

Dear Readers,

I am thrilled to present to you the Fall 2018 edition of the Whitman Journal of Psychology. This particular issue is a combination of work by both this and last year's staff, and features the best of well over a hundred submissions. We were extremely impressed by the strength of all the submissions, and we are confident those we have chosen represent the depth and variety of research high school students are conducting.

I would like to thank our staff members for the effort and enthusiasm they have put into this edition of the Journal, and our faculty advisor, Ms. Del Savio, for the constant support throughout. And of course, thank you to the many students who submitted, without whom this journal would not be possible.

This coming year is an exciting one. For the first time since 2006, we will be reestablishing a panel of consulting editors from universities around the country. We are also updating our editing and reviewing guidelines to comply with APA Publication Manual 6th ed. and incorporating the new APA Journal Article Reporting Standards. We will be working together with staff from TOPSS to help expand the reach of the Journal and get more schools and students involved.

We hope you enjoy this issue, and welcome any and all feedback.

Sincerely,
Thomas Mande
Editor-in-Chief

Staff

Editor-in-Chief
Thomas Mande

Technical Director
Becca Mills

Editors
Mariana Fajnzylber
Elyssa Seltzer
Ivy Xun

Business Managers
Samantha Goldberg
Lauren Oppenheim

Interns
Ariana Faghani
Andrew Goldsholle
Olivia Personeni

Rat Lab Interns
Sydney Johnson
Izzy Lieber

Principal
Dr. Robert Dodd

Faculty Advisor
Marisa Del Savio

Content

The Whitman Journal of Psychology is a forum in which student-conducted research in the field of psychology is recognized. The Journal contains research from many subject matters and is not limited to any specific field of study.

Manuscript Preparation

Authors should prepare manuscripts according to guidelines established in the Publication Manual of the American Psychology Association (6th ed.). The Journal reserves the right to modify APA style when necessary. Manuscripts should be no longer than 15 pages and should include an abstract. Additionally, all manuscripts must include a list of references as well as parenthetical documentation in accordance with APA style. Professional and other scholarly sources should constitute the majority of references. It is suggested that manuscripts include the following sections: introduction, methods, results and discussion. Manuscripts are not limited to these sections. Detailed requirements can be found on our website.

All manuscripts submitted for consideration may be mask (blind) reviewed at the request of the author. Clear notification must be given on the title page of a manuscript in order for it to be mask reviewed. It is the author's responsibility to ensure that identification is omitted from the manuscript. All manuscripts submitted are subject to editing on both the basis of style and content. It is the author's responsibility to ensure clarity of expression.

We accept submissions year round; however, there is a deadline to be considered for the next publication which can be found on our website.

Manuscript Submissions

Submissions should include a cover page with the following identifying information: author's name, school affiliation, advisor's name, address, phone number and e-mail address. Please e-mail a copy of your file(s) along with a cover letter with the requirements listed above to whitmanpsychsubmissions@gmail.com. You will get a confirmation e-mail once we have received your submission and are able to open the file(s).

Disclaimer

Statements contained in The Whitman Journal of Psychology are the personal views of the authors and do not constitute Walt Whitman High School policy unless so indicated. Published in Bethesda, Maryland.

Website: www.whitmanpsychjournal.org
Email: whitmanpsych@gmail.com
Submissions: whitmanpsychsubmissions@gmail.com

Table of Contents

Experimental Psychology

The Effect of Photos on the Human Perception of Shelter Dogs <i>Kate Weseley-Jones, North Shore High School.....</i>	5
The Effect of Participation in Theater on Emotional Intelligence <i>Olivia Nelson and Maria Seidl, Lakeland High School</i>	11
Effects of Self-Fulfilling Prophecy on Test Scores <i>Audrey Damon-Wynne, Jordin White, McKenna Lacy, Lindsey Medenblik, Henrik Bakk, Gina Ruchti, Noah Fischer, NEW High School.....</i>	20
The New F Word: A Study on Perceptions of Feminism <i>Johanna Kann and Mayeesa Rahman, Roslyn High School</i>	27
Examining the Psychological and Physical Effects of Straw Size Diameter on Consumption <i>Jake Stoller and Yasin Badawy, Roslyn High School.....</i>	34

Inside Psychology

Psychological vs. Pharmacological Treatment of Antisocial Personality Disorder <i>Amy C. Lucas, Howell High School.....</i>	43
--	----



The Effect of Photos on the Human Perception of Shelter Dogs

Kate Weseley-Jones

North Shore High School

Abstract

While many opinions exist regarding how best to present shelter dogs in photographs for adoption, these theories remain largely untested. This experiment investigated the effect of photo background and zoom on people's perceptions of a shelter dog's appeal. In the experiment, 172 participants were randomly assigned to view one of six photos of the same dog. The photos were taken on one of three backgrounds (outside on grass, inside on a neutral background, or inside in a cage) and either featured the whole dog's body or were zoomed in on the dog's face. Participants then rated the dog's attractiveness. Statistical analyses using ANOVAs showed that background significantly affected perceptions but zoom did not; the dog photographed in the cage was rated least attractive while the dog photographed outside on grass was rated most attractive. More research should be conducted to identify the best ways to present shelter dogs.

