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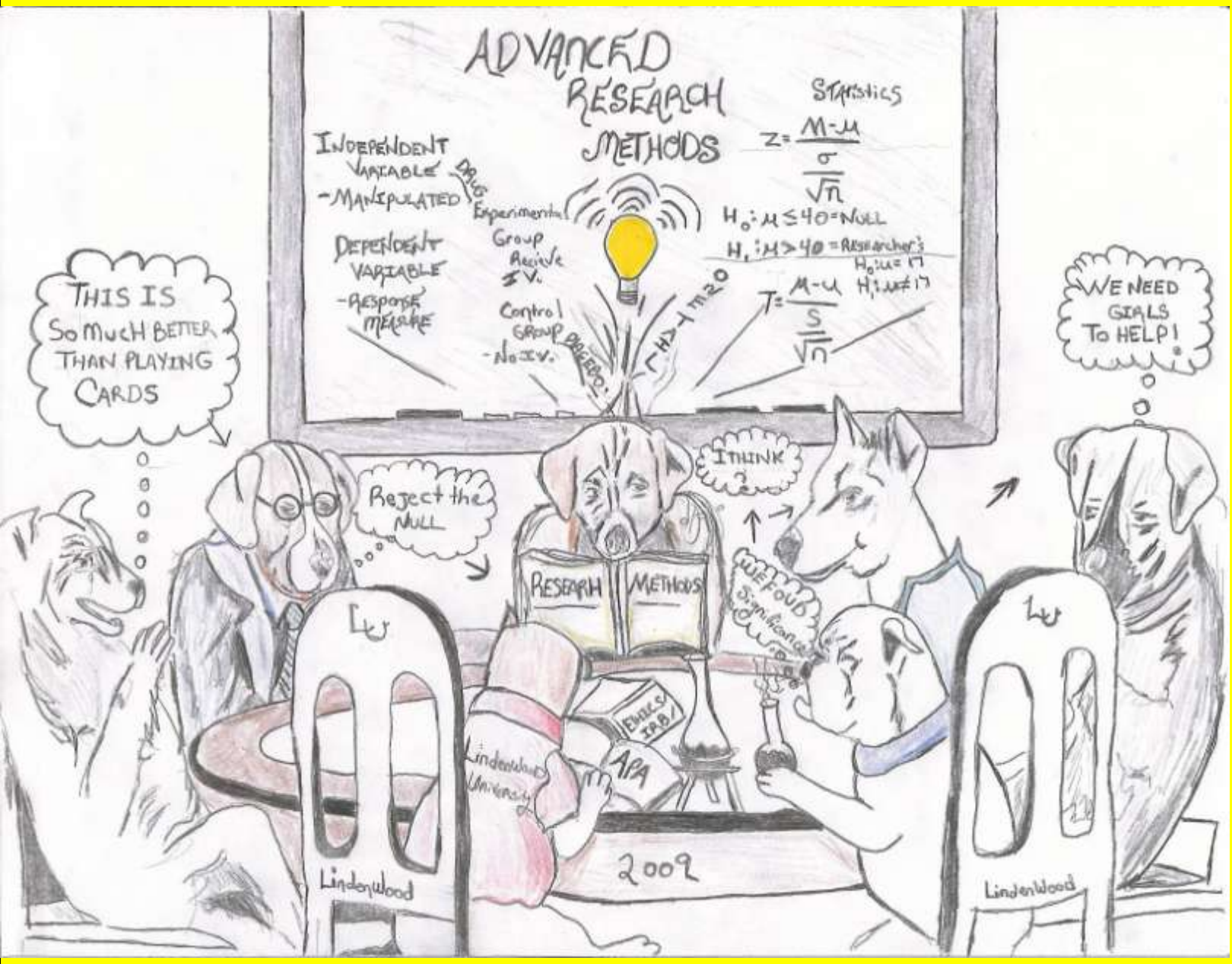

Spring 2009

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Prologue

Every semester in this course, students come up with a variety of original research topics drawing from assorted areas in psychology. However, I cannot recall a semester in which the individual projects have been this unique and diverse in topics as this one. This semester more so than any before, the projects reflected the personal interests of the researchers involved, and we all learned a great deal from each other because of it. I am very proud of the students who put their hearts and souls into their respective projects, and I am certain that you will make new discoveries as well, as you read through this collection of research papers. Many of the students from this class also presented their research findings at the Fifth Annual Missouri Undergraduate Psychology Conference hosted by Lindenwood University and won awards for their presentations.

This semester's journal cover was designed by Channon Chazelle. Many thanks go to Rachel Rogers, who served as course tutor for this semester and to Chelsea Schumacher, who graciously served as editor for this journal.

Last but not least, we have reserved a little room at the end of this journal to publish a final paper written by Danielle Merli and Jamie Zagar, who completed their project this semester in their Senior Research Project class.

Michiko Nohara-LeClair

Course Instructor

The Power of the Beat Impacting Human Emotion

Kelsey Anderson and Mandy Dion

The main objective of this study was to examine the effects that music would have on emotions when a song has lyrics and when it does not. It was hypothesized that if a song is played without lyrics then it will invoke a different emotion than if the exact same song with lyrics were played. There were a total of 70 participants who were recruited from the Human Subject Pool. After retrieving the data and observing the results, there was a correlation between emotions and songs played with lyrics and there was a different correlation of emotions with the songs played without lyrics. The conclusion was that songs with lyrics had a positive effect on human emotion.

Many emotions can occur when listening to music. Some of the basic emotions include; happiness, sadness, love, rage and even inspiration. All of these different emotions can be invoked by music in different ways. Two ways are through either choosing to play a song with lyrics or without. Many different experiments were done involving music and emotion and the following information helped to give a better understanding of the research done involving both music and emotions.

In an experiment done by Laukka and Juslin (2007), they compared music performances and vocal expressions from emotions trying to recognize abilities from young and old adults. The researcher assessed the recognition of discrete emotions and emotion intensity. The emotions that the researchers measured: anger, disgust, fear, happiness and sadness. Some age-related differences were also evident in the listeners' ratings of emotional intensity. Laukka and Juslin found age-related differences in emotional recognition from vocal expressions and music

performances (Laukka & Juslin). The differences seem to been emotion-specific with older adults being less accurate than their younger counterparts in recognizing negative emotions but not in recognizing positive or neutral expressions.

A second article by Robinson (1994) is about the relationship of the expression and the arousal of emotions by music. The main goal of this study was to determine whether there was connection between music expression and arousal. According to some theories of musical expression, the basis of which individuals show expressive feelings to music have little to do with the arousal of emotion within the audience (Robinson). The study conducted by McCaffrey (2008) was made out of several individual studies in which music was proven to help various people in a struggling situation. First, she recognized that music was typically used in traditions and ceremonies. Next, she further studied the effects music had on patients in nursing homes or that were undergoing surgery. She then stated that "music gave the patients a feeling of comfort and peace while helping reduce stress and anxiety" (McCaffrey, 2008, p. 41). In one of the many studies, the researcher used classical music to help lower pain experienced by many older adults. The music significantly reduced the amount of pain experienced (McCaffrey).

Beebe's study (2009) was based on GIM (Guided Imagery and Music) Therapy. The GIM is an expanded state of consciousness for music imaging. Looking all the way back into the past hundred years, music was used to help those dealing with depression, insomnia, schizophrenia, and even Post Traumatic Stress Disorder (PTSD). Beebe decided to test the theory within her own study and had the patients listen to classical music for over a half hour. She then asked them to describe their thoughts and feelings. She chose a from a music selection based on who the patient was which had a major impact on the imagery episodes (Beebe).

In the article written by Bishop, Karageorghis and Kinrade (2009) the researchers observed how music could influence emotions on athletes' reaction time performances. Athletes volunteered for the study and were competitive on the incentive to win either first, second or third. The main focus of this study was to examine the behavioral consequences of listening to music during an athletic event (Bishop, et al.). The results showed that music listening may be a beneficial way for athletes to have a positive and aroused mental state with fast tempo and to maximize their performances.

A study that was done by Scherer (2004) researched the different emotions that may have been induced by music. Suggestions were made of new ways that can measure affective states that are caused by music (Scherer). The three major reaction components of emotion were observed which are: physiological arousal, motor expression and subjective feeling. The results had shown that many of the techniques of inducing music have shortcomings and inappropriate instruments can lead to missing essential data and prevent any comparability of results. (Scherer).

Katagiri (2009) did a study of music's effects on children with autism while they learned. Due to the children's impairments they often struggle with communication and social behaviors. She played specific music in the background while she taught the children hoping that the association would improve and speed up their learning process. Katagiri believed that music has a strong impact on emotions and will therefore help the autistic children learn emotions. She found that all of the students improved greatly in their understanding of the emotions when they listened to the background music.

The purpose of the present study was to help determine whether or not having the lyrics to a song affects the emotion people feel when listening to a particular song. A song played without lyrics would invoke a certain emotion, and a similar song by the same artist, with lyrics, would invoke a different emotion. Each song would be given either with the lyrics or without but not both to each participant. We hypothesized that the song played without giving the lyrics would invoke a different emotion than the song played that contained lyrics in the music.

Method

Participants

The participants in this study consisted of 70 university students, both male and female, attending Lindenwood University. The participants were recruited from the Human Subject Pool on the Lindenwood University campus. Each participant, if taking the appropriate classes, which were: PSY 100, PSY 101, SOC 100, SOC 214, and ANT 112. The people who were enrolled in the specified classes received extra credit points towards their courses. No other compensation was given in our study. There were a total of 70 participants, 19 were men and 51 were women. Of those 70 participants 20% were 18 years old, 39% were 19 years old, 20% were 20 years old, 7% were 21 years old, 6% were 22 years old, 4% were 23 years old, 1% was 26 years old, 1% was 28 years old and 1% was 29 years old. The mean age of the participants was 19.86 years old and the standard deviation was 2.122. Of the 70 participants, 20% chose hip-hop as their top genre and 19% each chose alternative or country as their top choice. For the participant's second favorite genre, 23% chose rock and 21% chose rap. As their third top choice, 19% of the participants chose pop music.

Materials and Procedure

The participants were asked to gather in a single room with tables and desks, where they were then given an informed consent form (see Appendix A) and demographic survey to fill out (see Appendix B). When the students entered the classroom specified, they were asked to sign the sign in sheet. Then they were given two informed consent forms to fill out; one for themselves and one for the experimenter. Then the participants were given their experiment ID number along with their demographic survey. In the classroom the experimenters placed a Hewlett Packard (HP) laptop on the table and inserted a Memorex Compact Disc that had specific songs on it that were used for the study. The two different songs chosen were: Strangers in the Night by Frank Sinatra (1966) and Standing on the Corner by Dean Martin (1964) either with lyrics or without. An emotional survey (see Appendix C) was provided which consisted of ten different emotional feelings directed towards the two different songs which were to be ranked based on emotion from the chosen two songs that were given; one with lyrics and the other without lyrics. After they were done filling out the emotional rating survey they handed them into the experimenter, who then gave them their participant receipt so that they could collect their bonus points.

The classroom setting was chosen so that the participant could have a quiet, isolated environment to listen to either Strangers in the Night or Standing on the Corner with or without lyrics through a pair of Apple headphones. As they left the classroom, the experimenter gave them a feedback letter (see Appendix D) and debriefed them on the purpose of the experiment. Also, participants were invited to leave their name and number if they were interested in obtaining results of the research. Participants were then dismissed. Once the surveys were

collected, the experimenters scored the surveys and analyzed the data through the SPSS that they collected.

Results

The hypothesis was that a song played without lyrics would invoke a different emotion than the exact same song with lyrics was played. (See table A) The emotion that occurred the most as the top choice for song A, which was Strangers in the Night, with lyrics was love, 56% of the participants chose this answer. When the same song was played without lyrics 25% of the participants chose love, and another 25% chose compassion of the 34 participants. For the second ranked emotion, 36% participants chose compassion for the song with lyrics while 21% chose love for the song without lyrics, along with 17% who chose happiness. The third ranked emotion most commonly picked was happiness, 39% participants with lyrics and 32% ranked compassion for the song without lyrics. For song B, which was Standing on the Corner, 56% of the participants ranked happiness as the first emotion, and only 35% with lyrics chose happiness while 29% chose love. 28% ranked inspiration as the second ranked emotion invoked from the song without lyrics while 32% of the participants ranked love as the second highest emotion. For the third ranked emotion 29% of the participants both chose compassion most frequently for both with and without lyrics.

Discussion

After reviewing all of the data it was found that there was still a common trend of the top three emotions invoked despite if the song was played with the lyrics or not. For both songs the top three emotions were Love, Compassion, and Happiness. These three emotions were ranked in the top three with the most frequently occurring choice: mode. Both of the songs were older

songs most of the participants were not familiar with because the experimenters did not want any personal memories of the songs to influence their decisions of the emotions. The songs were both slow paced relaxing and soothing. The study could have been improved if there were a larger number of participants. It also may have been dramatically changed if we had picked different songs or a completely different genre of music. It was found that these particular styles of music were linked to the emotions people associate with love and romance, however if songs from the rap genre were played perhaps different emotions would have been invoked. There may have been similarities because the songs were very similar sounding and perhaps after listening to one song with or without lyrics they may have felt the same way to the next song. Our limitations may have had an effect on our participant's choices because we already asked them to rank their favorite music on the demographic survey and maybe another two ranking questions was overwhelming.

Our results fit in with the previous research that we analyzed because we were interesting in finding a relationship with music and emotions. Our research was related to the study done by Laukka and Juslin (2007) because they were trying to recognize abilities of expressions from young and old adults. We were also interested in discovering what our emotions have to do with music. Our study also ties into the study done by Robinson (1994) quite well because they were searching for a relationship between expression and arousal of emotions by music. Their study was the most related to ours and we used their study to guide our research.

Limitations of our study were the fact that we used two songs that could not be given a clear genre and they were both very similar. This may have had an effect because participants may have been confused or unaware of the music. The songs were also listened to through

headphones. Since they listened to the music through headphones the volume may not have been constant and could have been too loud for them to clearly hear the words. Also, the volume could have had an effect on their emotional state because their heart rate may have changed due to loud music. Our sample may have been biased because we had a lot more women than men. This may have affected our results because the women could possibly feel different towards the genre of music than men would.

In the future we would change the emotions we chose because there was too many and most of them invoked a positive emotion rather than a more negative emotion. Next time we would also choose songs of different genres, ones that people may be more familiar with. Also for further research purposes we would test more participants and a broader range of participants. We would take our study further than Lindenwood University campus to get a larger more unbiased sample of individuals. If our study had different song genres and choices, different emotions and more participants our results may have been able to more significance in our study. If further research is going to be done we suggest that the above changes be made to ensure a more effective study related to human emotions and their effects from music.

References

Beebe, L.H. (2009). Guided imagery and music: Using the bonny method to evoke emotion and access the unconscious. *The Journal of Psychosocial Nursing and Mental Health Services, 47,* 29-33. Retrieved April 9, 2009, from Academic Search Elite.

Bishop, D.T., Karageorghis, C.I., & Kinrade, N.P. (2009). Effects of musically-induced emotions on choice reaction time performance. *The Sport Psychologist, 23*, 59-76. Retrieved April 22, 2009, from Academic Search Premier.

Katagiri, J. (2009). The effects of background music and song texts on the emotional understanding of children with autism. *Journal of Music Therapy*, 46,15-32. Retrieved April 24, 2009, from Academic Search Elite.

Laukka, P., & Juslin, P.N. (2007). Similar patterns of age-related differences in emotion recognition from speech and music. *Motivation & Emotion, 31*, 182-191. Retrieved April 10, 2009, from Academic Search Elite.

Martin, D. (1964). Standing on the corner. Dino: the Essential Dean Martin [CD].

McCaffrey, R. (2008). Music listening: Its effects in creating a healing environment. *The Journal of Psychosocial Nursing and Mental Health Service*, *46*, 39-44. Retrieved April 9, 2009, from Academic Search Premier.

Robinson, J. (1994). The expression and arousal of emotion in music. *Journal of Aesthetics & Art Criticism, 52*, 13-22. Retrieved April 11, 2009, from Academic Search Elite.

Sherer, K.R. (2004). Which emotions can be induced by music? What are the underlying mechanisms? And how can we measure them? *Journal of New Music Research, 33*, 239-251. Retrieved April 20, 2009, from Academic Search Premier.

Sinatra, F. (1966). Strangers in the night. Strangers in the Night [CD].

Author Note

There are many people we would like to thank us for helping us with our project and putting forth the time and effort that they did. First of all, we would like to give a special thank you to Dr. Nohara-LeClair for helping us polish up our paper and for providing any assistance we required. We would also like to thank the HSP office and our classmates for critiquing our work. Last of all, we would like to thank all the student's who participated in our study throughout the semester.

For further inquiry about the research we conducted please contact Kelsey Anderson (847) 912-3525 or Mandy Dion (636) 627-1260.

Appendix A

Informed Consent Form

I,_____(print name), understand that I will be taking part in a research project that requires me to complete one short questionnaire and listen to 6 genres of songs and circle the emotion I feel best describes the music best. 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 should not incur any penalty or prejudice because I cannot complete that 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 date 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 consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of Participant)

_____ Date: _____

(Signature of Researcher obtaining consent)

Student Researcher's Names and Numbers:

Kelsey Anderson (847) 912-3525

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Supervisor:

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Course Instructor

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Appendix B

Demographic Background Survey

Please fill out these questions.

Age (in years)_____

Sex: Female Male

Favorite genre of music? (rank, 1 being the best and 12 least favorite)

___Alternative

___Classical

___Country

___Heavy Metal

___Hip-Hop

___Indie

___Oldies

___Pop

___Rap

___RnB

___Rock

___Other:_____

Hearing impaired?

YES NO

If yes, do you need a hearing aid?

YES NO

Appendix C

Feedback Letter

Thank you for participating in our study. The songs were used to distinguish which emotion people link to a particular type of genre of music and to see if the lyrics influenced the participant's rankings. The researchers hypothesized that if a song was played without lyrics it would invoke a certain emotion, while a similar song by the same artist, with lyrics, would invoke a different emotion. The purpose of this study was to help determine whether or not people actually comprehend the words in a song and were touched emotionally by the words or if they simply listen to the beat of the music. We are interested in these findings because we find ourselves enjoying some music that may have lyrics that we do not particularly care about or that would make us feel the same about a specific song.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of people, 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.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:
Kelsey Anderson (847) 912-3525
Mandy Dion (636) 627-1260

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

Appendix D

Rank the ten basic emotions: ID #_____

(One being the most applicable and ten being the least)

*Use each number only once per song.

Song A(L);	Song B(N);
___Compassion	___Compassion
___Disappointment	___Disappointment
___Emptiness	___Emptiness
___Frustration	___Frustration
___Happiness	___Happiness
___Inspiration	___Inspiration
___Loneliness	___Loneliness
___Love	___Love
___Rage	___Rage
___Sadness	___Sadness

Appendix E

Rank the ten basic emotions: ID #_____

(One being the most applicable and ten being the least)

*Use each number only once per song.

Song B(L);	Song A(N);
___Compassion	___Compassion
___Disappointment	___Disappointment
___Emptiness	___Emptiness
___Frustration	___Frustration
___Happiness	___Happiness
___Inspiration	___Inspiration
___Loneliness	___Loneliness
___Love	___Love
___Rage	___Rage
___Sadness	___Sadness

Appendix F

Rank the ten basic emotions: ID #_____

(One being the most applicable and ten being the least)

*Use each number only once per song.

Song A(N);	Song B(L);
___Compassion	___Compassion
___Disappointment	___Disappointment
___Emptiness	___Emptiness
___Frustration	___Frustration
___Happiness	___Happiness
___Inspiration	___Inspiration
___Loneliness	___Loneliness
___Love	___Love
___Rage	___Rage
___Sadness	___Sadness

Appendix G

Rank the ten basic emotions: ID #_____

(One being the most applicable and ten being the least)

*Use each number only once per song.

Song B(N);	Song A(L);
___Compassion	___Compassion
___Disappointment	___Disappointment
___Emptiness	___Emptiness
___Frustration	___Frustration
___Happiness	___Happiness
___Inspiration	___Inspiration
___Loneliness	___Loneliness
___Love	___Love
___Rage	___Rage
___Sadness	___Sadness

Table A

	Song A (Strangers in the Night)		Song B (Standing on the Corner)	
Top emotion	With lyrics	Without lyrics	With lyrics	Without lyrics
First	Love= 20/36 (.555%)	Love=9/34 (.265%) Compassion=9/34 (.265%)	Happiness=12/34 (.353%) Love=10/34 (.294%)	Happiness=20/36 (.555%)
Second	Compassion=13/36 (.361%)	Love=7/34 (.206%) Happiness=6/34 (.176%)	Love=11/34 (.324%)	Inspiration=10/36 (.278%)
Third	Happiness=14/36 (.388%)	Compassion=11/34 (.324%)	Compassion=10/34 (.294%)	Compassion=10/36 (.278%)

Does Hard Work Pay Off?

Channon Chazelle and Kristen Gravlin

The purpose of this study was to determine if relationships exist between a student's level of work ethic, whether or not he or she pays for school, and his or her GPA. The participants were 83 undergraduate students from Lindenwood University's Human Subject Pool, Plato's Closet, and various colleges in the St. Louis area. To study this relationship, a survey was administered inquiring about the participants' opinions towards working, their GPA, and amount paid for school. Upon analyzing our data, no strong relationships were found between level of work ethic and amount paid for school or GPA and amount paid for school, but relationships were found between GPA and work ethic, GPA and amount of scholarship, and hours spent working on homework and work ethic.

Among individuals, there is a wide variety in attitudes towards work. Many studies have been performed measuring work ethic. Work ethic is defined as the belief that work itself is as important and fulfilling as the end result (Dictionary.com, 2009). A person with a high level of work ethic is typically said to value hard work and portray the personal qualities of honesty, industriousness, and integrity (McCortney & Engels, 2003). This study was designed to measure work ethic in undergraduate college students, and to relate this value to the amount of money one pays for his or her tuition. We suspected a correlation would exist between these two variables.

Numerous studies have been conducted in order to test work ethic among working adults, but few have been designed to specifically address college students transitioning into the workforce. One such study of adults related work ethic to welfare in America. Tang and Smith-Brandon (2001) divided their participants into three groups: welfare recipients (Group 1);

welfare recipients in training programs (Group 2); and employed past welfare recipients (Group 3). The researchers then administered surveys assessing the three groups' work ethic, income, and job tenure. Work ethic was measured by using the Protestant Work Ethic Scale (PWE). PWE was originally developed in 1905 by Max Weber (as cited in Cokley, et al.) and stressed the importance of work, self-discipline, and responsibility. Isonio & Garza (as cited in Cokley, et al.) view PWE as reflecting hard work, having the motivation to do well, and consistently moving to make goals that last throughout life. The results of the study showed that individuals in the groups receiving welfare (Groups 1 and 2) had little work experience, low income, and low endorsement of the PWE. The participants in Group 3 were found to have higher education levels, more income, and longer job experience. They also displayed the highest level of Good, Respect, Power, and Budget (Tang & Smith-Brandon). The findings of this study showed that those not receiving money have a higher work ethic, so this led us to our hypothesis that students paying for their own school will have a higher sense of work ethic than those not paying themselves.

A study conducted by Cohen (1985) investigated the effects of Protestant Work Ethic on educational and occupational success. The study compared work ethic to high school GPA, educational and occupational aspiration, educational and occupational attainment, and income. To determine the level of Protestant Work Ethic, the researcher asked participants what criteria they used when choosing a job. Those who answered that the enjoyment of the work itself was most important expressed Protestant Work Ethic. The results showed that work ethic was positively correlated to GPA, educational and occupational attainment, and income. The

researchers also found that people interested in the enjoyment of work generally chose to complete more schooling than those uninterested in the enjoyment of work (Cohen).

Another study that looked at work ethic examined work-related characteristics to test the sense of work ethic in Canada. The participants took a survey inquiring about work ethic, attitudes about working, and background information. Work ethic was assessed by determining the amount of Protestant Work Ethic, work involvement, contemporary work ethic, individualism, work individualism, and loyalty (Ali & Azim, 2001). The results of this study showed that the commitment of Canada's employees was significantly low. They scored low on general individualism, but scored moderately on commitment involving work-related individualism. They also scored low in the items that compared leisure time and hard work, reporting that they preferred leisure time more than work. The results indicated that from the measures of Protestant work ethic, work involvement, contemporary work ethic, individualism, work individualism and loyalty, the individuals in Canada may focus less on work ethic than other places (Ali & Azim).

A study by Pino and Smith (2004) was designed to test how academic ethic differs in race and whether or not academic ethic is related to GPA. In a previous study, Rau and Durand described those possessing high academic ethic as placing their studies above social activities and studying on a daily basis in a disciplined fashion (as cited in Pino & Smith). To test their hypothesis, Pino and Smith surveyed 15,000 students at Georgia Southern University. Their results indicated that black students were more likely than white students to possess academic ethic, but on average black students had a lower GPA than white students. In general, however,

students possessing academic ethic had higher GPAs and were more likely to be female than those without academic ethic (Pino & Smith).

Another study measuring work ethic compared Protestant Work Ethic in Australians and Sri Lankans. The hypothesis was that, compared to Australia, Sri Lanka would have a low level of work ethic because they are economically depressed and have lack of achievement due to lack of motivation (Niles, 2001). In this study, the researcher used university students from Australia and Sri Lanka. The participants consisted of 134 Sri Lankans and 125 Australians ranging in age from 17 to 47 years old. The researchers had the participants' complete questionnaires, which displayed various questions and measures on work ethic. Both questionnaires were met to fit the participants' needs culturally, so they understood them completely. The questionnaires had statements involving work ethic on a rating scale. These included statements such as ones that ask whether or not the participant agrees that hard work is fulfilling and can enable a person to succeed. The participants rated each item from 1, indicating they strongly agree, to 4, indicating they disagree with the statement. On the total rating scale, Australians scored higher than Sri Lankans, but the difference between them was not significant (Niles). The findings show that culture may not be as big of an influence as other factors in determining work ethic.

Another point of interest concerning this study is whether or not work ethic has an effect on GPA. A previous study tested for a correlation between grades and the amount of hours a student spends studying. Students were asked three times in a semester about the amount of time they spent studying and their grades. Surprisingly, no correlation between the amount of time spent studying and grades was found, although they did find a correlation between attendance and grades (Rau & Durand, 2000).

A study by Duckworth and Seligman (2005) measured the relationship between self discipline and IQ. They wanted to see if students are more likely to progress in school if they have high self discipline or if IQ mainly determines their success. The participants consisted of 198 eighth grade students from various ethnic backgrounds and social economic statuses. The first study conducted in 2002 examined self-discipline by giving questionnaires to students, parents and teachers. After this, they did a second study on IQ the following year including data from many different tests the adolescents did in the past, which helped score academic performance. The researchers found that the more self-disciplined the adolescent was, the more likely he or she would do better not only in school grades, but was also more likely to have better attendance and attend more rigid academic high schools as well. It was also found that IQ did not have as significant an effect as self-discipline when regarding an individual's ongoing progress in school. In the end, this study found that students with high self discipline were more likely to be able to improve their grades over time whereas IQ did not have as much of an effect (Duckworth & Seligman).

From the previous research, we developed a study designed to measure work ethic in undergraduate college students and relate this value to the amount of money they pay for their tuition. Tang and Smith-Brandon's (2001) study indicated that those who were not receiving outside funds had a higher level of work ethic and had higher education levels, so we suspect that work ethic and whether or not a student pays for her or her school will be positively correlated. Duckworth and Seligman's (2005) study indicated that self-discipline strengthens students' performance in school, so we also hypothesized that work ethic will be positively correlated with GPA.

Method

Participants

Our participants consisted of 83 undergraduate students from the St. Louis area. Of the 83 participants, 50 of the students were recruited from the Human Subject Pool (HSP) at Lindenwood University and received bonus points in their introductory psychology, anthropology, and sociology classes. The remaining 23 participants were coworkers at Plato's Closet, a clothing store in Florissant, MO, who attended the University of Missouri-St. Louis and Florissant Valley Community College, and students from Meramec Community College recruited by word of mouth. These participants received no form of compensation. Out of 83 participants, 30 were male, 52 were female, and one gave no response. 33 were freshman, 13 were sophomores, 23 were juniors, and 14 were seniors. Students recruited came from 29 different majors. No data were omitted.

Materials

Participants from the HSP were tested in a quiet area of Lindenwood University's Butler Library at a small table. The remaining participants were tested at a table in the back room of Plato's Closet or at a quiet table at the researcher's house. Each participant received two informed consent forms explaining his or her rights as a participant. The survey given asked for general information such as gender, class in school, and GPA, as well as questions designed to assess the level of work ethic they possessed, the amount of time spent on various activities such as work or sports, and how much of the participant's tuition was paid for by his or herself, his or her parents, and scholarships (see Appendix A). The questions assessing the level of work ethic were taken from Lindsey Geeding's work ethic study and asked participants to rate the extent to

which they agreed with statements such as "There are few satisfactions equal to the realization that one has done his best at a job," and "I feel uneasy when there is little work for me to do" (Geeding, 2008). The participant was also given a feedback letter describing the purpose of the study and providing contact information should he or she desire to learn the results of the study. Once all the data was collected, the results were assessed using The Statistical Package for the Social Sciences (SPSS) in the third floor computer lab of Lindenwood University's Young Hall.

