personality

Kristin E. Lantzy<sup>7</sup>

*This study explored the relationship between the personality traits of conscientiousness and openness and coffee habits/preferences. A total of 50 participants were included in the study. All participants took part in a personality survey, and those who were coffee drinkers took part in a secondary survey assessing their coffee drinking habits/preferences. Participants with high openness scores had a weak positive correlation with the average cups of coffee consumed per week. They consumed slightly more cups of coffee/week on average. Participants with high conscientiousness scores had a weak negative correlation with the average cups of coffee consumed per week. These participants consumed slightly less cups of coffee/week on average. George Saucier's (1994) Mini Marker's Survey was used in this study along with a short coffee consumption survey. Implications of this study are that those who score high in the trait of openness may consume more coffee due to social coffee drinking, while those who score high in the trait of conscientiousness may limit their coffee consumption due to knowledge of health risks.*

Interest in the relationship between coffee preferences and personality stems from my years of experience working as a barista, coinciding with undergraduate studies in Psychology. While spending four years working as a barista in several different coffee shops in two different US regions, I began to notice possible relationships between

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customer's personalities and the types of coffee beverages they purchased. I observed that people seemed to be very particular and habitual about their coffee preferences, and became interested in learning if those coffee drinking habits were reflections of personality in any way.

Research findings reveal that there are some correlates between behavior and coffee drinking. A study focusing on the relationship between coffee drinking and suicide found that heavy coffee drinkers, heavy being defined by the researchers as eight or more cups of coffee per day, had a 58% greater risk of suicide than coffee drinkers who drank less than eight cups of coffee per day, (Tanskanen, A., Tuomilehto, J., Viinamaki, H., Vartianinen, E., Lehtonen, J., & Puska, 2001). A study by Leviton and Allred (1994) showed a correlation between consistently choosing decaffeinated coffee and other healthy choices. For women healthy choices correlated with decaffeinated coffee choice included taking vitamins, eating green, leafy vegetables, using seat belts, and exercising, (Leviton & Allred, 1994). For men, the consistent choice of decaffeinated coffee was correlated with a low body fat index, consumption of green, leafy vegetables and eating a diet that is low in fat, (Leviton & Allred, 1994). Leviton and Allred (2004) concluded that people who drank decaffeinated coffee are different from those who do not drink decaffeinated coffee in ways that can provide insight into the risks of illness. Another study researching effects of job stress on consumption of coffee, cigarettes, and alcohol showed that regular coffee drinking was related to consistent and higher perceptions of job stress, (Conway, Vickers, Ward & Ray, 1981).

Review of related literature shows that there is a relationship between behaviors and coffee preferences, (Tanskanen, A. et. al. 2001), (Leviton & Allred 2004). Review of



literature also shows that there is a relationship between coffee drinking and stress perception, (Conway, et al., 1981). Because a relationship can be seen between behaviors and coffee preferences, further study was proposed to see whether or not this relationship occurs at a deeper level—personality. Through review of the above mentioned literature, and personal experience, a hypothesis was developed honing in on conscientiousness and openness and their relationship to coffee drinking habits. The hypothesis developed through personal observation and literature review was that personality traits of conscientiousness and openness predict coffee drink habits.

Conscientiousness can be defined as being painstaking or careful. Openness can be defined as being accommodating and open to new ideas and opinions. These traits were focused in on because I personally observed them in my regular customers and desired to conduct standardized research to test my observations.

The Big Five personality traits were selected for use in this study because of their inclusion of the traits of Conscientiousness and Openness. According to Srivastava (2009), the Big Five traits are broad measures of personality, sometimes called dimensions. The traits include Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism, (Saucier 1994). Openness refers to intellect, having a variety of interests, and being creative, (Srivastava 2009). Conscientiousness refers to being organized and planning ahead, (Srivastava 2009). Extraversion refers to being social and energetic, (Srivastava 2009). Agreeableness refers to being empathetic and nice, (Srivastava 2009). Neuroticism refers to anxiety and moodiness, (Srivastava 2009).

George Saucier's "Mini-Markers Survey" was chosen to assess the Big Five personality traits. The Mini-Markers Survey is a personality measure based on the Big

Five theory of personality. The Mini-Marker Survey was selected for use due to its simplicity and user-friendly design, (Saucier, 1994).

To assess coffee drinking habits and preferences the study was designed with a short coffee survey. The coffee survey consisted of four questions to determine and standardize the participant's coffee drinking preferences for evaluation and comparison with the individual's scores in the traits of Conscientiousness and Openness on the Mini-Markers survey.

Coffee is an important part of the cultural fabric of many communities, and people around the world drink coffee for various reasons including enjoyment, stimulation, and socializing, (The Science Newsletter, 1943). Benefits of this study to society include deeper general knowledge of personality and how it may be reflected in small decisions such as how/if people drink coffee. This general knowledge will serve as a foundation for applied research in the future.

## **Method**

### **Participants**

The participants in this study were 50 Lindenwood University college students recruited through the Lindenwood University Participant Pool (LPP). There were 20 male and 30 female participants. The average age of the participants was 20 years. All participants took the amended Mini-Markers survey. Out of the 50 students participating in the study, 32 people or 65.3% answered yes to question three, "Do you drink coffee?". The average amount of coffee consumed per week by the coffee drinkers was 3.61 cups (SD=3.32). The group of participants that answered yes to question three took a second

survey assessing their coffee drinking preferences. Participants were rewarded with extra credit in qualified courses (ANT 112, PSY 100, PSY 101, SOC 102 and SOC 214) at Lindenwood University.

### **Materials**

The materials for this study consisted of an amended Mini Markers survey (Appendix A), a coffee preferences survey (Appendix B), two informed consent forms and a feedback letter. Saucier's Mini-Markers survey was amended to include several demographic questions: sex, age and whether or not the participant is a coffee drinker. These questions were included to gather basic demographic information for the study, and also so that non-coffee drinkers would not have to take the second survey. The coffee survey consisted of four multiple part questions asking the participant about their coffee drinking habits and preferences. From this survey information was collected pertaining to how much coffee the participant drinks, what type of coffee they most frequently drink and how they fix their coffee (e.g. black or with sugar and milk).

### **Procedure**

The same researcher was present for each participant of the study. All surveying took place in Young Hall 105B and Butler Library 201 on Lindenwood University's campus. Young Hall 105B consisted of a desk and three chairs. Library 201 consisted of a long table with one chair on either end and three chairs on either side. Participants were tested individually, however some testing overlapped as individuals arrived either later than or earlier than their scheduled times. Surveying took place on Mondays, Wednesdays and Thursdays from October 26 through November 2. In the evenings surveying took place in the library from 5-8pm, on Monday afternoons surveying took

place in Young Hall 105B from 11am to 3pm. Participants signed up for timeslots on the LPP sign up board located on the fourth floor of Young Hall. Upon arrival at the study, participants were greeted and thanked for coming. Participants were then given two copies of the informed consent form and asked to read, sign and return one copy, keeping the second copy for their own records. Next, participants were given the amended Mini Markers survey. Upon completion of the Mini Markers survey participants who answered yes to the last question on the survey, "Do you drink coffee?" were given the coffee survey. Participants who answered no to the last question on the amended Mini Markers survey were given a feedback letter and extra credit slip, and thanked again by the researcher for their participation. Participants who answered yes to the last question on the amended Mini Markers survey were given a feedback letter and extra credit slip upon completion of the coffee survey, and thanked again for their participation in the study. All participants were given the opportunity to ask questions of the researcher upon receiving the feedback letter.

### **Results**

To test the hypothesis that the personality traits of conscientiousness and openness are related to coffee drinking behaviors correlational analyses were conducted to see if the mean number of cups of coffee consumed per week was related to any of the personality traits. This test revealed that the trait of Openness had a weak positive correlation of  $r=.165$  and the trait of Conscientiousness had a weak negative correlation of  $r=-.104$  with the variable cups of coffee consumed per week. The traits of Agreeableness, Extraversion and Neuroticism were not correlated with the variable cups of coffee consumed per week.

The most common type of coffee chosen by coffee drinkers on the survey was hot brewed coffee, 36.7%. This was true for the second choice and third choice options. The majority of those who drank brewed coffee drank their coffee with sugar and milk, 72.2%, which was also the same for the second and third choice options.

The mean Openness score out of a possible 54 points was 28.72 (SD=8.29) for those who drank brewed coffee. The mean Conscientiousness score out of a possible 36 points was 9.94 (SD=10.27). The mean Extraversion score out of a possible 36 points was 16.89 (SD=8.31). The mean Agreeableness score out of a possible 36 points was 16.89 (SD=9.33). The mean Neuroticism score out of a possible 54 points was 14.06 (SD=10.13).

