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ADVANCED RESEARCH METHODS

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Journal

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Lindenwood University

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Prologue

The overall quality of this year's student research projects have been outstanding. Many students from this class elected to present their research at regional conferences, and a number of them pursued more projects in a future semester. Their enthusiasm was also reflected by the fact that the majority of students in the PSY40400 class of Spring 2015 submitted cover designs for this online journal. I am proud and delighted to have the opportunity to share these papers with the reader because I believe the students who completed these papers gave their respective projects their 100% effort.

Michiko Nohara-LeClair, PhD

Course Professor and #1 Cheerleader for the Awesome Class of Spring 2015

The Effects of a Visual Cue on Reaction Time

Madison Vander Wielen¹

This between-subjects design study focuses on the effects of a visual cue on reaction time. Participants started the study by completing an online reaction time test and their performance was recorded. Then, they were exposed to a visual cue in the form of a 2-min video clip of a man dancing. Each participant was assigned to one of two conditions. Participants in one condition watched the video at a decreased speed (i.e., slower), whereas participants in the other watched the video at an increased speed (i.e., faster). Then, the participants were asked to complete a second online reaction time test. The difference in the participants' performance on the two reaction time tests were used as the dependent measure to determine whether their reaction times were affected by exposure to a visual cue presented in a faster or slower speed. I hypothesized that the speed of the video would affect the speed of the participants' reaction time so that the participants who watched the faster video in between the reaction time tests would see a decrease in their reaction time (i.e., respond more quickly) whereas those who watched the slower video in between the tests would show an increase in their reaction time (i.e., respond slowly). My hypothesis was not supported; the study resulted in no significant effect of a visual cue and the participants' reaction time differences.

The purpose of this study is to see if a visual cue can subconsciously affect a person's behavior. I have always been intrigued by the well known psychological concept of priming. The term describes the idea that behavior can be triggered automatically by previously experienced situations and events (Bargh, Chen, & Burrows, 1996). Can a person's reaction time improve just from watching a video at an increased speed?

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There has been research on priming in the past. One study in particular conducted by Bargh et al. (1996) focused on how verbal cues affect participant's behavior. The verbal cues were presented in three individual experiments. I am going to discuss the two experiments from Bargh et al. (1996) that influenced my own research study. The first experiment had the participants complete a scramble-sentence test that consisted of three groups of stereotypical words (polite, rude, and neutral words). Participants were given one of three envelopes of stereotypical words and were instructed to complete grammatical sentences. After completing the sentences, the participants were told to let the researcher know they were finished. The researchers waited for the participants while talking to a confederate. The point of the study was to time how long the participants waited before interrupting the researcher and the confederate. The results supported Bargh et al.'s (1996) hypothesis that the participants would interrupt the confederates faster when conditioned with the rude word scramble-sentence test compared to the participants in the other two conditions.

The second experiment in Bargh et al.'s (1996) study required participants to complete the same scramble-sentence tests as before but with age stereotypical word lists. This included a list of elderly stereotypical words and a list of neutral words. The participants were told to walk down a hall and were unknowingly timed. Bargh et al. (1996) predicted that the participants in the elderly word condition would walk slower compared to the participants who were given the

list of neutral stereotypical words. The results of Bargh's et al. (1996) research study supported his hypothesis that the stereotypical words that were presented subconsciously influenced participant's behavior. I was fascinated with the idea that the types of words affected the participants' actions and wanted to try and replicate Bargh et al.'s (1996) study but instead of just giving the participants words to look at as a visual cue, I wanted to show them a more stimulating visual cue such as a video clip.

There has already been research conducted that looked at the effects of a visual cue in the form of a digital or electronic stimulus. One study in particular was set up to study the effects of video games on a given lexical decision task. Specifically, Bosche (2010) had participants play either a violent or non-violent video game for 20 min and then tested the participants with a task containing violent and non-violent words. Bosche's (2010) data challenged his hypothesis that violent video games stimulate negative concepts only because the results from the study revealed that the violent video games primed both aggressive and positive thoughts. Even the simple fact that the violent video game impacted the participants' response in general is worthy of further investigation.

At first, it seemed unrealistic to me to be able to subconsciously influence a person's behavior with cues. I thought that our brains were too advanced for this and that it would only work in people who were diagnosed with a condition that affected one's cognitive functions.

Rossell, Shapleske, and David's (2000) research challenged my idea that people with unhealthy brain functioning would be more susceptible to priming compared to people without abnormal brain functioning. Rossell et al. (2000) compared a group of schizophrenic patients experiencing delusions and a group of schizophrenic patients not experiencing delusions. Each group of patients completed a lexical decision task after being exposed to one of the three emotional word pairs (positive, negative, or neutral). The results concluded that indirect semantic priming is consistently present in the normal control subjects, non-deluded subjects, and deluded subjects. The results helped Rossell et al. (2000) better understand why schizophrenic patients experience dysfunctional cognitive functioning in the brain that result in things such as delusions.

Similarly, there has been research done in the past that found that amnesic patients exhibit priming effects even after having major brain trauma (Ochsner, Chiu, & Schacter, 1994). Ochsner et al. (1994) reviewed past researcher studies and discussed the ideas of priming on patients with brain damage. Previous researchers gave participants, who were diagnosed with a brain injury resulting in amnesia, word stem completion tasks. Just like the results of the participants with delusions resulting from schizophrenia, the results of the individual word stem completion tasks found that the participants with amnesia were capable of being primed.

Many people, just like me, have been interested in the idea of priming thanks to Bargh et al.'s (1996) famous study that focused on priming with verbal cues. There has been some debate

on the creditability of the findings from the study conducted by Bargh et al. (1996). Since the study was conducted, multiple researchers have tried to replicate the study with no prevail. One researcher in particular replicated the original study with two exceptions; the researchers used an automated timing method compared to Bargh et al.'s stopwatches, and they also tested a larger sample of 120 participants compared to the 60 participants in Bargh et al.'s study (Doyen, Klein, Pichon, & Cleeremans, 2012). In my opinion, these two changes in the original study's design should improve the chance for significant results. The automated timing method was more reliable than someone manually controlling a stop watch and the larger sample size is more related to the population. But surprisingly, the results did not support neither Doyen et al.'s (2012) hypothesis nor the original hypothesis that participants who were exposed to words related to old age would walk slower when measured compared to the participants who were not in the old age condition.

The study at hand was conducted in order to determine whether a visual cue would impact people's reaction time. There were two different conditions in the study. The first condition required the participant to complete the reaction time tests and watch a video that was presented at an increased speed. The other condition was exactly the same but the video speed was decreased. I was focused on the difference between the first reaction time test the participants took and the second reaction time test the participants took after they watched the

video. I hypothesized that the participants who watched a video with two times the normal speed would have an increased reaction time speed on the first reaction time test compared to the second reaction time test.

Method

Participants

There were a total of 14 participants recruited from the Lindenwood Participant Pool (LPP). The LPP allows Lindenwood University students who are enrolled in qualifying classes at Lindenwood University to sign up online for research studies approved by Lindenwood University' Institutional Review Board. The experiments started on March 9th, 2015 and ended on April 18th, 2015. These students received extra credit in their qualifying classes for their participation in the study. The minimum age for the participants was 18 years old and the average age of the participants was 20 years old. Out of the 14 participants, 5 of them were male students and 9 of the participants were female students. There were no participants with visual impairments that disabled them from viewing the video or the reaction tests. The average amount of hours that participants stated that they played video games per day was about 1.2 hours. To my surprise, 5 out of the 14 participants stated that they spent zero hours of the day playing video games.

Materials

The room that the study took place in was one of the rooms available through the LPP. The rooms included chairs, a table, and my laptop. The LPP requires all participants to fill out a participant sheet to keep track of who participates in research studies. A LPP participant receipt was also filled out for each individual in order for the participants to receive their extra credit. Participants were required to read and sign two consent forms that made it clear that the person could opt out of participating at any time throughout the study (see Appendix A).. One of the consent forms was for the participant and the other one I kept. The participants also completed a demographic survey. The survey consisted of four questions (see Appendix B).

There are two online reaction tests that the participants completed on my laptop; test one (<http://getyourwebsitehere.com/jswb/rttest01.html>) is a stoplight reaction test and test two (<http://www.humanbenchmark.com/tests/reactiontime>) is a full screen color test and. Both of the tests have easy to follow instructions for the participants to read and both tests compute the average after five timed trials. I randomly assigned the order of the tests to the participants so that there were an equal number of participants in the slow video condition as the fast video condition taking the tests in a particular order. I wanted to limit error by systematically changing the order of the tests so that the participants did not naturally do better on the second test since they were used to the format and buttons after completing the first test. I systematically altered

the order of the reaction time tests for each participant so that the order rotated after every two participants. The two tests are measuring the same thing, reaction speed, and their format is fairly similar enough to not skew the data (Both tests have five timed trials). I kept track of everyone's average times in a chart that organized everyone's times (see Appendix C).

The first reaction test is a full screen reaction test where the participants have to click the mouse when the screen turns from the color red to the color green. After five trials the test averages out the participants reaction times

(<http://www.humanbenchmark.com/tests/reactiontime>). The second reaction test is very similar to the first except that instead of the computer screen changing colors there is an animation of a stoplight that the participant watched. When the stoplight changes from red to green the participant has to click a button. Similar to the first test, the test averages out the participant's five trials (<http://getyourwebsitehere.com/jswb/rttest01.html>). Each participant was given a sheet of paper with the instructions to the reaction tests printed on it (see Appendix D).

The video is a Youtube video of a man dancing; it is called "How to Shuffle: Basic 'Smoothstyle' Tutorial" (<http://youtu.be/yWC1xRC7-0s?t=10m49s>). The participants only watched the last 2 min of the video when a man is dancing to background music. The video was presented on my personal laptop (the same laptop that the reaction time tests were taken on) with the volume turned up to 100%. The participants did not wear headphones.

Procedure

All of the participants were recruited from Lindenwood's Participant Pool (LPP). The study began with me handing out the consent forms for the participant to read and sign (see Appendix A). They were be given two, one they took with them and one that I kept. The consent forms are the only part of the study that has identifying markers on them and were kept separate from any data collected. The participants then completed the demographic survey. Next, the participants were assigned to complete one of the two reaction tests (<http://www.humanbenchmark.com/tests/reactiontime> and <http://getyourwebsitehere.com/jswb/rttest01.html>). Their average time was recorded on my data sheet anonymously (see Appendix C). I kept the chart and all other paperwork in my locked filing cabinet. All of my electronic calculations are stored in a password encrypted file on my personal laptop. The next thing the participants did was watch the last 2 min of a video (<http://youtu.be/yWClxRC7-0s?t=10m49s>) with either the speed of the video increased or decreased. The participants were randomly assigned to one of the two video conditions. After the video, the participants immediately completed the second reaction time test. Just like the first one, the participants completed five trials and I took the average time of the five.

After the participants were done with the experiment, I gave every participant a copy of the feedback letter (see Appendix E) and their participant receipt for the LPP office that they

need in order to receive their compensation in the form of extra credit toward their LPP participating class

Results

I hypothesized that the speed of the video will affect the speed of the participants' reaction time so that the participants who watched the faster video in between the reaction time tests would show a decrease in their reaction time (i.e., respond more quickly) whereas those who watched the slower video in between the tests would show an increase in their reaction time (i.e., respond slowly). An independent sample *t*-test was conducted to determine whether people's reaction times changed based on the speed of the video they watched between the pre-test and post-test reaction time tests. I wanted to see if the video speed affected the post-test reaction time compared to the pre-test. There was no significant relationship between difference in reaction time and the video conditions, $t(12) = -.478$, $p = 0.641$.

A paired sample *t*-test was conducted to compare individual pre-test and post-test reaction times. I found that on average, the post-test reaction time scores were faster than the pre-test reaction time scores. I found no statistically significant mean difference between the pre-test scores ($M = 0.410$, $SD = 0.113$) and the post-test scores ($M = 0.383$, $SD = 0.023$), $t(13) = 0.996$, $p = 0.337$.

Discussion

The results from the study did not support my hypothesis. There was no statistically significant effect of video speed on the participants' reaction times. This could be due to the fact that the video was not powerful enough to stimulate an effect. It could also be possible that the participants did not fully attend to the video and therefore, they were not stimulated by the speed of the video. Unlike Bargh et al. (1996) who found a significant effect from the visual cue given to the participants on their measured action, the visual cue given in my study did not have an effect on the participant's reaction times.

Unfortunately, very few participants took part in my study. In the future, more participants should be tested before analyzing the data. Some participants encountered possible interruptions such as the air conditioning unit coming on while three of the participants were watching the video. This made the video hard to hear. Another issue that I ran across was Lindenwood's wireless internet. During two of the participation's time the internet was loading slowly and it caused the study to be delayed. These two participants had to wait longer for me to start the study and could have become impatient. It was noticed that a confound variable was unknowingly present in the study. The participants who stated that they played more than 2 hours of video games per day were not purposely placed in the fast speed video condition.

In the future, a different visual cue could be used to prime the participants. I think the speed of the video needs to be more noticeable compared to the video that I chose for this experiment. Instead of a man dancing, a video of a common slow activity (such as an old person in a walker) could be sped up to a noticeably increased speed, and a video of a fast activity (such as a bird flying) should be slowed down a considerable amount. The drastic speed manipulation of the video might make the participant notice the speed and pay more attention to what is going on in the video. Even though my results support Doyen et al.'s (2012) idea that Bargh et al.'s (1996) study is non-replicable, I believe that with a more sophisticated presentation to view the stimuli and a larger population of participants the results could potentially support the idea that a visual cue can affect a person's behavior.

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Appendix A

Informed Consent Form

I _____ (print name), understand that I will be participating in a research project that requires me to fill out a demographic questionnaire, watch a short 1-2 minute video clip, and complete two reaction games, one which I will do before I watch the video and one which I will do after I watch the video. I understand that I should be able to complete the entire study within 10 minutes. I understand that I am allowed to skip any questions that make me feel uncomfortable answering on the questionnaire. I understand that my participation in this study is voluntary, and I can withdraw from the research at any time without penalty. I understand that the information obtained from my responses will be analyzed only as part of aggregate data, and that identifying information will be absent from the data in order to ensure anonymity. I understand that my responses will be kept confidential and that the data collected from this study will be available for research and educational purposes. I also understand that any questions about this study will be answered by the researcher involved to my satisfaction. Lastly, I verify that I am at least 18 years of age and am legally able to consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____
 (Signature of participant)

_____ Date: _____
 (Signature of researcher obtaining consent)

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Appendix B
Reaction Time and Visual Cue
Demographic Questionnaire

1) Are you (circle one) **MALE** **FEMALE** **OTHER**

2) AGE: _____ Years old.

3) Do you have any visual impairments? **YES** **NO** **OTHER**

If **YES**, please explain:

4) On average, how many hours a day do you spend playing video games (This includes apps on your phone like Candy Crush Saga and Song Pop)? _____ Hours

Appendix C

Reaction Time and Visual Cues

Reaction Time Chart:

Reaction Test Order:	Average Before Video:	Average After Video:	Difference In Averages:	Notes:
1.				
2.				
1.				
2.				
1.				
2.				
1.				
2.				
1.				
2.				
1.				
2.				

Appendix D

Stoplight Reaction Time Game

Instructions:

1. Click the large button on the right to begin.
2. Wait for the stoplight to turn green.
3. When the stoplight turns green, click the large button quickly!
4. Click the large button again to continue to the next trial.
5. Repeat the steps until you have completed 5 trials.
6. Let the instructor know when you are finished so they can write down your average time.

Full Screen Reaction Time Game

Instructions:

The screen will start out blue.

1. Click anywhere on the screen to begin and the screen will turn red.
2. Once the screen turns green quickly click anywhere on the screen.
3. The screen will turn blue again in between trials so you will need to click again to begin the next trial.
4. Repeat the steps until you have completed 5 trials.
5. Let the instructor know when you are finished so they can write down your average time.

Appendix E

Feedback letter

Thank you for participating in my research study. The study was conducted in order to determine whether visual cues would impact your reaction time. There were two different conditions in the study. The first condition required the participant to complete the reaction time games and watch a video that had an increased speed. The other condition was exactly the same but instead of the video speed increased, the video speed was decreased. I hypothesized that the participants who watched a video with two times the normal speed would have a faster average for their reaction time when completing the reaction time games.

Please remember, I am not interested in your individual results; I am only interested in the overall findings based on aggregate data. No information about you will be associated with any of the findings, nor will anyone be able to trace your responses on an individual basis. If you are interested in obtaining the final results of this study based on aggregate data, or if you have any questions or concerns regarding any portion of this research study, please feel free to let me know now, or in the future. My contact information is found at the bottom of this page.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

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Dr. Michiko Nohara-LeClair

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Appendix F

Reaction Time and Visual Cues

Reaction Time Chart:

Reaction Test Order:	Average Before Video:	Average After Video:	Difference In Averages:	Notes:
1. Stoplight Test 2. Full Screen Test	261ms	317ms	-56ms	Fast speed x1.5
1. Full Screen Test 2. Stoplight Test	381ms	262ms	+119ms	Slow speed x0.5
1. Full Screen Test 2. Stoplight Test	311ms	386ms	-75ms	Fast speed x1.5
1. Stoplight Test 2. Full Screen Test	465ms	486ms	-21ms	Slow speed x0.5
1. Stoplight Test 2. Full Screen Test	405ms	449ms	-44ms	Fast speed x1.5
1. Full Screen Test 2. Stoplight Test	432ms	327ms	+105ms	Slow speed x0.5
1. Full Screen Test 2. Stoplight Test	322ms	297ms	+25ms	Fast speed x1.5

1. Stoplight Test				
2. Full Screen Test	276ms	422ms	-146ms	Slow speed x0.5
1. Stoplight Test				
2. Full Screen Test	575ms	364ms	+211ms	Fast speed x1.5
1. Full Screen Test				
2. Stoplight Test	537ms	466ms	+71	Slow speed x0.5
1. Full Screen Test				
2. Stoplight Test	406ms	318ms	+88ms	Fast speed x1.5
1. Stoplight Test				
2. Full Screen Test	285ms	278ms	+7ms	Slow speed x0.5
1. Stoplight Test				
2. Full Screen Test	471ms	526ms	-55ms	Fast speed x1.5
1. Full Screen Test				
2. Stoplight Test	610ms	468ms	+142ms	Slow speed x0.5

Implanting False Memories

Lynn Mundwiller²

Previous research suggests that we experience false memories, these are events that we believe happen, when they actually do not. There are many factors that can create false memories; however I will be looking specifically at how priming can affect memory. Priming is an effect where in order to retrieve a memory, a link to that memory must be activated with the use of subtle cues (Herbert, 2011). Two different lists were used to try to create the same false memory for participants. These two lists I created are a semantic list and a rhyming list, both associated with the critical lure word, "snake." Participants recruited through the Lindenwood Participant Pool were randomly assigned to which list would be presented first, and then the other list was presented next. After viewing each list, participants had to write down as many of the words they could remember that they had just seen. My hypothesis is that if participants are assigned the semantic list associated with snake first, then they would be more likely to recall snake when writing down all the words that rhyme with snake.

Keywords: false memories, priming, short term memory

Previous research has been conducted to support the hypothesis that our brain can create false memories. False memories are memory illusions, these are events that we believed happen, even though they did not (Clark, Nash, Finchman & Mazzoni, 2012). There are many potential causes that can create false memories, however, I will be looking specifically at how priming can affect memory. Priming is an effect where in order to retrieve a memory, a link to that memory must be activated with the use of subtle cues (Herbert, 2011). In a previous study, researchers

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gave a list of words to participants that all related to sleep; however sleep was not one of the words on the list (Roediger & McDermott, 1995). Many participants falsely recalled the word sleep being on the list because many people were actively thinking about sleeping when hearing words associated with sleep such as bed, rest, awake, etc. I will be conducting a similar experiment, however I will have two separate lists, a semantic list and a rhyme list, that will both have a critical lure word, “snake.”

Participants will have to use their working memory, or short-term memory, to help them memorize the lists. It is safe to assume that participants will be using techniques such as chunking or rehearsal to try to memorize the lists, because these are techniques that are normally used when working in short term memory. Chunking is putting the information into sections, or chunks, to help them memorize things while rehearsal is constantly repeating the information over and over again to try to memorize something (Cowan, Rowder, Blume & Saults, 2012). Another approach some participants may use to help them remember the material is the Method of Loci. This method consists of using a story and picturing images in a familiar setting throughout the story in order to help remember something (Lea, 1975). Ideally, lists are good for this method because it is fairly easy to picture a few items from a list.

My hypothesis is that the word, “snake” will be falsely recalled through the use of priming most frequently when participants are recalling words from the Rhyme List after they

have already been exposed to the Semantic List in the first trial. Although it was possible for my participants to falsely recall “snake” after either list given at either trial, I believed that the effect of priming would be greatest when participants were given the Semantic List first, followed by the Rhyme List. I expected to see “snake” more frequently on the Rhyme List when the Rhyme List was given second, because the Semantic List would prime them to think about a snake. Giving the participant the Semantic List first, since it is a list of words that described and related to snake, it would then influence what they recall on the Rhyme List. Due to the effects of priming, they previously had thought about snake characteristics, and would currently be listing multiple words that rhyme with snake. Since participants would actively be thinking of snake characteristics, it would be expected to assume that they would recall snake on the Rhyme List because at one point they were thinking about a snake when given the Semantic List first, and are also focused on many words that rhyme with snake.

Method

Participants

There was a total of 13 participants in this study. Participants for this study were recruited from the Lindenwood Participant Pool (LPP), where participants signed up for this study through Sona Systems. The LPP consists of undergraduates in classes of anthropology, psychology, sociology, athletic training along with exercise science. Those in the LPP are at least ages 18 and

older, or unless they have a parent consent form filed with the LPP office. Participants received extra credit from their class for their participation.

Materials and Procedure

Once approved through the IRB, a room was booked through the LPP and a room in Young 105 was assigned to conduct this experiment. Participants signed up for this study by using Sona Systems to book a time to participate. Upon arrival, participants signed the participant sign in sheet, and then participants were then given the informed consent (see Appendix A) which they read and then willingly signed. Instructions (see Appendix B) were then read to participants explaining to them that they would be watching two different sets of timed slides in PowerPoint. Each slide were presented for 3s, and they were told to memorize as many words as possible and then write down all of the words they remembered after viewing each set of slides.

The slides were filed with two different lists, List Semantic (see Appendix C) consisted of 10 words associated with snake, such as: slither, constrictor, bite, reptile, etc. List Rhyme (see Appendix D) consisted of 10 words that rhymed with snake, such as: bake, take, shake, wake, etc. List Semantic and List Rhyme were counterbalanced between participants, meaning whichever list was presented first alternated between participants. After viewing either list, participants were then given a sheet of paper (see Appendix E) to write down all the words they recalled.

Participants then viewed the other PowerPoint, and then were asked to write down all the words they recalled for that set of slides. After viewing both sets of slides, participants were then asked a set of questions (see Appendix F). The first questions asked if there were any words that stuck out to them that they remembered. The next question asked if they used any techniques to help them memorize the lists. Participants were then given a feedback letter to inform them the purpose of this study (see Appendix G) along with their participant receipt in order to receive their extra credit for participating. Participants would turn their receipts into the LPP office and then receive extra credit from their professor.

Results

Thirteen participants were in this study. All participants did not falsely recall snake through the use of priming, except for one. However, this participant falsely recalled snake after receiving the Rhyme List first, and the Semantic List second, which was the opposite of my hypothesis. A paired sample *t*-test was performed in SPSS comparing the means of the amount of correctly recalled words on both the Semantic List and the Rhyme List (see Appendix H). The results revealed a statistically significant difference, $t(12)=4.085$, $p=0.002$. More words were recalled from the Rhyme List (M)=70.54 (SD)=1.33. A paired samples *t*-test was also calculated for the Semantic List, (M)=5.85 (SD)=1.41. In order for a word to count, it must have been spelled correctly. Steak was the most frequently recalled word, which 3 out of the 13 participants

recalled. Also, memory rehearsal was the most used technique to help remember the list of words, which 7 out of 13 participants described as “repeating the words over in my head.”

Discussion

My hypothesis was that snake would be most falsely recalled through the use of priming if participants are presented with Semantic List first and Rhyme List second. Previous research has looked at the effects of priming, however previous research did not look at how effective priming is in storing in short term memory, it is possible that priming isn't an effective way in order to implant a false memory. Participants were able to remember more words from the Rhyme List than the Semantic List, maybe because it was easier for participants to list off similar words that rhyme with each other. There is some confusion as to why my hypothesis was not supported by the performance of a single participant. It could be because it was such a small sample, and possibly if more participants had been signed up, and if I had made more room bookings, more people could have demonstrated my hypothesis of falsely recalling snake. It could have also been that 3s was possibly too long of a time for participants to see each slide. Maybe if the time were faster, it would have made remembering each word a little harder, which could potentially affect the priming process. I think it was also obvious to some participants that I was centered around the theme of snakes, while viewing the semantic list one participant even

asked me why all the words were related to snake. It is possible to them that the snake theme was obvious, and they knew that snake was in fact not, one of the words to recall.

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Appendix A
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St. Charles, Missouri 63301

Informed Consent for Participation in Research Activities

“Implanting False Memories”

Principal Investigator Lynn Mundwiller
E-mail: LMM073@lionmail.lindenwood.edu

Participant _____ Contact info (email) _____

1. You are invited to participate in a research study conducted by Lynn Mundwiller under the guidance of Dr. Michiko Nohara-LeClair. The purpose of this research is help support previous research on how memories can be influenced based on what it has been previously been exposed to it, which is called priming.
2. a) Your participation will involve viewing a PowerPoint presentation with several words on it. Try to remember as many of the following words as you can. When you are finished, you will be given a piece of paper and will write down all of the words you remember from the PowerPoint. Once you are done with this, you will then view another power point presentation, where you will again be instructed to remember as many of the words as possible. Again, you will write down all the words you remember after viewing the presentation. When finished with this, I will then ask you a couple of questions about this experiment.

b) The amount of time involved in your participation will be approximately 15 minutes, and you will be rewarded extra credit from your class.

Approximately 30 students will be involved in this research.

3. There may be certain risks or discomforts associated with this research. They include discomfort from words on the power point presentation.
4. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about priming and false memories and may help society.
5. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw. Alternatives for earning course credit are available from your course instructor.
6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location.
7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Lynn Mundwiller at LMM073@lionmail.lindenwood.edu or the Supervising Faculty Dr. Michiko Nohara-LeClair at 636-949-4371, You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Vice President for Academic Affairs at 636-949-4846.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

Participant's Signature Date

Participant's Printed Name

Signature of Principal Investigator Date

Investigator Printed Name

Appendix B

Instructions:

Shortly you will be viewing a PowerPoint presentation with several words on it. Try to remember as many of the following words as you can. When you are finished, you will be given a piece of paper and will write down all of the words you remember from the PowerPoint. Once you are done with this, you will then view another PowerPoint presentation, where you will again be instructed to remember as many of the words as possible. Again, you will write down all the words you remember after viewing the presentation. When finished with this, I will then ask you a couple of questions over this experiment. If you have any questions during any time, please ask the researcher.

Appendix C

Semantic List

Scales

Constrictor

Bite

Reptiles

Eggs

Slither

Fangs

Poison

Vertebrate

Predator

Appendix D

Rhyme List

Break

Ache

Wake

Flake

Steak

Take

Make

Rake

Shake

Cake

Appendix E

Participant #: _____

Participant #: _____

Trial #: _____

Trial #: _____

List as many words as you can remember:

List as many words as you can remember:

(You don't have to use all of the lines)

(You don't have to use all of the lines)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Appendix G

Feedback Letter

Dear Participant,

I am really thankful for your help in conducting my research. Your time today has been really appreciated!

The point of this experiment was to create a false memory with the influence of priming. Priming is an effect where in order to retrieve a memory, a link to that memory must be activated with the use of subtle cues. What I hoped to accomplish in this experiment was for you to falsely remember “snake” on one of the lists. Snake was not one of the words on either PowerPoint, but if priming was done correctly, I would have expected you to recall snake from being on the list. If you received the list of words related to snake first, and then received the list of words rhyming with snake, when recalling the words that rhyme with snake, I expected you to write snake on your list of words. However if you saw the list of rhyming words first, and then received the words that are related to snake second, I expected you to not recall snake.

Results of this study will be available at the end of the spring semester, and will also be available in Dr. Michiko Nohara-LeClair’s research website in our class journal. If you have any questions concerning this study, or you are interested in hearing the results, feel free to contact me or you can contact my professor Dr. Michiko Nohara-LeClair. This information is provided below.

If for whatever reason my study has made you uncomfortable and you think you may need to seek professional counseling, you may do so by contacting Lindenwood’s Student Counseling and Resource Center at (636) 627-2928.

Once Again, thank you for participating!

Sincerely,

Lynn Mundwiller

636-698-4771

LMM073@lionmail.lindenwood.edu

Dr. Michiko Nohara-LeClair

636-949-4371

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The Effects of Prescribed vs. Choice Organization on Information Recognition

Carlee M. DeYoung³

Previous research has suggested that categorical organization of information increases the likelihood of it being remembered on a later memory task (Calfee & Peterson, 1968). Additionally, Slamecka and Graf (1978) found that if participants were forced to generate portions of words they were more likely to remember the words on a later test. The main point of interest for this experiment was whether providing participants with an organizational strategy, (Prescribed Organization-PO), in comparison to allowing them to freely choose how they want to organize information, (Choice Organization-CO), affects the participants' scores on short-term recognition tests of that information. This study was unique due to the pictorial nature of the materials. The materials were created for this study and have not been employed in any previous research. The results of this study indicate that presence or absence of organizational instruction had no significant effect on short-term recognition of information. However, it was discovered that when using a CO strategy it is more beneficial to use more than one level of organization for the information being studied.

There are many choices involved in the learning process, many of which pertain to the type of organization people decide to enforce upon the information they wish to learn (Mandler & Rabinowitz, 1983). There is a vast amount of research in the field of learning, memory, cognition; however, there is little recent research investigating how the organization of information influences how well it is then recognized on a memory task.

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The author would like to give special thanks to Erin Kaser for her assistance in coding data. Correspondence concerning this article should be addressed to Carlee DeYoung, Department of Psychology, Lindenwood University, St. Charles, MO 63341. Email: cmd472@lionmail.lindenwood.edu

Slamecka and Graf (1978) investigated what they called “The Generation Effect.” In this study they had participants remember related word pairs. In one condition participants would simply read the related words pairs in an attempt to memorize them. In another condition participants were given the first word and the first letter of the second word in the pair. The remainder of the second word was left for the participant to “generate.” Slamecka and Graf (1978) found that when the remainder of the second word in the pair was left blank, and then “generated” by the participant, it was recalled more.