Procedure

Upon arriving in the designated testing areas, participants were told they would be taking a survey inquiring about their work habits, opinions about working, and whether or not they were paying for their own school. The participants were then given two informed consent forms, one for them to keep and one to return to the researcher. Next, the participants were given the survey to complete. Once the survey was completed, the participants were verbally informed that the purpose of the study was to determine if a relationship exists between work ethic and whether or not they pay for school. After being verbally informed of the purpose, the participants were given a feedback letter restating the purpose of our study and providing them with contact information should they choose to inquire about the results of the study.

Results

In order to determine whether or not a relationship exists between work ethic and amount one pays for school, a correlational analysis revealed a Pearson's r= -.096 (see Table 1). Figure 1 depicts a scatter plot of the findings. In order to determine if a relationship exists between GPA and amount one pays for school, a correlational analysis revealed a Pearson's r= -.045 (see Table 2). Figure 2 depicts a scatterplot of the findings. In order to determine if a relationship exists

between GPA and work ethic, a correlational analysis revealed a Pearson's *r*=.153 (see Table 3). Figure 3 depicts a scatterplot of the findings. In order to determine if a relationship exists between GPA and the amount of scholarship a student receives, a correlational analysis revealed a Pearson's *r*=.238 (see Table 4). Figure 4 depicts a scatterplot of the findings. In order to determine if a relationship exists between work ethic and the amount of hours spent on homework, a correlational analysis of work ethic and the amount of hours spent on homework revealed a Pearson's *r*=.369 (see Table 5). Figure 5 depicts a scatterplot of the findings.

Discussion

Our study revealed that our hypothesis that a correlation would exist between work ethic and the amount a student pays for school was incorrect. The results instead showed a slightly negative correlation (*r*=-*.096*). This result differs from Tang and Smith-Brandon's (2001) welfare study that found that adults who earned their own money had higher levels of work ethic than those receiving welfare. Although this hypothesis was incorrect, our other hypothesis that GPA and work ethic would be positively correlated was supported by a weak positive correlation (*r*=.153). These findings are in accordance with Cohen's (1985) study that found that work ethic was positively related to GPA.

Although one of our hypotheses was not supported, we did find a significant correlation between work ethic and the amount of hours spent on homework each week (*r*=.369). This is logical because if one has a high level of work ethic, one values the learning experience homework provides. We also found significance in the correlational analysis of GPA and how much the student is receiving in scholarships (*r*=.238). This also makes sense because many students must maintain a high GPA to maintain their academic scholarships.

We have several theories for why our results contrasted previous findings. First, we were unable to recruit as many participants as we wanted, so our results may not be representative of the population in general. Second, since we constructed our own work ethic survey, it may not have been a valid measurement of work ethic. Third, many people were unsure of their GPA as well as the amount of money they are paying yearly for school, so inaccurate data may have been collected. Fourth, the group we surveyed may have been a biased sample. Since we only surveyed students currently enrolled in college classes, their work ethic may have been greater than that of the public since choosing to attend college displays a stronger desire to work hard than those not attending college.

If one wishes to do further research on this topic, several design changes should be made. First, work ethic may vary among different locations and cultures, so other areas should be surveyed in order to obtain a more representative sample. In addition, a larger sample size would be ideal to survey people of different cultures to see if there is a variation in work ethic. Second, future researchers should use a standardized work ethic survey, such as the Protestant Work Ethic survey, to test the level of work ethic. By using a test that has been widely used and normed, one could be more confident in the reliability and validity of the survey. Third, to avoid confusion regarding GPA and the amount one pays for tuition, future researchers could obtain permission to access financial and transcript information from the registrar. Fourth, to avoid the biased sample of college students, a question could be added to the survey that asks if the students are going to school by their own will or if their parents, for example, are pressuring them to attend. This would eliminate the confounding variable of higher work ethic in college students.

As a whole, our hypothesis that work ethic would relate to amount paid for school was not supported, but relationships were found between work ethic and GPA, work ethic and hours spent on homework each week, and GPA and the amount the student receives in scholarships. Although this study did not show correlations regarding the amount a student pays for school, changes in the design of the survey may prove to be effective in examining work ethic in the future.

References

Ali, A.J. (2001). Work ethic and loyalty in Canada. *Journal of Social Psychology, 135*(1), 31-37.

Cohen, J. (1985). Protestant ethic and status-attainment. *Sociological Analysis, 46*(1), 49-58.

Cokley, K., Komarraju, M., Pickett, R., Shen, F., Patel, N., Belur, V., Rosales, R. (2007). Ethic differences in endorsement of the Protestant Work Ethic: The role of ethnic identity and perception of social class. *The Journal of Social Psychology, 147*(75), 75-90.

Duckworth, A, & Seligman, M (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, *16*, 939-944.

Geeding, L. (2008). *Work ethic in America: Urban vs. rural*. Unpublished manuscript, Lindenwood University.

McCortney, A. L. & Engels, D. W. (2003). Revisiting the work ethic in America. *Career Development Quarterly, 52*, 132-140.

Niles, S. F. (2001). The work ethic in Australia and Sri Lanka. *The Journal of Social Psychology,34*(1), 55-59.

Pino, N. & Smith, W.L. (2004). African American students, the academic ethic, and GPA. *Journal of Black Studies, 35*(1), 113-131.

Rau, W. & Durand, A. (2000). The academic, ethic, and college grades: Does hard work help students to make the grade? *Sociology of Education, 73*(1), 19-38.

Tang, T.L., & Smith-Brandon, V. L. (2001). From welfare to work: The endorsement of the money ethic and the work ethic among welfare recipients, welfare recipients in training programs, and employed past welfare recipients. *Public Personnel Management, 30*(2), 241-261.

Work Ethic (2009). Retrieved March 11, 2009 from http://dictionary.bnet.com/definition/work+ethic.html.

Author Note

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Anyone interested in further information regarding this study can contact Channon at cec036@lionmail.lindenwood.edu or Kristen at monkbue53@yahoo.com.

Appendix A

STUDENT SURVEY

ID # _____ (Assigned by Researcher)

1. Are you MALE or FEMALE?
2. Are you a

   FRESHMAN SOPHOMORE JUNIOR SENIOR OTHER
3. What is your major? _____

Please circle the response that best represents your opinion

4. There are few satisfactions equal to the realization that one has done his or her best at a job.

   Strongly Disagree Neutral Strongly Agree

   1 2 3 4 5
5. The most difficult college courses usually turn out to be the most rewarding.

   Strongly Disagree Neutral Strongly Agree

   1 2 3 4 5
6. Most people who don't succeed in life are just plain lazy.

   Strongly Disagree Neutral Strongly Agree

   1 2 3 4 5
7. A person who supports him or herself is likely to be more hard-working than one to whom everything is given.

   Strongly Disagree Neutral Strongly Agree

   1 2 3 4 5
8. Anyone who is able and willing to work hard has a good chance of succeeding.

   Strongly Disagree Neutral Strongly Agree

   1 2 3 4 5

9. If people work hard enough they are likely to make a good life for themselves.

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

10. I feel uneasy when there is little work for me to do.

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

11. A distaste for hard work usually reflects a weakness of character.

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

12. What is your cumulative college GPA? _____

13. On a scale of 1 to 5, how important do you believe your degree is to getting your desired job?

Not Important		Neutral		Very Important
1	2	3	4	5

14. On a scale of 1 to 5, how important do you think a high GPA is to getting hired in your desired field?

Not Important		Neutral		Very Important
1	2	3	4	5

15. Do you plan on getting further education after getting your bachelor's or associate's degree?

YES NO NOT SURE

16. How many hours each week do you work on homework? _____ hours per week

17. Do you have a job outside of school? YES or NO

    a. If so, how many hours each week do you work? _____ hours per week

18. Do you participate in Work and Learn? YES or NO

    a. If so, how many hours each week do you work? _____ hours per week

19. Do you participate in after-school activities such as sports or clubs? YES or NO

    a. If so, how many hours each week do you spend on after-school activities? ___ hours per week

20. How many nights each week do you go out with friends? _____ nights per week

21. Of your total tuition, roughly how much is paid by each of the following?

    a. Parent or Guardian:_____ dollars per year

    b. You:_____ dollars per year

    c. Scholarship:_____ dollars per year

    d. Other (Specify):_____ dollars per year

Correlations

		Level of Work Ethic	How much you spend on school
Level of Work Ethic	Pearson Correlation	1.000	-.096
	Sig. (2-tailed)		.411
	N	83.000	75
How much you spend on school	Pearson Correlation	-.096	1.000
	Sig. (2-tailed)	.411	
	N	75	75.000

Table 1. Correlation between work ethic and how much one spends on school.

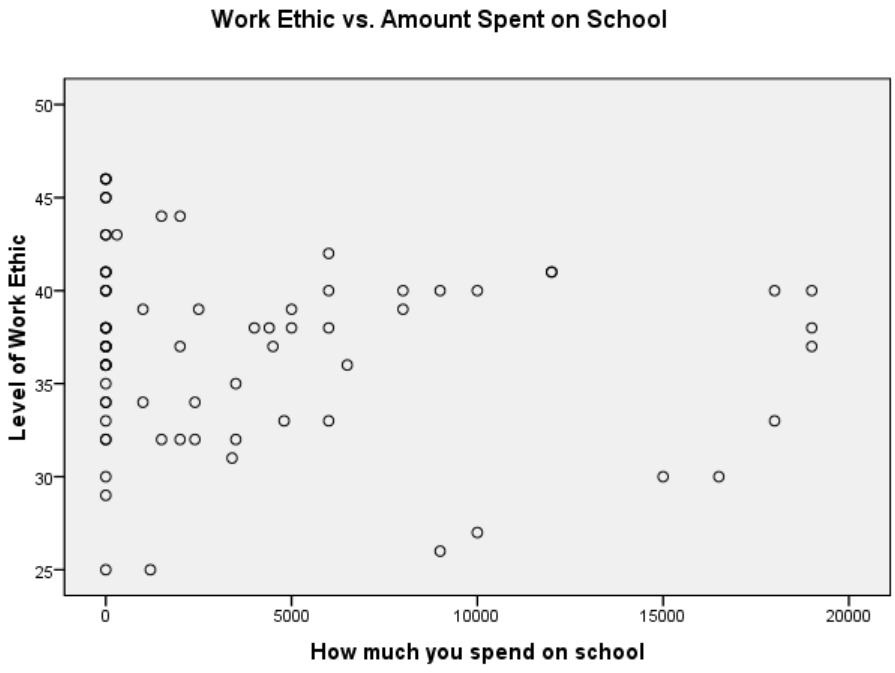

Figure 1. Scatter plot of work ethic and how much one spends on school.

Correlations

		GPA	How much you spend on school
GPA	Pearson Correlation	1.000	-.045
	Sig. (2-tailed)		.707
	N	79.000	73
How much you spend on school	Pearson Correlation	-.045	1.000
	Sig. (2-tailed)	.707	
	N	73	75.000

Table 2. Correlation between GPA and amount student spends on school

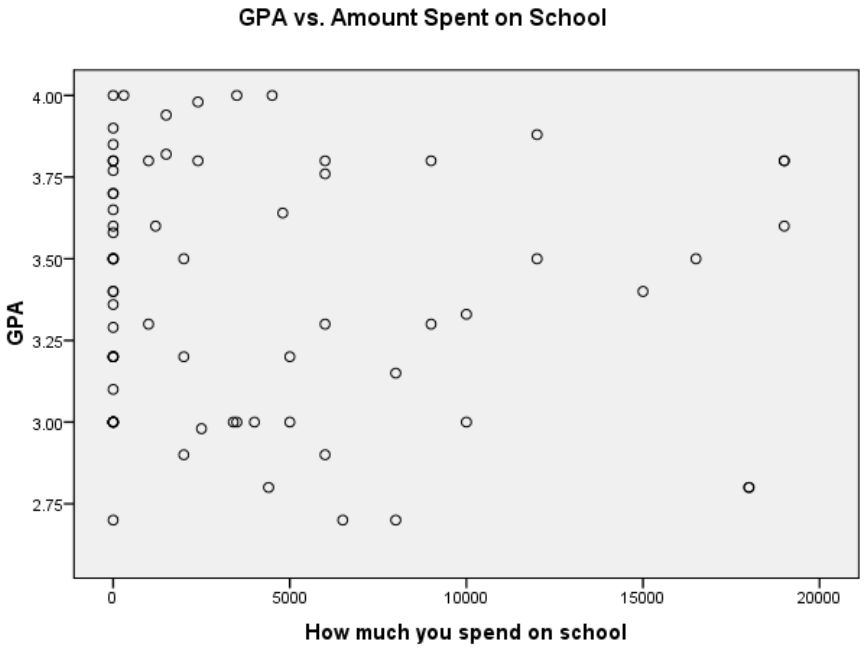

Figure 2. Scatter plot of GPA and amount students spends on school

Correlations

		GPA	Level of Work Ethic
GPA	Pearson Correlation	1.000	.153
	Sig. (2-tailed)		.179
	N	79.000	79
Level of Work Ethic	Pearson Correlation	.153	1.000
	Sig. (2-tailed)	.179	
	N	79	83.000

Table 3. Correlation between GPA and level of work ethic

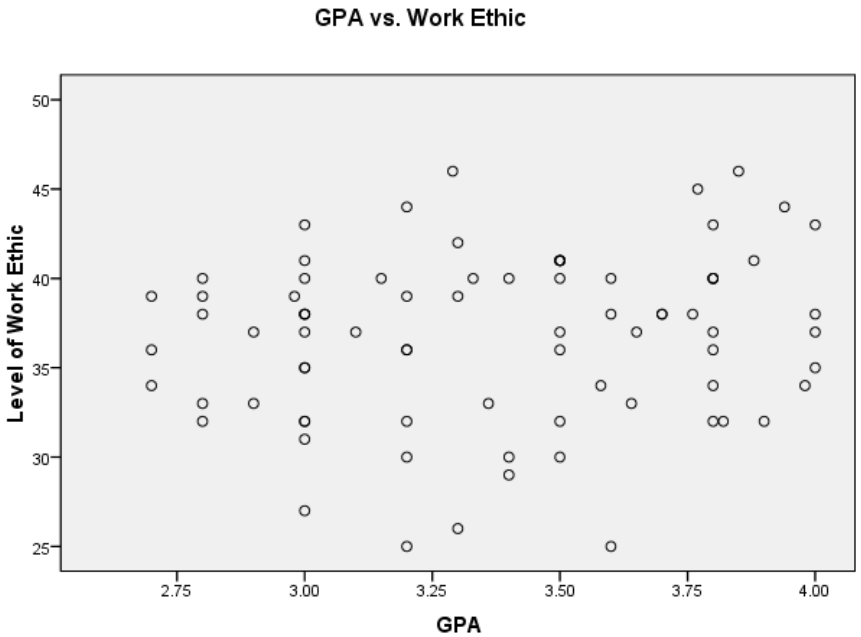

Figure 3. Scatter plot of GPA and level of work ethic

Correlations

		GPA	How much scholarship pays for
GPA	Pearson Correlation	1.000	.238
	Sig. (2-tailed)		.063
	N	79.000	62
How much scholarship pays for	Pearson Correlation	.238	1.000
	Sig. (2-tailed)	.063	
	N	62	63.000

Table 4. Correlation between GPA and how much scholarship pays for

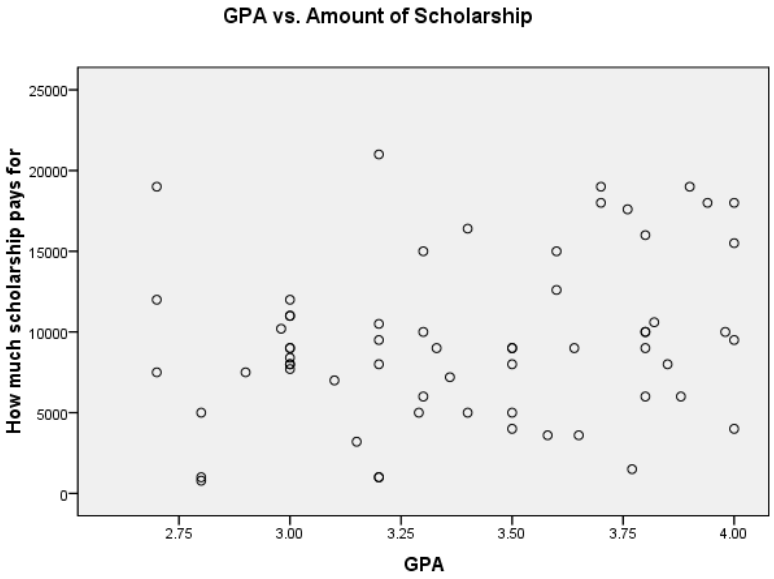

Figure 4. Scatter plot of GPA and amount scholarship pays for

Correlations

		Hours Spent on Homework	Level of Work Ethic
Hours Spent on Homework	Pearson Correlation	1.000	.369**
	Sig. (2-tailed)		.001
	N	81.000	81
Level of Work Ethic	Pearson Correlation	.369**	1.000
	Sig. (2-tailed)	.001	
	N	81	83.000

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

Table 5. Correlation between hours spent on homework and level of work ethic

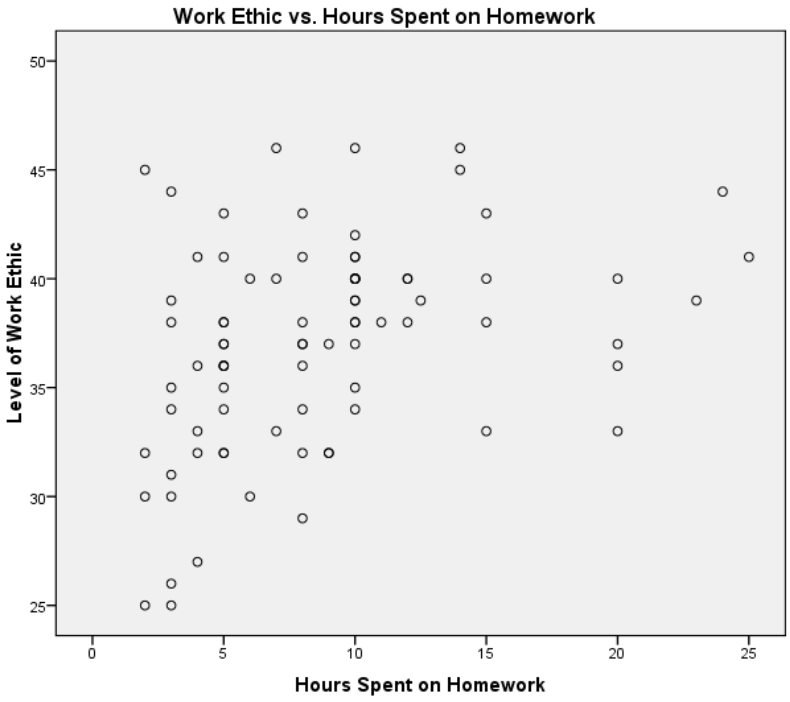

Figure 5. Scatter plot of hours spent on homework and level of work ethic

The Dangers of Facebook

Daniel Chionuma and Luis Miguel Ponce

Social networking sites have been around for a long time but just recently, within the decade, they have been experiencing exponential growth. Facebook is the media's leading social networking site and it is dominant among today's youth. In the present study, 91 participants were asked a variety of questions in order to assess the kind of impact facebook had on an individual's GPA. Facebook usage and GPA was shown to have no correlation, r_s=.035. The findings were due to lack of control throughout the experiment and an insufficient amount of participants.

Technology is everywhere. In this day and age it would be unfathomable to even imagine going a day without technology. Let us take a step back and think about what it would truly mean to be without any influence of technology for just a day. It would mean no cell phones to communicate with family and friends, it would mean no computers to use for research or social interaction, it would mean no use of modern day cars that take us from place to place, and no television. These are just a few of the footprints the field of technology has left on modern day United States and we can see how devastating their absence would be for the lives of Americans. Computer technology is more than likely the force that is driving the market in the field of technology. Users are spending more time on them and social networking sites (SNS) seem to play a key role in it. SNS developed in 1997 but did not really have a huge impact in the world until 2003 (Boyd & Ellison, 2007). According to Valenzuela, Park, and Kee (2008), Facebook and MySpace are the leading social networking websites.

Facebook, Orkut, Myspace, Cyworld and other social network sites are increasing in their popularity; more and more people from different ages, ethnicity, and socioeconomic classes are joining daily (Valenzuela, Park & Kee, 2008). SNS help individuals stay connected with people who are your neighbors or people who live halfway around the globe without the use of a telephone, post office mail system or going to visit them in person (Boyd & Ellison, 2007). Now the only things a person needs in order to stay current in his or her friend's lives is a computer, internet, and an SNS account. Facebook, however, was first created for just college students before entering to the rest of the world. Orkut was developed in the U.S. but most of their users where from Brazil (Graunke & Woosley, 2005). Cyworld became very popular in some parts of Asia and Hi5 become popular in South America (Valenzuela, Park & Kee, 2008). Social networking sites are everywhere, ranging from different countries, different places, and different ethnicities. They also seem provide some sort of dependence as research but Kung (2004) demonstrates. It seems the ability to interact with friends and family no matter where they are in the world attaches them to these websites (Kung, 2004).

Mark Zuckerberg, Dustin Moskovitz, and Chris Hughes were students from Harvard University developed an idea of creating a social networking website that people at their university could use to stay connected with each other. They named the website Facebook and it débuted in 2004. A little more than one year later, they decided to expand the user domain to anyone that had an education (.edu) e-mail account (Boyd & Ellison, 2007). Not even six months later Facebook expanded its domain again, this time to high school students. Their intentions for doing this was so that the seniors in high school who were preparing for college could begin to get connected with their peers without the boundary of an education e-mail

account in the way (Kung, 2004). By 2006, Facebook was accessible to anyone who had internet access as long as they were at least 14 years old (Valenzuela, Park & Kee, 2008). With it's new found potential and growth, Facebook quickly jumped to one of the most common websites used in the world (Kung, 2004). Last year, Facebook had 67 million active users; more than half of them spent an average of 20 minutes per day on this website (Facebook, 2008). Mark, Dustin, and Chris are now individually multimillionaires and still remain responsible for creating a new, more efficient way of staying connected.

Facebook, like other social networks, has become a key role in our society. In today's world it is evident that people are spending more and more time at home on their computers. The first assumption was that it was television, then it was video games, and now it is shifting towards social networking websites. With this new found information the questions arises; how is this impacting the users? Facebook started out targeting college students so it is no surprised that it is most used by them. What attracts people to use it is the fact that they can always check a friend's profile by watching his or her recent status (Valenzuela, Park & Kee, 2008). However, the addicting qualities of the mass social website may have an effect on an individual's grade point average. In this experiment, we intend to examine the correlation between Facebook usage and grade point average.

The University of Minnesota (2008) created a study to see the educational benefits of using web pages like Facebook, and they concluded that the type of learning and creativity that kids are developing during this century is the required for everyone who lives in a civilized society due to the fact that internet is everywhere. So it is possible that Facebook in reality has no correlation to GPA. We are conducting this experiment because as stated before, social

networking sites have a major role in our society and it would be important to see what kinds of relationships can be found. We realize that causation cannot be conducted through our study but possibly through the correlational evidence experiments could be conducted to find causation.

Method

Participants

There were a total of 91 participants recruited for the Lindenwood Human Subject Pool. Participants were 40 male and 51 female undergraduate students, ages 18 to 27, who participated in the study for extra credit. Experimental sessions were conducted by both male researchers.

Materials

Participants were presented with a survey was presented that consisted of 12 questions (see Appendix A); participants took no longer than five to eight minutes to fill out the questions in the survey. The questions in the survey were designed to control for a particular set of extraneous variables: time spent studying weekly, time spent working at an off campus job weekly, time spent work and learning weekly, time spent in one's respective sports team weekly, time spent in an extracurricular activity weekly, whether or not participant owned a Facebook book account, what type a computer participant owned, and how hard the participant strives to maintain a good G.P.A. (3.0 or higher). The critical questions that were used in our study were; the amount of time participant spent on Facebook weekly and the participant's last semester or mid-term G.P.A. Two informed consent forms (see Appendix B) were provided, one for the participant and one for the researchers. After conducting the survey we also gave them a feedback letter (see Appendix C) which thanked them for their time and gave them our contact information in the case they would be interested in our findings. There was a pen or pencils

present so the participant could fill out the survey and a desk for them to sit in. For the participants eligible for extra credit we gave them a participants receipt for them to take back to the HSP. Everything was done in room Y105A.

Procedure

Upon arriving at Y105A the participant was asked to read and sign two informed consent forms, one for him or her and one for the researcher. The informed consent form explained the terms of withdrawal and how it was option without penalty, how their information given is confidential, our process of documentation, and that they have to be 18 or older to participate. After explaining the forms the researchers administered the survey which took about five to eight minutes. After the participant took the survey the researchers collected the survey, debriefed the participant on what the study was testing, and reassured him or her about the confidentiality. The researchers then handed the participant a feedback letter and a participant receipt depending on whether he or she was eligible for it.

Results

We did a Spearman's r analysis to test the relationship between G.P.A. and hours spent on Facebook. Our results showed a very weak correlation, which was r_s=.035. Using a multiple regression analysis on the data showed there to be only six participants who met the criteria of the other extraneous variable tested in the survey (hours played in sport weekly, hours spent at work weekly, hours spent doing work and learn weekly, hours participating in an extracurricular activity weekly, hours spent studying weekly, hours spent on Facebook weekly) and G.P.A.

An independent t-test comparing between sex on the numbers of hours on Facebook revealed a significant effect of sex, t(87.779) = -2.601, p=.011. Male and female groups were

not equal and the previous statistic shows results when equal variances were not assumed. Correlation analysis shows there to be a relationship between hours the participant worked at their job and hours spent on Facebook, r_s=-.330 as well as hours spent studying and hours spent on Facebook, r_s=.243. All other relationships when compared to hours spent on Facebook or G.P.A. did not exhibit a significant relationship.

Discussion

Our study did not find a relationship between time spent on Facebook and G.P.A. This presents a problem because other research shows there to be a relationship (Karpinski, 2009). So this would either mean other research is incorrect or there were some variables which were not controlled for in the study that was skewing the data.

One explanation for the results is that there was no blind in the study. The project title was "The Dangers of Facebook" so when participants were signing up for the project from the Human Subject Pool, they probably already had an idea of what they were getting themselves into. It is likely that non Facebook users did not sign up so it would be impossible to test whether non-Facebook users have a better or worse G.P.A. than active Facebook users. In a later study it would be advised to have a blind in the research name and also to have a certain quota for both non-Facebook users and active Facebook users.

Another alternative to why there was no correlation between time spent on Facebook and G.P.A. is the variability of the information subjects are presenting. The setting was designed to be a quick in and out, but in doing that subjects may have rushed their information which leads to incorrect data. Depending on the level of stress the individual was experiencing at the moment of study, he or she may write down more hours at work than he or she really worked.

This could apply and factor in to all of the other "time spent" variables. The questionnaire left room for many subjective responses which presented a problem because the researchers were accounting for them objectively. Better and clearly defined questions would help future researchers better account for reliable data.

Participants could also inflate their G.P.A. and deflate the time spent on Facebook book because of social desirable expectations (William, 2008). One wants to appear as if he or she has a good G.P.A. and one does not want to appear as if he or she does not have a real social life (this is the common assertion when one talks about how much time one spends of Facebook). Participants may consciously or sometimes unconsciously make themselves look better than they are. The lack of anonymity with their confidential information may have played a factor with the possible inflation as well. The survey was just placed faced down when they had completed so they had no assurance that the researchers would not peak at their information. Participants may have seen this flaw and inflated their responses.

Overall, the experiment helps show experimenters the effect uncontrolled stimuli can have on an experiment. The researchers still stand behind their hypothesis of a relation between time spent on Facebook and G.P.A. If conducted in the future more variables will be accounted for and properly controlled.

References

Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*, 210-230.

Graunke, S.S, & Woosley, S. A. (2005). An exploration of the factors that affect the academic success of college sophomores. *College Student Journal*, *39*(*2*), 367-376.

Karpinski, A. (2009). College Facebook fans get lower grades. *Techweb on LexisNexis Academic.*

Kung, A. (2004). Social networking wins more friends. *New Media Age. 1,* 15-15.

Valenzuela, S., Park, N., & Kee, K. F. (2008). Lessons from Facebook: The effects of social network sites on college students' social capital. *International Symposium on Online Journalism, 11*,34-34.

University of Minnesota (2008, June 21). Educational Benefits of Social Networking Sites Uncovered. *ScienceDaily*. Retrieved April 27, 2009 from http://www.sciencedaily.com /releases/2008/06/080620133907.htm.

William, A (2008). The politics of grade inflation: A case study. *Change, 1*, 1-3.

Author Note

We would like to thank everyone who helped us complete this study. We first like to thank Dr. Nohara-LeClair for assisting us anytime we needed and teaching us how to become quality researchers. We also would like to thank our classmates who critiqued our papers throughout the semester. And finally we would like to thank all of our participants who participated in our experiment. Without them, we would not have been able arrive with this information our research.