### **Discussion**

The results of the study show support for the hypothesis; there is a correlation between high scores on the traits of conscientiousness and openness and coffee drinking habits. The null hypothesis was rejected. The statistical analyses showed that there is a weak positive correlation of  $r=0.165$  for the trait of openness. The statistical analyses showed that there is a weak negative correlation of  $r=-0.104$  for the trait of conscientiousness. Statistical analyses showed that there was no correlation between the traits of extraversion, agreeableness and neuroticism and the amount of coffee participants consumed per week.

One possible reason for the finding that people who scored high in the trait of openness consume slightly more cups of coffee/week could be that in many occurrences is a social activity. It may be that people who participate in coffee drinking as a social activity are more open to new experiences, thoughts and ideas. Coffee shops are in many

cases meeting places for open-minded community focused people. However, the finding that the traits of agreeableness and extraversion were not correlated does not support this idea. Further study needs to be conducted in this area to determine why agreeableness and extraversion are not correlated along with openness.

The more surprising finding is that people who scored high in the trait of conscientiousness consume slightly less cups of coffee/week than average. One might think that those who are very conscientious are also hard workers and probably use caffeine as an energy source. Instead, it might be true that those who are very conscientious are aware of the possible health risks of consuming high amounts of coffee and therefore limit their coffee intake. Further study also needs to be conducted here to determine why this finding is true.

Implications of the results are that personality does indeed influence choices at levels as basic as coffee drinking habits. Limitations in this research prevent us from knowing if the coffee drinking habits formed because of taste of coffee, physiological effects of coffee, or social environment of coffee drinking. Other limitations include running the study with only undergraduate students in a small Midwestern university setting where participants have much in common. Future studies on the topic could include a survey that addresses taste, physiological, and social aspects of drinking coffee more directly. Future studies could also be done including a broader range of participants.

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## **Appendix A**

ID: \_\_\_\_\_

(Assigned by Researcher)

### Part I: Demographic Information

Sex: Male Female

Age: \_\_\_\_\_

Do you drink coffee? : Yes No



## Part II: Personality Assessment

Please use this list of common human traits to describe yourself as accurately as possible.

Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly your same age. Before each trait, please write a number indicating how accurately that trait describes you, using the following rating scale:

1	2	3	4	5	6	7	8	9
Extremely Inaccurate	Very Inaccurate	Moderately Inaccurate	Slightly Inaccurate	Neither Inaccurate nor Accurate	Slightly Accurate	Moderately Accurate	Very Accurate	Extremely Accurate

- |                  |                  |                   |                    |
|------------------|------------------|-------------------|--------------------|
| ___ Bashful      | ___ Energetic    | ___ Moody         | ___ Systematic     |
| ___ Bold         | ___ Envious      | ___ Organized     | ___ Talkative      |
| ___ Careless     | ___ Extraverted  | ___ Philosophical | ___ Temperamental  |
| ___ Cold         | ___ Fretful      | ___ Practical     | ___ Touchy         |
| ___ Complex      | ___ Harsh        | ___ Quiet         | ___ Uncreative     |
| ___ Cooperative  | ___ Imaginative  | ___ Relaxed       | ___ Unenvious      |
| ___ Creative     | ___ Inefficient  | ___ Rude          | ___ Unintellectual |
| ___ Deep         | ___ Intellectual | ___ Shy           | ___ Unsympathetic  |
| ___ Disorganized | ___ Jealous      | ___ Sloppy        | ___ Warm           |
| ___ Efficient    | ___ Kind         | ___ Sympathetic   | ___ Withdrawn      |

### Appendix B

ID # \_\_\_\_\_

1. How often do you drink coffee beverages, for example ice coffee, hot coffee, latte, etc?

\_\_\_\_\_ 12 oz cups per week\*

\*(12 oz is the average size of a small to go cup of coffee, for example if you drink a medium size coffee put 1.5, for a large put 2)

2a. What type of coffee beverage do you drink **most often**?

\_\_\_\_\_

2b. How often do you drink this beverage? \_\_\_\_\_ /week

2c. How do you usually fix this beverage?\*

\*(For example, two Splendas and skim milk, be as specific as possible)

3a. What type of coffee beverage do you drink **second most often**?

\_\_\_\_\_

3b. How often do you drink this beverage? \_\_\_\_\_ /week

3c. How do you usually fix this beverage? (Be specific)

4. What is your **favorite** coffee beverage?

\_\_\_\_\_

4b. How often do you drink this beverage? \_\_\_\_\_/week

4c. How do you usually fix this beverage? (Be Specific)

**Courtesy on Campus:****How Far away does a Person have to be Before the Door is Held?**Kristen Frederick<sup>8</sup>

*Many times while coming to the doors of a building the person who entered or exited before just lets the door shut in others' face. It was thought that the door was less likely to be held ten minutes before a class period started (when people tend to be more rushed) than ten minutes after a class period starts. It was also thought that men are more courteous in public than women. The fundamental attribution error is used to explain peoples' behaviors in public. The concept behind this is, people tend to do things because of an internal disposition like personality rather than an external situational disposition. Observations were made in a classroom building during the passing period between classes on Lindenwood University campus. Information was collected like the time the door was held, the gender of the person holding the door (holder), the gender of the person the door was held for (holdee), and the distance the holdee was from the door.*

Everyday people enter and exit buildings, sometimes without even opening the door. Many people who open a door tend to hold it open for people behind them and some do not. Do people hold the door for others just because they are too close to let the door shut in the others' face? Or does distance have any significance on door holding behavior? It is thought that people are less likely to hold the door for others 10 minutes before a class period begins (when they tend to be more rushed), than 10 minutes into a

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<sup>8</sup> Kristen Frederick, Department of Psychology, Lindenwood University. The researcher would like to thank Dr. Nohara-LeClair for helping to conduct all of the statistical analyses. Any questions concerning this article should be addressed to Kristen Frederick, Department of Psychology, Lindenwood University, St. Charles, MO 63301. Email: knf533@lionmail.lindenwood.edu

class period even if somebody else is five feet away. When people are in a rush they tend to ignore any other person or the wellbeing of any other person. This behavior is easily explained when looking at the fundamental attribution error. What is meant by the fundamental attribution error is it is used to help understand and explain what happens in social settings. We tend to explain behavior as an internal disposition, like personality traits, abilities and motives as opposed to external situational factors.

Levine, Reysen, and Ganz (2008) did a study on the fundamental attribution error using a sample of 24 cities in the United States. Levine and colleagues proposed that there are three types of helping; direct help vs. indirect help or giving what one has, informal help vs. formal help or planned, serious vs. non-serious help (2008). The researchers tested these types of helping behaviors by conducting four field studies. The first was dropping a pen; the researcher would “accidentally” drop a pen in front of a subject. The subjects were scored as helping if they picked up the pen and called to the researcher to inform him/her of the pen being dropped (Levine, et al., 2008). The second experiment was having a hurt leg and “accidentally” dropping a pile of magazines in front of a subject. The subjects were classified as helping if they either offered to help or helped without first offering. (Levine, et al., 2008). The third experiment was changing a quarter; the researcher would ask a person if they had change for a quarter and were considered helpful if they checked their pockets for change (Levine, et al., 2008). The fourth experiment was an observation of walking speed. The researchers measured out a distance of 60 feet and timed subjects as they walked the total distance in order to get a good indicator of pace of life (Levine, et al., 2008). After conducting a one-way MANOVA with region being the independent variable and the three types of helping

behavior as the dependent, the results did not reveal a significant regional difference.

The researchers compared the sex differences of each helping behavior and found that men helped more than women. There was a difference; however, in pace of life, women had a slower pace than men (Levine, et al., 2008). After looking at this research it is apparent that even if a person is in a rush he/she might still help another person.

Patricia Oswald proposes that people try to explain others' behaviors by engaging in perspective-taking activities (Oswald, 1996). She is looking at altruistic helping, which is a considerate concern for others' wellbeing (Oswald, 1996). She explains that there are two types of perspective taking; cognitive perspective taking and affective perspective taking. Cognitive perspective taking is the ability to recognize and understand the thoughts of others (Oswald, 1996). Affective perspective taking is also referred to as affective recognition and is the ability to identify and understand how another person is feeling (Oswald, 1996). Oswald assembled participants into groups but was individually assigned a perspective-taking task. The results of the study were that the perspective-taking condition significantly influenced altruistic behavior (Oswald, 1996). When looking at gender differences in altruistic helping the amount of time volunteered did not differ significantly between the genders (Oswald, 1996). This research helps to identify that gender differences do not play a role in helping behaviors.

