INTUITION

BYU Undergraduate Journal of Psychology

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INTUITION

BYU UNDERGRADUATE JOURNAL OF PSYCHOLOGY

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Intuition: BYU Undergraduate Journal of Psychology, is published annually during the Fall Semester by the Brigham Young University Psychology Department.

Intuition is managed, edited, and designed by undergraduate students enrolled at Brigham Young University. Individuals who are interested in joining the staff are encouraged to contact the editor-in-chief at byupsychjournal@gmail.com. Class credit is available for staff members. Individuals interested in submitting articles to be considered for publication should read the submission guidelines located on the last page of the current issue.

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Intuition would especially like to thank Julianne Holt-Lunstad for her guidance in developing this journal. The efforts of Mel Thorne, Linda Hunter Adams, and the Psychology Department faculty members who generously provided reviews are likewise appreciated.

Additional information can be found on our Web site at http://intuition.byu.edu
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FROM THE EDITOR

Angela Hamaker

This year, the staff of Intuition saw a year of success. We encountered many challenges but overcame them with surmountable enthusiasm. We faced the inevitable impediment of graduating staff members and the process of replacing them. This year the entire editing staff graduated, and we began anew. Ideally the wise, experienced editors would train their replacements before their parting, but time was against us this year. Difficult as we found it to be, training several new staff members all at once offered us a great opportunity to improve the journal. We used this challenge to set and define the procedures and guidelines that go into editing and formatting the journal. We can now announce that Intuition is no longer in its infancy.

Intuition has now seen four publications, and we are pleased to report that the journal is becoming more established, its reputation is growing, and an increasing number of students are being recognized through its publication. Furthermore, we are continuing to improve Intuition. This year we would like to introduce a new segment of the journal, a collection of abstracts from the Mary Lou Fulton Conference, highlighting the great research endeavors of undergraduates at BYU.

We would like to recognize and express our gratitude for our advisor, Dr. Holt-Lunstad, who generously guides and assists us through the entire process of publication; the supportive psychology faculty who helped edit articles: Dr. Bruce Brown, Dr. Sam Hardy, Dr. Mikle South, and Dr. Niwako Yamawaki; our featured professor, Dr. Higley, for sharing his inspiring enthusiasm of research with us as we interviewed him; and most of all, we offer our appreciation to the authors of the contributing articles for their hard work and extensive editing of multiple revisions. Without these diligent supporters, Intuition would not exist, and we thank them.

We would also like to offer congratulations to our graduating staff members: Keira McLane, Debra Young, Courtney Pittman, and Rachel Hunter. With my own graduation approaching, it is time to hand over the reigns and introduce McKay Young as the new editor in chief of Intuition. McKay has been with Intuition for close to a year and has proven that he will take Intuition to new heights. The future of Intuition looks bright!
Interview with Dr. James D. Higley

McKay Young

Dr. James D. Higley, a BYU professor of Psychology, graduated from BYU with a Bachelor of Science Psychology in 1980. He received both a Master's and Doctorate degree in child development and primate behavior at the University of Wisconsin-Madison shortly after. His research interests include primate behavior, development, and developmental psychopathology. He focuses on alcoholism, impulsivity, the effects of parents and genes on development and adolescent outcomes, brain neurotransmission and behavioral outcomes.

How did you get started in Psychology?
Well, I came here and I thought I was going to be an advertising major. Brigham Young was good to accept me many years ago and I took the general course in psychology and enjoyed that a lot. I figured if I was going to be an advertising major, taking a course in motivation would be helpful, so I took the course from a new faculty member, Hal Miller, who had just come from Harvard. I couldn’t have been more than two or three classes into it when I decided that this is what I wanted to do. He has a real way of turning you on to psychology, as you already know. He continues to have that kind of motivating influence. He was tough, but he really motivated me; I’ve never looked back since.

Why did you decide to work with primates?
Well, it’s awfully hard to cut the brain out of a BYU student and still have them perform very well on their exams. I decided to go into animal research because it seemed like an alternative that allowed us to look at the internal workings of various animals. I started my research with Hal Miller looking at pigeons. Bird brains are notorious for not being very smart, but as it turned out, they use the same sort of self-control techniques that we do. They make a decision very far in advance and then become resistant to temptation and stay away from the tempting stimulus as well. But it didn’t tell me a lot about what happened internally because bird brains are different from human brains. So I did some research with rats, but their societies and brains were still different enough that I couldn’t gather enough information from them. It occurred to me somewhere along the way that if I’m going to look at the central nervous system developmentally in model individuals so I could look at the changes across time, monkeys were probably a reasonable in-between. Their brains are a lot like ours, their physiology is a lot like ours, and yet we can do some things with them that allow us to make marvelous medical advances. One of the things that we discovered very early on, which thinking about where those differences came from has started me on my current research path. There is a strong underpinning determining whether and what we become, and I’ve wanted to gain an understanding of how that works. So that’s what made me interested in psychology in general and what’s driven my interests over the years. Now, psychopathology has played a large part in my interest in looking at why people turn out unusual. But I think that it started with a desire to understand why individuals are different despite very homogeneous kinds of experiences that lead you to expect similar outcomes.

What has led you to your current research topics? Where have you gained the ideas leading to your research?
One of the things that I became interested in early in psychology is what I call the “Bishop’s Son Syndrome.” Bishops’ families generally have very good quality, but so many times young men and young women from these families tend to have problems and difficulties. And the flip-side of that, sometimes families that have all sorts of difficulties—broken homes, the parents are absent, having mental illness in the family—turn out to have wonderful outcomes. That sense of individual differences and
right now is the most read article in the Proceedings of the National Academy of Science, was the discovery of a drug that blocks anxiety. Most people have a loved one or family member that suffers from severe anxiety. If we can discover the cause of a problem like that, then we have discovered something to help those people. Even though sometimes researching monkeys looks unpleasant, curing disease is something that is beneficial to everyone.

What is your main goal in studying primates?
One is to get students involved. I go up there for three months, and it’s a long way from home. The main payoff is watching the students change, but the discoveries we make along the way can go on to help humankind. If we can eliminate any kind of pain and suffering as a result of the research, that is part of the larger goal, whether it be anxiety, alcoholism, or compulsive behavior. The world is loaded with compulsive people who continue to have problems despite our best efforts. I do lots of research with violence and aggression; in fact, we probably publish more papers on violence than just about anything. Violence is intrinsic to every society and nothing is more harmful to the family than violence. Monkeys teach us a lot about good parenting and bad parenting. If we can learn about being better parents and if we can prevent violence with the things that we learn, that would have a great deal of importance.

How did you get involved in primate research in Oregon?
Again, Hal Miller’s influence was present in this. I was a member of the founding Psi Chi society here on campus. I was the treasurer at the time and became the second vice-president. I always felt so grateful to the people who participated and helped us out that I promised Hal that if I had an opportunity to come give back at some point, I would be happy to do so. The Chemistry department invited me to come give a talk, so I called up Hal and told him that I would be in town and that I would love to talk to the Psi Chi students here on campus. I had a wonderful evening talking to the Psi Chi students. After that we went out for dinner and he asked me, “What would it take to get you back here?” I said, “Well, there are no monkeys,” and he responded, “Well, you can do your research off site.” That evolved over time into an opportunity with a collaborator that I have up in Oregon. I talked with her and she said she would love to have us come up. So we made arrangements in June, the first year I was here, and since then it’s been such a good experience that we’ve replicated it each year.

Can you describe what the Center is like and what you do there?
The primate center is one of nine funded research centers that our tax dollars pay for to study monkeys—non-human primates. A primate center has anywhere from 2,000 monkeys to 8,000 or 9,000 monkeys. Each one of them is funded by both the Federal Government and individual grants, with a specific mandate to study various things. It turns out that the people in Oregon are very interested in studying reproductive behavior. They were the first to find a gene in the primate and show that it would relate to their behavior. It was a cool study. They took the luciferin that you would see in fireflies as you see them at night and inserted that gene into monkeys (it didn’t hurt them or anything). But if you looked at their fingernails, they turned a little bit of a green color from the gene that the scientists had inserted. From those kinds of studies we are now looking at taking a gene from the pancreas to make insulin and insert that back into a human. The primate center in Oregon studies infertility. They’ve found some wonderful things looking at why infertile women continue to be infertile over the years. They’ve discovered that stress, for example, makes a woman infertile. That’s why you’ll find that a woman who has been infertile for years will go on vacation and suddenly become fertile again and become pregnant. We never would have known that from rats, but looking at monkeys who are a lot like us and can be under stress like us, we are able to make those kinds of findings. We can also study things like the effects of nutrition and formulas. When our brains are made it is from a basic building block that is in our mother’s milk. This is missing in Similac: we’re the only civilized country in the world that doesn’t put this in our Similac. Through some research we did at the NIH we were able to show that babies who don’t get this particular nutrient that is in mother’s milk can end up having slower development, cognitive difficulties, and ultimately developmental noise. As a consequence of that, you can buy formulas with a nutrient in it called DHA, the nutrient in mother’s milk that is the building block of the brain. Those are the kinds
of things that you might see up there typically. The research that we do is looking at anxiety and alcoholism, often kissing cousins. There are a lot of qualities of alcohol that reduce anxiety. Alcohol is as effective as Valium at reducing anxiety; the only problem is that it has so many other side-effects, such as the addictive properties, gastritis, and other destructive influences. So, though it affects anxiety, it often leads to worse problems in anxiety itself and individuals who have anxiety. We don’t know, yet, precisely what the genes are that produce anxiety, so the mission we have up there is to find them. Again, monkeys are a lot like us: many of the genes that we have are identical as far as location and function. So, if we find anxious monkeys we could go back and see if they have differences in their genes. When we find those genes that are present in anxious monkeys but are not present in outgoing monkeys, then we might have a clue that the gene is dysfunctional.

What are some of the difficulties and challenges you find when working with primates?

Well, monkeys are not furry little men with tails. As much as I would like them to tell me what’s going on, I really have to interpret the setting. Asking them what is going on is something you cannot do, whereas in humans you can ask them and get a better sense of what is happening internally. That is probably the biggest challenge when you are working with any animal, and monkeys are no different. We are always looking at the setting to tell us what you might be invoking with that particular subject. Plus, there are certain ethics you have when working with monkeys. Regardless of what I’m learning from the monkey, there are things the monkeys might have to go through. Although we don’t do things that are terribly intrusive, still you have a sense when you are standing in front of that cage that you are provoking some anxiety in that monkey. What you have to ask yourself at that point is, “Is what I am learning really worth what the monkey is going to go through?” And that is part of the decision process that goes into whether you are going to do that experiment or not. Most people would agree that standing in front of a cage and measuring what a monkey is going to do, if it gives us the potential of developing a drug that blocks anxiety or keeps people from becoming alcoholic, will probably be well worth the cost. Still, those are important ethical considerations that one must make when doing this kind of research.

Why do you choose to use undergraduate students during your research?

Well, I was at the NIH for years; they have esteemed scientists and post-docs who help you out. You have technicians, graduated and graduate students. They can probably do more, but it is the learning process that brought me here – the idea that you can take a young undergraduate and get them excited about monkeys and about thinking things – that will have a much greater effect in the long-run than what I’m going to do with a post-doc on one study. Publication is the currency that determines how much money you are going to get in the research world; the payoff there is that the more you publish the more money and funding you get to do more research and make more discoveries. Yet the payoff of seeing people grow and develop is not quite as rich as you get in a place like this, where you see an undergraduate who has a little bit of interest, makes some discoveries, learns some things, and then begins to change their way of looking at things. That’s the real payoff, getting to see people learn and grow and develop. It is what really brought me here.

What do you think is the most important finding you have made from your research?

That mothers matter. Right from the beginning, that’s what sent me to graduate school. BYU at the time did not have monkeys (we still don’t have monkeys here on the campus – lots of primates but no monkeys). But we did have wonderful books by a person named Harry Harlow who did the original studies looking at mothering, with the wire mother who gave milk but was not soft, and the soft mother that did not give milk. That had a huge influence on my research, and at the time they were just starting to do studies with monkeys without adults around. We knew that deprivation was not good for a monkey, but we did not know if the results we were seeing were because of the deprivation or because of the lack of mothering. So, most of my research over the years has been focused on issues of the Family Proclamation, such as, “Why is mothering important? What is it about mothering that leads an infant to develop normally? Why did God decide that mothers were the best way to shape the brain (which I firmly believe is what mothers are there
for—to change and shape the brain, to make sure the right
input gets in at the right time?)” Whether you are a strict
evolutionist or God-centered every step along the way,
it is clear that mothers are there because when the brain
is being developed, the anxiety part of the brain is get­
ting the right kinds of neurons and synapses. Mothers are
there to make sure that they grow the right way, that they
stay that way, and that they practice, and after a while
the baby’s brain is developed enough that they begin to
say, “the world’s not such a bad place, I can reduce my
own anxiety.” They begin to become efficacious in how
they interact with the world. Mothers are also wonder­
ful at punishing inappropriate behavior and building our
wonderful frontal cortex. No other animal has one nearly
as well developed. We often talk about the natural man,
the enemy of behaviorism, and how the natural man is
the enemy to God. Well, the natural man is acting on
your urges. What the frontal cortex does is say, “Stop!
Think about this, and think about what the consequences
will be.” Because of that ability we can go on missions,
and there we don’t hold hands with young men or young
women. We can inhibit our behavior despite our inclina­
tions. Mothers are very good at the early stages of learn­
ing to inhibit our behavior, making sure there is practice
in the brain so that the neurons survive and go from the
frontal cortex and say, “Stop, wait, think this through and
what the consequences are.” Mothers are critical because
they tend to practice the brain again and again and again.
Those synapses tend to become stronger and stronger over
time and they see us into adulthood. When we say we
hear the echoes of our parents in our head, what we are
really hearing is the echo of the neurons we formed over a
period of time and the synapses that allow us to stop and
think things through before we engage in a behavior.