For further information concerning this study please contact researcher Daniel Chionuma at duc383@lionmail.lindenwood.edu.

Appendix A

1) Are you: MALE FEMALE

2) How old are you? _____ years old

3) What is your ethnicity? (please circle one)

Caucasian

Hispanic

African American

Asian

Other (please specify):_____

4) Do you play any inside or outside school sports? Yes No

If so, which sport, and how many hours per week do you play it?

_____ _____

5) Do you have a job besides work and learn? Yes No

If so, how many hours per week do you work? _____

6) Do you have a work and learn? Yes No

If so, how many hours per week do you work? _____

7) Do you involve yourself in any extracurricular activity outside school? Yes No

If so, how many hours per week you spend on participating in the

activity? _____

8) Do you own one of the following: (please circle one)

Laptop Desktop I do not own a computer

9) Do you have a facebook account: Yes No

If yes, how many hours per week do you spend on it? _____

10) What was your lasts semester GPA? (please circle one)

0.00-.499 .500-.999 1.00-1.49 1.50-1.99 2.00-2.49 2.5-2.99 3.00-3.49 3.5-4.0

11) How hard do you strive to achieve or maintain a high GPA (3.0 or higher)? (please circle one)

Not at all I strive a little bit Moderately I strive a lot I do all that I can

12) How many hours do you study per week? _____

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 survey asking about my study habits, extracurricular activities, and current GPA. 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 HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:

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Daniel Chionuma 816-582-2355

Supervisor:

Dr. Michiko Nohara-LeClair

Course Instructor

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Appendix C

Feedback Letter

Thank you for participating in our study. The survey was used in order to determine if there is any correlation between time spent on facebook and an individual's GPA. The questions about other activities were asked so we could see what other kind of variables, along with facebook, affect one's GPA.

Please note that we are not interested in your individual results; rather, we are 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. 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.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:

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Supervisor:

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Gender Differences in Exclusive Romantic Relationships

Maria Diaz and Sarah Ward

There is previous research indicating that men and women worry while involved in an exclusive relationship. In the study conducted, we were interested in finding whether there are differences in the issues men and women worry about while involved in an exclusive romantic relationship. We recruited 60 participants, or 30 heterosexual couples. Participants were asked to complete a short survey rating 15 issues on a 5-point Likert scale focusing on how much they worry about different issues. Our findings indicate that there are no significant differences in what issues men and women worry about. However, there was a significant difference in how men and women rated for each item.

Analyzing the emotions that arise from conflict in romantic relationships is useful in helping couples deal with their emotions and better communicate with each other. Having people recall an event that made them certain or uncertain about their relationship can help determine which emotions they felt during that event. Knobloch and Solomon (2003) focused their study on how emotions can affect a person's certainty regarding their romantic relationship. The researchers conducted their study by having participants recall a specific event that made them confident about their relationship and another event that made them unsure about their relationship (Knobloch & Solomon). After recalling the event, the participants were asked to complete surveys asking about how they felt at the time, how the event made them confident or unsure, and the behaviors that followed the event. Behaviors were assessed by affection toward the other person and how they communicated their emotions (Knobloch & Solomon). Their findings indicate that positive emotions correspond with events that made the participants more

confident about their relationship and negative emotions correspond with events that made them unsure about their relationship (Knobloch & Solomon).

Mindfulness is defined as the awareness of what is going on externally and internally at the present time (Brown & Ryan, 2003). Many authors have suggested that mindfulness helps the improvement, connection and closeness in relationships. It promotes one to be more aware of their partner's interests, thoughts, emotions and welfare. In the present study it is examined if mindfulness would enhance romantic relationships quality. The hypothesis for this study is that mindfulness would be positively associated with romantic relationship satisfaction and that it would lower relationship stress (Barnes, Brown, Campbell, Krusemark, & Rogge, 2007). Findings for this study indicated that mindfulness has a positive correlation with romantic relationship satisfaction and lower stress in relationships.

Worry is described as being emotional and cognitive. This study was divided in three parts where 301 participants completed a questionnaire that rated if men or women engaged in more maladaptive worry. In the first part of the study, participants examined if men or women worry more in general. In the second part of the study, participants rated the worry of a man or a woman they knew. In the third and last part of the study, participants rated how men and women worry according to their status. The hypothesis was that people perceive women to worry more than men in general and that low status individuals would experience more maladaptive worry than high status individuals (Conway, Dugas, Pushkar, & Wood, 2003). The results show that the hypothesis was supported.

In the study above, Conway et al. (2003) were interested in finding out if men or women worry more. They conducted further research in order to find out what people worry about. The

hypothesis was that men and women would worry more about issues pertaining to their stereotype. Women would worry more about relationships while men would worry more about accomplishment (Wood, Conway, Pushkar, & Dugas 2005). Participants were recruited on the campus of Concordia University. They were asked to complete a questionnaire about themselves, someone they knew, and a significant other (Wood et al.). In analyzing data about someone the participants knew and their significant other, the results indicate that the hypothesis was true. However, when analyzing the data on the participant's view of themselves, women were found to worry more about accomplishment than men (Wood et al.).

Adolescent romantic relationships sometimes are described as casual hook ups that lack feelings of intimacy or commitment (Giordano, Longmore & Manning 2006). This study focuses on the nature of communication, emotion, and influence within adolescent dating relationships. It was expected that boys would be more confident while involved in the relationship and that they would be less emotional involved than girls because they are stereotyped as wanting sex and girls wanting romance. The study included 1,300 adolescents who were interviewed on their confidence and emotions while involved in a relationship. The sample of boys consists of 957 participants and the majority of them reported lower levels of confidence in different aspects of their relationships, about the same level of emotional involvement as girls but have more power and influence than girls (Giordano et al.). The findings for this study were that adolescent boys are less confident and more emotionally engaged than what they expected.

A specific issue that arises in relationships is jealousy which can cause conflict and worry. Aune and Comstock (1997) researched the effect of the length of a relationship and what would be considered a right time to express jealousy and the right amount of jealousy. They

hypothesized a positive correlation between time and expression and intensity and expression. One hundred and sixty-four students were recruited on college campuses who were involved in a relationship (Aune & Comstock). Participants were asked to think about a time when they felt jealous and/or threatened by someone else while in their relationship. They described the situation and then rated the intensity of their jealousy (Aune & Comstock). The results indicated that there was significance in the time and expression and significance in time and the right amount of jealousy perceived as being acceptable (Aune & Comstock).

Romantic relationships can cause the two people involved to worry about different issues. Sometimes these issues can cause conflict and stress in the relationship. Simon, Kobielski, and Martin (2008) conducted research involving late adolescents and how their beliefs about conflict along with their goals influenced their behavior regarding the romantic relationship they were in. They hypothesized that believing in constructive ways of dealing with conflict would lead to acting in a constructive way to solve the conflict and therefore believing in deconstructive ways of dealing with conflict would lead to acting in a deconstructive way to solve the conflict (Simon et al.). Participants were given a questionnaire to determine their beliefs on conflict and a questionnaire to determine their goals in relationships. The results indicate that late adolescents view conflict in relationships as a positive thing that can lead to helping their romantic relationship instead of hurting it (Simon et al.). The type of behavior in conflict was also found to be positively correlated to the type of goals a person had about the relationship.

In our study, we predicted that there would be gender differences in what men and women worry about while involved in an exclusive relationship. Leahy (2005) provides insight to why people worry and ways to deal with worrying. He points out that worrying can be a factor

in depression and anxiety. Knowing what we individually worry about can help us to focus on ways to overcome feelings of anxiety. In previous literature there are findings which support what and how much men and women worry about while in a relationship. We wanted to research this hypothesis in order to satisfy our own curiosity and provide information to other young adults who are involved in an exclusive romantic relationship. Knowing what a significant other is thinking can help to constructively develop the relationship instead of suppressing emotion and conflict.

Method

Participants

The participants in this study consisted of 60 college students attending Lindenwood University. We exclusively recruited 30 hetersexual couples who were at the moment involved in an exclusive, romantic relationship ages 18 to 27 years old. Most of the participants were Caucasian (53.3%), followed by Hispanic (33.3%), African American (8.3%), Asian (3.3%), and Other (1.7%). Researchers accessed participants through and verbal scripts (see Appendix A) from the college library, Spellmann computer lab, cafeteria, or dormitories. Participants received candy (Starburst or Hershey's chocolate) upon completion of the survey.

Materials

The materials for the present study consisted of a survey about issues regarding what people may worry about while involved in an exclusive, romantic relationship (see Appendix B). The survey asks the participants to rate 15 issues on a 5-point Likert scale with the anchors being 1 (never worry) and 5 (always worry). Researchers randomly chose the 15 issues, such as your partner lying to you or having the same beliefs and values, men and women may worry about

while involved in an exclusive relationship. A questionnaire packet (i.e., informed consent form, demographic questionnaire (see Appendices C & D) was also given to the participants which were completed before the survey. The informed consent form was given to participants in order for them to know the risks and communicate to them that their answers will be confidential and to make sure they are at least 18 years old. The demographic survey allowed researchers to collect data about the participant's gender, age, ethnicity and previous and current relationships regarding the duration of these relationship. The survey also asked participants to define what they believed an exclusive romantic relationship meant using a free response format.

The survey was conducted on the campus of Lindenwood University in Butler Library, Spellman computer lab, cafeteria, and campus housing. Pens or pencils were provided to participants in order for them to fill out the surveys. A feedback letter was handed to each participant after they completed the study in order to explain the purpose of the study and give them contact information for any questions and/or feedback (see Appendix E).

Procedure

We recruited couples who are students from Lindenwood University through the use of flyers and verbal scripts (see Appendix F). The study was conducted in various locations on campus. Each person in the couple was given a pen or pencil and asked to read and sign two copies of an informed consent form; one for the participant and one for the researcher. Identification numbers were given out to each participant to ensure anonymity, however each couple was given a certain number/letter code in order to compare their responses. The researchers then gave the participants the survey and explained to rate the following 15 issues about what they worry about when involved in their current relationship. A 5-point Likert scale

was used to measure how much they worry. After this was completed, the participants were asked to fill out a short demographic survey. A feedback letter was given to each participant after completing the study to indicate the purpose of the study and provide contact information of the researchers in case they have any questions. Finally, candy was given to each participant as a thank you for participating in our study.

Results

We conducted a paired samples t-test with sex of the participant being the first variable and each of the 15 issues being the second variable. Overall, the results were not statistically significant; however for 5 out of 15 issues we did find significance. These issues included "Your partner getting physically hurt" $t(29) = -2.428$, $p < .022$, "Your partner getting emotionally hurt" $t(29) = -2.552$, $p < .016$, "Being liked by your partner's friends and family" $t(29) = -4.287$, $p < .001$, "Both you and your partner being financially stable" $t(29) = -2.575$, $p < .015$, and "Pregnancy" $t(29) = -2.525$, $p < .017$.

Discussion

Our hypothesis was not supported by our findings. It appears that there are no significant differences in what men and women worry about while involved in an exclusive romantic relationship. Some limitations to our research would be that we recruited couples only who were involved in an exclusive romantic relationship. Both the man and the woman had to complete the same survey. By doing so, each partner in the couple served as the control for the other partner. However, this limited the number of participants in our study as it would be easier to recruit any person involved in a relationship despite whether their partner completed the survey. Also, while administering the survey, the couples were sitting next to each other. This could potentially have

a major affect on the results since having the person right next to you could influence your answer. For example, saying that you never worry about a certain issue when in fact, you always worry about it.

Our research does not correspond with others' findings. Wood, Conway, Pushkar, and Dugas (2005) found statistical significance in that people perceive men and women worry more about issues based on their stereotype. This could be due to our small sample size and limited time given to conduct our research. In previous research, the effect of the length of a relationship and what would be considered a right time to express jealousy and the right amount of jealousy was the focus. In our study, one of the items on the survey was "Your partner being excessively jealous." We found no statistical significance with 43.3% of participants stated they never worry about this issue. It would be interesting to find out if this was due to how long the person has been in the current relationship. Another limitation regarding our study would be the survey itself since it was not standardized. By finding a survey that has already been used in previous research, it would have allowed the researchers with a more valid and reliable survey.

While analyzing the demographic survey, researchers found information regarding previous and current relationships that may have affected the results of the study. The longer the couple has been together, the more experiences they will share and better know each other. Ten percent of people have been in their current relationship for 1 month, 5 months, or 7 months. Also, how many relationships in the past a person has been in can also affect what and how many experiences they have been in such as feeling jealous or worrying about money, to name a few. When asked how many relationships the participant has been in within the past 5 years, 46.7% said 2 relationships. The last question on the demographic survey asked participants to

define using a free response format what they think an exclusive relationship is. When analyzing this data into 6 categories (dating one person and loving one person, not having sex with anyone else or being faithful to one person only, having emotional feelings for one person only, liking each other mutually or equally, being serious about the relationship or dating one person for a long time, and trusting that person) the majority of participants, 48.3%, defined an exclusive romantic relationship as "dating one person and loving one person."

Further research should be conducted by analyzing the above mentioned factors and whether these influence what men and women worry about in a relationship. Further research should also be conducted on this issue considering our study was only made up of 30 couples and a larger sample size would provide more accurate results. Also, since our sample size consisted mainly of Caucasians and Hispanics, differences in ethnicity could have affected our results. Further research should be conducted on differences in ethnicity and what people worry about while involved in an exclusive romantic relationship.

References

Aune, K.S., & Comstock, J. (1997). Effect of relationship length on the experience, expression, and perceived appropriateness of jealousy. *The Journal of Social Psychology*, *137*, 23-31. *Proquest Psychology Journals*. Retrieved March 7th, 2009.

Barnes, S., Brown, K.W., Krusemark, E., Campbell, W.K., & Rogge, R.D. (2007). The role of mindfulness in romantic relationship satisfaction and responses to relationship stress. *Journal of Marital and Family Therapy*, *33*, 482-500. *Proquest Psychology Journals*. Retrieved March 4th, 2009.

Conway, M., Wood, W., Dugas, M., & Pushkar, D. (2003). Are women perceived as engaging in more maladaptive worry than men? A status interpretation. *Sex Roles, 49,* 1-10. *Proquest Psychology Journals*. Retrieved March 4th, 2009.

Conway. M., Wood, W., Dugas, M., & Pushkar, D. (2005). People's perceptions of women's and men's worry about life issues; Worrying about love, accomplishment, or money" *Sex Roles, 53*, 545-551. *Proquest Psychology Journals*. Retrieved March 3rd, 2009.

Giordano, P. C., Longmore, M.A., & Manning, W.D. (2006). Gender and the meanings of adolescent romantic relationships: A focus on boys. *American Sociological Review, 71*, 260-288. *Proquest Psychology Journals*. Retrieved April 8th, 2009.

Knobloch, L.K., & Solomon, D.H. (2003). Responses to changes in relational uncertainty within dating relationships: Emotions and communication strategies. *Communication Studies, 54*, 282-305. *Proquest Psychology Journals*. Retrieved April 8th, 2009.

Leahy, R. (2005). The way of the worrier. *Psychology Today, 38*, 68-72. *Proquest Psychology Journals*. Retrieved April 8th, 2009.

Simon, V., Kobielski, S., & Maritn, S. (2008). Conflict beliefs, goals, and behavior in romantic relationships during late adolescence. *Journal of Youth and Adolescence, 37*, 324-335. *Proquest Psychology Journals*. Retrieved April 14th, 2009.

Appendix A

Recruitment Description

We are looking for couples only for this study, meaning people who are involved in an exclusive, romantic relationship.

Description:

In this study, you will be asked to complete a short survey regarding issues men and women worry about in an exclusive relationship. The survey should take no more than 10 minutes of your time.

Sign-Up Schedule

Name	Date/Time	Phone Number	Location

Appendix B

SURVEY

SUBJECT ID NUMBER _____ (Assigned by the Researcher)

On a scale of 1-5, please rate the following:

1- never worry **2**-sometimes worry **3**-undecided **4**- often worry **5**-always worry

1) Your partner lying to you _____
2) Your partner being sexually unfaithful to you_____
3) Whether you see a future in the relationship _____
4) Your partner loving you as much as you love him/her _____
5) Your partner getting physically hurt_____
6) Your partner getting emotionally hurt _____
7) Being liked by your partner's friends and family _____
8) Spending enough time together _____
9) Both you and your partner being financially stable _____
10) Being able to be completely open with your partner, such as being able to tell him/her anything _____
11) Having the same beliefs and values _____
12) Compromising who you are as a person (being someone you're not or do not like) _____
13) Pregnancy _____
14) Whether your partner is thinking about ending the relationship _____
15) Your partner being excessively jealous _____

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short survey asking about what issues I worry about when I am involved in an exclusive relationship. I understand that I should be able to complete this project within 20 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.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

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Appendix D

Data Gathering Material

Questionnaire

*Remember at any time you may skip any questions that you may feel are too personal. There will be no penalty for doing so.

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1) Are you Male_____ Female_____
2) Age _____
3) Caucasian_____ Hispanic_____ African American_____ Native American_____ Asian_____
4) How long have you been in the current relationship? Put years and/or months _____
5) How many exclusive relationships have you been in the past 5 years? _____
6) How do you define an exclusive relationship? _____ _____ _____

Appendix E

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to determine if there is a difference in what issues men and women worry about while involved in an exclusive relationship.

Please note that we are not interested in your individual results; rather, we are 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. 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.

Thank you again for your valuable contribution to this study.

Sincerely,

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Maria Diaz md695@lionmail.lindenwood.edu

Supervisor:
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Appendix F

We Need Your Help!

We are looking for couples involved in an exclusive, romantic relationship that are willing to help out by completing a short survey regarding issues men and women worry about in an exclusive relationship .

It will only take 20 minutes of your time and candy will be given out upon completion. This survey will be used in the study we are conducting for our Advanced Research Methods class.

We cannot do this without you!

If you are interested, please fill out the sign-up schedule below. Each couple needs to come together and sign up for the same time.

Date	**Time**	**Name**	**Phone Number**	**Location**
4/9	1:30-2:50			Library-Left side
4/9	1:30-2:50			Library-Left side
4/9	1:30-2:50			Library-Left side
4/9	2:00-2:20			Library-Left side
4/9	2:00-2:20			Library-Left side
4/9	2:00-2:20			Library-Left side
4/9	2:30-2:50			Library-Left side
4/9	2:30-2:50			Library-Left side
4/9	2:30-2:50			Library-Left side
4/10	2:00-2:20			Library-Left side
4/10	2:00-2:20			Library-Left side
4/10	2:00-2:20			Library-Left side
4/10	2:30-2:50			Library-Left side
4/10	2:30-2:50			Library-Left side

Are We Expecting Too Much from Ourselves?

Irina Dolgikh

The study investigated whether there was a time difference between what society expected people to experience at a certain age and the age at which people actually engaged in those behaviors. The sample consisted of 13 men and 46 women with the age range from 18 to 54 years. On-line questionnaires were used to obtain all data. The findings showed that social expectations did not match with actual behaviors for women. Although interestingly, no significant difference between these two concepts was found for men.

The idea of social expectations (opinions of people around us, for example: parents, teachers, friends, co-workers, relatives, neighbors, and others) could be linked to the concept of a social clock. Berger (2004) referred to the social clock as settings of life stages and certain behaviors that were supposed to be performed during these stages, but the settings were not dictated biologically, rather they were made up by our society. An example of a social clock concept was cultural belief regarding when "middle age" should begin, in which every society would have a different age standard for it (Berger). Neugarten and Neugarten believed that a social clock is a timetable for different events and behaviors in one's life (as cited in Berger, 2004, p. 462). A timetable is based on social norms that one society has, which help to define "best ages" for life events such as graduating from school, getting married, and buying a house (Berger).

Generations changed, and so did social expectations. In a study of three generations of women, Roscoe and Peterson (1989) found that there were differences in the perceptions for age-appropriate behaviors. The results showed that the greater a woman's age, the less tolerance she

exposes to the violation of age norms. Also, the previous generation tended to influence the next generation in its values. In other words, adolescents tended to keep the social traditions of their parents than those of their grandparents. All three generations of women disagreed on what behavior was the most variant from what society has set as the socially acceptable age-norms. The study supported Neugarten and Neugarten's (as cited in Roscoe & Peterson, 1989) "theory of adult socialization." The theory states that people become more conservative in their beliefs about social norms and traditions as they grow older.

Hence, how do we know if social expectations actually exist? In a study concerned with age norms, Settersten (1998) conducted an interview with 319 adults and asked them about an age deadline for leaving home. The results showed that both men and women agreed that there was a mental age deadline for leaving home, and for both sexes the deadline varied from the ages of 18 and 25 years.

Researchers that previously analyzed how social expectations match actual behaviors found that a person's idea of the social timetable might be wrong. Ward and Rivadenyra (1999) found an interesting trend within their study's results about adolescents' sexual attitudes and behavior. They found that watching television provides adolescents with incorrect expectations about sexual behaviors. The misunderstanding was that women expected men to be more sexually active at the age of 18 than what men reported about their actual sexual experience at that age. Women estimated that 75% of men were sexually experienced while the actual rate was 66% (Ward & Rivadenyra).

The mismatch between social expectations and people's actual experiences was revealed in a study of differences in tobacco use among youth in India. The results demonstrated that,

sixth-grade students used significantly more tobacco than eighth-grade students despite the traditional expectation that a higher grade level in school was a reliable predictor in tobacco use (Reddy, Perry, Stigler, & Arora, 2006).

Assuming that social norms depend on the culture, gender and ethnic differences in the timing of life events should be considered (McCluer, 1998). McCluer's study was aimed toward finding out whether there were differences in the preferences of timetables for younger people of various backgrounds. The results stated that social expectations depended on gender and ethnicity and that it was natural for people to have a certain image of a normal lifestyle in their mind.

If people do not go along with these social expectations they might become frustrated and concerned with themselves. According to Neugarten (as cited in Smallen, 1995), every individual had doubts about whether he or she was on time for social clock because completing life tasks on time was essential to one's self-concept. Helson (as cited in Smallen, 1995) also believed that a person may feel a sense of failure and incompetency when believing that he or she is not developing on time with his or her peers.

The purpose of the present study was to determine whether there was a time difference between what society expects people to experience at a certain age and people's actual behaviors. Considering what has already been shown, many people have these beliefs regarding what they are supposed to experience, what knowledge they are supposed to have, and what skills they are supposed to master before a certain age.

This study was designed to test whether social expectations and people's actual experiences matched when looking at various life-course milestones such as the time of and

individual's first kiss, first sexual intercourse, graduation from high school, first year of college, moving out from parents' house, first marriage, first child, first paycheck, first cigarette, and first alcoholic beverage.

Because culture often influences people's values in a significant way, the researcher narrowed her results from participants that were raised in the United States of America. This was done in order to eliminate possible errors when making conclusions about the societal expectations and people's actual behaviors. The hypothesis was that people's actual experiences did not reflect social expectations for those behaviors.

The previous findings showed that societal expectations changed due to different factors such as the results of "generational differences in socialization" that bring new values, influences of mass media, gender and ethnic differences (Roscoe & Peterson, 1989, p. 167). Therefore, the present study may have helped to re-examine society's expectations that tend to change over time.

Method

Participants

The sample size consisted of 60 people, with 15 men and 44 women participating. The data from three people were discarded due to the nationality factor that was essential to the results of the study. The researcher was interested only in data of those who were from the United States of America. One participant did not disclose any demographic information, and it was impossible to tell his or her gender, nationality, age and college status, thus, the researcher discarded his or her data as well. The final sample size of American students was 56 people, with 13 men and 43 women participating. The most common participants consisted of 19-year-olds

and 20-year-olds, making up 17.9% and 16.1%, respectively. All of the participants were Lindenwood University students. Undergraduate students made up 76.7 % of all participants and graduate students made up 17.9%.

All the participants were recruited through e-mail service on a volunteer basis. To keep confidentiality, all the participants were informed to remain anonymous due to the sensitivity of some data. Identifying someone by his or her e-mail address was very difficult, because the researcher only used Lionmail Lindenwood addresses, which consisted of student's initials with numbers following the initials only.

Materials

The materials for the present study were two questionnaires (see Appendices A, B), the informed consent form (see Appendix C), and the feedback letter (see Appendix D) for each participant. The informed consent was used to inform the participant about the nature of the study, possible risks, and the participant's rights. The feedback letter explained why the study was important, thanked students for their participation, and provided them with the researcher's contact information. The first questionnaire form (see Appendix A) asked participants about their knowledge about social age expectations for certain behaviors (e.g., "According to social expectations, at what age are people expected to graduate from high school?"). Participants were offered an option to either write their answers in a free response format or to skip the question if they did not agree that there was a social expectation for such behavior. The second questionnaire (see Appendix B) had two sets of questions. The first set had questions about a participant's demographic characteristics (gender, country where the participant was raised, age, and his or her college status) while the second set had questions about participant's actual

experiences (e.g., "Have you tried drinking an alcoholic beverage?" If they did have that experience, they proceeded to the next part "At what age did you first try drinking an alcoholic beverage?") The participants were invited to write their answers in a free response format as well.

Procedure

The researcher conducted her study using the process of on-line recruiting where she sent out a mass e-mail to all Lindenwood students inviting them to take part in her study. She accompanied her e-mail with a script (see Appendix E) explaining the nature of the study and also containing an informed consent form. Those who consented to participate read the informed consent form, opened the attachment with the two questionnaires, filled them out and sent them back to the researcher. After she received the completed questionnaires, the researcher sent a feedback letter to the participant. After gathering all the data, a set of descriptive and statistical analyses were conducted in which the two sets of questions was compared between each other. This was done in order to find out whether there was a timing difference between social expectations for certain behavior and people's actual experiences.

Results

To test the hypothesis that social expectations for what people should have experienced by a certain age differed from people's actual experiences, the researcher conducted a series of paired t-tests. The first set of paired t-tests examined the difference between male social expectations and their actual behaviors. The analyses revealed no significant differences between social expectations and actual behaviors (see Table 1). The second set of paired t-tests was conducted to see if there was a difference between female social expectations and their actual

behaviors. The analyses revealed several significant findings: first kiss behavior, t (40) = 1.903, p < 0.05, where the age of social expectation for the first kiss experience (M = 14.77, SD = 2.15) was higher than the age of actual experience (M = 13.85, SD = 2.42); graduation from high school, t (42) = 2.864, p < 0.05, where the age of social expectation (M = 17.91, SD = 0.23) was higher than the age of actual experience (M = 17.63, SD = 0.578); moving out from parents house, t (42) = 5.872, p < 0.05, where the age of social expectation (M = 21.47, SD = 2.22) was higher than the age of actual experience (M = 18.90, SD = 2.30); first marriage, t (15) = 4.451, p < 0.05, where the age of social expectation (M= 24.78, SD = 2.11) was higher than the age of actual experience (M = 21.31, SD = 2.47); first child, t (14) = 3.662, p < 0.05, where the age of social expectation (M = 26.40, SD = 3.04) was higher than the age of actual experience (M = 22.33, SD = 4.45); first paycheck, t (34) = 7.852, p < 0.05, where the age of social expectation (M = 22.49, SD = 2.84) was higher than the age of actual experience (M = 18.06, SD = 3.34); first smoking experience, t (24) = 2.353, p < 0.05, where the age of social expectation (M = 15.44, SD = 1.85) was higher than the age of actual experience (M = 14.20, SD = 2.55); first drinking experience, t (37) = 2.091, p < 0.05, where the age of social expectation (M = 16.80, SD = 2.48) was higher than the age of actual experience (M = 15.47, SD = 3.07) (see Table 2).

The difference between social expectation for men and women from men's point of view was found to be significant for the following behaviors: first marriage, t (11) = 2.278, p < 0.05, where women were expected to experience that at a younger age (M = 24.58, SD = 2.97) than men were (M = 25.42, SD = 2.50); and first child, t (11) = 2.880, p < 0.05, where women were expected to experience that at a younger age (M = 26.17, SD = 2.53) than men were (M = 27.33, SD = 2.53).

The difference between social expectations for men and women from women's point of view was found to be significant for the following behaviors: first kiss, t (40) = -3.745, $p < 0.05$, where men were expected to experience that at a younger age (M = 14.08, SD = 1.82) than women were (M = 14.72, SD = 2.15); first intercourse, t (41) = -5.253, $p < 0.05$, where men were expected to experience that at a younger age (M = 15.57, SD = 4.55) than women were (M = 16.55, SD = 4.88); first marriage, t (40) = 5.721, $p < .05$, where women were expected to experience that at a younger age (M = 24.21, SD = 1.87) than men were (M = 25.80, SD = 2.45); first child, t (36) = 5.588, $p < 0.05$, where women were expected to experience that at a younger age (M = 25.88, SD = 2.54) than men were (M = 27.74, SD = 2.75); smoking experience, t (36) = -4.066, $p < 0.05$, where men were expected to experience that at a younger age (M = 14.35, SD = 3.03) than women were (M = 14.86, SD = 2.95); and drinking experience, t (40) = -4.176, $p < 0.05$, where men were expected to experience that at a younger age (M = 16.35, SD = 2.65) than women were (M = 16.81, SD = 2.42).

Discussion

The purpose of the study was to find out whether there was a time difference between what society expects people to experience at a certain age and people's actual behaviors. The hypothesis was that people's actual experiences did not reflect social expectations for those behaviors.