Foos, Mora, and Tkacz (1994) also investigated the generation effect. In their study they had individuals and small groups read material that they knew they were going to be tested over. They then provided some individuals with an outline of the material to study and others were told to generate their own outline for the material. Other groups were given sets of study questions based on the material, and other were told to write their own study questions for the material. Students who generated their own material were not told how extensive their materials needed to be. Students returned two days later to take a test over the material they read. Foos, et al. (1994) found that when students were forced to generate their own study materials a generation effect occurred thus increases their recall of generated items.

A study by Calfee and Peterson (1968) used word lists with random or blocked presentation to test the effects of organization on short-term recall. The lists with random words

were comprised of words with no noticeable connection to one another. The lists with blocked presentation were comprised of words that all shared some obvious connection to one another.

They also had conditions where the category name presentation prior to the test was manipulated to see if having a category title in mind would help increase recall. The results of the study showed that short-term recall of a list of words was increased when words were presented organized by category.

Additionally, a study by Strand (1975) investigated how providing category names in instructions influences retention of lists of words over a several day period. The results of this study showed that instructing participants to use experimenter defined categories in learning a free-recall list can reduce forgetting over a several day period. Strand (1975) then posited that the limiting nature of including category names in the instructions would lead to fewer retrieval cues that needed to be remembered, thus easing the process of storing and accessing the cues and information at a later time.

A more recent study by Kinjo and Snodgrass (2000) looked specifically at the generation effect as it pertains to pictures. This relates directly to my current investigation because pictures were used as the main stimuli for participants to study. In this study participants were presented with pictures with incomplete names, as well as some items with full names. Participants would either generate the remainder of the name or read the full name provided. Participants were then

immediately shown the correct name with the corresponding picture. The findings of this study showed a significant generation effect, suggesting that generating names for pictures increases later correct recall of the picture and name.

The present study aims to investigate how instruction for categorical organization of information influences performance on a short-term memory recognition test. This study can be differentiated from previous investigations of the relationship between memory, categories, and the generation effect because of the pictorial nature of the study materials. Most previous research as relied on the use of word lists or word pairs. However in this study the use of cards with varying colors, number of items, and item type were utilized. The primary investigator hypothesized that allowing participants to decide how to categorically organize the cards instead of explicitly instructing them how to do so would allow for greater performance on a short-term recognition test.

Method

Participants and Design

Participants ($n=22$) for this study were Lindenwood University, undergraduate students recruited through the Lindenwood Participant Pool (LPP). Eligibility to participate in the LPP requires that a participant be at least 18 years of age or have a signed parental consent form on file at the LPP office. LPP participants also must be enrolled in a participating, introductory level

anthropology, sociology, psychology, athletic training, or exercise science course at Lindenwood University. Participants were compensated for their participation with one LPP credit, which resulted in extra credit in their participating introductory level class. Participants signed up to participate for this study through Sona Systems, a website that organizes scheduling, sign-ups, and participation.

This experiment was a 2 (Prescribed Instruction) x 2 (Deck) x 2 (Organization Strategy) Mixed Factorial Design. Prescribed Instruction was a between participant factor that split participants into two groups, Instructions1 ($n = 11$) and Instructions2 ($n = 11$) (see Appendix A for Instructional script). Participants were assigned to one of the two Prescribed Instruction groups by alternating group assignment for each participant. The other two factors (Deck and Organization Strategy) were within participant. The order and combination in which participants were presented with these two factors (Deck and Organization Strategy) was controlled for by randomly assigning participants to one of four possible trial sequences (see Appendix B for table breakdown of sequences).

Materials

The main materials used for this experiment were two decks of cards (Deck A and Deck B) and two corresponding tests (see Appendices C and D for tests). Each deck of cards was comprised of 18 cards (see Appendix E for sample cards). To create the cards the random

number function in Microsoft Excel was used to randomize lists of possible card items, quantities, and colors. The possible card items were comprised of numbers (0, 1, 2, 3, 4, 5, 6, 7, 8, and 9), animals (pig, lion, chicken, elephant, and rabbit), and shapes (circle, star, triangle, and pentagon). The possible quantity of card items for each card ranged from one to five. One of seven possible item colors (red, pink, orange, yellow, green, blue, or purple) was assigned to each card. A total of 38 cards were randomly generated using this method, 19 for each deck. However, only 18 cards were used in each deck. The 19th card served as an alternate that would take the place of any card duplicate (card with the same item, quantity, and color) that occurred in the deck. The items for the cards were then printed, cut out, and pasted on to blank 3" x 5" index cards. The deck name (A or B) was written lightly on the back of each card with pencil. Each card was then laminated to protect the cards from sustaining stains or defects.

As previously mentioned, each deck had a corresponding test. Both tests had 25 items, 7 false (cards not in the deck) and 18 true (cards in the deck). The same method that was used to create the cards for each deck was used to create 14 false items. To determine the order of the 18 true and 7 false items within each test (see Appendices C – D for tests) the random number generator in Microsoft Excel was used.

An informed consent form (see Appendix F for form) was used to record each participant's consent for the experiment. These consent forms also gave participants a general

overview of what would be expected of them. This form informed participants of the voluntary nature of the experiment, which granted them the right to end their participation at any time without penalty. Additionally, a feedback letter (see Appendix G for letter) was used in this study to provide additional clarity regarding the purpose of the experiment and posited hypotheses. This letter also included the experimenter and faculty advisor's contact information, and made it clear that if any questions arose they could be contacted with the information provided. A script (see Appendix A for script) was also composed and read to each participant to ensure consistency of instruction for all participants. Lastly, a demographic survey (see Appendix G for survey) was written for this study and was comprised of three questions. This survey was used to gather information about the demographics of the participants, as well as information regarding decisions made during the course of the experiment.

Forms provided by the LPP were also used in this experiment. These forms included, experimenters running list of participants, absence without notification form, room booking request form, and participant receipts. These forms were all written by the LPP. Their main functions were to provide paper documentation of participation or absences. The receipts were used to ensure that participants received credit for their participation. Sona Systems was used in addition to the LPP paper forms in this study to post timeslots and allow participants to sign-up. This online system was also used to grant credit to participants.

Participation for the study occurred in the Lindenwood Psychology Lab. This lab is comprised of four different rooms. These rooms allowed for privacy, and served as a barrier between the participant and external distractors. The rooms have white walls with no décor or windows and contained at least two tables with large surface areas.

Procedure

Participants signed up to participate in this study using Sona Systems. When the participants arrived at the lab they were greeted and asked to sign in on the experimenter's running list of participants. The participants were then given two copies of the informed consent form (see Appendix F for form). The participants were asked to carefully read the form. Once completed, participants would then print, sign, and date their name on both copies, acknowledging that they understood what was expected of them and the voluntary nature of the experiment. Next, participants were read a script (see Appendix A for script), which gave a brief overview of the entire experiment.

Two different card decks (Decks A and B), each containing 18 cards, and each card depicting different quantities of shapes, numbers, and animals, in various colors were used for this study. All participants were tested once with each deck, and once under two different conditions: Prescribed Organization (PO) and Choice Organization (CO). The order in which the participants went through these two conditions was counterbalanced, and the deck associated

with each condition was also counterbalanced across participants. A total of four different trial sequences were employed (see Appendix B for table breakdown of sequences) and randomly assigned to participants.

In the PO condition, participants were specifically instructed how to organize the cards. The specific prescribed instructions provided alternated between participants. For Instructions1 participants were told to organize the cards based on the “number of items on each card”. For Instructions2 participants were told to organize the cards based on the “type of item on each card” (see Appendix A for script). The participants were then given 1-min to organize the cards according to the instructions. Once the 1-min was up the experimenter told participants that they had 30 s to study the cards. Once the 30 s was up the experimenter removed the cards from the table and gave the participant the corresponding test (see Appendices C – D for tests).

In the CO condition, participants employed a choice organization strategy. In this condition participants were told to organize the cards in “whatever way made the most sense to them” (see Appendix A for script). The participants were then given 1-min to organize the cards in whatever way they pleased. Once the 1-min was up the experimenter told participants that they had 30 s to study the cards. Once the 30 s was up the experimenter removed the cards from the table and gave the participant the corresponding test (see Appendices C – D for tests).

After both trials were complete each participant filled out a three question demographic survey (see Appendix G for survey). Participants were then be debriefed and given a feedback letter (see Appendix H for letter).

Data Analysis

The tests were graded using a Microsoft Excel spreadsheet. Items that were circled, indicating it had been recognized, received a “1”, and items that were not circled received a “0”. The sum for all of the correct test items was then calculated. Inferential and descriptive statistics for the data were completed using SPSS software.

Results

A paired samples *t*-test was run to examine the data gathered from 22 participants ($n = 22$). This test was used to compare test results for the two conditions (PO and CO). The results showed no significant difference between PO ($M = 11.682$, $SD = 3.123$) and CO ($M = 12.273$, $SD=3.3691$) conditions, $t(21) = -.777$, $p = .446$. This suggests that any differences in the data are most likely due to chance or individual differences.

An additional analysis was run to see if the complexity of the CO strategy used by participants, as described on the survey, led to statistically significant differences on the CO condition test scores. Two individuals coded the data to the free response survey question, which indicated how participants organized the cards during the CO condition, and interrater reliability

of 100% was reached. Responses were coded to reflect the number or organizational (categorical) levels used by participants during the choice organization condition. An example of a survey response indicating a one-level organization strategy would be “I organized the cards by color.” An example of a survey response indicating a two-level organization strategy would be: “I organized the cards by item category (animals, number, and shapes) and then put each category in order based on the item quantity for each card.”

An independent samples *t*-test with equal variances assumed was run on the two groups (CO using one organizational level and CO using two organizational levels). The results showed that there was a significant difference ($t(20) = -2.237, p = .037$) between the mean test scores for those who used one level of organization ($M = 11.267, SD = 3.3051$) and those using two levels of organization ($M = 14.429, SD = 2.507$) as their CO strategy. These results indicate that those who used two levels of organization during the choice organization strategy correctly recalled more than those using only one level of organization.

Discussion

The results of this study do not support the previously mentioned hypothesis. Therefore, I failed to reject the null hypothesis that organization strategy, prescribed or choice, has no significant effect on short-term recognition of information. These results suggest no significant difference in short term-recognition when using PO and CO strategies. These results could

potentially be due to the fact that previous research has suggested that providing category titles increased recall of items in the category, but previous research also suggests that allowing people to generate information increases recall as well (Strand, 1975). In the PO condition participants were given instructions defining how the cards were to be organized. In the CO condition participants generated their own categories. Could it be possible that the benefits of these two different strategies are equivalent? I believe that in future research a control group would be necessary to suggest that any benefit of CO and PO strategies exist, and then the means between CO and PO strategies should be compared. This control group would simply present participants the cards to study after they have already been randomly laid out. Therefore the participants in this group would not receive the benefit of category titles provided by the instructions in the PO condition or the benefit of generating their own categories in the CO condition. We can then compare the CO and PO groups to this control to see if either has a benefit over simply being presented with the information.

The results concerning the level of CO strategy complexity indicate that two levels of organization during CO strategy use produce significantly higher average recall scores on the short-term recognition task than using only one level of organization. Possible explanations for these results may be due to the increased levels of processing involved in more complex

organization of information. Increased levels of processing with the use of pictorial stimuli should also be investigated as part of future research.

These results need to be interpreted with caution. Limitations for this study were the relatively small sample size and the use of untested materials. Future research should in general explore advantageous study strategies, with regards to how information is organized prior to studying when no instruction is given. Additionally, future studies should focus on longer-term recognition to make results more ecologically valid and relatable to real classroom environments. Lastly, the materials used in the study should be reworked to appear more similar to pictures or diagrams that are used in typical classroom settings to hopefully increase generalizability.

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Appendix A

Script

“ There are two parts to this study. For each part you will be given a deck of cards. You will have 1 minute to organize the deck of cards. When organizing the cards you should lay the cards so that you can see each one clearly. You will then have 30 seconds to study the cards. Finally, you will be tested over the deck of cards. Do you have any questions before we begin?”

Prescribed Organization condition:

- Instructions1: “Please organize the cards into groups based on the number of items on each card.”
- Instructions2: “Please organize the cards into groups based on the category of the items on each card.”

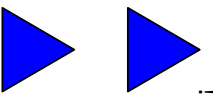
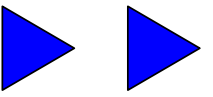

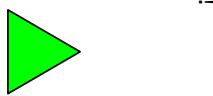
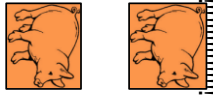
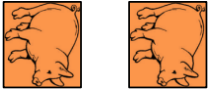
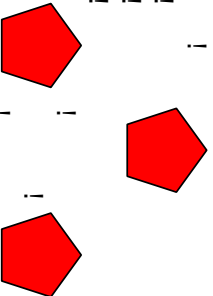






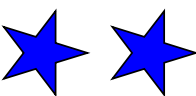
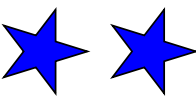






















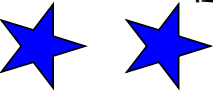
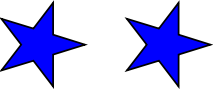





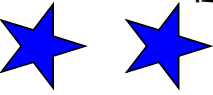
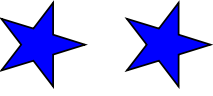

Choice Organization condition:

“Please organize the cards in a way that would make it easiest for you to remember them.”

Appendix B


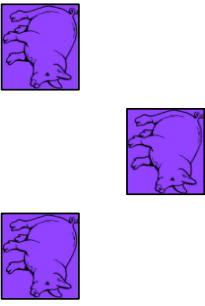
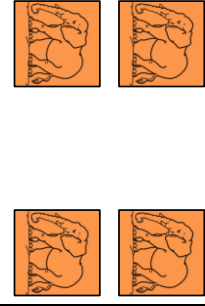
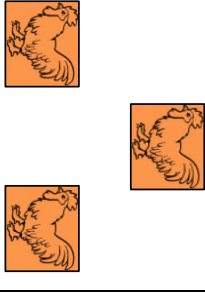
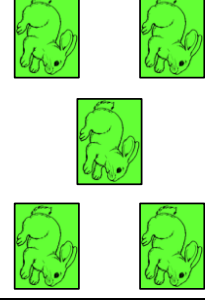

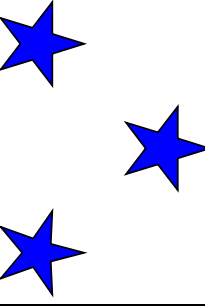
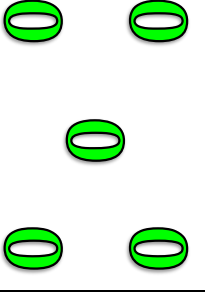
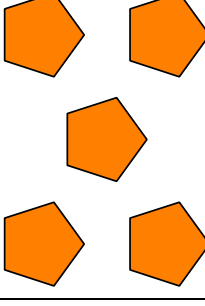
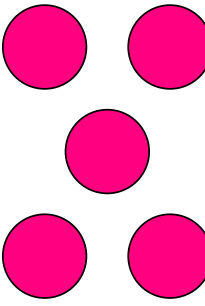

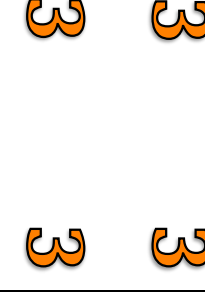

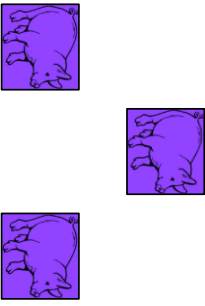
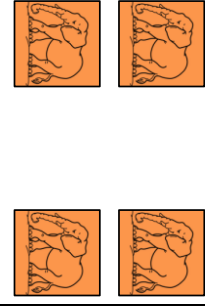
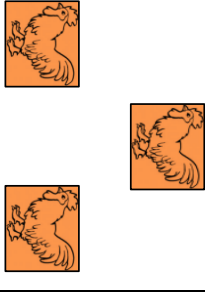
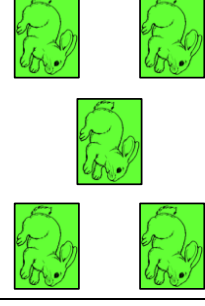

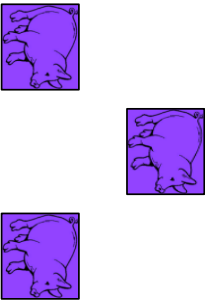
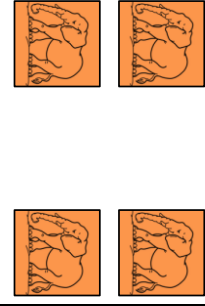
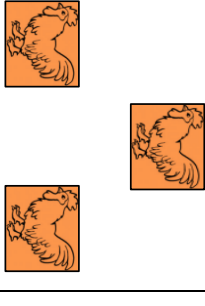
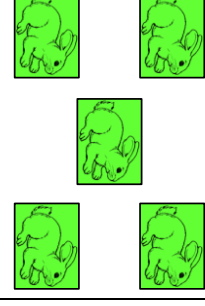

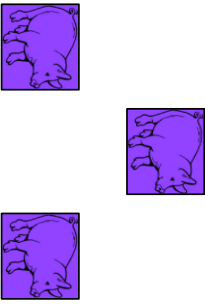
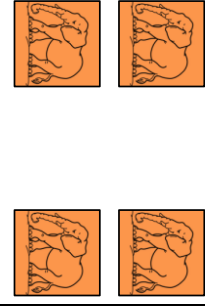
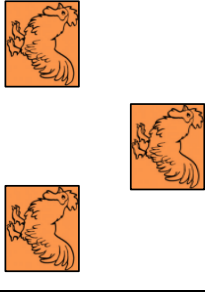
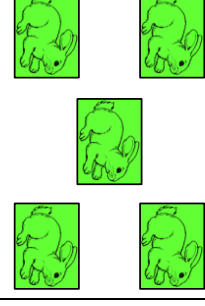

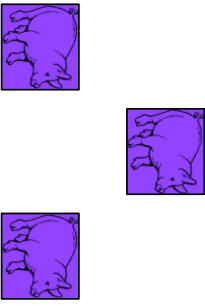
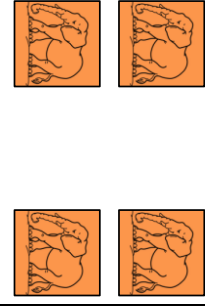
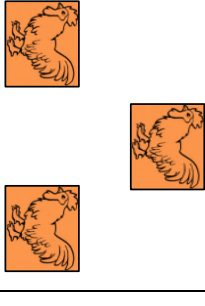
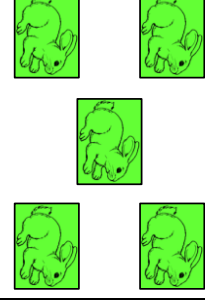

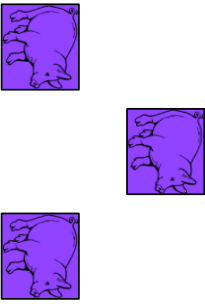
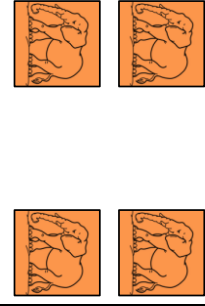
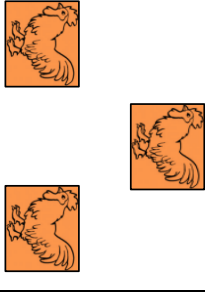
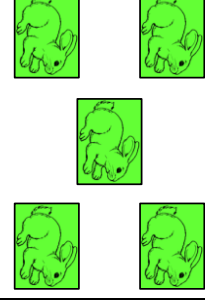

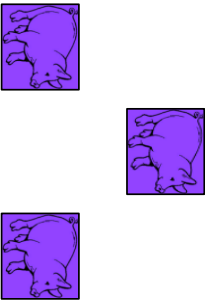
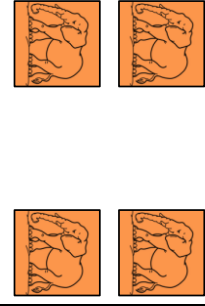
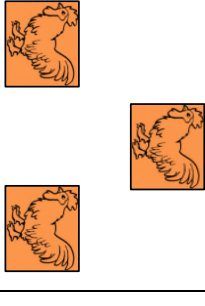
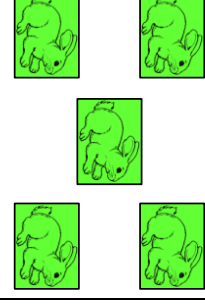

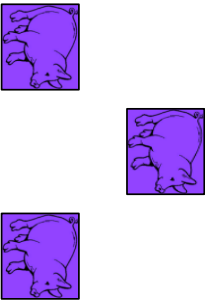
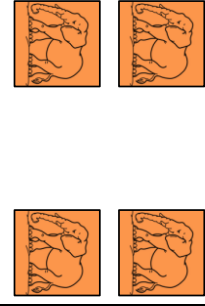
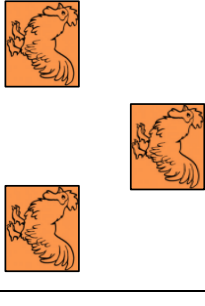
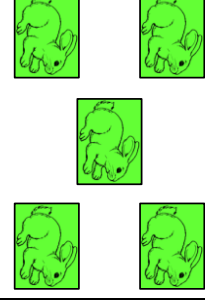

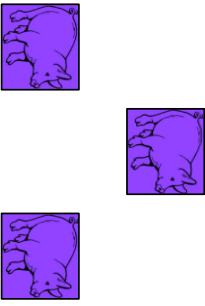
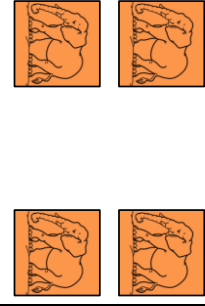
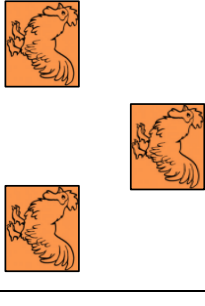
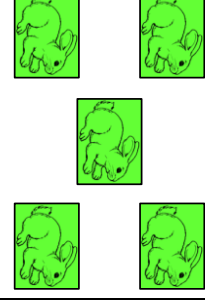

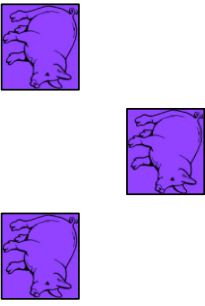
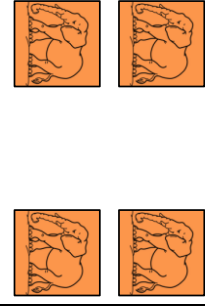
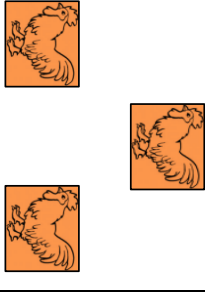
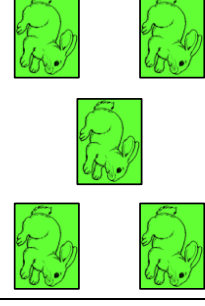

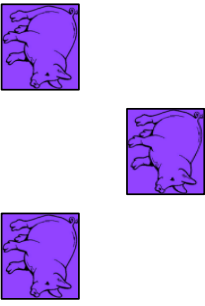
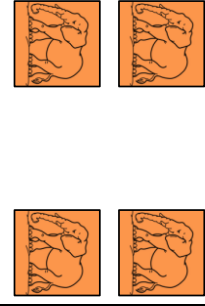
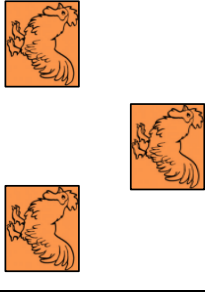
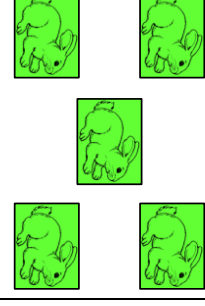

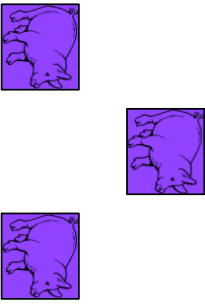
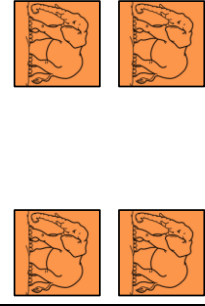
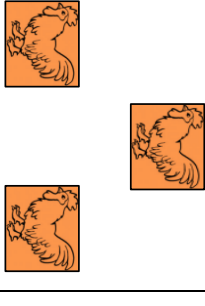
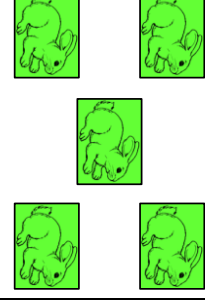

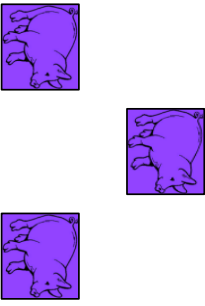
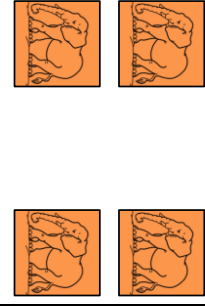
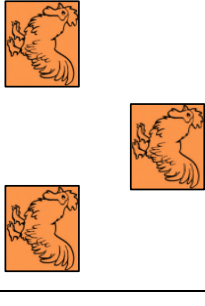
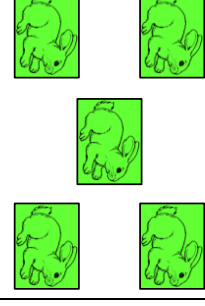

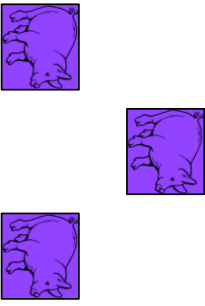
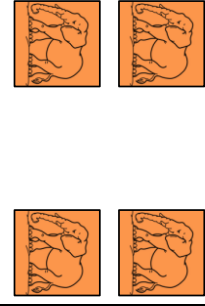
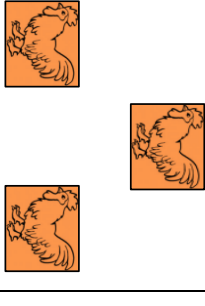
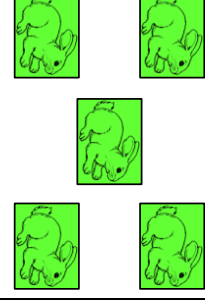

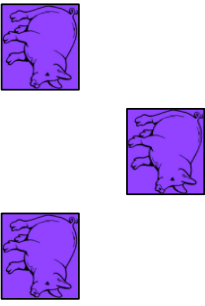
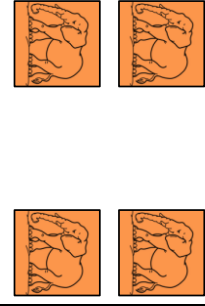
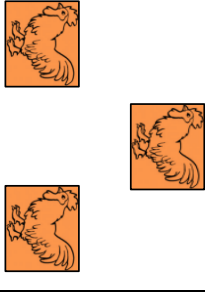
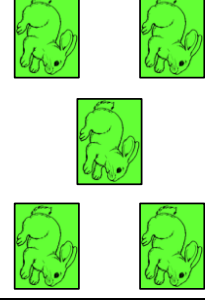

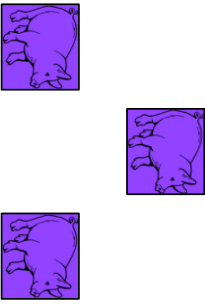
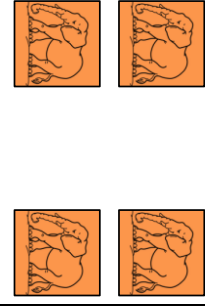
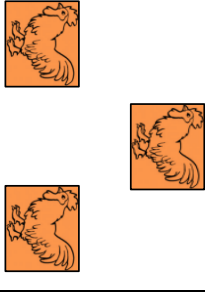
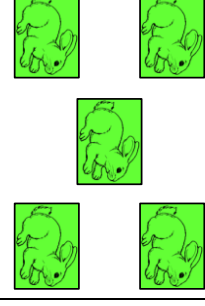

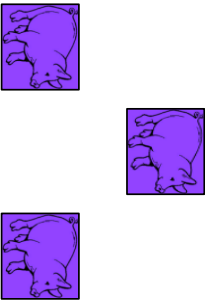
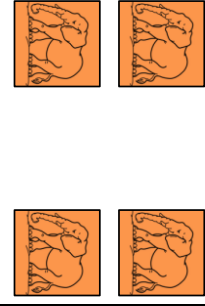
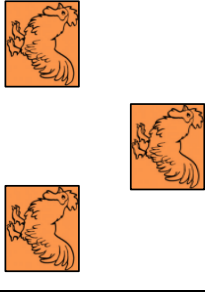
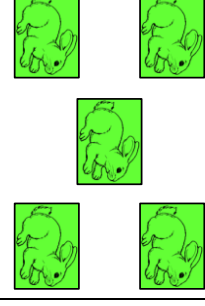

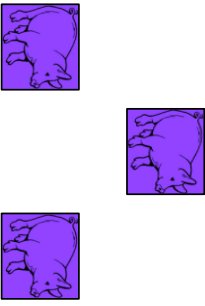
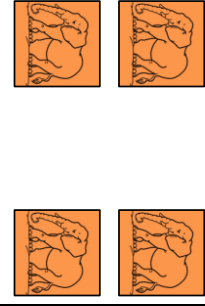
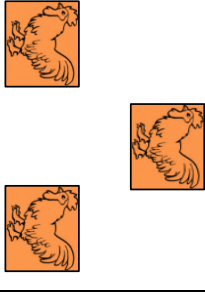
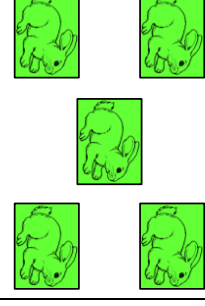

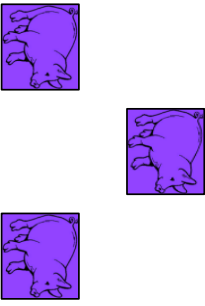
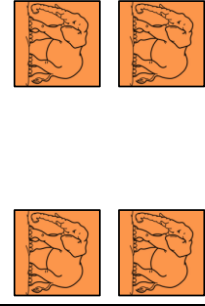
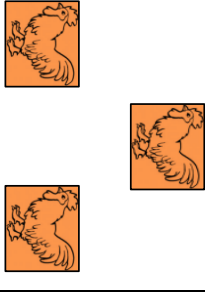
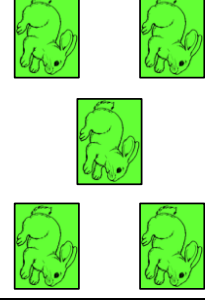