What is the best way for students to get involved in
research with you and in general?
In general, BYU is elite. There is nowhere else, I think
in the world, that gives students the opportunities to be
first-hand mentored in these kinds of research projects
that go on to such esteemed places as the National Insti­
tutes of Health or Harvard. I would love to have students
get interested in the kinds of research projects I’ve done
here and at the NIH. If they would like to learn more,
they could take my primate behavior course, and then
enter into the database as well as the internship, where
they can take that opportunity to go up and see firsthand
the research we do. We have a database that the NIH was
very kind to allow me to bring here. It represents about
20 years of collecting data from monkeys from when they
were babies, juveniles, adolescents, and ultimately when
they were adults. We know what their genes are; we know
what their pedigrees are. So, now we can go back and say,
“You have these types of qualities as an infant, what will
you become later on?” With a database of 600 subjects,
the questions you can ask are really endless. As students
take statistics and are interested in getting involved in a
project with analysis and data that could eventually lead
to a publication, that’s another way to get involved.

*The Intuition Staff thanks Dr. Higley for his time,
support, and willingness to make this interview possible.*
A Successful Simian Summer

David Glenn and Stuart Thomas

Students of Dr. Higley share their research experience during an internship through the Oregon Health and Sciences University at the National Primate Research Center.

I was taking my first neuroscience class, Neuro 205. One day our professor put up a flyer for a non-human primate behavior class that would be taught in the winter. I do not remember the exact words but it was about monkeys. He mentioned that the professor teaching it was Dr. Dee Higley, an experienced researcher who studied monkeys on an island back east. He would be coming to BYU soon to give a lecture about his research at the annual Rocky Mountain neuroscience conference. My interest was piqued so I went to the conference to listen to Dr. Higley's lecture.

Afterwards there was a dinner reception where I had the chance to meet and talk at length with Dr. Higley for the first time. I mentioned that I would like to enroll in his class the following semester and he assured me that I could. The next semester I signed up for the Primate Behavior course and spent three hours each Friday afternoon learning about a wide variety of monkey species and their intriguing behavior quirks. Dr. Higley told our class about an internship he was putting together in Oregon for that summer. Unfortunately, I could not go that summer but I made sure to jump on it the following summer. In the meantime, Dr. Higley became a full-time professor at BYU and I took another class from him. During the school year I had the chance to get some initial research experience by working with a large monkey data set that Dr. Higley had collected while he was in Washington, working with the NIH. This data set had hundreds of monkeys in it, with their behavior and neurobiology from over 20 years of research. I decided to use the data to test whether there were genes that lead monkeys to abuse alcohol. I learned a lot about monkey behavior and alcoholism analyzing that data set. Under Dr. Higley's supervision I was able to put together a poster and submit it to the Mary Lou Fulton Spring Research Conference, where I won one of the awards.

With these experiences under my belt, I applied for the summer internship and was excited when Dr. Higley accepted me and six other students as interns to study monkeys at a primate center located in Oregon. When June first arrived, we piled in a BYU van with Dr. Higley and the other interns to travel to Beaverton, OR where the monkeys were located. BYU provided us with a place to live and our food. It was our job to learn as much about monkeys as possible. Our internship was with Oregon Health and Sciences University working with Drs. Dee Higley and Judy Cameron until the end of August. The monkey facility in Oregon is one of eight National Primate Research Centers. There they have about 6000 monkeys, mostly rhesus monkeys (the white rat of the monkey world). Dr. Cameron had several research projects going that involved working with the monkeys kept in large outdoor one acre corrals. Twice a year, these monkeys are caught so the veterinary staff can perform medical exams, ensuring the monkeys are healthy and to treat them if needed. While the veterinarians are waiting for the lab reports, Dr. Cameron uses these monkeys in various research projects investigating alcoholism, anxiety, and weight control. During the first weeks we learned about how to do the testing and how to work with monkeys. Then we became full-time research assistants. The project I was assigned to in-

Published by BYU ScholarsArchive, 2008
involved measuring growth hormone in the infant monkeys following a medication that is administered while they are anesthetized. Specifically, I was in charge of preparing the infants each day to get their blood samples taken. This was about a 2-3 hour process measuring four anesthetized infants at a time. We usually had about 2-3 days to get samples from 20-30 monkeys, so we would have to get started early in the morning and work hard and fast in order to get everything done. Over the course of the summer I got very comfortable handling the monkeys, giving their sedation shots, and even taking the blood samples. There were many other minor jobs we had to do over the summer such as paperwork, labeling things, and cleaning the equipment. One of the things I learned about being an intern is that you get to do a little bit of everything. Some things are interesting and challenging, while others are less stimulating. The days are long, but rewarding. As an intern I worked with used to say, "This is awesome. Where else can you get paid to work with monkeys!"

Other interns measured behavior in monkeys of various ages by using standardized tests of anxiety. Some of the other interns looked at levels of anxiety in a new room where there were interesting toys or new foods, while others measured anxiety when a human was standing close by. Another team of interns looked at levels of intoxication in monkeys that each had identical amounts of alcohol. The monkeys were quite different in how much they looked intoxicated, even though they all received the same amount of alcohol. Overall it was a very good experience for me. I had the chance to see how research is done first hand and I was able to work side-by-side with and get well acquainted with both Dr. Cameron and Dr. Higley.

Spending my summer as an intern at OHSU was one of the most valuable experiences I have had as a college student. The research experience was great and will help me in my academic career. Spending time away from BYU and away from home was also a good learning experience. I was able to make some great friends over the summer and have a lot of fun in a new place. I would recommend to any student that they look for internship opportunities in their field and go after them. The experiences you have and things that you learn far out weigh the sacrifice of time and money that it often requires.

*Photographs courtesy of Dr. Dee Higley*
The Verbal Overshadowing Effect: Influence on Perception

Bretton H. Talbot, Jim L. Gifford, Emily Peterson, Pona Sitake, & Eric Stevens

ABSTRACT- The current study aims to observe alterations on perception of attractiveness due to the Verbal Overshadowing Effect (VOE). University students (N=458, 178 males and 280 females) participated in a study where two faces were shown, one male and one female, for 5 seconds. The experimental group verbalized their perception of the face and then immediately rated the attractiveness of the face on a Likert scale ranging from 1-7. It is hypothesized that describing the face will influence the rating of attractiveness, and that gender will also influence perception. Statistical analysis supported the hypothesis and revealed significance in the factor of verbalization, and between males and females in the experimental group. There was no main effect for the factor of gender; however, a test for interactions revealed a significant main effect for females. Results are discussed in relation to gender differences and a general shift in cognitive process.

Talking about an issue may not be the best way to reach a conclusion or an answer. It is a common practice to talk about things that are occupying the mind and when trying to reach a certain outcome. Individuals are encouraged to talk about their problems and express themselves so that others can help. But does talking about something change the way one views it? Recent studies have explored this question, and specifically how views of physical attractiveness can change with verbalization.

What we consider to be facial attractiveness depends in part on whether we verbalize the perception, which is the ability to visually recognize and describe, before making a rating or decision (Valentine, 2004). Many people’s perception of attractiveness is magnified after consciously giving a description of what stands out to them and then giving a rating of attractiveness. A previously rated average attractive face may be shown to a participant and then the participant is asked to rate the face according to a given measuring scale. Accordingly, the ratings of the face should come out to be average. If the same procedure is done, but the subject is asked to give a description of the face prior to the rating, the rating will be affected toward an extreme. The verbalization impairs the participant’s ability to accurately rate the face (Schooler, 1990). Gender might also moderate a change as perception often varies greatly between men and women.

This phenomenon is known as the Verbal Overshadowing Effect (VOE), the finding that recognition performance for certain stimuli is impaired if it is described verbally (Westerman, 1997). It is common to see the Verbal Overshadowing Effect in such situations as criminal description, face identification, voice recognition, eyewitness accounts and many others (Lane, 2004). For instance, a witness of a robbery may easily identify the criminal out of a series of faces without any verbalization. But if a police officer asks the witness to try and verbally describe the criminal without any facial stimuli present, the witness’s ability to later identify the correct criminal is reduced (Clare, 2004). VOE normally occurs when participants describe a non-verbal stimulus, such as a face, prior to a recognition memory test (Chichester, 2002), or when one’s perception exceeds one’s ability to describe it verbally. In other words, it’s difficult to explain in words but easily recognized.

This study explored the effects of the Verbal Overshadowing Effect, as seen in non-verbal stimuli recognition, in the visual perception of facial attractiveness (Rhodes, 2006) and in the effects of gender roles on perception. A control group of 218 participants was shown two faces, one female and one male that had been rated at an earlier time by a panel of judges as “average” on a scale of attractiveness. They
were then asked to rate the attractiveness of the faces using a Likert attractiveness measuring scale. Conversely, an experimental group of 240 participants were shown the same faces and asked to describe the attractiveness of the faces before rating the faces using the same Likert scale as the control group. Results supported the theory of VOE and its ability to shift the participants' ratings to either extreme. The methodology and design used in this experiment has been shown to be valid in many other situations (e.g., Valentine, 2004; Schooler, 1990; Chichester, 2002).

As a result of previous effects of the Verbal Overshadowing Effect in many situations, it seemed advantageous to experiment its effects on facial attractiveness perception. This experiment sought to examine how the effects of VOE influence attractiveness rating results using faces that have been previously shown to distribute on a normal attractiveness curve. We hypothesize that describing the attractiveness of the face will result in the Verbal Overshadowing Effect and influence the attractiveness ratings to either extreme of the attractiveness scale. We hypothesize a two-directional influence due to the possibility that the initial perception of attractiveness of the given face may be positive or negative. The initial perception will be accentuated due to the verbal overshadowing effect, thus the possibility of a two-directional influence. We also hypothesize that participant gender will moderate the attractiveness ratings.

**Method**

**Participants**

With prior consent from the professor and approval from the universities Institutional Review Board, students at the university attending selected psychology 300-level and anthropology 100-level courses were asked to participate in the experiment. The classes were selected based on the professor's consent for the researchers to take five to ten minutes of class time to administer the experiment. Two sections from each course were randomly assigned to either the control group or experimental group. Participants voluntarily consented to the experiment and were not compensated for their participation. A total of 458 students participated in the study with 240 in the experimental group and 218 in the control group. Participants ranged from 18 to 27 years in age and included 178 males and 280 females.

**Materials**

Experiments were conducted in university classrooms. Participants looked at large projector screens where the pictures of the two faces were shown, one female and one male. A multicultural panel selected the faces from a pool of 300 pictures. The pictures chosen had been previously rated as "average" on an attractiveness scale. The two faces were displayed in the form of a PowerPoint presentation. Participants rated and described the faces on the screen using a handout that was given to them before the commencement of the experiment.

The control group participants each received a handout that contained two boxes, each box containing the seven-point scale used to rate the each face. Below the scale were the words "unattractive, average, and attractive," with an additional two points between each descriptive word. The scale ranged from the left extreme of "unattractive" to the right extreme being "attractive." The numbers on the scale were not shown as to reduce rating bias (assigning a number to attractiveness). The experimental group was given a document with the same two boxes for rating attractiveness along with space after each box to describe, in written form, each of the faces separately. In both groups, space was provided at the top of the form for demographic information including gender, race, age, and marital status.

**Procedures**

Research was administered in a classroom setting with individual desk space for each participant. Participating groups ranged from 20 to 75 students. Research took place at the beginning of each scheduled class.

The administrator first passed out the respective form to each participant. The administrator gave the respective instructions to each group. The control group was given instructions that a female face would first be viewed on the screen for about five seconds. They would then have one minute to rate the attractiveness of the face on the provided scale. The same process was repeated for the second face, that of a male. The experimental group was given the same instructions except that after viewing each face they were given three minutes to describe the face before rating it. In both conditions the administrator collected handouts after ratings had been completed and debriefed the participants on the purpose of the study. Later, the numbers on the scale, which were initially omitted, were added to the attractiveness scale, 1 being "unattractive" to
Table 1

### Sample Means

<table>
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</tbody>
</table>

7 being "attractive," to assist the researchers in data entry and statistical analysis.