Taking a look now at whether or not mothers and children's psychological problems affected prosocial development Hay and Pawlby tracked children's development from birth to the age eleven (Hay & Pawlby, 2003). Hay and Pawlby defined prosocial behavior as behaviors which are positively reactive to others' needs and wellbeing (Hay & Pawlby, 2003). The researchers used all types of data collecting

methods and used parents, teachers, the children themselves as informants of the behaviors (Hay & Pawlby, 2003). The first part of the experiment was to interview the mothers when they were pregnant and judged the level of postpartum depression. The second part of the experiment was visiting the families at home on when the children were four-years-old. The researchers assessed the mother's past and current psychopathology (Hay & Pawlby, 2003). Children were also rated on the psychological problems by the parent's word. Another researcher was brought in to assess the mother's and children's psychological wellbeing without being aware of the results from the previous researcher. The second researcher rated the cooperativeness of the child and interviewed the mother (Hay & Pawlby, 2003). The third experiment was run on the child's eleventh birthday and assessed the mother's current psychological state and compared it to the past assessments. The mother again gave insight into child's psychological problems (Hay & Pawlby, 2003). A second researcher again came in without knowledge of the previous researcher's findings and interviewed the child. The results of the study were at the age of four the children who participated in the cooperative task with their mothers had significantly fewer problems (Hay & Pawlby, 2003). At age eleven, children diagnosed with significant emotional disorders were not any different than other children in showing prosocial behaviors (Hay & Pawlby, 2003). After reviewing this article, it is a little clearer that maybe childhood experiences play a role in helping others as an adult.

Harbaugh and Krause looked at children's altruism in public (Harbaugh & Krause, 2000), again suggesting that childhood events lead to adult behaviors. The researchers looked at the development of altruistic and free-riding behavior in 6-12-

year-old children (Harbaugh & Krause, 2000). The researchers conducted experiments with children randomly assigned to groups of six. The researchers gave the children poker chips and told them at the end of the experiment they could use the tokens to buy items (Harbaugh & Krause, 2000). The researchers gave the children a cup and an envelope and asked them to put the tokens they wanted to keep in the cup and the ones they would contribute in the envelope. When tokens were placed in the envelope the whole group would receive more back than if the children were to keep the tokens in their cup (Harbaugh & Krause, 2000). The results of this study indicated that more children contributed two tokens more than any other amount (Harbaugh & Krause, 2000). Looking at the behavior results of the study, there is little evidence that the subjects learned to free-ride during the experiment (Harbaugh & Krause, 2000). Overall, the results showed that children gave more over time (Harbaugh & Krause, 2000), which says that children are as concerned with others' wellbeing as adults.

Maybe religion plays a role in altruistic helping. Religion provides specific reinforcements and punishments (Saroglou, et. al., 2005). The researchers conducted experiments to test if religiousness negatively associated with indirect aggression (Saroglou, et. al., 2005, p. 326). The results of this study found that men were less religious than women and that religiousness was negatively correlated with aggressive behaviors (Saroglou, et. al., 2005). So, maybe being religious plays a role in helping behaviors because being concerned with others' wellbeing is highly sought after. A second study was conducted to test if religious people would help people, who were close to them more, like family members, rather than a stranger (Saroglou, et. al., 2005). The results of this study were that participants varied on their willingness to help and



that those who were close to the participant, like family members, were helped more than those not known (Saroglou, et. al., 2005). This indicates that people will help others who are friends or family members more than people they do not know. This goes along with the current study that people who walk in or out of a door will hold it open for a friend, co-worker, or relative over somebody else who is also going through the door.

## **Method**

### **Participants**

In this study the subjects were undergraduate students of Lindenwood University taking classes in Young Hall. This building is used for classes and is flooded with students throughout the school day. Observations were done in the front of the building from a bench in the main entrance hallway. There were 50 subjects observed for door holding behavior ten minutes before classes have started (when people are more in a rush) and ten minutes after classes have started (when people are not so rushed).

### **Materials and Procedure**

To be able to judge the distance the person having the door held was from the door, I first used a tape measure to measure out the distance of the path leading up to the front door of Young Hall and marked every foot with a dry erase marker. I stationed myself on a bench in the hallway of the main entrance to Young Hall so the path (Appendix A) and the door were easily viewed for observations. After setting up, I collected data writing down the time of the door holding, gender of the door holder, the distance the other person was from the door, and the gender of the person the door was being held for on a data sheet (Appendix B).

## Results

Unfortunately the hypothesis, people are less likely to hold the door for others ten minutes before a class period begins (when they tend to be more rushed), than ten minutes into a class period even if somebody is five feet away was not supported statistically. In order to determine whether people were more likely to hold the door longer for others 10 minutes into a class period compared to 10 minutes before a class period, a point-biserial correlation analysis was conducted with time of observation as the dichotomous variable and distance between the door holder and the person following as the continuous variable, it was found that the rush ten minutes before class compared to ten minutes after class have began and the distance the other person was from the door did not have a relationship . It did not matter when the door was held for another person,  $r = .080$ .

A 2 (gender of door holder) X 2 (gender of person door being held for) chi-square analysis for the gender of the door holder and the gender of the person the door is being held for was also conducted. After conducting a chi-square for the gender of the door holder and gender of the person the door was being held for it was apparent that men held the door more for women than for other men. But, these results were not statistically significant enough to mean anything,  $\chi^2 (1) = .965$ ,  $p = .326$ .

## Discussion

The results indicate that there is no a relationship concerning the time of day the door holding behavior happens and there isn't really any significance in gender differences in door holding behavior. The results did not support my hypothesis, people are less likely to hold the door for others ten minutes before a class period begins (when

they tend to be more rushed), rather than ten minutes into a class period even if somebody is five feet away. The reason there was not any significance or a relationship in the data could be because of repeat subjects in the building. While conducting research in a classroom building gets many subjects, a researcher also acquires many of the same subjects; this is definitely true if data collection is done on the same days of the week at the same times. There were a few limitations for this study and they would be the amount of subjects observed, the difference in the times classes begin, and the time observations were done. Things to do differently for this study would be to pick a specific day of the week to do the observations, like only Monday, Wednesday, and Fridays or just Tuesdays and Thursdays; that way there is not a time difference when the classes start. Another thing I would change would be trying to find more of a gender difference in door holding behavior. I would accomplish this by observing a male dormitory building and a female dormitory building. This study allowed me to learn a lot about the behaviors of others and why they tend to help others. Even though there was not any significance or a relationship of my data I think with a bigger sample there could be a chance of the statistics being significant.

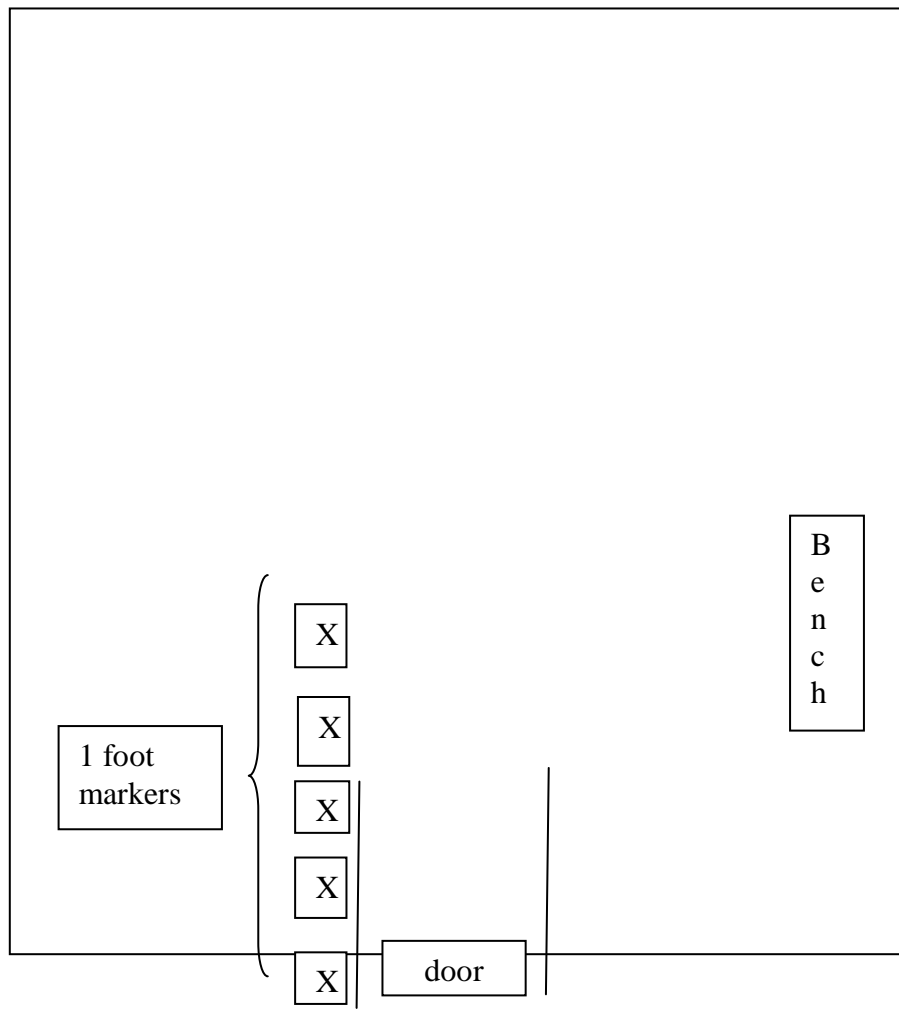
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### Appendix A