Introduction

About half of the dogs in shelters, or 670,000, are euthanized each year in the United States (ASP-CA, n.d.). However, approximately 80% of cats and dogs euthanized in shelters each year are healthy and adoptable pets (Humane Society, n.d.). Websites like Adopt a Pet and Petfinder have become popular ways for potential adopters to look at dogs in shelters near them. Modern society increasingly revolves around use of the internet and visual information, so websites like these use photos of dogs to draw in viewers. Many photos of dogs are presented similarly to how clothing is showcased in an online store. When people see a dog they find physically appealing, they can click on the photo for more information. Therefore, a dog's photo can be extremely important in determining whether or not it will be adopted. Common beliefs support the idea that the

appearance of dogs on adoption websites may affect potential adopters' perceptions of the dogs and their likelihood to adopt (Lampe & Witte, 2015; Malnick, 2014). Photos of dogs online vary drastically from blurry and partially obscured images of unkempt pups to high-quality photos of dogs in adorable poses. The purpose of this experiment is to look at the effect of altering certain aspects of a photograph of a shelter dog on people's perceptions of the dogs' adoptability.

Gunter, Barber and Wynne found that the presence of some people in photos of shelter dogs improved participants' perceptions of the dog (Gunter, 2016). A pit bull type dog was perceived as more attractive when photographed with a boy or a woman compared to the same dog photographed alone. On the other hand, the same dog photographed with a man was seen as less attractive than the dog photographed alone. In practice, however, it would probably be difficult for shelters to photo-

graph all their dogs with people, and it would seem odd if all the dogs from a shelter were photographed with the same small group of individuals. While posing a dog with people may counter some of the negative stereotypes people have about shelter dogs, the effect likely depends on the particular people used, and this approach seems relatively cumbersome (Cattet, 2014).

While the Internet is full of suggestions about how to photograph shelter dogs to make them look adoptable, virtually no research has tested these assertions (Fay, 2006; Fromm, n.d.; McDaniel, n.d.; Palmer n.d.). Many agree that dogs should be photographed at eye level to make the dog seem personable and help viewers feel like they are getting a better sense of the dog's character (Fay, 2006; Palmer, n.d.). In addition, a Petfinder website advises taking the photos from close up and having the dog fill the frame, making sure that he or she is the center of attention. Some people also advise zooming in on the dog's face to produce a photo that will capture online viewers' attention and stand out among the many dog photos across different websites (Haak, n.d.).

With regard to what kind of background to use when photographing dogs, some of the suggestions contradict one another. For instance, some people recommend photographing dogs on neutral backgrounds (Fay, 2006), while others suggest photographing dogs on unusual backgrounds (Fromm, n.d.). Fay advised that neutral backgrounds were best because they would not draw attention away from the dog, thus making him or her look more attractive. On the other hand, a more unusual background would make the dog stand out from other dogs. In addition, some people believe that shelter dogs look better when photographed outside because it creates a more positive and happy atmosphere in the photo (Fromm, n.d.; Heimbuch, 2015). Conversely, it seems to make sense that dogs photographed in cages would be perceived more negatively than dogs photographed on other backgrounds, because having a dog in a cage could imply that the dog is aggressive and requires restraint. Thus, a natural setting is more effective than a cage. However, this idea is not supported across all sources. Lampe and Witte's archival study

compared photos of black Labradors shown in and out of cages on the website Petfinder and the number of days that it took for each dog to be adopted. They found that dogs who appeared in cages did not take longer to adopt than dogs who were photographed outside of cages (Lampe, 2015).

It is simple to control variables such as the background on which a dog is photographed and whether just a dog's face or his/her whole body is shown in a photo. Experimental research has yet to show whether these factors have a significant effect on how attractive people find dogs in photographs. If these factors do affect people's perceptions, it would not be difficult for a shelter to alter certain dimensions and might have a worthwhile impact that could potentially save shelter dogs from euthanization. Therefore, the purpose of the present study is to test some of the many suggestions for photographing shelter dogs found on the web. It was hypothesized that 1) compared to a dog shown outside, a dog shown on a neutral background or in a cage will be rated as less attractive and 2) relative to a dog shown in a close up of her face, a dog whose whole body is shown will be rated as less attractive.

Method

Design and Procedure: The study used a 2 x 3 design, with two levels for the independent variable of zoom (zoomed in on face or whole body shown) and three levels for the independent variable of background (neutral/inside background, sunny outdoor background, cage). Participants were recruited online, given a brief description of the study, and then were asked to complete a click-through consent form. After giving consent, participants were randomly assigned to view one of the six photos of the dog. Participants evaluated the dog's attractiveness and then answered a variety of demographic questions including their personal experiences with dogs.