### Results

The raw data from each condition were compiled. No outlier scores were found, thus, no data points were eliminated from the analysis. The means for the total number of each group of participants (N=458) were control group: .25, and experimental group: .46 (see Table 1).

To test for significant differences between the means of the main factors, and to test for interactions between these factors, the data were analyzed with a one-way ANOVA. The analysis revealed a main effect for the factor of verbalization, F (1, 456) = 6.143, p = .01, in which the experimental group rated significantly different than the control group. There was no main effect for the factor of overall participant gender, F (1, 456) = 1.023, p = .31. However, in our test for interactions (see Table 2, and Graph 1) we found a significant main effect when comparing control vs. experimental conditions within female participants, F (1, 278) = 7.186 p = .01, in other words, the females in the experimental group rated higher than the females in the control group. We did not find significance within males participants. We further found a significant difference between participating males and females in the experimental group, F (1, 239) = 2.32 p = .02, but not in the control group. Females in the experimental group rated higher than males in the experimental group. These findings suggest an interaction between gender and verbalization, or gender as a moderator between perception of facial attractiveness and verbalization of that perception.

### Discussion

Consistent with our hypothesis we found that verbalization does have an effect on face perception and that gender does play a role. Three significant results were seen: (1) Female participants in the experimental group rated significantly higher when compared to the females in the control group; (2) females in the experimental group also rated higher when compared to males in the experimental group; and (3) experimental group participants rated overall higher compared to the control group participants.

The effects of verbalization were more evident in the female participants. Females in the experimental group tended to give much higher ratings of attractiveness than females of the control group. A possible change in their level of perception was seen as most females responded verbally in the experimental group justifying their initial
Students were also asked to verbalize their opinion in the form of a written response. Verbalization occurs in this environment where they felt less pressure. The results supported our original hypothesis, but not without several limitations, including a homogenous sample and class size. All 458 participants were taken from students from one university. The university where the sample was taken is a highly religious campus that focuses and teaches students the importance of personal characteristics other than physical attractiveness. Judging another person based on strictly physical characteristics might elicit feelings of shallowness in highly religious students. While this would be true for both groups, it is possible that this may have been more pronounced for those asked to verbalize their response. Therefore, student's ratings of attractiveness at the university might have underlying meaning attached to it rather than strictly a physical attractiveness opinion. This was highly evident among the female participants in the current study. Some female face ratings were highly influenced by their tendency to allot other traits to the target face given only the visual stimulus. Attempting to verbalize a non-verbal stimulus will elicit such responses (Schooler, 1990). The females' focus on positive attributes also dispensed a shift in perception; however, further studies may result in more conclusive evidence for why this shift takes place (McKelvie, 1981).

While the overall effect of verbalization was significant, there was not a significant difference between males in the control group and males in the experimental group. The majority of the significance was found in the female portion of the sample. This coincided with our hypothesis in that gender would affect verbalization. This may be influenced by the difference between male and female cognitive processes, in that females might naturally internalize their perceptions whether or not they were asked to verbalize them. So why was it that females rated so much higher than males?

First, we found that females included personality traits in their descriptions of attractiveness while men interpreted “attractive” as solely based on physical appearance. Men made comments like, “She has a mole on her left cheek,” “She has big ears,” or “Her teeth are off white,” while females made comments like, “She seems really happy, like she could be a fun person.” Also, females tended to emphasize positive attributes while men were more critical in their observations. When females did make negative comments, they tended to follow them with positive comments such as, “She has a round face, but she seems really happy and seems like a nice person.” Additionally, it is possible that females give more generous ratings than men in general.

The effects seen in the three significant areas, (females participants in the experimental rated higher than females in control group, females in the experimental group rated higher than males in the experimental group, and the experimental group rated higher than the control group) specifically in the third difference, may be partially explained by a general shift in cognitive processes and retrieval of information before rating the faces (Meissner, 2001). When the participant considers the reasons for their perceptions their thoughts about the perception are disrupted. A shift occurs from a normal cognitive process to a more analytical procedure and thus affects the outcome (Westerman, 1997). This general shift may explain the overall affect or a change in how the faces are viewed (Clare, 2004). But just as we have discussed, there are many elements that were uncovered as we looked deeper at each significant difference.

The results supported our original hypothesis, but not without several limitations, including a homogenous sample and class size. All 458 participants were taken from students from one university. The university where the sample was taken is a highly religious campus that focuses and teaches students the importance of personal characteristics other than physical attractiveness. Judging another person based on strictly physical characteristics might elicit feelings of shallowness in highly religious students. While this would be true for both groups, it is possible that this may have been more pronounced for those asked to verbalize their response. Therefore, student's ratings of attractiveness at the university might have underlying meaning attached to it rather than strictly a physical attractiveness opinion. This was highly evident among the female participants in the current study. Some female face descriptions went beyond the physical realm and began to attempt to describe the external person with internal characteristics, known as the halo effect. In other words, the females might have felt shallow judging the face, and in essence the person, based strictly on physical characteristics (Ellison, 1993).

Another limitation concerns the size of the participating groups during each administration of the study. Classes varied in size ranging from 20 students to 70 students. Though the raw number of students in each class does not affect the results, the pressures that might have been felt in each classroom due to its size might have influenced the ratings (Conner-Green, 1988). Social pressure is a strong force among adolescents and even among the university-aged population. Students in larger classes in the current study might have felt more social pressures to rate faces as more attractive when they might have not in an environment where they felt less pressure.

Students were also asked to verbalize their opinion in the form of a written response. Verbalization occurs in this situation when the opinion is put into words, whether it...
is spoken or written. The fact that the student’s responses were all written might have also played a role in the rating, versus having a spoken verbalization.

Though the current study widens the breadth of study concerning the Verbal Overshadowing Effect, there still remains much to be researched. Future studies should study variables other than gender and its effects on perception and the Verbal Overshadowing Effect. A look at how same-sex and opposite-sex attractiveness ratings affect perception will also shed new light on the changes that are seen after verbalization.

Conclusion

Individual perception of attractiveness is highly influenced by the verbal attention given to the perception at hand. In other words, if an individual verbalizes, either written or vocally, their perception of attractiveness, then his or her results will be different than if they had not verbalized their perception. After evaluating the many significant differences seen in the current study and considering the limitations and confounds of the current study, we observe that verbalization does affect overall perception of attractiveness, and participant gender does play a role in perception. These observations are consistent with the original hypothesis.

References


Rumination: A Laughing Matter? The Effects of Humor on Depressive Moods

Tim Ferrin, Brandon King, Natalie Morelock, Joshua Olson & Robyn O’Neil

ABSTRACT - Rumination is defined as negative, anxious repetitive thought and is highly correlated with depression. We hypothesized that humor would reduce the amount of rumination as measured by the Ruminative Response Scale (RRS). Distraction from ruminative thoughts could help prevent depressive episodes. Adding humor as a distracter after inducing rumination could produce lower scores on the RRS. Sixty Brigham Young University (BYU) students were subjected to a ruminative exercise. Thirty of those participants were subjected to a humorous clip after the ruminative exercise. All participants were then required to fill out an RRS questionnaire. Scores for the experimental and control groups were not significantly different ($t(58) = -1.62, p = .11$). Systematic improvements could increase the effectiveness of the manipulation, resulting in a more significant difference in means. Further research is needed to test the various measures, the length of exposure to humor and test a more representative sample than BYU students.

Rumination is defined as negative and anxious repetitive thought. Oftentimes, it leads to depressive symptoms, and involves focusing on one's distressing symptoms and their possible sources and effects (Roemer & Borkovec, 1993). It is also highly correlated with stress, worry, and anxiety and is a valuable issue to understand because of its effect on depressed and non-depressed people. Knowing the influence and effects of rumination can aid in understanding how to reduce its negative impact.

Rumination can lead to common effects of depressive factors, such as self-criticism, neediness, and negative cognitive styles in continued occurrences of major depression (Spasojevic & Alloy, 2001). Those who show highly ruminative and negative responses are more likely to experience the onset of a depressive mood (Ito & Tekenaka 2006). Although most rumination studies focus on depressed populations, rumination also applies to non-depressed populations. As rumination increases in the non-depressed, the future outlook becomes increasingly negative (Lavender & Watkins, 2004). A decrease in rumination could stop the onset of depressive episodes or lessen the frequency of depressive episodes.

Persistence in rumination often shows persistence in depression as well. Responding to depressed moods will many times develop and maintain persistent depressive episodes (Nolen-Hoeksema, 1991). Thus, the less one ruminates the less one will have depressive symptoms. As one ruminates, the focus is not on making things better, but on self, low quality of life and the potential consequences of a low quality of life. The combination of negative thinking and poor problem solving provides a heightened risk for depression and can cause prolonged depressive episodes (Ciesla & Roberts, 2007; Lara et al., 2000). If ruminative symptoms cannot be resolved effectively, the depressed individual will most likely need help to stop the negative pattern of thought. Those who dwell on negative feelings and events often cannot break their depressive cycle because of their maladaptive cognitive style (Lara, Klein & Kasch, 2000).

The ruminative process often involves negative past memories. In long-term memory, negative information is remembered better than neutral information (Kensinger & Corkin, 2003). Emotional stimuli are also given more attention in the working memory than non-emotional stimuli (Vuilleumier & Schwartz, 2001). With autobiographical memory, a lack of specificity has been a reliable predictor of depression with rumination as a mediator (Reas & Hermans 2006). When there is a negative and emotional connection to an event or experience, it is likely that the event or experience will be remembered better in the end. This may lead individuals to be more vulnerable to rumination. Thus, memory
is associated with rumination, and rumination in turn, influences the role of memory—leading to depression.

Distraction tends to break negative thought patterns better than ruminative responses (Broderick, 2005). Distracting responses are reactions that take the mind off the immediate symptoms. Response Style theory proposes that there are a variety of distracting responses to sad moods that will affect the duration and severity of depressive symptoms. Sadness can promote or inhibit distractions (either triggering them or overwhelming a person’s ability to distract; Young & Azam, 2003). If the effects are successfully reduced using distraction, then distraction could be a preventative measure for rumination and depression.

Adaptive humor helps one cope with stress and sadness, while maladaptive humor is self-destructive (Olson, Hugelshofer, Kwon & Reff, 2005). Adaptive humor is divided into affiliative humor and self-enhancing humor. The affiliative kind entails laughter with others to enhance interpersonal relationships and express emotion without feeling discomfort from being a burden to others. The self-enhancing kind maintains a humorous outlook on life or uses humor to deal with stress and cheer oneself up (Olson, Hugelshofer, Kwon & Reff, 2005). Adaptive humor correlates negatively with dysphoria and thus could provide an effective distracter to rumination and depressive symptoms. Research has found that among individuals with high rumination, those with high amounts of adaptive humor had significantly lower levels of dysphoria than individuals with high rumination and low amounts of adaptive humor (Olson, Hugelshofer, Kwon & Reff, 2005).

From these results, it appears that humor could mitigate the negative effects of rumination, not just as a mere distraction. The research team aimed to find results that provide more direct evidence of the direction of the effect than the correlational study on humor and dysphoria cited above. Because humor is available to many (even without professional help), we hypothesized that the addition of humor as a distracter would result in fewer depressive thoughts, as measured by a modified Ruminative Response Scale (RRS).

### Methods

**Participants**

Research participants were 60 undergraduate students from Brigham Young University (BYU). Students were recruited from psychology classes and ranged in age from 18 to 31. The average age was approximately 21 (M=20.62). Because of the demographics of BYU, most participants were Caucasian. IRB approval was obtained before starting the study. Every participant signed an informed consent form in order to participate, and had the option to remove themselves from the experiment at any time.

**Design**

The independent variable in our experiment was humor. Both our experimental and control groups were subjected to a self-descriptive negative word exercise to induce rumination. This included 24 negative words and word pairs that were self-descriptive. Participants thought about the negative items for six minutes before choosing the five that they felt best described them.

Immediately following the word exercise, a modified form of the RRS (modified to measure a ruminative state rather than ruminative traits) was administered to the control group. The experimental group, however, watched a scene from the TV show, “The Office”, entitled “Future Dwight” after the negative word exercise and then took the modified RRS. At the end of the RRS we asked to see if the participants found the clip or the study to be funny as our manipulation check. Our dependent variable was the modified RRS scores.

**Measures**

To measure rumination, we obtained a copy of the Ruminative Response Scale (RRS) questionnaire that has been psychometrically tested in previous studies (Treynor, Gonzalez, Nolen-Hoeksema, 2003; Roelofs, Muris, Huibers, 2006). Scores from this test were used for our dependent variable. The RRS questionnaire used a 1 to 4 Likert scale, 1 being almost never, 2 being sometimes, 3 being often, and 4 being almost always. Test items include “think about how alone you feel” and “think about how hard it is to concentrate” (Treynor, Gonzalez, Nolen-Hoeksema, 2003).