YOUNG HALL FRONT ENTRANCE



**Picture Perfect Job:****An Analysis of the Effects of Weight on Internship Interviews**John R. Gatermann<sup>9</sup> and Kimberly N. Gould<sup>10</sup>

*The purpose of this study was to discover if weight perception has an effect on obtaining an internship. It was hypothesized that a less qualified individual with an average weight appearance will be chosen more often than a qualified person who was above average weight when compared for an internship. Furthermore, people's perception of weight and how they perceive others based on weight was observed. In the study, participants were directed to evaluate two resumes: one being qualified and one being unqualified and each having either an average weight or above average weight candidate's photo identification attached. Then, the participants were instructed to fill out a survey pertaining to the participant's choice of resume. Afterwards, each participant was directed to complete a demographics survey in order for the researchers to gain insight on personal attributes of the participant. This offered an understanding of the individualistic qualities of each participant when analyzing the results. As a result, the study did not provide overwhelming evidence of a positive relationship between weight and internship acceptance. Also, there were no significant conclusions that could be made in the fact that a positive relationship was observed between participants' perceiving overweight individuals more derogatory than average weight individuals; however, there was significance when analyzing the results of overweight individuals*

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*being perceived in a more favorable light. This may suggest that people have become more accepting of others based off perception.*

In the United States, as well as many other industrialized societies, weight has become a major concern for the public eye (Donahue, 2008). In prior years, weight was not an issue for individuals due to the fact that people were accustomed to the physical aspects of manual labor and other analogous aspects; however, with the increase of fast-food chains, stress, transportation services, deficient exercise, and injurious eating habits, obesity (Obesity will be used interchangeably with overweight individuals and is defined as people having a body mass index of 30 lbs over normal weight ) has rapidly spread throughout the United States like a spontaneous new bacteria that is resistant to all preexisting antibiotics. Consequently, obesity is now linked to many life-threatening ailments. Like tobacco use, obesity may one day become the leading influencer of preventable death in the United States (Fouad, 2004).

Overall, it may be suggested that obese people are perceived in a derogatory light. As with heroin addicts, these people are generally seen as insecure, depressed, dejected, desolate, and discontented. Moreover, there are physical stereotypes that follow obese people as well. These include peoples' perception of the person as being ugly, sloppy, or grotesque; however, obesity has instilled itself in American society and is becoming a major problem in consideration to discrimination.

Due to stereotypical views held by some people regarding obese individuals, many hardships are faced by these people. When considering the major uproar over a hundred years ago dealing with racism and its effects on daily life for African Americans,



the same hardships can be perceived in correlation to overweight people. More specifically, employment is harder to attain for a person who is overweight due to the stereotypical beliefs upheld by some individuals. In this paper, weight and internship acceptance is assessed due to the prevalence of obesity among young adults in the United States.

In order to gain a better understanding of obesity influenced discrimination, the causes of the sudden increase in body mass index (BMI) has to be assessed. According to Finkelstein, Ruhm, and Kosa (2005), the reduction time to prepare meals and accessibility of food has become a reason for the spike in BMI. Due to the constant pressure of daily tasks and time restraints, people have turned to inexpensive eating habits. Often, these foods consist of a high fatty and calorie content. Relatively, these foods are inexpensive and easily accessible, which allows for mealtime to be quick and unobtrusive to daily tasks. Additionally, Finkelstein et al, (2005) identify the aspect of increased wages. Due to inflated wages, people are more able to spend money on fast-food type of food. Subsequently, swinging by the nearest McDonalds has become easier than going to the grocery store and preparing a home cooked meal. Furthermore, with increased wages come a heavy work load and more time dedicated to work, rather than on food preparation. Constantly, individuals are resorting to unhealthy food choices in the essence to save time (Finkelstein et al, 2005).

Aside from fast food chains and time restraints, Finkelstein, et al., (2005) also discussed the effects of television watching on weight gain. In American culture, the aspect of television viewing has become part of everyday routines for some families; however, with increased media viewing, comes increased food consumption. More

importantly, food consumption related to television viewing often consists of high fatty and calorie foods. Often, this snacking is induced by constant commercial advertisements of food or people indulging in high fatty meals (Finkelstein et al., 2005). Even though, television watching is amongst a variety of factors that contribute to the increased BMI of Americans, it is one that can be controlled and reduced in order to help better the problem.

By understanding the nature revolving around the causes of obesity, further emphasis can be placed on the discriminatory aspect of this problem, more specifically, its effects on job acceptance. According to research conducted by Puhl, Andreyeva and Brownell (2008), discrimination is prevalent in regards to obesity. As concluded, they found that weight discrimination was as much of a concern as race discrimination when dealing with a work setting. Furthermore, they discovered that women were more vulnerable to the effects of weight discrimination than that of men; however, both overweight men/ women reported feelings of discrimination in the workplace. Furthermore, Puhl et al., (2008) found that once a BMI of 40 was reached, all participants reported feelings of discrimination in the workplace.

Additional research has been provided by Rothblum, Miller, and Garbutt (1988) on how women are discriminated against when applying for a job. It was discovered that students perceive obese women more negatively than normal weight women. After asking the participants to report on job applicant descriptions, the ones that depicted an overweight female was repeatedly perceived in a derogatory manner. Furthermore, this research went on to discuss how obese women are unfairly perceived for job employment in the consideration of attractiveness. It discussed how obese women are visualized as

unattractive when visually described to participants. Another study regarding the salaries of lawyers in conjunction with obesity found that a male lawyer's salary was negatively affected when his BMI was above average (Saporta & Halpern 2002). The study suggested that these men were less likely to receive equal pay as compared to their thinner coworkers, furthering the debate regarding discrimination onset by obesity in the workplace.

On the contrary, research conducted by McLean and Moon (1980) suggests that there is not a discrepancy in pay for mature men in the banking field. As they reported, being overweight did not directly correlate to specific salaries of the men studied; however, the research went on to address the issue of mature men. These men had already been employed for a number of years and previous weight was not taken into consideration. As mentioned, these men may have not always assumed an obese image and may have once been thinner when applying for their current position.

In relation to obesity and its effects on salary, a study conducted by Fong and Franks (2007) explored the effects of obesity and obtaining an employee-based health insurance (EBHI) job. Fong and Franks (2007) suggested that people with increased BMI would be discriminated against and less likely to receive a position when applying for an EBHI position. Surprisingly, the study only discovered a small correlation between the two; however, they did discuss how obesity is considered to be a lifestyle choice and not considered to be a disease. Furthermore, they suggested that in the future, if this shall ever change, the employer's views may adversely change as well.

In the same context, the situation regarding obesity as a disease needs to be analyzed. In a study administered by Johnson and Wilson (1995), the aspect of obesity as

a disability was explored. After conducting their study, they discovered that weight-based discrimination was existent in today's society and that it can be considered as a legal matter. Also, they provided that in the future, weight discrimination in the workplace will carry a heavy consequence as race discrimination does, due to the fact that this is being seen more as a disability rather than a lifestyle choice.

Overall, weight-based discrimination in the employment field is prevalent. With the growing demands for longer work days and easier accessible food, obesity continues to rise in the United States. In this paper, it was hypothesized that the perception of overweight internship candidates will be derogatorily upheld and will have a negative effect on their acceptance. In order to test this hypothesis, two resumes were designed, each with a picture representing normal weight and overweight individuals, to see which one the participants preferred. Moreover, the resumes consisted of qualified and unqualified credentials. By utilizing this design, it was hoped that people may be enlightened on the discrimination of weight-based applicants and may provide equality for those who are obese.

## **Method**

### **Participants**

The participants in this study were recruited from the Lindenwood Participant Pool (LPP). The LPP is through Lindenwood University and is a way to draw human participants for research and data in an ethical manor. Seventy-six participants, ranging in age from 18 – 26 years old, were recruited. Of these 76, 27 were men and 47 were women. Subsequently, two of the total 76 participants had to be omitted during analysis due to error in survey completion. Furthermore, the final sample of participants

(excluding the two omitted participants) consisted of 23 Freshmen, 29 Sophomores, 8 Juniors, and 14 Seniors. Moreover, the participants consisted of varying body physiques and the majority spoke English as their primary language. On the contrary, the ethnic background of the participants was Hispanic, Caucasian, African American or other. Potentially, participants will have received extra credit from the following basic lower level classes: ANT 112, PSY 100, PSY 101, SOC 102 and SOC 214. Moreover participants may also receive extra credit for athletic training and exercise classes. The participants were at least 18 years old, or had parental/guardian consent if they were a minor.