Participants: Participants on the website Amazon Mechanical Turk (mTurk) were invited to be in a study "to look at people's views of dogs up for adoption" and were provided a link to the study on Sur-

veyMonkey. Out of the 204 people who began the survey, 172 completed enough of it to be included in the data analysis. The sample for the study had an age range from 20 to 70, with an average age of 39 years. All participants were currently living in the United States. The majority of the sample was female (59.9% v. 40.1% male). The sample was also predominantly Caucasian (82%), with 6.4% of the sample identifying as Black or African-American, 6.4% as Asian or Asian-American, 4.7% as Hispanic and .6% as Multiracial. In addition, over one-third of the sample expressed interest in adopting a dog within the next year.

Experimental Stimuli: Pit bulls are the most commonly seen breed of dogs in shelters and one of the hardest to successfully adopt (O'Conner, 2013). No pit bulls were available to be photographed for the experiment, so a boxer (named Stella) was used instead, as the breed is frequently mistaken for pit bulls ("10 breeds most commonly mistaken for pit bulls," n.d.).

To design stimuli appropriate for the study, a mini photoshoot was conducted. A white sheet was hung up in a well-lit room to control the background as suggested by a professional photographer, and the photos were taken using tips from another professional photographer specializing in ways to best get a dog's attention, such as using treats and toys. Many photos were taken both inside and outside a cage in order to maximize the chance that Stella could be captured in the same position and with the same expression in both backgrounds.

After selecting the two most similar photos of Stella inside and outside of a cage, the image of Stella on a plain background indoors was edited onto a sunny outdoor background. Each photo with a different background was then replicated in a "zoomed in" version so that only the face of the dog was shown, thus creating six separate photos for the stimuli.

Dependent Measures: After viewing their assigned photo of the dog, participants completed an Attractiveness Scale used in previous research (Gunter et al., 2015). The scale consisted of five

items answered using a six-point Likert-type scale. The questions were: "This looks like an aggressive dog" (reverse-scored), "I would feel comfortable approaching this dog," "This dog looks smart," "This dog looks friendly to me," and "If circumstances allowed, I would consider adopting this dog." The order of the questions was randomly assigned to eliminate any biases due to question order, and the scale had strong reliability in the current study as shown by a Cronbach's alpha of .81.

Data Analysis: Analyses of variance (ANOVAs) were used to explore the effect of photo background and zoom on attractiveness ratings of dogs. In addition, given that nearly 35% of the sample expressed interest in adopting a dog within the next year and that it was thought that people looking to adopt a dog might react to the photos differently from people not interested in adopting, this factor was included as a third variable in the analysis. The conventionally accepted cutoff for statistical significance of .05 was used in this study.

Results

The Effect of Background: An ANOVA revealed that background did have a significant effect on participants' perceived attractiveness rating of the dog, $F(2, 160) = 3.21, p = .04$. Contrary to the hypothesis, however, post hoc tests showed that the dog shown on the plain, indoor background was rated as the most attractive—significantly more attractive than the dog shown in a cage. The attractiveness rating of the dog pictured on the sunny, outdoor background did not differ significantly from the dog in either of the other two conditions. Figure 1 shows the mean ratings of the dog on each of the three backgrounds.

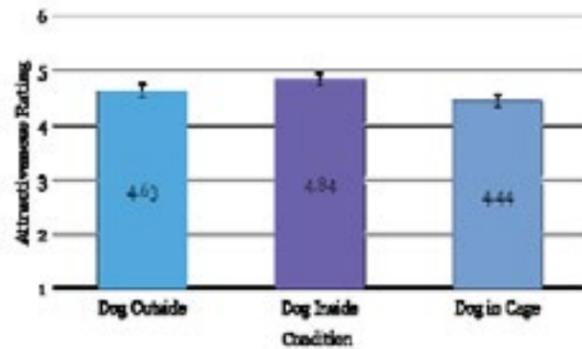


Figure 1. The Effect of Background on Perceived Attractiveness

The Effect of Zoom: Contrary to the hypothesis, zoom did not have a significant effect on participants' perceptions of attractiveness of the dog, $F(1, 160) = 0.95, p = .33$. The ratings for the zoom conditions are shown in Figure 2.