We modified the RRS to measure state rather than traits. Still using a 1 to 4 Likert scale, the modified items include, “Right now I am thinking about how lonely I sometimes feel” and “Right now I am thinking about
how hard it is to concentrate." In the modified version, 1 was strongly disagree, 2 was disagree, 3 was agree, 4 was strongly agree. The total score was calculated by adding all the numbers marked in the RRS. We statistically checked for gender differences (p = .75). The alpha coefficient for the original test at time 1 is .90, and the test retest correlation of the original is .67. The modified version of the test yields a .91 alpha coefficient.

Both the experimental and control groups took a self-descriptive negative word exercise to begin meant to induce rumination. Joorman (2006) found that the tendency to ruminate is closely related to the inability to inhibit irrelevant emotional information processed in a self-referential way. Part of the negative priming task used to find these results involved participants identifying negative traits in themselves. Using this information, the research team created the negative word exercise. Although the created exercise and the exercise used in Joorman's (2006) negative priming task were not identical, both required participants to identify negative traits in themselves (see Appendix B).

The exercise contained 24 negative words and word pairs, such as “judgmental” or “without potential.” Participants were required to look at the negative items and think about them for six minutes, choose the five items that best described them, and ponder upon times when they exhibited the five items they selected. This particular exercise was created for this study and reliability and validity were not obtained before its use. In order to see if humor was an effective distracter for rumination, the control group took the RRS after the self-descriptive, negative word exercise and the experimental group watched a humorous clip from “The Office” called, “Future Dwight” and then took the RRS. Included in the questionnaire was an item inquiring about the humor of the clip to ensure that the clip was humorous for each participant. Each session ended with a briefing on the actual purpose of the study, followed by time for participant questions.

Results

Raw scores from the RRS were calculated by summing each score on a 4-point Likert scale. Using the statistical package SPSS, the raw scores were entered and analyzed by using a t-test to find significant differences in means between the experimental and control groups on the dependent variable of RRS scores. A chi squared test determined any differences in our demographics, and Pearson bivariate tests found correlations in rumination scores according to demographics. Data was also analyzed for the experimental groups by using a one-way ANOVA, with humor as the independent variable.

The manipulation check revealed that experimental group participants found “The Office” clip humorous, while the control group participants did not find the study humorous (Table 1). Chi squared analysis demonstrated randomization was effective for age and ethnicity but not in gender. In the experimental group 21 of the 30 participants were male, while in the control group 12 of the 30 participants were male, which probably influenced our results.

We found that the addition of humor, while controlling for gender, did not result in significantly lower RRS scores, although it did approach significance (F(57) = 2.46, p=.12). This is further illustrated in figures 1 and 2. Figure

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Table 2 T-test for Equality of Means

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Figure 1 The distribution of scores in the experimental group on the RRS is illustrated. The curve is shown upon the graph to demonstrate that the scores are normally distributed. The mean and standard deviation are also shown.

1 illustrates the distribution of scores for the experimental group, whereas figure 2 illustrates the same for the control group. As seen from these figures, the distribution and the central tendency of scores in each group are similar. Participants in the experimental group averaged a score of 40.0, while control group participants averaged a score of 44.5 on the RRS (see figures 1 and 2). Humor did not act as an effective distracter from rumination. Although humor did not distract as hoped, demographic information was analyzed to look for differences in scores.

Gender was expected to have high correlation with rumination. Females were expected to score higher on the RRS. Results, however, showed that gender is insignificantly correlated with rumination (p=.75). Since the correlation between rumination and gender was low, no further statistical analysis was done to look at specific differences between male and female scores on the RRS (r=.04) (see table 3).

Age was not expected to be significantly correlated with rumination. The research team did not find any studies that would suggest that age affects the amount of ruminative thoughts. Also, participants’ ages were in the typical range of college students in the United States. Results were consistent with this hypothesis showing a low correlation between age and rumination (r=-.11, p=.42) (see table 3).

Ethnicity was not expected to have significant correlation with rumination. Results support this with a low correlation and low significance of correlation (r=.11, p=.40) (see table 3). However, with 88.1 percent of all participants being Caucasian, this would need further research to be conclusive.

### Discussion

In this study we hypothesized that introducing humor would lower rumination as measured by the RRS. It appears that humor was partially effective, but there was not sufficient statistical evidence to show that humor was the primary factor in lowering RRS scores. Increased time of exposure to the manipulation and psychometric tests on the negative word exercise and the modified RRS could substantially improve the power of the manipulation. Having an uneven gender distribution may have affected results because of the difference in male and female depression rates (Nolen-Hoeksema, 1987). The RRS is usually meant to evaluate negative thoughts in those with disorders, not a normal population as we studied in...
our experiment. Religiosity in participants may have also played a role in the results of the study. Statistics almost approached significance suggesting that if this study was replicated with these improvements and changes, the expected results could be obtained.

There are still indications that humor is an effective distracter for rumination. The difference in means shows that participants were affected somehow by the humor. With adjustments to the word exercise and the design, humor may perform as a reliable distracter to rumination. If so, humor may be used as effective treatment for patients that suffer from major depression and have ruminative response styles when dealing with depressive thoughts.

Previous research has indicated that negative self-statements do more harm than positive self-statements do good (Kaplan & Saccuzzo, 2005). Negative self-descriptive items on the word exercise may have caused too much negativity in participants' thinking. As a result, the negative word exercise may have been too harmful for such a short humorous clip to overcome the depressive feelings that the exercise may have induced. This phenomenon may be the reason why the results did not show significance.

An additional factor that contributed to the lack of significance in our study may have been a result of the duration of our manipulation. The participants in the experimental group were subjected to a ruminative exercise that lasted six minutes, whereas they were only subjected to a humorous clip for 54 seconds. Previous research shows that most distracters used for those expressing ruminative thoughts were eight minutes in duration (Lyubomirsky, 1998). The limited duration of the manipulation may not have been long enough to effectively distract the participants from their ruminative thoughts. If the clip was modified by increasing its length, it may have more effectively reduced ruminative, depressive thoughts.

It is also possible that the negative self-statements used to induce rumination may not have effectively done so. As the exercise was created just for the purpose of this study, there was no psychometric testing done to test reliability and validity. Thus, we would not know if the test was accurate in inducing rumination or if it was inducing a related construct such as dysphoria. If all participants did not ruminate, then all of the participants would have had lower scores on the RRS to begin with. Scores in the experimental group were lower than the control group's scores, suggesting that the humor did have an effect, just not enough to produce statistical significance. This could mean that the humor was effective, but that the negative word exercise was not.

Another interesting finding that was present in our experiment was that there was not a significant correlation between rumination and gender. This is not consistent with previous research, as women are twice as likely as men to be diagnosed and treated for major depressive episodes and other types of depression (Lips, 2005). This likely indicates that the sample we chose was not representative of the population. The unbalanced distribution of genders between our control group and our experimental group is one illustration of how our sample was not representative of the population. As a result, it is difficult to make any conclusions about rumination and humor in terms of gender.

Most rumination studies in the past have observed populations that were afflicted with major depression or other depressive disorders. Our study measured undergraduate students at a religious university. It is possible that religiosity may have been a limitation to our study. Students who are highly religious may be less depressed and less likely to use ruminative responses to depressive thoughts and thus could be less affected by our ruminative exercise. Limitations to the exercise itself were explained earlier.

However, according to the BYU counseling center, the three most commonly treated issues they deal with in the 2000 to 2500 yearly visits are first, academic concerns, second, anxiety, and third, depression. Anxiety and depression are usually the factors that contribute to academic concerns (T. Pedersen, personal communication, Wednesday March 19, 2008). This would suggest that BYU students may not be less depressed than other populations. No participants in the study scored extremely high on the RRS. Additional research would need to be done to compare BYU depression rates with those of other populations.

The RRS was originally intended for individuals already suffering from depressive episodes. In our experiment, we used the RRS for individuals not suffering from any depressive disorders. The absence of a disorder in our subjects may have contributed to the insignificant results. A measure of rumination in the non-depressed population would be more accurate for use in this study. How-
ever, that we are aware of, there is no current measure for rumination in the non-depressed population. In our experiment, we did not require subjects to record any disorders that they may have.

A modified version of the dependent variable was needed for this study. The RRS was intended to measure ruminative traits. However, our study used the RRS to measure the ruminative states of our participants. The modified test measured how participants were feeling at one moment in time and did not measure patterns of behavior they had acquired. In order to make this adjustment, we modified the original RRS. Although reliability was found with the sample used in this study (r=.91), the modified RRS did not undergo rigorous testing to determine its reliability and validity. Hence, it cannot be known that the modified RRS accurately measures ruminative states of anyone who takes it. After extensive testing, if the modified RRS is found to reliably and validly measure ruminative states, it could be used for those who have depressive disorders. It would be of great benefit to the psychological community to see if the modified RRS could be an effective measurement of ruminative states in individuals suffering from major depression and individuals who exhibit unhealthy ruminative responses to depressive thoughts.

In addition to increasing the length of exposure to humor, additional testing on the differences in gender should be made in future studies. The results of our study convey that there are little to no differences in gender when rumination is measured by state rather than by trait. If the experiment has proper randomization of gender, one should be able to draw more conclusive statements about gender’s effect on rumination. Given that previous research concerning rumination has looked at the display of rumination in personality traits, it would be of great worth to see how gender differs in states. This would give a better picture of the role gender plays in ruminative responses. The modified RRS allows for future observation to be performed on this new area of research.

Another future direction could look at the use of humor compared to the use of other distracters in preventing rumination. It would be beneficial to those suffering from depression to know which distracters are best for eliminating ruminative thought patterns, or if the quality of various distracters depends upon the characteristics of each individual. Also, seeing how much decrease in rumination there is due to the different kinds of distracters could further specify therapy techniques for individuals.

Although this study did not provide significant results concerning the use of humor as a distracter from ruminative thoughts, it has raised possible avenues for future research. Research is needed in order to identify the usefulness of the modified version of the RRS and the negative word exercise. The results illustrate that humor did not make a significant difference in scores on the modified RRS; however, with better measures and increased distracter duration, humor could provide more significant results.

References


Lara, M.E., Klein, D.N., & Kasch, K.L. (2000). Psychosocial predictors of the short-term course and


Leadership Skills: Developing a Measure for College Students

Bretton H. Talbot & Shyla Hallows

Abstract: Strong leaders are in high demand in many of today's disciplines. Many characteristics and skills contribute to the emergence and success of leaders. It is important to assess these skills and characteristics in order to better fulfill the leadership demands of employers and other organizations. The current measure aims to assess leadership abilities in college students in order to identify good leaders and the characteristics that they possess. A Likert scale measurement was created and administered to 50 university students. Statistical analysis showed the scale to be psychometrically sound. Items correlated highly with one another and the Cronbach's alpha was 0.78, showing it to be internally consistent. Factor analysis revealed that items loaded on three components: leadership confidence in group settings, leadership in interpersonal interactions, and leadership determination. Participants averaged 2.632 on each item, on a scale of 0-4, with no gender differences. Standardizing this scale to different populations will make it more generalizable. The leadership scale could also be used in different contexts to assess skills of individuals, specifically in job and school settings.

Leadership skills are required in most situations. It is important for job settings, organizations, institutions (Blair, 2002) and other groups (Outhwaite, 2003) to have strong leaders to guide and direct people. The success of these groups relies strongly upon the leader's vision and skills in handling and leading others. Assessing leadership aids many of these organizations in selecting leaders that possess these abilities. Thus, knowing what skills, characteristics, and abilities contribute to strong leaders is vital in selecting individuals that will have more likelihood of succeeding as a leader. Research has long focused on what makes a strong leader and how one might identify powerful leaders early on.

Researchers and theorists have developed numerous theories and measurement systems in order to identify what characteristics create an effective leader (Yuki, 1989). Some claim that there is no single approach to evaluate what makes such a leader (Carew, 1986). Context and purpose will have a strong influence on what skills and abilities are needed to succeed in various environments. Despite these claims there continues to be a heightened interest in measuring leadership skills among certain populations. Some common scales used to measure leadership skills, and determine how well individuals will perform in a leadership position are the Ohio State Leadership Scales (Schriesheim & Kerr, 1974) and the Alberta Heart Health Project scales (Barrett et al., 2005). The Ohio State Leadership Scales are broken down into three separate subscales. All three have shown to be fairly psychometrically sound, although distinct from one another (Schriesheim & Kerr, 1974). It is observed that assessing at least three different areas of leadership allows for a more comprehensive view of leadership. Other scales are available that are more specific to occupational leadership. For example, the newly developed set of scales as part of the Alberta Heart Health Project assesses leadership skills to decide on health field promotions (Barrett et al., 2005). These scales are very useful in assessing the qualities that make good leaders for certain positions.