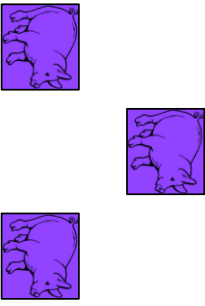
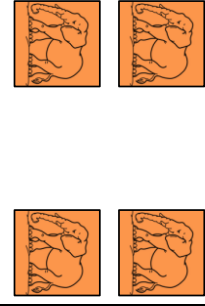
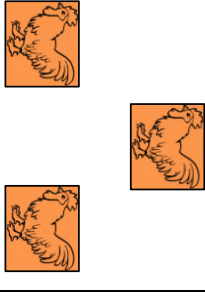
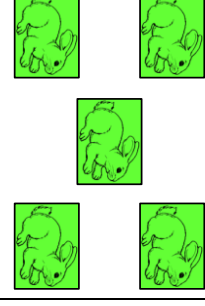

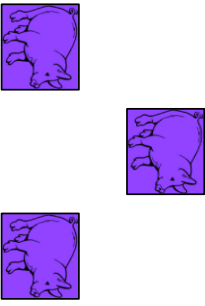
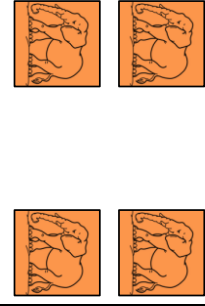
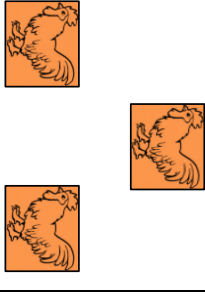
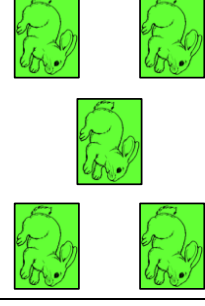

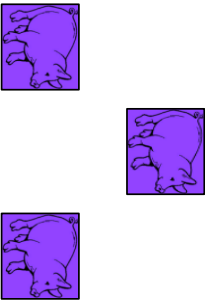
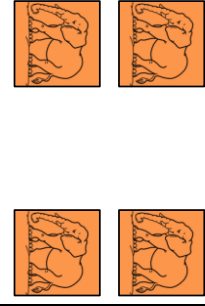
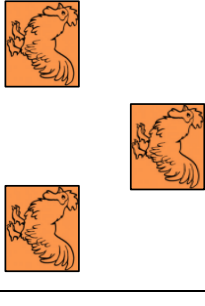
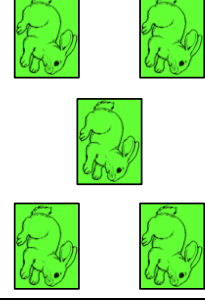

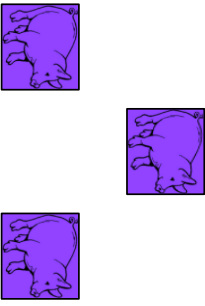
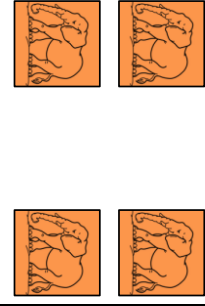
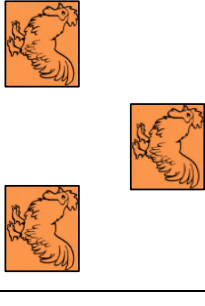
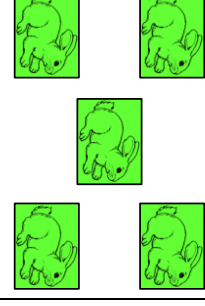

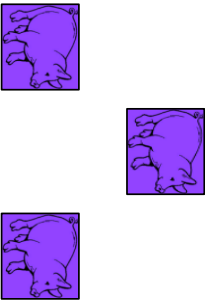
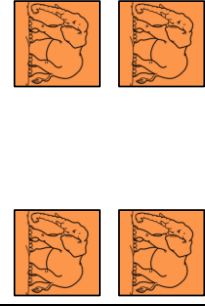
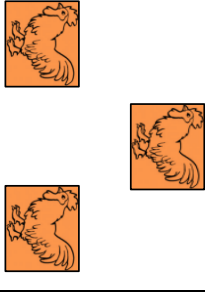
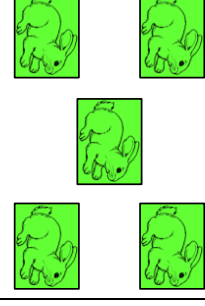

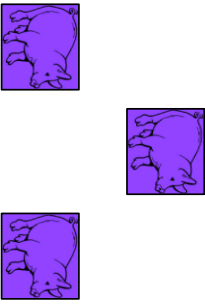
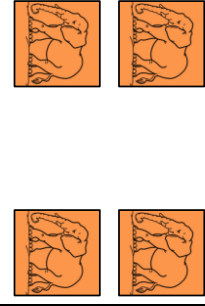
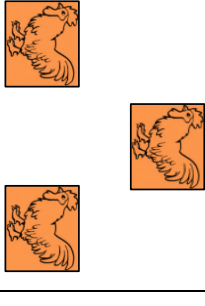
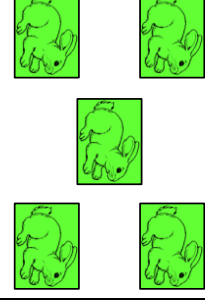

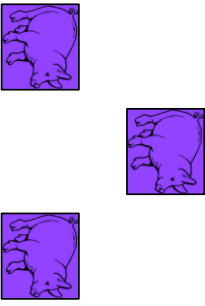
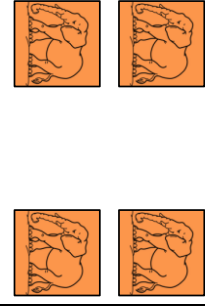
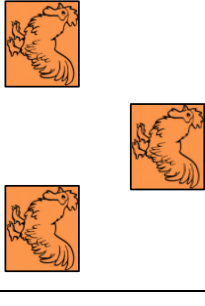
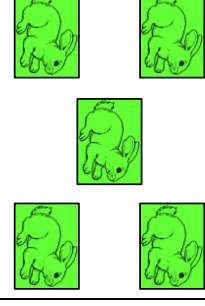

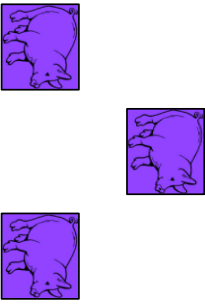
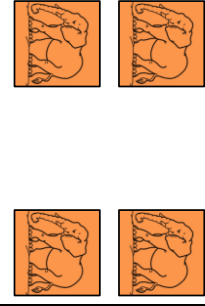
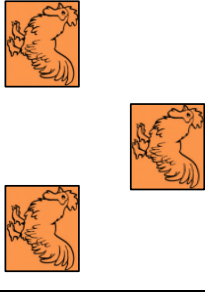
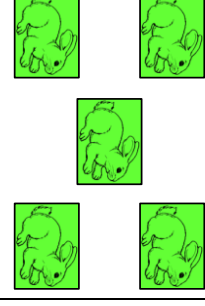

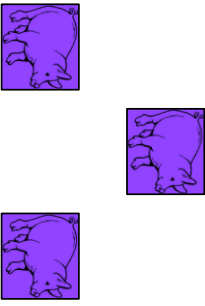
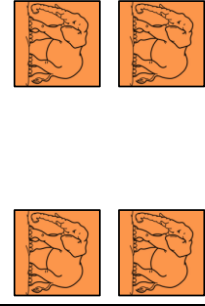
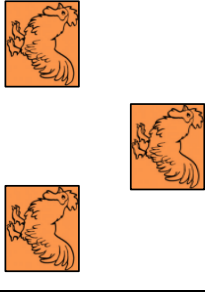
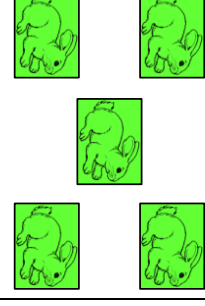

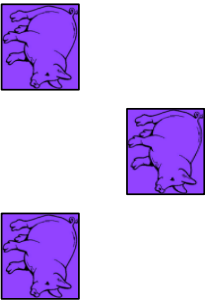
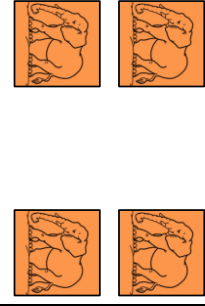
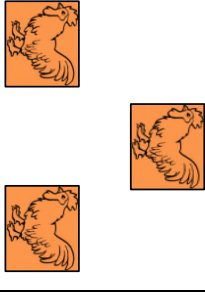
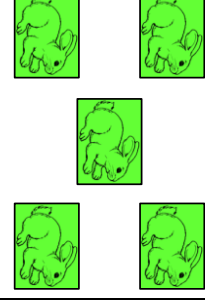

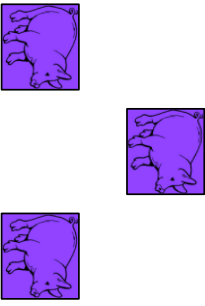
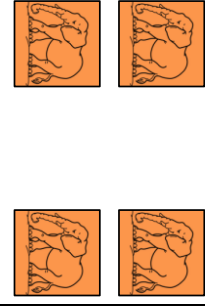
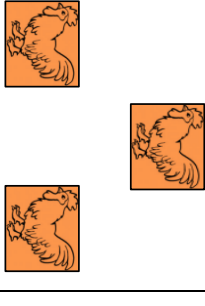
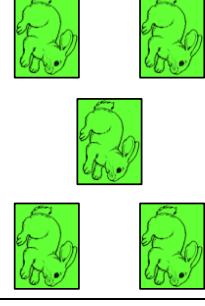

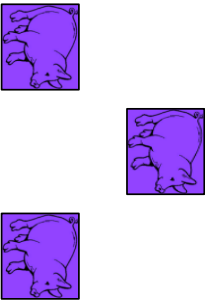
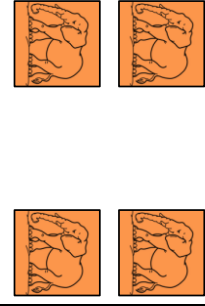
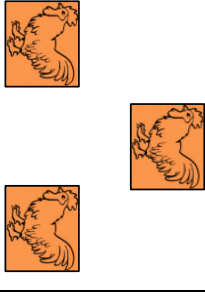
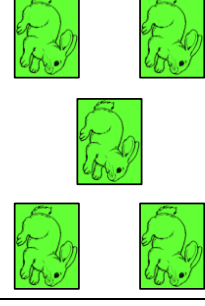

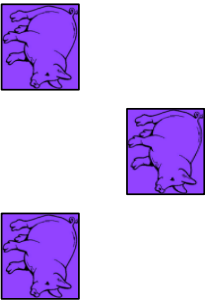
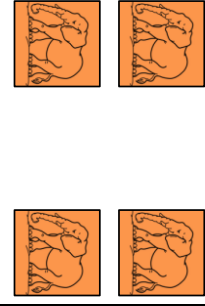
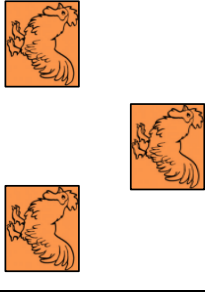
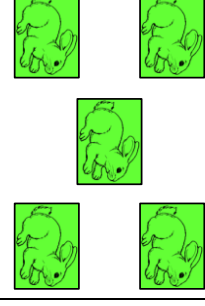

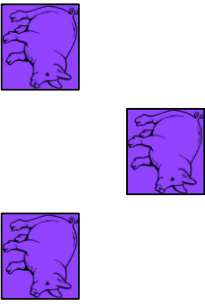
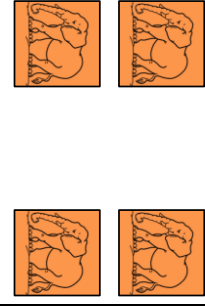
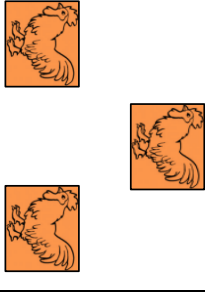
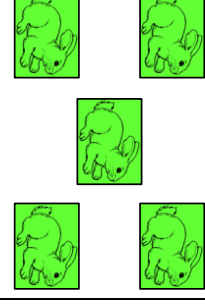

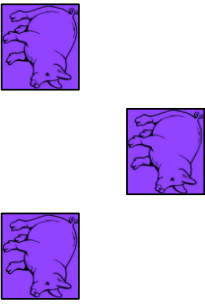
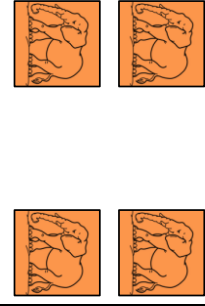
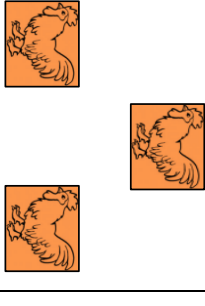
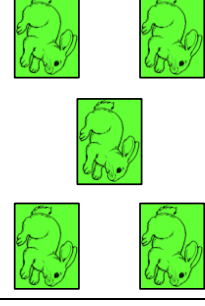

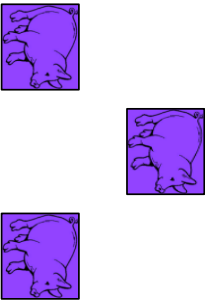
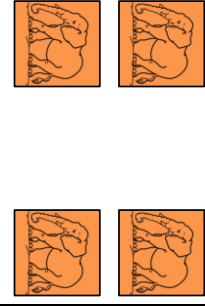
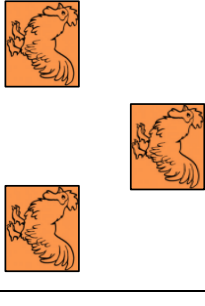
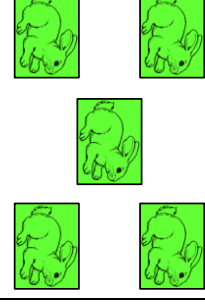

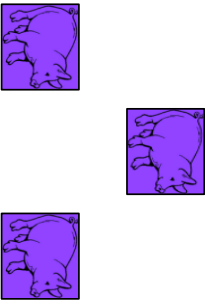
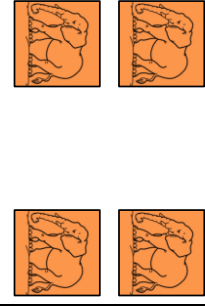
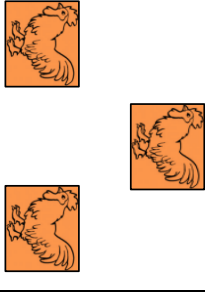
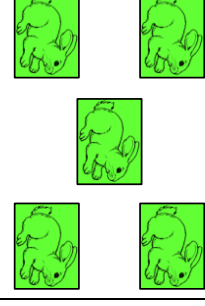

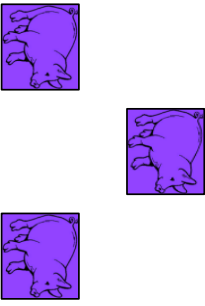
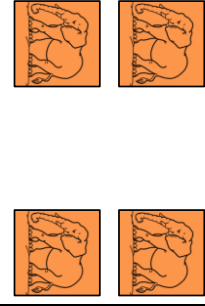
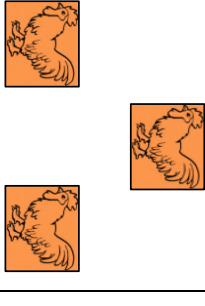
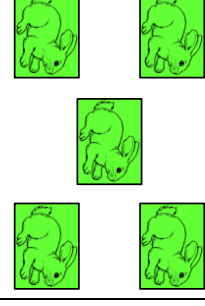

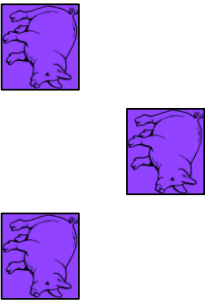
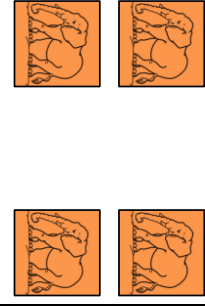
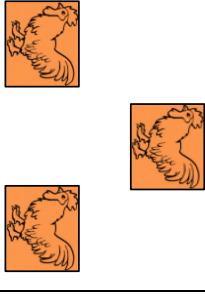
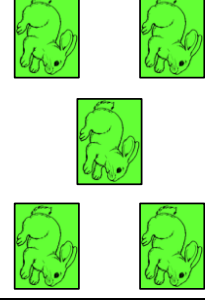

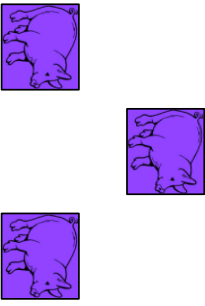
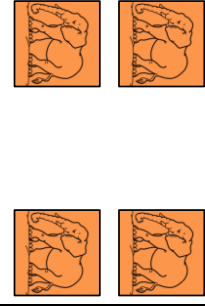
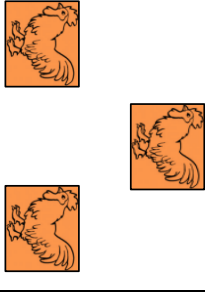
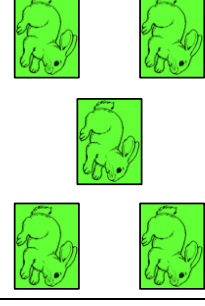

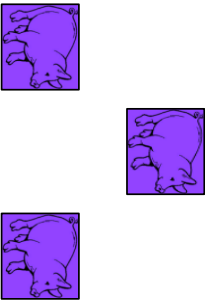
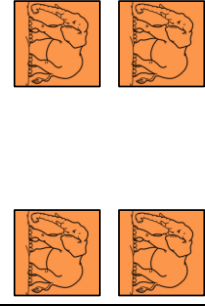
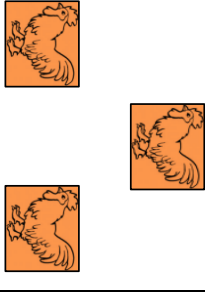
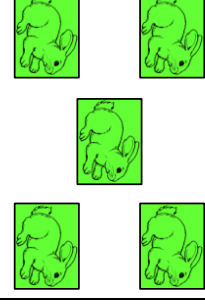

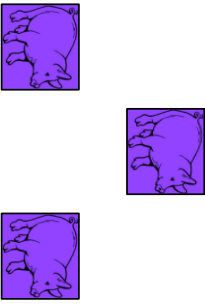
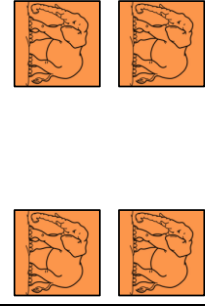
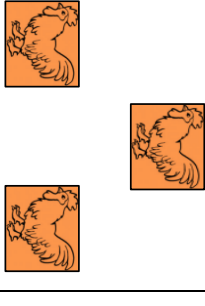
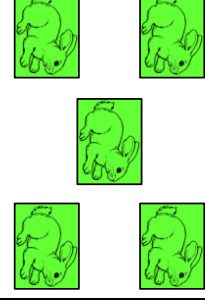

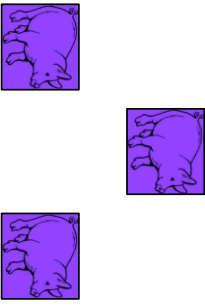
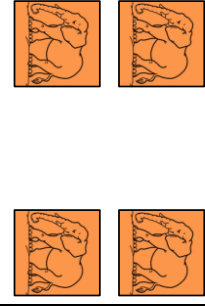
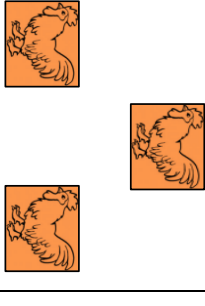
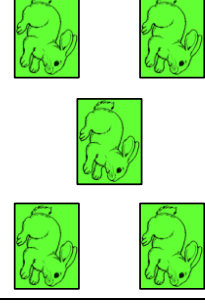

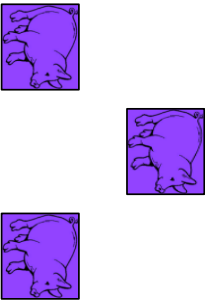
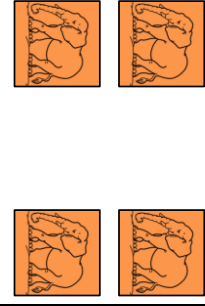
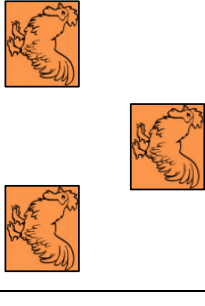
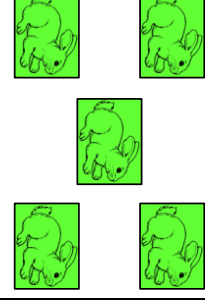

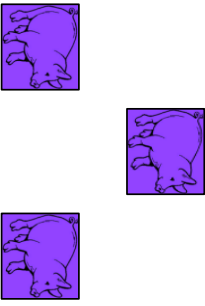
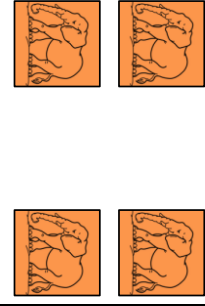
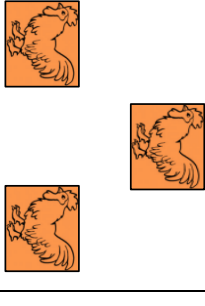
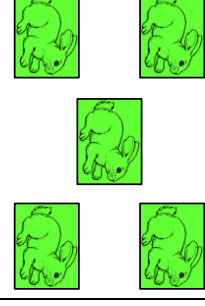

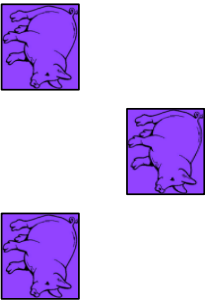
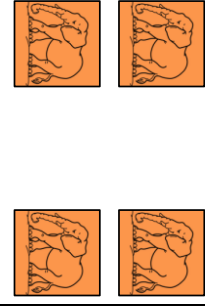
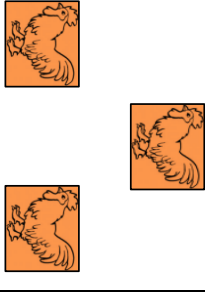
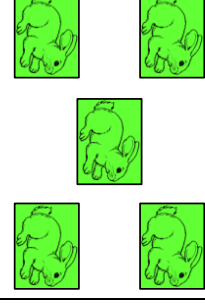

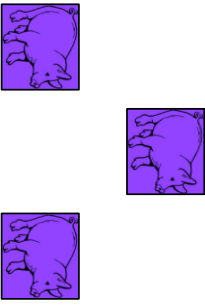
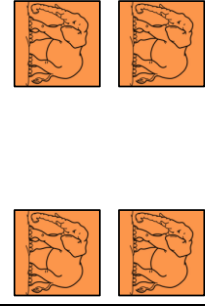
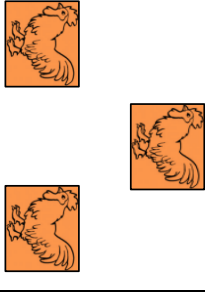
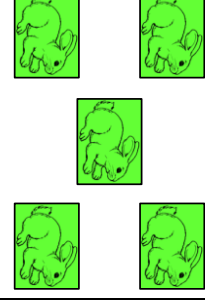

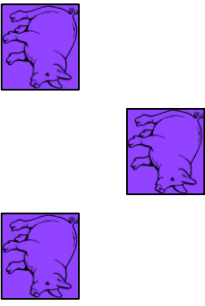
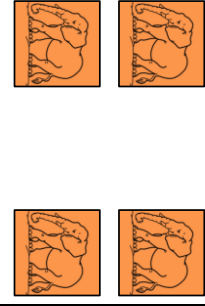
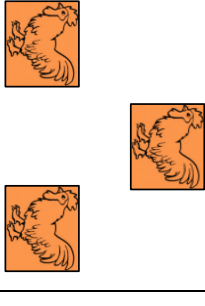
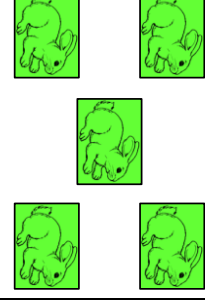

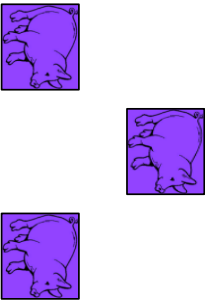
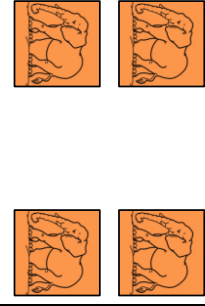
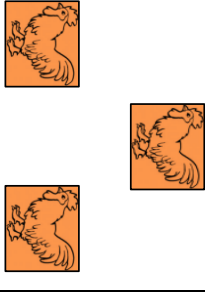
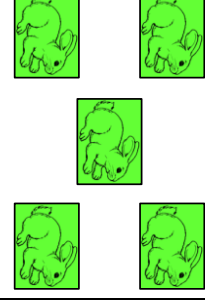

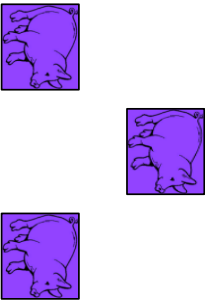
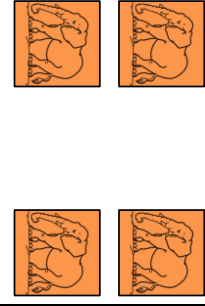
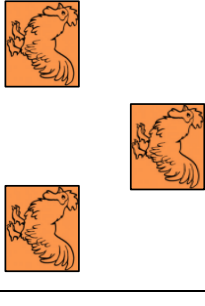
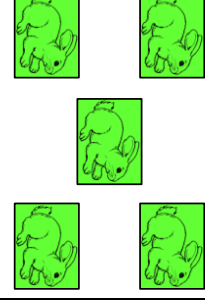

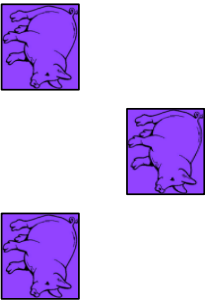
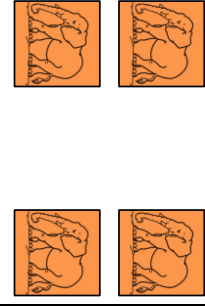
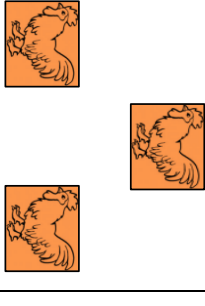
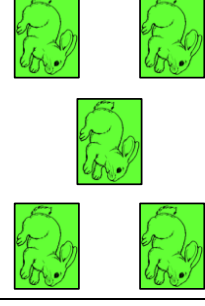

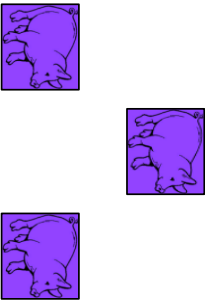
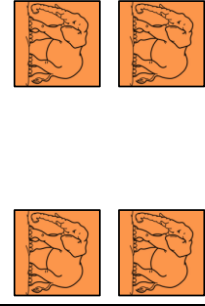
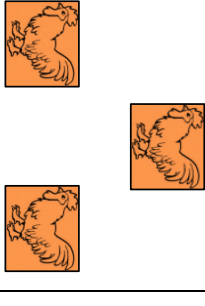
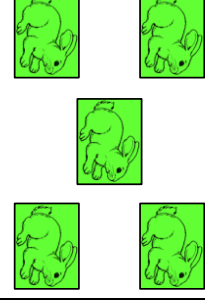

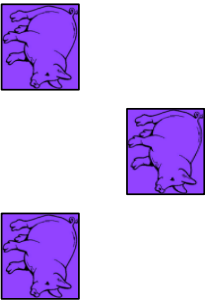
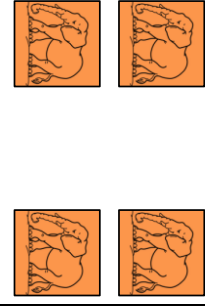
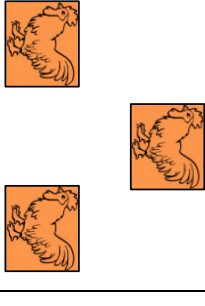
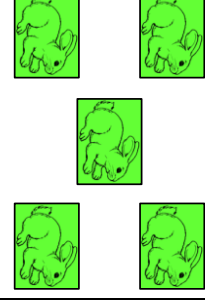

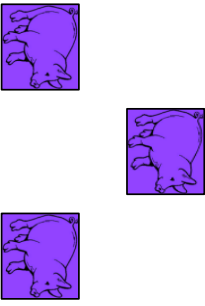
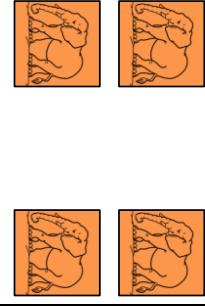
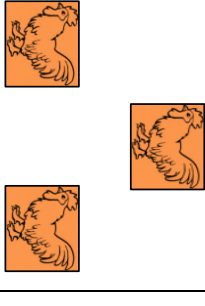
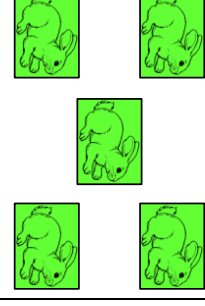

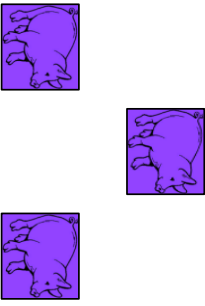
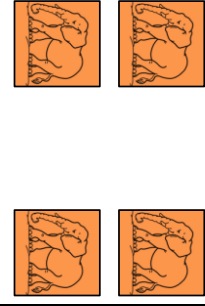
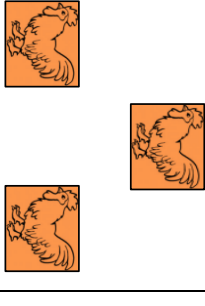
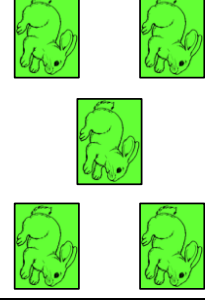