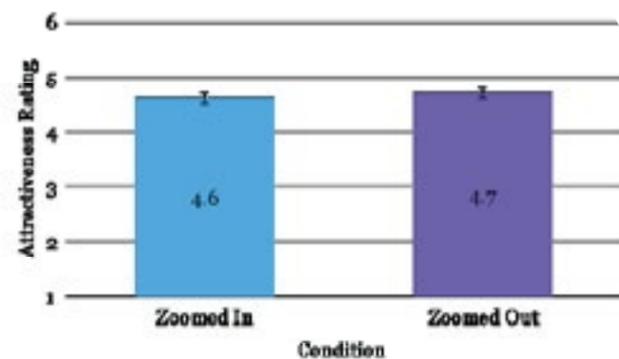


Figure 1.2. The Effect of Zoom on Perceived Attractiveness

Interest in Adoption: As expected, participants who answered "Yes" to the question: "Would you be interested in adopting sometime within the next 12 months" rated the dog in the photo as marginally more attractive when compared to participants who answered "No" to the same question, $F(1, 160) = 3.10, p = .08$. These results can be seen in Figure 3. No significant interactions between any of the variables were found.

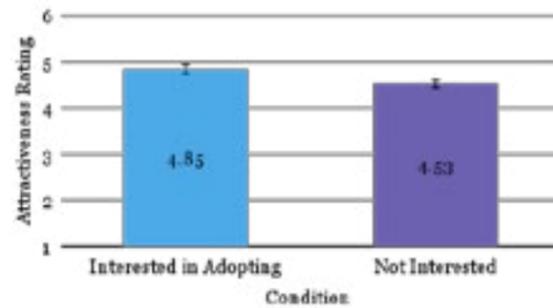


Figure 3. The Relationship between Interest in Adoption and Overall Attractiveness Rating

Discussion

The Effect of Background: While background did affect participants' attractiveness ratings, it was not in the way that was hypothesized. The dog shown on the plain, indoor background was rated as more attractive than the dog in the cage, but the dog shown on the sunny, outdoor background was not rated significantly different from the dog shown against either of the other two backgrounds. Online opinions about what background was best to use when photographing shelter dogs had differed with some people advocating for plain backgrounds, (e.g., Fay, 2006) while others suggested outdoor settings (Fromm, n.d.; Heimbuch, 2015). It is possible that the dog on the plain indoor background was rated as the most attractive because such a background does not provide any distractions to draw attention away from the dog in the photo, thus making the dog appear more attractive. While the outdoor photo provided a simple background of mostly grass and trees in the distance, any outdoor background is still necessarily more varied and complex than a controlled, indoor space. In addition, small shadows and other minuscule details in the photo of the dog on the sunny outdoor background could have distracted the viewer, making the dog appear less attractive than the same dog did on the plain, indoor background.

As predicted, the dog photographed in the cage was rated least attractive. People likely as-

sociate a dog in a cage with the dog being sad or even potentially aggressive and may elicit negative responses. While people may feel sympathy for a sad dog and it may even encourage them to donate money to shelters, a sad dog is not the dog that they are going to find attractive as a potential pet.

The Effect of Zoom: Contrary to the hypothesis, zoom did not have an effect on participants' attractiveness rating of the dog being photographed. While McDaniel suggested taking photos so that the dog fills the frame, it may be that people just have different preferences for how much of a dog they like to see (McDaniel, n.d.). For this reason, it might be preferable for shelters to provide both zoomed in photos and zoomed out photos of a dog on websites like Adopt a Pet, so as to appeal to as many viewers as possible. Looking at the effects of showing multiple photos that vary how much of a dog is shown would be a worthwhile extension of the current study.

Interest in Adoption: As expected, participants who stated that they were interested in adopting within the next year rated the dogs in the photos as slightly more attractive compared to participants who were not interested in adopting. People who are considering adopting may view the photos of shelter dogs in a different, more positive light. Many people have negative stereotypes of shelter dogs (Mazzio, 2014), but such views may be less common in people who are purposely seeking out dogs in shelters.

Conclusion

The study's biggest limitation was the in-

ability to perfectly control the photos. Although exactly the same photo of Stella was used on the plain indoor background and the sunny outdoor background, it was not possible to use exactly the same photo for the cage setting. Because Stella was not highly trained, it was challenging to get her in exactly the right poses. If feasible, future studies should use well-trained dogs and, ideally, professional pet photographers.

In addition, this study only looked at the effects of background and zoom on photos with one specific dog. It is possible that the results might have been different if another pit bull-like dog was used or even an entirely different breed of dog.

In the future, it is important to look at other variables in photos of shelter dogs that could make them appear more attractive and get them adopted faster. Factors like whether the dogs' heads are tilted, their mouths are open, or even whether or not they have a toy with them all could potentially affect viewers' perceptions of shelter dogs. It is also important to look at other factors outside of photos that could be used to get shelter dogs adopted. Simple things like whether or not a dog is given a human name like Scott versus a non-human name like Spot could also contribute to whether a shelter dog finds a home.

Hopefully, shelters will be able to use this research to get dogs adopted faster. If potential adopters think a dog looks attractive, that is the first step in getting that dog out of the shelter and into a good home. Adoption is nearly the only permanent way for shelter dogs to avoid euthanasia. Using this research to aid in the adoption of shelter dogs could not only save canine lives but could also improve the lives of the people who adopt them.