### **Materials**

The study included an internship description form (Appendix A), along with two candidates' resumes with photo identification (Appendix B). Additionally, the participants received a survey questionnaire that asked participants to identify the better candidate for the internship (Appendix C). Moreover, other materials included within the study were as follows: sign up sheet B (allowing for participants to sign up for predetermined times arranged by the researchers), two copies per participant of informed consent forms, a short demographic questionnaire (outlining any personal variables of the participant other than what was being tested; see Appendix D), a feedback letter (depicting the nature of the study and its importance), a room to conduct the study (which always consisted of a chair and desk for the participant to partake in the research), experimenters' list of participants (to keep track of each participant partaking in the study), and participants' receipts (provided to the participants in order for them to receive their extra credit for partaking in the study).

## **Procedure**

In the beginning, the participants were given two consent forms, depicting any risk that may be involved when participating in the study. Then, the participants were verbally informed of the instructions of the study. The participants were informed to read the internship description and formulate a basic understanding of the job entailed. Any questions the participants had were answered by the researcher to eliminate any confusion. Next, the participants were given a detailed job description of a particular job related to business. Moreover, two applications with a photo of the applicant were presented to the participant. The participant reviewed the credentials of each candidate and filled out a survey pertaining to the reasons for choosing one candidate over the other.

In order to eliminate the risk of confounds in the study, each picture was the same candidate, of which, in one photo the candidate was of average weight and the other was above average weight. Each photo was representative of the same individual accept for alteration to the individual's weight. The photograph with the above average weight had increased fat on cheeks and neck due to the fact that only the face was pictured in the photograph. Additionally, the average weight individual had decreased fat on cheeks and neck, allowing for bone structure to show.

In order to obtain the photographs, two individuals who had a weight loss of 120 to 130 lbs within a one year span were obtained (either via the internet or from a personal photograph). Furthermore, the credentials of each candidate were of either qualified or unqualified, and each was counterbalanced. In order to achieve this task of counterbalancing, the format was followed:

First, the study included two different sets of photos (two people being illustrated as either above average weight and average weight), set A, which included two pictures of the same person, where As was the label for slimmer version and Bh was the label for heftier version. Moreover, set B included two pictures of the same person as well, where Bs was the label for the slimmer version and Bh was the label for the heftier version. Then, there were two types of qualifications utilized within the study. This included the qualified resume being labeled A and the unqualified resume being labeled B (Note, that the qualified resume was always labeled A and the unqualified resume was always labeled B).

Next, the resumes were arranged in order to have each participant get both types of qualifications but only one version of each person. Specifically, the first participant received qualified (A) profile with slimmer (As) person photograph and unqualified (B) profile with heavier (Bh) person photograph. As for the second participant, he/she received qualified (A) profile with heavier (Ah) person photograph and unqualified (B) profile with slimmer (Bs) person photograph. The third participant received qualified (A) profile with heavier (Bh) person photograph and unqualified (B) profile with slimmer (As) person photograph. Finally, the fourth participant received qualified (A) profile with slimmer (Bs) person photograph and unqualified (B) profile with heavier (Ah) person photograph.

Afterwards, the participants filled out a demographics survey in order to gain an understanding of the participant. The questions on this survey inquired about the sex, age, and body weight of the individual. All names were omitted, and each participant was given a identification number connecting the results of the demographics survey to

the results of the resume survey (Appendix C and D), on the sole purpose of understanding the influence of the participant's perception. All, surveys and demographics sheets were put in a folder by the participant themselves in order to omit the possibility of remembering participants and their surveys.

Finally, the participants were debriefed and informed about the aspects of the study. The participant was fully informed of all the privacy measures taken by the researchers. Additionally, upon departure from the study, each participant was provided a letter of feedback outlining any issues that may have not been addressed in the verbal debriefing process.

### **Results**

Analyses focused on participants' perception of the individual illustrated in the photograph with their choice of candidate for the depicted internship. Furthermore, the perceived stereotypes of obese candidates were analyzed. In order to examine these results, the analyses focused on the participants who received the profile depicting the above-average weight individual with the qualified resume (A) and the average-weight individual with the unqualified resume (B). In order to distinguish between the preferred resume chosen by each participant and whether that choice was of the above-average weight candidate and average-weight candidate, a Pearson Chi-Square test was conducted. The results concluded that participants chose the qualified resume more often regardless of the perceived weight of the individuals depicted in the photograph  $\chi^2(1) = 2.030$  (see Table 1 a for raw scores).

Furthermore, a point-biserial correlation between the candidates who were qualified and above-average weight and the ratings they received on the survey regarding



how the individual perceived was  $r_{pb} = .203$  (Note, on the survey pertaining to the participant's resume choice, ratings were given based off the following scale: 1 indicating strongly agree, 5 indicating strongly disagree, and the sum of the ratings were used in the analysis.

### **Discussion**

As previously outlined, it was hypothesized that young adults are more inclined to show bias towards individuals who are of average-weight when perceiving a candidate for a particular internship related to the field of business. Specifically, when presented with a profile illustrating an above-average weight candidate for an internship paired with qualified credentials and an average-weight candidate for an internship paired with unqualified credentials, the average-weight candidate was hypothesized to be chosen more frequently for the internship than the above-average weight candidate. The results revealed contrary findings. Specifically, the results indicated that participants were inapt to the photo identification paired with the credentials and frequently chose the qualified resume. Additionally, when analyzing the profiles specifically related to the above-average weight candidate paired with the qualified credentials and the average-weight candidate paired with the unqualified credentials, the participants were more inclined to choose the qualified above-average weight candidate over the unqualified average-weight candidate.

Aside from the participants' resume preference, the results pertaining to the survey questions were analyzed. Based on the resume chosen by the participant, the results indicated that candidates who were qualified and above-average weight were

perceived more favorably and receive positive ratings more often than the unqualified average-weight candidates.

The results of this study are contradictory to prior research that had been conducted on weight perception existing in the world today. In reflection to Finkelstein, Ruhm, and Kosa (2005), they discovered that with the sudden increase in wages, there is more pressure to purchase unhealthy foods. Time constraints have influenced the consumption of high-calorie and fatty foods. Consequently, adults resort to purchasing “fast-food” due to the fact that it is quicker and easier than food preparations at home. Furthermore the results of this study contradict the findings of Rothblum, et al, (1988). In, their study, the results pointed to above-average women being discriminated against when applying for a job. These women were viewed more derogatory than their average-weight competition. Lastly, the study conducted by Fong and Franks (2007) in consideration to above-average weight individuals obtaining an employee-based health insurance (EBHI) job is contradicted by these results as well. In their study, they upheld their beliefs that obesity will make it harder for these individuals to obtain EBHI positions in the future even though their research did not provide overwhelming significance.

On the contrary, when reflecting back on the research conducted by McLean and Moon (1980), the results of this study are congruent. When considering their study, they discovered that above-average weight males in the banking industry were not unequally paid when compared to their average-weight coworkers. However, they did note that these men were older and age may have confounded their results due to the fact that many of the men that were studied had been working in the banking firm for a long

duration. Furthermore, the authors discussed the limitation of how the participants' weights prior to their current condition could not be analyzed.

After interpreting this prior research, some limitations in this study can be perceived. Even though the age, facial expression, posture, color of clothing, and facial hair were all controlled for between the same individual, these were not controlled for between the two individuals utilized within the study. Subsequently, the candidates were apparently of differing ages, had differing apparel, and had differing facial hair (Note that between the two candidates, only one had facial hair. Even though this facial hair was the same for the person when they were illustrated as being above-average weight and of average weight, the other individual utilized in the study possessed no traces of facial hair). This confound may have caused a participant to rely on personal preference when considering the potential candidate for the internship.

Furthermore, the pictures themselves were of poor quality. Being that the resolution was poor, the photographs may have been hard to interpret. This may have caused the participant to make their choices based off the credentials rather than being influenced by the photo identifications of the candidates. Additionally, the candidates themselves were a possible confound. After analyzing the photos, a participant mentioned, after completion of the study, that one of the candidates appeared to be less qualified for the position based on his criminal-like appearance. Even though the photo identifications had influence over this participant's choice, it was not valid for the research of weight perception.