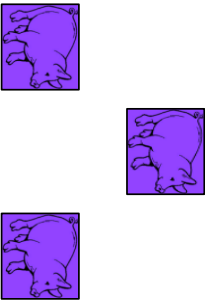
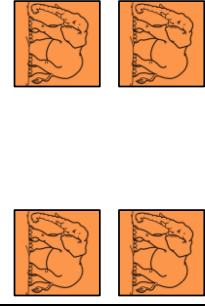
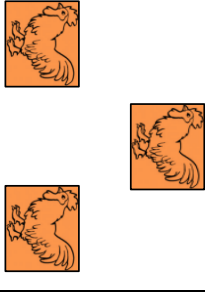
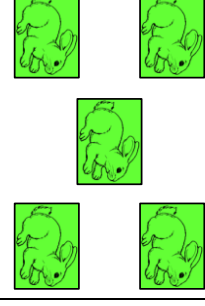

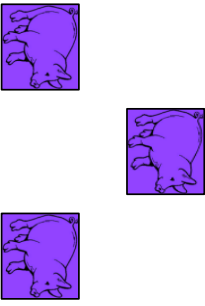
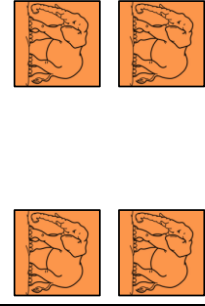
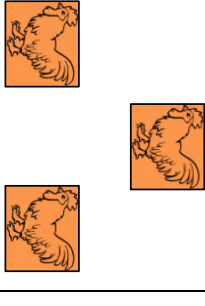
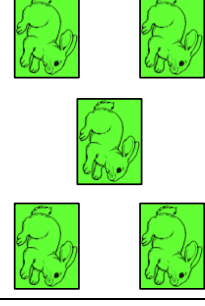

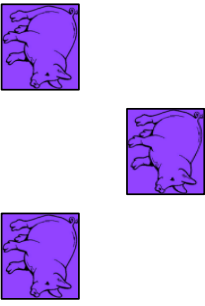
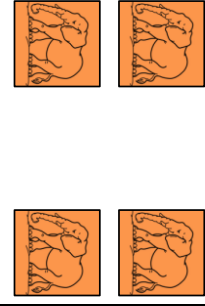
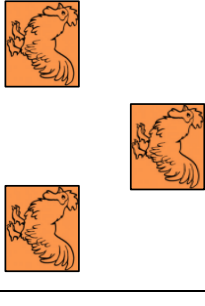
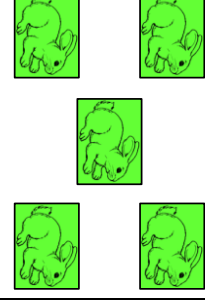

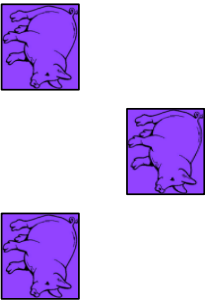
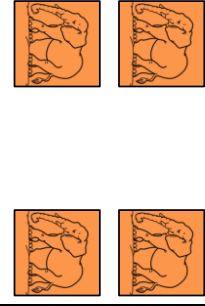
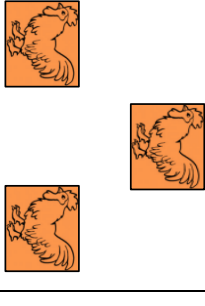
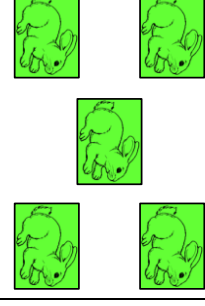

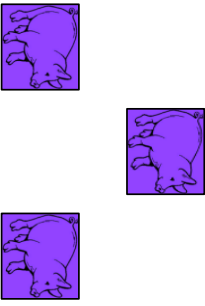
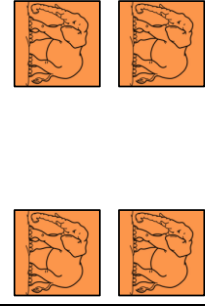
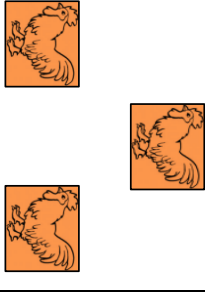
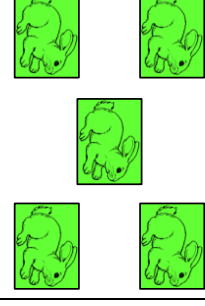

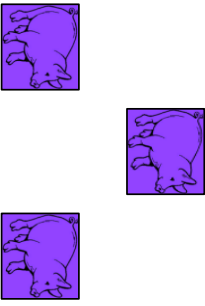
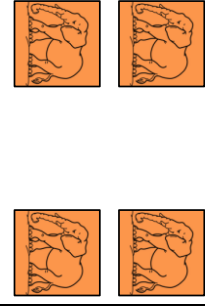
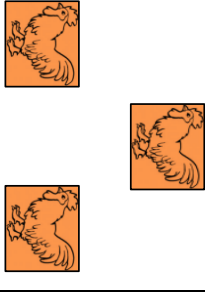
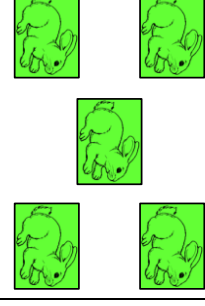

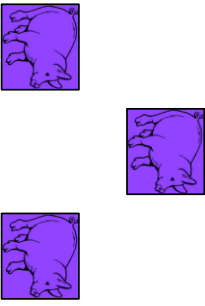
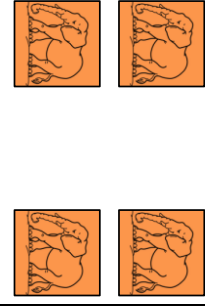
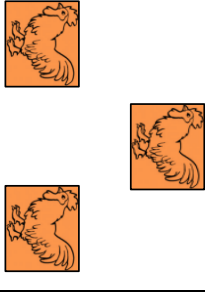
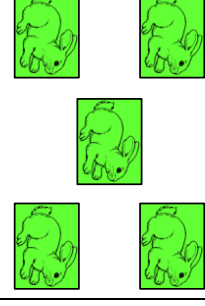

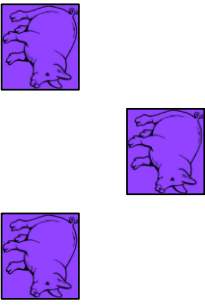
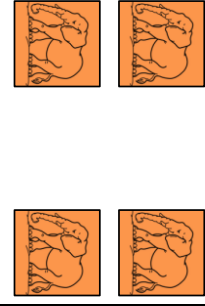
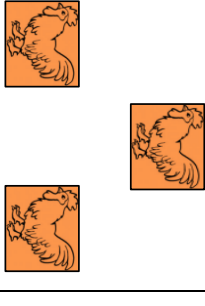
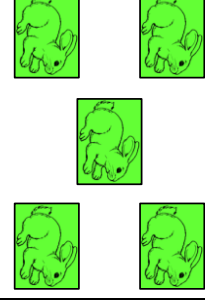

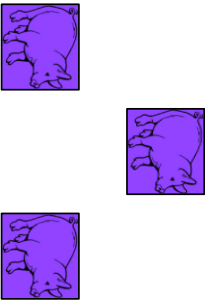
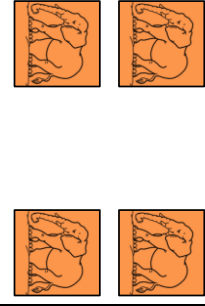
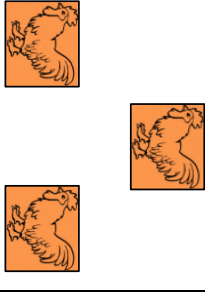
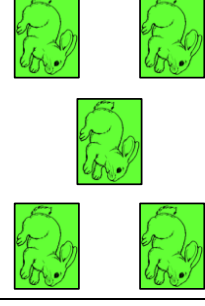

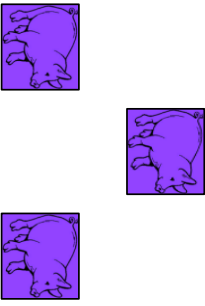
Trial Sequence	Trial 1	Trial 2
1	PO condition with Deck A	CO condition with Deck B
2	PO condition with Deck B	CO condition with Deck A
3	CO condition with Deck A	PO condition with Deck B
4	CO condition with Deck B	PO condition with Deck A

Appendix C

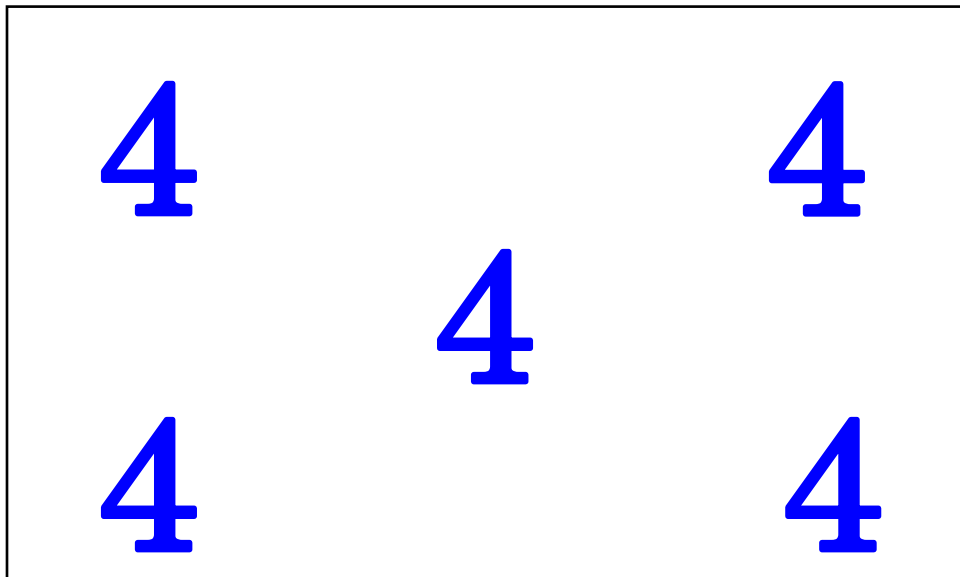
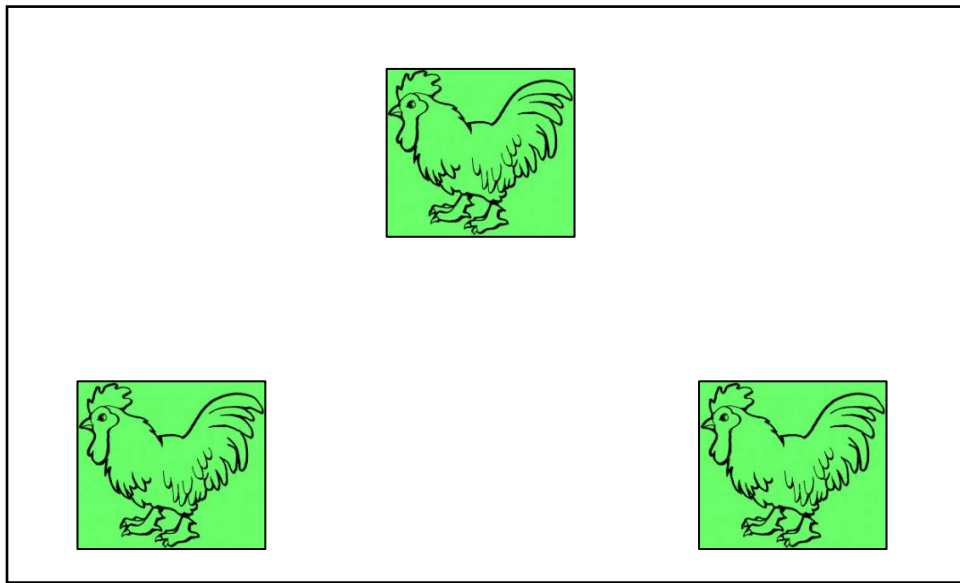
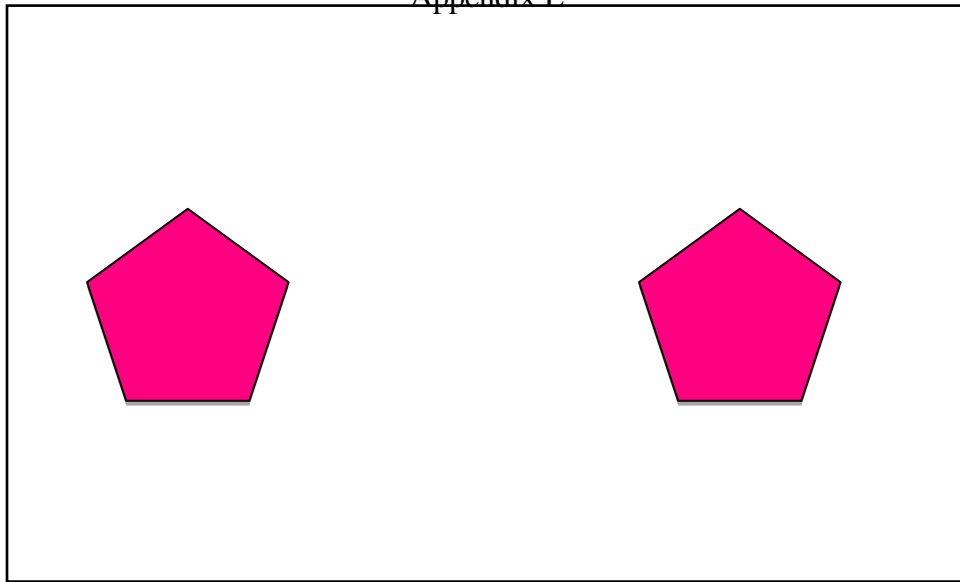
						
8	8					
						
						
						
						
						

Please draw a circle in each box that contains a design that you just studied. Please do not guess.

Appendix D

Appendix E



Appendix F

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project where I will organize cards, study these cards, and then take a test over what I remember without guessing. This process will occur under a total of three different conditions: 1) using the strategy the experimenter describes, 2) using the organizational strategy of my choice, and 3) just laying the cards out with no specific strategy. Lastly, I will complete a short demographic survey. I understand that I should be able to complete this project within 30 minutes. I am aware that I am free to skip any questions in the unlikely event that I feel uncomfortable answering any of the items on any of the surveys. I am also 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. Additionally, I should not incur any penalty or prejudice because I am not physically able to complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

 (Signature of participant) Date: _____

 (Signature of researcher obtaining consent) Date: _____

Prime Investigator:

Carlee DeYoung
 CMD472@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair
 Course Instructor
 (636)-949-4371
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Appendix G

Feedback Letter

Thank you for participating in my study. The present study was conducted in order to investigate the effects of different organizational conditions, specifically, the effects of having someone tell you how to organize information versus making your own decision on how to organize information. This study is applicable to everyday life because understanding factors that affect how well information is stored in our minds could potentially be beneficial in school situations, especially for those who are at critical developmental stages. I hypothesized that participants would correctly recognize more cards when they were able to choose their own method for sorting and organizing the information. This study is applicable to everyday life because understanding factors that affect how well information is stored in our minds could potentially be beneficial in school situations, especially for those who are at critical developmental stages.

Please note that we are not interested in your individual results; rather, we are only interested in the overall findings based on aggregate data. No identifying information about you will be associated with any of the findings, nor will it be possible for us to trace your responses on an individual basis.

If you are interested in obtaining the final results of this study based on aggregate data, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to let us know now or in the future. Our contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Carlee DeYoung, 636-459-5524 (CMD472@lionmail.lindenwood.edu)

Supervisor:

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

Perception of Female Leaders among Men and Women

Caitlin Ward⁴

Recent research studies have revealed that men and women have different perceptions of female leaders. Historically, men have predominantly held leadership roles. With the increasing demand for female leaders in our society, increasingly more women are holding higher-level positions today. The current study was designed to examine the perception of women's leadership by both men and women using an online survey. There were a total of 137 respondents. 38 were male and 99 were female. The average age of the participants was 33, ranging from 18 to 67. Among the participants, 87 reported to a female leader while 49 did not. The results of an independent t-test indicated that women perceive female leaders to be more independent, conscientious, risky, adaptable, challenging, decisive, and fearless than men do. Descriptive statistics indicated that gender stereotyping in relation to occupations still exists among nurses, construction workers, maintenance, farmers, engineers, first responders, and psychologists. A chi-square analysis was conducted to determine whether men and women perceive female leaders differently in the workforce. The result of the chi-square analysis was significant and indicated that men believe women are equally represented in the workplace while only 23.5% of women agreed. The findings of this research can help us better understand people's perceptions of female leaders, and in the future, perhaps help to eliminate prejudice towards women holding leadership positions.

In the past, men have predominantly held leadership roles. Today, there is an increasing push for women to hold higher leadership roles in the workforce, such as supervisors and managers. Although female leaders in the workforce have been at an increasing demand, it is still a fairly new topic. Baumeister and Bushman (2009) state that prejudice is the feeling of negativity toward a particular group outside of their own. Since the development of the debate between male and female leaders, a sense of prejudice towards female leaders is likely to erupt because it is not considered the norm. Eagly and Karau (2002) state that there are two forms of prejudice. The first form of prejudice includes perceiving women to be less qualified than men in leadership roles. The second form of prejudice involves evaluating the level of leadership less favorably if it were a woman instead of a man. For example, people would perceive a female

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construction worker to be less qualified than a male particularly because there are less female construction workers regardless of their qualifications and performance.

In a study demonstrating gender differences in leadership style, job stress, and mental health, Gardiner and Tiggemann (1999) found that both men and women in the labor force did not differ in relationship adjustment while in a male-dominated environment, but there were interpersonal (relationship adjustment) differences when the environment was female-dominant. This is important in order to notice that there are differences among male and female leaders. In turn, this shows that even today there are still gender stereotypes in the workforce. Jacobs and McClelland (1994) designed a study to assess motivation patterns in leadership among men and women. In a longitudinal study, they found no sex differences among motivational factors in leadership styles. Therefore, our perceptions of male and female leaders are what we make them. However, Pratch and Jacobowitz (1996) found that there is a differential pattern of relationships among male and female leaders. For example, their research supported the idea that men typically display greater levels of instrumental attributes to their approach while women characteristically tend to show greater levels of social qualities. Possible reasons for different findings may be due to the fact that individuals create certain expectations depending on what they believe is socially appropriate for men and women leaders. Therefore, it is possible that these findings are a result of preexisting stereotypes of masculinity and femininity (Pratch & Jacobowitz, 1996).

Along with prejudice, society tends to associate more positive perceptions of male leaders and negative associations are typically perceived toward female leaders (Peachey & Burton, 2010). For instance, if there are gender stereotypes associated with occupations, it is likely that a woman will be associated with negative perceptions for being a construction worker

regardless of her ability and performance. In other words, prejudice can be more passive and unconscious, while these types of perceptions are more active. Overall, the current research indicates that females are not perceived with equal positive regard and are still victims of prejudice. These findings underscore the importance of continued study on this topic, so that we can better understand and eliminate prejudice towards women in the workplace.

The purpose of this study was to determine some common perceptions of female leaders. The study further examined the findings from Peachey and Burton (2010) by surveying participants and asking them what gender they associate with certain occupations. The work of Pratch and Jacobwitz (1996) pertains to the study as well since participants were able to characteristically define a female leader on a five-star rating scale, where the higher the rating, the more likely it is that a female leader displays that characteristic. This ties into the work of Pratch and Jacobwitz (1996) to determine whether women are perceived with more social attributions. I hypothesized that prejudice still exists today. Although there is an increasing demand for women holding higher-level positions, people still hold different perceptions and stereotypes of occupations and individual leadership styles. Participants took an online link to take the survey that consisted of eight questions at their convenience. A majority of the questions pertained to how an individual perceived characteristics and the importance of female leaders. Results were analyzed using an independent *t*-test, multivariate, chi-square analysis, and descriptive statistics.

Method

Participants

Participants were recruited from those who are members of the Lindenwood Participant Pool (LPP), classmates, coworkers, friends inside and outside of Lindenwood University, and

persons connected to the PI on social media. The LPP recruits participants from participating social science courses on campus. If students who use the LPP sign up for a study, they are eligible to receive compensation in form of extra credit points. Although participants can only participate if they are 18 or older, those who are members of the LPP and are under 18 had a parental consent form on file. Thus, they were be able to participate in the study.

The survey was accessed by a total of 171 participants. The results of 35 participants were incomplete and had to be discarded. Therefore, I analyzed data from 136 participants. The participants included 38 (27.7%) men and 98 (72.3%) women. The participants' ages ranged from 18 to 67; the average was 33. Sex and age were the only two demographic data that were collected.

Students who participated using the LPP were recruited via Sona Systems while the remaining participants were recruited through work and social media. Upon choosing to participate in the study, the participants completed an online, anonymous survey at their convenience. The survey consisted of eight questions from demographics to questions pertaining to one's perception of both female and male leaders. The PI did not know whether or not an individual participated.

Materials and Procedure

Both Sona Systems and Survey Gizmo were used to recruit participants and administer the survey. Sona Systems is a cloud-based research tool that allows the primary investigator to recruit participants and administer the survey online to students and faculty at the University. Survey Gizmo is an online survey software program that allows the primary investigator to build the survey and analyze results descriptively. There was no setting designated for this survey since participants accessed the link to take the survey online at their convenience. Upon clicking

the link to participate in the study, participants read the informed consent form. An informed consent statement (see Appendix A) contained information about the study that may have influenced a participant's willingness to participate in the study and provided consent to choose whether or not to participate. A participant at any time during the study could choose to discontinue the survey at no penalty at any point during the study. The consent statement also verified that the participant was at least 18 years of age or that they had parental consent (with the LPP) to participate in the survey.

Upon choosing to participate in the study, the participant then started the survey (see Appendix B). The survey was available to the participant to complete via Survey Gizmo on Sona Systems. The survey, excluding the informed consent, and feedback letter contained eight questions. The first two questions pertained to the demographics of the participants such as their age and sex. The following questions asked for the participant to rate characteristics of both male and female leaders. For example, question four asked whether the participant generally reports to a male or female leader. Question five asks how the participant attributed certain characteristics to female leaders in general. The participant was given a trait, and then they were asked to indicate the extent to which they thought a female leader characterized a given trait on a scale of 1 to 5. Question six asked the participant to identify whether they agree or disagree with certain statements describing female leaders in society today. Question seven provided several occupations and asked the participant to associate either male, female, or neutral to which would be more suitable for the position. Questions eight and nine on the survey asked the participant's opinion on what has both hindered and helped women's participation in the workforce. Descriptive statistics, multivariate, chi-square analysis, and an independent *t*-test will be used to analyze the data. All information obtained will be anonymous. After completing or choosing to

discontinue the study, the participant was provided a feedback statement (see Appendix C). The feedback letter provided the participant with the contact information of the PI in case they had any further questions or comments.

Results

The purpose of the study was to determine whether or not men and women perceive female leaders in the workforce differently using an online survey. While analyzing the data, results supported that men and women perceive female leaders differently. A series of independent *t*-tests were conducted in order to determine whether there were any sex differences in how participants perceived traits of female leaders.

Table 1 shows the results when participants were asked to rate specific traits of a female leader. The results revealed that women perceived female leaders to be more independent ($t(130) = -3.329, p = .001$), conscientious ($t(129) = -2.785, p = .006$), risky ($t(130) = -3.193, p = .002$), adaptable ($t(130) = -2.761, p = .007$), bold ($t(129) = -3.655, p = .000$), challenging ($t(129) = -2.590, p = .011$), decisive ($t(125) = -2.495, p = .014$), fearless ($t(129) = -3.623, p = .000$). Furthermore, helpful ($t(130) = -1.751, p = .082$) and inefficient ($t(127) = 1.92, p = .057$) were close to being statistically significant as well. Since multiple *t*-tests can inflate a type 1 error, I conducted a multivariate test. The multivariate results showed that there was no significant main effect on sex. However, this could be due to an unequal sex representation in the study.

A series of chi-square analyses were conducted in order to determine whether men and women perceive participation of women in the workplace differently. The results showed that 94.6% of men and 88.8% of women said they agree that women are active leaders in the workforce, and 97.4% of men and 100% of women said they agree that women's participation is important. These findings were not statistically significant. However, whereas 65.6% of men

believe that women are equally represented in the workplace, only 23.5% of women believe the same. This difference was statistically significant, $\chi^2_{(1)} = 16.799, p < .001$.

Variables that were analyzed include the sex, age, whether or not the participant reports to a female leader, traits that define a female leader, whether or not the participant agrees or disagrees with three statements, sex preference in terms of occupations, what enables women's participation in the workforce, and what benefits there are to women's participation in the workforce.

Of the 142 participants, 87 of them reported to a female leader while 49 did not. Therefore, approximately 61.3% of participants reported to a female leader. When asked whether or not women are active leaders in the workforce, 85.9% (n=122) agreed. All but one person stated that women's participation in the workforce is important. Of the 136 participants, 96 people (67.6%) disagreed that women are equally represented in the workforce today. Therefore, it is important to examine why women are perceived to be equally represented in the workforce when in fact, they are not.

Participants were then asked to identify which sex they feel would be more suited for the following occupations: doctor, nurse, teacher, principal, lawyer, business owner, chef, first responder, architect, engineer, artist, coach, construction, business owner, maintenance, farming, and transportation. The participants were given the option of choosing male, female, or either.

Table 2 shows the results of gender stereotypes in relation to occupations. These particular results show, out of the given occupations that women were perceived to be right for caring, emotional jobs such as nursing. On the other hand, according to the responses, men are more suitable for physically demanding jobs such as construction, maintenance, farming, and first responding. Therefore, although descriptive statistics cannot support evidence of prejudice

in the workforce, it can simply show that men and women are perceived as having different qualities and characteristics that better suit them for certain occupations.

As a whole, most people chose either gender for the occupations. However, some occupations demonstrated that gender stereotypes still exist. For example, 42.3% of respondents stated that nurses are primarily female. Another one that stood out is the first responder. Of the 142 participants, 41 of them stated that they feel men are more suited for this occupation. Similarly, participants (62%) stated that men are better suited to work in construction. Finally, descriptive statistics also showed that about 50% of participants believe that men are better suited for maintenance and farming.

Descriptively, when asked what enables women's leadership in the workforce, the most frequent responses were higher level of education, variety of opinion, diversity, support, and equal opportunity. Finally, the participants were asked open-endedly to define the benefits to women's participation in the workforce. The results included various responses. However, the responses that were most frequent include various approaches and perspectives to handling situations, variety, diversity, and balance.

Discussion

The results of the independent *t*-test conclude that my hypothesis was supported and in fact, men and women perceive female leaders differently. The results show that there is still gender bias and stereotypes today. However, research shows that women are increasingly holding higher-level positions in the workforce. Even though men still typically earn higher salaries, gender equality in the workforce is increasing.

In fact, recently the NFL has hired the first female full-time official (Orr, 2015). This shows that society is more accepting of businesswomen today. However, it is telling that in the

20th century it is breaking news that a woman has been hired at such a level. Part of the reason this is considered important news is because stereotypically, NFL referees should be men. This relates back to the occupational gender preference because people still hold gender stereotypes for certain occupations and this is one of them. For example, physical, more demanding tasks should be male-dominant while the more intellectual, supportive tasks should be female-dominant. As a whole, we can see that these sorts of stereotypes and assumptions are decreasing.

Another current topic is the idea of putting a women's face on a 20- dollar bill (One of these women could be on the \$20 bill, 2015). If this idea will in fact be presented by 2020, it will represent a symbolic change that could increase the initiative to promote gender equality both in and out of the workforce.

While analyzing the findings, statistically significant results were not necessarily surprising. I hypothesized at the beginning of the research that men still perceive female leaders differently than women. Due to the results, I can infer that gender equality; especially in the workforce will be a significant aspect to my future career as an Industrial Organizational (I/O) Psychologist. I believe that since paternity leave has been implemented in the workforce, that gender equality is increasing in the workforce. As an Industrial Organizational psychologist, it will be important to tie in this research, as I will most likely be one of the females in this position. It will also be important to understand this topic to better understand how others will perceive me as a female leader to be efficient and effective for the company. This research could lead to educating both men and women on gender equality and it's importance to the workforce.

Future directions in this research would be to implement compensation, in form of an annual salary, for both men and women. This is an important aspect to the topic as the small percentage of females holding higher-level positions are getting paid less than male leaders for

performing the same tasks and having the equal requirements. There were minimal limitations to the study. The first limitation is the available resources. While finding academic articles, I found that most of the sources were dated over 10 years. This is disturbing because even though gender equality is increasing, it is a topic that is still not receiving much attention for how important it is. Therefore, it was hard to relate my results to other research that has recently been completed. Although I had 136 participants, it may not have been a representable portion of the population in this area. Maybe the particular people that had participated in my study had very strong opinions on the subject. Also, it could be that participants knew what type of results I was looking for. Therefore, they may have responded differently.

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Table 1
Traits of female leaders

Variable	<i>t</i>	<i>p</i>
Independent	(130) = -3.329	.001
Conscientious	(129) = -2.785	.006
Risky	(130) = -3.193	.002
Adaptable	(130) = -2.761	.007
Bold	(129) = -3.655	.000
Challenging	(129) = -2.590	.011
Decisive	(125) = -2.495	.014
Fearless	(129) = -3.623	.000

Table 1
Traits of female leaders

Trait	Men	Women	<i>p</i> -value
Independent	M=3.86 (SD=.944) n=35	M=4.40 (SD=.786) n=97	.001
Conscientious	M=3.62 (SD = .922) n=34	M=4.15 (SD=.983) n=97	.006
Risky			.002
Adaptable			.007
Bold			.012
Challenging			.039
Decisive			.014
Fearless			.000

Table 2

Gender stereotypes

Occupation	Male	Either	Female	Participants
Nurse	0	76	60	136
Construction	88	48	0	136
Maintenance	63	72	1	136
Farming	71	65	0	136
Engineer	42	93	1	136
First responder	41	95	0	136
Psychologist	2	100	34	136

Appendix A

Informed Consent

Perception of Female Leaders among Men and Women

This survey about the perception of female leaders was created by Caitlin Ward as part of a class research project in the department of Psychology at Lindenwood University. It will take approximately 5-10 minutes to complete. Although your participation will not result in direct benefits to you, information from this study may help provide additional insight on the perception of female leaders. Please read the information below before deciding whether or not to participate.

Your participation is completely voluntary.

- You may discontinue taking the survey at any time.
- If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way; LPP participants will still receive extra credit.
- You may also choose to skip any questions you wish without penalty or judgment.

Your responses will be anonymous.

- No information that identifies you personally will be collected, not even your IP address.
- The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.

The results of this survey will be used for scholarly purposes only. If you have any questions about the survey itself, please contact the primary investigator, Caitlin Ward, at cmw396@lionmail.lindenwood.edu or by calling (636) 236-6960.

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- you have read the above information
- you voluntarily agree to participate
- you are at least 18 years of age or have a parental consent form filed with the LPP Office.

If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button.