References

- ASPCA. Shelter intake and surrender. (2016). Retrieved February 6, 2018, from <http://www.aspc.org/animal-homelessness/shelter-intake-and-surrender>
- Cattet, J. (2014). Shelter dogs: Studies highlight why some are adopted, others aren't. Retrieved on October 10, 2016 from <http://blog.smartanimaltraining.com/2014/08/11/shelter-dogs-studies-highlight-why-some-are-adopted-others-arent/>
- Fay, J. (2006). Tips for photographing animals for adoption. Retrieved on October 23, 2016 from <http://www.broadtracy.org/phototips/index.shtml>
- Fromm, E. (2016). How to get great shelter pet photos. Retrieved February 6, 2018, from <https://www.petfinder.com/animal-shelters-and-rescues/volunteering-with-dogs/adoptable-pet-photo-tips/>
- Barber, R. T., Gunter, L. M., & Wynne, C. D. L. (2016). What's in a name? Effect of breed perceptions & labeling on attractiveness, adoptions & length of stay for pit-bull-type dogs. *PLOS One*. <https://doi.org/10.1371/journal.pone.0146857>
- Haak, M. (2017). Photography 101; Tips and tricks for taking those all important dog pictures! Retrieved February 6, 2018, from <http://www.reachoutrescue.org/info/display?PageID=10992>
- Heimbuch, J. (2015). 5 photo tricks that help get dogs adopted. Retrieved July 2, 2017 from <https://www.mnn.com/family/pets/stories/5-photo-tricks-help-dogs-get-adopted>
- Hoffman, C. L., Harrison, N., Wolff, L., & Westgarth, C. (2014, March 27). Is that dog a pit bull? A cross-country comparison of perceptions of shelter workers regarding breed identification. Retrieved from *Journal of Applied Animal Welfare Science* website: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4160292/>
- Humane Society. Pets by the numbers. (2016) Retrieved February 6, 2018, from http://www.humanesociety.org/issues/pet_overpopulation/facts/pet_ownership_statistics.html
- Lampe, R., & Witte, T. H. (2015). Speed of dog adoption: Impact of online photo traits. *Journal of Applied Animal Welfare Science*, 18, 343-354.
- Malnick, E. (2014). Shelter dogs given makeovers to find new home. *Telegraph*. Retrieved on October 23, 2016 from <http://www.telegraph.co.uk/lifestyle/pets/10821928/Shelter-dogs-given-makeovers-to-find-new-home.html>
- Mazzio, J. (2014, October 8). 5 ridiculous myths about shelter pets. Retrieved February 21, 2018 from One Green Planet website: <http://www.onegreenplanet.org/animalsandnature/ridiculous-myths-about-shelter-pets/>
- McDaniel, M. (2016) Getting great adoptable dog photos. Retrieved February 6, 2018, from <https://www.petfinder.com/animal-shelters-and-rescues/volunteering-with-dogs/adoptable-dog-photo-tips/%3D24586CB1AFBFBFD>
- O'Conner, R. (2013). Dogs least likely to be adopted. Retrieved July 3, 2017 from <http://tvblogs.nationalgeographic.com/2013/03/12/dogs-least-likely-to-be-adopted/>
- Palmer, T. (2016) Teresa Berg's five tips for better dog photography. Retrieved February 6, 2018, from <http://www.dogster.com/doggie-style/teresa-bergs-five-tips-for-better-dog-photography>
- Wright, J. (2007). Dog breed stereotype and exposure to negative behavior: Effects on perceptions of adoptability. *Journal of Applied Animal Welfare Science*, 10(3), 255-265.

The Effect of Participation in Theater on Emotional Intelligence

Olivia Nelson and Maria Seidl

Lakeland High School

Abstract

The development of emotional intelligence in adolescence merits a more in depth exploration due to its relevance across multiple disciplines. An emotional intelligence test was administered to a random sample of 24 thespians and 24 non-thespians. The participants were students from three different high schools in Oakland County, Michigan. The researchers hypothesized that participating in theater can lead to a higher and more developed emotional intelligence. Both the mean and mode of the data collected revealed that students who partook in the performing arts were more likely to have a significantly higher emotional intelligence.

Introduction

Emotional intelligence is described as the ability to understand, control, and express one's own emotions, as well as empathize with others' feelings (Clark, 2006, p. 6). Taking part in the fine arts can help cultivate emotional IQ, by teaching how to put yourself into someone else's shoes, practice empathy and control emotions simultaneously.

Studies indicate participation in artistic activities during the formative and developmental years of a person's life is crucial. Susan J. Clark, doctoral student at BYU, tested this belief in a study of 506 5th grade students from Utah. A control group represented the emotional intelligence of an average fifth grader, and the experimental group was tested prior to and after participation in assorted arts programs. Students who took part in activities involving dance, music, drama/ theater, and visual arts tested noticeably higher in emotional intelligence. Those immersed in the musical or dance activities scored significantly higher than the others in the experimental group and control group (Clark, 2006, p. 6).