Aside from the pictures utilized within the study, other limitations were perceived pertaining to the experiment. By evaluating the region in the world that this study took

place, it can be interpreted that the participants were less inclined to discriminate against above-average weight people due to the fact that the Midwest has a higher frequency of above-average weight people inhabiting it. Unlike the coastal regions, the Midwest is more prevalent to above-weight individuals and this may have biased a participant's choice. On the contrary, limitations of time and funds impeded the ability to obtain a representative sample of the United States as well as a global representation.

Additionally, there were concerns with other limitations in the study as well. Specifically, the labeling of the resumes expressed a concern. Being that the qualified resume was always labeled A and the unqualified resume was always labeled B, there may have been bias. Presumably, it could be suggested that a participant preferred the letter A over the letter B and this may have influenced the participant's choice of a particular resume. Also, the aspect of participant's preference of reading may have been a limiting factor within the study. Consequently, some people do not prefer reading. According to this study, there was influence on reading; however, if the participant did not take the time to read over the questions on the survey, they may have been more inclined to make more spontaneous answers (Labeling 1 or 2 to symbolize their agreeableness or labeling 4 or 5 to symbolize their disagreeableness for all the questions being asked). Finally, the study was limited to candidates of the male gender. This may have proved biased for participants being that some individuals perceive heavier males as possessing a stronger demeanor or being more powerful in nature. Furthermore, these attributes may be perceived more positively and could have biased the participant's resume choice.

Because of these possible limitations to the study, suggestions for future research in obesity discrimination can be outlined. Being that obesity has become such a prevalent aspect of American culture, continued research is needed in order to recognize the issues revolving around this current situation. Furthermore, in order to understand the global perspective of obesity, a study that consisted of participants from different regions of the world may produce a better insight of people's weight perception and the discriminatory aspect of obesity. Different countries hold unique cultural perspectives on weight; the results may be more significant by obtaining participants from different regions of the world. Moreover, the study could be reformatted into a video in order to control for the reading preference. By visually perceiving the entire image of the candidate, the participant's choice may be influenced differently rather than by seeing only photographs of the candidates head and face.

Aside from the regional and imagery limitations, the gender bias must be addressed. In the future, a study could be conducted on how above-average weight women are perceived when paired with their average weight peers. Generally within the United States, above-average weight women are viewed in a more derogatory perspective than above-average weight men. Even though this belief may be stereotypical, future research done on this aspect could potentially provide the extent to which this stereotype is upheld. Furthermore, a global representation could be used in order to discover how above-average weight women are perceived in differing countries.

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**Table 1.a**  
**Preferred Resume \* whether the candidate was**  
**heavy or not**

Count		whether the choice was heavy or not		
		Not Heavy	Heavy	Total
	Preferred Resume A (Qualified)	25	33	58
	Preferred Resume B (Unqualified)	9	5	14
	Total	34	38	72

**Appendix A**  
**Overview of Internship**  
**Internship: Baymount Managerial Company**

**Overview:**

Our interns go at a highly energized pace. From day one you'll learn what it takes to run a successful business and acquire highly marketable skills and experience pertaining to every aspect of operating a business. And it's learning by doing, not by getting coffee or filing all day. Our college interns take on the same challenges as our first and second year full-time professionals. It's a team-based environment where the Enterprise employees are supportive and fun to work with.

**Responsibilities:**

You will be required to elicit motivation and focus in the field of business administration. Additionally, you will have to be able to fulfill a strenuous work load that will require energy and determination. At Baymount, you won't be a glorified gopher getting coffee or filing all day. Our interns go at the same energized pace and take on the same challenges and responsibilities as our Management Trainees.

**Qualifications:**

- Must be a rising Junior or Senior enrolled full time for the upcoming semester in a college or university.
- Must have 6 months of sales (business to business, commission based or quota based) or customer service or marketing or management experience.
- Must have at least a 3.0 GPA
- Must promote a professional in appearance on a daily basis
- Must be organized and creative
- Must project self-confidence and a strong demeanor
- Must elicit intelligence in managerial skills
- Must show discipline and focus
- Must be energetic and enthusiastic



**Appendix B**

*Sample Qualified Resume*

**Resume A**

246 University Dr. • Cambridge • Massachusetts • 17011 • (555) 555-8866

---

**OVERVIEW**

An energetic undergraduate with experience in business administration. A self starter who focuses on results and tries to reinvigorate business ventures by 'thinking outside the box'. Seeking an internship with a company that truly believes that opportunities are limited only by imagination. Fluent in both English and Spanish.

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**EDUCATION**

**Candidate for a Bachelor of Commerce: International Business** (May 2011)

*Harvard University, Cambridge Massachusetts*

School of Busines, Finance major

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**WORK EXPERIENCE**

Intern: Broker's Assistant, (Sept. - Apr. 2007-2008)

**Company: East Coast Financial, Boston, MA**

- Assisted broker with client portfolio composition
- Designed, organized and distributed financial information packages
- Established, organized and maintained clients' files

Sales Manager, (Jun. - Aug. 2006-2007)

**Company: Basic Electrics, Amesbury, MA**

- Increased sales by 25% by implementing numerous innovative marketing programs
- Supervised and trained 25 employees
- Reorganized displays to improve storefront display image

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**SPECIAL SKILLS**

- Keen insight on corporate background
- Strong leadership and managerial experience
- Personable and enthusiastic
- Understanding of basic finance
- Strong sense of comprehension

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**ACTIVITIES**

- Organized fundraising events for business class
- Volunteered for Habitat For Humanity
- City of Amesbury's Young Entrepreneurs Club - Board member
- Honor's Society for Young Business Scholars – Board member
- G.P.A.: 3.7

*Sample Unqualified Resume***Resume B**

54790 Park Place Ln. • Cambridge • Massachusetts • 17011 • (555) 555-8866

**OVERVIEW**

An undergraduate student with knowledge in business ethics. Seeking employment in a business setting to further knowledge of administrative abilities. Willing to work hard and develop an overall sense of creativity and knowledge. Very focused, determined, and uphold an overall creativeness pertaining to business administration.

**EDUCATION**

**Candidate for a Bachelor of Arts of Design** (May 2011)

*Harvard University, Cambridge Massachusetts*

School of Business, Visual Design Discipline

**WORK EXPERIENCE**

Electrical Assistant (Sept. - Apr. 2007-2008)

**Company: Blisteck Electricity, Champagne, MA**

- Developed electrical workings to advance business
- Enabled electrical units
- Developed electrical blueprints

Department Clerk, (Jun. - Aug. 2006-2007)

**Company: RhodeSide Clothing, Festus, MA**

- Promoted sales by offering assistance
- Supervised sports department

**SPECIAL SKILLS**

- Personable with employees and customers
- Establish sound working environment
- Elicits humbleness
- Focused and determined
- Great listener and seeker of higher knowledge

**ACTIVITIES**

- Residential assistant at the dormitory on campus
- Assisted with organizing school bake sale – three years in a row
- Office assistant on campus
- G.P.A.: 3.7

## Appendix C

**LABEL THE RESUME YOU CHOOSE: \_\_\_\_\_ (A OR B)**

On a scale from 1 to 5 please rate your opinion of the candidate.

1	2	3	4	5
<b>Strongly agree</b>		<b>Neutral</b>		<b>Strongly Disagree</b>
1.				This candidate has superior qualifications for the job description: ____
2.				This candidate will work well under pressure: ____
3.				This candidate will be able to handle strict demands and deadlines: _____
4.				This candidate is the best choice for the position: ____
5.				This candidate has the skills to work with other people in a professional manner: ____
6.				This candidate will be the most responsible for the job: ____
7.				This candidate has good, previous job history: ____
8.				This candidate has good communication skills: ____
9.				This candidate has good social skills: ____
10.				This candidate has a professional appearance: ____
11.				This candidate is representative of the overall qualifications needed for the job: ____
12.				This candidate elicits qualities that will promote a sense of professionalism to the company ____
13.				This candidate reflects the overall description of the job ____
14.				This candidate is more suitable for handling stressors within the job ____
15.				This candidate elicits a strong self-esteem that will further their ability with problem solving within the job ____
16.				This candidate handles criticism efficiently ____
17.				This candidate seems insightful and creative ____
18.				This candidate is enthusiastic and handles daily challenges with ease ____
19.				This candidate projects an overall self-confidence in his abilities that will benefit the company's image ____
20.				This candidate has a positive outlook on life and future prospects that will further his ability to perform the job ____