The results of the study showed that there were gender differences in how social expectations and actual behavior reflected each other. Men showed no significant time differences between socially expected behavior and their actual experiences. Women's results showed time differences between the expected and actual experiences that were found to be

significant for several behaviors: first kiss, graduation from high school, moving out from their parents' house, first marriage, first child, first paycheck, first time smoking experience, and first time drinking experience. Women tended to perform these behaviors at a younger age than what society expected.

The fact that there were differences in men and women's results may have been due to the way men and women interpreted the questions. Men did not show any time discrepancies between socially expected and actual behaviors because those concepts looked the same to them. Women were used to thinking about socially expected behaviors since their gender often places limitations on their behaviors. One of the examples of socially expected behaviors for women was bearing children before a certain age because women's biological ability to conceive is time limited. Therefore, women showed more differences between expected and actual behaviors because they may have understood the differences between those concepts more.

Men and women showed different social expectations for each other. Men only reported that they expected women to get married and have a child earlier than men do. Women agreed that they were expected to get married and have a first child at a younger age than men; however, they also reported that men are expected to experience their first kiss, first intercourse, first time smoking and drinking behaviors at a younger age than women.

Actual men and women's behavior confirmed that women did get married at a younger age. However, it was impossible to say anything about first child experience because none of the male participants had any children of their own. The results also confirmed that men experienced their first kiss at a younger age. However, the results also demonstrated that women experienced

such behaviors as first intercourse, first time smoking, and first time drinking at a younger age than men did.

The gender differences that were found were somewhat predictable. McCluer's (1998) study demonstrated that social expectations depended on gender and ethnicity and that it was natural for people to have a certain image of a normal lifestyle in their mind. This study found that men had no time difference between socially expected and actual behaviors, and women tended to be on time with social expectations.

The present study's findings were consistent with the results of the study conducted by Settersten (1998) that had demonstrated that people's minds have a mental age deadline for leaving their homes, and the deadline was found to vary from the ages of 18 and 25 years for both sexes. The present study also found that people believed that there was a social expectation for such behavior, however, men's deadline for moving out from parents' house varied form 18 to 25 years and women's varied from 16 to 24 years.

The findings of this study were also consistent with Ward and Rivadenyra's (1999) findings that a misunderstanding existed between men and women's expectations for each other. Women estimated men to be more sexually experienced at the age of 18 than men said they actually were at this age. Women estimated 75% of men to be sexually experienced where the actual rate was 66% (Ward & Rivadenyra). In the present study, women estimated 81.6 % of men to be sexually skilled by the age of 18, where only 55.6% of them actually had had sexual experience. However, the fact that the researcher had a small number of male participants might have affected the results.

Also, the findings were somewhat similar to the results of the study of young people's differences in tobacco use in India. Sixth-grade students were found to be using significantly more tobacco than eighth-grade students despite traditional expectations that increased grade level in school was a reliable predictor in tobacco use (Reddy, et al., 2006). In the present study, 50% of all the participants who smoked (60.7%) had tried their first cigarette by the age of 14 years. Another 30.2% of the participants with smoking experience tried their first cigarette by the age of 16 years and the rest of the people had tried it by the age of 19 years. The findings were similar to the previous research in a way that the number of people who had tried smoking cigarettes by the age of 16 years was bigger than the number of people who had tried it between the ages of 16 to 19 years.

Other previous findings such as differences in the perceptions for age-appropriate behaviors between three generations of women were difficult to confirm. The sample size of women was not big enough to divide it among three generations. The ages of women varied from 18 to 54 years, where most of the female participants were 18 to 30 years old.

The limitations of this study included a small sample size, an unequal number of men and women participating in the study, and a small number of people who had gone through the behaviors asked in the surveys. Another limitation was that when conducting the analyses the researcher made an assumption that American culture was the same everywhere in the United States of America. Nevertheless, the United States of America consists of many mini-cultures that have different values and traditions that could have easily affected participants' answers about the social expectations and actual behaviors. Also, the researcher could have clarified her

definition of social expectations more. The given definition may have been interpreted in various ways.

Modifying the questions on the questionnaires may have helped to find relevant data relating to the culture of the participants. The questionnaires could also have included more demographic questions such as a question about ethnicity, religion, socioeconomic status, area where person grew up (rural or suburban), participant's major or profession, and others. It may have provided more information to conduct correlational and descriptive analyses of the data afterwards. Again, the definition of social expectation could have been written in a more narrowed way for an easier interpretation.

The results of the study could be useful for future research on social expectations. The findings could help to re-examine social expectations that tend to change over time. The original title of the study was "Are we expecting too much from ourselves?" After analyzing the data, however, the title should have been changed to "Are we expecting too little from ourselves?"

References

Berger, K.S. (2004). *The developing person through the life span (6th ed.).* New York: Worth Publishers.

McCluer, J.A. (1998). Gender and ethnic differences in the timing of life events. *School for Social Research,* 160. Retrieved March 7, 2009, from ProQuest Psychology Journals database.

Reddy, K.S., Perry, C.L., Stigler, M.H., & Arora, M. (2006). Differences in tobacco use among young people in urban India by sex, socioeconomic status, age, and school grade: Assessment of baseline survey data. *The Lancet, 367*(95), 589-595. Retrieved March 7, 2009, from ProQuest Psychology Journals database.

Roscoe, B., & Peterson, K.L. (1989). Age-appropriate behaviors: A comparison of three generation of females. *Adolescence, 24*(93), 167-179. Retrieved March 7, 2009, from ProQuest Psychology Journals database.

Settersten, R.A. (1998). A time to leave home and a time never return? Age constraints on the living arrangements of young adults. *Social Forces, 76*(4), 1373-1401. Retrieved March 7, 2009, from ProQuest Psychology Journals database.

Smallen, J.M. (1995). Social timing, life continuity, and life coherence: Implications for vocational change. *Social Work, 40*(4), 533-542. Retrieved March 7, 2009, from ProQuest Psychology Journals database.

Ward, L.M., & Rivadenyra, R. (1999). Contributions of entertainment television to adolescents' sexual attitudes and expectations: The role of viewing amount versus viewer involvement. *The Journal of Sex Research, 36*(3), 237-250. Retrieved March 7, 2009, from ProQuest Psychology Journals database.

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Appendix A

Questionnaire 1

*** Some of the items are sensitive in nature but you are allowed to skip any question that you do not wish to answer. All your responses will be kept confidential.**

Please, answer the following questions **NOT** depending on **YOUR** actual experience, but depending on what you know about generally recognized *social rules and expectations (opinions of people around you: parents, teachers, friends, co-workers, relatives, neighbors, and so on*).

1. According to social expectations, at what age are people **expected to** have their first kiss (in terms of expressing romantic affection and sexual desire) with a person of an opposite or the same sex? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years

Females: _____years

*Skip the question if you think that there is no social expectation for such behavior

2. According to social expectations, at what age are people **expected to** have their first sexual intercourse? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years

Females: _____years

*Skip the question if you think that there is no social expectation for such behavior

3. According to social expectations, at what age are people **expected to** graduate from high school? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

4. According to social expectations, at what age are people **expected to** attend their first year of college? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

5. According to social expectations, at what age are people **expected to** move out from their parents' house? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

6. According to social expectations, at what age are people **expected to** marry for the first time? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

7. According to social expectations, at what age are people **expected to** have their first child? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

8. According to social expectations, at what age are people **expected to** find their first job (meaning having a paycheck and being financially independent)? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

9. According to social expectations, at what age are people **expected to** have tried smoking cigarettes? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

10. According to social expectations, at what age are people **expected to** have tried drinking an alcohol beverage? (Remember, it is not what you have experienced it is what our society expects people to follow)

Males: _____years *Skip the question if you think that there is no

Females: _____years social expectation for such behavior

Appendix B

Questionnaire 2

*** Some of the items are sensitive in nature but you are allowed to skip any question that you do not wish to answer. All your responses will be kept confidential.**

Please, answer the following questions based on **YOUR** personal experience. Honesty is greatly appreciated.

1. What is your gender? Male _____ Female_____

2. How old are you? _____years

3. What country were you raised in (country that you spent the most time in your life in while growing up)? _____

4. What year are you in school (Freshman, sophomore, junior, senior)? Circle one.

Other_____

5. Have you kissed (in terms of expressing romantic affection and sexual desire) with a person of an opposite or the same sex? (This is your actual experience)

Yes, I have_____ _____ No, I haven't

At what age did you kiss for the first time? _____years

6. Have you had sexual intercourse with a person of an opposite or the same sex? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you have sexual intercourse for the first time? _____years

7. Have you graduated from high school? (This is your actual experience)

Yes, I have_____ _____ No, I haven't

At what age did you graduate from high school? _____years

8. Have you attended your first year of college? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did attend your first year of college? _____years

9. Have you moved out from your parents' house? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you move out from your parents house? _____years

10. Have you married? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you marry for the first time_____years

11. Have you had a child? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you have your first child? _____years

12. Have you had a job? (meaning having a paycheck and being financially independent)? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you have your first job? _____years

13. Have you tried smoking cigarettes? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you first tried smoking cigarettes? _____years

14. Have you tried drinking an alcohol beverage? (This is your actual experience)

Yes, I have_____ _____No, I haven't

At what age did you first try drinking an alcohol beverage? _____years

Thank You!!!

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete 2 short questionnaires. First questionnaire has questions about age-related social expectations, and the second questionnaire has questions about my actual behavior. I understand that some of the items are sensitive in nature but I am allowed to skip any question that I do not wish to answer. 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.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

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Appendix D

Feedback Letter

Thank you for participating in my study. The questionnaires were used in order to find out what the social expectations for age-appropriate behavior are and to see how they are reflecting people's actual experiences. All of us have these beliefs regarding what we are supposed to experience, what knowledge we are supposed to have and what skills we are supposed to master before a certain age. If we do not go along with these ideals of social expectations we become frustrated and concerned with ourselves thinking that there must be something wrong with us. The study will show if there is indeed a difference between age-related social expectations and people's actual experiences.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of people, 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.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:
Irina Dolgikh 917-302-5408 (id659@lionmail.lindenwood.edu)

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

Appendix E

Recruiting Participants through Mass E-mail Script.

Hello, my name is Irina Dolgikh and I am a senior student in the department of Psychology. I am currently working on the study for my Advanced Research Methods class that I am taking with Professor M. Nohara-LeClair. I am studying the timing difference between social expectations and people's actual experiences. I want to see if social expectations for what people should have experienced by a certain age differ from people's actual experiences.

If you volunteer to participate in the study you will be asked to fill out two questionnaires. The first one has questions about your known social expectations and the second one has personal questions about your actual experiences. Completing the survey should take approximately 10 minutes of your time. I am not interested in your individual data; therefore, please do not write your names on the answer sheets in order to keep the information absolutely anonymous. After completing the questionnaire you will be asked to send back completed answer sheets to the researcher.

Unfortunately, you will not receive any reward for participating in this study, but your participation will be greatly appreciated by Lindenwood Psychology Department, and especially by me who needs to conduct this study in order to successfully graduate.

If you are interested to be a volunteer for this study, please, open the attachment; fill out the questionnaires, and then them back to me. Once I get your questionnaires I will send you a feedback letter. Thank You.

Proceed if you agree with following:

I understand that I will be taking part in a research project that requires me to complete 2 short questionnaires. First questionnaire has questions about age-related social expectations, and the second questionnaire has questions about my actual behavior. I understand that some of the items are sensitive in nature but I am allowed to skip any question that I do not wish to answer. 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 involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent.

Tables

Table 1. Mean and standard deviation scores of expected and actual ages for men

Behavior	Expected	Actual Age	Significance
First Kiss	14 (1.84)	13.82 (4.21)	no
First Intercourse	15.95 (4.07)	18.44 (4.16)	no
High School Graduation	------	18.00 (0.41)	no
First Year of College	18.35 (0.54)	18.69 (1.18)	no
Moving out from Parents House	21.19 (2.27)	19.86 (2.41)	no
First Marriage	25.71 (2.44)	27.00 (4.24)	no
First Paycheck	21.92 (2.91)	18.38 (3.15)	no
First Smoking	14.72 (2.89)	14.71 (2.50)	no
First Child	27.64 (2.68)	-------	no
First Drinking	16.31 (2.58)	15.64 (2.73)	no

*------ - No results

Tables

Table 2. Mean and standard deviation scores of expected and actual ages for women

Behavior	Expected Age	Actual Age	Significance
First Kiss	14.56 (2.18)	13.86 (2.40)	yes
First Intercourse	16.71 (4.31)	16.61 (1.88)	no
High School Graduation	-------	17.63 (0.58)	yes
First Year of College	18.31 (0.53)	19.16 (3.52)	no
Moving out from Parents House	21.60 (2.27)	18.90 (2.30)	yes
First Marriage	24.30 (2.14)	21.31 (2.47)	yes
First Paycheck	22.21 (2.84)	18.06 (3.34)	yes
First Smoking	15.16 (2.74)	14.41 (2.58)	yes
First Child	25.94 (2.56)	22.31 (4.30)	yes
First Drinking	16.73 (2.33)	15.44 (3.03)	yes

*------ No results

The Color Red Enhances Men's and Women's Attraction to the Opposite Sex

Heather Franklin and Jessica Forbes

Based on previous research, the color red has been shown to enhance one's attraction to the opposite sex. We hypothesized that if a photo of the opposite sex was framed in red, then people would rate it as more attractive than if the same photo were framed in white. Furthermore, all things being equal, men would prefer the photo framed in the darker shade whereas women would prefer the photo framed in a lighter shade of red. A total of 38 participants were shown five photos and selected the photo they found most attractive. The results revealed partial support for our hypotheses.

When conducting our study on the color red, we specifically examined the relationship between the color red and behavior. Our study had several purposes. Our first purpose was to try and establish whether or not the color red affected an individual's attraction to the opposite sex and if so, to what extent? Furthermore, we were curious to know if there was a biological connection, social connection, or a combination of both to the color red. For our second purpose, we further studied the relationship between the color red and behavior. We wondered if a particular shade of red made a difference in whether or not attraction was increased. In addition, we wondered if the preferred shade of red varied between genders.

Elliot and Niesta (2008) were interested in the connection between color and behavior. Specifically, they wanted to know if the color red would increase men's attraction to women. Through the use of psychological experiments Elliot and Niesta found that red did enhance men's attraction to women in the context of relationships and that men were unaware of the color's influence. During their study, Elliot and Niesta further examined the biological and

social link to the color red. In terms of social links, for example, there was a distinct connection between the color red and hearts on Valentine's Day. In terms of biological links, for example, women naturally become flushed when sexually aroused which sends a sexual signal to men.

To quantify the effects of red, Elliot and Niesta (2008) exposed men to photographs of women under a number of different conditions. Each individual condition used identical photos of a woman. For example, an identical photograph of a woman was placed in a red frame and a white frame side by side and the subject was asked, "How pretty do you think this person is?" In another condition, the woman's shirt in the photograph was altered to be red in one photo and blue in the other. Both photos were identical aside from shirt color. In this condition the participants were asked about their attraction to the woman and their intentions regarding dating her. The participants were asked, "Imagine that you are going on a date with this person and have $100 in your wallet. How much money would you be willing to spend on your date?" The studies concluded that participants preferred the photos that contained red over any other color. Participants rated the photos containing red as more attractive. Participants were also more willing to date and spend more money on the photos of women who were wearing red. Elliot and Niesta further believe that their findings will be useful in the dating, fashion design, and product marketing industries.

Kaya and Epps (2004) examined the relationship between color and emotion. Ninety-eight college students were asked to rate their emotional response to five principle hues. Specifically, they were to rate the positive and negative emotions they felt while observing the color. The five colors examined by the participants were red, yellow, green, blue, and purple. The participants also examined different color combinations. The color combinations were

yellow/red, green/yellow, blue/green, purple/blue, and red/purple. The results pertaining specifically to the color red were that the color red was most often associated with excitement and considered stimulating. The color red had both positive and negative impressions such as, "active, strong, passionate, warm...and aggressive, bloody, raging, and intense" (p.396).

Kaya and Epps (2004) noted that color and emotions are related to color preference. Color preference pertains to the type of emotions experienced when viewing the color. According to Kaya and Epps, brighter colors are preferred and bring about feelings of happiness and darker colors are less preferred and bring about negative feelings such as sadness. In the study, the color red evoked both positive and negative reactions. The color red is considered positive because it is associated with love and romance while it is negatively associated with fighting, blood, Satan, and evil. Red often reminds people of Valentine's Day and the shape of hearts (Kaya & Epps).

Whitfield and Wiltshire (1990) performed a critical review of Color Psychology. Color Psychology examines color preference and the different effects it has on individuals and groups as a whole (Whitfield & Wiltshire). Most of the studies they reviewed were flawed and needed corrections in the area of methodology. For example, the stimulus used was not always exactly the same for each participant when it was intended to be. Another example was that participants were not always given the same instructions; therefore they carried out different tasks for the same condition. However, even though these studies were flawed, they still contained useful information. The studies reviewed examined what exactly color preference was and more importantly what factors influenced an individual's color preference. The review found that differences in color preference depended on age. Ranging from young children up to adults, they

all preferred different colors. Women also seemed to differ from men in their color preference. In terms of gender, women rated warmer colors more pleasant while men rated cooler colors more pleasant. In addition, researchers found that differences existed among groups of people as a whole and between those individuals within that same group (Whitfield & Wiltshire).

According to Whitfield and Wiltshire's (1990) review, researchers believe that color preference was based on the hue of the color, the value or brightness of the color, and the chroma or saturation of the color. Many individuals perceive color as possessing mood and emotional characteristics. Besides age and gender, color, value, and chroma of the color all influencing color preference, research suggests that other physical factors related specifically to participants also contribute to color preference. In one study, participants were asked to evaluate the colors red, blue, yellow, and green. Each had three different levels of brightness and was viewed in a room where there were three very different levels of temperature. The study concluded that the cooler shades of color were preferred in warmer conditions and the warmer shades of color were preferred in the cooler conditions. The research concluded by noting that physical conditions only influenced color preference in extreme cases (Whitfield &Wiltshire).

Meola (2005) set out to answer the question, does color influence our lives? Before answering this question, Meola examined what exactly makes up color. When we see color, we are seeing light refracted. Sir Isaac Newton discovered that the light was broken into a range of colors. These colors were red, orange, yellow, green, blue, indigo, and violet. These color waves have specific lengths and vibrations which causes them to appear the way they do. The longer end of the spectrum, at 700nm, is seen as the color red. The shorter end of the spectrum, at 400nm, is seen as violet. Due to the difference in wave lengths and vibrations, infrared, for

example, is felt as heat and waves at the violet end of the spectrum are felt as cooler. This is why we have distinguished some colors as "cool" colors and others as "warm" colors.

Meola (2005) explored all seven colors of the spectrum. When he examined the color red he had some interesting findings. When exposed to pure red light, individuals were stimulated by the light. Specifically, individuals experienced an increase in heart rate, respiration, and blood pressure. The red light had an exciting effect on their nervous system. Interestingly, Meola suggested that due to the color red's stimulating effects, red stop signs and red car tail lights could be contributing to road rage. Meola also examined the positive and negative associations and impressions Americans assign to the color red. Mental associations to the color red were hot, fire, and blood. Direct associations made were danger and Christmas. Objective impressions were passionate and exciting and subjective impressions were rage and fierceness.

Meola (2005) concluded his study by examining the relationship between color and the perceived tastes of foods and the effects of color in our surrounding environment, specifically the work place. The color red is associated with sweetness, such as watermelon, strawberries, or cherries. In a study conducted on junior high students, non-flavored gelatin was presented to the students. The gelatins were all identical except for color. The participants all perceived the red colored gelatin as sweeter tasting than, for example, the green gelatin which was perceived as less sweet. In terms of work environment, Meola found that while a red office was more stimulating and may cause feelings of anger or tension, work performance did increase.

Color allows people to identify and organize their environment. Therefore, individuals always interpret and assign different meanings to color every time they see them. People respond to color visually, intellectually, consciously, and unconsciously (Byrne, 1973).

Psychologists have found that particular colors arouse particular thoughts and emotions that can alter our behavior and/or provoke particular moods. Since the meanings we assign to color can be subjective or learned, does this suggest that colors take on different meanings in different cultures or is there a universal link to colors across cultural boundaries (Byrne)?

Byrne (1973) examined similar interpretations and meanings assigned to colors across different cultures. The color red is the dominant color in China. It is the color for good luck, happiness, and promotes a long life. The Japanese culture associates the color red with the sun which is seen as a fiery ball that gives life. In the Unites States, the Christian religion depicts Christ with red robes which symbolize the sacrifice for life, passion, and love of Jesus Christ. The color red can also be seen in the different flags around the world. Ninety-seven percent of the flags from Asia, Africa, Europe, Latin America, the Middle East, and the United States incorporated the color red. While each country may be very different from each other in terms of their culture and philosophy, there is universal acceptance of the meaning of the colors used in the flags. Other similarities pertaining to the color red were found across cultures. For example, red was considered the most exciting color in the United States and Japan. The color red was preferred by both men and women from multiple cultures and ethnicities. Coca-Cola even uses the color red to represent them all over the world because it has universal acceptance in meaning. While the meanings associated with color can vary and are subjective from individual to individual, there seems to still be a universal connection between color and the associated interpretations and meanings assigned to them across cultures.

Elliot and Maier (2007) conducted a study to create a general model of color and psychological functioning. Through their literature research they found that red is naturally

experienced as stimulating and arousing due to its longer wavelength. In their study they hypothesized that the color red stimulates reactions such as romance, sexual readiness, passion and attractiveness. They theorized that these stimuli can be biologically based on the use of red to attract future mates in nonhuman mammals.

Alliot, Moeller, Friedman, Maier, and Meinhardt (2007) believed that individuals learn to react and think a certain way when we see a color. The color red can mean a variety of different things, as well as make us feel different ways. Red can mean danger but it can also bring pleasure and sexual arousal. The color red can stir up passion, lust, or love. Red is also said to invoke action; Alliot, et al. found that a thief tends to steal more red cars than any other color car.

Before conducting our study, two hypotheses were formulated. Our first hypothesis was that if a photo of the opposite sex were framed in red, then participants would rate the individual in the photograph as more attractive than if the same photo were framed in white. Furthermore, all things being equal, our second hypothesis stated that men would prefer the photo framed in a darker shade of red whereas women would prefer the photo framed in a lighter shade of red. We clearly believe that gender will influence the preferred shade of red and that the color red will increase the participant's attraction to the opposite sex.

In order to conduct our study, participants were recruited through the Human Subject Pool at Lindenwood University. On arrival, participants were asked to fill out several forms, such an informed consent and a pre-survey, before the study began. Once the study began, participants were given one minute to view several photos. To conclude the study, participants filled out a post-survey and were provided a feedback letter.

Method

Participants

For our study we recruited students from Lindenwood University through the use of the Human Subject Pool (HSP). Seventeen men and 21 women ranging from 18-26 years of age were recruited. Students involved in the HSP are usually enrolled in entry level Psychology, Anthropology and Sociology classes. For their participation, students may receive bonus points in these classes. To ensure that students do not repeat the same experiment twice, they are only allowed to participate in an experiment once. From our data collected, we concluded that only one participant was color blind and 16 out of 38 participants wore corrective eyewear. Sixteen participants selected blue as their favorite color, eight participants selected red as their favorite color and five participants selected green as their favorite color. These were the top three favorite color selections.

At the end of our study, two participants' data had to be excluded from the final results. One participant's data was excluded because he was colorblind. The second participant's data was excluded because the participant wore corrective eyewear but was not wearing it at the time of the study. With both participants, we were concerned that they would not be able to accurately distinguish between the different shades of red and photos. We were concerned that their choice would have been influenced indirectly by their vision.

Materials

Four cardboard picture frames were used varying in shades of red (light to dark) with the fourth frame being completely white. Each frame was labeled either A, B, C, or D (see Appendices A & B). The colored frames were used to determine which shade of red

men/women would select most often. A large piece of poster board was also used to attach the four picture frames to. An additional poster board was used to conceal the photos until the participant was ready to view them. Two photos were selected to be used in this research project. The photos selected were black and white and were headshots of a random man and woman. The photos were removed from the photo frames they were purchased in. The photos were purchased from a Target shopping center. We tried to choose photos of individuals we felt were of average attraction to the majority of the population. Unfortunately, there was some subjectivity to our selections.

Other materials ranged from writing utensils, several documents (including a pre-survey [see Appendix C] and post-survey [see Appendix D], participant lists and receipts, consent forms [see Appendix E], feedback letters [see Appendix F] and a stop watch). The study took place in Young Hall, room 105, lab B on Lindenwood University's campus. The room was well lit and quiet. The room contained a long table with one chair on the left side (for participants) and two chairs on the right side (for researchers). This setup allowed for the researchers to face the participants. There was also a computer desk with a monitor and a chair.

Procedure

For our research project participants were recruited through the HSP at Lindenwood University. Before conducting the study, participants were given two copies of the informed consent form to read and sign. Participants were allowed to retain one copy for themselves and one copy was kept by the researchers to be filed (see Appendix E). Participants were then given an anonymous pre-survey questioning them about their gender, age, if they were color blind or

wore corrective eyewear, and what their favorite color was. Once the pre-survey was completed it was collected and retained by researchers.

Next, participants were informed that the study would begin and that they would have one minute to observe the photos. Participants were asked, "Which man/woman do you find more attractive?" The participants were then shown four identical framed photos of a man/woman (depending on participant's gender). Three of the picture frames were different shades of red, a light red, a medium red, and a dark red. The fourth picture frame was white. All of the picture frames were equal in brightness and saturation level. Participants were given exactly one minute from the time the photos were shown to the participants, until the one minute was up at which point the photos were covered back up and removed. A stop watch was used to keep track of time.

The participant was then given a post-survey that asked, "Which man/woman do you find more attractive?" Each frame was labeled A, B, C, or D. The participant then circled the letter that corresponded to the picture of their choice on the post-survey. The post-survey asked, "How attractive do you think this person is?" The participant then circled a number ranging from 1 being not at all to 5 being extremely attractive. The final question on the post-survey asked, "Which of the following factors influenced your choice the most?" The factors were as follows: the man's/woman's facial expression, the way the man/woman was dressed, or the color in which the photo was placed (see Appendix D). The post-survey also remained anonymous. To conclude the study, participants were given a feedback letter explaining the purpose of the experiment and contained contact information if they had any further questions (see Appendix F).

Results

For our first hypothesis, we performed a related sample t-test. Our first hypothesis stated if a photo of the opposite sex were framed in red, then people would rate it as more attractive than if the same photo were framed in white. The results from our statistical analysis yielded statistical significance, $t\ (37) = -5.559$, $p<.001$.

For our second hypothesis, we performed a *Chi-Square* analysis (2[sex] x 4[shade]). Our second hypothesis stated all things being equal, men would prefer the photo framed in the darker shade of red whereas women would prefer the photo framed in a lighter shade of red. The results from our statistical analysis yielded no statistical significance, $\chi^2_{(3)} = 6.442$, p=.093.

Discussion

For our first hypothesis, which stated if a photo of the opposite sex were framed in red then people would rate it as more attractive than if the same photo were framed in white, resulted in statistical significance. It turns out that the results from our first hypothesis supported similar findings from other studies. Based on our significance, the color red did increase attraction of the opposite sex. The three photos framed in red were selected as more attractive than the photo framed in the white frame. Other researchers, such as Elliot and Niesta (2008), had similar results when they compared the color red to other colors such as blue or green.

While our second hypothesis yielded no statistical significance, there were however, other interesting findings worth mentioning. Our second hypothesis stated all things being equal; men would prefer the photo framed in the darker shade of red whereas women would prefer the photo framed in a lighter shade of red. Majority of both men and women selected photo "A" as

most attractive. Photo "A" was framed in the darkest shade of red. Specifically, six men and ten women selected photo "A". Photo "D", which was framed in white, was the least selected photo.

Current research today has been geared more towards men and the color red and not women and the color red. While we did not find a gender difference in our second hypothesis, we believe that further research is still warranted. For example, there may be gender differences between the preference of pastel colors and non pastel colors.

As researchers, it is important to examine your results and what may have influenced a study's outcome. A concern of ours pertaining to our study was the layout of the photos. The darkest shade of red frame always appeared to the far left and was always labeled "A". Seeing as how individuals read left to right, was the darkest shade of red selected most often because of its color or was it because it was first in the sequence and was labeled "A"? In the future, the arrangement of the colors needs to be mixed up and additional colors, such a blue or green, should be added.

When reviewing possible limitations of our study, it was apparent that a few did exist. For example, one limitation in our study was that we were limited on subjects so our sample data was small. Although 56 available openings were offered, only 38 participants actually attended the study. Had we had more time to conduct our study, we believe we would have been able to recruit more participants. Another limitation to our study was that the majority of our participants were women. This had a direct effect on our results based on gender differences, making our sample biased. We could possibly avoid this limitation in the future by recruiting participants through other avenues. This would be especially important for future research in the

area of color and gender differences. We would want to have an equal amount of men and women when comparing the two.

In addition to gearing future research towards gender differences, one may want to examine color preference and personality types. The future research could examine common personality types and favorite color combinations. Maybe outgoing women prefer the color red and wear it often. So, is it the color red that men are attracted to or is it that the woman is more outgoing and more available to men? Either way, there is much more to learn about the relationship between color and behavior.