Many studies have also been conducted to observe which characteristics those in leadership positions hold and those leaders' current views of leadership (Mulec, 2006). Recent research has shown that there exists a strong relationship between certain individual traits and leadership emergence. Those that possess traits such as intelligence, dominance, gender, self-efficacy, self-monitoring, emotional intelligence, conscientiousness, emotional stability and extraversion, are more likely to be successful leaders (Vardiman et al., 2006, 95).
Because of this high correlation between specific traits and leadership emergence, we designed a measure specifically to assess leadership traits in college students in specific situations such as public speaking, motivation, and organization. Past studies have been conducted to assess leadership in college students concerning other characteristics such as cognition, along with skills and behaviors (Houghton & Neck, 2002). By identifying these qualities in college students, organizations will be able to better select individuals fit for their specific leadership needs. This is beneficial for many employers because it allows them to screen for individuals that are more likely to succeed as a leader before hiring them. This will also allow organizations to spend less time and money on training leaders and the rate of unsuccessful leaders will also decrease.

The current scale consists of questions that use common characteristics of leaders to evaluate the level of leadership among the participants. The characteristics used in the measure consist of public speaking ability, initiative in group settings and organizational skills. We hypothesize for the scale to successfully measure these qualities in Brigham Young University (BYU) students. We also anticipate that gender and education level will influence the results.

Methods

Participants

A total of fifty participants were used, twenty-eight female and twenty-two male. All participants fell between the ages of nineteen and twenty-seven years old. The majority of those completing the surveys were sophomores (N=13) and juniors (N=24) from BYU (freshman participants N=5, senior participants N=8).

Design

This survey was a measure developed to assess leadership skills amongst college students. The collection of data for this leadership survey used a convenience sample. Twenty-five of the surveys were administered prior to the starting of undergraduate psychology classes, while the other twenty-five were given door-to-door at an apartment complex.

Procedure

A pool of thirty questions was created based on common characteristics of leaders in the home, school, and job settings. A panel of judges rated each item using a content validity ratio. The content validity ratio (CVR) refers to the judges rating each item on a scale of essentialness. A minimum requirement of judges indicating the item as "essential" is used to ensure that the agreement is not due to chance (Pennington, 2003). Thus, after items were rated ten items were selected. The questions evaluated common leadership behaviors such as public speaking ability, initiative in group settings, and organizational skills. The questions were presented in a Likert Scale format that allowed the participants to be able to rate themselves on a scale of 0-4, 0 showing disagreement with the statement, ranging to 4, showing complete agreement. Half of the participants completed the survey in a classroom setting and half completed it in their homes. The participants were instructed to answer the questions as honestly as possible and were allowed an unlimited amount of time to finish the survey. Administrators were present during the completion of the surveys.

Results

After administering the survey and running statistical analysis, the following results were found. The overall mean score for participants (N=50) on each leadership scale item was 2.632, meaning that on average students rated themselves as demonstrating the leadership skills slightly more than half of the time. Male participants averaged 2.618, and female participants scored an average of 2.643, which were not statistically different. Also, year in school did not show a significant difference. Items correlated well with one another (see Appendix A, Table 2). A factor analysis showed that items from the questionnaire loaded on three distinct components: leadership confidence in group settings, leadership in interpersonal interactions, and leadership determination (see Appendix A, Table 1). Cronbach's alpha was 0.78, which shows that it was fairly internally consistent.
Table 1

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>comfortable in front of large groups</td>
<td>.895</td>
<td>.002</td>
<td>-.026</td>
</tr>
<tr>
<td>volunteer to be a spokesperson</td>
<td>.821</td>
<td>.039</td>
<td>.055</td>
</tr>
<tr>
<td>confident decisions</td>
<td>.703</td>
<td>-.005</td>
<td>.110</td>
</tr>
<tr>
<td>people group around me</td>
<td>.350</td>
<td>.253</td>
<td>.236</td>
</tr>
<tr>
<td>manager trust</td>
<td>-.004</td>
<td>.793</td>
<td>-.047</td>
</tr>
<tr>
<td>supervised others</td>
<td>.140</td>
<td>.714</td>
<td>.037</td>
</tr>
<tr>
<td>formation of study groups</td>
<td>.221</td>
<td>.637</td>
<td>-.244</td>
</tr>
<tr>
<td>plan activities</td>
<td>-.206</td>
<td>.577</td>
<td>.293</td>
</tr>
<tr>
<td>strong vision</td>
<td>.139</td>
<td>-.115</td>
<td>.841</td>
</tr>
<tr>
<td>determination</td>
<td>.083</td>
<td>.088</td>
<td>.766</td>
</tr>
</tbody>
</table>


Discussion

The current leadership measure showed to be a good self-assessment of the specified leadership skills. Looking at the inter-item correlations, each question correlated with many of the other items. Therefore there existed no need to eliminate any questions. This high correlation between items shows internal consistency as they all measure the same construct. For example, question 5 refers to speaking in front of large groups and correlates with question 7, which deals with volunteering to be a spokesperson. This shows that they are both measuring the same component of leadership – public speaking ability. This occurred for all of the items that appeared on the survey and revealed three areas of interest.

Factor analysis showed that items loaded on three components: leadership confidence in group settings, leadership in interpersonal interactions, and leadership determination. Division into these three components was due to similarities in the questions. The items that loaded on confidence in group settings referred to aspects such as public speaking. Leadership in interpersonal interactions involved qualities of leaders in work and school settings. Items referring to vision and having a firmness of purpose measured the last component, leadership determination. Those participants that scored highly on one item tended to also rate themselves highly on those items that loaded on the same component.

When the effect of gender was evaluated our findings were surprising. Where there is normally a disparity between men and women (Walker, Llardi, & McMahon, 1996) data analysis showed that gender did not play a role in how the participants rated themselves as having leadership skills. The sample used in the current measure may have influenced this finding. Previous studies that have looked at gender difference have commonly recruited a wider variety of participants, including those attending universities and those who were not. The current sample was taken strictly from university students. In other words, university students might rate themselves higher in leadership abilities than individuals who are not university students (Linimon, Barron & Falbo, 1984). Thus, the gender difference that has appeared in prior research disappears when both the male sample and female sample are university students.

Year in school also did not show a significant difference. There is little variation of scores between the sophomore and junior-level students. This may occur because by college age most students will have developed the specific leadership skills that are used in the current measure. Most students develop high organizational skills in their freshman year in college. Thus, by the sophomore and junior years there does not exist a large difference. We might assume then that there would be a larger difference between freshman and seniors. Further studies will benefit by looking at this comparison, but in the current measure there was an insufficient amount of freshman-level participants (N = 5) to adequately compare to sophomore level participants.

While results support the current measure, some limitations do exist in areas such as the sample, personal differences, and the generalizability. Though the sample size was adequate, all participants were BYU students and thus the results are not inferable to the general population of college students. The majority of the sample population was between the ages of 19 and 27. The small range of age hinders the results’ ability to represent any college student falling outside of this range. There is a large number of non-traditional university students (i.e. students who are returning to the university level education after many years of work experience, or over the age of 25) that would not fall into the age range of the current measure (Luzzo, 1993).

Additionally, participant’s individual differences such
as self-perception, arrogance, background and attitude towards social pressures, and values (Ciulla, 1999) were not accounted for. Because self-report was utilized, perception of one's own leadership skills may have been influenced by personality characteristics. Thus, this measure is based on subjective view rather than objective leadership ability (Hessing, Elffers & Weigel, 1988). The use of self-report, and consequently the personal differences between participants, may have caused biases during the measure and thus may not be a good measure of leadership skills. Future scales might also address to what extent the measure predicts leadership success.

In conclusion, it is assumed that the current measure successfully assesses leadership characteristics such as confidence, interpersonal interactions and determination in BYU college students. Individuals who scored high overall on the assessment showed to possess characteristics such as public speaking, initiative in group settings and organizational skills. The implications of this measure are most valuable to organizations aimed at selecting successful leaders at an early point in time.

Future leadership scales should focus on the ability to be generalized to represent a wider population. Subsequent scales could also be administered to a larger number of college students in order to have a more representative sample to measure leadership skills. Leadership scales should also be used in different contexts to assess skills of individuals, specifically in job and school settings.

References


Gender and the Appreciation of Physically Aggressive “Slapstick” Humor

Terri Jorgensen, Allen Quist, Katie Steck, Kristen Terry, & Mark Taylor

ABSTRACT This study investigated gender differences in the appreciation of slapstick humor. Participants included 28 male and 29 female undergraduates at Brigham Young University. Participants rated three humorous video clips (slapstick, wordplay, and non-sequitur) using a five question, seven point Likert-type rating scale. The results of the study supported our hypothesis that men would rate slapstick humor as funnier than women would. This suggests that gender differences in physical aggression influence perception of humor.

There are significant gender differences in physical aggression. In 2004, men were almost ten times more likely than women to commit murder (U.S. Department of Justice). Moreover, men consistently report more physical aggression on questionnaires and measurement scales (Burton, Hafetz, & Henninger, 2007). In addition to being more overtly aggressive, men are more likely to participate in activities with physically aggressive undertones. For example, men play more contact sports such as lacrosse, football, ice hockey, and wrestling (Connell, 2000). Men are also more likely to be soldiers or police officers (Connell, 2000).

Gender differences in physical aggression may affect entertainment preferences (Fenigstein, 1979). Entertainment preferences, especially more violent preferences for males, appear early in life. By age two, some boys already demonstrate a preference for masculine toys such as tanks, planes, toy guns, and male action figures (Singer & Singer, as cited in Goldstein, 1998, pp. 62-63). Boys typically prefer violent video games like Grand Theft Auto, Counter Strike, and Call of Duty, over less aggressive games (Lemmens, 2006). Boys are also more likely than girls to enjoy a game’s aggressive elements (Cantor, as cited in Goldstein, 1998). Gender differences continue into adolescence as young men prefer more violent music videos and television shows than do young women (Shayovits, 2006).

Another form of entertainment in which gender differences appear is in physically aggressive humor. When asked to rate the perceived pain and funniness of aggressive cartoons, men and women rated the perceived pain similarly, but women rated the most painful cartoons as less funny than did men (Barrick, Hutchinson, & Deckers, 1990). Similarly, women have shown an inverse relationship between joke cruelty and joke appreciation (Herzog, Harris, & Kropscott, 2006). Other studies have failed to find significant gender differences (Henkin & Fish, 1986; McCauley, Woods, Coolidge, & Kulick, 1983).

Although previous studies have explored gender differences in appreciation of cruel and painful humor, no studies specifically deal with gender differences in appreciation of slapstick humor. Slapstick humor is physical, “pie in the face” humor. It is characterized by an exaggerated display of violence that is not accompanied by realistic consequences (Tibbetts, 1973). An understanding of slapstick humor is important because exposure to aggressive humor may increase overt aggression (Baron, 1978; Baron, 1974). In this study, we examined whether men or women would find slapstick humor funnier. Instead of having participants rate cartoons, as several past studies have done, we had them rate a short video clip. A video clip, as opposed to cartoons, can more accurately display the exaggerated violence that characterizes slapstick humor. Based on previous studies of gender differences in physical aggression, entertainment preferences, and specifically humor appreciation, we hypothesized that men would rate a slapstick video clip as funnier than women would.
Method

Participants
Participants were 28 men and 29 women undergraduates attending Brigham Young University, between the ages of 18-25. Most were recruited from psychology courses and received extra credit for their participation. All participants signed an informed consent. The study was approved by the Institutional Review Board.

Materials
The instruments were three video clips and a rating scale for each dip. The first clip depicted a violent scene from Happy Gilmore in which actors Bob Barker and Adam Sandler engage in a brawl on a golf course. The fighting that occurs in this clip is extended, exaggerated, and neither party seems to suffer any consequences such as fatigue or the presence of blood. Also, while fighting, the pair begins to tumble down the golf course hill. This tumble is intended to be humorous. The aforementioned characteristics of the clip were intended to represent slapstick humor.

The second clip illustrated wordplay humor, which the researchers define as quick wit and a play on words. It involved a scene from the television show Scrubs, in which the doctor gives his old Spanish dictionary to the nurse because he claims he already mastered the language. The nurse thanks him in Spanish and he replies, "You're welcome-o." By the doctor's vocabulary, it shows that he did not, in fact, know Spanish. This dialogue represented a play on words. The final clip was from the movie Zoolander. This particular clip shows Ben Stiller watching a video intended to brainwash him. The delusions that follow are random images and ideas whose haphazard connectedness displays non sequitur humor. The nonsensical content was intended to represent non sequitur humor.

We constructed a Likert-type rating scale of five items to accompany each clip. Participants rated how funny, clever, physically aggressive, entertaining, and offensive each clip was on a seven-point scale; one being low and seven being high. The researchers only analyzed the funniness and physical aggression ratings. The other questions were instituted in order to disguise the real intent of our study. The clip types and the participants' gender were independent variables, while the mean ratings of each clip were the dependent variables.

Procedure
Each participant sat in front of a computer that had the three clips downloaded onto the desktop. After signing the informed consent, each received a packet with instructions informing them of the order they were to watch the clips. This order was determined by an online random number generator. After reading the instructions on the first page, participants circled whether they were male or female. This packet also included the rating scales, which participants filled out immediately after viewing each clip. Participants were excused once their packet had been collected. Though there was no formal debriefing, participants who inquired were explained the details of the study.