There are cognitive variations in the mental functions of students who participate in different activities. The key point of focus in Kevin Niall Dunbar's study was the overall cognitive difference between pupils involved in performing arts and those who are not. In order to investigate this, an fMRI machine monitored activity in multiple regions of the brain during several cognitive tasks. The fMRI's results of performing arts students was compared to non-performing arts students to measure the similarity or dissimilarity in usage of certain sections of the brain during various simple acts between these two groups. Such prospective results would provide insight into the changes in students' brains who have been exposed to performing arts programs, as well as provide a deeper understanding of how those changes occur. Investigation of this subject allowed for further comprehension of a specific hypothesis pertaining to performing arts (Dunbar, 2008, p. 81).

Participation in performing arts programs can enrich language and creativity that boosts the overall intelligence of children previously deemed 'gifted.' In a study by Geneva H. Dillard, 97 gifted/ talented students ranging between kindergarten and third grade were tested in a plethora of different ar-

eas of intelligence. The students took intelligence, achievement, creativity, and personality tests prior to engaging in the fine arts program. It was concluded that gifted or talented students who were immersed in a fine arts program scored significantly higher on these tests than those (gifted/talented) who had not taken part in the program (Dillard, 1982, p. 3).

The purpose of the present study was to test overall emotional intelligence in high school students ages 14 through 18 involved in a theater program. This study differs from those of the past regarding the hypothesis. The Clark study focused on emotional intelligence in theater students, however the only participants were elementary school aged children. Next, the Dunbar study observed cognitive processing differences of theater students apart from non-theater students. In addition, the Dunbar study did not focus on emotional intelligence, but rather variations in brain usage/makeup between those involved in fine arts and those not involved. The Dillard study tested elementary school students who had been deemed gifted or talented on multiple intelligences prior to and following participation in a fine arts program.

Method

Participants: The study was comprised of willing participants ages 14 to 18. 24 teenagers who had never participated in theater volunteered to represent their respective population. In conjunction with the non-theater students, 24 people who had participated in theater volunteered to represent their population. Participants were students from Milford, Lakeland, and Walled Lake Northern High School.

Design and Procedure: The study was designed as a correlational study (Appendix A), where the independent variable was whether students have participated/currently participate in a theater program and the dependent variable was the emotional intelligence score. Controls were the test used in order to collect data and the number and range of people who participated. Operational definitions used were the points received on the emotional intelligence test

taken and the division of students into thespians and non-thespian. Emotional intelligence consists of the ability to accurately label and recognize feelings and use emotions to guide behavior.

The first step of the experiments was to obtain willing participants. A link to the Google Forms survey was posted on researcher Olivia Nelson's Twitter account, including a message asking volunteers to take a moment and fill out a survey.

Participants were instructed to fill the ten question survey out and were debriefed at the end of the survey. The statement said, "Thank you again for taking our survey! The purpose of this experiment was to determine if students involved in theater develop a higher emotional intelligence than those who do not take part in a theater program."

Following the submissions, each test was scored based on the key (Appendix B), and the data was organized and divided by school and theater participation. The survey was closed to submissions when the researchers had received a total of 48 responses, divided evenly between thespians and non-thespian.

Results

Figure 1

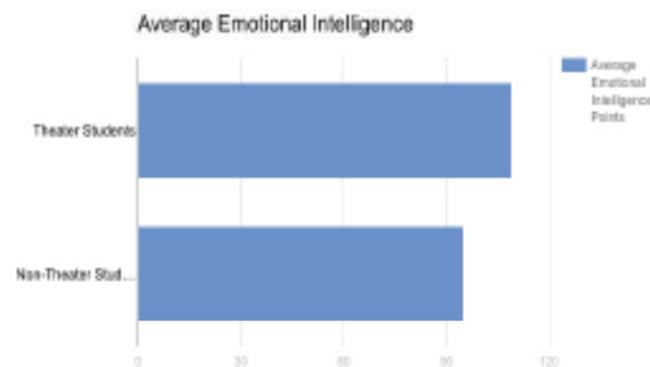
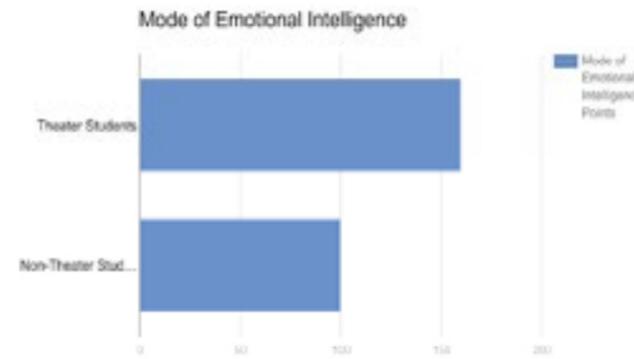


Figure 2



Overall, the data showed that the average emotional intelligence of students who have participated in a theater program is higher than that of students who do not participate in theater. This was concluded by taking the mean of the data between the two groups tested. The students who had taken part in a fine arts program averaged an emotional intelligence of approximately 109, while the students without theater experience averaged an emotional intelligence of 95. This data is displayed in Figure 1. The mode of the emotional intelligence of students participating in theater was 160 whereas the mode of non-theater students was 100. This data is displayed in Figure 2.