References

Alliot, A., Moeller, A., Friedman, R., Maier, M., & Meinhardt, J. (2007). Color of psychological functioning: The effects of red on performance attainment. *Journal of Experimental Psychology, 136*, 154-168. Retrieved April 20, 2009 from www.psychbits.edu/the-psychology-of-color-red/

Byrne, M. (1973). Culture and communications: Similarities of color meanings among diverse cultures. *Journal of Cross-Cultural Psychology, 4*, 135-156. Retrieved April 10, 2009, from www.bwwsociety.org/feature/color.htm

Elliot, A. (2007). Current directions in psychological science: Color and psychological function. *Journal of the American Psychological Society, 16*, 250-254.

Elliot, A. J., & Niesta, D. (2008). Romantic red: Red enhances men's attraction to women. *Journal of Personality and Social Psychology, 95*, 1150-1164.

Kaya, N., & Epps, H. H. (2004). Relationship between color and emotion: A study of college students. *College Student Journal, 122*, 250-270.

Meola, K. V. (2005). The psychology of color. *Hohonu, a Journal of Academic Writing, 3*, 1-6. Retrieved April 7, 2009, from http://www.uhh.hawaii.edu/academics/hohonu/writing.php?id=73

Whitfield, T. W. A., & Wiltshire, T. J. (1990). Color psychology: A critical review. *Genetic, Social, and General Psychology Monographs, 116*, 387-412.

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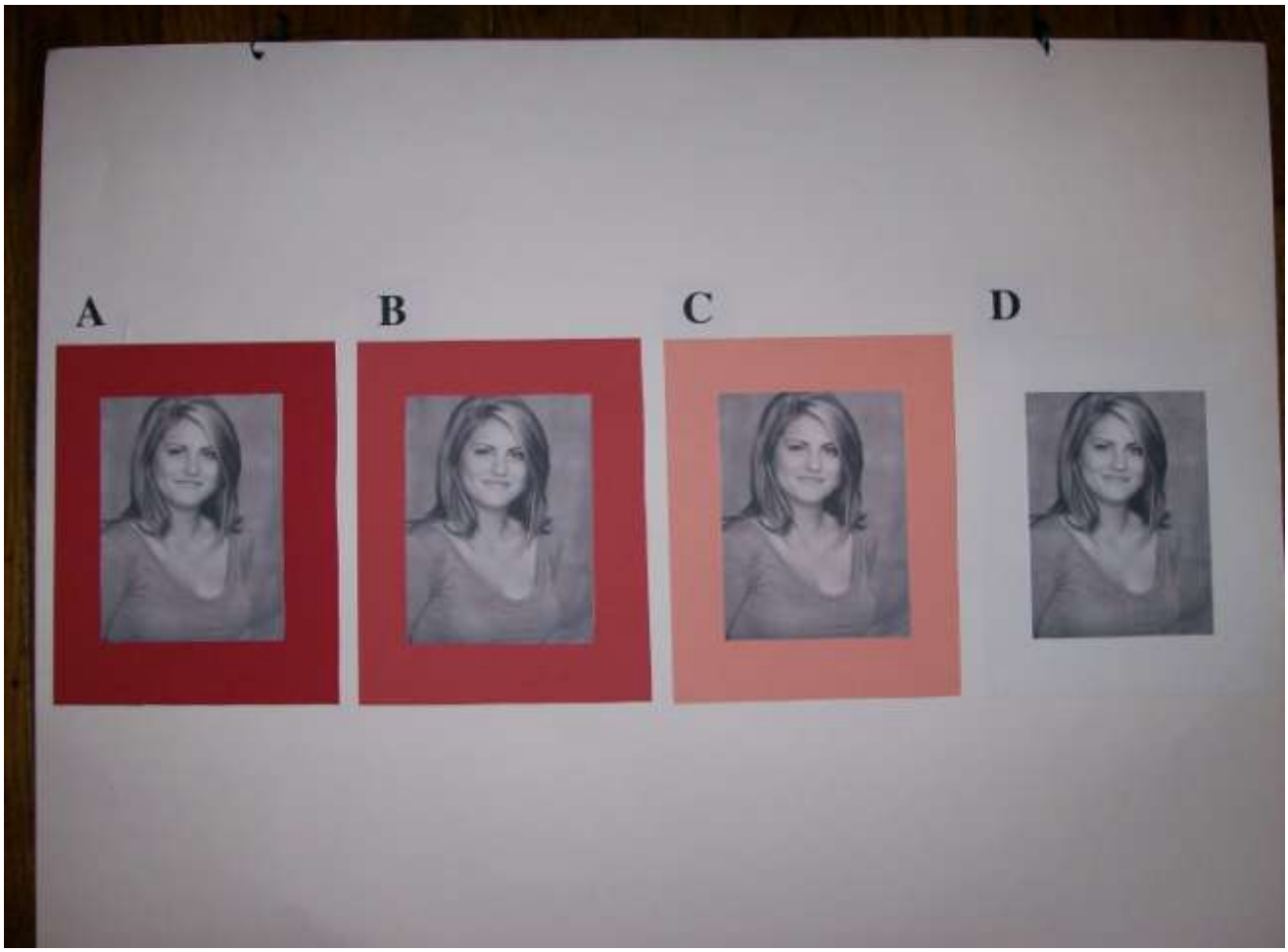
Correspondence concerning this article should be addressed to Heather Franklin, E-mail: lilrosebud111@aol.com

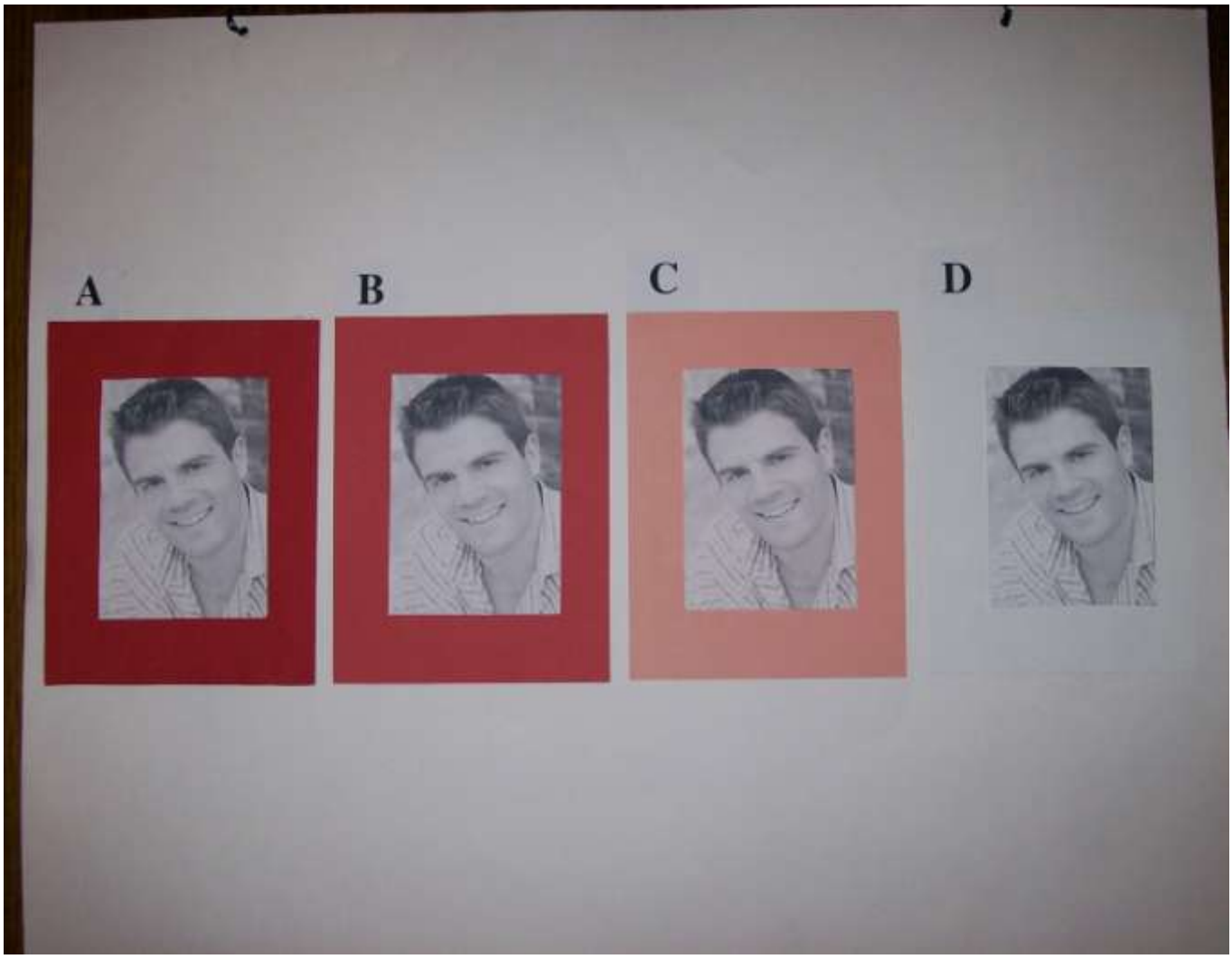
Appendix A

Stimuli shown to men



Appendix B

Stimuli shown to women



Appendix C

Pre-Survey

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

***IMPORTANT: As a participant you are not required to answer any of the following questions. However, if you choose to answer any of the following questions then your information will remain anonymous. Your information will not be shared with anyone outside of this research project nor will it be identifiable.**

1) Are you **MALE** **FEMALE**?
2) Are you color blind? **YES** **NO**
3) Do you wear any form of corrective eyewear (ex: contacts or eyeglasses)?

   YES **NO**

4) What is your age?
5) What is your favorite color (please 1 choose from the list below)?

   RED GREEN BLUE YELLOW PURPLE ORANGE WHITE

Appendix D

Post-Survey

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

***<u>IMPORTANT</u>: As a participant you are not required to answer any of the following questions. However, if you choose to answer any of the following questions then your information will remain anonymous. Your information will not be shared with anyone outside of this research project nor will it be identifiable.**

1) Which photo do you find most attractive?

A B C D

2) How attractive do you think this person is?

1 2 3 4
Not attractive at all Neither attractive nor unattractive Somewhat attractive Very attractive

3) Which of the following factors influenced your choice the most?

A) Individual's facial expression

B) The way the individual was dressed

C) Color in which the photo was placed on.

Appendix E

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short pre-survey asking me about my gender, age, whether I am color blind, whether I wear corrective eyewear of any kind, and what my favorite color is,. I will also be asked to complete a post-survey asking me questions about the photos I previously observed. 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 am also aware that as a participant of this study I am not required to answer any questions I am not comfortable answering and that 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 between myself and the researchers, Heather Franklin and Jessica Forbes. In addition I understand 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.

_____ Date: _____
(Signature of participant)

_____ Date: _____
(Signature of researcher obtaining consent)

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Appendix F

Feedback Letter

Thank you for participating in our study. The purpose of our study was to examine the relationship between color and behavior. Specifically, we hypothesize that men would find the photo of the woman in the dark red frame most attractive and that women would find the photo of the man in the lightest red frame most attractive. Furthermore, we believe that this attraction takes place on a biological level and neither men nor women are aware of it.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of participants, 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.

Thank you again for your valuable contribution to this study.

Sincerely,
Principal Investigators:
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How Do You Compare? The Correlations of Social Desirability and Self-Esteem as well as Social Desirability and Self-Consciousness

Kristy Johnson and Kristy Myers

In the present study, 81 participants were asked to self-report their levels of self-esteem and self-consciousness using Rosenberg's Self-Esteem Scale and Fenigstein's Self-Consciousness Scale, respectively, as well as report their current semester GPA in order to study the correlations between these variables and the variable of GPA inflation. There was no significance found for the correlations between the level of GPA inflation and experimental condition, between GPA inflation and self-esteem, or between GPA inflation and self-consciousness for the 35 participants with obtainable GPA's. However, the present researchers did find significance in the correlation between inflated GPA and self-consciousness for the 80 total participants with a reported GPA.

The purpose of the present study was to research the observable relationships between self-esteem, self-consciousness, and social desirability in context. Based on the results of the studies reviewed in this paper, one's levels of self-esteem and self-consciousness seem to directly influence their behavior in social or individual contexts depending on what the perceived socially desirable behaviors are in that context.

Abrams and Brown (1989) conducted a study of self-consciousness in relation to social identity and self regulation as a group member. The researchers pointed out that when people are placed in a group context, they tend to surrender their own individuality for what is socially acceptable and popular among the group they are in. They also explained that self consciousness

is sometimes lost because of the desire to achieve positive distinctiveness (Abrams & Brown). This term refers to decreased conformity to a group's norms, and is important because the conformity differs depending on the social condition one is placed in.

Abrams and Brown's (1989) study assessed a group of 208 secondary education students in England. The students were told that they were being compared to another school on a 'general abilities' test. Additionally, students were told to either cooperate with the other school, or compete against the other school, and the 'winning' student would receive a prize. Students were then led to believe that when compared to their opposing school, data concluded that the other children generally had higher, lower, or equal pretest scores. The experiment concluded with a scale that measured characteristics such as, but not limited to: goal orientation, in-group pride, perceptions of the group's test performances, and competitiveness (Abrams & Brown). They found evidence that individuals who possessed high self consciousness were susceptible to threats of interpersonal individuality, meaning that these individuals behaved in ways that would be deemed socially desirable (Abrams & Brown).

Mesmer-Magnus, Visesvaran, Deshpande, and Joseph (2006) conducted a study designed to measure the correlation of over-claiming (inflated responses) in relation to social desirability, self-esteem in relation to social desirability, and emotional intelligence in relation to social desirability. Mesmer-Magnus et al. assessed 198 participants using the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe as cited in Mesmer-Magnus et al., 2006), a ten item over-claiming scale, the Rosenberg Self-Esteem Scale (Rosenberg as cited in Mesmer-Magnus et al.), an emotional intelligence scale, and a demographics survey.

Mesmer-Magnus et al. (2006) found that many factors positively correlate with social desirability, including self-esteem and emotional intelligence. They also found no significant correlation between over-claiming and social desirability (Mesmer-Magnus et al.). Additionally, upon analysis, emotional intelligence, or the ability to examine one's own emotions, possessed a greater variance with social desirability than the other factors.

Mesmer-Magnus et al. (2006), initiated research on the topic of social desirability and the relevant studies revealed motivation and ability both have the tendency to cause one to distort responses in certain situations. This is a feasible correlation because one must first have the ability to inflate responses, but that same individual also needs a reason, or motivation to distort responses as well. For example, if something were to remain a secret and no one would ever find out, there would be no point in lying about it. Individual differences also played a role in a distortion of responses. This is also a likely correlation because, for example, an individual with a low level of modesty may feel it necessary to exaggerate the truth to a potential employer. On the other hand, an individual with a high level of modesty may feel that even a slight exaggeration in response to a potential employer would constitute a lie, which may be against his or her ethics. Unconscious and conscious response styles, distortion, and impression management all played into the tendency to inflate responses in given situations as well. Mesmer-Magnus et al. suggests that when acting upon self deception, the participants themselves believe their own exaggerated perceptions of their abilities. Such deception is generally viewed as unconscious; however, when one desires to create a good impression on others, and have the motivation to do so, the deception is more deliberate and serves to maintain moral consistency (Mesmer-Magnus et al.). Regardless of the reasoning, social desirability is manifested in social

instances, especially if one has reason to desire acceptance and a higher status within the situation (Mesmer-Magnus et al.).

Brown, (as cited in Mesmer-Magnus et al., 2006) found that high self-esteem correlated positively with social desirability and vice versa. Mesmer-Magnus et al. ultimately concluded that self-esteem related to social desirability, however, felt it necessary to further investigate the many factors that underlie the characteristics.

Troop, Allan, Treasure and Katzman (2003) studied the correlation between social desirability and eating disorders. The researchers assessed 102 participants with eating disorders from two different hospitals and comparison participants were assessed form previous studies that measured the same constructs. They took both age and gender into consideration when completing analysis (Troop et al.). The participants were given an eleven item Likert scale designed to measure several aspects of social comparison. Participants were also given an inventory to measure submissive behaviors as well as eating disorders (Troop et al.). Upon analysis, researchers found that patients with eating disorders displayed a higher number of submissive behaviors, such as vulnerability, humiliation, and avoidance, and that the same participants also reported an adverse reaction to social comparison. Their study demonstrates that individuals sometimes go to extreme measures to maintain status, especially in social settings.

Pager and Quillian (2005) held a study that focused on comparing results from a self-report measure of discriminative attitudes with an employer's actual behavior in real-life situations where they would be employing white or black ex-offenders. The researchers focused on labor and employment scenarios in order to control for the effects of social desirability in an employer's characteristic attitudes of their individual social life. Pager and Quillian theorized

that an employer's actual hiring behavior would differ from that in which they reported on the self-measure for both ex-offenders and racial differences. Pager and Quillian used hypothetical vignettes, or situations in which an employer would typically encounter in order to study what their actual behavior might be if they did encounter such an employment situation. However, Pager and Quillian admitted that discrimination in an employment setting is often influenced by factors of a particular situation and environment, and these factors lessen the relationship between attitude and behavior in certain situations. Therefore, Pager and Quillian also theorized even an employer that would normally be discriminatory to certain types of potential employees would change their behavior in order to be more compliant to a particular situation rather than their own desires.

For a six-month period in 2001, Pager and Quillian sent matched pairs of white and black men to apply for a total of 350 entry-level employment opportunities. Each pair was according to race, with two white (n=150) or black (n=200) men applying for a job, one with a false "ex-offender" status, and one without. The discriminative preference of each hiring employer was measured by the amount of calls they made to each applicant. White non-ex-offenders received 34 percent call backs and white false offenders received 17 percent call backs. However, black non-ex-offenders only received 14 percent call backs and 5 percent call back ratings for false offenders. Pager and Quillian concluded that ex-offenders and blacks were only half, if not less, as likely to receive call backs from potential employers.

After this first part of the study, Pager and Quillian (2005) conducted phone interviews with these employers in order to gauge what their reported individual attitudes about employment discrimination were. Out of the 350 original employers, 199 responded. During the

phone interview, employers were read vignettes of typical situations they might be involved in, and their likelihood of hiring an applicant. Vignettes included applicants with similar features of the original study: if the original applicant was a white non-offender, then the respondent's second vignette involved a white non-offender, and vice versa. According to this phone survey, 60 percent of employers said they would hire an ex-offender, whereas in the audit only 17 percent white and 5 percent of blacks received call backs. Also, in survey results, employers reported interviewing 55 percent of total applicants, eight for each individual job. What employers reported and what was presented by Pager and Quillian's sample were not equivalent, and thus researchers concluded that employers reported socially desirable answers when they knew that their answers would be directly attributed to them, when their respective hiring behavior exhibited otherwise. This study serves justice to the present researchers' hypotheses because it demonstrated that when placed in an actual situation, in which social desirability was presumed to be irrelevant, the employers did not distort their personal judgment. On the other hand, when specifically asked in a socially desirable situation, in which such judgments could be attributed to each employer, the employers consistently distorted their judgment and response to appear socially desirable.

Santos-Pinto and Sobel (2005) mentioned that positive self-image, or a high self-esteem, positively correlates with egocentrism. Myers (as cited in Santos-Pintos) pointed out that in economically significant circumstances, 90 percent of individuals assess themselves as greater than average. Santos-Pinto and Sobel hypothesized that several factors play into an increase of self-esteem, such as ability, skills needed, and one's level of technological knowledge.

Santos-Pinto and Sobel (2005) tested their hypothesis by putting individuals in several different conditions, for example a group receiving instruction in technology and a single individual receiving instruction in technology, and having the individuals rate their own abilities on a specific task. They also had others rate the participants' abilities on the same task. They gave each person a list of words to choose from, and the number of words differed for each condition. The control group did not receive describing words to choose from, but instead were allowed to write whatever they desired when describing their ability. They found that the easier the task, the higher individuals rated themselves. They also found that individuals in the group setting were more likely to have a lower self-image than those in individual settings, and that the amount of technology one was allotted to use for specific tasks also had a correlation with self-assessments.

James L. Gibson (1981) found that self-esteem has a significant impact on one's decision making of a judicial nature (legal decision making). Gibson hypothesized that the impact of external or internal influences on judicial decisions depends on the judge's level of self- esteem. Gibson theorized that those with higher self-esteem would be less likely to be swayed by external role expectations, whereas those with lower self- esteem would be more likely to change their opinions based on external role expectations.

Gibson (1981) stated that those with a career in politics have certain roles they must adhere to, and that their judgments are largely influenced by the norms and expectations of the role in which they hold. A total of 48 judges in the state of California were interviewed, and their selection was based on the fact that each of them had held both legislative and judicial positions throughout their careers. All 48 selected judges were male, and 45 were white, three

were classified as "non- white". Almost half of these judges were selected because they have suffered a defeat politically, and Gibson found that high self-esteem did not positively correlate to the judges holding the highest political offices.

Gibson (1981) used a Likert scale which was a, "Modified version of the Eagly revision of the Janis- Field Feelings of Inadequacy Scale," in order to measure each judge's level of self- esteem (p. 111). This self-esteem measure was administered by pencil and paper, and then Gibson asked each judge was a series of questions regarding judicial role expectations and altering behavior to meet such expectations that of which are typical of judicial behavior. The first set of verbal items was focused on external expectations, and the second set dealt with internal expectations of behavior. High self-esteem according to the written scale was very poorly correlated with role orientations: what a judge perceives their own role to be, and role expectations: what a judge perceives as external expectations of their role. Judges scoring low on the self-esteem scale were more strongly influenced by both role orientations and role expectations.

Gibson (1981) concluded from these data that judges who scored higher in self-esteem would be more likely to take into account their own personal opinions when making a judicial decision and less likely to take into account precedent or externally motivated role expectations; and that those who scored lower in relation to self-esteem would be more likely to make decisions solely based on precedent and what is externally expected of them.

Damasio (1998) pointed out that consciousness is a very difficult concept to study because it is a private status that occurs within the human species. Damasio made note, however, that consciousness is possible to study in a well controlled environment abiding the strict

guidelines that have been placed on the scientific community as well as using stringently controlled stimuli. The stimuli generally used in experiments attempting to unravel consciousness are known to produce inner feelings, which can then be analyzed (Damasio).

Damasio (1998) broke consciousness into two levels, one is commonly known as core consciousness and the other is known as extended consciousness. Core consciousness is a more basic concept, and involves a general awareness of surroundings and thoughts. Extended consciousness is more complex and involves past, present, and expected future thoughts. Both require some form of memory, and both occur involuntarily, or without will. The present researcher's experiment attempts to tap into participants' core consciousness. The present researchers hoped to create an environment in which participants are forced to decide whether to be completely honest about his or her Grade Point Average in both a controlled and manipulated environment. The decision the participants made should tell present researchers general information about the participant's level of consciousness, which could then be correlated with self-esteem and social desirability. Damasio made note that consciousness was the beginning of rules, ethics, science, technology, art, and the foundation of representing oneself.

Researchers for the present study wished to study the relationship between environmental condition and changing of one's behavior to be more socially desirable, as well as whether or not there was a positive or negative relationship between self-esteem and social desirability, and self-consciousness and social desirability. The present researchers hypothesized that when placed in an environment in which a certain socially desirable behavior was expected, such as reporting a high GPA, participants would inflate their own GPA in order to be perceived as more socially desirable. The present researchers also hypothesized that there exists a negative relationship

between self-esteem and socially desirable behavior and that there exists a positive relationship between self-consciousness and exhibiting socially desirable behavior. The present researchers hypothesized that an individual with high self-esteem will not be as likely as one with low self-esteem to change their own behavior to be more socially desirable. The present researchers arrived at this hypothesis by reasoning that participants would be more likely to give a distorted response in a situation in which social desirability was valued, especially if participants had low self-esteem. These participants, the present researchers hypothesized, would have more of a reason to desire social approval. The present researchers also hypothesized that individuals with high self-consciousness will be more likely to distort responses in order to appear socially desirable. In being highly self-conscious one should, hypothetically, be much more conscious about one's own behavior and thus more likely to change to be socially desirable. A vast amount of research has been done studying the correlations between self-esteem and / or self-consciousness related to social desirability.

The researchers for the present experiment presumed, based on Pager and Quillian's (2005) study, that students would alter their self-reported GPA in an experimental setting in which a confederate was present. The present researchers also thought that Pager and Quillian's study demonstrated that when participants were placed in a control setting in which all social characteristics are removed, the participant would be less likely to alter their self-reported GPA. Also, Santos-Pinto and Sobel's (2005) hypothesis specifically relates to the present researchers' experiment because participants must first see themselves as able to retain a high GPA, and they must also have the skills necessary to distort their GPA as well. Finally, the participants needed to understand the purpose of the self-esteem scale administered, and be able relate it to the

specific GPA task, in order to avoid overstating their own GPA and not present themselves as socially desirable.

Additionally, Gibson's (1981) conclusion is significant because it shows that individuals with high self-esteem seem to have less of a reason to distort judgments and responses, which is what researchers for the present experiment also hypothesized. Finally, Damasio's (1998) observation is important because by controlling environment as well as stimuli, researchers of the present experiment hope to obtain an accurate representation of self-consciousness, which directly relate to some of these mentioned themes.

Method

Participants

The participants in this study consisted of 81 college students (28 men, 53 women), attending Lindenwood University. All 81 participants were recruited via the Lindenwood University Human Subject Pool (HSP). The HSP is a way for researchers to recruit participants, and the participants are rewarded for participation with bonus points in general education social science classes. The individuals who chose not to participate in experimental research have the option of completing an alternate assignment for bonus points in the same social science classes. The average age of participants was 19.86 years old, and most participants were in their freshman year of college. In fact, 53.1% of participants were freshmen, 27.2% were sophomores, 14.8% were juniors, and only 4.9% were seniors. Of the participants recruited, one participant failed to report his or her GPA. Participants were assigned to conditions using random assignment.

Additionally, since many of the participants were either first semester freshmen or transfer students, the actual cumulative GPA was obtainable for only 35 of the 80 participants in total. Of these 35 participants, there were 12 men and 23 women. Also, freshman status remained the grade level most represented, as 37.1% were second semester freshmen, 34.3% were sophomores, 17.1% were juniors, and 11.4% were seniors. The mean age of the 35 participants was 20.63.

Materials and Procedure

The materials for the present study consisted of a sign-up sheet posted on the Lindenwood Human Subject Pool (HSP) bulletin board, so that the present researchers could recruit participants for the study, and so that participants could sign up for convenient times in which to participate, as well as two informed consent forms per participant (see Appendix A); one for the present researchers to keep on file, and another for the participant to read and refer back to if necessary. The sign-up sheet provided contact information for both participants and researchers so that communcation regarding the study would be possible, and the informed consent form explained to participants the reason behind the study, as well as the fact that the experiment requires the release of participants GPA. It also reinforced the notion of withdrawal, and made sure participants were at least 18 years of age or had a parent or legal guardian's consent on file. Additionally, each participant received a separate GPA release to sign (see Appendix B), which aided researchers for the present study in obtaining accurate GPAs for each participant. A feedback letter was given to participants at the end of the session, which was used to thank participants for their contribution to the study. The feedback letter also provided the

present researchers' names and phone numbers in case the participants had any further questions about the study, or wished to obtain the results of the experiment upon completion.

Each participant received a short demographic survey (see Appendix C) as well as a copy of Rosenberg's Self-Esteem Scale (as cited in http://www.wwnorton.com/), which is a Likert scale which assessed self-esteem for each individual (see Appendix D). The ten items were based on a four- point scale in which participants read a statement related to self-esteem, such as, "I feel that I have a number of good qualities…" and decided if they strongly agreed, agreed, disagreed, or strongly disagreed with each statement. Participants then received a copy of Fenigstein's Self-Consciousness Scale (as cited in http://www.psychbytes.com), which is also a Likert scale with five anchors (see Appendix E). There were 20 questions for the participants to answer, and participants were required to describe how characteristic or uncharacteristic the statements were of them. The ultimate goal of this scale was to measure one's level of self-consciousness in order to give the present researchers general personality characteristics that may alter one's self-esteem.

Researchers for the present study had four trays set up, each labeled with a range of possible GPAs. The first tray was labeled 0-1, the second 1.1-2.0, the third 2.1-3.0, and the fourth was labeled 3.1-4.0. The present researchers used the trays to hold the surveys, and a different amount of phony surveys were placed in each tray. The number of surveys in each tray depended on whether the participants were assigned to the experimental group or control group. In the control group, an equal number of surveys was put in each tray. In the experimental condition, however, the 3.1-4.0 tray had the most, 5 phony surveys in this tray, and less in each of the others. The number of surveys in each tray differed for the experimental and control

groups because it created an opportunity for participants to compare themselves to others, otherwise, there would be no reason for participants to inflate (or in some cases deflate) their answer.

Since all participants were recruited from the HSP, participants were given a participant receipt signed by the present researchers in order to receive extra credit. Also, the participants were required to sign up for the date and time they wished to complete the experiment on a signup sheet that was posted on the HSP bulletin board located on the fourth floor of Young Hall. The present researchers then met the participant at the predetermined lab room to conduct the experiment. The lab room was also located in Young Hall, and was a small room with a desk and two chairs. Pens were provided to participants so they could complete the necessary forms and surveys, and the chairs were provided to make participants as comfortable as possible. Candy was passed out concluding the experiment to thank the participants for helping the present researchers conduct their study. Finally, a computer was used to analyze data, create a spreadsheet, and write a paper over findings. Microsoft Office as well as the Statistical Package for the Social Sciences (SPSS) was the program of choice for these tasks.