Results
Ratings of funniness and aggression were analyzed using a repeated measures ANOVA with the following independent variables: Humor type (slapstick, wordplay, non sequitur) and gender (males, females). Our alpha level was set at 0.05.

There was no Gender main effect for the funniness ratings of the dips $[F(1, 55) = 1.381; p = 0.245]$ indicating that the overall averages of the funniness ratings of the three clips did not differ by the participants' gender. This analysis was performed to make certain that there were not any significant differences in overall funniness ratings of the clips between the genders.

There was a Clip main effect for the funniness ratings of the dips $[F(2, 110) = 6.945; p = 0.001]$. The funniness ratings of the individual clips were different depending upon the clip type: the slapstick clip rated as the funniest, the wordplay clip rated second funniest, and the non sequitur clip rated as the least funny. Thus the clips differed in how funny the participants found them.

There was a Clip x Gender interaction for the funniness ratings of the dips $[F(2, 110) = 3.186; p = 0.045]$ (see figure 1). There was a significant difference between how men and women rated the individual clips. This difference was
found looking at the linear component. This differs from the finding of no Gender main effect in that the Clip x Gender interaction analyzed the individual clips' funniness rather than the overall funniness.

There was a significant linear component for the funniness ratings of the clip \( F(1,55) = 16.411; p = 0.000 \) with a nonsignificant quadratic component \( F(1,55) = 0.350; p = 0.557 \). The Clip funniness ratings x Gender linear component \( F(1,55) = 7.370; p = 0.009 \) was significant and the quadratic component which was not significant \( F(1, 55) = 0.270; p = 0.605 \), show that the significant difference lies in the slapstick clip.

The standard deviation of the funniness ratings among women for each clip was higher than the standard deviation for the men. The difference was highest for the slapstick clip (SDwomen=2.09; SDmen=1.73). Particularly, the funniness ratings of the slapstick clip differed more between women. Their ratings were more inconsistent while men’s ratings tended to be more similar.

There was a Clip main effect for the aggressiveness ratings \( F (2, 110) = 655.589; p = 0.000 \). The mean rating for the slapstick clip was higher than the other two clips (slapstick M=6.3684, wordplay M=1.2982, non sequitur M=1.5965) indicating that this clip is the most physically aggressive of the three.

The Clip x Gender interaction for the aggressiveness ratings was non-significant \( F (2,110) = 0.811; p=0.447 \) (see figure 2). Thus, the relative ratings of the three clips did not differ between genders. Both men and women rated the physical aggressiveness of each clip similarly.

### Discussion

The purpose of this study was to examine whether men and women would rate the funniness of slapstick humor differently. Specifically, we hypothesized that men would rate the slapstick clip funnier than women would. Two other clips were used to control for funniness ratings. This was to ensure that the men did not rate all three humor types significantly funnier than the women. The findings are consistent with our hypothesis and support the research of Barrick et al. (1990), which found that men were not influenced by the amount of pain suffered by a character while women showed an inverted-U relationship between the pain and the funniness of cartoons. Moreover, the results expand previous research by extending the media form from cartoon images to video clips of human actors.

From our results, we cannot specifically determine why men rated slapstick humor funnier than women rated it. However, by connecting previous research to our findings, we can seek probable cause for the difference. Previous research found that men are more aggressive in behavior and prefer more violent entertainment (Burton et al, 2007; Fenigstein 1979). One of the predominant factors that distinguish slapstick comedy from wordplay and non sequitur humor is physical aggression. Not only did the men rate the slapstick clip as funnier than the other two clips, but they also rated it as funnier than the women rated it. This implies that the high level of physical aggression was a major factor in determining who
rated the slapstick clip as funnier.

Implications

Because the men rated slapstick humor as more comic than the women rated it, this may help to explain why the media markets more violent forms of entertainment towards the male demographic. Additionally, entertainment is becoming more violent overtime (McCauley et al., 1983). The increasingly violent media may possibly be due to two factors: desensitization and the finding that the more aggressive a cartoon is, the funnier men rate it (McCauley et al., 1983).

Confounds & Limitations

There are at least three potential alternative explanations for the differences observed. First, having the participants circle whether they are male or female prior to viewing the clips may have primed them to conform to gender stereotypes. For example, some female participants might have rated the slapstick clip as less funny because they may believe that most women do not find this type of humor funny. We could have controlled for this by recording a participant's gender after they completed the experiment.

A second limitation was the unequal duration of the clips. The slapstick clip was 85 seconds, the non sequitur clip was 70 seconds, and the word play clip was 20 seconds. It is possible that the length of the slapstick clip affected how the women rated its funniness. In the study conducted by Barrick et al. (1990), female participants initially rated violent cartoons as very funny, but as the cartoons grew progressively more violent, female participants began to rate them as less funny. Barrick et al.'s study suggests that the intensity and the duration of aggressive humor may affect female humor appreciation. In our experiment, the women may have initially enjoyed the slapstick clip but over time found it less humorous. Thus, future research should systematically study the influence of intensity and duration of aggressive humor regarding gender differences in funniness ratings.

Finally, the clips selected may have biased our results. Despite attempts to be objective, the influence of personal preference regarding what is amusing was inevitable. For example, the male authors of this study liked the word-play clip enough to persuade the females, who were initially opposed to the clip, that it should be included in the study. Moreover, many of the participants may have been familiar with the sources of the clips. This familiarity may have caused them to rate the funniness of the clip's source and not the clip itself. For example, participants may have rated the slapstick clip as funnier than the non sequitur clip based on their holistic opinions of the films Happy Gilmore and Zoolander. Experimenters wishing to control for these variables should hold the source constant or select less familiar video clips.

There are also a few limitations to the study. By using a convenience sample we may not be able to generalize the findings to an entire population because our sample came from Brigham Young University undergraduate students and was limited to the ages 18-25. This population is mostly a Conservative and more traditional group of people compared to other colleges and this may affect how the participants viewed the violence in the slapstick clip. In addition, men were the principal actors in the three clips. This may have had an influence on how the participants rated the clips. For instance, McGhee and Duffey (1983) found that both genders rated jokes as funnier when women, as opposed to men, were the brunt of the joke.

Further Research

We suggest that future studies investigate how, and if there is an interaction between gender personality characteristics and appreciation of physically aggressive humor. Previous research has shown that people that rate themselves as aggressive were more appreciative of aggressive jokes (Prerost, 1975). This would be worth examining to pinpoint what other characteristics elicit a higher funniness rating of aggressive behavior or jokes. This could have further implications as to what personality types are more susceptible to aggressive tendencies.

It would also be beneficial to see if sampling in a more diverse population would render different results. Because Brigham Young University is a conservative school, a more liberal school may produce different results between men and women. Because the majority of our participants were members of the Church of Jesus Christ of Latter-day Saints, coming from a more conservative and traditional background, another study may use a sample from different religious backgrounds. Religious affiliation and beliefs tend to trickle into other parts of a person's life, so there is a reasonable cause to investigate how this
might affect a person's evaluation of physically aggressive humor. According to Latter-day Saint doctrine, viewing certain types of media such as physically aggressive humor should be avoided. "Consuming violent media makes it more difficult to keep ourselves 'unspotted from the world.'" (Bushman, 2003). Since the Bible is a part of the Latter-day Saints' standard works, they believe that being "unspotted from the world" means to keep one's self pure, including what is visually perceived (James 1:27). Thus, it is possible that the results presented here would be stronger in other samples.

It would be valuable to determine whether age plays a role in the perception of slapstick humor. The older a person gets, the more conservative they become (Truett, 1993). From this finding, the assumption could be made that older persons might rate a slapstick clip as less funny than would younger persons. Future researchers could evaluate if age does in fact affect humor appreciation and whether or not it changes over time (Shammi, 2003). This investigation could be done by comparing the ratings of clips from different age groups. Results may also affect how the media caters to age groups, and how a violent clip may not be as effective if viewed by an older generation.

Another way to expand the research would be to obtain a sample of males from different countries and compare their ratings of a slapstick humor clip. Research has shown that American males score higher on the masculinity scale than do males from Great Britain (Eysenck, 1995). Another contribution that could be made is to find if there is a correlation with scores on the masculinity scale and the ratings of physically aggressive humor.

In conclusion, though we cannot specifically attribute what caused the difference in ratings between genders, there are certain personality differences in men and women which may have led them to rate slapstick humor differently one from another. For example, men score higher on aggressive personality inventories (Burton et al., 2007). Thus, personality differences may lead men to enjoy watching slapstick humor more than women.

References


Rumination and Cognitive Ability in Undergraduate Females

Hayley Jensen, Stephanie Johnston, Jaclyn Kahrs, Haliaka Kauwe, & Michelle Knight

ABSTRACT- The present study investigated the hypothesis that rumination, induced through a negative-based self reflection questionnaire would hinder cognitive ability in undergraduate females, as measured by an anagram test. Sixty-eight females from Brigham Young University took an anagram test and filled out the Beck Depression Inventory, the Burns Anxiety Inventory, and Rumination Responses Scale. Thirty-seven of these participants also filled out a Rumination Induction Questionnaire (RIQ) before taking the anagram test. Manipulation checks indicated that the Rumination Induction Questionnaire was an ineffective method for inducing rumination. Results did not support the original hypothesis. Instead, results showed that those who took the RIQ performed no different on the anagram task than those who did not. Additionally, ruminators and non-ruminators performed no differently from one another, indicating that there was no causal role between rumination and anagram performance. The study also supported previous research findings; that rumination, anxiety, and depression are strongly related. Possible limitations and suggestions for future research are discussed.

Rumination is a repetitive focus on one's own circumstances and the causes and consequences of the resulting mood. Ruminators continually focus on their own thoughts, feelings, and behaviors. Although individuals may engage in positive or neutral rumination, this coping style is more often associated with negative thought processes (Ward, Lyubomirsky, Sousa, & Nolen-Hoeksema, 2003). Rumination is strongly linked to depression and dysphoria. Indeed, those who engage in rumination are at greater risk for developing depression and often suffer from more severe depression than those who do not ruminate (Lyubomirsky & Nolen-Hoeksema, 1998). Additionally, there seems to be a difference between depression and depression in combination with rumination. Rumination, when paired with a depressive state, is more likely to impair concentration, as well as performance in school work and general day to day activities (Lyubomirsky, Kasri, & Zehm, 2003). This impairment is likely the cause of one's negative feelings.

Rumination is the depressed individual's attempt to overcome negative feelings. People often believe that an inward-focused coping style, such as rumination, will lead to greater insight concerning their problems. Ruminators often ponder the answers to questions such as “Why am I feeling depressed?”, “What does it mean when I feel this way?”, and “Why can't I stop feeling this way?” Depressive ruminators dwell on personal mistakes and inadequacies, and they focus on their feelings of hopelessness and isolation (Davis & Nolen-Hoeksema, 2000). Compared to depressed individuals who were not induced to ruminate, depressed ruminators believed they were reaching a greater understanding concerning the circumstances that were causing them to feel depressed (Ward et al., 2003). In reality, this ruminative coping style led to negative and ineffective solutions to the individual's problems. Attempts to clarify reasons behind troubles only generated inefficient results for the ruminator (Ward et al., 2003).

Compared to individuals who engaged in a distraction task, self-focused ruminators were found to entertain more negative thoughts and distorted interpretations of events. Additionally, these individuals had more negative expectations for the future and generated poorer solutions to interpersonal problems (Lyubomirsky et al., 1995). Ruminators not only experienced more severe depression and dysphoria,
but they also had more negative interpretations of their situations and more difficulty finding solutions to their problems. Studies have shown that depressed individuals have a lower ability to interact effectively with other people when put into a social environment. Rumination may contribute to this: when individuals are constantly replaying thoughts and memories in their mind, they lose focus and hinder their social problem solving skills (Goddard, Dritschel, & Burton, 1996; Kao, Dritschel, & Astell, 2006). This may only serve to add to the depressive state of mind, as ruminators then will wonder why they have difficulties socializing with other people.

Rumination disrupts the initiation of behaviors that may help solve the everyday challenges associated with socializing. This may be the result of reduced confidence and satisfaction with solutions, as well as a decreased willingness to commit to solutions (Ward et al., 2003). People engaged in ruminative responses do not take action to change their situation; instead, they spend much of their time focusing on how bad they feel and wondering "Why me?" (Davis & Nolen-Hoeksema, 2000). Due to the fact that ruminators primarily focus on their negative, depressed, and anxious thoughts or feelings, they lack self-efficacy (Bandura, 1986, as cited in Ward et al., 2003). As a result, ruminators tend to feel less motivated to try to resolve their predicaments. Not only do ruminators have difficulty initiating the very behaviors that will help them escape the vicious cycle of depression and rumination, but they also withdraw from, or avoid altogether, activities which they would normally enjoy (Ward et al., 2003). Given rumination's negative impact on social problem-solving, this coping style may also have a negative impact on cognitive problem solving.