**Appendix D**

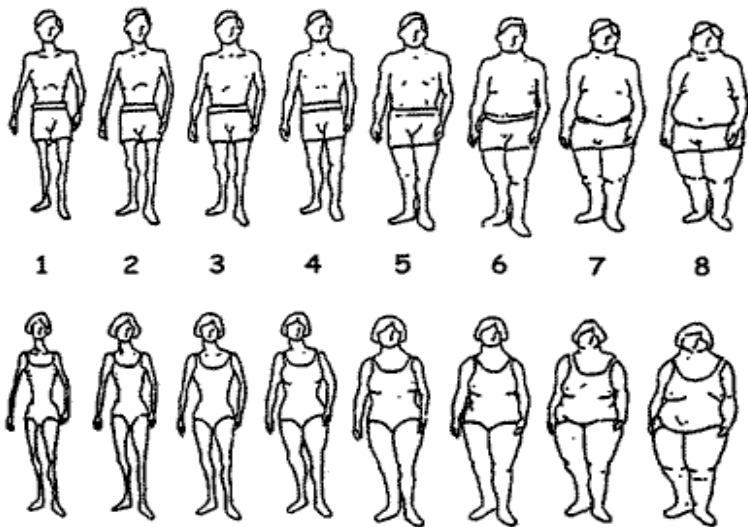
**Demographics**

**Subject ID Number :** \_\_\_\_\_ (Assigned by Researchers)

1. Sex:
  - a. Male
  - b. Female
  
2. Please circle one:
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Other

3. Age range: \_\_\_\_\_ (List)

4. Circle the body type that best suites you (optional):



Males

Females

\*Standard  
 figural stimuli.  
 by Dr. A.  
 Stunkard

5. Please list your ethnicity:
  - a. White/ Caucasian
  - b. Hispanic
  - c. Latino
  - d. African-American
  - e. Native-American
  - f. Other
  
6. Is English your primary language?
  - a. Yes
  - b. No
  
7. Do you have any disabilities that may affect your perception?
  - a. Yes \_\_\_\_\_(please list)
  - b. No

**General Perceptions of Homosexuality in a Small Private University in****The Greater Saint Louis Area**Verenna Huerta<sup>11</sup> and Taylor Morrill<sup>12</sup>

*Homosexuality has long been a major topic of concern among political, social, and religious agendas. Societies have either labeled homosexuality as deviant or non-deviant behavior. This type of categorization has led to many negative assumptions about those who hold a different type of sexual orientation other than heterosexual. According to Pachankis and Goldfried, (2008, p. 3), "Gay male undergraduate students reported a higher fear of negative evaluation and greater social interaction anxiety than did heterosexual students." Students in educational systems who are homosexual, bisexual, lesbian, or transgendered often battle with peer evaluation. The knowledge of students' perceptions, attitudes, and comfort levels on homosexuality can create a base for future studies on the origins of these perceptions. Gaining a better understanding of these variables could possibly produce more effective support programs on campuses for LGBT student communities. The analysis of the general perceptions of homosexuality on a small private university (Lindenwood University) revealed that females had higher comfort levels and more positive attitude than males. The perceptions evaluated in the study reported that in general, students had a positive perspective on homosexuality.*

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In today's mainstream America, sexual orientation has become a more acceptable topic for discussion. "Sexual orientation by definition is an enduring emotional, romantic, and sexual attraction that can range from exclusive homosexuality to exclusive heterosexuality and includes various forms of bisexuality (Dam, DePaul, & Walsh, 2009)". Although sexual orientation is becoming more open, homosexuality is still considered taboo in most American societies.

Homosexuality was once considered a mental disorder classified as *sexual orientation disturbance* (Spitzer, 1973). The push to remove homosexuality as a mental disorder was due to the fact that homosexuality, like heterosexuality is a form of sexual behavior, which is not in itself a psychiatric disorder. Many of the current problems with the non-acceptance of homosexuals lie with persons who continue to think incorrectly that homosexuals, as defined in the second edition of the Diagnostic and Statistical Manual of Mental Disorders, are suffering from a mental disorder (Spitzer, 1973). This misconception can cause a homophobic atmosphere that is both emotionally and psychologically dangerous for any and all persons who identify themselves as homosexuals. According to Meyer (2007, p.6) homosexuals suffer from *minority stress* or the "excess stress to which individuals from stigmatized social categories are exposed to as a result of their social, often a minority, position." Being a sexual minority can subject a person to stress due to having to live in a society whose culture, social structure, and norms do not correlate with their own (Meyer, 2007). An example of this cultural clash between the dominant heterosexual culture and the minority homosexual group is the lack of social institutions, similar to those of heterosexual marriage, allowing for family life and intimacy between two homosexual individuals (Meyer, 2007).

Many homosexuals who have “come out of the closet” (openly announcing themselves as homosexual) are met with daily challenges from society through stigmas, prejudice, and hate. More often than not, many of the challenges take place in school settings especially in high schools and universities. According to Pachankis & Goldfried, (2008, p. 5), “Gay male undergraduate students reported a higher fear of negative evaluation and greater social interaction anxiety than did heterosexual students.” A high percentage of lesbian, gay, and bisexual students reported high levels of verbal and physical harassment due to their sexual orientation and “64 percent reported that they did not feel safe at school (Dam, DePaul, & Walsh, 2009, p.4) For students attending Christian universities, many of those identifying themselves as homosexual, stated that upon the realization of their sexuality, came a flood of emotions including fear, confusion and shame. (Brooke, Dean, Stratton, & Yarhouse, 2009) Also reported in this study was a lack of support by the institution itself, meaning that there were no groups or organizations on the campus that explicitly dealt with homosexuals and bisexuals and their personal needs. According to Davis, Locke, and Saltzburge, (2009, p.8) there is a “need to intervene with sexual minority youth to ensure their mental health and developmental well being.” Due to the social negativity that many persons who fall under a sexual minority experience, “predictions of suicide attempts, suicidal ideation, self harm,” can be inferred on the basis of a person being either homosexual or bisexual. The knowledge of students’ perceptions and acceptance levels on homosexuality can create a base for future studies on the origins of these perceptions. Furthermore, knowing where college students in Missouri stand on the topic of homosexuality could lead to programs

to inform the public on homosexuality, in turn creating a more socially comfortable atmosphere for homosexuals.

## **Method**

### **Participants**

The participants of this study consisted of 106 university students in the greater St. Louis area who attend a small university, Lindenwood University. Researchers recruited participants from the Lindenwood Participant Pool as well as outside of the campus cafeteria located on the second floor of the Spellman building. The students consisted of 56 males and 45 females with an average age of 20.31 ( $SD=2.278$ ). The participants were mainly from North America, Missouri in the United States, and were predominantly single, 94%. The last question of the demographic asked the participant the status of sexual orientation. The overwhelming majority was heterosexual, 91.1%, but approximately 10% either answered no comment, homosexual, or bisexual.

### **Materials**

The materials for this study consisted of a survey (Appendix A), informed consent form (Appendix B), feedback letter (Appendix C), verbal script (Appendix D), description of the study (Appendix E), and ballot-like box. The survey included a demographic section consisting of six general questions that involved the participant's sex, age, country/state of origin, marital status, and sexual orientation. The second portion of the survey included ten questions addressing the participants' individual perceptions on homosexuality as it relates to relationships and general acceptance within public environments. Each question is set to a six point Likert scale ranging from 1, strongly disagree to 6, strongly agree.



**Procedure**

The students who were recruited through the Lindenwood Participant Pool were given two informed consent forms in which to read and sign, with one copy to be returned to the researcher. Next, the participant was given a survey with two sections. The first section consisted of six general questions involving the participant's sex, age, country/state of origin, marital status, and sexual orientation. The second portion of the survey had a group of ten questions addressing the participants' individual perceptions on homosexuality as it relates to relationships and general acceptance levels within public environments. The participants answered the questions using a six-point Likert scale ranging from 1, strongly disagree to 6, strongly agree.

Participants were also recruited at Lindenwood University outside of the campus cafeteria located on the second floor the Spellman building. Tables were set up with dividers so that each participant would have the opportunity to complete the survey in privacy. Clip-boards were also provided to participants who chose not sit behind the confined area of the divider. Upon approaching a potential participant, the researchers introduced themselves and asked him or her if he or she would like to take part in a survey of 16 questions addressing the topic of romantic relationships. The potential participant was also notified that the survey covers a sensitive topic and that completion of the survey was not imperative if the questions arouse any level of uneasiness when answering, and that any concerns or questions that may arise would be answered anytime by the researcher. Once a participant had completed the survey, he or she would place the survey into the ballot box, were debriefed, and given the feedback letter.