Results

The present researchers hypothesized that when placed in an environment in which a certain socially desirable behavior was expected, such as reporting a high GPA, participants would inflate their own GPA score in order to be perceived as more socially desirable. The present researchers manipulated the experimental condition by either placing a confederate with a reportedly high GPA (3.9) in close proximity and observable to the participants when they reported their own GPA (experimental), or not (control).

In this study, GPA inflation refers to the level of distortion in a participant's reported GPA in reference to their actual GPA on file. Of the 81 participants who contributed to this study, an actual GPA was obtainable for only 35 participants.

An independent t-test comparing the two conditions on GPA inflation for the 35 participants did not reveal statistical significance, $t_{(33)} = .811$, $p>.05$. The experimental group had a mean GPA inflation score of .2026 points and standard deviation of .43972, whereas the control group had a mean GPA inflation of .0894 points and a standard deviation of .38211.

In order to determine whether or not there was a positive or negative relationship between self-esteem and social desirability, as well as self-consciousness and social desirability, a multiple regression analysis was conducted with GPA inflation as the dependent variable and experimental condition, self-esteem, and self-consciousness as the independent variables. The results did not reveal any significant findings. The findings did reveal that GPA inflation was correlated with experimental condition $r_{pb} = -1.40$, with self-esteem r= -.122, and with self-consciousness r=.252, indicating that the present researchers did assume the correct directions of these relationships.

Discussion

Though significance was not found for the original hyptotheses, the present researchers still wanted to study the relationships between self-reported GPA and self-esteem, self-consciousness, and social desirability for the 80 total participants that reported a GPA. Since GPA inflation between participants' self-reported and actual GPA's could not be obtained for all 81 total participants, researchers instead used self-reported GPA level as the dependent variable

in these measures. Since one participant did not report a GPA, all but one of the 81 participants' self-reported GPA's were included in the following analyses.

An independent t-test comparing the experimental conditions on self- reported GPA level for the 80 total participants did not reveal statistical significance, $t_{(78)}= .810$, $p>.05$. Since actual GPA's were not obtainable for the 81 total participants, the present researchers instead wished to only study the difference between condition on the inflated level of self-reported GPA. Present researchers deduced from these results that condition was not a defining factor in this experiment in determining the amount of inflated GPA, and that participants inflated their GPA regardless of condition.

In order to determine whether or not there was a positive or negative relationship between self-esteem and social desirability, as well as self-consciousness and social desirability, a multiple regression analysis was conducted for all 80 participants with a reported GPA, with GPA level as the dependent variable and experimental condition, self-esteem, and self-consciousness as the independent variables. The results revealed a significant finding for the self-consciousness measure, $F_{(1,78)}= 5.097$, $p<.05$. In fact, self-consciousness scores accounted for about 6% of the variance in GPA inflation ($R^2= .061$).

Also, present researchers found significance in the correlation between self-esteem and self-consciousness, $r= -.579$, conveying that those who scored high in self-esteem also scored low in self- consciousness, and vice versa. These results indicate that the relationship between self-esteem and self-consciousness might be an interesting avenue for future research.

There were several limitations to the present study, the first and foremost being the time constraints. The present researchers although allotted ample time to analyze data, did not have

sufficient time to recruit participants and run experiments. The times that the present researchers posted were not being requested by participants, as most participants had classes to attend, and did not want to try to complete an experiment during breaks. The realization that the times posted were not feasible for individuals to participate prompted the present researchers to take off of work to run experiments, and times earlier in the morning were posted as well as later in the afternoon to curb this issue. Posting different times for participation seemed to work, as many individuals began signing up for the experiment.

Another major limitation was the design of the experiment. Since the present researchers only used the Human Subject Pool for participants, many of the participants were freshmen. This is true because the teachers that offered extra credit for participation were primarily for introductory classes. The present researchers did not realize the problem this could post at the beginning of the project. Even though the present researchers ran 81 participants, only 35 of the participant's data could be used in analysis because the registrar's office did not have the GPA of freshmen or transfer students on file. GPA was used to determine one's level of social desirability, and was a vital part of the study. Not being able to obtain sufficient data really lowered the validity of this study. To overcome this limitation, the present researchers could have used participants that were not part of the HSP. Although the thought occurred halfway through the experiment, the present researchers could not change the design of the study because it would have taken too long to get approval from the Institutional Review Board. Another idea would be to ask for approval at the beginning of the project to obtain permission from Lindenwood teachers to run experiments in their classrooms, however, that could also harm the validity because it would have been extremely difficult to control the level of social desirability.

Additionally, the differences in responses then could be attributed to a myriad of factors, such as participant's friends being present, or coercion from friends to participate if one did not want to.

The sample size obtained was yet another limitation. For this research to be considered reliable and valid, thousands of participants should have been assessed. As previously mentioned, time constraints as well as design confounds made such a sample size impossible to obtain. Perhaps if the researchers of the current experiment could have visited other colleges this limitation could have been defeated. Additionally, the sample was composed primarily of females, which could also affect the level of social desirability because perhaps women h ave a higher lever of social desirability than men, or vice versa, when in social situations. It would have been ideal to have an equal number of men and women participants in the experiment.

References

Abrams, D., & Brown, R. (1989). Self-consciousness and social identity: Self-regulation as a group member. *Social Psychology Quarterly*, *52*, 311-318. Retrieved March 13, 2009, from http://www.jstor.org.gatekeeper.lindenwood.edu.

Damasio, A.R. (1998, November, 29). Investigating the biology if consciousness. *Philosophical Transactions: Biological Sciences*, *353*, 1879-1882. Retrieved March 31, 2009, from http://www.jstor.org.gatekeeper.lindenwood.edu.

Fenigstein, A., Scheier, M.F., & Buss A.H.. (1975). *Fenigstein's Self-Consciousness Scale*. Retrieved February 18, 2009, from http://www.psychbites.com/Quizzes/Self%20Consciousness%20%20Multiple%20Scores/Self%20Consciousness%20Scale.htm

Gibson, J.L. (1981). Personality and elite political behavior: The influence of self esteem on judicial decision making. *Journal of Politics, 104*(22), 104-125.

Mesmer-Magnus, J., Viswesvaran, C., Deshpande, S., & Joseph, J. (2006). Social desirability: The role of over-claiming, self-esteem, and emotional intelligence. *Psychology Science, 48*, 336-356.

Pager, D., & Quillian, L. (2005). Walking the talk? What employers say versus what they do. *American Psychological Review 26*, 355-380.

Santos-Pinto, L., & Sobel, J. (2005). A model of positive self-image in subjective assessments. *American Economic Association 95*, 1386-1402.

Troop, N. A., Allan, S., Treasure, J. L., & Katzman, M. L. (2003). Social comparison and submissive behavior in eating disorder patients. *Psychology and Psychotherapy, 3,* 237-49. Retrieved March 13, 2009, from ProQuest Psychology Journals database. (Document ID: 443173661).

Rosenberg, Marshall. (1965). *Rosenberg's Self-Esteem Scale*. Retrieved February 13, 2009, from http://www.wwnorton.com/college/psych/psychsci/media/rosenberg.htm

Author Note

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We thank our participants for volunteering for our research experiment, without participants the experiment would have been impossible!

We thank our classmates for the helpful and insightful critiques of our work. We also thank our classmates for emotional support throughout this research project.

Appendix A

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 concerning my Grade Point Average (GPA), as well as Rosenberg's self-esteem scale and Fenigstein's self consciousness Scale. I also understand that I am giving permission for the researchers to request my official GPA from the registrar's office to be reported anonymously. I understand that my identity and GPA will remain anonymous for the entire duration of this study. I understand that I should be able to complete this project within 10-15 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 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.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

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Appendix B

I understand that I am giving my student ID number; if I do not know my student ID number, I will make every attempt to obtain my student ID number in an expedient manner in order to aid researchers in obtaining data for this study's purposes.

_____ _____/_____/_____

Participant Signature Date

Appendix C

Demographic Survey

1. Are you Male or Female? (check one)

   __ Male

   __ Female

2. What is your age in years? _____

3. What college grade level are you currently? (check one)

   __ Freshman

   __ Sophomore

   __ Junior

   __ Senior

4. Are you a first semester freshman or first semester transfer student? (check one)

   __ First Semester Freshman

   __ First Semester Transfer

   __ Neither

Appendix D

Participant ID Number: _____

(Assigned by Researcher)

STATEMENT		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	I feel that I am a person of worth, at least on an equal plane with others.				
2.	I feel that I have a number of good qualities..				
3.	All in all, I am inclined to feel that I am a failure.				
4.	I am able to do things as well as most other people.				
5.	I feel I do not have much to be proud of.				
6.	I take a positive attitude toward myself.				
7.	On the whole, I am satisfied with myself.				
8.	I wish I could have more respect for myself.				
9.	I certainly feel useless at times.				
10.	At times I think I am no good at all.				

Appendix E

.Self Consciousness Scale

by Allan Fenigstein,

Michael Scheier, and Arnold Buss

Below are twenty-three statements that may or may not be characteristic of the way you see yourself as a person. Read each one carefully and rate whether the statement is characteristic of uncharacteristic of you using the rating scale below. Select the number of your answer after each question.

Extremely uncharacteristic	= 0
Generally uncharacteristic	= 1
Equally characteristic and uncharacteristic	= 2
Generally characteristic	= 3
Extremely characteristic	= 4

1. I'm always trying to figure myself out.

a. 0
b. 1
c. 2
d. 3
e. 4

2. I'm concerned about my style of doing things.

a. 0
b. 1
c. 2
d. 3
e. 4

3. Generally, I'm very aware of myself.

a. 0
b. 1
c. 2
d. 3
e. 4

4. It takes me time to overcome my shyness in new situations.

a. 0
b. 1
c. 2
d. 3
e. 4

5. I reflect about myself a lot.

a. 0
b. 1
c. 2
d. 3
e. 4

6. I'm concerned about the way I present myself.

a. 0
b. 1
c. 2
d. 3
e. 4

7. I'm often the subject of my own fantasies.

a. 0
b. 1
c. 2
d. 3
e. 4

8. I have trouble working when someone is watching me.

a. 0
b. 1
c. 2
d. 3
e. 4

9. I constantly scrutinize myself.

a. 0
b. 1
c. 2
d. 3
e. 4

10. I get embarrassed very easily.

a. 0
b. 1
c. 2
d. 3
e. 4

11. I'm self-conscious about the way I look.

a. 0
b. 1
c. 2
d. 3
e. 4

12. I find it hard to talk to strangers.

a. 0
b. 1
c. 2
d. 3
e. 4

13. I'm generally attentive to my inner feelings.

a. 0
b. 1
c. 2
d. 3
e. 4

14. I usually worry about making a good impression.

a. 0
b. 1
c. 2
d. 3
e. 4

15. I'm constantly examining my motives.

a. 0
b. 1
c. 2
d. 3
e. 4

16. I feel anxious when I speak in front of a large group.

a. 0
b. 1
c. 2
d. 3
e. 4

17. One of the last things I do before I leave the house is look in the mirror.

a. 0
b. 1
c. 2
d. 3
e. 4

18. I sometimes have the feeling that I'm off somewhere watching myself.

a. 0
b. 1
c. 2
d. 3
e. 4

19. I'm concerned about what other people think of me.

a. 0
b. 1
c. 2
d. 3
e. 4

20. I'm alert to changes in my mood.

a. 0
b. 1
c. 2
d. 3
e. 4

21. I'm usually aware of my appearance.

a. 0
b. 1
c. 2
d. 3
e. 4

22. I'm aware of the way my mind works when I work through a problem.

a. 0
b. 1
c. 2
d. 3
e. 4

23. Large groups make me nervous.

a. 0
b. 1
c. 2
d. 3
e. 4

Battle of the Sexes

Andria M. Musso

The purpose of the experiment was to see which sex pays better attention to a speaker present a story. A video was shown of two detailed passages read by both a woman and man. The speakers were as equally attractive in the researcher's opinion, dressed nicely, and videotaped from the neck line up. If the speaker was a woman it was hypothesized that men would remember more details about the story whereas women would remember more about the appearance of the female speaker but that no sex differences would be found for either measure when the speaker was a man. The results of a 2 (sex) X 4 (content) X 2 (appearance) ANOVA revealed only significant main effects but no interaction.

Stereotypes are viewed as the unsweetened versions of many dispositional traits that have shaped all human beings' behaviors. Many sweet stereotypes also exist but the bitter ones stand out far more. Being judged from the outside in would not be an ideal summary of one human being as a whole. Many of us have been judged, whether we were aware of it or not. We may have been judged by our sexual orientation, age, appearance, and more commonly, our race. Price (2002) reported that White American children performed superior to other races in academics starting as early as kindergarten. Although there were many social reasons why Price found these results, many people were quick to interpret these findings to mean that African-American students were not as academically advanced as their non-African American peers. Some individuals come to such conclusions in part because of the stereotypical views they have harbored about race.

The mainstream beliefs about racial differences should not control the views individuals have toward groups of people; in many ways stereotypes are created opinions. Chesler, Guskin, Sanchez, Shaevitz, and Smith (1974) stated that teachers' stereotyping is unprofessional but natural and commonly goes unnoticed by the teachers themselves. Understanding general beliefs about different cultures has helped teachers to identify individual students' backgrounds and where they may have came from. This in turn allowed teachers and principals to grasp the potential side effects stereotyped views created toward the child. By self-evaluating the place where the stereotype originated from, the individual may realize they are at fault. If individuals believed all humans were equal, then their mindset should be focused on equality of the human race entirely.

Sometimes similar assumptions are made about women's capabilities compared to men's. A person is labeled male or female from the moment they are born, but the labeling does not stop there. In many cultures including American culture, men and boys are traditionally valued more than women and girls and therefore, women and girls are faced with a life-long fight for equality when compared to their counterparts. In a project designed by Smith (2004), achievement goals were compared with the expectancy of women's success on math skills to men's testing achievement. Half of the women in the study were told about the common stereotype that men excel above women in mathematics, and then all were asked to perform computational questions in front of the male observer. The women in the experimental group, made aware of the stereotype, performed poorly compared to the women in the control group, who had no knowledge of such an idea (Smith, 2004).

Although certain studies may portray that women perform more poorly than men at certain tasks, other studies have contradicted these findings. For example, positive stereotypes exist for women as well, such as the belief that women pay more attention to putting pieces together in a detailed manner. Secretaries, interior designers, and wedding planners are a handful of occupations typically held by women. Women have, in all eras, been worshipped for their unique, mysterious physiques. So, in many ways women have more going for them than they may think. Another example is that many children would rather listen to adult women because of their biological connection with their own mothers. Evers and Walberg (2004) revealed that in elementary age classrooms the Japanese run daily sessions by videotape along with an additional instructor. This allowed the children to hear the concepts of mathematical equations taught by a man, while simultaneously a teacher, also a man, answered individual questions asked by the students. The study showed many downfalls, one being that the man's voice was hard to understand and it did not appeal to the children's interest in the concepts of the course. Another problem was that no control group existed in the study. In order to conclude that the children really didn't learn well from the man's voice, the researchers needed to compare it with a female condition.

The current study examined sex differences in the ability to remember visual details about a male and female speaker compared to audio details presented by these speakers. The researcher predicted that the stereotype exemplifying women's natural behavior to judge other women is true, and that women would remember more about a female speaker's appearance. However, it was hypothesized that men in this study would remember more about the information provided by the female speaker. Since the speaker's image was only a head shot

there were limited distractions present, encouraging the participants to pay more attention to the content of the message. The female's voice may or may not have been naturally more attractive to both the men and women who participated. Women may already believe they cannot compare to men in most cases, because of socially reared ideologies.

Method

Participants

Fifty-four university students took part in this study. Twenty-one of the students who participated were men, and the other 33 were women. These participants were recruited from Lindenwood University's Human Subject Pool (HSP). The break down of participants by grade level is as follows: 39 freshman, 10 sophomores, four juniors, and one senior. Thirty-two of the participants spoke English as their native language. A sign-up sheet was posted along with a short description of the Experimenter's procedures. The participants who signed up for the experiment picked the time that best worked for them and were ensured that the session would only take ten minutes, which was posted on the experiment description sheet posted on the HSP bulletin board. The sign-up sheet was located on the fourth floor of Young Hall, located on campus. The only compensation granted to the volunteer students was the opportunity for extra credits. The participants recruited through the HSP were enrolled in one of the following classes: Cultural Anthropology, Principles of Psychology, Interactive Psychology, The Family, and Basic Concepts of Sociology. Participants were treated in accordance with the guidelines stated by the IRB.

Materials

A Maxwell Standard Grade T-120 video tape stored the four different video recordings. The tape was recorded with a Sony Handycam Camcorder which stood on a tripod. The four recordings showed both speakers in which they were reading different passages from the same story. The four videos all neared two minutes of play back a piece. Each speaker, the male and female, were both equally attractive and wearing bright solid colors. Their attractiveness was based on the experimenter's sole judgment consisting of a pretty smile, nice complexion, fashionable clothes, and clear voices. The female speaker Alyssa was the experimenter's roommate; the male speaker Michael was the experimenter's brother. This was a homemade videotape recorded from the same location, therefore ensuring that all of the videos had a consistent background throughout the taping. Both speakers were sitting and taped from the shoulders up, with a cream colored wall paper in the background. The speakers were the main focus of the video, and the camera was zoomed in on them to emphasize the visual details of their appearance. One of the passages read in all of the videos, labeled "Trip," (see Appendix A) and is the opening page (p. 3) of the novel *Twilight*, by Stephenie Meyer (2005). The other passage in the videos was labeled "School," (see Appendix B) from the same novel (p. 13). Both passages were of similar length and had a wide variety of details. The two passages combined in time showed from 2 minutes, and were consistent amongst all four videos. The survey used in the study to collect data was created by the experimenter based on the passages and appearances of both speakers. An example question from the survey (see Appendix C) regarding the details of the female speaker is stated as, "What color hair did the female speaker have"? An example question from the survey regarding the content of one of the passages is stated as, "In the passage

titled Trip, what was the temperature in the town"? The survey consisted of 20 questions, all of which are divided evenly between the two passages, and the two appearances of the speakers.

Additional materials used in this study were paper and pens to record data, a stapler to attach both pages of the survey together, multiple copies of the survey for the participants to fill out, a demographic survey (see Appendix D) that was created by the experimenter and consisted of 5 personal questions, and all of the necessary paperwork including: informed consent forms (see Appendix E) 2 per participant, extra credit receipts, the experimenter's list of participants, and a feedback letter (see Appendix F). The extra credit receipts were given to the participants after they completed the survey. It was explained to the participants that they were to complete the top portion of the receipt and turn it in for extra credit to the HSP office. The experimenter explained the location of the office and where to place the receipt. The study was conducted in rooms Y404 and Y100, in Young Hall, where there were chairs, a table, a projector screen, a television (TV) labeled Toshiba CV27d48 and videotape player (VCR) labeled as JVC DR-MV 99, borrowed from the university, to show the videos. The other room used to run the experiment was also located in Young Hall in room Y111, which was an elevated theatre style classroom. It consisted of desks, a large table at the front of the room and the same TV and VCR brand which was used to play the video on a large projector screen. The last room used in this study was Y105 lab room A, which was a much smaller room with one large desk, a computer, a small desk in which the participants sat in and a different model TV, labeled as Sony V-61.

Procedure

Each participant met the experimenter in Young Hall in the room indicated on the sign-up sheet at their designated time. The experimenter introduced herself and the experiment to each

participant. The participants were asked to sign two copies of the informed consent form explaining their duties in the study, along with their extra credit slip which was given to them after they finished the exercise. They were asked to pay attention to the short video clips presented by both a male and female speaker. They viewed one video as a whole that was broken up into two parts: the man reading a passage, and the woman reading the other passage. The experimenter explained that one of the passages presented was labeled "Trip", and the other passage presented was labeled "School". This methodology was used to maintain consistency in the presentation of the passages. With a video recording of the story passages, all participants were exposed to the exact same controls in the experiment. For example: the speed that the passages were presented, the time frame in which the participant saw the speaker's appearance, the background behind the speaker were all consistent. The experimenter chose these two passages because they have simple story lines, along with many details, both offering plenty of opportunities for questions on the survey regarding the passages. This was explained to the participants so they could identify which questions on the survey applied to which passage. When the video was finished, showing both the speakers present their passage, the experimenter had the participant answer a detailed list of 20 questions total, 10 questions regarding the two passages, and five questions regarding each speaker's appearance. The experimenter collected the participant's answers, thanked them for their participation, and presented them with a feedback letter. Each participant was debriefed on the purpose of the study and was given the researcher's contact information for the results of the study, and if he or she had any further questions to ask the researcher.

Each participant in the study viewed two clips - one of a man and one of a woman, and did not view the same passage twice. The order was counterbalanced in which each participant viewed the tapes. There were four possibilities: 1) Male speaker reading the passage titled "Trip" followed by the female speaker reading the passage titled "School", 2) Male speaker reading the passage titled "School" followed by the female speaker reading the passage titled "Trip", 3) Female speaker reading the passage titled "Trip" followed by the male speaker reading the passage titled "School", 4) Female speaker reading the passage titled "School" followed by the male speaker reading the passage titled "Trip". The two passages titled "Trip" were identical, but read by both the man and woman speaker, with the same applying for the two passages labeled "School". The experimenter repeated the four-option sequence of video clips for every four participants.

Results

The hypothesis being tested, using a mixed Analysis of Variance (ANOVA) was that females would remember more about another female's appearance while watching an audio video, while a man would remember more about the content of the video, and not the speaker's appearance. Data were analyzed using a 2 (Sex) x 2 (Appearance) x 2 (Content) mixed ANOVA. Sex was a between-subjects factor, while the two types of questions: speaker appearance and passage content were within-subjects factors; each with two levels corresponding to the male and female speakers was a within-subjects factorial design. The results were yielded using this mixed ANOVA, comparing sex differences in ability to remember details of the female speaker. A significant main effect F (1, 52) = 31.905, p = .001 of appearance was found. Also using the mixed ANOVA, testing of between- subjects effects compared men and women

participant's ability to answer correctly on the survey. A significant main effect was shown of sex, F (1, 52) = 6.743, p = .012. Approaching significance F (1, 52) = 3.722, p = .059 was also shown about the details of the speaker's appearance. Approaching significance F (1, 52) = 3.226, p = .077 was found among content memory and sex. No significant interaction F (1, 52) = .135, p > .05 was found between sex and content. No significant interaction between sex and appearance was found F (1, 52) = .648, p > .05.

An independent t-test was conducted to analyze the scores of those participants who were familiar with the book the story passages came from versus those who weren't familiar. A participant was marked as being familiar with the Novel or not familiar with it at all. Overall for those who were familiar (M = 7.8065) scored slightly higher than those who were not familiar (M = 6.7391), t (52) = 2.044, p = .046.

A second independent t-test was conducted to analyze the difference in scores compared to those who said they pay more attention to visual details versus audio information. Participants who stated they paid more attention to details (M = 5.4839) had a mean score (M = 7.0323) on the total correct answers about the passages than those who stated they paid more attention to information (M = 5.5652), in which they had a higher mean test score (M = 7.7826) when answering questions concerning the passages. For the total amount of questions right about each speakers appearance, out of ten possible questions t (52) = -.186, p = .853 and for the total correct questions about both of the passages out of ten possible questions t (52) = -1.408, p = .165.

Discussion

The hypothesis of the current research was if the speaker is a woman, then men would remember more details about the story whereas women would remember more about her appearance. If the speaker is a man, then women and men will retain relatively equal amounts of information, both on content presented and the man's appearance. The analysis that is relevant to the hypothesis stated was the mixed ANOVA. The experimenter anticipated a significant interaction between sex and appearance, as well as sex and content; neither of which the experimenter found, the independent samples t-test that was conducted showed a difference in content question accuracy but not in appearance question accuracy. There was a significant finding shown through another independent samples t-test that the total correct answers about the passages were better for native English speaking participants. Within the 32 women participating in the study, 23 of them spoke English as their native language. This is over twice the amount of overall female participants. Of the 22 men who participated in this study, nine of them spoke English as their native language. Therefore, more English speaking women participated than English speaking men. A Pearson Chi-Square test was analyzed a significance was found amongst sex of participants and their native language $x2(1) = 3.829$, $p = .05$. This makes sense contrary to the belief that those participants whose native language was one other than English would not score as well on questions regarding content of the passages, but excelled just as well in questions about appearance.

That there was no finding of statistical significance in this study may be the result of defects in the methodology. The male speaker in the videos mumbled his speech and made it very unclear as to what he was saying. Another flaw about the male speaker was that the

questions about his appearance were not nearly as difficult as the questions were about the female. The experimenter was more concerned about the questions about the female's appearance since she essentially was studying the relationship between females judging another female. Once the experimenter added a control group, the male speaker, the questions were not developed to be as difficult as the original questions modeled for the female speaker. If this research were conducted again it would be very important to have specific questions about both sex speaker's appearance distributed evenly, and even so the male speakers could have been wearing pieces of clothing with more detail. A sample question from the survey asks "what color scarf was the female speaker wearing," versus a sample question about the male "what did the hat the male speaker was wearing say," when in bold across the front of the hat it read "yeah boy".

Another critique that would need to be made if running this experiment again would be to have the experimenter sit through each session behind the participant. The experimenter noticed that more often than not when they glanced up during the video the participant's attention was on them rather then the video. If the experimenter would have been seated behind those participants instead of standing in the front of the room they may have been able to pay more attention to the details in the video. Along with the faults of the experimenter is the inconsistency in giving the directions to the participants. In some instances the experimenter gave out more information in the directions than needed and this wasn't consistent for every individual participant. In the reproduction of this experiment an audio recording of the directions would be best in order to keep a control in the experiment throughout the duration of the study. Being that each

participant viewed a video as a part of the study; the directions could have been given from the experimenter recorded at the beginning of the two speaker's passage readings.

If more time were allotted to the experimenter and many more participants were present a study could be conducted with those who had never heard of the novel *Twilight*, making the results of the surveys more valid since none of the participants would have an advantage over the others. Also, the experimenter could make up two passages in which they both share the same amount of details and involve the same characters. This way each participant would have no more of an advantage in answering the survey questions because they would have no chance of knowing background information on the passages. The last main concern about the faults in this study concerns the visual format of the video showings. The experimenter was unaware of the negative effects a large projector screen would have on the viewing of both speakers' appearance. On a small screen like the one the experimenter used to key the video the details of both speakers were very obvious. Once the video was shown on the big screen in the classrooms in Young Hall, it was much harder to make out the details and color shown in the videos. Some participants mentioned this flaw along with the mumbling of the male speaker. All of these complications should be revised if further interest develops in the reproduction of this study.

The results found in this study can not compare with Price (2002), who stated that white American children score better academically, than their non American classmates, due to natural reared beliefs in academic inability. If there were a significant variation in race between the participants in this study it could have possibly been compared with the findings from Price's study. The outcome of differences between races of those who participated was non existent between White American and African American students. Chesler, et al. (1974) found that

those in an administrative position, like teachers, have already established a stereotype or first impression of each student before getting to know them. This coincides with this study because the experimenter agrees that stereotypical thoughts were aligned for each participant about how well they would perform based on their ethnicity. This shows no meaning in statistical data but is an example of how one's appearance can affect future situations, just merely because of their image. Evers and Walberg (2004) were the most consistent with the results in this study. They compared visual learning with hands on learning and if it made a difference for elementary school aged children. There was no significance found between the man teaching in the video and with the man present teaching in the classroom. This experiment also, unexpectedly, shows no significance with a desired speaker having more of an effect on viewers. Kizilgunes et al. (2009) combined the effects of self-efficacy of children to epistemological beliefs about gender differences. The differences found are similar to those in this study, and those were that gender differences occur differently across the board. Many men are more intrigued by women speakers because of the biological connecting bond they share with their mothers. Women aren't necessarily judging other women when observing homogenous accounts. They could simply be just as attracted to a male speaker as a female speaker. All of these possibilities need to be kept in mind with the reproduction of this study, with more time and materials this study could help prove the stereotypical norms held by members of the opposite sex.

References

Chesler, M., Guskin, A., Sanchez, D., Shaevitz, M., & Smith, W. (1974). *Desegregation/integration: Planning for school crime*. Washington: National Education Association.

Evers, W., & Walberg, H. (2004). *Testing student learning, evaluating teaching effectiveness*. Stanford: Hoover Institutions Press.

Kizilgunes, B., Tekkaya, C., & Sungur, S. (2009). *Modeling the relations among students' epistemological beliefs, motivation, learning approach, and achievement.* The Journal of Educational Research. Vol. 18, 115-122.

Price, H. (2002). *Achievement matters*. New York: Kensington.

Smith, J. (2006). The interplay among stereotypes, performance-avoidance goals, and women's math performance expectations. Sex Roles, *54*, 274-301.

Author Note

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Appendix A

Passage titled "Trip"

(read by both the male and female speaker)

"My mother drove me to the airport with the windows rolled down. It was seventy-five degrees in Phoenix, the sky a perfect, cloudless blue. I was wearing my favorite shirt---sleeveless, white eyelet lace; I was wearing it as a farewell gesture. My carry-on item was a parka.