In a memory study, depressed college students were evaluated on rumination and their ability to recall a passage. Results showed that the more a participant recorded mind lapses, the worse the individual performed on the memory recall test. These mind lapses measure rumination by providing evidence that the participant's negative thoughts were distracting them from the memory recall test (Hertel, 1998). Dysphoric ruminators experience impaired concentration on academic tasks, including reading and answering questions, listening to a lecture and digesting the information, and proofreading a paper (Lyubomirsky et al., 2003). It seems this is the result of rumination taxing the individual's cognitive capacity. Those individuals who were depressed and focusing on what is wrong with them – why they feel the way they do and why they can't snap out of the mood they are in – found their ability to concentrate significantly diminished. More specifically, these individuals spent more time on the tasks, reported more frequent interfering thoughts, and displayed somewhat poorer performance on the tasks (Lyubomirsky et al., 2003).

Further research has suggested that women are affected more by rumination and perform poorer on the tasks (Lyubomirsky et al., 2003). There seem to be clear gender differences between men and women for depression and rumination. This dichotomy first becomes apparent in the adolescent years. Adolescent girls engage in co-rumination more often than their male counterparts (Rose, 2002). As girls and boys mature, girls are also more likely to develop depression as well as engage in ruminative thought processes. These traits characteristic of adolescent girls are carried into adulthood, as there is increasing evidence that women suffer from depression much more often than men (Papadakis, Prince, Jones, & Strauman, 2006). Studies testing gender differences in rumination have also been consistent in finding that females report a more ruminative response style than males (Goldman, 2005; Mezulis, Abramson, & Hyde, 2002).

Furthermore, research suggests that men are much less likely to recount or be observed in ruminative and depressive states than are women (Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema, Parker, & Larson, 1994). In general, males are much more apt to distract themselves from their depression, while females tend to exacerbate their depression (Morrow & Nolen-Hoeksema, 1990). Nolen-Hoeksema, Larson, & Grayson (1999) suggest that women are more vulnerable to depression because they experience more chronic strain, have a greater tendency to ruminate when stressed, and perceive less mastery over their lives. Due to this previous research indicating that females are affected more by rumination, our study focused on women's overall cognitive ability of problem-solving as measured by anagram performance.

We were particularly interested in studying how college-aged women were affected by rumination in their ability to complete the anagram problem-solving task. Zarantonello, Slaymaker, Johnson, & Petzel (1984) found that anxiety led to reduced efficiency in anagram comple-
a test of cognitive problem-solving abilities. Like anxiety, rumination is often associated with depression. Just as anxiety negatively affects performance on anagram completion, rumination may have similar consequences. We hypothesized that rumination, induced through a negative-based self-reflection questionnaire would hinder cognitive ability in undergraduate females, as measured by an anagram test. As suggested by Lyubomirsky et al. (2003), participants were given a time limit in which to complete the anagram task. Also assessed in our study were some of the factors that may intervene between a participant's level of rumination and her performance on the anagram task. In particular, we administered the Beck Depression Inventory and the Burns Anxiety Inventory, as depression and anxiety were potential covariates in our study.

Method

Participants
The participants for our study were recruited from courses at Brigham Young University. We studied sixty-eight female undergraduates. The majority of participants were Caucasian and between the ages of 18 and 28. Participants were recruited through flyers and in-class announcements. Signed consent was obtained upon their arrival for participation. Institutional Review Board approval was obtained.

Materials
Our study included questionnaires comprised of a Rumination Induction Questionnaire (RIQ), the Beck Depression Inventory (BDI), the Burns Anxiety Inventory (BAI), and the Ruminative Responses Scale (RRS). The Rumination Induction Questionnaire, created by the researchers, consists of nine items and is designed to induce negative-based self-reflection in individuals. Questions included:

6. What is the worst day you had last week? Why was it so bad?
7. What was the most depressing day you have ever had? Why?
9. Think about significant life crises you have personally experienced such as a car accident, death of a family member or friend, natural disaster, etc. Write about your experience and the feelings and emotions you associate with these negative events.

This questionnaire was not scored, as its only purpose was to induce rumination.

The BDI contains 21 items and the BAI contains 33 items. These inventories assess an individual's depressive and anxious tendencies, respectively. Typical questions from the BDI include:

3. 0 I do not feel like a failure.
   1 I feel I have failed more than the average person.
   2 As I look back on my life, all I can see is a lot of failures.
   3 I feel I am a complete failure as a person.
7. 0 I don't feel disappointed in myself.
   1 I am disappointed in myself.
   2 I am disgusted with myself.
   3 I hate myself.
12. 0 I have not lost interest in other people.
    1 I am less interested in other people than I used to be.
    2 I have lost most of my interest in other people.
    3 I have lost all of my interest in other people.

Questions on the BAI were answered on a four-point scale where 0 means not at all, 1 means somewhat, 2 means moderately, and 3 means a lot. Typical questions include:

1. Anxiety, nervousness, worry, or fear 0 1 2 3
7. Difficulty concentrating 0 1 2 3
21. Butterflies or discomfort in the stomach 0 1 2 3
31. Headaches or pains in the neck or back 0 1 2 3

The RRS consists of 22 items, which serve to indicate the participant's present level of rumination. These questions were also answered on a four-point scale indicating how often participants engaged in particular thoughts or behaviors where 1 means almost never, 2 means sometimes, 3 means very often, and 4 means almost always. Example questions include:

6. Think about how passive and unmotivated you feel
13. Think about a recent situation, wishing it had gone better
14. Think "I won't be able to concentrate if I keep feeling this way."
21. Go someplace alone to think about your feelings

Questions on the BDI, BAI, and RRS were scored based on the number circled by participants. Total scores for each separate questionnaire were calculated by adding up all of the circled numbers. All three tests have been used frequently in psychological research. They have been accepted as valid and reliable measures for depression, anxiety, and rumination in the scientific community.

Additionally, a 60-item anagram test was administered for a seven minute time limit. The anagrams chosen were random and unassociated with any particular theme or goal. A clock was used to keep track of the seven minute
test period. The tests were administered with paper and pencils.

Procedure

Research participants were randomly assigned to either the experimental or the control group based upon the session or day they came. Upon the participants’ arrival, the study was introduced as research on response style and cognitive ability, and participants signed the consent form. Participants in the experimental condition began by filling out the RIQ. There was a ten minute time period for this questionnaire. Following this, participants took the seven minute anagram test. Lastly, these participants filled out the questionnaire containing the BDI, BAI, and RRS. If participants were in the control condition, they followed the same procedure, except they did not fill out the RIQ; they began immediately with the anagram test. Participants who filled out the RIQ were debriefed before they left. These research methods, along with all materials and consent forms, were submitted to and approved by the institutional review board of Brigham Young University.

Data Analysis

Data was entered and analyzed using Statistical Package for the Social Sciences (SPSS). We used a Between-Subjects Design with covariates. We used the General Linear Model Procedure to analyze the effects of rumination, the independent variable, on cognitive ability, the dependent variable, while controlling for the covariates measured, namely depression and anxiety. Additional procedures included T-tests, Chi-Square analysis, and Pearson Correlations. Before entering data into SPSS, scores from each questionnaire were tallied by adding the individual responses as dictated by each questionnaire’s instructions. Participants had four scores each: depression, anxiety, rumination, and anagram.

Results

Because the researchers attempted to induce rumination in the experimental condition, we used the Rumination Responses Scale as a manipulation check to see if rumination was actually induced. Results showed that there was no significant difference between groups’ scores on the RRS, indicating that the manipulation was ineffective (t = .553, p = .582). Furthermore, the control and experimental groups differed significantly in age, class, and ethnicity (see Table 1). This implies that our randomization did not work.

Our hypothesis was that rumination would hinder cognitive ability in female undergraduates. As previously mentioned, researchers attempted to induce rumination in the experimental group through a negative-based self-reflection questionnaire. Cognitive ability was measured in all participants by a seven-minute anagram test. Results did not support the hypothesis. The difference between

![Graph of mean anagram score for control and experimental groups.](https://scholarsarchive.byu.edu/intuition/vol4/iss1/11)
the groups was insignificant (p=.986). More importantly, there was no correlation between rumination and anagram scores (Pearson correlation = .028, p = .409). Thus, the difference between the control and experimental groups, as well as the difference between ruminators and non-ruminators, was statistically insignificant.

Research suggests that depression, anxiety, and rumination are connected. We included depression and anxiety as covariates. As shown in Table 1, the control and experimental groups were not different in these factors. Table 2 confirms that, consistent with previous studies, there were strong correlations between all three variables. There is also a significant correlation between anagram score and anxiety. Although our main finding concerning rumination and cognitive ability was insignificant, this may be attributed to our ineffective manipulation. It is important to note that no strong relationship was found between rumination and anagram score.

### Discussion

We hypothesized that rumination, induced through a negative-based self-reflection questionnaire would hinder cognitive ability in undergraduate females, as measured by an anagram test. There was no significant difference in the anagram score of participants in the control group versus the experimental group because the Ruminati on Induction Questionnaire failed to generate ruminative thoughts and feelings in the experimental group, eliminating our dependent variable. Overall, those that were induced to ruminate were not actively ruminating while taking the anagram test. Therefore, no statistically significant difference was produced between the control and experimental groups in this regard.

More importantly, there was no statistically significant correlation between rumination and anagram score despite evidence for a valid measure of rumination. Like previous research, the Rumination Responses Scale appeared to be a valid measure of rumination as it strongly correlated with both the Beck Depression Inventory and the Burns Anxiety Inventory. However, there was still no positive relationship between rumination and anagram score. Though rumination may affect performance in other cognitive tasks, this result is particularly compelling as it indicates that there is no evidence to suggest that rumination plays a causal role in the cognitive disruption of anagram performance.

### Limitations

There were many shortcomings associated with our study which may contribute to the lack of statistically significant results. First, differences in the administration of the exam by different experimenters may have affected results. There was a set protocol for administering the tests. However, as the tests were handed out in new and varying settings the experimenters were put into environments that were unplanned. Questions and comments by participants were brought up in each study presenting the need for instructors to interact with participants in unscripted dialogue. These unscripted dialogues may have affected the results of the participants.

Second, while conducting the experiment we were unable to recruit the desired number of participants through our designated study sessions, which affected the randomization of the study. The environment of the study was meant to be strict and structured, giving the participants a silent room without distraction or interaction among participants. Most of the participants who took the test in these ideal conditions were students of introductory level psychology courses; they constituted a large portion of the control group. Because of recruiting difficulties, there was a lack of participants from Psychology 101, Psychology 111, and History of Psychology courses for the experimental group. Different recruiting patterns took place as a result. Friends and roommates of the researchers became participants, which accounts for the variation in ages and ethnicities. It was through friends and roommates that the majority of the experimental group was established. Therefore, there were significant differences in age and ethnicity between the control and experimental groups, and randomization was not successful. These participants, while given the same tests and questionnaires, were in different environments than the original sessions administered. This difference in environment may have affected overall results, as participants likely felt less re-
served and more relaxed. Under this more casual setting, it is possible that participants may have taken the test less seriously. Overall, randomization did not occur, and it is very likely that these variations in environment were major contributors to the lack of significant findings.

Lastly, the largest limitation and main confound of the study was the Rumination Induction Questionnaire. This questionnaire was created by the researchers; therefore, its effectiveness in inducing rumination was uncertain. We included the Rumination Response Scale as a manipulation check. This scale showed the rumination levels of the participants, enabling us to see the levels of rumination in the control group versus the experimental group. It was important to recognize the levels of rumination to identify whether there was a significant difference in rumination between groups. The results of this scale showed that the groups were not different and that the experimental group did not have increased rumination. Both groups had similar scores on the anagram test. The scale uncovered the weakness of our Rumination Induction Questionnaire, exposing the loss of our independent variable: rumination.

Confounds

Researchers of other studies have found that individuals who engage in rumination find it more difficult to focus, leading to poorer performance on cognitive tests and abilities. However, we failed to demonstrate that rumination directly affects the underlying cognitive mechanisms of anagram performance. The correlations we found between depression, anxiety, and rumination were consistent with previous research in this area. Individuals who suffer from one of these conditions likely suffers from one or both of the others. Depression, anxiety, and rumination go hand in hand, as the presence of one increases the presence of another. As in previous studies, participants in our research who indicated one of these conditions tended to have one of the other conditions as well.

Future Research

For future research we suggest that the experimenters choose participants that are known to ruminate, instead of attempting to induce rumination. Should experimenters choose to induce rumination we suggest using different methods. Possible ideas might include using more thought provoking questions, using multiple techniques (questions and music), and increasing the amount of time given for the rumination induction. It is also very important that the environment is kept constant through sessions and across conditions. Also, for testing overall cognitive ability, we suggest using other types of tests, such as a memory recall or a reasoning test. Other possible directions for research might include varying the difficulty of the tasks and varying the time given for the tasks. Understanding the effects of rumination on cognitive ability is important for improving educational systems and workplace settings. Being able to recognize rumination and possible coping strategies may help people overcome their ruminate tendencies and perform better in school and work. This recognition also has the potential to reduce the prevalence of depression and feelings of loneliness that accompany rumination.