- I choose to participate in this survey.
- I choose not to participate.

Appendix B

Survey

1. Informed Consent**2. Are you:**

Male

Female

Prefer not to answer

3. Age:

Open-ended

4. Do you report to a female leader? (i.e. manager, coach, teacher, boss etc.)

Yes

No

5. Using the following 5 star scale, please indicate how much each of the following traits describe your perception of a female leader in general. (1 star is not at all and 5 stars are definite). For each trait, there will be a five star rating scale.

Independent	Risky	Candid	Ethical	Sympathetic	Adaptable
Accommodating	Fearless	Assertive	Helpful	Challenging	Honest
Reliable	Inefficient	Communicative	Knowledgeable	Understanding	Soft-Spoken
Decisive	Passionate	Forceful	Approachable	Dedicated	Responsible
Conscientious	Bold	Empowering	Trustworthy	Truthful	Careful
Encouraging					

6. Please state whether you agree or disagree with the following statements. (Each statement will have a choice to either agree or disagree.)

- Women are active leaders/managers in the workforce.
- Women's participation in the workforce is important.
- Women are equally represented in the business decision-making positions.

7. Using male, either, or female, please choose one that you feel would be more suitable for the following occupations.

Nurse	Psychologist	Artist	Farming
Lawyer	Chef	Coach	Transportation Services
Teacher	First responder	Construction	
School Principal	Architect	Business Owner	
Doctor	Engineer	Maintenance	

8. In your opinion, what enables women's participation in the workforce?

Open-ended

9. In your opinion, what benefits are there to women's participation in the workforce?

Open-ended

10. Feedback letter

Appendix C

Feedback Letter

Thank you for taking the time to complete this survey for my class project at Lindenwood University. By taking this survey, you have helped me learn about people's perceptions of female leaders and how they are perceived by both men and women. The results of this survey will be beneficial to both society and individuals by addressing whether or not prejudice still exists.

If you would like to see the results of my survey after May 13, 2015, please feel free to contact me using the contact information below. Please also feel free to contact me if you have any questions about this study. Again, thank you very much for your time and effort!

Principal Investigator,

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Email: cmw396@lionmail.lindenwood.edu

Faculty Supervisor

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Stigma of Mental Health on Campus:

A Research Study

Amelia Fowler⁵

It was examined if there are any stereotypes or stigma on the Lindenwood University campus by handing out fliers and emailing the link to both students and faculty and having them take an online survey through survey gizmo. Mental illness can be extremely difficult to live with, especially in school at in the work place, so my aim is to find out if any stigma exists on Lindenwood campus and how I can help make the lives of struggling students and faculty easier. When looking at the preliminary results, based on 80 out of a total of 100 participants, it was found that there is a low amount of stigma on campus, however students have a lot of great ideas of how to make the lives of students easier. Suggestions that were given involved making the student counseling center easier to find and advertising the center better so that more people are aware of it.

Keywords: stigma, stereotypes, mental health, survey, counseling, dangerous

Today, due to more helpful programming and more groups dedicating their time and effort to get rid of mental health stigma, many citizens are more accepting of people with a mental illness. A stigma is, according to the Gale Encyclopedia of Mental Health (2012), a weakness or defect of individual character. However, there are still people who have negative thoughts and beliefs about people suffering from a mental illness. There are many different types of bullying, and sometimes when negatives thoughts and beliefs exist about a group of people, it occurs whether it is intended or not. Bullying can come in the form of both physical and/or verbal aggression. An example of a stereotype that can cause bullying is that a person may think that people who has a mental illness is looking for attention. The purpose of this study is to

⁵ Amelia Fowler, Psychology Department, Lindenwood University.

This research paper and study was done for Psychology 404, Advanced Research Methods, taught by Professor Nohara-LeClair.

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examine if there are stigmas and how they are perceived by Lindenwood University students and faculty.

According to the Association for University and College Counseling Center Directors Survey, 24.5% of students in the counseling center take psychotropic medicine and 70% of directors report the number of students with severe psychological problems on campus has increased in the last year (“College student,” 2013). Mental illness exists all over college campuses, so it is important to watch what one says around other people because one may never know who they might be hurting. According to psychiatrists who have studied the social stigma associated with mental illness, there are two different kinds of stigma: self stigma and public stigma (Key, 2012). Self stigma is a person’s internalization of public discrimination and disapproval, while public stigma is defined as prejudice and discrimination on the part of the general population against those, in this case, diagnosed with mental disorders (Corrigan & Watson, 2002). Some impacts of public stigma include withholding help, avoidance, and segregated institutions (Corrigan & Watson, 2002).

Bullying is a problem when it comes to stigma and stereotypes. A study on bullying was done in eight colleges and universities in the Midwest that involved 2118 freshmen students. Out of these students, 43% experienced bullying at school, while 33% experienced it at work (Rospenda et al., 2014). Bullying causes a lot of problems such as low self-esteem and anger due to the prejudice that is happening to the individual (Corrigan & Watson, 2002). The effects of bullying cause the victim to suffer psychologically, physically, and academically (Perdew, 2015). Psychologically, victims suffer from low self esteem and depression. Physically, a person could stop eating and lose weight dramatically due to depression. All of this could cause a person to not be able to concentrate in school and their grades could drop.

In the student organization, Active Minds, our goal is to help get rid of the stereotypes and poor images of mental illness on campus and to give the students better access to resources that can help them when they are struggling. In this study, students and faculty were asked to participate in an online survey. The results on the surveys will show whether or not there is any stigmas or negative feelings toward those with a mental illness. Also, it will show how much students and faculty really know about mental illnesses and hopefully Active Minds can help educate our campus and help make the lives of struggling individuals on campus easier. Also, participants were given resources in the survey they took that can be used in case themselves or a friend needs help. According to Stone and Merlo (2011), there is a need for improved education regarding the nature of mental illness, the appropriate use of medication, and potential consequences associated with the abuse of drugs. After it is determined whether or not there really are stereotypes represented by the campus population, this information could be used for additional research to fight against these stereotypes if they are present. One of the questions in the survey asks participants if they have any ideas as to how we can make the lives of struggling students on campus easier. This information will give Active Minds ideas as to which direction we can go to assist our peers.

Method

Participants

101 adults were recruited with fliers on the Lindenwood University campus (see Appendix A), with the permission of the Lindenwood Student Government Association. Lindenwood University is a school located in the Midwest. Lindenwood University offers 600 degree programs to more than 16,000 students and has been going strong for nearly 200 years. Lindenwood also represents 1155 international students from 109 different countries.

All participants were either a staff or student of Lindenwood University and at least 18 years of age. Copies of the flier were handed to professors to share with their students and their colleagues, along with being posted inside of university facilities. Fliers were posted in Evans and Spellman outside of the cafeteria, along with a stack in each dorm for residents to pick up. The survey was also made available on Facebook. It was made clear that only Lindenwood students and staff were allowed to take the survey so results would not be compromised.

Materials and Procedure

The flier, survey, consent statement, and feedback letter were made online on Microsoft Word. The survey (see Appendix B), consent statement (see Appendix C), and feedback letter (see Appendix D) were all uploaded onto SurveyGizmo, and the URL was shared with the Lindenwood University community on the flier that was given out to everyone on campus. SurveyGizmo is a website that allows people to make surveys with ease online and distribute it to many people at once. After all the data were collected on survey gizmo, the data was put on an excel sheet and kept on a personal laptop.

Results

101 participants consisting of students and faculty took the survey on survey gizmo (See Appendix E). Out of the 101 participants, 82.2% said yes to knowing someone who was diagnosed with a mental illness, while 15.8 percent said no (See Appendix F). For the question asking how participants would feel if someone in their residential area was undergoing psychiatric treatment, the mean for how comfortable the participants felt was 5.24 out of 10, while the mode was 5. About 83.2% of participants know that Lindenwood offered free counseling services, while 11.9% did not (See Appendix F). When asked how participants felt about allowing someone undergoing psychiatric treatment to babysit their children, the average

comfort participants felt was 4.92, with a mode of 5. For the question asking if it is dangerous to forget a person is mentally ill, the average participant ranked their disagreement with that statement is 3.86 and the mode as a 5. For the statement that said that former mental patients should not have a hunting license, the average was 4.77 out of 10, while the mode was 5 out of 10. With the statement that one would not trust someone with a mental illness, the average participants chose was 2.39 for disagreeing, with a mode of 0. The final statement was that it is difficult to tell how someone with a mental illness will act 1 min to the next. The average rating was 4.05 out of 10, with a mode of 5 out of 10.

Discussion

When looking at the results, one can tell that there is very little stigma surrounding mental illness on campus. Overall, most people on campus feel comfortable with people with a mental illness. I found it interesting how people know that people with a mental illness are not all dangerous and participants have rated that they will trust something with a mental illness, however nobody wishes to live near someone with a mental illness. Due to the small sample size, I do not know how accurate the data is. I believe there is a response bias due to the fact that whether or not people feel comfortable with a person who has been diagnosed depends on the severity of the illness and how recent the diagnosis is. With a lot of disorders, it takes a while to get the right medicine and treatment so that the individual can start improving. Due to this, a struggling individual would have less of a possibility of being hired to teach or even babysit until they are more stable. This project is not very complex; however this factor represents a limitation in my survey.

The results so far also show that there are a few people that do not know that Lindenwood offers free counseling services. As a part of the student organization Active Minds,

it is important to make sure people are aware of the services that are offered to students. When looking at the different suggestions participants had to decrease the stigma of mental illness on campus, most students talked about making the counseling center more advertised and easier to find. Other students talked about having a guest speaker at the Lindenwood University First-Year Experience classes, having support groups and workshops, and making the hotlines better known to students and faculty. I believe that the information that the participants gave is valuable to making our school a better place to be for everyone and helping this community be more accepting of people with a mental illness.

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Appendix A

Flier

ATTENTION STUDENTS AND STAFF

PARTICIPANTS NEEDED FOR A DESCRIPTIVE SURVEY ABOUT THE
STIGMA OF MENTAL ILLNESS

ARE YOU...

- ✓ 18 YEARS OLD OR OLDER?
- ✓ A STUDENT OR STAFF AT LINDENWOOD?

PLEASE VISIT <https://www.surveymzmo.com/s3/2008958/Stigma-of-Mental-Health>
AND TAKE THIS SHORT 10 QUESTION SURVEY

QUESTIONS? ASK AMELIA FOWLER
AFF326@LIONMAIL.LINDENWOOD.EDU

This project has been approved by Lindenwood University's Institutional Review
Board (Case Number. TBD*)

Appendix B

Survey

1. Has someone you know been diagnosed with a mental illness?

Yes No I do not know

2. How likely would you be to hire a person for a teaching position in a grade school if you knew the candidate had a mental illness?

Very unlikely 1 2 3 4 5 6 7 8 9 10 Very likely

3. How would you feel if someone in your dorm or residential area was undergoing psychiatric treatment?

Very uncomfortable 1 2 3 4 5 6 7 8 9 10 Very comfortable

4. Are you aware LU has a free counseling service?

Yes No

5. If someone you knew was receiving treatment for a mental illness, how likely would you be to allow the person to babysit your children?

Very unlikely 1 2 3 4 5 6 7 8 9 10 Very likely

6. Can you think of anything we can do at Lindenwood to make it easier for people who struggle with a mental illness? Feel free to write any suggestion you can think of.

7. Although some psychiatric patients may seem alright, it is dangerous to forget that they are mentally ill even for a second.

Completely disagree 1 2 3 4 5 6 7 8 9 10 Completely agree

8. Former mental patients should not have a hunting license.

Completely disagree 1 2 3 4 5 6 7 8 9 10 Completely agree

9. I would not trust someone who has a mental illness

Completely disagree 1 2 3 4 5 6 7 8 9 10 Completely agree

10. One important thing about a person with a mental illness is it is difficult to tell how they will act one minute to the next.

Completely disagree 1 2 3 4 5 6 7 8 9 10 Completely agree

Appendix C

Consent Statement

This survey is about the possible existence of any stigma or stereotype related to mental illness on Lindenwood campus created by Amelia Fowler as part of a research project in the department of psychology at Lindenwood University. This survey contains questions regarding your own personal opinion toward people with a mental illness.

A stigma is, according to the Gale Encyclopedia of Mental Health (2012), a weakness or defect of individual character. According to psychiatrists who have studied the social stigma associated with mental illness, there are two different kinds of stigma: self stigma and public stigma. Self stigma is a person's internalization of public discrimination and disapproval, while public stigma is defined as prejudice and discrimination on the part of the general population against those diagnosed with mental disorders. A stereotype, according to Fichner-Rathus (2014), is a fixed, conventional idea about a group of people.

This survey will take approximately 5 minutes to complete. Although your participation may not result in direct benefits to you, information from this study may help provide insight into any stereotypes or stigma that may exist on campus. This information may be used in the future to help eliminate any negative feelings or actions. Please read the information below before deciding whether or not to participate.

Your responses will be anonymous. No information that identifies you personally will be collected. The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.

- Your participation is completely voluntary. You may discontinue taking the survey at any time. If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way.
- The results of this survey will be used for scholarly purposes only. If you have any questions about the survey itself, please contact the primary investigator, Amelia Fowler, at 636-233-2692.
- When responding to these questions, some participants may become uncomfortable or upset, but these feelings are not expected to exceed what one experiences in everyday life. If you find taking the survey causes you significant discomfort and you would like assistance, please stop participating and contact the Lindenwood Student Counseling and Resource Center at [636-949-4889](tel:636-949-4889). If you are not a Lindenwood student, contact the P.I., Amelia Fowler, for information on how to contact persons in a position to refer you to counseling services.

ELECTRONIC CONSENT: Please select your choice below.
Clicking on the "agree" button below indicates that:

- You have read the above information.
- You voluntarily agree to participate.
- You are at least 18 years of age
- You are a student or staff member at Lindenwood University

If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button.

- I choose to participate in this survey
 I do not choose to participate in this survey

Appendix D

Feedback Letter

Thank you for participating in my study. This study was conducted in order to tell if any stigma surrounding mental illness are on this campus and what students think we should do here at Lindenwood to help erase this stigma.

Active Minds is an organization on campus dedicated to erasing the stigma of mental illness and helping students become aware of resources such as the counseling center that will help them through their college career. As Vice President of this organization on campus, the overall data found through this study is greatly appreciated. If you are interested in joining Active Minds, feel free to email me and I will give you the date, time, and location of our meetings.

Please note that I am not interested in your individual results; rather, I am only interested in the overall findings based on aggregate data. No identifying information about you will be associated with any of the findings, nor will it be possible for us to trace your responses on an individual basis.

If you are interested in obtaining the final results of this study based on aggregate data, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to let me know now or in the future. Also, I plan to publish an article in *The Legacy* based on the results of this study once they are available. My contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study.

Amelia Fowler
aff326@lionmail.lindenwood.edu

Dr. Nohara-LeClair
Mnohara-leclair@lindenwood.edu

Interested in fighting the stigma of mental health on campus? Active Minds meets Thursdays at 6 p.m. to 7 p.m. in Spellmann 4105. Feel free to like us on Facebook, and visit www.activeminds.org for more information on our organization! For any questions regarding this survey or Active Minds, contact Amelia Fowler at aff326@lionmail.lindenwood.edu.

Need Help? Contact the Lindenwood University Counseling and Resource center at 6369494525, SCRC@lindenwood.edu, or contact Dr. Joseph Cusumano at JCusumano@lindenwood.edu

Appendix E

Table 1

	Teaching	Dorm	Babysit	Dangerous	Hunting	Trust	Act
Mean	5.24	7.25	4.92	3.86	4.77	2.39	4.05
Median	5.00	8.00	5.00	4.00	5.00	2.00	4.00
Mode	5	10	5	5	5	0	5
Std. Deviation	2.474	2.376	2.820	2.838	2.942	2.361	2.903
Variance	6.120	5.646	7.951	8.056	8.655	5.575	8.429

Appendix F

Table 2

	Do you know someone who was diagnosed?	Are you aware LU has free Counseling Services?
Percent Yes	82.2	83.2
Percent No	15.8	11.9

Memory Patterns in a Dementia Patient

Darren Wilson⁶

Alzheimer's disease is characterized by the gradual loss of memory and personality traits. Cognitive function deteriorates over time and affects a person's quality of life, as well as his or her ability to remember. More specifically, Alzheimer's disease affects one's ability to recall specific types of memory, including those of an implicit nature. Implicit memories are those that are subconsciously stored and later retrieved throughout the lifespan with relative ease. Examples include, but are not limited to: learning to ride a bike, or tying one's shoes. These are abilities that may or may not require a great deal of learning, and they are also more difficult to explain to others with regards to the actual process that goes in to carrying out the behavior, as opposed to declarative memories which are memories of facts, events, or occurrences. Alzheimer's has been shown to adversely affect one's memory storage in very complex ways. Some may experience anterograde amnesia in which the person has difficulty creating new memories, while others may experience retrograde amnesia in which they have trouble recalling events or situations that have already happened. The purpose of this study was to observe a patient with Alzheimer's disease and determine how well he or she was able to retrieve implicit memories through completion of everyday tasks. It was discovered that tasks that required greater physical effort were less likely to be completed than those that were quicker to carry out.

Under the umbrella of dementia, Alzheimer's disease is defined by the American Psychological Association as a condition characterized by gradual loss of memory, and a decline in one's social and/or mental faculties (2002, p. 1) The subject involved in this research was diagnosed with Alzheimer's disease in December of 2009 at the age of 62. His memory patterns have changed significantly over the years since his diagnosis. At times he is able to carry out everyday behaviors (e.g. changing his clothes or rolling his own wheelchair) with relative ease, while at other times he is much slower to react or not able to carry out the behavior at all. This poses many questions as to what affects his competence from day to day, whether his ability to remember is damaged, and/or is there a motivation component that drives him to behave in particular ways. The purpose, however, was to uncover any significant findings with regards to

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his ability to recover implicit memories. It is believed that some aspects of implicit memory are unaffected initially in the onset of Alzheimer's (Storandt, 2008). These types of memories are subconsciously stored and typically recalled without great effort. These abilities are also said to involve automatic activation of existing memories (Storandt, 2008). This was particularly relevant because the subject has shown patterns of some memory loss over time, but to varying degrees. His memory changes over time, and it is of great interest to examine if there may be a potential motivation component underlying his ability to retrieve memories.

For an Alzheimer's patient with retrograde amnesia (forgetting prior histories), it may be severe to the point that it goes well beyond the inability to recall recent events, and may encompass their entire life. Of course the severity is important to examine because it may suggest that there is atrophy in the MTL (medial temporal lobe) or neocortex, where it is believed that long-term memories are stored (Smith, 2014). But, when looking at the MTL or hippocampus, it is known that when these structures are damaged, memory loss is likely to occur (Moskovitch, 2008). The subject suffered from multiple diagnosed strokes in 2009, leading to initial damage. With that said, observing his behavior in ways that required very little effort on his part would aim to provide insight into not just how Alzheimer's disease affects implicit memories, but also whether a motivation component was present as well. This also tied into how well he selectively paid attention, which is why observation of his implicit memories was of utmost importance. Observation allowed for the principal investigator to thoroughly examine the subject without placing unnecessary stress on the individual. This also allowed the principal investigator to determine what extrinsic as well as intrinsic factors were motivating the subject to carry out a particular behavior. For example, an extrinsic factor may have been his desire of

wanting to close the window blinds because there was too much sunlight in his room. An intrinsic factor on the other hand may have been his desire to quench his thirst by getting a soda.

Another study examined the relationship between implicit memories (with explicit memories) and Alzheimer's disease with regards to priming. Specifically, priming occurs when an individual is exposed to a stimulus that may provoke a response to the same stimulus after repeated exposure (Psychology Dictionary, n.d.). What they discovered was that memory ability in Alzheimer's may be damaged or intact due to the processes underlying the particular types of memory that are controlled by the parts of the brain that are affected by the presence of Alzheimer's (Fleischman, et. al, 2005). Essentially, Alzheimer's was shown to definitively have an impact on implicit memory ability. They conducted two different tests (category-exemplar and word-identification tests) and saw that higher levels of neuropathology with regards to Alzheimer's were related to lower levels of implicit memory in the first test, though these levels of neuropathology were not related to implicit memory levels in the word-identification test (Fleischman, et. al, 2005). All of this is relevant because by presenting the same stimuli to the subject over time, priming could occur (i.e. the subject would be more likely to remember events from the previous visits). So, if behaviors occurred or were encouraged to occur during the first visit, they would hopefully trigger memories of these events in the future when visiting him. Comparatively speaking, the behavior of the subject between visits may indicate that there was a substantial effect with regards to priming and implicit memory. Another relevant study indicated that there was a relationship between priming and implicit memories. David B. Mitchell cited relevant research when he determined through long-term picture priming that individuals exhibited higher recognition rates than those in a control group who had never seen the image before (Drumme & Newcombe, 1995). They were shown an image for 1 to 3 seconds, and

again showed these images 17 years later by mail. Their recognition rates were higher than for those who had never been shown the images. When considering individuals with Alzheimer's it was determined by Mitchell and Schmitt that with regards to long-term picture priming, these individuals showed some impairment when they were assisted in remembering but their long-term picture priming was more intact when presented with a brand new image (i.e. they recognized them better) (2006, p. 928).

All of these studies serve the purpose of recognizing that implicit memories are durable over time and that even though the subject has Alzheimer's, he or she is still more than capable of recalling events from the past, regardless of how briefly they were exposed to an event. If the subject is not able to complete a task, it may be due to some other factor, and likely not because of his or her inability to remember.

Method

Participant

The subject studied was a resident at Dutchtown Care and Rehabilitation Center. The subject, who is 67 years old, was visited two times per week for approximately three weeks. Data was collected in the form of descriptive statistics to display the frequency of implicit behaviors that occurred. It was performed by the principal investigator, whom is also related to the subject. The subject also has Alzheimer's disease.

Materials

For the research, mere observations were used to gather data on the subject. A list of implicit memories was used to determine which behaviors did or did not occur (see Appendix A). The facility in which the subject resides was also used to gain access to the participant on a consistent basis.

Procedure

A set of nine implicit memories was observed by the investigator during each visit. These behaviors would often occur by the subject, although there were times in which he would ask for assistance to complete some of the behaviors. After each visit, the frequency of each implicit memory was recorded in a table that accurately displays how often the implicit behaviors occurred. This started in early April, and concluded later in the month.

Results

Data were collected on five different days, starting April 12, 2015, and occurred approximately once to twice a week for three consecutive weeks. The following implicit behaviors or basic tasks were observed of the participant: pushing an elevator button for transportation, spending money at a vending machine to retrieve a soda, opening a can of soda, washing his face by first turning on the sink, clipping his own fingernails, changing the channel using the remote, rolling his own wheelchair, opening or closing of the closet door to look for a shirt, and opening/closing of his window blinds in his room. The frequency was recorded from each of these behaviors from visit to visit.

For the behavior of pushing the elevator button, out of five consecutive visits, the behavior occurred at least once during each visit. The behavior of spending money at the vending machine occurred at some point during all five visits. For the behavior of opening a can of soda, out of five consecutive visits, the behavior occurred during all five visits after money was spent at the vending machine. After shaving his face, the behavior of washing his face by turning on the sink did not occur at all, as well as the behavior of clipping his own fingernails, which did not occur at all. These behaviors were instead completed by the principal investigator upon request; other behaviors that did not occur included opening and closing of the closet door to

retrieve a shirt to change in after the shaving. Assistance was provided in this particular situation. Rolling his wheelchair occurred during visits 1, 4, and 5. The behavior of changing the channel using the remote occurred during every single visit. Lastly, the behavior of opening or closing his window blinds did not occur either (see Table 1).

Discussion

A noticeable trend occurred over time pointing to the subject's personal level of motivation. Behaviors that occurred more frequently typically led to personal satisfaction for the subject, as determined by overall affect and pleasant mood. The participant was also more talkative when satisfied and appeared to have little to no stress. This included going to the elevator so that he could facilitate going to the vending machine much faster. This would lead to the behavior of spending money at the machine, as well as actually drinking the soda, all behaviors that occurred with great frequency. Once back in his room, the behavior of changing the channels on his television with his remote occurred with great frequency as well. Collectively, these were all behaviors that the participant wanted to accomplish because they led to personal satisfaction or fulfilled natural processes (i.e., quenching his thirst, or watching his favorite television show). The other behaviors that did not occur with great frequency were not of particular interest to the subject, and were very telling with regard to the subject and his current mental state. The behaviors of looking after himself were of very little interest, if at all, because they did not occur frequently. Another interesting aspect of this development was that these behaviors required greater effort physically from the participant. Clipping his own fingernails, washing his face after turning on the sink, as well as opening and closing of the closet door to change clothes, as well as opening or closing of the window blinds were tasks that required him to put in greater effort, for an outcome that he did not value as greatly as the frequently occurring

behaviors. This was all very telling with regard to how motivation can play an important role in a person with Alzheimer's disease, and if it truly has an effect on his or her implicit memories.

As for future implications, it would be imperative to conduct research on many more individuals with Alzheimer's because as the elderly population climbs, the occurrences of Alzheimer's may increase as well. Being able to confront this condition in this manner will likely help families understand why their loved ones behave in the manner in which they do while also allowing caregivers to be able to effectively meet the demands of those with Alzheimer's and ensure that they have a comfortable future while living with the condition. While there is no cure for Alzheimer's, if there is a possibility to delay any damaging mental effects through motivating or encouraging them to keep active through physical activity, it will hopefully allow for them to retain some mental sharpness as they progress with the disease.

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Appendix A

Implicit Memory Behaviors

- 1) Pushing elevator button for transportation
- 2) Opening can of soda
- 3) Spending money at vending machine
- 4) Washing face by first turning on sink
- 5) Clipping fingernails
- 6) Change channel using remote
- 7) Rolling his own wheelchair
- 8) Opening/closing closet door to look for shirt (aftershave)
- 9) Opening/closing the window blinds

Table 1. The frequency of implicit behaviors throughout each of the five visits.

Behaviors	Visits				
	1	2	3	4	5
Pushing elevator button	1	1	2	1	2
Spending Money at Machine/Opening can of soda	1	1	3	2	2
Washing face after turning on sink	0	0	0	0	0
Clipping fingernails	0	0	0	0	0
Change channel using remote	2	5	7	2	4
Rolling his own wheelchair	2	0	0	2	2
Opening/Closing closet door	0	0	0	0	0
Opening/Closing Window Blinds	0	0	0	0	0

Predicting Factors of Generosity

Carlo R. Barth⁷

The purpose of this paper is twofold, as it includes a literature review concerning factors influencing generosity, as well as a proposal for study that investigates generosity based upon five factors, religiosity, gender, race, annual income and education level, and it is supposed to conclude which out of five factors best predict generosity. Inspiration for the study was found in Will and Cochran (1995) finding drastic differences in giving in different religious affiliations, income, sex, race, and denomination. Regnerus, Smith and Sikking (1999) even attested almost a twofold likelihood to give to religious people. Other notion to be discussed are the idea of generosity being dependent upon a person's networks (Wiepking, 2009), and the importance of reciprocal expectations and behavior in relation to giving (Jones, Doughty and Hickson, 2006). In the study, I will measure religiosity of participants with a questionnaire examining different self-reported factors, such as attendance of religious events, personal devotion, prayer and community life. Generosity will be operationally defined as both financial giving, but also social giving, for example, volunteering. I will also examine participants' reactions to various scenarios, to better understand how helpful they are, as an additional measure of generosity. The scenarios they will encounter include situations such as encountering a person begging for money, a homeless person, a person who might need assistance after an accident. Separate multiple regression analyses will be conducted with the different measures of generosity: financial giving, social giving, and general helpfulness, as the dependent variable and religiosity, gender, race, annual income and education level as the independent variables.

Keywords: generosity, religiosity, education, income, race, sex

In studying generosity many researchers looked at different variables, such as religiosity, gender or race, just to mention a few, but rarely ever was there a focus on a bigger number of different factors that could be helpful in predicting generosity.

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Will and Cochran (1995) found dramatic differences in generosity, defined as financial giving, between different groups of religiously affiliated people. Income, gender and denomination were other factors used as variables in the analysis, all of which did relate to giving. They also found women to be more generous than men, Non-Caucasian people to be more generous than Caucasian people, and people with lower incomes to give proportionately more than those with higher incomes. In that case, race made the biggest difference, with Caucasian people giving 25% less than Non-Caucasian people. Different religious denominations and classifications differed up to 16% in their giving, with the most generous being highly religious Catholics and moderate Protestants being the least generous (Will & Cochran, 1995).

Regnerus, Smith and Sikkink (1998) found a twofold likelihood for religious people to give to the poor than for non-religious people. They started with analyzing data from the 1996 Religious Identity and Influence Survey, funded by the Pew Charitable Trusts. Their dependent variable was giving, whereas the independent variables were religious location (as defined by factors such as denominational affiliation and religious activities), political location (that being their political beliefs and orientation) and demographics (race, gender, education, age, income, number of dependents, county population size, southern residence, marital status). This study included the most extensive collection of predicting factors I was able to find and some of these factors, such as race, sex, education, income and religiosity, seem to be named in other studies as helpful predictors of generosity.

A recent meta-analysis by Galen (2012) examined a relationship between religiosity and pro-sociality. Galen (2012) worked through a broad array of different pro-social experiments, survey and self-reported measures. In his examination of different studies that explored whether religious belief promotes pro-sociality, Galen (2012) found increased pro-social behavior in planned actions (such as giving), but no effect in spontaneous situations (like encountering people asking for money or similar). This makes it particularly interesting to bring both financial giving and spontaneous reactions to different scenarios into one study and to investigate reactions of both religious and non-religious participants.

Hill and Vaidyanathan (2011) in their study of the relationship between religious over secular giving, examined both religiously or secularly motivated giving as well as giving to religious and secular causes, they found different demographic factors helpful in predicting when people are more likely to give. Specifically, religiosity was measured by religious participation and giving and then compared to secular giving. They did find marital status, employment, education and denomination to make for significant differences in giving.

Researchers from the Netherlands looked at factors contributing to generosity from a resources perspective. They asked whether generosity was as high as expected when resources were present as opposed to absent (Wiepking, 2009). Influencing factors Wiepking (2009) examined were the impacts of broad groups, such as a social versus a religious network and formal education. Specifically values like church attendance, network size, education, income, age,

gender, marital status and other demographics were studied. Findings attested the highest number of donations in any financial manner to church attendance, which the authors explained with the high frequency of requests for donations. Other big predictors for financial generosity were a high number of solicitations, an empathetic concern and whether the person volunteered in any function (Wiepking, 2009).

Piff, Kraus, Côté, Cheng, and Keltner (2010) hypothesized and showed that members of the lower social classes are more generous than members of higher classes. They also stated that religious affiliations can explain higher generosity. Even after controlling for age, religiosity and ethnicity, members of lower socio-economic backgrounds were more generous (Piff, et al., 2010). This stands in contrast with Wiepking's (2009) findings in which he claimed that people with higher formal education were more generous because of their greater amount of financial resources. Wiepking (2009) claims a positive correlation of both higher household incomes and formal education to charitable causes, which could possibly be explained by a merely a higher amount of donations in total numbers and not by percent of total income.