In the Olympic Peninsula of northwest Washington State, a small town named Forks exists under a near-constant cover of clouds. It rains on this inconsequential town more than any other place in the United States of America. It was from this town and its gloomy, omnipresent shade that my mother escaped with me then I was only a few months old. It was in this town that I'd been compelled to spend a month every summer until I was fourteen" (Meyer, 2005, p. 3).

Meyer, S (2005). *Twilight.* New York, NJ: Little, Brown and Company.

Appendix B

Passage titled "School"

(read by both the male and female speaker)

"I parked in front of the first building, which had a small sign over the door reading FRONT OFFICE. No one else was parked there, so I was sure it was off limits, but I decided I would get directions inside of circling around in the rain like an idiot. I stepped unwillingly out of the toasty truck cab and walked down a little stone path lined with dark hedges. I took a deep breath before opening the door.

Inside, it was brightly lit, and warmer than I'd hoped. The office was small; a little waiting area with padded folding chairs, orange-flecked commercial carpet, notices and awards cluttering the walls, a big clock ticking loudly. Plants grew everywhere in large plastic pots, as if there wasn't enough greenery outside. The room was cut in half by a long counter, cluttered with wire baskets full of papers and brightly colored flyers taped to its front. There were three desks behind the counter, one of which was manned by a large, red-haired woman wearing glasses. She was wearing a purple t-shirt, which immediately made me feel overdressed" (Meyer, 2005, p. 18).

Meyer, S (2005). *Twilight.* New York, NJ: Little, Brown and Company.

Appendix C

SURVEY

Directions: Circle the best fit answer for each question, the order of the questions are not matched up with the order of the videos shown.

1) **What sex was the character speaking in both story passages**?
   Male Female
2) **In the passage titled "Trip", who drove the character to the airport**?
   Dad Aunt Mom
3) **In the passage titled "Trip", what was the temperature in the town**?
   60 85 75
4) **In the passage titled "Trip", what town was the character going to**?
   Seattle Forks Birmingham
5) **In the passage titled "Trip", what was the characters carry-on item**?
   Bag Parka Pillow
6) **What color was the female speaker in the video wearing**?
   Blue Yellow Red
7) **What color hair did the female speaker in the video have**?
   Brown Blonde Red
8) **What kind of jewelry, if any, was the female speaker wearing**?
   Earrings Necklace None
9) **What best describes the scarf the female was wearing**?
   Cheetah Zebra Yellow
10) **What color jacket was the female speaker wearing**?
    Tan Black Purple

11) **What color shirt was the male speaker wearing?**

Blue Red Black

12) **What style of hair did the male speaker have**?

Long Curly Short

13) **What color jacket was the male speaker wearing**?

Tan White Black

14) **What jewelry, if any, was the male speaker wearing**?

Earring Necklace None

15) **What did the male speaker's hat say**?

"Yeah Boy" "Just Do It" Nothing

16) **In the passage titled "School", what did the sign in the parking lot read**?

Front Office No Entry Gym

17) **In the passage titled "School", how many desks were behind the counter**?

1 4 3

18) **In the passage titled "School", what was making noise in the office**?

Students Bell Clock

19) **In the passage titled "School", what color shirt was the secretary wearing**?

Yellow Purple White

20) **Which passage did the female speaker read**?

"School" "Trip"

Appendix D

DEMOGRAPHIC SURVEY

-What is your sex?

Male Female

-What year in school are you?

Freshman Sophomore Junior Senior Other:

-Have you read the book, or seen the movie, titled *Twilight*?

Yes No

-What is your native language? _____

-Which area do you feel you pay more attention to in any given situation?

Details Information

Appendix E

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete two surveys, one regarding the information I obtained from two short videos, along with details about the speakers appearances. The other survey is a demographic questionnaire asking details about you as an individual. 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.

_____ Date: _____
(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Dr. Michiko Nohara-LeClair Course Instructor
(636)-949-4371/mnohara-leclair@lindenwood.edu

Appendix F

Feedback Letter

Thank you for participating in my study. The surveys were used in order to determine if women pay more attention to other women's appearance or the information presented by the woman speaking. The questions were split evenly asking details from the story passages, and details about the speaker's appearances.

Please note that I'm not interested in your individual results; rather, I'm only interested in the results of a large group of participants, 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 we 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:

Andria Musso

Am669@lionmail.lindenwood.edu

Supervisor:

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

Time: Friend or Foe?

Greg Townsend

The present research was conducted in order to determine whether timing a test (such as on the ACT) causes a decrease in accuracy compared to the same test given without any time limit. Participants were given two equivalent tests (Test A & Test B), one timed and the other not timed, in the four ways: 1) test A first with test B timed, 2) test A first with test A timed, 3) test B first with test A timed, and 4) test B first with test B timed. The time allowed for the timed test was eight minutes and fifteen seconds (see Appendix A). The results revealed that there was no statistical difference between scores on the timed and untimed tests.

The problem under investigation includes time and pressure. The purpose of this experiment was to find out if people perform more accurately under pressure with a time limit or without a time limit. Currently, these types of performances are used in high schools, ACT (American College Test), SAT (Scholastic Assessment Test), and college universities. The topic under study was chosen because the research is much like the ACT test and how it is entirely timed. It would be interesting to see if the fact of being timed could affect how one performs on tests by measure of accuracy. I hypothesized if someone is pressured to finish ACT-like questions (standardized) in a specific amount of time, then the timed task will cause one to lose accuracy.

There is much research on how to perform better on timed tests and any other test dealing with test anxiety. The Education Testing Service (ETS) has published a guide called *Reducing Test Anxiety*. In this guide, they state that to maximize test performance, the three things one you need to do are to prepare, stay organized, and practice (ETS, 2005). When dealing with

preparation, it is important to study areas in which you are unfamiliar with and to use strategies, as part of the studying that would reduce test anxiety. Organizing, can possible help to create clear and targeted study plans for weeks leading up to the test (ETS 2005). Finally, the third way to maximize test performance is to practice. The ETS says that practicing for the test is what practice includes. This practice includes sitting for certain periods of time, answering and studying test questions, and learning a correct pace. If these three success tools are used weeks before the test, it will help most to reduce text anxiety.

Two types of test anxieties that are seen are somatic and cognitive (Nolting, 2000). Somatic testing anxiety deals with what the individual feels; it would be physiological. On the other hand, cognitive testing anxiety is what the individual is actually thinking; it would be psychological. Some causes of these anxieties can come from grades, feeling of lack of control, being in a difficult course, and can be caused by timed tests and the fear of not finishing.

Since the study is based on the ACT, the tips the ACT offers to prepare for their test would prove to be very helpful. Some tips for taking the ACT (found on their website) include reading instructions carefully, reading each question carefully, using a good pace and to not spend too much time on a single questions or passage, pay attention to time announcements, answer easy questions then go back to answer more difficult ones, and always recheck your answers if time permits.

If speed of a performance were an integral part of a measurement, then the time limits are essential, just like testing the skill how fast one can type (Bridgeman, McBride, & Monaghan, 2004). Also, limiting time can help with expenses, as long as the time is lot limited too much as it would threaten the validity of the test. A term used when dealing with timed tests is

speededness, which "in testing refers to the effect that time limits have on test takers' scores" (Bridgeman *et al.*, p. 1). If a test is considered speeded, then the tests' time limits are too constrained and not allowing the test takers enough time to consider and answer the questions presented. This article also highlights research done by Brent Bridgeman, Catherine Trapani, and Edward Curley in 2003. Bridgeman, *et al.* Trapani, and Curley attempted in this study to find what the effect of fewer questions per section would do on SAT I scores. In their study, Bridgeman, *et al.* Trapani, and Curley decreased the number of questions in the SAT Reasoning Test™ section. This section of the SAT is not counted towards the final grade and is used to test new questions. In the end, it was found that allowing more time per question had a minimal impact on verbal scores yet more of an impact on math scores.

A study was conducted at Lindenwood University which dealt with standardized test performances related to test anxiety " (Judd, Merli, & Zagar, 2008). This was achieved by examining the two variables of time warning and the presence of a confederate (another test taker purposely placed there by researchers). In Judd, Merli, and Zagar's research, they hypothesized that when the confederate was present, test takers would perform worse that those whom tested alone. Along with the previous statement, they hypothesized that test takers that receive time warnings would yield a decreased performance when compared to those not receiving any time warnings. The findings of their study found no statistical difference for either of the two hypotheses.

Finally, in Virginia, there are counties that are increasing time allowed on standardized tests. The author, Jay Mathews, states that there are 14 states, including Virginia, which allow student as much time as need for achievement tests. Robert Schaeffer, an expert who is the

public education director for the Nations Center for Fair and Open Testing (FairTest), stated that "If tests are suppose to be measuring what a student knows, not just how fast she or he can spew back answers, there's no reason for the rigid time restrictions" (Mathews 2004). It seems that the possible future of testing may go to more allotted time, however, experts would like to do more research on how and why students use extra time.

Method

Participants

My experiment involved a total of 46 participants, 25 of them being female and 21 being male. The ages of these 46 participants ranged from 18 to 26 years old, but were all either Freshman, Sophomores, or Juniors at Lindenwood University. All participants were recruited through Lindenwood University's Human Subject Pool (HSP) on the fourth floor of Young Hall and were enrolled in one or more of the following classes: Cultural Anthropology, Principles of Psychology, Interactive Psychology, The Family, and Basic Concepts of Sociology. Since this was done through the HSP, recruitment was done with the sign up sheets that are put up on the HSP Board after approval. Participation was strictly voluntary, however, the participants would also receive extra credit from their professors (if their professor offered it/or they were enrolled in one of the above classes).

Materials

The materials used in this study were fairly straightforward. A lot of paper was used, for items such as the demographic survey (see Appendix B), informed consent form (see Appendix C), feedback letter (see Appendix D), participant receipts (see Appendix E), answer sheet (see Appendix F), and of course, the two tests them selves (see Appendices G & H). Aside from the

materials I prepared, the HSP also booked rooms for me that included chairs and tables/desks (I used room Young 100 for all my research). Ink pens were also provided in order for the participants to fill out all of the aforementioned documents. These were used to fill out everything that was handed to the participants. There was also a 3-ring binder, which I utilized to keep all of the above materials organized and easily accessible. It would have also been much more difficult to analyze all data without the use of SPSS 16.0 (Statistical Package for the Social Sciences) and performed a paired sample t-test.

From the demographic survey, I learned that my participants consisted of 11 eighteen-year olds, 17 nineteen-year olds, 13 twenty-year olds, 2 twenty one-year olds, 1 twenty three-year old, and 2 twenty six-year olds. Of all of these ages, 32 were freshman, 9 were sophomore, 5 were junior, and 0 were senior undergraduate students attending Lindenwood University. About 35% of participants had never taken the ACT before and just over 60% of participants thought they did well or neither poorly nor well on their ACT test. Only 4% of participants actually liked taking the ACT whereas 54% disliked or had much dislike for the ACT. Finally, 46% of the participant's thought that time does constrain or affect test performance and only 11% thought that time enhances test performance.

Procedure

As the participants arrived and were seated (I waited five minutes after starting time for people to arrive. If they arrived after that time, they were not be allowed to enter the room), they found four sheets of paper on the desks; 1) Participant's Receipts, 2) Informed Consent Forms, 2) Demographic survey, and 4) Test Answer Sheet. The experimenter then introduced himself and told the participants to start to fill out the papers on their desks. Once all participants

finished filling out the papers, the experimenter collected them and passed out the first 10-question test, faced down, and instructed participants not to start until told to do so. The experimenter then explained to the participants the test would consist of questions from the following: English, Math, Reading, and Science. Participants were also instructed to try to answer all of the questions and when time is up to drop their pen or pencil and flip the test over. The previous procedures were the same for the second test as well (except they did not have to fill out all the paper work again).

Depending on which group of tests I decided the give, participants received one of four orders of tests and times; 1) Test A first with test B timed, 2) Test A first with Test A timed, 3) Test B The first test A timed, and 4) Test B first with Test B Timed. The timed tests handed out were allowed 8 minutes and 15 seconds to complete. During the timed tests, the experimenter informed the participants when there is 1 minute left and when there was 10 seconds left. When the experimenter said start, the participants flipped the test over and began. Anyone who finished early was asked to flip the test over and sit quietly for time to expire. Once everyone was finished, the experimenter walked around and picked up each test. Once they were all collected, the papers were shuffled around to keep them anonymous and then the experimenter handed out the second test, which had the same amount and same type of questions that were counterbalanced.

Once both tests were completed and collected, the experimenter debriefed the participants as to why they took these tests and what the hypothesis was. A feedback letter was then passed out that had a number on the top of it, which the participant could refer to himself or herself as if they needed to get a hold of the experimenter.

Results

My hypothesis stated that if someone were pressured to finish ACT-like questions (standardized) in a specific amount of time, then the time would cause one's accuracy to decrease. The independent variable in this research was whether or not the test was timed. After analyzing the data and performing a paired sample t-test, I found that $t_{(45)} = .143$, $p > .05$ and that there was no statistically significant differences in test performance between the two types of tests given (timed vs. not timed). I also ran a paired sample's t-test for the percent scored on Test A and Test B and for the score on the first test received and second test received and as expected, there was no performance difference found between Test A and B ($t_{(45)} = -1.159$, $p > .05$) and no order effect was found ($t_{(45)} = -.286$, $p > .05$).

Discussion

My hypothesis, which stated that if someone were pressured to finish ACT-like questions (standardized) in a specific amount of time, then the time would not cause one's accuracy to change, was not supported in my research. Therefore I can conclude that my original research hypothesis was false or rejected. To try to determine what could have possibly caused my research hypothesis to be false, I ran the same t-tests to determine if the tests or tests order played a role. The mean score of Test A was 50% (standard deviation = 20.1) and the mean score for Test B was 54% (standard deviation = 22.3), which shows that the two tests were not statistically different from one another. The next t-test led to a mean for the timed test of 52.4% (standard deviation = 21.41) and a mean for the untimed test of 51.9% (standard deviation = 21.14), which again shows that that there was not a statistically difference. Finally, the last t-test I ran was between the scores on the first test and the scores on the second test received

(regardless of if it was Test A or Test B). The average for the first received test was 51.7% (standard deviation = 21.22) and the average for the second test received was 52.6% (standard deviation = 21.43), which means the order the test is received does not make a statistical difference.

When going back and looking at possible confound and/or extraneous variables, there definitely were some that were apparent. I had a participant after a research day come to me and explain that no matter what for the second test, the participant would be familiar with the instructions/directions and took less time familiarizing herself with them. Also, some days the room I was in (Young 100) was extremely hot and humid. This room was also located at the entrance of the building, which allotted for much outside noise and distractions. Another issue that I really think played a role was the participants just doing my research for their extra credit. Not many participants want to take two 10-question standardized tests. I knew this so I paid attention to participants and realized that many of them just filled in answers (I believe this because some people finished the 10 questions in less that one minute). As there are other variables that played a role, these seem to be the ones that stuck out to me.

To make this a better and more efficient study, I should not have included any instructions on the Tests and verbally given them and made sure no questions needed to be asked. Also, since all of the questions came from practice questions on the ACT website, I had asked questions on the same passage for science in both tests. Although the questions were different, practice could have carried over from one test to the other (not as test order but as different questions over the same passage or graph). These are two ways I think my research could be made a little better.

However, it is very possible that time does have an effect on accuracy. A possible floor effect could have occurred in several ways. One way would be the tests being too hard (correct answers could have been luck of guessing) whereas another way a floor effect could have occurred is since some people have taken the ACT and are familiar with the test, however, some participants never took the ACT and are not familiar with the test.

This leads to what happens if we do find that time has an effect on accuracy. If this were to be the case, then we need to study where the time is affecting scores most (meaning what section and/or subject). If we can find where more time is needed and where less time is needed, then it would be possible to decrease the likelihood of time effecting accuracy.

References

ACT, Inc., (2009). *ACT test prep: Sample tests*. Retrieved February 19, 2009 from, http://www.actstudent.org/sampletest/index.html

ACT, Inc., (2009). *Tips for taking the ACT*. Retrieved February 19, 2009 from, http://www.actstudent.org/testprep/tips/

ACT, Inc., (2009). *Understand your scores*. Retrieved February 19, 2009 from, http://www.actstudent.org/scores/understand/index.html

Bridgeman, B., McBride, A., & Monaghan, W. (2004). T*esting and Time Limits*. Educational Teaching Service, San Diego, CA.

Bridgeman, B., Trapani, C., & Curley, E. (2003). *Effect of fewer questions per section on SAT® I scores* (College Board Report No. 2003-2). Retrieved Oct. 19, 2004, from the College Board Web site: http://www.collegeboard.com/research/pdf/rdcbreport20032web_23502.pdf

Educational Testing Service, ETS (2005). Reducing test anxiety. *The Praxis Series*, Retrieved March 11, 2009, from www.ets.org/praxis/testingtips.html

Judd, B, Merli, D, & Zagar, J. (2008). *Can't test this: Test performance and anxiety*. Unpublished Manuscript, Lindenwood University.

Mathews, J. Standardized test times vary at area schools. (2004, June 1). *Washington Post*, p. Education, B01.

Nolting, P. D. (2000). *Math study skills workbook, your guide to reducing test anxiety and improving study strategies*. Houghton Mifflin Company.

Author Note

I would first like to thank my professor for my Advanced Research Methods Class, Dr. Michiko Nohara-LeClair. Whenever I needed any help or advice, she was there to give it. Her knowledge was a great asset to my research and APA (American Psychological Association) paper. Another person who I cannot forget to thank is Krystal Handley. She helped me organize my data and was also there to give me advice when needed. She even helped me with some of my research to make sure things went well. Thank you to you both for all the help and guidance you gave me.

If anyone would like further information on test taking tips, more hints and tips can be found on the ACT website at http://www.actstudent.org/testprep/tips/.

Contact Information:

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Appendix A

How I Figured Time Limit

English - 3 questions
(An actual ACT English Test contains 75 questions
to be answered in 45 minutes.)

45 min (2700 sec)/ 75 questions = 36 seconds per question
36 seconds per question * 3 questions = 108 seconds = 1 min 48 sec

Math - 2 questions
(An actual ACT Mathematics Test contains 60 questions to be answered in 60 minutes.)

60 min (3600 seconds)/ 60 questions = 60 seconds per question
60 seconds per question * 2 questions = 120 seconds = 2 min

Reading - 3 questions
(An actual ACT Reading Test contains 40 questions to be answered in 35 minutes.

35 min (2100 seconds)/ 40 questions = 52.5 seconds per question
52.5 seconds per question * 3 questions = 157.5 seconds = 2 min 37.5 sec

Science - 2 questions
(An actual ACT Science Test contains 40 questions to be answered in 35 minutes.)
35 min (2100 seconds)/40 questions = 52.5 seconds per question
52.5 seconds per question * 2 questions = 105 seconds = 1 min 45 sec

1 min 48 sec +
2 min 0 sec +
2 min 37.5 sec +
1 min 45 sec =

6 min 130.5 sec =
8 min 10.5 sec. to answer questions

I will give them 8 minutes and 15 seconds to finish the entire test (same for Test A and for Test B)

Appendix B

Participant Demographic Survey

Participant ID: ____ARM-_____Date: _____

1.) Please circle the level of college you are currently in:

Freshman Sophomore Junior Senior Other:_____

2.) Please indicate your age: _____years

3.) Please circle your gender:

Female Male

4.) In your opinion, do you think you did well on the ACT?

1—Very Poorly

2—Poorly

3—Neither Poorly nor Well

4—Well

5—Very Well

6—I never took the ACT

7—Other (please specify):

5.) In your opinion, how do you feel about timed tests?

1—Much Dislike

2—Dislike

3—Neutral

4—Like

5—Much Like

6.) In your opinion, do you think timed tests constrains/affects your testing performance?

1—Much Constrain/Affect

2—Constrain/Affect

3—Neutral

4—Enhancement

5—Much Enhancement

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a 10-question test that will be graded on accuracy. I also understand that all questions not answered will be discarded.. 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, as well as if I cannot complete the test. I understand that the information obtained from my participation will in now way be able to identify who I am 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 used strictly for research and educational purposes. I understand that any questions I may have regarding the test shall be answered by the researchers(s) to my satisfaction. Finally, I verify that I am 18 years of age and that I am legally able to give consent. Also, I verify that if I am under the age of 18 that I have on file, with the HSP Office, a completed parental consent from that allows me to give consent as a minor.

_____ Date: _____
(Signature of Participant)

_____ Date: _____
(Signature of Researcher Obtaining Consent)

Student Researchers'' Name(s), E-mail(s), and Number(s):
Greg Townsend – (314) 605-9056 – grt357@lionmail.lindenwood.edu

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
(636) 949-4371
mnohara-leclair@lindenwood.edu

Appendix D

Feedback Letter

Thank you for participating in my experiment. The test you took will be graded on accuracy. I gave each group standardized tests that were counterbalanced to be similar in which one was times and the other was not. This leaves my hypotheses to be: If someone is pressured to finish ACT like questions in a specific amount of time, then the timed task will cause one to lose accuracy. The reason I chose this is because I want to see if the ACT is actually testing what someone knows or how much they can answer correctly for their given time.
I am not interested at all if you did or did not get all the questions right. I am only interested if the time will affect how many answers are right. There will be no way for anyone to identify you and your answers.

If you have any questions and/or concerns regarding any portion of this study, please do no hesitate to bring them up in the future. Contact information can be found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a date later than you taking the test, please make an effort to contact a number at the bottom of the page and it will be available upon the completion of the experiment.

Thank you for your time and contribution to the study.

Sincerely,

Principal Investigators:

Greg Townsend (314) 605-9056 grt357@lionmail.lindenwood.edu

Supervisor:

Dr, Michiko Nohara-LeClair (636) 949-4371 mnohara-leclair@lindenwood.edu

Appendix E

Participant's Receipt

x_____
(Participant's full name-printed**)**
x_____
(Signature)
x_____
(Student ID number) **(Time of Class)**
x_____
(Teacher's name)

_____
(*Project Number***)**
_____
(*Experimenter's name-printed***)**
_____
(*Experimenter's Signature***)** **(***date***)**

Please return this form to Y407
to receive your extra credit

Participant's Receipt

x_____
(Participant's full name-printed**)**
x_____
(Signature)
x_____
(Student ID number) **(Time of Class)**
x_____
(Teacher's name)

_____
(*Project Number***)**
_____
(*Experimenter's name-printed***)**
_____
(*Experimenter's Signature***)** **(***date***)**

Please return this form to Y407
to receive your extra credit

Please cut along dotted lines.

Appendix F

Answer Sheet

Participant ID: ____ARM-_____Date: _____

Make sure when you take Test A that those answers are put under the Test A answer blocks. Same goes for Test B.

Test A Answers:

1	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
2	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
3	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
4	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
5	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
6	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
7	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
8	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
9	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
10	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐

Test B Answers:

1	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
2	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
3	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
4	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
5	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
6	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
7	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
8	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
9	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐
10	⊏A⊐	⊏B⊐	⊏C⊐	⊏D⊐	⊏E⊐

Appendix G

Test A

Participant ID: ____ARM-_____Date: _____

ENGLISH

DIRECTIONS: In the passage that follows, certain words and phrases are underlined and numbered. In most cases, you are to answer the one that best expresses the idea, makes the statement appropriate for standard written English, or is worded most consistently with the style and tone of the passage as a whole. If you think the original version is best, choose "NO CHANGE."

Passage - Bessie Coleman: In Flight

It was a long journey from the American [1]Southwest she'd been born in 1893, to these French skies. [2]The year in which she was born was about a year ago. There hadn't been much of a future for her in Oklahoma. After [3]both semesters of the two-semester year at Langston Industrial College, Coleman headed for Chicago to see what could be done to realize a dream. Ever since she saw her first airplane when she was a little girl, Coleman had known that someday, somehow, she would fly.

Questions

1. A. NO CHANGE
   B. Southwest that she'd been
   C. Southwest, where she'd been
   D. Southwest, she was
2. A. NO CHANGE
   B. It is now just about a century since the year of her birth.
   C. Just about a century has passed since the year of her birth.
   D. OMIT the underlined portion.

3. A. NO CHANGE
   B. a year
   C. a year like two full semesters
   D. one year filled with two semesters

MATH

4. A rectangle is twice as long as it is wide. If the width of the rectangle is 3 inches, what is the rectangle's area, in square inches?

A. 6

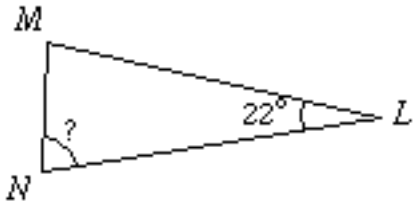
B. 9

C. 12

D. 15

E. 18

5. The triangle below is isosceles and is drawn to scale. What is the measure of N?



A. 22°

B. 68°

C. 78°

D. 79°

E. 89°

READING

DIRECTIONS: The passage in this test is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

PROSE FICTION: This passage is adapted from Elizabeth Bishop's short story "The Housekeeper" (©1984 by Alice Methfessel).

Outside, the rain continued to run down the screened windows of Mrs. Sennett's little Cape Cod cottage. The long weeds and grass that composed the front yard dripped against the blurred background on the bay, where the water was almost the color of the grass. Mrs. Sennett's five charges were vigorously playing house in the dining room. (In the wintertime, Mrs. Sennett was housekeeper for a Mr. Curley, in Boston, and during the summers the Curley children boarded with her on the Cape.)

My expression must have changed. "Are those children making too much noise?" Mrs. Sennett demanded, a sort of wave going over her that might mark the beginning of her getting up out of her chair. I shook my head no, and gave her a little push on the shoulder to keep her seated.

6. According to the narrator, Mrs. Sennett wears a hat because she:

A. is often outside.
B. wants to look like a literary figure.
C. has thin hair.
D. has unique taste in clothing.

7. It is reasonable to infer from the passage that Mrs. Sennett asked "Are those children making too much noise?" (lines 11–12) because Mrs. Sennett:
   A. concerns herself about the well-being of others.
   B. wishes to change the subject to literary figures.
   C. cannot supervise the children without the narrator.
   D. is bothered by the noise the children make.
8. As it is used in line 3, the word composed most nearly means:
   A. contented.
   B. unexcited.
   C. satisfied.
   D. constituted.

SCIENCE

DIRECTIONS: The passage in this test is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

Passage I

The following table represents the concentration of ions and dissolved gases in the sediment at the bottom of an ocean. A depth of 0 centimeters (cm) represents the top of the sediment. The concentrations are expressed in parts per million (ppm). The acidity of a solution is represented on a scale known as pH. A pH of 1 is very acidic, a pH of 7 is neutral, and a pH of 14 is very basic.

Depth	Temp.		Concentration in sediment (ppm)					
(cm)	(°C)	pH	SO_4^{2-}	S^{2-}	CO_2	Fe^{3+}	Fe^{2+}	O_2
0	4	7.0	7.0	0.0	1.0	4.0	0.5	2.0
5	5	6.5	5.0	2.0	1.5	3.0	1.5	1.0
10	7	6.0	3.5	3.5	2.0	2.0	2.0	0.0
15	9	5.5	3.3	3.8	3.0	0.8	3.8	0.0
20	10	5.0	3.0	4.0	1.0	0.5	4.0	0.0

Table adapted from R.M. Atlas and R. Bartha, Microbial Ecology: Fundamentals and Applications. ©1981 by Addison-Wesley Publishing Company.

9. According to the information provided in the table, the concentration of which of the following ions and dissolved gases is constant for sediment depths of 10 cm or more?

A. Sulfide (S2–)
B. Carbon dioxide (CO2)
C. Ferric iron (Fe3+)
D. Oxygen (O2)

10. If the trends indicated in the table were to continue, one would predict the pH of the sediments at a depth of 35 cm to be:

A. 1.5.

B. 3.5.

C. 4.5.

D. 6.0.

Appendix H

Test B

Participant ID: ____ARM-_____Date: _____

SCIENCE

DIRECTIONS: The passage in this test is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

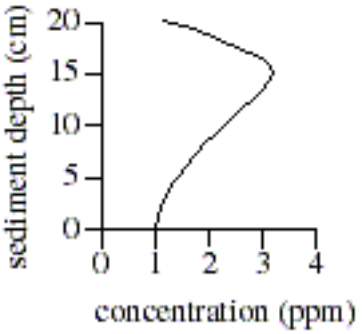
Passage I

The following table represents the concentration of ions and dissolved gases in the sediment at the bottom of an ocean. A depth of 0 centimeters (cm) represents the top of the sediment. The concentrations are expressed in parts per million (ppm). The acidity of a solution is represented on a scale known as pH. A pH of 1 is very acidic, a pH of 7 is neutral, and a pH of 14 is very basic.

Depth	Temp.		Concentration in sediment (ppm)					
(cm)	(°C)	pH	SO_4^{2-}	S^{2-}	CO_2	Fe^{3+}	Fe^{2+}	O_2
0	4	7.0	7.0	0.0	1.0	4.0	0.5	2.0
5	5	6.5	5.0	2.0	1.5	3.0	1.5	1.0
10	7	6.0	3.5	3.5	2.0	2.0	2.0	0.0
15	9	5.5	3.3	3.8	3.0	0.8	3.8	0.0
20	10	5.0	3.0	4.0	1.0	0.5	4.0	0.0

Table adapted from R.M. Atlas and R. Bartha, Microbial Ecology: Fundamentals and Applications. ©1981 by Addison-Wesley Publishing Company.