References


Kao, C., Dritschel, B. H., & Astell, A. (2006). The effects of rumination and distraction on overgeneral auto-


Abstracts from the 2008 Mary Lou Fulton Mentored Research Conference

Affective Functioning in Pre- and Post-Surgical Patients With Medial Temporal Lobe Epilepsy and Good Seizure Outcome

Mentor: Howard Cleavinger

Abstract: This study examined affective functioning in patients who received surgery for intractable medial temporal lobe epilepsy. We hypothesized that patients who received surgery with decreased post-surgical seizure frequency would show affective improvement. The study showed a clinically significant improvement in affective functioning for patients with a good surgical outcome.

Pediatric Traumatic Brain Injury: The Entorhinal Cortex and Cognitive Outcomes

John A. K. Coburn and Howard B. Cleavinger: Brigham Young University
Erin D. Bigler, Elisabeth A. Wilde, Jill V. Hunter, Xiaoqi Li, and Harvey S. Levin: Baylor College of Medicine
Mentor: Howard Cleavinger

Abstract: Research has consistently demonstrated volume loss in temporal lobe structures, including the hippocampus, following moderate-to-severe traumatic brain injury (TBI). However, the relationship between the entorhinal cortex (EC), a structure with direct hippocampal input, and volume changes following TBI has not been specifically examined in children. This study was conducted to investigate the role of EC volume loss as it relates to cognitive outcomes in children who have suffered TBI. Quantitative magnetic resonance image analysis was used to measure EC volumes in 16 children with TBI and 16 demographically matched controls. Other temporal lobe structures were also measured to examine volumetric relationships. Cognitive outcomes were also analyzed. EC volume was significantly reduced in children with TBI in relation to the control group, and strongly correlated with hippocampal volume. Children with TBI also showed a significant relationship between aspects of cognitive functioning and EC volume. As hypothesized, EC volume loss occurred following moderate-to-severe TBI. This was correlated with other temporal lobe structures and cognitive functioning.

Authoritative Influences on Self-Report Self-Esteem

Timothy Holt, Elizabeth Eagar, Tabitha Harper, and Ashleigh Johnson
Mentor: Claudia Clayton

Abstract: We examined the influence of authoritative messages on self-reported self-esteem. A 30-item questionnaire measure of self-esteem was administered to three groups of subjects, consisting of college students from either the older or younger half of their family. One group received a questionnaire with a message stating that older siblings are more intelligent than younger siblings. Another group re-
received a message stating that younger siblings are more intelligent than older siblings. The last group received no message. Self-esteem scores were higher among subjects in the younger half of their families than subjects who were in the older half of their families. It is suggested that younger children generally have higher levels of self-esteem than older children.

The Effects of Informational Conformity on Long-Term Memory

Josh Cazier, Chelsey Campbell, Brian Blewitt, and Billy Chaplin
Mentor: Claudia Clayton

Abstract: Past research has stressed the need for accurate memory recollection of important information, such as eyewitness testimonies (Paterson & Kemp, 2006; Wright, et al., 2000). Our experiment tested the influence of informational conformity on long-term memory. We hypothesized that subjects who were exposed to informational conformity would be more likely to have an actual change in their long-term memory than subjects who were not exposed to informational conformity. Subjects viewed a picture for sixty seconds and then completed a quiz regarding the picture. Experimental subjects received a fabricated set of results while control subjects did not. Subjects completed the same quiz a week later. However, due to confounding variables, the results did not support our hypothesis.

Substance Dependence and Psychiatric Disorders Do Not Influence ICU Outcomes

Callie J. Beck, Ramona O. Hopkins, PhD, Colin W. Key, MS, Mary R. Suchyta, DO, and Al Jephson, BS
Mentor: Ramona O. Hopkins, PhD

Abstract: Alcohol use and dependence disorders are associated with chronic health problems and cost more than $184 billion United States dollars per year. The contribution of drug dependence, alcohol dependence, and psychiatric disorders on patient recovery and morbidity following critical illness is unknown. We compared mortality and discharge disposition in patients with and without substance dependence and in patients with and without psychiatric disorders. We reviewed medical records of all patients admitted to the LDS Hospital Shock Trauma and Respiratory intensive care unit (STRICU) between July 1, 2003 and June 30, 2004. A preexisting diagnosis of alcohol dependence, drug dependence or psychiatric disorder was confirmed if: 1) the pre-existing disorder was reported on the admitting history and physical note; 2) the disorder was reported in a previous record; 3) or the pre-existing disorder was reported in a psychiatric or social worker note. Preexisting substance dependence occurred in 137 (19%) patients. Of the 137 patients, detectable ethanol levels were found in 40 patients with a mean ethanol level of 82.4 ± 113 mg/dL. The overall prevalence of psychiatric disorders in our ICU population was 19% (137 patients), including 14% with depression, 4% anxiety, 2% bipolar disorder, and 1% of patients with schizophrenia or post-traumatic stress disorder. Patients with substance dependence were younger, more likely to be male, have an admission diagnosis of trauma or drug overdose, a shorter hospital length of stay, and lower incidence of ARDS and comorbid illnesses. Patients with psychiatric disorders were more likely to be female and have comorbid illnesses and drug overdose as an admission diagnosis. We found no difference in mortality or discharge disposition for patients with or without substance dependence or with or without psychiatric disorders, except for patients with psychiatric disorders being discharged to psychiatric units.

Reducing Error: Averaging Data to Determine Factor Structure of the QMPR

Shea Gibbons, Robert Bubb, BS, and Bruce Brown, PhD
Mentor: Bruce Brown

Abstract: Human subject data in psychological research often contain a high level of unexplained error. Factor analytic data are no exception. Factor loading instability is common in single administration factor analytic research with high levels of error. Such instability accounts for little variance in the data and results in poor interpretation of the factor pattern. However, Monte Carlo simu-
lations have shown that averaging data across multiple administrations reduces unexplained error, resulting in increased explained variance and stable factor patterns. In the present study, the Questionnaire for the Measurement of Psychological Reactance (QMPR) was administered to participants multiple times over a three-week period. The data were then averaged and analyzed using principle-components factor analysis with varimax rotation. Factor stability was measured using the Tucker, Koopman, and Linn (1969) coefficient of congruence. The results of the study demonstrated a notable increase in explained variance and factor-pattern stability and support previous Monte Carlo simulation findings. Averaging data from multiple administrations is advocated to reduce unexplained error in human subject data.

Narcissism and Aggression in Sports

Adam Anderson, Anne Ricks, Rob Lowry, and Zaida Requelme
Mentor: Dr. Patrick Steffen

Abstract: Researchers have high linked levels of narcissism with high levels of aggression, derived from narcissistic traits producing a need to aggress in order to prevent ego depletion. Competitive sports have proven to be highly correlated with aggression and violence in media has shown to have a positive correlation with feelings of aggression in viewers. We investigated whether watching aggressive sports media had an effect on feelings of aggression in correlation with levels of narcissism. We hypothesized that participants with narcissistic traits would produce higher levels of aggressive feelings than participants with minimal or entirely without narcissistic traits. We investigated 90 university-aged Brigham Young University students, equally distributed in gender. Subjects were divided into three groups and were exposed to varying levels of aggression in rugby sports media. The primary measures were scores on the Narcissistic Personality Inventory-16 and the Aggression Questionnaire in response to the sports media viewed. Although combined levels of narcissism and aggression were slightly higher in participants viewing more aggressive media, there was no significant difference between scores of participants viewing media of differing levels of aggression. Possible explanations of this lack of correlation in our study are the quality and duration of aggression instigated, and/or a disconnection between the media presented and the methods of measurement.

Social Support in Failing Therapy Outcomes

Aaron Allred, Matthew Kahler, Seth Robinson, Michelle Souder and Russell Bailey
Mentor: Michael J. Lambert

Abstract: This exploratory study examined the influence of social support on the outcome of 95 failing clients in a college counseling center. Clients were identified for participation in the study based on scores on the Outcome Questionnaire (OQ-45), an assessment of overall client functioning. After signaling as a failing client, each participant was given the Assessment for Signal Clients (ASC) at each subsequent therapy session. Four variables were measured for each client across the course of their treatment (alliance, social support, motivation, and perfectionism). The ten most improved participants were identified and then compared to the top ten least improved. Results showed that when considered alongside other therapy factors, social support tended to decrease in participants that deteriorated over the course of therapy.

Social Comparison Theory and Body Image: A Depression Evaluation

Crystal Davis, Shannon Crabb, Kim Curtis, Mike Eveton, and Rebecca Sayers
Mentor: Patrick Steffen

Abstract: This study compared the effect of social comparison of body image on depression by measuring depression using the CES-D after participants viewed a slideshow featuring pictures of their peers. While past experiments have induced social comparison through mass media images, this experiment focuses on the effects of social comparison to immediate peers. We hypothesized that when participants in an experimental group were exposed to a slideshow featuring images and statistics of healthy and attractive people, this would cause them to
make upward social comparisons and lower their mood when compared to a control group exposed to a random sampling of BYU students and socially neutral facts. No significant results were found; however, males scored in the opposite direction than hypothesized. The manipulation check results provide interesting questions for future research.

**Ego Depletion, Incentive, and its Effect on Self-Control**

Brittany States, Andrea Friddle, Hazel Rodriguez, Whitney Stiggins, Joe Galloway and Ryan Wallace.

Mentor: Patrick Steffen

Abstract: Research suggests that active self control depends on a limited resource. When this resource is depleted, an incentive can give the necessary motivation to draw from reserves of energy to complete the required task. This study tests whether or not an incentive will motivate participants, allowing them to perform better on a measured math test. Participants in both groups are ego depleted by difficult word and logic problems. Then the experimental group is offered a gift certificate for the top performer while the control group is offered nothing. The experimental group on average answered 1.8 questions more than the control group, thus suggesting that incentives really do play a part in overcoming ego-depletion.

**A Comparison of Time Management Practices of BYU Students: Time Logs**

Dr. Bruce L. Brown, Dr. Steve Turley, Dr. Steven A. Wygant, Jessica Scott, Ryan Johnson, Megan Linn, Michele Myer, Andrew Proctor, David Richardson, Nancy Stoltenberg, and Joshua Dawson

Mentor: Bruce L. Brown

Abstract: As part of ongoing research into the affects of time management on academic success, a pilot study was conducted Winter 2008 semester using a new approach; time logs. Data gathered from a convenience sample of 13 Brigham Young University students (11 control and 2 academic support) over a seven day period was analyzed with respect to evaluations of time. Descriptive statistics of activities and productivity ratings were evaluated. Also, comparisons were made between average ratings of various activities. It was found that the control group studied more than those in the academic support group. The academic support group had approximately three times as much visiting and about twice as much recreation as did the control group, and rated sleep as more interesting. Differences were also noted in the productivity ratings of various activities between the two groups. This information is being used to conduct a similar, larger, study during the Fall 2009 semester in hopes of more reliable and valid data.

**The Halo Effect of Returned Missionary Status on Long-term Dating Attraction**

Garret Roundy and Carol Vermillion

Mentor: Claudia Clayton

Abstract: In the context of mate selection, this experimental study suggests a halo effect among Latter-Day Saint (LDS) women attending Brigham Young University (BYU) when rating their attraction to a returned missionary (RM). Fifty-six male and female undergraduate BYU students, ages 18-30, were presented with 1 of 3 biographical descriptions of a fictitious person whose characteristics were identical except for returned missionary (RM) status and gender. Subjects rated their attraction using a questionnaire based on criteria for mate selection. A two-way ANOVA with RM status and gender of subject showed significant gender differences and an interaction effect between gender and RM status at p=0.001. Possible theoretical frameworks are used to explain findings and understand errors of impression formation.
2009 SUBMISSION GUIDELINES

Call for submissions for the Fall 2009 issue of
Intuition: BYU Undergraduate Journal of Psychology

Submissions must adhere to the following guidelines:

• The author (or first author) must be an undergraduate psychology major/minor at a BYU campus during the time he or she wrote the submitted work.
• Articles submitted for publication cannot have been accepted for publication elsewhere.
• Articles must be at least 1,000 words in length and must conform to APA style.
• An electronic copy of all articles must be submitted (see below for further directions). Preferred format for the electronic copy is Microsoft Word. All graphics or photos must be of high resolution (300 dpi).

Types of submissions

• Brief and extended reports of theoretical development or original research (or both). We accept submissions from any field of study in psychology.
• Creative works (visual media for potential cover art, and personal narratives related to research experience).
• Topical reviews, book reviews, and essays (reviews must be of recent publication and noteworthy).

Important Information

• Submissions are accepted and processed year-round. The submission deadline for the Fall 2009 volume is January 15, 2009.
• Those who wish to submit manuscripts, reviews, or creative works to be considered for publication should send an e-mail, with an electronic copy of their work attached, to byupsychjournal@gmail.com with the subject line: SUBMISSION: TITLE OF WORK
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