Discussion

The results obtained from the study support the hypothesis stated in the introduction. Participating in theater correlates with an increase in an individual's emotional intelligence. The researchers believe this outcome occurred because thespians must embody another personality while in a show; they have to understand and empathize with situations that may be contrary to their own experiences. One of the first abilities taught in theater is how to differentiate and express complex emotions. The individual must learn different non-verbal cues to get across their

state of mind. Such skills boost their emotional intelligence level because they are taught how to label and recognize behavior. Those who take part in this art form must use the emotion they are portraying to guide their interactions with others, which is another skill tested in EI tests. Those not in theater are not taught these skills; instead, they must learn them on their own. Without help, they may not reach their full potential regarding maturity. As a result, their EI may be lower.

This study aligned well with past research done on similar topics, however it was unique in multiple ways. To begin, the Clark study was similar to the present study due to the fact that they both pertained to the correlation between emotional intelligence and theater participation. However, the Clark study focused on students in the fifth grade, whereas this study observed the emotional intelligence of high school students. Next, the Dunbar study investigated the changes in the brain of theater students. This differs from the present study in terms of the dependent variables. The Dunbar study intended to find a physical change in thespian versus non-theatrical brains while performing cognitive tasks, whereas this study focused on the emotional intelligence of theater students. Finally, the Dillard study looked at multiple intelligences of gifted or talented students who had or had not been immersed into the fine arts. The present study is set apart from the Dillard study through the fact that the purpose of this was solely to analyze the Emotional Intelligence. Overall, each study is equally important because it advances the knowledge and understanding of the impact of art on young minds.

There can be many confounding variables within surveys. For instance, the researchers cannot distinguish between lies and truth; they must rely on the participants to be honest or the results will be skewed. If any participants lied, it might have changed the mode and average, misleading the overall difference between thespians and non-thespian. Another confounding variable was the survey itself. The questions were specific and the test taker may not have identified with any of the four options. As a result, they may have chosen a random

answer which would alter their EI score and skew the data. An additional confounding variable would be the limited group of participants available. Although the survey was distributed through Twitter and email, only 48 responses were collected. Many teachers emailed did not respond until after the survey concluded. Therefore, the researchers did not get the diverse response wanted. A wider spectrum may have strengthened the correlation being tested. Finally, the time in which the survey is available to answer should be longer. A lengthened time amount would cause more participants, and stronger results. To improve this study, next time the researchers should select a wider range of individuals.

Researchers should elaborate on this study by adapting the format so it is experimental. To produce concrete evidence regarding this correlation, it must be experimental as correlational studies cannot prove causation. Investigators should select participants from a wide variety of different art forms instead of just theater.

Greater job success goes hand in hand with

superior social skills. Emotional intelligence is a key component of social skills. A longitudinal study tracking the job success of those who took part in theater (or other art forms if proven) might reveal that theater could be linked to better job success. Drama classes and other budgets regarding theater have been cut. Data reasserting the importance of these classes could be beneficial to students as they learn crucial life skills, and the community as teenagers come out of school better equipped to handle relationships and jobs.

The researcher's study was focused on the correlation between emotional intelligence and theater participation. The method included a survey that was distributed to willing participants. The results showed that the average EI score of those who had taken part in theater were higher than those who had not. The researchers have concluded that since theater correlates with a higher EI that the art may teach how to express emotions, interpret emotions, and respond to different scenarios.

This is an optional study, you are not required to participate! The following questions will give us a rough sense of what your emotional intelligence might be. Answer honestly, on the basis of what you really would be most likely to do. Don't try to second-guess what seems right.

What school do you go to?

1. Lakeland
2. Milford
3. Walled Lake Northern

Have you ever participated in theater?

1. Yes
2. No

1. You're on an airplane that suddenly hits extremely bad turbulence and begins rocking from side to side. What do you do?

- a. Continue to read your book or magazine, or watch the movie, paying little attention to the turbulence.
- b. Become vigilant for an emergency, carefully monitoring the stewardesses and reading the emergency instructions card.
- c. A little of both a and b.
- d. Not sure -- never noticed.

2. You've taken a group of 4-year-olds to the park, and one of them starts crying because the others won't play with her. What do you do?

- a. Stay out of it -- let the children deal with it on their own.
- b. Talk to her and help her figure out ways to get the other children to play with her.
- c. Tell her in a kind voice not to cry.
- d. Try to distract the crying girl by showing her some other things she could play with.