1. The graph below best represents the relationship between concentration and sediment depth for which of the following ions and dissolved gases?



A. Ferrous iron (Fe2+)

B. Oxygen (O2)

C. Carbon dioxide (CO2)

D. Sulfate (SO42–)

2. A certain type of bottom-dwelling microorganism thrives under the following environmental conditions: low concentrations of Fe2+, high concentrations of O2, and a neutral pH. Based on the table, at which of the following sediment depths would one most likely find this microorganism?

A. 0 cm

B. 5 cm

C. 10 cm

D. 15 cm

READING

DIRECTIONS: The passage in this test is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

HUMANITIES: This passage is adapted from the article "Japan's Tansu: Cabinetry of the 18th and 19th Centuries" by Rosy Clarke (©1985 by W.R.C. Smith Publishing Company).

The Japanese, always pressed for room on their island empire, have long been masters at utilizing space. This is especially evident in the native handmade Japanese cabinetry known as tansu, produced from about 1750 to 1900. A prolific range of wooden tansu was created for a variety of needs, and a diverse group of pieces emerged, ranging from small, portable medicine chests to giant trunks on wheels.

Prior to Japan's Edo Period (1603-1867), ownership of furniture was limited to the nobility. Primarily, these were black-and-gold lacquered pieces of Chinese inspiration. But with the demise of Japan's feudal society and the rise of a moneyed merchant class by the mid-Edo Period, furniture in Japan took on its own personality, as craftsmen enjoyed the freedom to create original designs that combined function and beauty.

Today, examples of these skillfully constructed chests tell us much about the lifestyle and accoutrements of people during the Edo Period and the Meiji Era (1868-1912).

1. The author claims that by studying examples of handcrafted Japanese tansu that are still available today, scholars can learn about which of the following?

   I. How mass production first began in Japan

   II. How Japanese industrialists developed shortcuts in building furniture

   III. How the Japanese lived during the Edo Period and the Meiji Era

   A. II only

   B. III only

   C. I and II only

   D. I, II, and III

2. The passage suggests that the Japanese tansu had changed by the mid-Edo Period in which of the following ways?

   A. It reflected increased creative freedom of the craftsmen.

   B. It became a symbol of status and wealth for the nobility.

   C. It became less important to the merchant class.

   D. It became much larger.

3. According to the passage, the Chinese influence on Japanese furniture-making is reflected in which of the following characteristics of some Japanese furniture?

   I. The use of space

   II. The black and gold lacquer

   III. The use of paulownia wood

   A. II only

   B. III only

   C. I and II only

   D. I, II, and III

MATH

1. If 60% of the weight of a 2,200-pound car should be supported by the rear tires, how many pounds should be supported by the rear tires?

A. 120

B. 600

C. 1,200

D. 1,320

E. 1,600

2. A rock group gets 30% of the money from sales of their newest compact disc. That 30% is split equally among the 5 group members. If the disc generates $1,000,000 in sales, how much does one group member receive?

A. $30,000

B. $50,000

C. $60,000

D. $200,000

E. $300,000

ENGLISH

DIRECTIONS: In the passage that follows, certain words and phrases are underlined and numbered. In most cases, you are to answer the one that best expresses the idea, makes the statement appropriate for standard written English, or is worded most consistently with the style and tone of the passage as a whole. If you think the original version is best, choose "NO CHANGE."

Passage – The Joy of Running

I keep in shape by running on an indoor track several times a week. There are many advantages to running as a [1]sport, of which the top two advantages are: I never have to reserve a court or find teammates; [2]teammates are usual in many sports; I can run at my [3]convenience and I can set my own pace. Just running is, however, rather boring, so I've made it interesting by watching the other runners.

Questions

1. A. NO CHANGE
   B. sport, of which a few of the many advantages are:
   C. sport, which I will now list:
   D. sport:
2. A. NO CHANGE
   B. those who play tennis do have to worry about courts;
   C. although running is hard on one's feet;
   D. I need only shoes for equipment;
3. A. NO CHANGE
   B. convenience, and;
   C. convenience; and
   D. convenience and,

SPECIAL FEATURE:

SENIOR RESEARCH PROJECT PAPER

The following paper was written by Jamie Zagar and Danielle Merli, who embarked upon a joint independent project for their Senior Research Project course. These students presented their research in front of the PSY404 class and served as great role models for those who plan to conduct research beyond the PSY404 class.

MNL

The Effects of Priming on Self-Esteem with an Emphasis on Extroversion

Jamie A. Zagar and Danielle C. Merli

This experiment looked at priming on self-esteem. We were also interested in the differences between extroverts and introverts in relation to priming on self-esteem. A priming message with a graphic was used on the experimental group, while only the graphic (same image) was used for the control group. We measured extroversion between the two groups to look for differences within and between the group conditions, in relation to self-esteem. Participants in the experimental group were expected to have a higher self-esteem. A significant difference was found. The priming condition showed that participants had a higher self-esteem. However, a relationship between extroverts in the experimental group and self-esteem was not found.

The researchers of the current study focused on priming, self-esteem, and extroverted personalities. We investigated the power of priming on self-esteem. The differences between extroverts and introverts with priming and self-esteem were also explored. We evaluated two separate conditions, the experimental group and the control group. We believed that there would be differences between the experimental group and the control group. A graphic with a priming message was used on the experimental group, while only the graphic was used for the control group. We measured extroversion between the two groups to look for differences within and between the group conditions, in relation to self-esteem. The researchers reviewed several articles on self-esteem, priming, and extroversion.

To explore the effects of priming on self-esteem, one must have understood the construct of self-esteem. Oakes, Brown, and Cai (2008) incorporated two viewpoints to establish the

definition of self-esteem. First, Oakes et al. referred to Brown and Marshall's (2006) definition that emphasized that self-esteem was the affective view an individual felt about himself or herself. Other theorists found that cognition played a more important part to evaluating one's value of himself or herself (Crocker & Wolfe as cited in Oakes et al.). Integrating both views helped describe self-esteem. Self-esteem used the ability of cognition to reflect one's thoughts about oneself. To further the understanding of self-esteem, Tafarodi and Ho (2006) related self-esteem to an individual's reflective and automatic judgment on his or her worth. Identifying one's own understanding was based on past situations. People judged themselves based off their own memory, in terms of feelings, behaviors, perceptions, and even intentions (Tafarodi & Ho). According to Tafarodi and Ho, the past situations affected one's memory of his or her feelings, observations, objectives, behavior, etc.

The measurement of self-esteem currently shifted from direct questioning of how individuals thought about themselves to indirectly associating themselves to optimistic or pessimistic stimuli (Oakes, Brown, & Cai, 2008). Self-esteem was able to be measured explicitly or implicitly. Explicitly measured self-esteem was defined by Tafarodi and Ho (2006) as one's awareness of judging oneself from memory. Using explicit measures to evaluate self esteem was direct and instantaneous. With explicit measures, respondents were typically given the option of agreeing with positively or negatively attributed statements (Tafarodi & Ho). Tafardo and Ho described implicitly measured self-esteem as an unconscious evaluation of one's attitude and self. The implicit self-esteem occurred outside of one's awareness.

In the current study, we used an explicitly measured self-esteem instrument. The most popular scales of explicitly measured self-esteem were the Feelings of Inadequacy Scale (Janis &

Field, 1959), Self-Esteem Inventory (Coopersmith, 1967), and Self-Esteem Scale (Rosenberg, 1965) (as cited in Tafarodi & Ho). The Rosenberg Self-Esteem Scale (1989), the revised edition, was used in the present study. The intention of the Rosenberg Self-Esteem Scale was to measure the self-worth of adolescents (Rosenberg as cited Furnham & Cheng, 2000).

A study conducted by Pritchard, Wilson, and Yamnitz (2007) attempted to determine whether law and medical students faced major stress during their first year at college. They hypothesized that undergraduate freshmen would have experienced stress from the transition of high school into college life. The participants consisted of 242 undergraduate freshmen at the beginning and end of their first year. They were questioned over a series of topics such as physical health, alcohol use, stress level, perfectionism, self-esteem, optimism, extroversion, and psychological adaptation to college (Pritchard et al.). There was a decline in psychological and physical health for medical and law students. Poorer physical health was due to negative coping tactics. Low self-esteem helped predict the abuse of alcohol. Both optimism and self-esteem showed better outcomes physically and psychologically. Extroverts appeared happier and healthier than introverts (Cohen as cited in Pritchard et al.). However, the results of the study by Pritchard et al. established that extroverts were more depressed than introverts. The Rosenberg Self-Esteem Scale showed to be both reliable and valid during the experiment. The results concluded that participants with a low self-esteem initially had more physical health problems. There was also a relationship between low self-esteem and increased negative moods (Pritchard, et al.). As stated previously, we also used the Rosenberg Self-Esteem Scale in our study.

Melnick, Conture, and Ohde (2003) studied whether phonological priming through picture naming affected children who stuttered. Speech reaction time was measured of the 36

children (18 who did stutter and 18 who did not stutter). The computer presented "white-on-black line" drawings, and the participants were asked to name the objects fast as they were able (Melnick et al.). There were three conditions in the study: no prime, related prime, and unrelated prime. All children participated in each condition. The no prime condition presented a picture while the children answered as quickly as they could. The related prime condition and the unrelated prime condition had the children look at the same picture, as the first condition. However, there was an auditory prime just before the picture was presented in both of these groups. Both groups received a different priming word. Those that received the auditory prime related to the picture were in the related prime group, while those who received an auditory prime unrelated to the picture were in the unrelated prime group (Melnick et al.). During the related condition, results showed shorter speech reaction times compared with those in the no prime condition.

Anderson and Conture (2004) investigated stuttering in young children. They investigated whether priming helped children to stop stuttering with the effect of sentence-structure. There were 32 participants in the study (half who stuttered and the other half who did not). Speech, language, and hearing development were within standard limits for all the participants who did not stutter. The participants were asked to watch and explain the "black-on-white" drawing on the computer screen that illustrated children, adults, and animals. The presence of the priming sentences were of drawings expressing different activities that were easily depicted (e.g. the girl is hugging the cat). The two conditions were no-prime and syntactic-prime. The syntactic-prime gave an auditory priming sentence; however, the auditory

sentence was not related to the actual picture (Anderson & Conture). The researchers measured speech reaction time from the onset of the drawing to the onset of the participant's vocal reply.

The media (e.g. newspaper, radio, and television) has had numerous sources of information for political views and political recruitment. Moy, Xenos, and Hess (2005) were interested in whether infotainment media could influence American's views during the 2000 presidential campaign. The modern term infotainment was defined as information about entertainment (Moy et al.). Infotainment media investigated late-night-comedy shows. Priming was used to detect whether a viewer's judgment of the presidential candidates who appeared on the television shows would have influenced his or her vote. The National Annenberg Election Survey surveyed 11,482 respondents about their perception on their views and beliefs about the candidates and even their character traits. After appearing on The Late Show with David Letterman (Burnett, 2000), George W. Bush's character traits were evaluated more positively by viewers than by non-viewers. The participants were asked to rate G. W. Bush and Al Gore. Respondents evaluated Bush more highly than Gore. Participants rated Bush as more honest, inspiring, and a leader, while Gore was rated more knowledgeable and caring. Demographics, issue evaluations, character evaluation, and late-night comedy viewing showed there were higher ratings for Bush, and these results showed a positive correlation because he just recently appeared on David Letterman's show just before the election (Moy et al). Between pre and post appearances on the television show, there was a statistically significant 3-way interaction, which was between caring, late-night comedy exposure, and a time variable-caring. According to Moy et al., American viewers were persuaded by the priming effects of infotainment.

The present study investigated priming on self-esteem. In particular, the researchers used two posters with the same graphic image, one with text and the other without text. The poster with the text was used in the priming condition. The first hypothesis of the researchers was the belief that participants in the experimental (priming) group would have higher self-esteem than participants in the control group. The researchers also hypothesized that extroverts in the experimental group would have been most affected by the poster with text. The extroverts with the experimental poster condition would have had the highest self-esteem out every condition.

To take hold of the effects of priming, we reviewed journal articles dealing with stimuli influencing a particular response. Moy et al. (2005) demonstrated that the media helped influence or prime its viewers to make a direct decision on voting for which candidate to be elected for president. The goal of priming was the need to influence a response without a person's recognition of what it was that influenced him or her. For example, the current study investigated whether a motivational poster influenced one's response in a self-esteem inventory. By utilizing priming, we did not make it known during the experiment that the poster was a part of the experiment because participants were expected to notice the poster on their own.

Method

Participants

One-hundred and twenty-four university students signed up and volunteered to take part in this study. These students were recruited from Lindenwood University's Human Subject Pool. The sign-up sheet was located on the Human Subject Pool Bulletin Board, which was located on the fourth floor in Young Hall. There was no monetary compensation granted; however, extra credit points were given as compensation to the participants who were students

from one of the following five classes: Basic Concepts of Sociology, The Family, Cultural Anthropology, and Principles of Psychology, and Interactive Psychology.

Only 118 out of 124 participants were included in the study. Five participants' data were excluded from the study because of vision problems because they were physically unable to see the poster. One participant failed to fill out the third survey. Demographic information from the third survey was evaluated by the researchers using SPSS 16.0. There were 49 male participants and 69 female participants. Participants were also categorized by class year in college. The results showed that there were 58 freshmen, 23 sophomores, 15 juniors, 21 seniors, and 1 unknown classman. The age range was between 18 and 44 years. The mean average age was 20.08 years, with a standard deviation of 2.851. Over 75% of participants were from the United States. Roughly five percent of participants were from India. There were a total of 22 countries from which participants stated they were from. The countries ranged from Argentina, the Bahamas, Columbia, Germany, Pakistan, and Venezuela. Seventy-eight percent of participants stated that English was their first (native) language. The second most frequent language was Spanish, with over seven percent of the sample speaking it as their first language. Hindi was the third most frequent first language, and it was spoken by a little over four percent of participants.

Materials

The study used two posters of the same graphical image. One poster had a motivational message about the concept of confidence on it. The second poster did not have any wording on it (see Appendix A). Both posters were found on the same internet website at http://www.zazzle.com motivational_ladybug_confidence_poster-228992254619523585. In addition to the posters, three surveys were used as the basis of the study. The first survey

Rosenberg Self-Esteem Scale was standardized (Rosenberg, 1989 as cited in University of Maryland) (see Appendix B). The second survey was the standardized *A Trait Questionnaire* (Wilson, 1978 as cited in McAdams, 2005) (see Appendix C). The third survey was not a standardized survey (see Appendix D). We generated our own demographic survey to use in our experiment.

Additional materials used in the study included pens to record information and provided for the participants to use on the inventories and necessary paperwork. The necessary paperwork consisted of a two informed consent forms (see Appendix E), the experimenter's list of participants, a feedback letter (see Appendix F), and a receipt showing proof of the participant that took part in the study. A desk and several chairs were provided for both the experimenters and participants. Sticky tack and a tape measure were used to place the appropriate poster in the same position for every scheduled meeting.

Procedure

The recruitment description and sign-up sheets were posted on the HSP bulletin board on the fourth floor of Young Hall. One to six participants were able to sign up for each scheduled time. Before participants arrived at the designated lab room, we placed the appropriate poster on the wall. The experiment tested participants in a group setting. When participants arrived for the experiment, they were given two informed consents forms to read and sign. We retained one copy of the informed consent form and gave the second copy to participants for their own records. Participants also signed the experimenter's list of participants form.

Each participant was given three surveys to fill out. The participants were asked to fill out the surveys in the arrangement that was given to them. The first survey that participants took

was the standardized *Rosenberg Self-Esteem Scale* (Rosenberg, 1989). The second survey used was the standardized *A Trait Questionnaire* (Wilson, 1978). The participants then responded to the demographic survey that the experimenters created.

The experimenters separated participants into two groups, the experimental group and the control group. While testing, each group of participants had a poster placed on the wall in front of their table. However, the experimental group received the independent variable, a poster that had a lady bug image and a motivational message about confidence. The control group received a poster that had the same lady bug image but without any text. Both posters were positioned at the exact location in the designated lab room with the use of the tape measure.

The poster conditions were alternated each day. The posters were also rotated for the beginning of each week day. For example, if the experimental poster was on the wall on Monday of the first week, it would have been put up on Tuesday the second week. The starting day for the control group would have corresponded on Tuesday the first week and Monday the second week.

After the three surveys were completed, we debriefed the participants about the poster condition in both the experimental and control situation. The participants were also debriefed about the true purpose of the experiment. After debriefing participants, we gave them a feedback letter that contained the purpose of the study and our contact information. Participants were encouraged to contact us if they had any questions or comments about the experiment.

Participants were also given the participant's receipt that both the experimenter and participant signed. The participant then took the receipt to the HSP office to receive extra credit points for one of the five lower level classes of Anthropology, Sociology, or Psychology. All

surveys were evaluated after all the participants in one day took the test. Results of individual surveys were not given to any participant.

After the surveys were evaluated, based on the participants' score on the *A Trait Questionnaire*, participants were also placed into either the extroverted or introverted group. These two conditions were two levels of the second independent variable, the quasi-independent variable of extroversion.

Results

The first hypothesis that the experimenters were interested in was whether the experimental poster condition affected participants' self-esteem on the *Rosenberg Self-Esteem Scale* (1989). A one-tailed independent t-test was conducted between self-esteem scores and the experimental poster condition. A significant difference was found between both poster conditions in self-esteem scores. The results showed that $t_{(116)} = 2.127$, $p = .036$.

The second hypothesis examined whether extroverts with the confidence poster condition had higher self-esteem than introverts in the same condition. There was not a relationship between extroversion and self-esteem in the poster condition. The Pearson correlation revealed that $r = -.027$. However, a relationship was found between extroversion and self-esteem in the poster condition that did not have the motivational message (the control group). The Pearson correlation revealed that $r = .380$, a positive correlation. The researchers also looked at self-esteem scores and extroversion scores that included both poster conditions. A correlation was found between extroversion and self-esteem. The Pearson correlation showed a weak positive relation, where $r = .189$.

The experimenters were also interested in whether participants that thought they were extroverted differed from their scores on the extroversion scale. There was a significant difference in whether the participants thought of themselves as extroverted and their extroversion scores. The independent t-test's results showed $t_{(116)} = -7.562$, $p < .001$. An independent t-test was used to evaluate whether there were differences in self-esteem scores and whether participants thought they were extroverted. The results demonstrated that there was not a significant difference, $t_{(116)} = -.642$, $p = .522$. An independent t-test was also used to evaluate whether the self-esteem scores of both groups of participants differed by whether they thought they were affected by the poster. There was not a significant difference in scores. The independent t-test's results demonstrated $t_{(116)} = .808$, $p = .523$.

Additionally, differences in scores by sex, class year in college, and age in college were explored. There were not any significant differences in self-esteem scores between males and females. The independent t-test showed $t_{(116)} = .173$, $p = .863$. Extroversion was also examined between the sexes. The results did not show a significant difference between males and females. The independent t-test showed $t_{(116)} = -.035$, $p = .972$. A one-way ANOVA was used to look at class year in college on self-esteem. The results concluded that there was not a significant difference, where $F_{(3, 113)} = 2.353$, $p = .076$. In particular, the mean self-esteem scores were about the same (around 22) from freshman year through junior year. The senior level average of self-esteem was at 25. The Pearson correlation was also used to look at class year and self-esteem. It showed a very weak positive relationship, where $r = .052$. Finally, the researchers looked at the relationship between age and self-esteem. The results did not show a relationship. The Pearson correlation was $r = -.060$.

Discussion

As stated previously, a significant difference was found in self-esteem scores between the experimental group and the control group. This difference supported the hypothesis that participants in the priming condition would have higher self-esteem than participants in the controlled condition. We were excited to find evidence to support our hypothesis. However, we also recognized that other influences, other than priming may have influenced the results. Participants in the experimental group may have had fewer distractions or fewer life stresses than participants in the control group. Additional variables and limitations were discussed later in this section.

Other interesting findings came from this study. A significant difference was found between whether participants thought of themselves as extroverted and their extroverted scores. Participants that thought they were extroverted may have been actual extroverts, which would have made the experimenters question the validity of the questionnaire. However, participants may not have been in tuned with how truly extroverted they actually were. The demographic survey question about whether participants thought they were extroverted was limited to either a closed response of only two choices-extrovert or introvert. If we would have put the response choice on a Likert scale, the scores of extroversion between what participants thought and their responses on the questionnaire may have been more similar.

A weak positive correlation was found between extroversion and self-esteem for both poster conditions. However, a more significant correlation was found between self-esteem and extroversion in the control group. It was interesting to note these results between self-esteem with the extroverts in the control group. Explaining the correlation between the control group

and self-esteem was difficult. The experimenters came up with three possible explanations. The first explanation was that participants may have found the lady bug image to be motivational without needing a motivational message. The second explanation looked at differences outside of the data evaluated in the study. Perhaps the extroverted participants in the control group had more similar characteristics that differed from the characteristics that the experimenters already gained from the demographic survey. A third explanation was that it was by chance (or random) that these extroverts in the control group ended up in the same condition; that perhaps, the posters had no effect on either group.

Limitations to the study included extraneous variables and confounding variables. The extraneous variable included noises from outside of the library room and outside the window. There was an instance where music was being played from a car outside. Music may have impacted the results of some participants. The sunshine that peaked through the windows varied between scheduled meetings. This may have made the room less comfortable by a glare on the paper, as well as a warmer temperature in the room. One confounding variable was determined as the poster size. We believed that a more significant difference between the poster conditions may have been found if the posters were slightly larger, where participants would have been able to notice the image and text. The second confounding variable was the eighth question on the third survey, the demographic survey, that asked if participants if they were able to read the poster. However, in the control group, the reading section of the question did not apply and may have confused participants. We explained to participants in the control group that the reading part of the question did not apply to them, and that we were only if they were able to visually see the poster without any problems.

We obtained a great significance between the two poster conditions with self-esteem. Because the results were significant, using priming to enhance self-esteem on a broader population, such as in education, at work, religious events, and sporting events, would have been beneficial to society. Using the concept of self-esteem would have motivated students, workers, and athletes to achieve their goals such as performing well and becoming a better person.

We were satisfied with the two standardized inventories that we used in their experiment. In the future, we would have used a larger image, with a larger font size. The poster would have used a little more color. More colors may have enticed participants to view the posters longer. The only colors on the current posters were black, red, grey, and white. For future research, we would have also tried a larger room to conduct the experiment to see whether the results would have been the same between a more natural classroom setting and the smaller setting we used. The obvious differences between the rooms would have been the size of the room and the amount of distractions. We may not have found a significance if the room was larger and full of more people. We believed that future research on classroom size and priming of self-esteem should be explored. Perhaps, the smaller the room, the higher self-esteem students would have had. In the future, we also would have looked more thoroughly into the effect of priming on self-esteem with other populations, such as children in grade schools and adults at work.

References

Anderson, J. D. & Conture, E. G. (2004). Sentence-structure priming in young children who do and do not stutter. *Journal of Speech, Language, and Hearing Research*, *47*(3), 552-575. Retrieved February 16, 2009 from Proquest Psychology Journals database.

Burnett, R. (Executive Producer). (2000, October 19). *The Late Show* [Television broadcast]. California: Columbia Broadcasting System.

Furnham, A. & Cheng, H. (2000). Perceived parental behavior, self-esteem and happiness. *Soc Psychiatry Epidemiol, 35*, 463-470. Retrieved February 23, 2009, from Proquest Psychology Journals database.

Melnick, K. S., Conture, E. G., & Ohde, R. N. (2003). Phonological priming in picture naming of young children who stutter. *Journal of Speech, Language, and Hearing Research, 46*(6), 1428-1449. Retrieved February 16, 2009 from Proquest Psychology Journals database.

Moy, P., Xenos, M. A., & Hess, V. K. (2005). Priming effects of late-night comedy. *International Journal of Public Opinion Research, 18*(2), 198-210. Retrieved February 16, 2009 from Proquest Psychology Journals database.

Oakes, M. A., Brown, J. D., Cai, H. (2008). Implicit and explicit self-esteem: Measure for measure. *Social Cognition, 26*(6) 778-790. Retrieved February 23, 2009, from Proquest Psychology Journals database.

Pritchard, M. E., Wilson, G. S., & Yamnitz, B. (2007). What predicts adjustment among college student? A longitudinal panel study. *Journal of American College Health, 56*(1), 15-21. Retrieved March 9, 2009 from Proquest Psychology Journals database.

Rosenberg, M. (1989). *Society and the adolescent self-image* (Rev. ed.). Middletown, CT: Wesleyan University Press. In University of Maryland (n.d). The Rosenberg Self-Esteem Scale. Retrieved February 9, 2009, from http://www.bsos.umd.edu/socy/Research/rosenberg.htm.

Tafarodi, R. W. & Ho, C. (2006). Implicit and explicit self-esteem: What are we measuring? *Canadian Psychology*, *47*(3), 195-202. Retrieved February 23, 2009, from Proquest Psychology Journals database.

Wilson, G. D. (1978). Introversion-extroversion. In H. London and J. E. Exner, Jr. (Eds.), *Dimensions of personality* (pp. 217-261). New York: John Wiley & Sons.

Author Note

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Appendix A

Figure 1

Description:

We were unable to make the poster image any bigger without distorting the image. In Figure 1, the 13 X 11 poster displays the word *confidence* in all caps and in red font. The quote that follows *confidence is* "No matter how small I might feel, there is something or somebody who sees me as colorful." We will be using two posters in our project. Both posters will show the same image. However, the poster for the control group will not include any wording (see Figure 2). The motivational message will be cut off of the poster, as seen in Figure 2.

(http://www.zazzle.com/motivational_ladybug_confidence_poster-228992254619523585)

Figure 2

Appendix B

Rosenberg Self-Esteem Scale (1989)

	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1	I feel that I am a person of worth, at least on an equal plane with others.				
2	I feel that I have a number of good qualities..				
3	All in all, I am inclined to feel that I am a failure.				
4	I am able to do things as well as most other people.				
5	I feel I do not have much to be proud of.				
6	I take a positive attitude toward myself.				
7	On the whole, I am satisfied with myself.				
8	I wish I could have more respect for myself.				
9	I certainly feel useless at times.				
10	At times I think I am no good at all.				

Appendix C

A Trait Questionnaire (Wilson, 1978)

For each of the following 20 questions, answer either yes (if it is generally true for you) or no (if it is generally not true for you).

1.	Do you often long for excitement?	YES	NO
2.	Are you usually carefree?	YES	NO
3.	Do you stop and think things over before doing anything?	YES	NO
4.	Would you do almost anything for a dare?	YES	NO
5.	Do you often do things on the spur of the moment?	YES	NO
6.	Generally, do you prefer reading to meeting people?	YES	NO
7.	Do you prefer to have few but special friends?	YES	NO
8.	When people shout at you, do you shot back?	YES	NO
9.	Do other people think of you as very lively?	YES	NO
10.	Are you mostly quiet when you are with people?	YES	NO
11.	If there is something you want to know about, would you rather look it up in a book than talk to someone about it?	YES	NO
12.	Do you like the kind of work that you need to pay close attention to?	YES	NO
13.	Do you hate being with a crowd of people who play jokes on one another?	YES	NO
14.	Do you like doing things in which you have to act quickly?	YES	NO
15.	Are you slow and unhurried in the way you move?	YES	NO

16. Do you like talking to people so much that

    you never miss a chance to talk to a stranger? YES NO

17. Would you be unhappy if you could not

    see lots of people most of the time? YES NO

18. Do you find it hard to enjoy yourself at a lively party? YES NO

19. Would you say that you are fairly self-confident? YES NO

20. Do you like playing pranks on others? YES NO

Appendix D

QUESTIONNAIRE

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1) Sex: MALE FEMALE?

2) Year in college:

   a. FRESHMAN SOPHOMORE JUNIOR

      SENIOR OTHER

3) Age: _____ years.

4) What country are you from?: _____

5) What is your first (native) language?: _____

6) Do you consider yourself introverted or extroverted?

   a. -**Introverted** -**Extroverted**

   b. *shy, withdrawn, reserved, quiet * outgoing, social, friendly, gregarious

7) Did you notice the poster in front of you before **this last survey** (behind the experimenters)?: YES NO

8) Can you visually see and read the poster in front of you? YES NO

9) Do you feel that the poster affected you in anyway? YES NO

   a. If YES, please explain:

Appendix E

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete three questionnaires asking about in my personality. To the best of my knowledge, I do not have any anxieties or opposition taking a personality survey by answering personal questions about my personality or self-concept. 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.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

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Appendix F

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to determine whether the independent variable of a poster about confidence would influence the scores on the self-esteem survey. A personality test was given to determine whether participants were extroverted or introverted. We predicted that Participants who received the independent variable (confidence poster) would score higher on the self-esteem survey. We also hypothesized those participants who scored more extroverted than introverted on the personality test will score higher on the self-esteem survey, regardless of having the confidence poster in the room.

Please note that we are not interested in your individual results; rather, we are 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. 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.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:

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