A factor that is seldom mentioned in the same sentence as generosity is reciprocity or the fact that some people might not be selflessly or altruistically generous. Jones, Doughty and Hickson (2006) found in a field experiment that 85% of their participants complied to providing a quarter when given an exchange of equal value in pennies, but only 35% complied when not offered the exchange.

While mainly investigating the exchange issue, the second question that was asked concerned the income of the participants. Here it was found that participants earning more than \$60,000 per year were more unlikely than participants who earned less than that to participate in the exchange. Cox and Deck (2006) fit right in here; they discussed differences in male and female generosity and compared previous studies that concluded either gender to be more giving. One of their findings was that men were looking for reciprocal behavior and their giving was dependent upon that. Since in many cases, there is no direct benefit or reciprocal effect in charitable giving, women are generally seen as more generous (Cox & Deck, 2006). Also Borch, Thye, Robinson and West (2011) looked at a form of reciprocity as they examine religious claims on future reward in relation to giving. They found different demographics, such as education and marital status predictive for giving.

All these different findings lead to the rationale for this proposed study, which combines many aspects of different previous studies into one big survey. The purpose of the study at hand is to predict what demographic has the biggest impact on generosity. Among the many demographic factors I propose to include, I predict that religiosity would be the biggest factor in predicting generous behaviors. I propose to examine both planned as well as spontaneous giving in one study, thereby conducting possibly the first comprehensive study linking different demographic factors to generosity in different contexts.

I came up with five hypotheses to cover five different areas or demographics. The first one states, that religiosity will be the biggest factor in predicting all measures of generosity; as Regnerus, Smith and Sikkink (1998) stated, they found a twofold likelihood for religious people to give as compared to non-religious people. Secondly I expect women are more generous than men; Cox and Deck (2006) find men to be looking for reciprocal giving, so I hypothesize that women will be more generous than men. Thirdly, non-Caucasian people are expected to be more generous Caucasian people; non-white ethnicities gave 25% more than their white counterpart (Will & Cochran, 1995). The fourth hypothesis states that people who earn more give proportionately less than people who earn less income; which is what Piff, Kraus, Côté, Cheng, and Keltner (2010) suggested and I expect to find the same. And lastly, there will be a negative correlation between education level and generosity. Research suggested different conclusions about the formal educational achievement of an individual and their giving. Wiepking (2009) claims that more resources equal more generosity, while Piff et al. (2010) disagree and argue with the empathy and communal orientation of the lower socio-economic classes. This latter one seems to outweigh the former in terms of per cent given of the actual income.

Methodology

Participants

Most of the subjects are expected to be recruited out of the Lindenwood University student body, but participation will also be open to the general population. Recruitment information will be posted on Lindenwood's campus, the Lindenwood Participant Pool, select grocery stores around campus and some

churches. Participants' ages are expected to range mostly around college age, even though the hope is to also assess some people that are clearly out of college. As far as sex, race and income are concerned, there are no precise predictions. Participants recruited from Lindenwood University's Participant Pool will receive extra credit forms; other than that there will be no compensation for participation.

Materials and Procedure

The materials first put to use will be recruitment scripts that contains general information about the study and a link to the study (see Appendix A). On the SurveyGizmo (<https://www.surveygizmo.com/s3/2010620/Spending-habits>) cover page, an information and informed consent page is provided helped both informing participants about everything they need to know before taking the study and it includes the informed consent process. The survey itself will be conducted through SurveyGizmo. The 23-item questionnaire consists of 2 tools to assess religiosity (5 questions), generosity (12 questions) and 6 demographic questions. Most of the question are questioned on a Likert scale, on a numeric scale or yes no, except the demographic questions. Some of the questions (as indicated in the appendices) are conditional, such as church attendance for example led either to the next question if negated or to an extension concerning the number of days attending church if positively answered. The debriefing process is also part of the survey itself and contained in Appendix B.

Data Analysis

A multiple regression analysis will be conducted with all different demographic factors, religiosity, sex, race, income and education level, as independent variables and the generosity values, financial giving, volunteering and reaction to spontaneous events, as dependent variables.

Expected results and implications

I hope to reject the null hypothesis for my five hypotheses. This would (apart from the fifth hypothesis) continue on where previous research left off. In case of the last hypothesis, there were findings that suggested both directions, but hypothesis number four would probably support number five. I am also hoping to learn about how I could improve on my study in the future. The review process already helped incredibly and taught me a lot about what would be important to look for. I am hoping to better understand the dynamics of giving and what that means for us today and how we could use that knowledge.

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Appendix A
Psi Chi and LPP script:

<u>Study Title</u>	<u>Study Area</u>	<u>Study Description</u>	<u>Study URL</u>
Predicting Factors of Generosity	Social/ Behavioral	How do you spend your time and money? What influence do your gender, race, income and religious belief have on your generosity?	Submission Link

Script for alumni association email

Lindenwood alum!

May I ask for 10 minutes of your valuable time? I am conducting a study called “Predicting Factors of Generosity.” On the following link you will find a survey, which investigates what factors are associated with generosity. If you click the link, you will be lead to a page that explains the contents of my study in more detail and gives you an idea of why I appreciate your participation so much!

As professionals in all forms and shapes, careers and professions and from diverse backgrounds, you could really help out to investigate predictive factors of generosity. I would love you to be able to help further this field of research and also maybe have some introspection while doing so. As promised, the overall duration of the survey should not be more than 10 minutes!

Thank you for your participation,
Carlo Barth

<https://www.surveymzmo.com/s3/2010620/Spending-habits>

Online script (social media: Facebook, twitter)

Attention: Opportunity to take part in research!

You have the chance here to further the understanding of generous behavior. With 10 minutes of your time you can make a meaningful contribution to research and maybe attain some understanding about factors that predict generosity.

Thank you for participation!

Carlo Barth

<https://www.surveymzmo.com/s3/2010620/Spending-habits>

Post with “rip-off links” script (for churches, grocery stores)

Dear friend,

I am currently conducting research in the field of spending habits and generosity. In this present study I want to invite you to help me understand trends and tendencies when it comes to how to handle your resources, such as money and time.

I designed a short survey that takes about 10 minutes and would love you to take it in order to help out this area of the behavioral sciences and maybe learn a little bit about yourself!

Sincerely,

Carlo Barth

RIP-OFF PIECES <https://www.surveymzmo.com/s3/2010620/Spending-habits>

Verbal script

Hi (name if known),

Do you have a minute? I am conducting a study with the Department of Psychology here at Lindenwood University. My goal is to further the understanding of people’s spending habits. The survey takes about 10 minutes of your time, which would be a valuable contribution to research in the behavioral sciences.

(Give potential participant a slip with the print script and survey link)

I really appreciate you taking the time out of your busy schedule to take part in this! Thank you so much!

Appendix B

Predicting Factors of Generosity

PAGE ONE

Dear Participant,

This survey about the possible relationships between spending habits and religious activities is part of a study conducted by Carlo Barth in the department of Psychology at Lindenwood University. This survey contains questions pertaining to both these areas and will help to set the bar for further investigations in the direction of decision-making and persistence in how these beliefs are acted upon.

The two different components are basic variables for how you tend to spend your money, and how involved you are in different religious activities or communities.

This survey will take approximately 10-15 minutes to complete. Your participation may not result in direct benefits to you; it is anticipated however, that your awareness about spending habits and your religious habits and preferences could be increased. Also, information from this study may help provide additional insight into spending habits in a broad sense and religious activities as they relate to spending.

Your responses will be anonymous. No information that identifies you personally will be collected, not even your IP address. The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.

Your participation is completely voluntary. You may discontinue taking the survey at any time. If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way; LPP participants will still receive extra credit.

The results of this survey will be used for scholarly purposes only. If you have any questions or concerns about the survey and the background of the study it is used in itself, please do not hesitate to contact the primary investigator, Carlo Barth at 636-634-1042 or at cb705@lionmail.lindenwood.edu

Some of the questions on the survey may make some respondents feel uncomfortable. Please feel free to skip any questions that you are uncomfortable answering. If you are feeling significant discomfort, please contact the researcher using the contact information provided above, or contact my supervisor, Dr. Michiko Nohara-LeClair at mnohara-leclair@lindenwood.edu or 636-949-4371.

ELECTRONIC CONSENT: Please select your choice below. Checking "Yes" below indicates that:

- You have read the above information.*
- You voluntarily agree to participate.*
- You are at least 18 years of age or you are part of the LPP and have a parental consent form filed with the LPP Office.*

Please make sure you also uncheck the "No" field.

*If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by selecting "No". **

Yes

No

1) *Are you a Lindenwood student?**

Yes

No

MONETARY CLUSTER

2) *Do you give or donate in any form? (This includes both money and other goods you give away)*

Yes

No

3) *In your best estimate, how much do you give or donate per year? **

\$/year: _____

4) In case you give differently than monetarily, please explain what you give!

5) What kinds of organizations, charities or ministries do you donate to? (Select appropriate fields)

Organization type

Ministries (Faith based organizations)

Charities (Goodwill, homeless shelters)

Other

If other, please specify.

SERVICE CLUSTER

6) Do you volunteer?*

Yes

No

7) How many hours do you estimate you volunteer per year?*

8) Where do you volunteer? (Please mark all that apply)

Church, ministry, faith-based or religiously-affiliated charity

Non-profits

Charity

Other

WHAT WOULD YOU DO?

9) How would you respond to a stranger who approached you asking for money? What would you be likely to do?

10) Imagine the following situation: You are downtown in the middle of the winter, and the temperatures are around zero degrees. On the side of the road, you see a person who appears to be homeless and cold. How would you react to this person?

11) Imagine you have just witnessed someone you do not know trip and fall. How likely is it that you help him/ her or ask whether he or she is okay?

- Very Unlikely Unlikely Likely Very Likely

12) Imagine the following situation. You are driving home from work (or school). At a small intersection close to your house you see a car crash. You cannot tell how bad it is at this point, only that the cars look very damaged. The way home for you is not blocked, and you could pass without anyone noticing. How likely is it that you would get out of your car and check on the people involved in the accident?

- Very Unlikely Unlikely Likely Very Likely

RELIGIOUS ACTIVITY

13) In the last 12 months, have you attended religious services of any kind?*

- Yes
 No
 I wish not to say

14) How often do you attend such services?

- Daily
 Multiple times a week
 Twice a week
 Once a week
 Twice a month
 Once a month
 A couple times a year
 Other

15) How often do you pray or meditate in private?

- Multiple times a day
- Daily
- Multiple times a week
- Once or twice a week
- A couple times a month
- Less than the afore mentioned

16) Do you privately study religious materials or scriptures of your religion or belief system?

- Yes
- No

17) How often do you study your religion's or belief system's scriptures?

- Daily
- Multiple times a week
- Once or twice a week
- A couple times a month
- Once or twice a month
- Less than that

18) How many minutes do you study your religion's or belief system's scriptures when you study them?

Minutes: _____

19) Do you take part in any study or community groups? Community groups are Bible studies or other scripture studies, prayer or meditation groups, or any other form of service group that regularly meets and originates out of a religious community.

- Yes
- No

20) Do you participate in any secular community or service groups?

- Yes

No

21) How often do you meet for these groups and or studies?

Once a month

Twice a month

Once a week

Twice a week

Other

22) Since you selected "other" please specify.

23) Are you partaking in any form of religious activity outside of the aforementioned?

Yes

No

24) Please specify.

DEMOGRAPHIC INFORMATION

25) How old are you?*

Age in years: _____

26) What is your sex? (If would like to skip this question, please do so)

Female

Male

27) What is your annual income?

\$/year: _____

28) How would you describe your racial/ethnic identity?

American Indian/Alaska Native

Native Hawaiian/ Pacific Islander

Asian or Asian American

Black or African American

Hispanic or Latino

White or Caucasian

Multiracial/Multiethnic

Other

29) If you are not born in the U.S., what is your country of origin?

30) How would you describe your religious affiliation, if any?

Buddhist

Catholic

Hindu

Jewish

Mormon

Muslim

Protestant

Other

Unaffiliated

31) Is there any denomination or group you claim affiliation to within your religion or belief system?

32) *What is your highest level of educational attainment?*

- Some high school, no diploma
- High school diploma or equivalent (GED)
- Some college, no degree
- Associate's (2 year) degree
- Bachelor's (4 year) degree
- Master's degree
- Doctoral or professional degree

33) *What is your marital status?*

- Married or in a domestic partnership
- Divorced
- Widowed
- Separated
- Never Married

34) *Are you currently employed?*

- Yes
- No

35) *Are you a full-time college student?*

- Yes
- No

36) How many hours do you work every week?

THANK YOU!



Dear Participant,

I really appreciate your participation in this study! To show you how valued your participation is, I want to take every effort to make you feel accommodated. I want you to feel comfortable to contact me about any concerns or questions any time!

The study you just took part in serves research in the area of pro-social behavior in relation to different factors, such as your sex, your beliefs, your income, your education and your race. To phrase this more plainly, I am looking to see, which of these factors best predicts how generous people are. This I tried to accomplish by asking you a variety of questions pertaining to ways in which you could serve and benefit other people; also I asked about the previously mentioned demographics, and, on top of that how involved you are in religious services, practices, studies and personal devotion to measure how religious you are. I will try to convert all of your answers into a tangible system of numbers and then make some assumptions on how predictive each single factor is for generosity.

Again, I am very thankful for your participation and if at any point you have questions, concerns, remarks or input of any kind please do not hesitate to contact me!

Carlo Barth, 636-634-1042, cb705@lionmail.lindenwood.edu

I hope you enjoyed being a part of this research project!

Thank you.

SPECIAL FEATURE:

SENIOR THESIS/INDEPENDENT RESEARCH PROJECT PAPERS

FALL 2014 & SPRING 2015

Determining if there is a Relationship between Locus of Control and Stress

Sara Roderick⁸

Locus of Control and stress are potentially vital concepts that could, in theory, reveal to be major players in everyday life. Previous research has examined locus of control in relation to stress, although both locus of control and stress were variables defined in a variety of different contexts depending on the research. Some studies focused on locus of control and stress in regards to specific environments, while others looked at the concepts in broader terms, such as this study does. Indeed, the present study sought to explore the relationship between these two concepts in a more general sense, in order to achieve a rudimentary understanding of how locus of control and stress could possibly relate. Participants were given a survey comprised of two other surveys combined and slightly modified that measured locus of control orientation (internal or external) and perceived levels of general stress. Participant's scores within each variable were compared. The results of the study indicated that there was indeed a significant relationship between an external locus of control orientation and high stress levels, although the strength of that correlation remained weak.

This study was conducted in order to discover if there was any type of relationship between an individual's levels of perceived, general stress and that same individual's internality or externality of locus of control. By obtaining more information as to the relationship between one's locus of control orientation and stress levels, it is at least somewhat possible that individuals will become more aware of their locus of control orientation and can then, if a relationship is found, take more effective steps to manage stress. The reasoning behind this study is to increase awareness of locus of control in general, and how such a concept can relate to other factors such as stress levels. In the study recounted here, one survey was posted online and made available to participants. This survey measured levels of stress and the orientation of one's locus of control. It is believed that by examining the scores for externality and internality of locus of control as well as levels of stress, further insight as to whether or not the two concepts have any type of relationship can be gleaned.

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Although a concept such as stress is more familiar, one such as ‘Locus of Control’ may remain slightly more undefined. Locus of Control is a term for how one attributes events and circumstances to either his or her own actions, or to environmental factors. To have an external locus of control is to feel as if events are dictated by chance or luck – therefore originating independently, not as a result of the individual’s actions. On the other hand, to have an internal locus of control is to feel as if you as an individual can influence events, and that luck has nothing to do with how things turn out. In other words, those with an external locus of control feel more acted upon by the environment, while those with an internal locus of control feel as if they act on the environment (Rotter, 1990).

In this study, locus of control is being examined in relation to stress levels. Stress levels are defined in this instance as one’s perceived, general levels of stress – not situational or specific types of stress. Although stress itself is a varied concept that can be applicable to life in many different ways, this study hopes to measure Locus of Control orientation against participants’ general rating of how stressed they are.

The possibility of a relationship existing between stress levels and Locus of Control orientation is illustrated by a variety of previous research into areas very closely related to what this study touches on. Studies by Sprung and Jex (2012) and Gianakos’ (2002) both examine locus of control orientation in regards to individual response to stress specific to the workplace. These studies are helpful in that they demonstrate how locus of control and stress interplay in real-life, everyday situations, even if they are not looking at more generalized instances of stress. Through the use of an online survey made up of established measures of locus of control and work-related stress, Sprung and Jex (2012) found an interesting, positive correlation between an externally oriented locus of control and greater instances of counterproductive workplace

behavior as a response to work-place specific stress, which was not the case for those scoring with a more internal locus of control. Gianakos (2002) on the other hand examined sex, gender roles, social desirability, and locus of control as predictors for coping styles in the event of work place stress. Giankos (2002) indeed found that one's externality of control was correlated with the use of escape-related coping methods, such as alcohol use, in response to work-place stress – further indicating that locus of control orientation appears to influence how one may respond to stress.

There is further evidence of a possible relationship between the two concepts of stress and locus of control. A few other studies have shown that one's perception of control does appear to relate to various physiological symptoms. For example, in the studies examined here, Houston (1972) manufactures situations in which participants have varying levels of control, and Pruessner at al. (2005) measures the possible relationship between one's locus of control and physical indications of long-term stress, namely, hippocampal volume. Both these studies will be further outlined below to better demonstrate how each measured the physiological manifestations possibly related to Locus of Control.

Indeed, Houston (1972) attempted to design situations in which participants would feel either in control or in which they had no control. He then measured stress levels among the different groups using verbal self-report, as well as physiological monitoring. The results indicated that the group exposed to a situation in which participants had more control did not verbally report as much stress as the group in which participants were given no control. Interestingly enough however, the group given more control over the outcome of their situation had an increased physiological response suggesting high anxiety levels, more so than the group given no control. Even though the in-control group did not verbally report as much anxiety as

the group given no control, physiological monitoring proved that the in-control group actually felt more stress. One possible explanation for this finding is that the difficulty of the task being performed may have caused an increased physiological stress response, but not in the number of self-reports indicating stress (Houston, 1972).

In the study conducted by Pruessner et al. (2005), the researchers measured the personality traits of self-esteem and internality of locus of control. They hypothesized that lower self-esteem and low internality of one's locus of control (or, having an externally oriented locus of control) would predict a more atrophied, or significantly smaller, hippocampus. Atrophy of the hippocampus signifies prolonged, high cortisol levels resulting from sustained stress. The cortisol is what causes the hippocampus to decrease in volume, as a result of its proven atrophying effects.

The results of Pruessner et al.'s (2005) study revealed that low self-esteem and low internality are associated with a lower hippocampal volume. Additionally, those with a more external locus of control orientation experienced a greater cortisol response than those with a more internal locus of control, even when faced with identical stressors. Pruessner et al.'s (2005) study is indeed significant because it provided physiological evidence that those with a more external locus of control in fact experienced increased quantities of cortisol – the stress hormone.

In the study recounted here, I hope to find support for my hypothesis that those with a more external locus of control will also have higher levels of perceived, general stress. As previously stated, participants of this study will take an online survey composed of two established surveys. The surveys utilized for the purposes of this study are Rotter's (1966) Rotter's Internal-External Control Scale measuring locus of control and the Perceived Stress

Scale—Revised, by Wickrama et al. (2013). Participants completed the survey online, and were granted extra credit in their classes for their participation.

Method

Participants

Participants were all fellow undergraduate students at Lindenwood University. All participants came from the Lindenwood Participant Pool (LPP), no subjects were under the age of 18, and all were current students at Lindenwood – the target population for this research. LPP members are student of entry level Psychology, Sociology, Anthropology, and Exercise Science classes that have opted to take part in student-run research in order to earn extra credit in their respective courses. LPP students access available studies by going online to a website run by Sona Systems which allows for a completely online way of managing participation in research projects.

Materials

The materials used in this study were, most prominently, the survey administered (see Appendix A). The survey used was a combination of modified versions of two previously created surveys Rotter's Internal-External Control Scale (Rotter, 1966), and the Perceived Stress Scale--Revised (Wickrama et al., 2003). The two surveys used were chosen by the P.I because they were deemed to be relevant to the study in that they were effective measures of the two concepts under investigation, locus of control and perceived, general stress. Only questions that were the most direct and applicable to college-age students in regards to Locus of Control and perceived general stress were selected for use in this study. The original surveys were modified slightly, so that the selected questions matched with the Likert Scale format of the answers more closely. Participants were asked to fill out the survey online, using SurveyGizmo.com, but to also

feel free not to answer any questions if they did not wish to, as described in the informed consent statement (see Appendix B). The survey was conducted online utilizing SurveyGizmo, which provides easy access to the survey and all related documentation. The SurveyGizmo survey was linked to Sona Systems, the research management software employed by the LPP to recruit and inform participants of ongoing research projects, as well as keep track of any bonus credits earned by participants.

Procedure

The participants were able to view this study on Sona Systems, on the web page that displays all currently active studies. Participants had the option to read a brief description of the study, and were free to choose to participate at any time. At the start of each session, when the participant first traveled to the survey page on SurveyGizmo via the link in Sona Systems, he or she was required to agree to the terms laid out in the informed consent statement, in addition to being informed of his or her rights as a participant. Once participants had read the consent statement and selected to participate in the survey, they were then redirected to the next page of the survey, containing the first of the survey's questions. Once the survey was completed, the participant was redirected to the final page of the survey which contained some more information on the project as well as contact information for the P.I., and how to seek help if needed (see Appendix C). Once all data was collected, the survey was scored and the correlations between stress levels and internality v. externality of locus of control was recorded. The higher the score for Locus of Control, the more external one's Locus of Control orientation was said to be. The higher the score for stress levels, the greater amount of stress one indicated as feeling.

Results

In order to determine if there was a relationship between participants' scores of perceived, general stress levels and Locus of Control orientation, I conducted a Pearson's r test using the data from 65 ($n = 65$) participants in order to determine if any relationship was indeed present between these concepts across all participants. I found that the average score relating to Locus of Control ($M = 5.6462$, $SD = 1.93996$) was slightly lower than the average score for levels of general, perceived stress ($M = 7.7077$, $SD = 1.85171$), however, after conducting the Pearson's r test, the correlation between locus of control and stress was found to be $r = .271$ with a P value of $p = .015$. Based on the results obtained, we rejected our null hypothesis and conclude that there is a significant correlation between an external locus of control orientation and higher levels of perceived, general stress – albeit a weak one.

Discussion

In this study the hypothesis that there would be a significant relationship between locus of control orientation and stress levels was supported because there was a weak positive correlation between the two variables, $r = .271$ with $p = .015$. Although the hypothesis was supported, the correlation does remain weak, and it is important to consider possible reasons for these results in order to improve further research. A possible reason why the correlation found was of a weak strength may be because of the small sample size, $n = 65$. Additionally, the sample was recruited using the LPP, and was therefore made-up of college students exclusively, who were all taking the same basic classes. It may be more enlightening to use a greater, more representative sample in future research in order to compare the results to this study and to see how the correlation strength or significance would change.

There were a few other limitations encountered within this study in addition to sample size. I was exclusively interested in each participant's scores for locus of control orientation and levels of perceived, general stress and did not introduce any variables based on demographics, such as age and gender. In future research, it may be more conducive to a better understanding of the relationship between these two variables to include demographic data and analyze scores of locus of control and stress in relation to variables such as age. Also due to the fact of limited demographic information in the current study, it is unknown how representative the sample was. It would be important to conduct this study again using a sample made up of equal numbers of men and women, as well as equal numbers from different age ranges and ethnic backgrounds. It is very possible that scores of locus of control orientation and levels of stress would have different ranges within different populations, and it would be important to examine the relationship between the two variables within those possibly widely different ranges.

Future modifications that can be utilized in order to overcome these limitations could include having a larger sample size that consists of many people of differing genders, and ages. Additionally, by analyzing the obtained data across many different demographic variables, the data for which would be gathered by way of demographic questions included within the main survey, it is hoped that an even greater understanding of the relationship between locus of control and stress can be obtained.

It would indeed be interesting to further explore the concepts of locus of control and stress in future research, perhaps distinguishing between differing types of stress instead of looking at general levels, and distinguishing between locus of control based on certain situations, such as Sprung and Jex (2012) and Gianakos (2002) did when examining locus of control specific to work-place behavior. Additionally, the survey used to measure these concepts could

include more questions relating to stress, locus of control, and the demographics of respondents. Perhaps by more clearly defining the concepts of stress and locus of control orientation, and by measuring each in a slightly more specific manner while allowing demographics to play a part, the results may vary from those encountered here. Such results may provide further insight into each of these concepts and the possibility of a stronger relationship between them.

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Appendix A

Locus of Control and Stress - Senior Thesis by Sara Roderick**Page 2**

You will be presented with various statements, all of a similar nature but addressing slightly different aspects of individual personality. Please select the option that corresponds with how much (or how little) you agree with a particular statement.

Please take this survey in a location in which you feel comfortable answering questions regarding your own personal thoughts and feelings.

1) Many of the unhappy things in people's lives are partly due to bad luck.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

2) Unfortunately, an individual's worth often passes unrecognized no matter how hard he or she tries.

Strongly Disagree Disagree Somewhat Disagree Neutral Agree
Somewhat Agree Strongly Agree

3) Most students don't realize the extent to which their grades are influenced by accidental happenings.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

4) One can only become successful if given the right chances.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

5) No matter how hard you try some people just don't like you.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

6) Many times exam questions tend to be so unrelated to course work that studying is really useless.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

7) This world is run by the few people in power, and there is not much the little guy can do about it.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

8) When I make plans, I am almost certain that I can make them work.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

9) In my case getting what I want has little or nothing to do with luck.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

10) By taking an active part in political and social affairs the people can control world events.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

11) Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

12) There is a direct connection between how hard I study and the grades I get.

Strongly Disagree Disagree Disagree Somewhat Neutral Agree
Somewhat Agree Strongly Agree

Page 3

You will be presented with various questions, all of a similar nature but addressing slightly different aspects of feelings of perceived, general stress. Please select the response that most closely corresponds with your own feelings.

13) How often do you feel that you are unable to control the important things in your life?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

14) How often do you feel nervous and/or stressed?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

15) How often do you feel unable to cope with all the things you have to do?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

16) How often do you find yourself thinking about things you still need to accomplish?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

17) How often do you feel as if difficulties are piling up so high that you cannot overcome them?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

18) How often do you feel confident about your ability to handle your personal problems?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

19) How often do you feel that you are effectively coping with important changes occurring in your life?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

20) How often do you feel as if things are going your way?

Never Infrequently Somewhat Infrequently Average Somewhat
Frequently Frequently Always

Appendix B

Page One

This survey about the possible relationship between locus of control and stress was created by Sara Roderick as part of a class research project in the department of Psychology at Lindenwood University. This survey contains questions pertaining to Locus of Control and perceived, general stress.

Locus of Control is a term for how one perceives the events of daily life in relation to what determines them. To have an Internal Locus of Control is to feel in control of events and outcomes, while having an External Locus of Control is to feel as if outcomes are subject to fate and chance.

This survey will take approximately 5 minutes to complete. Although your participation may not result in direct benefits to you, information from this study may help provide additional insight into the relationship between ones Locus of Control and perceived, general stress levels. Please read the information below before deciding whether or not to participate.

- **Your responses will be anonymous. No information that identifies you personally will be collected, not even your IP address. The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.**
- **Your participation is completely voluntary. You may discontinue taking the survey at any time. If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way; LPP participants will still receive extra credit.**
- **The results of this survey will be used for scholarly purposes only. If you have any questions about the survey itself, please contact the primary investigator, Sara Roderick at 636-577-4192.**
- **Taking this survey could result in some distressing feelings, like guilt, confusion, frustration, stress, anxiety or sadness for some participants, but these feelings are not expected to exceed what one experiences in everyday life. If you find taking the survey causes you significant discomfort and you would like assistance, please stop participating and contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.**

**ELECTRONIC CONSENT: Please select your choice below.
Clicking on the "agree" button below indicates that:**

- **You have read the above information.**

- **You voluntarily agree to participate.**
- **You are at least 18 years of age.**

If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button.

*

- I choose to participate in this survey.
- I choose not to participate.

Appendix C

Thank You!

Thank you for your time today. Whether you decided to complete the survey or opt-out, please read below for important information.

If you found that the survey caused you emotional distress and you would like assistance, please contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.

For tips on managing stress please see the PDF document located at:

<http://yalestress.org/pdf/stresstips.pdf>

It is recommended that you download this document for future reference.

If you would like to see the results of my survey after December 8, 2014, please feel free to contact me using the contact information below. Again, thank you very much for your time and effort!

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Lindenwood Students' Cultural Domain of Female Beauty

Courtney Cox⁹

In this study, the shared cultural domain of female physical beauty on the Lindenwood campus was identified. A cultural domain is essentially, "things that somehow go together" (Bernard 2006, p. 299). The domain is established by systematic use of free lists, a method in which participants list all of the attributes that they can in response to a prompt. A written free list method was selected so that a large group of students could provide their data in a quick and anonymous manner. In this case, the domain of interest was "attributes that are physically beautiful in women." After providing written consent, participants responded to the following prompt: "Please list physical traits that you find attractive in women." Responses were collected until saturation, which occurs when the informants give repetitive answers and nothing new is being mentioned (Bernard 2006, p. 436). Data generated using the free list was used to establish the domain. The domain was arbitrarily defined as any item that was mentioned at least four times. Through analysis, eight items made up the cultural domain, which means there is a tight domain of attributes of attractiveness in women along with many idiosyncratic outliers. In total, the sample included 77 participants at which point the cultural saturation level was reached, which means that through the free listing no new attributes were included.

Keywords: Cultural domain, female, beauty, free list

The aim of this project is to determine the cultural domain of female beauty on Lindenwood University's campus. This study's goal is to establish which traits students on campus view as beautiful in women despite the diverse student backgrounds. Lindenwood University is home to students from each of the 50 states and many countries around the world, but despite the different backgrounds represented, are there overlaps between perceptions of attractiveness? The objective of this study is to answer the following research question: within the Lindenwood University community is there shared understanding of physical beauty in

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women? Through this study, I hope to form the basis of continued research on the role of aesthetics on women's sense of self. By using the attributes from the established cultural domain of the representative sample of Lindenwood students, I plan to assess how women internalize the characteristics of the domain, and to what effect their acknowledgement of the cultural domain of beauty has on self-esteem.