## Results

The analyses of this study focused on students' perceptions, attitudes, and comfort levels with homosexuality. Calculating these viewpoints, SPSS was used to conduct an independent t-test, as well as compute the descriptive statistics for the data. In order to compute the data for this study, each question was put on a scale from 1 to 6. If a question was answered with 1, it meant that individuals perceptions, attitudes or comfort levels revealed to be pro-homosexuality, whereas 6 revealed perceptions, attitudes and comfort levels to be anti-homosexuality. There were five questions based on one's comfort level of homosexuality. The scale for comfort level ranged from five to thirty. These two numbers represented the extremes on each end of the spectrum for comfort level. For example, if a score were 5, then that particular individual was considered to be very comfortable as opposed to a score of 30, equaling an uncomfortable level. Furthermore, there were eight questions assessing positive or negative attitudes towards homosexuality. The extremes for the attitude portion was 8 (positive attitude) and 48 (negative attitude). The perceptions portion of the survey was found to be based on societal norms. There were 4 questions in the survey that pertained to perceptions. Perceptions category consisted of questions that were relatively direct in their content, for example, one asked whether one would be okay if their coworker was fired because of their sexuality. Even though that particular participant may feel uncomfortable with homosexuality, he or she may be hesitant to circle 6 (meaning its okay for people to be fired because of their sexuality) due to societal pressure to work on accepting such individuals in work situations.

For the analysis of this study, a t-test was used to compare males' and females' comfort levels, attitude, and perceptions towards homosexuality. For the independent t-test, all 105 participants' data were included. Both comfort level,  $t(97)=.011$ ,  $p<.05$  and attitude,  $t(93)=.020$ ,  $p<.05$  were found to have significance. This significance suggests that females have higher comfort levels and have a more positive attitude towards homosexuality than males at Lindenwood University. There was no significance found with perception level,  $t(94)=.245$ ,  $p>.05$  among males and females. To further analyze the data, a t-test was used to validate our hypothesis. The independent T-test only encompassed data that had "straight" circled as sexual orientation, 96 participants. The results again revealed significance for comfort level,  $t(87)=.0515$ ,  $p<.05$  and attitude,  $t(82)=.018$ ,  $p<.05$  but not for perception level,  $t(83)=.135$ ,  $p>.05$ . The significance for comfort levels and attitudes repeated the implication that females had higher comfort levels and more positive attitudes than males.

### **Discussion**

The study addressed three levels concerning acceptance of homosexuals: comfort levels, attitudes, and perceptions. Although it was a descriptive study, analyses were able to be made addressing the above criteria on the basis of sex. In conclusion, it was found that men were significantly less comfortable around homosexuals and tended to have more negative attitudes towards homosexuality in general than women. The perceptions category revealed no statistical significance and it was concluded that this was due to the content of the questions under this category. The statements upon which the participants were to agree or disagree, involved social and societal stigmas that would have had to

have been challenged in order to evoke strong negative or positive perceptions of homosexuality.

Goldfried and Plachankis (2009), in their study addressing the gay males and their social anxiety in social situations around other heterosexual males found that in many of these all-male situations, homosexuals reported higher levels of fear and anxiety. The fact that the results of this study revealed heterosexual males to be less comfortable and have higher negative attitudes than women towards homosexuality, is a further testament to the rationality behind these reports of fear and anxiety. It can be inferred that the stigma behind homosexuals being psychologically sick as Spitzer (1973) explained in his paper involving homosexuality as a disorder in the DSM II, has changed as the all around attitudes and perceptions of homosexuality fell below the middle range between the two extremes of pro-homosexuality and anti-homosexuality. Due to the scores for more positive perceptions and those conveying more comfort around homosexuals being given a lower numerical value, it is statistically significant that the means of the values were below the middle range of the two extremes, thus, in this study, illustrating that the scores for both males and females were more pro homosexuality than anti homosexuality.

Some interesting aspects pertaining to the study were observed by the researchers as the survey was being handed out and taken. First, participants who took the survey through the Lindenwood Participant Pool revealed some interesting differentiations between the sexes in the time it took to complete the study. Most males seemed to take a few minutes longer than the females to complete the study. Some participants had some difficulty with the terminology used on the study as well as identifying some portions, such as the “marital status” portion, as being vague and unclear. Many participants added

in categories such as “straight” when “heterosexual” already existed as well as an “engaged” and “in a relationship” category under the “marital status” portion. When recruiting outside of the Lindenwood Participant Pool, it was observed that the level of discretion varied significantly as many persons chose to sit behind dividers or even take the survey into a corner of the room while others were quite content filling the survey out right in front of the researchers. It would be interesting to see if there is significance between such behaviors and how individuals report their attitudes and perceptions on similar sensitive subjects.

The study itself had a few limitations that may have both skewed and perhaps limited the possibility for further statistical analyses to be completed. To begin with, the sample size of 105 students was fairly weak, as well as a major portion of the participants recruited were from the Lindenwood Participant Pool which involved students from selected psychology, sociology, anthropology, and athletic training courses. This was hardly a strong representation of the university and future studies might find different locations around school so that students in all majors might be able to participate. The demographic portion of the survey, as mentioned before, had vague descriptions and lofty terminology. A category specifically for non-married couples would be added rather than the confusing “never married” category, and general terminology such as “straight” and “gay” would be added to “homosexual” and “heterosexual” to further clarify their meanings.

When recruiting outside of the cafeteria, many of the participants knew the researchers and their stances on the subject previous to taking the survey, and this knowledge may have induced social pressure on the way they answered the questions on

the survey thus potentially skewing the results. This obstacle would have been very difficult to avoid due to the small social environment of the university.

Future studies on the topic of individuals' perceptions, attitudes, and comfort levels with homosexuality could compare the results of those found on Lindenwood University with other universities in the region, state, or even country. Due to the content of the study and the research found on the necessities for support groups to be active on campuses and within scholastic institutions, it would be important to relay the results found here to this particular institution's Gay/Straight Alliance for their potential evaluation of the general social atmosphere regarding the subject of homosexuality.

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## **Appendix A**

**PLEASE FEEL FREE TO SKIP ANY QUESTIONS YOU FEEL UNCOMFORTABLE WITH.**

Male/Female:

Age:

Country of origin:

State originally from, if in US:

Marital Status:

1. Single, 2. Never Married, 3. Married, 4. Separated, 5. Divorced, 6. Widowed

Sexual Orientation:

Homosexual, Heterosexual, Bisexual, don't know, no comment



**PLEASE STATE HOW MUCH YOU AGREE OR DISAGREE WITH THE  
FOLLOWING STATEMENTS**

1. If I were on a sports team, I would be bothered if one of my teammates was homosexual.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
2. I am okay with having a friend who is in a romantic relationship with the same sex.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
3. I would feel uncomfortable if one of my professors was homosexual.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
4. Same sex relationships are less meaningful than opposite sex relationships.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
5. I would attend a Gay Pride Parade if my friend asked me to attend.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
6. Same sex bars/clubs would be okay in my city.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
7. I would be okay if one of my coworkers was fired due to him or her being homosexual.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**
  
8. A man and a woman is the only acceptable romantic relationship.  
**1strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**

9. Since you need a man and woman to procreate (have a child) any relationship outside of a man and a woman is pointless.

**1 strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**

10. Upon recruitment, military personnel ought to ask the sexual orientation of a potential recruit.

**1 strongly disagree 2 disagree 3 mildly disagree 4 mildly agree 5 agree 6 strongly agree**

**Appendix B**

## Informed Consent Form

I, \_\_\_\_\_ (print name), understand that I will be taking part in a research project that is designed to study students perceptions on romantic relationships. If I agree to participate, I will be given a short questionnaire addressing the topic mentioned above. The survey contains sensitive material and I may choose not to answer any question I feel uncomfortable with. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that the data obtained from this study will only be available for research and educational purposes only. I understand that any questions I may have regarding this study shall be answered by the researchers involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

\_\_\_\_\_  
(Signature of participant) Date: \_\_\_\_\_

\_\_\_\_\_  
(Printed name of participant) Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature of researcher obtaining consent)

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## Appendix C

### Feedback Letter

Thank you for participating in our study. The survey was used in order to determine students' perception and acceptance levels of homosexuality in Missouri who attend a small university such as Lindenwood University. Please note that we are not interested in your individual answers, we are only interested in the answers of a large group as a whole, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Here are two links to support groups in the Greater St. Louis area that will help with any other concerns you may have with the subject of homosexuality as well as other alternative romantic relationships and lifestyles: [www.findmycenter.com](http://www.findmycenter.com) and [www.growingamericanyouth.org](http://www.growingamericanyouth.org)

Thank you again for your valuable contribution to this study.

Sincerely,

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### **Appendix D**

Script when recruiting participants:

“Hello. How are you doing today? My name is \_\_\_\_\_ and I was hoping you could take a short 16 questions survey on romantic relationships for my research psychology class at Lindenwood University. The questions do address a sensitive topic, so if at any time you feel uncomfortable, you are welcome to either skip that question or stop the survey with no penalty. Thanks for all your help.”

## **Appendix E**

Woman to Woman?

Man to Man?

In this study you will be asked to complete a short questionnaire about perceptions of romantic relationships. This study does involve a sensitive topic. The entire process should take no more than 10 minutes of your time.