Charles Darwin wrote, "It is certainly not true that there is, in the mind of man, any universal standard of beauty with respect to the human body (Darwin, 1871, p. 337)." Since Darwin's time, many social scientists have argued that perceptions of beauty are a social construct, a product of class and social hierarchical systems. Although the research on female beauty has been extensive, there remain many questions about the differences in perceptions of beauty that can be seen cross-culturally. In our modern age of Photoshop, global communications, and advertising, the boundaries between real and ideal physical beauty are blurred, no matter how unrealistic the ideal may seem. For this reason, the topic of female physical beauty continues to be an important research topic for social scientists. Studies of female attractiveness appear to be driven by the high level of importance that both men and other women place on physical attractiveness, making it highly salient (Fisher, 2006). Although beauty can be influenced by our media outlets, there are seemingly biologically ingrained preferences that transcend our cultural and social influence. Feminist theorists, namely Naomi Wolf, adhere to the social constructionist perspective, which states that female beauty standards and expectations are intertwined with the culture they reside in and are not related to the biological reality. The evolutionary perspective, rather, holds that the emphasis on female attractiveness is universal in nature (Gottschall, 2008). Despite the extensive study of the body, many questions remain; particularly in the realm of cross-cultural comparison (Fisher, 2006).

However, the prevalence of the importance of female beauty is uncontested. In a study of 658 folktales from 13 distinct cultures, researchers have found that if a character is female, her physical appearance is mentioned as much as twice as often than if she were a male (Gottschall, 2008). Through these folktales, it seems that throughout culture and time we as humans have maintained our fascination with women and their physical beauty.

Although there is no unified definition of beauty, many researchers believe that there is a culturally constituted perception of beauty based on shared socialization experiences (Sener, 2013). Studies on cross-cultural perceptions of female beauty have found, in general, that culture has a large impact on the body type that participants find attractive; however, facial beauty seems to be much more universal (Brichacek & Moreland, 2011). Recognition of those who are physically beautiful begins in early childhood development, and several factors of attractiveness are similar across cultures; namely facial symmetry, youthfulness, and proportionality (Vera Cruz, 2013). Brichacek & Moreland (2001) reported that all men in a cross-cultural study, regardless of background, appear to prefer facial symmetry and average features in women. These preferences seem to transcend cultural and media influences. The researchers of this study conclude that there is a high level of agreement on beauty across different cultures in facial characteristics. The preference for facial symmetry may be tied to an evolutionary basis, where left-right bilateral symmetry was tied to health and genetic success (Brichacek & Moreland, 2011). Facial symmetry indicates that an individual did not have extensive exposure to mutations, parasites, and toxins during their development (Wilson, 2013). Evolutionary biology provides much of the understanding that we have of mate attraction and perception of beauty today. Facial symmetry and sexual dimorphism are physical representations of reproductive fitness, which makes cultural variations in this perception more

difficult to understand and classify (Wilson, 2013). This is, perhaps, due to the biological indication of relative fertility as it relates to physical attractiveness in women. Whereas men do not possess a clear connection between fertility and attractiveness, perhaps due to the smaller amounts of variability in male fertility, their physical appearance gives less indication of their ability to produce offspring (Gottschall, 2008).

Wilson (2013) claims that infantile signals that evoke parental responses in their potential mates, including large open eyes, a small chin, and full lips, have an evolutionary advantage when it comes to passing on genes when they are also found in a woman's adult phenotype. Similarly, hyper-female traits that indicate high levels of estrogen, such as big eyes, narrow eyebrows, red lips, and a pinkish complexion are often exaggerated with makeup. Supermodels, for example, tend to have very symmetrical faces, which reinforces their high level of perceived attractiveness (Brichacek & Moreland, 2011). The preference for symmetrical faces has been tested in both modern and traditional populations around the world, and in all of these studies, has proven strong. Our preference for average features is also called koiniphilia, and is a cross-cultural sign of beauty in women. Vera Cruz (2013) studied participants from a study of participants from Mozambique, Brazil, and France showed that despite living in different continents and with distinct cultural backgrounds, similar assessments of women's faces were performed in regard to facial proportionality. Body size and shape, on the other hand, seems to have a larger variation between cultures (Wilson, 2013).

It appears that many of the quantifiable measures of attractiveness are not cross-culturally consistent (Fisher & Voracek, 2006). Although beauty is abstract, quantifiable measures of the female body, such as the waist-to-hip ratio and body mass index can be used for comparison of the physical body (Brichacek & Moreland, 2011). Body mass index seems to be contingent on

the amount of resources that a group of people have access to. In areas where there are low levels of resources, women with higher body fat are considered more attractive, while in areas of abundance, thinner women are considered more beautiful (Fisher & Voracek, 2006).

In a study similar to my own, university students were surveyed on their preferences of women's attractiveness, and significant differences in the results based on gender and racial differences were apparent. In this study, men and white respondents were most likely to have extreme preferences regarding their physical perceptions (Sewell, 2013). After 300 participants completed the survey, the variables that had statistically significant relationships with the race of the respondent were skin, eye, and hair colors, along with body type. This contradiction with previous research that said that racial background only caused changes in the perception of the physical body and not the facial structure indicates that more research needs to be done on the subject. Beauty appears to be situational, and the roles that an individual holds, as well as other extraneous factors may influence the perception of beauty (Sewell, 2013). Concluding a relationship between cultural diversity and perceptions of beauty is difficult; however, the role of the social context on these perceptions is strong.

An example of the role of social context in perceptions of beauty in women historically is the preference for pale skin in the Victorian era. According to the International Communication Association (2012), at that time, tan skin was considered to be for the low class, working society, but in the 1950s, darker skin began to become the ideal. Since this change, tan skin is often associated with beauty in the United States, as evidenced in my study. Women are often held to a higher standard for their physical attractiveness than are men (Gottschall, 2008). Cultural concepts of beauty in one area may seem extreme in others, such as neck elongation in Southeast Asia and Chinese foot binding. The International Communication Association (2012) exhibits

how women around the world are held to different standards based on their cultural and historical locality. Global ideals of beauty are communicated through mass media and print advertisements, in particular. By examining the differences between the apparent objectives of these advertisements cross-culturally, it appears that most magazines in the United States focused on bodily beauty, whereas similar magazines in Singapore and Taiwan focused much more on facial beauty.

With advertisements proposing the beauty ideal, many fashion magazines, specifically *Cosmopolitan*, which has an international following, transmits this ideal of beauty via ads which vary from country to country (Sener, 2013). These different views of beauty not only help sell specific products, but they also reinforce the large scale perceptions of physical norms for readers. In a recent study by Dove on women, over two-thirds of the women surveyed felt that beauty was very narrowly and specifically defined. These findings also showed that 90% of the women wish that they could change something about their body, and a strong relationship between appearance satisfaction and self-respect was also noted (Sener, 2013).

Although advertisements do have a role in homogenizing cross-cultural images of beauty, variation still remains (Bjerke, 2006). Yet, it is important for social scientists not to make generalized assumptions of a participant's taste in attractiveness based on their background and cultural norms (Wilson, 2013). Despite the images of perfection presented by advertising companies around the world, there are differences that remain between cultures. Some attributes, such as hair color, which can be changed fairly easily and inexpensively, are much more culturally variant as opposed to eye color, which cannot be changed (Bjerke, 2006). Some cultures are much more definite about their physical preferences and finding these trends is

difficult; however, hair and eye color often seem to be one of the most often mentioned characteristics of beauty in women (Bjerke, 2006).

In the modern age, with Photoshop used to warp models into perfect and unattainable images, it is no surprise that many consumers have a resulting unrealistic body image. Adolescents seem to be particularly vulnerable to this influence. As written by Diller (2014), many celebrities and models have seen the influence of Photoshop on their own advertisements and magazine cover shoots, and have now taken positions of advocacy against its use. Diller (2014) also writes that The American Medical Association, in particular, has taken a stance against advertisement manipulation, citing the contributions between Photoshop use and unrealistic physical expectations, emotional trauma, and eating disorders. Other professional opinions have been mixed; physicians have found links between photo distortions and eating disorders (Diller, 2014). Due to the large impact that our perceptions and reactions to physical beauty in women have on our increasingly global society, further research on cross-cultural assessments of beauty should be completed. Through such studies, we will better understand the impact of globalization on perceptions on young women growing up in a world inundated with diversity and modification. The resulting impact on their sense of selves may be powerful, and should be assessed fully.

My research is within the field of cognitive anthropology, which focuses on how people think about the people, objects, and events which make up our world (D'Andrade, 1995). This type of study is important in anthropology because these perceptions help us understand how we classify our experiences, and the role that they have in our interactions. Cultural domain analysis has become more popular with the growth of applied anthropology, especially within the field of cognitive anthropology (Borgatti, 1994).

According to Bernard (2006, p. 299), cultural domains are “things that somehow go together.” Through the study of a cultural domain, researchers are able to study how we relate external objects together within the confines of our minds (Bernard, 2006). I have completed this research due to my curiosity about how Lindenwood, as a campus, perceives female beauty, taking into consideration the geographic diversity of the students enrolled in the university. For this reason, I expected the domain of the students to be wide with a large amount of idiosyncratic outliers and few points of agreement. In order to test this hypothesis, I collected data from students in General Education World History (HIS10000) classes through the method of free listing.

Method

Participants

I collected my data from Lindenwood University students in General Education classes of World History (HIS10000). This particular course was selected because it is a course in which all students are required to complete prior to graduation. Students of all majors, age, and backgrounds enroll in World History courses, so it provided a representative sample of Lindenwood University’s students. However, only students over the age of 18, who are able to consent to their participation without parent or guardian permission, were eligible to participate in this study. I visited and collected data from classes in which I received approval of their professors, whom I contacted via email (see Appendix A) to inquire if they were willing to allow me to visit their class. In the email I explained that I would like to spend a few minutes collecting data from consenting participants during class time. Once a professor approved of my request, I visited his or her HIS10000 class and recruited participants through a memorized script (see Appendix B). For these students, participation in the study was optional, and no extra

credit or compensation was given for completion. I brought candy for whoever chose to take some regardless of whether they took part in the study or not.

After attending 4 classes, I was able to obtain free list data from 77 participants. Through this sample, I was able to reach saturation, which means that the participants were not contributing any new attributes to their lists, signifying that the cultural domain had been reached. Although 3 participants did not answer the demographic survey, of the 77 participants, 32 were identified as men and 42 as women. The participants spanned a large range of age, from 18 to 49. The average age of respondent was 22. In response to their race or ethnicity, 4 students identified as Asian or Asian American, 2 indicated that they were Black or African American, 2 consider themselves to be Hispanic or Latino, 65 were Non-Hispanic White. Of these students, 12 were international students who have primary citizenship outside of the United States. This sample had students of all years of study, indicating a wide variety of academic backgrounds in addition to the diversity in terms of international or domestic status, age, and race/ethnicity of participants.

Materials and Procedure

After recruiting professors who allowed me to survey their students at the end of one of their World History (HIS10000) classes, I pre-arranged a date to attend their classes and collect my data. Once in the classroom, I introduced myself and recited the memorized pre-written oral recruitment script (see Appendix B). I provided information about the objectives of my study and the involvement of the students as possible participants. I emphasized that participation is completely optional, and that no extra credit or incentives would be given. With this established, I distributed informed consent forms (see Appendix C) to the entire class, and gave them the chance to read it to decide if they would like to participate. Since everyone received the

informed consent form, those who later decided not to participate are not singled out and made to feel uncomfortable for their choice not to take part in the study. I instructed those who planned to participate to sign the form, and those who did not to leave the form blank. After sufficient time had passed, I asked all of the students to pass their forms forward. Those who choose not to participate turned in the blank page and left the classroom at this point.

I then distributed the research instrument, with a blank sheet of paper listing only the free list prompt (see Appendix D) which said, "Please list physical traits that you find attractive in women." on one side, and a short demographic survey on the other. A free list is a great tool for making inventories because it reveals cultural salience and variation, but it will not represent the total knowledge of the participants. Participants are asked to produce as many words that they associate with the prompt that they can. I chose a written free list so that I could have a large group of students provide their data in a quick and anonymous manner.

I reminded participants that their responses would be confidential, and that it was of most importance that they provided their own list without input from others. This experiment took only a few minutes, but no time limit was imposed, so no time taking device was used. After constructing their free lists, the participants completed the reverse side of the sheet, which asked basic demographic questions (see Appendix E).

I reminded the students to work independently and directed where they should pick up a debriefing form (see Appendix F) upon completion. I also offered some candy for after the study and indicated that all completed instruments must be turned into a manila envelope at the front of the room, and then left the room. Once every participant had completed the study, I re-entered the room and collected the manila envelope containing the free lists and demographic surveys. After collecting the surveys, I analyzed the results with Anthropac 4.98 (Analytic Technologies,

1996), which is a program designed for cultural domain analysis through use of cognitive mapping and the construction of domain matrices. First, I entered my demographic data into a spreadsheet and my free list data into a document for upload into Anthropac. From my data collection, I received free lists from 77 participants and cleaned the data in Anthropac, which means I collapsed overlapping categories. For example, if participants wrote responses such as “tan skin” and “tanner skin,” I would collapse them together to reduce the amount of categories. After cleaning my data with the help of Anthropac’s language recognition feature, I had 87 distinct attributes remaining.

Many of these attributes were mentioned only a few times, making them idiosyncratic outliers for this sample, and not a part of the cultural domain. Most of these characteristics were individual preferences such as small hands, while some of the items that were mentioned only several times were surprising for their prominence in the pop culture discussion of aesthetics, such as the thigh gap. Anthropac calculated the frequencies, along with producing statistics such as the mean, standard variation, and salience measurement.

Results and Discussion

From my analysis with Anthropac, I conclude that my representative sample of students at Lindenwood University have a very strong cultural domain of female beauty. Despite the demographic differences between the students in my sample, many attributes were mentioned by a large percentage of the representative sample, which means that we have a strong domain. The items in the domain were arbitrarily sorted based on number of mentions after cleaning was completed. The items that were mentioned four times or more were included in the cultural domain.

In total, the lists had 87 separate attributes listed, but the components of the cultural domain included hair, eyes, smile, teeth, athletic build, lips, legs, a clear complexion, natural beauty, and a tan. Hair was mentioned most often, 54 times, in fact, which means that 71% of the students who responded included hair on their free lists. The average rank of hair was 1.926, which means hair was mentioned near the top of the free list, usually the first or second attribute. The second most mentioned characteristic was eyes. It was included 47 times and on 62% of the free lists. It was mentioned lower, on average, on the free lists with the average rank at 3.149. The attribute with the third highest number of mentions was a smile, with 38, or 38% of participants including it on their free lists with an average rank of 2.421. For additional information on the specifics of the entire cultural domain, see Table 1. The limited number of items in the domain reflects agreement among members of the sample.

Unfortunately, some of the free lists that I received were very general and did not provide descriptive attributes. Because the free lists were constructed after the participants were released from class, some of those who did participate did not put in their sincere effort. Several of the classes I attended coincided with lunch and dinner times, so some students did not put in extensive effort. A portion of the lists were very short, listing only a few general items. Although I took every precaution to ensure that I maintained the privacy of the participants during recruitment, some of the responses seemed guarded and not at all comprehensive. However, I do think that the written free lists were the better of the oral alternatives, because the anonymous nature of the data collection was maintained and if participants felt inclined to include information they would feel uncomfortable listing out loud, they could do so at their discretion. Another limitation of this study was my lack of familiarity with Anthropic. The

program has quite a few glitches, as it is on an outdated operating system, and several technological hold ups have slowed the analysis of the free list analysis.

The characteristics that were mentioned in a large amount of free lists included hair, eyes, smile, teeth, athletic build, lips, legs, and a clear complexion despite the diversity of the students in my sample due to their age range, country of citizenship, and academic background. Thus, with this tight cultural domain, I have established that in my representative sample, there is a shared sense of beauty in women on Lindenwood's campus. There were many idiosyncratic outliers that had fewer mentions, which means that their inclusion on the free list is attributable to individual preference and not cultural agreement. In connection to my literature review, my results were in line with past studies on perceptions of beauty in women. The literature concluded that preferred facial characteristics are cross-culturally similar, and bodily attributes are more variant. Of the items in the cultural domain, seven of the eight were facial features, whereas only one was related to the body. This shows that there is a cultural agreement on facial characteristics, and most of the bodily attributes were idiosyncratic. The smaller amount of mentions for body characteristics may indicate some sort of taboo against discourse about the body for participants.

Through my work on the current project, I have sparked several additional research goals for future study. I suspect that the short responses on many free lists may have been as a result of the discomfort that many students felt describing beauty in women. Perhaps the stigma for both men and women of being too critical or derogatory regarding women's appearance was a factor that limited the responses. Through my data entry; however, I did notice that most of the women put longer and more detailed responses than the men. What influence would changing the prompt of my free list and making it about men instead of women have on the responses from

both sexes in a repeated experience? Would the women provide more extensive responses, yet again, or would the men give more detailed answers? Are we more likely to give critical responses if we are considering our own bodies?

In addition to repeating this study for male traits of attractiveness, I plan to assess self-esteem among women in relation to these established cultural domains of Lindenwood University. I plan to construct a survey with a measure of assessment based on the domain reported in this paper, and then attach an additional instrument to assess participants' self-esteem. This way, I will be able to measure the relationship between internalization of the cultural domain, and the correlation its association with the participants' has on the sense of self. After analyzing my results from my free list data collection regarding physical traits that participants find attractive in women, I have found that the cultural domain is strong, and despite the diversity on campus, there are many shared perceptions of beauty on Lindenwood University's campus.

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Appendix A

Recruitment E-mail

My name is Courtney Cox, and I am a senior anthropology and sociology student here at Lindenwood. I am starting a study about Lindenwood students' understanding of physical beauty in women. I have received Institutional Review Board (IRB) approval with the help of my research advisers, Dr. Nohara-LeClair (psychology) and Dr. Dames (anthropology). In order to avoid influencing my research participants and to obtain data from a broad array of potential participants, I am seeking professors of World History general education courses (HIS10000) who are willing to let me administer the instruments below during their class time. Participation in this study should be optional for your students, and no extra credit of any kind should be given to those who participate. In all, this exercise will take between 5 and 10 minutes of your class time.

If you would like more information before deciding if I would be able to come to your class to briefly survey students, please let me know.

At your earliest convenience, please reply if you are willing to help me with this research.

Thank you in advance for your consideration,

Courtney Cox

cec834@lionmail.lindenwood.edu

Appendix B

Script for P.I. Administering the Instruments in GE Classes

“Hi, I’m Courtney, and I’m a student researcher starting a study in cognitive anthropology and trying to find out how LU students think about beauty in women. This study is optional, and no extra credit will be given for your participation. I will now distribute an informed consent form. Please read this form, and sign it if you would like to participate. If you do not wish to participate, please don’t write on the form.”

(Wait for the students to sign the form, if they so choose for 10 seconds)

“Whether or not you signed the form to participate, please pass the papers forward. I will now distribute this sheet of paper with the written prompt and a survey on the back. If you have chosen to participate, please fill out both sides. If you have not chosen to participate, please turn in the blank form. The prompt says “Please list physical traits that you find attractive in women.” Please remember that your responses will be completely confidential, and the researcher will not see the responses in connection with your name. It is very important that you provide your own list without input from others. If you decide to participate, please write as many characteristics as come to mind, and then fill out the demographic survey. Whether or not you participated, please turn in the form by putting it in the manila envelope at the front of the room before you leave. Please pick up the debriefing letter and the consent form with some candy on your way out. Thank you in advance for your participation.”

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project where I will be asked to list physical traits that I find beautiful in women and to complete a demographic questionnaire. I understand that I should be able to complete this task within 10 minutes. I am also 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. By signing this informed consent form, I acknowledge that I am at least 18 years old. I understand that any questions I may have regarding this study shall be answered by the researcher involved. I understand that I can receive a copy of this form and the debriefing form when I exit the room.

_____ Date: _____

(Signature of participant)

Student Researcher's Name and Number:

Courtney Cox

cec834@lionmail.lindenwood.edu

Faculty Advisers' Names and Emails:

Dr. Christina Dames

cdames@lindenwood.edu

Dr. Michiko Nohara-LeClair

mnohara-leclair@lindenwood.edu

Appendix D

Please list physical traits that you find attractive in women:

Appendix E

Demographic Survey

Please provide the following information about yourself.

- 1) What is your gender? _____
- 2) What is your age? _____ years
- 3) What is your race/ethnicity? (Circle all that apply)

- A) American Indian/Alaska Native
- B) Native Hawaiian/ Pacific Islander
- C) Asian or Asian American
- D) Black or African American
- E) Hispanic or Latino
- F) Non-Hispanic White
- G) Multiracial/Multiethnic

- 4) Are you an international student?

YES or NO

- 5) What year of study?

- A) Freshman
- B) Sophomore
- C) Junior
- D) Senior
- E) Other

Appendix F

Debriefing Form

Dear Participant,

Thank you very much for participating in this study. This study seeks to understand the similarities in the way that we, as a campus community, view physical beauty in women. The results will help us understand more about the culture of Lindenwood University, and will be used for the basis of future studies.

If you have any questions about this study or if you feel any discomfort from this study please contact one of the following individuals:

Courtney Cox

Dr. Dames

Dr. Nohara-LeClair

Student Researcher

Anthropology Professor

Psychology Professor

cec834@lionmail.lindenwood.edu

cdames@lindenwood.edu

mnohara-leclair@lindenwood.edu

Table 1

The Cultural Domain of Female Beauty

	<i>Item</i>	<i>Frequency</i>	<i>Percent</i>	<i>Average Rank</i>
1	Hair	54	71	1.926
2	Eyes	47	62	3.149
3	Smile	38	50	2.421
4	Teeth	23	30	1.000
5	Athletic	18	24	1.556
6	Lips	9	12	5.889
7	Legs	9	12	2.889
8	Clear Skin	8	11	5.750
9	Natural Beauty	7	9	3.000
10	Tan	6	8	2.667

Relationship between Social Category and Third-Party Perceptions of Crime

Sara Roderick¹⁰

How social category affects observer perceptions of crime is an interesting topic that can yield many interesting results. Previous research has shown that the social category of individual can hold some influence on how the individual is perceived. Some studies focused on the dispositional qualities attributed to individuals solely based on social category, while other were more concerned with third-party responses to individuals based on social category. Within that same line, this study hoped to replicate findings by Lieberman and Linke (2007) which indicated that the social category of a perpetrator of a crime did indeed have an effect on observer perceptions of that crime. Lieberman and Linke (2007) utilized a between-participants design, while the present study hoped to replicate those findings using a within-participants design. Two surveys were constructed presenting different crime scenarios with perpetrators of varying social-categories. Participants rated three measures relating to the crime such as: how morally wrong the crime was, how much punishment the perpetrator should receive, and how remorseful the perpetrator would be. Ultimately, there were no significant results in regards to social-category, or familiarity, of the perpetrator and crime ratings, but future lines of research are uncovered in relation to degree, or severity of crime committed.

This study's main goal is to determine if social category will have an effect on how an observer of a crime judges the offender of said crime. How does the offender's closeness to the observer (familiar versus unfamiliar) affect how morally wrong the observer rates the crime, how severe of punishment is dealt to the offender, and how remorseful the observer thinks the offender will be? I hope to find out by building upon previous research conducted by Lieberman and Linke (2007).

Lieberman and Linke (2007) also looked at how the social category, or identity, of an offender affected observer perception of a crime committed. They utilized a between-participants design, presenting each participant with one scenario and having him/her rate the moral wrongness of the crime in the scenario received, along with the levels of remorse attributed to the perpetrator of the crime, and how harsh of a punishment should be dealt. The only difference

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in the scenarios given to each participant was the identity of the offender of the crime (family member, schoolmate, or foreigner.)

Lieberman and Linke (2007) found that the crime described to participants was rated as having the same levels of moral wrongness regardless of the social category of the offender. They also found however, that harsher punishments were given to out-group individuals (foreigners, followed by schoolmates) and more lenient punishments were given to in-group members (family members). Additionally, it was found that family members were attributed the highest levels of remorse, followed by schoolmates and foreigners.

First and foremost, before delving into how social category effects judgment and punishment, it may be beneficial to examine how social factors can influence the attributions people make towards others in general. In order to obtain a better understanding of how social-values can have a significant effect on what individuals attribute the behavior of others to, a study by Seta, Schmidt, and Bookhout (2006) looks at how observer social-values influence how that observer attributes causation. Within the study, participants were made to watch videotapes of a group interaction involving members from two different groups, the Greek group (college students in a sorority/fraternity) or the Independents (unaffiliated college students). Each participant was made to answer questions about the group and, in particular a target member. Unbeknownst to the participants, they all were watching the same target member, a member of the Greek group. Group membership was designated by a colored name tag on each of the group members.

The purpose of Seta et al.'s (2006) study was to see how participant social-identity orientation affected how readily participants attributed the opinions and behaviors of the target group member to social category and, on the other hand, dispositional factors. Social identity

orientation was defined by Seta et al. (2006) as how much of one's identity is dependent on social factors, such as how one appears to others. Participants in the main study were administered the AIQ, a questionnaire to discern social identity orientation, and only those participants scoring as either significantly high on social identity or significantly low were recruited. In accordance with Seta et al.'s (2006) hypothesis, that those high in social identity were more likely to attribute the Greek member's behavior and opinions to his Greek membership, while participants low in social-identity did not distinguish significantly between social category and dispositional factors.

Seta et al.'s (2006) study is a great introduction to social category as a means of attribution, and demonstrates how an observer's own perceptions can alter how events are perceived in relation to social category and social identity. By better grasping how social category can affect observer perceptions and how, in turn, observer perceptions can affect perception of social category new questions can be asked in regards to other area influenced by social category.

It is also important to establish a thorough history of research looking at the possible effects social category can exert in regards to decision making and passing judgment. In a study by Gummerum, Takezawa, and Keller (2009), the social category (in-group versus out-group) of interaction partners was found to have an effect on how participants responded when playing economic games. The main goal of Gummerum, et al. (2009) study was to examine altruistic behavior in relation to social category, but the researchers' results are applicable when examining how social category affects perception as a whole.

Gummerum et al. (2009) used three different economic games to examine different aspects of altruistic behavior in regards to social category. They investigated sharing in "the

dictator game,” reciprocity in a “sequential prisoner’s game,” and altruistic punishment in a final third-party punishment game. The dictator game involved participants, told they were playing against either in-group or out-group members, allotting “coins” to the other player (the responder). Gummerum et al. (2009) hypothesized that participants would “give” more to in-group members, which turned out to be supported by the results. In the next game, the “prisoner’s dilemma,” participants were told that they were given a certain number of “coins” by an anonymous second player, and the in-group versus out-group status of that player. The researchers hypothesized that there would be no significant difference in reciprocity rates based on group status. This hypothesis was supported in the results, for no significant differences were found.

Finally, and of most interest in relation to my own study, are Gummerum et al. (2009)’s trials involving the third economic game, the one featuring “altruistic third party punishment.” In the third part punishment game, participants were made to spend some of their “coins” to punish a non-cooperator within the game. Participants were cued as to the non-cooperator’s identity as an in-group or out-group member. In-group members were predicted to actually receive more punishment from the participant than would out-group members. The results of the study support the hypothesis, citing the reason as possibly being based in altruism, as harsher punishment of in-group members may reflect a greater desire to bring in-group members back into the fold, so to speak, or in other words, encourage in-group members to start cooperating (Gummerum et al., 2009).

Overall, I believe the results obtained by Gummerum et al. (2009) do stand out as a testament to how social category can affect interactions and perception, especially when it comes to judging and making decisions related to other individuals. Even in the other economic games

not related to punishment, social category was a factor in how the participants responded, though it seemed to have less of an effect in the case of reciprocity. Overall, Gummerum et al.'s (2009) study is a revealing look into how social category can make even more of a difference in participant perception.

Gollwitzer and Keller (2010) also examined how in-group and out-group status can influence decisions about severity of punishment. However, they wanted to look at how crime frequency specifically moderates the severity of punishment given. For example, the researchers were interested in how severity of punishment differed between first time, in-group offenders and repeated in-group offenders. Gollwitzer and Keller (2010) sought to compare the effect of offense frequency to both repeated and first-time offenders that were members of an out-group and of an in-group. Drawing upon previous research, Gollwitzer and Keller (2010) wished to look more exclusively at the factors that moderated in-group versus out-group punishment severity instead of group membership and punishment exclusively.

Gollwitzer and Keller (2010) hypothesized that offense frequency for out-group members should not affect severity of punitive punishment at all, while, for in-group members, there should be a difference in the severity of punishment depending on the first or repeated offender status of the offender. To be more specific, repeated, in-group offenders would receive harsher punishments than first-time, in-group offenders. Gollwitzer and Keller (2010) explained that repeated offenses by an in-group member made it more difficult to attribute the offensive behavior to situational factors, which resulted in a greater threat to overall group cohesion and maintenance. On the other hand, all out-group offenses, repeated or otherwise, would be seen as an overall threat to one's group and therefore offense frequency would not play as significant of a role.

Gollwitzer and Keller (2010) tested their hypothesis by presenting psychology students with a packet containing a vignette in which a fellow psychology student (in-group) or a biology student (out-group), violated a rule and was caught. Students were asked to rate their levels of outrage/anger, how severe of a punishment the offending student should receive, and to what degree they felt that societal cohesion had been threatened by the act. They found that their hypothesis was indeed supported, and offense frequency did affect the participant's ratings for in-group offenders but did not seem to have any effect on the judgment of out-group members. In line with Gollwitzer and Keller's (2010) hypothesis, repeat-offender in-group members were punished more harshly, were the target of greater amounts of outrage, and were perceived as a greater threat to societal cohesion. On the other hand, first-time in-group offenders were subject to what the researchers deemed the "benefit of the doubt" effect, in which the first-time offender's transgressions were not met with as much anger, perception of threat, or punishment degree. The offense frequency had no significant effect for out-group offenders.

The study by Gollwitzer and Keller (2010) was indeed an interesting one, for it demonstrates the varying ways in which social category could affect judgment. Beyond the implications of social-category itself, it also seems possible that social-category mediates how many other variables come into play, according to the results obtained. This proposition makes the true significance of social-category even more interesting, and I look forward to examining it more closely.

Further research by Wohl and Branscombe (2005) explored social category as it applies to larger groups – focusing on the in-group versus out-group differentiation, and citing previous research describing the hostility typically associated with out-groups and the cooperation and inclusiveness typically associated with in-groups. Wohl and Branscombe (2005) hoped to

examine how recategorization of a group's social category affected the perception of that group by a formally opposed group. In essence, the researchers explained, there are three different levels of social categorization: personal, social, and human. The "personal" level is one's individual category that differentiates one from even in-group members. The "social" level is the true origin of "in-group" versus "outgroup" as it involves the orientation of individuals into distinctive social groups. The third level, "human," is the most inclusive and includes everyone on a species level – in effect making all humans part of one group, and all non-humans the new, ultimate, "out group." Wohl and Branscombe (2005) sought to build upon previous research on this topic by testing its effect on larger populations in which no specific individual interaction occurs – as was the case in most previous research. The individual interaction present in the cited, previous experiments could have interfered with the manipulation of social category in its most basic form.

This being the case, Wohl and Branscombe (2005) decided to conduct four studies examining the effects of social recategorization on larger group with little personal interaction. The populations utilized in this research were German people and Jewish people, and Native Canadians and White Canadians – groups firmly in opposition to each other. The researchers hypothesized that by recategorizing "Germans" into "Humans," the Jewish group would be more inclined towards forgiveness and would lessen the expectation of collective guilt. Collective guilt is a term for how much remorse the offending group is expected to feel in regards to what they did to the victimized group. This same effect was hypothesized for both group sets, Germans and Jews, and Native and White Canadians.

In their first experiment Wohl and Branscombe (2005) used an online survey that Jewish college students, recruited from a school organization, took one of two versions of. In one

version, the “social” version, the Holocaust was framed as being an act of genocide perpetrated by Germans towards the Jews. In the “human” condition, the Holocaust was framed as an act of genocide committed against *people* by other *people*. Participants were then asked to respond, in Likert scale format, to questions asking to what extent modern day German should be held accountable for the action of their ancestors, and how capable and/or willing modern day Jews should be to forgive modern-day Germans for the acts of their ancestors. The researchers’ hypothesis was supported in that those who received the “human” categorization level survey gave ratings more indicative of forgiveness towards modern day Germans and less expectancy that modern-day Germans should be remorseful.

In their second study, again examining the groups of German people and Jewish people, Wohl and Branscombe (2005) tried the same experiment only using a different manipulation of the social-category-level variable. The “human” level survey remained the same, while the “social” level was altered to include less bias-sounding language. In this updated study, the social-level survey included the exact same phrasing as the human-level survey, only it also included a section where the participant indicates if he or she is Jewish or if German decent. In this way, the two group identities were still made prominent while avoiding the biased, blaming language. The results found in Wohl and Branscombe’s (2005) first experiments were replicated using this altered manipulation technique -- further supporting their hypothesis.

In the third experiment, Wohl and Branscombe (2005) sought to examine the effects of social categorization level using another set of oppositional groups. Instead of “German” and “Jewish,” the researchers tested their hypothesis with “Native Canadian” and “White Canadian.” The methodology was much the same as that used in the researchers’ second experiment, the only difference being the labeling of the groups and the crime (“intergroup harm” instead of

“genocide.”) The hypothesis of the researchers was supported, as Native Canadians showed higher rates of willingness to forgive and less attribution of collective guilt in the human-level social category condition than they did in the social-level condition.

In their final experiment, Wohl and Branscombe (2005) returned to examine the German and Jewish populations. The researchers used the same experimental conditions as their previous experiments, only this time the surveys also included question about how similar the participants felt Germans were to themselves, and how similar they felt modern-day Germans were to Nazi-era Germans. The previous results were replicated between the social-level and human-level social categorizations, but it was also found that Jewish participants found a greater difference between modern-day Germans and Nazi-era Germans in the human-level social category condition than did the participants in the social-level social category condition. Further in accordance with Wohl and Branscombe’s (2005) hypothesis, Jewish participants rated themselves as more similar to Germans if they were in the human-social category level condition.

Overall, the results obtained by Wohl and Branscombe (2005) are extremely interesting and revealing. The effect of social category on group perceptions appears clear, and it is very enlightening to see how these effects appear in larger-scale populations. The idea that social-category can influence perceptions to the degree discovered by the researchers is promising in that it hints at the further implications social-category may hold in regards to the perceptions of both in-group and out-group members about other opposing, or offending groups.

Further research conducted by Grier and McGill (1999) also helps to illustrate how social category can influence the perceptions of observers. The researchers Grier and McGill (1999) wished to examine observer causal comparisons and explanations for the behavior of other people. Specifically, the researchers wished to examine what factors moderate whether or not the

observer attributes the behavior of the observed to individual characteristics (within-group comparison), or social-category (across-group comparison). The researchers hypothesized that how typical the race of the observed is perceived to be, in relation to the activity being performed, will have an effect on which type of comparison, within-group or across-group, the observers will utilize. In this manner, it is hoped that the effect of social-category on perceptions of causality will become apparent.

In a pilot study, Grier and McGill (1999) established which activities were associated with which races of people. This study took place in South Africa, and examine the four main races of that area, described by the researchers as: White, Black, Colored, and Asian. One the results of the pilot study established the association between activities and race, the researchers constructed three different scenarios for the participants of the main study to read. Each scenario featured an actor whose behavior was to be explained by the participant. Following the scenario, participants were asked to explain the behavior of the actor in the scene they have read. Participants also rated hoe “informative” it would be to rate the actor’s behavior in relation to members of his (all actors were male) racial group or members of the opposite racial group. In accordance with their hypothesis, Grier and McGill (1999) found that race-related explanations (or across-group comparisons) were made when the race of the actor was atypical of the activity being performed.

The finding that the social-category of an individual can influence the types of causality attributed to his or her actions is very interesting. Grier and McGill (1999) were able to report the differences in the ways in which participants explained the actions of the actor in each scenario, and the interesting conclusion that the researchers arrived at is further testament to how influential the social-category of a person is when it comes to observer perceptions of that person.

Only further research can help clarify the poignant findings of Grier and McGill (1999), as well as the other studies reviewed hitherto.

More in line with my own study, as it is a more recent rendition of the original Lieberman and Linke (2007) study, was conducted by Linke (2012) in order to examine social category in relation to third-part perception of crime, but using a younger population of children in the fourth to ninth grade levels. Once again, Linke (2012) had participants read a scenario in which the only difference between participants was the identity of the offender of the crime. Linke (2012) utilized a between-participants design to collect data on how the subjects rated the crime across a few different variables: the perceived severity of the event, the punishment thought to best fit the crime; psychological states -- this time slightly more fleshed out to include remorse, selfishness, and probability of recidivism attributed to the perpetrator; overall emotional reactions to the crime; and how morally wrong the crime was perceived to be (Linke, 2012).

Although Linke's (2012) study also included a second experiment relating to the social category of the *victim*. I am mainly interested in the results of the study in which the offender's social category was varied, however, as it falls more in line with the past Lieberman and Linke (2007) study, and therefore, with my own. Linke (2012) did indeed find that the crime was rated as less severe when the perpetrator was socially close to the third-party observer (family member). Levels of punishment seemed to remain fairly constant regardless of social closeness, which is speculated to be a by-product of the relative innocuousness of the crime in question (Linke, 2012).

Linke's (2012) study also found that social closeness did seem to have an effect on rates of forgiveness, with family members being allotted more forgiveness than classmates, and lastly, foreign visitors. It was also found that higher levels of remorse were attributed to in-group

members as well as lower levels of selfishness and recidivism. Out-group members did receive higher ratings of possible recidivism and were perceived as less remorseful. Linke's (2012) findings are very interesting, but I would still like to try and replicate similar finding utilizing a within subjects design.

As for my own study, I hope to replicate the results obtained by Lieberman and Linke (2007) utilizing a within-subjects design along with other modifications to the original study design. I predict that the social-category of the offender will have an effect on how the offender is perceived as far as how remorseful he or she is, how much punishment he or she deserves, and how morally wrong the offense was. In line with Lieberman and Linke's (2007) findings, I predict that the more familiar an offender is, the more remorse will be attributed and the more lenient the punishment dealt will be, however, I predict that how morally wrong the crime is deemed will not be effected by the social-category of the offender, as was the case in the original research.

If my hypothesis is supported, it would reinforce the findings of Lieberman and Linke's (2009) study, adding further credibility to the claim that the social-category of an offender influences perception of the offense. The use of a within-participant design is meant to demonstrate more concretely the differences that are potentially inherent within individuals regarding perceptions of an offense, while allowing for an examination of how crime severity also influences any possible effects of social-category or perception – components not featured in the original study by Lieberman and Linke (2009).

Although the results found in some of the previous research examined above in relation to social category and third-party punishment are contradictory to my own hypothesis, such as those found by Gummerum et al. (2009), those studies featured various points of interest, and

therefore each had a slightly different focus. For example, going back to Gummerum et al. (2009), the researchers were more interested in altruistic punishment and not in specific criminal incidents as is the case in Lieberman and Linke's (2007) study -- and therefore my own. Even so, all of the research examined above demonstrates how social-category can play a significant role in how events are perceived and responded to.

In my own study, participants will read eight scenarios, four of which are misdemeanors (thefts under \$500.00) while the remaining four are felonies (thefts over \$500.00.) The monetary values of each theft will vary within the crime classifications, with half of the misdemeanor crimes detailing theft of \$50, and the other half thefts of \$100.00. The felony-class crimes involve two thefts of \$600.00, and two thefts of \$800.00. The social category of the offender will vary between scenarios. In half of each set of crimes the offender will be a "familiar student" while the other half will be an "unfamiliar student." Following each scenario, the participants will rate the three measures (moral wrongness, magnitude of punishment, and levels of remorse) in relation to the offender. I plan to use the varied monetary value and severity of crime to discover if the pattern found in the study by Lieberman and Linke (2007) still holds across the various levels of crime.

Method

Participants

The participants recruited for this study were all Lindenwood University, undergraduate students. Since all participants were recruited through the Lindenwood Participant Pool (LPP), all subjects were either 18 years of age or had a recent parental consent form on record with the LPP. Overall, LPP members are entry-level psychology, sociology, anthropology, and exercise science students, currently enrolled in a class that had signed up for LPP participation for the

semester during which data will be collected. All LPP participants have the incentive of participating in research for LPP Credits, which can then be applied as extra credit in the participating class. All studies recruiting from the LPP are posted online, on a website run by Sona Systems that tracks and monitors participation in posted studies.

Materials and Procedures

In order to have access to this study, which consisted of an online survey hosted on SurveGizmo (See Appendices A and B), participants had to sign up through the Sona Systems web page. The Sona Systems webpage, in addition to displaying all other currently active studies, also displayed a brief description of each study which the participant could read before deciding to sign-up. If the participant did decide to sign up for this study, he or she was directed to another page that contained a link to the survey on SurveyGizmo. The SurveyGizmo survey briefed the participants on their rights, and provided an overview of the study by way of the informed consent statement (see Appendix C). If the participant decided to agree to the consent statement, he or she was then directed to the beginning of the survey itself. Once completed to whatever extent the participant chose, the feedback statement was then displayed, containing a debriefing on the study itself as well as how to reach the P.I. should one have any questions or concerns (See Appendix D). The participants still received compensation, in the form of extra-credit, whether the survey was completed or not.

The survey itself consisted of eight total scenarios, half describing misdemeanor-class thefts and the remaining four describing felony-class thefts. After each scenario, participants were asked to rate the three measures being examined (moral wrongness, magnitude of punishment, and levels of remorse) in relation to the offender's identity, or social category, in each scenario. The offender's social-category altered between a "familiar" and "unfamiliar"

fellow student. The survey was also split into two separate versions. There were two versions of the survey in order to vary which scenarios participants saw in relation to the perpetrator of the crime featured in the scenario. This was done in an attempt to reduce the effects of any potential extraneous variables in relation to the wording or content of the scenarios that was not associated with offender social category or crime severity. For example, in one version of the survey the perpetrator of the low-level misdemeanor crime was “familiar,” while in the second version he/she was “unfamiliar.” Survey versions were switched out on Sona Systems half way through data collection, so each version was available for an equal amount of time. Once all data were collected, the surveys were scored, and offender and crime types were compared across the three measures of moral wrongness, magnitude of punishment, and levels of remorse were compared in relation to the offender of each crime.

Results

Six total repeated measures analyses of variance were conducted to examine the data gathered from 37 total participants ($n = 37$). The first three ANOVAs conducted analyzed morality, punishment severity, and remorse attribution for misdemeanor crimes, while the remaining ANOVAs analyzed morality, punishment severity, and remorse attribution for felony crimes.

Misdemeanors

I conducted a 2 (Degree) x 2 (Familiarity) repeated measures analysis of variance for misdemeanor crimes with morality as the dependent variable. No statistically significant findings were found for the degree of misdemeanor crime or for the familiarity of the perpetrator.

I also conducted a 2 (Degree) x 2 (Familiarity) repeated measures ANOVA for misdemeanor crimes with punishment severity, in this case fine amount, as the dependent

variable. Significance was found in regards to Degree, $F(1,31) = 4.405$, $p = .044$, $\eta^2 = 0.124$. As one might expect, the perpetrators of the more severe misdemeanor crimes (thefts of \$100.00) were given a larger fine on average ($M = 184.563$, $SD = 22.593$) when compared to the fines dealt to the offenders of the misdemeanor thefts of \$50.00 ($M = 128.922$, $SD = 23.458$).

The third analysis was also a 2 (Degree) x 2 (Familiarity) repeated measures ANOVA for misdemeanor crimes, but with attributed remorse as the dependent variable. No statistically significant findings were found for the degree of misdemeanor crime or for the familiarity of the perpetrator.

Felonies

Moving on to the felony crimes, another 2 (Degree) x 2 (Familiarity) repeated measures ANOVA was conducted using morality as the dependent variable. Significance was found in regards to Degree, $F(1,37) = 10.493$, $p = .003$, $\eta^2 = 0.221$. On a scale of 0 to 6, 0 indicating “not at all morally wrong” and 6 “extremely morally wrong” perpetrators of the more serious felony theft (theft of \$800) received higher scores on average ($M = 5.329$, $SD = 0.151$) than did those committing the less severe felony theft of \$600.00 ($M = 5.197$, $SD = 0.166$).

Secondly, another 2 (Degree) x 2 (Familiarity) repeated measures ANOVA was conducted for felony crimes using punishment severity as the dependent variable, which in this case was length of jail time in years. The main effect of Familiarity approached significance, $F(1,37) = 3.764$, $p = .060$, $\eta^2 = .092$. A familiar offender was sentenced to an average of .987 years, ($SD = 0.196$), while an unfamiliar offender had an average jail sentence of 1.066 years ($SD = 0.270$), ascribed to him or her.

Finally, the last 2 (Degree) x 2 (Familiarity) repeated measures ANOVA was conducted for felony crimes using remorse attribution as the final variable. Significance was found for the

main effect of Degree, $F(1,37) = 4.913, p=.033, \eta^2 = 0.117$. On a scale of 0 (not at all remorseful) to 6 (extremely remorseful), offenders were rated for the amount of remorse participants' felt that that offender would have. For the more severe-degree of felony crime, the remorse attributed on average was 3.974, ($SD= 0.247$). In the case of the less severe felony crimes, the average remorse score was $M=3.513, (SD=0.277)$.

Discussion

This study was meant to replicate the results of Lieberman, and Linke's (2007) study utilizing a within-participant design instead of the original between-participant design the original researchers used. It was hoped that the results obtained in Lieberman and Linke's (2007) study would be supported using this slightly different design. The results the researchers found were as follows: although participant rating of moral wrongness remained fairly consistent throughout, out-group, or unfamiliar offenders were attributed less remorse and dealt harsher punishments. The within-participant design utilized in the present study was selected because it could potentially solidify the findings of the original Lieberman and Linke (2007) study by comparing the effects of social-category in a way that more accurately portrayed how much variation there was within individuals instead of populations, as was the case with the between-participants design. Unfortunately, the results obtained by Lieberman and Linke (2007) were not replicated within this present study using the alternate methodology of the within-participant design. When participant responses were analyzed in relation to crime severity (misdemeanor and felony) and offender social category (familiar and unfamiliar) no significant differences emerged in punishment dealt or remorse attributed, which is inconsistent with Lieberman and Linke's (2007) initial results. Ratings of moral wrongness did however remain relatively the

same between the various scenarios, coinciding with the original findings by Lieberman and Linke (2007).

The only instance in which the familiarity of the offender appears to have had some effect (though only approaching true statistical significance) is in the case of the punishment dealt to the offenders of a felony theft. In accordance with the original hypothesis, unfamiliar offenders were dealt more prison time as punishment than did the familiar offenders on average.

Statistically significant findings were found between the degrees of crime in misdemeanor thefts in relation to punishment dealt, as, per expectation, the more severe degree of misdemeanor crime was deemed worthy of harsher punishment. This significance was however not in relation to offender familiarity – the main focus of this study. The same pattern was found when looking at remorse attributed to offenders of felony crimes. The significant difference was found between the degrees of felony crimes, with the more severe degree netting more remorse for both familiar and unfamiliar offenders, which is not supportive of the original results obtained by Lieberman and Linke (2007), who found statistical significance in relation to remorse and familiarity. No significance was found in relation to punishment or remorse attributed in any other analyses.

To further expand on the obtained results, this time looking at morality, significance was found between degrees of felony thefts and morality. The more severe felony theft was seen as more morally wrong, despite the social-category of the offender. This pattern was not observed for misdemeanors, even when focusing on the degree of crime committed. The lack of significance in relation to morality and familiarity is actually in support of the original hypothesis, as Liberman and Linke's (2007) study demonstrated similar patterns in moral-wrongness consistency.

Although the results of this study are underwhelming, they still are valid contributions to this line of research in that they provide more information as to how to effectively measure the effects of social-category on perception of crime. It is also important to examine some of the potential limitations of this present study in order to understand more about researching this topic as a whole. Finally, by brainstorming some potential modifications to this type of study, one can develop a more effective methodology for future studies that takes into consideration all of the limitations and issues mentioned herein.

First of all, some potential issues that may have interfered with the results obtained need to be addressed in order to better understand how this type of study should be organized in the future. The two different levels of crime, misdemeanor and theft, may have confounded the results instead of adding to the overall understanding of the topic. The distinction between misdemeanor and felony crimes originates from a legal stand point, and therefore may not have been the best distinction to use in this regard, as this study measures the distinctions made by the participants themselves in relation to familiarity – as such, the legal division of crime levels may have added an unnecessary variable.

Furthermore, the multiple degrees of theft within each crime category may have further complicated the original goal of the study. Although it would be interesting to further explore the effects of crime degree on perceptions, it may be best to examine that separately as a separate issue. By including degree of crime in this study, the effect of familiarity, which was ultimately the main focus of this analysis, may have been diluted throughout the course of this study from both the participants' stand point and within the analysis itself.

To address some of the limitations inherent in this study, it is important to consider what could be improved in future research. The sample size in this study was fairly small at $n=37$. A

greater number of participants could have resulted in greater significance in the areas that were approaching significant with this current sample. All participants were also recruited using the Lindenwood Participant Pool, ensuring that all were within a certain age group. In the future, it would be interesting to examine how these results would differ with the inclusion of a larger, more diverse sample.

In addition to the improvements that could be made with a larger sample size, this study may also benefit from a renovation of the overall organization of the survey and crime scenarios presented. As previously stated it may be best to include more similar scenarios and remove the division between felony and misdemeanor crimes. Not only would this make the social-category of the offender more prominent, but it may remove unconsidered confounding variables that could have affected the end results. For future research, it may be beneficial to have more scenarios that do not differ in severity and only vary based on the social-category of the offender. By moving forward with further research in this line while keeping what was learned from this study in mind, it is hoped that eventually a greater understanding of how social category affects perceptions can be obtained.

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Appendix A

Third Party Perception of Crime in Relation to Magnitude of Punishment, Attribution of Remorse, and Levels of Moral Wrongness

Page One

Page exit logic: Page LogicIF: Question "If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button." is one of the following answers ("I choose not to participate") THEN: Jump to [page 10 - Thank You!](#)

This survey about third party perception of crime in relation to magnitude of punishment, attribution of remorse, and levels of moral wrongness was created by Sara Roderick as a research project in the department of Psychology at Lindenwood University. This survey contains questions pertaining to scenarios describing the crime of theft. After each scenario, participants will be asked to rate how severe of a punishment the crime warrants, how remorseful the offender may be, and how morally wrong the crime is.

In the case of this survey, “third party” refers to an individual who has no personal stake in the crime, but is instead only an outside observer of the event. “Magnitude of punishment” refers to how severe of a punishment one feels the crime warrants – expressed in fine amount or jail-time duration. “Attribution of remorse” refers to how remorseful, or sorry, one believes the perpetrator of the crime is as a result of his/her actions, and finally, “levels of moral wrongness” refers to how morally wrong the crime is.

This survey will take approximately 10 minutes to complete. Although your participation may not result in direct benefits to you, information from this study may help provide additional insight into how third parties perceive a crime in relation to how severe of a punishment the perpetrator should receive, how morally wrong the perpetrator’s actions were, and how much remorse the perpetrator will have. Please read the information below before deciding whether or not to participate.

- **Your responses will be anonymous. No information that identifies you personally will be collected, not even your IP address. The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.**
- **Your participation is completely voluntary. You may discontinue taking the survey at any time. If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way; LPP participants will still receive extra credit.**
- **The results of this survey will be used for scholarly purposes only. If you have any questions about the survey itself, please contact the primary investigator, Sara Roderick at 636-577-4192.**

- **Taking this survey could result in some distressing feelings, like guilt, confusion, frustration, stress, anxiety or sadness for some participants, but these feelings are not expected to exceed what one experiences in everyday life. If you find taking the survey causes you significant discomfort and you would like assistance, please stop participating and contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.**

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- **You have read the above information.**
- **You voluntarily agree to participate.**
- **You are at least 18 years of age.**

Page exit logic: Page Logic**IF:** Question "If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button." is one of the following answers ("I choose to participate in this survey")
THEN: Jump to [page 2 - M1s](#)

If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button.*

- I choose to participate in this survey
 I choose not to participate

M1s

You witness a student who you know personally steal a textbook left behind by another unknown student. Since you had to purchase the same textbook, you know the item costs \$100.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

- 0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F1d

You witness a student you are not familiar with steal almost \$800.00 in fund raising funds from the locked cabinet of a student organization.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection.)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

M2s

You are just finishing up a meal at a restaurant when you see another group leave a \$50 tip on the table as they leave. One of the fellow students you came with snags the money off the table and pockets it.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F2s

You overhear a student you do not know bragging about a new tablet he or she has just bought that cost around \$600.00. Another student you are acquainted with overhears too, and decides to steal the device by removing it from its owner's bag when the owner gets up to go to the bathroom.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

M1d

You witness a student, who you do not know personally, steal a handbag that belongs to an unknown student. You happen to know that the handbag costs around \$100.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F1s

You witness a student you know steal an expensive laptop left behind in a classroom by another unknown student. Based on prior knowledge, you know the laptop's worth is approximately \$800.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection.)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

M2d

While walking to your next class, you notice that a \$50 bill falls out of the jacket pocket of someone walking in front of you -- this person does not realize that they have lost the money. An unfamiliar student sees the event too, and takes the money for themselves by picking it up and putting it into their own pocket.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F2d

You witness an unfamiliar student steal an expensive piece of lab equipment one day in class. You know the equipment is valued at \$600.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

Thank You!

Thank you for your time today. Whether you decided to complete the survey or opt-out, please read below for important information.

If you found that the survey caused you emotional distress and you would like assistance, please contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.

If you would like to see the results of my survey after May 15, 2015, please feel free to contact me using the contact information below. Again, thank you very much for your time and effort!

Principal Investigator

**Sara Roderick
Slr305@lionmail.lindenwood.edu
636-577-4192**

Faculty Supervisor

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

Appendix B**V2: Third Party Perception of Crime in Relation to Magnitude of Punishment, Attribution of Remorse, and Levels of Moral Wrongness - copy****Page One**

Page exit logic: Page LogicIF: Question "If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button." is one of the following answers ("I choose not to participate") THEN: Jump to [page 10 - Thank You!](#)

This survey about third party perception of crime in relation to magnitude of punishment, attribution of remorse, and levels of moral wrongness was created by Sara Roderick as a research project in the department of Psychology at Lindenwood University. This survey contains questions pertaining to scenarios describing the crime of theft. After each scenario, participants will be asked to rate how severe of a punishment the crime warrants, how remorseful the offender may be, and how morally wrong the crime is.

In the case of this survey, “third party” refers to an individual who has no personal stake in the crime, but is instead only an outside observer of the event. “Magnitude of punishment” refers to how severe of a punishment one feels the crime warrants – expressed in fine amount or jail-time duration. “Attribution of remorse” refers to how remorseful, or sorry, one believes the perpetrator of the crime is as a result of his/her actions, and finally, “levels of moral wrongness” refers to how morally wrong the crime is.

This survey will take approximately 10 minutes to complete. Although your participation may not result in direct benefits to you, information from this study may help provide additional insight into how third parties perceive a crime in relation to how severe of a punishment the perpetrator should receive, how morally wrong the perpetrator’s actions were, and how much remorse the perpetrator will have. Please read the information below before deciding whether or not to participate.

- **Your responses will be anonymous. No information that identifies you personally will be collected, not even your IP address. The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.**
- **Your participation is completely voluntary. You may discontinue taking the survey at any time. If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way; LPP participants will still receive extra credit.**
- **The results of this survey will be used for scholarly purposes only. If you have any questions about the survey itself, please contact the primary investigator, Sara Roderick at 636-577-4192.**

- **Taking this survey could result in some distressing feelings, like guilt, confusion, frustration, stress, anxiety or sadness for some participants, but these feelings are not expected to exceed what one experiences in everyday life. If you find taking the survey causes you significant discomfort and you would like assistance, please stop participating and contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.**

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- **You have read the above information.**
- **You voluntarily agree to participate.**
- **You are at least 18 years of age.**

Page exit logic: Page Logic**IF:** Question "If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button." is one of the following answers ("I choose to participate in this survey")
THEN: Jump to [page 2 - M1s](#)

If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button.*

- I choose to participate in this survey
 I choose not to participate

M1s

You witness a student who you do not know personally steal a textbook left behind by another unknown student. Since you had to purchase the same textbook, you know the item costs \$100.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

- 0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F1d

You witness a student you are familiar with steal almost \$800.00 in fund raising funds from the locked cabinet of a student organization.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection.)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

M2s

You are just finishing up a meal at a restaurant when you see another group leave a \$50 tip on the table as they leave. A fellow student you do not know snags the money off the table and pockets it.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F2s

You overhear a student you do not know bragging about a new tablet he or she has just bought that cost around \$600.00. Another student you are not acquainted with overhears too, and decides to steal the device by removing it from its owner's bag when the owner gets up to go to the bathroom.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

M1d

You witness a student, who you know personally, steal a handbag that belongs to an unknown student. You happen to know that the handbag costs around \$100.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F1s

You witness a student you do not know steal an expensive laptop left behind in a classroom by another unknown student. Based on prior knowledge, you know the laptop's worth is approximately \$800.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection.)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

M2d

While walking to your next class, you notice that a \$50 bill falls out of the jacket pocket of someone walking in front of you -- this person does not realize that they have lost the money. A familiar student sees the event too, and takes the money for themselves by picking it up and putting it into their own pocket.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong.)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus an additional fine. How large of an additional fine do you think best fits the act?

(Responses will be on a scale of \$0 to \$1,000, as the typical fine for theft of the level expressed in the above scenerio never exceeds \$1,000. Please move the slider until the value matches what you feel the fine for the offense discribed above should be. Slider values do not include dollar signs, but still represent monetary amounts)

0 _____ [] _____ 1000

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

F2d

You witness a familiar student steal an expensive piece of lab equipment one day in class. You know the equipment is valued at \$600.00.

Rate how morally wrong the student's actions were on a scale from 0 (Not morally wrong at all) to 6 (extremely morally wrong)

0: Not at all morally wrong 1 2 3 4 5 6: Extremely morally wrong

The student in the scenario above, as punishment for his/her crime, must pay back the cost of the item stolen plus serve some jail time. How long of a jail sentence do you feel the student should serve as punishment for the crime committed?

(Seven years is a standard max sentence for 1st time offenders in Missouri, and is therefore the max number of years available for selection)

Less than one year 1 year 2 years 3 years 4 years 5 years
 6 years 7 years

How remorseful do you think the student would feel after committing the act described above. Please rate on a scale ranging from: 0 (not remorseful at all) to 6 (extremely remorseful)

0: Not at all remorseful 1 2 3 4 5 6: Extremely remorseful

Thank You!

Thank you for your time today. Whether you decided to complete the survey or opt-out, please read below for important information.

If you found that the survey caused you emotional distress and you would like assistance, please contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.

If you would like to see the results of my survey after May 15, 2015, please feel free to contact me using the contact information below. Again, thank you very much for your time and effort!

Principal Investigator

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Faculty Supervisor

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Appendix C

This survey about third party perception of crime in relation to magnitude of punishment, attribution of remorse, and levels of moral wrongness was created by Sara Roderick as a research project in the department of Psychology at Lindenwood University. This survey contains questions pertaining to scenarios describing the crime of theft. After each scenario, participants will be asked to rate how severe of a punishment the crime warrants, how remorseful the offender may be, and how morally wrong the crime is.

In the case of this survey, “third party” refers to an individual who has no personal stake in the crime, but is instead only an outside observer of the event. “Magnitude of punishment” refers to how severe of a punishment one feels the crime warrants – expressed in fine amount or jail-time duration. “Attribution of remorse” refers to how remorseful, or sorry, one believes the perpetrator of the crime is as a result of his/her actions, and finally, “levels of moral wrongness” refers to how morally wrong the crime is.

This survey will take approximately 10 minutes to complete. Although your participation may not result in direct benefits to you, information from this study may help provide additional insight into how third parties perceive a crime in relation to how severe of a punishment the perpetrator should receive, how morally wrong the perpetrator’s actions were, and how much remorse the perpetrator will have. Please read the information below before deciding whether or not to participate.

- Your responses will be anonymous. No information that identifies you personally will be collected, not even your IP address. The primary investigator will not be able to identify your answers as belonging to you; data will be examined at the group level only.
- Your participation is completely voluntary. You may discontinue taking the survey at any time. If you choose not to participate or stop participating before the end of the survey, you will not be penalized in any way; LPP participants will still receive extra credit.
- The results of this survey will be used for scholarly purposes only. If you have any questions about the survey itself, please contact the primary investigator, Sara Roderick at 636-577-4192.
- Taking this survey could result in some distressing feelings, like guilt, confusion, frustration, stress, anxiety or sadness for some participants, but these feelings are not expected to exceed what one experiences in everyday life. If you find taking the survey causes you significant discomfort and you would like assistance, please stop participating and contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- You have read the above information.
- You voluntarily agree to participate.
- You are at least 18 years of age.

If you do not wish to participate in the research study, or are not at least 18 years old, please decline participation by clicking on the "I choose not to participate" button. ***This question is required.**

- I choose to participate in this survey
- I choose not to participate

Appendix D

Thank you for your time today. Whether you decided to complete the survey or opt-out, please read below for important information.

If you found that the survey caused you emotional distress and you would like assistance, please contact the Lindenwood Student Counseling and Resource Center at 636-949-4889. If you are not a Lindenwood student, contact the P.I., Sara Roderick, for information on how to contact persons in a position to refer you to counseling services.

If you would like to see the results of my survey after May 15, 2015, please feel free to contact me using the contact information below. Again, thank you very much for your time and effort!

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