3. Assume you're a student who had hoped to get an A in a post-registration course, but you have just found out you got a C- on the mid-term exam. What do you do?

- a. Sketch out a specific plan for ways to improve your grade and resolve to follow through on your plans.
- b. Resolve to do better in the future.
- c. Tell yourself it really doesn't matter much how you do in the course, and concentrate instead on other modules where your grades are higher.
- d. Go to see your personal tutor and try to talk them into giving you a better grade.

4. Imagine you're an insurance salesman calling prospective clients. Fifteen people in a row have hung up on you, and you're getting discouraged. What do you do?

- a. Call it a day and hope you have better luck tomorrow.
- b. Assess qualities in yourself that may be undermining your ability to make a sale.
- c. Try something new in the next call, and keep plugging away.
- d. Consider another line of work.

5. You're a ward manager that is trying to encourage respect for racial and ethnic diversity in your work-place. You overhear someone telling a racist joke. What do you do?

- a. Ignore it -- it's only a joke.
- b. Call the person into your office for a reprimand.
- c. Speak up on the spot, saying that such jokes are inappropriate and will not be tolerated in the work place.
- d. Suggest to the person telling the joke he goes through a diversity training program.

6. You're trying to calm down a friend who has worked herself up into a fury at a driver in another car who has cut dangerously close in front of her. What do you do?

- a. Tell her to forget it -- she's okay now and it's no big deal.
- b. Put on one of her favourite tapes and try to distract her.
- c. Join her in putting down the other driver, as a show of rapport.
- d. Tell her about a time something like this happened to you and how you felt as mad as she does now, but then you saw the other driver was on the way to the ER.

7. You and your life partner have gotten into an argument that has escalated into a shouting match; you're both upset and, in the heat of anger, making personal attacks you don't really mean. What's the best thing to do?

- a. Take a 20-minute break and then continue the discussion.
- b. Just stop the argument -- go silent, no matter what your partner says.
- c. Say you're sorry and ask your partner to apologize, too.
- d. Stop for a moment, collect your thoughts, then state your side of the case as precisely as you can.

8. You've been assigned to head a clinical team that is trying to come up with a creative solution to a nagging problem at work. What's the first thing you do?

- a. Draw up an agenda and allot time for discussion of each item so you make best use of your time together.
- b. Have people take the time to get to know each other better.
- c. Begin by asking each person for ideas about how to solve the problem, while the ideas are fresh.
- d. Start out with a brainstorming session, encouraging everyone to say whatever comes to mind, no matter how wild.

9. Your 3-year-old son is extremely timid, and has been hypersensitive about -- and a bit fearful of -- new places and people virtually since he was born. What do you do?

- a. Accept that he has a shy temperament and think of ways to shelter him from situations that would upset him.
- b. Take him to a child psychiatrist for help.
- c. Purposely expose him to lots of new people and places so he can get over his fear.
- d. Engineer an ongoing series of challenging but manageable experiences that will teach him he can handle new people and places.

10. For years you've been wanting to get back to learning to play a musical instrument you tried in childhood, and now, just for fun, you've finally gotten around to starting. You want to make the most effective use of your time. What do you do?

- a. Hold yourself to a strict practice time each day.
- b. Choose pieces that stretch your abilities a bit.
- c. Practice only when you're really in the mood.
- d. Pick pieces that are far beyond your ability, but that you can master with diligent effort.

Thank you again for taking our survey! The purpose of this experiment was to determine if students involved in theater develop a higher emotional intelligence than those who do not take part in a theater program.

If you have any questions or concerns, you can contact us at mariaseidl2018@gmail.com.

Appendix B

Emotional Intelligence Scoring

200 is the highest score and 100 is average

1. Anything but D -- that answer reflects a lack of awareness of your habitual responses under stress. A=20, B=20, C=20, D=0.
2. B is best. Emotionally intelligent parents use their children's moments of upsets as opportunities to act as emotional coaches, helping their children understand what made them upset, what they are feeling, and alternatives the child can try. A=0, B=20, C=0, D=0.
3. A. One mark of self-motivation is being able to formulate a plan for overcoming obstacles and frustrations and follow through on it. A=20, B=0, C=0, D=0.
4. C. Optimism, a mark of emotional intelligence, leads people to see setbacks as challenges they can learn from, and to persist, trying out new approaches rather than giving up, blaming themselves, or getting demoralized. A=0, B=0, C=20, D=0.
5. C. The most effective way to create an atmosphere that welcomes diversity is to make clear in public that the social norms of your organization do not tolerate such expressions. Instead of trying to change prejudices (a much harder task), keep people from acting on them. A=0, B=0, C=20, D=0.
6. D. Data on rage and how to calm it show the effectiveness of distracting the angry person from the focus of his rage, empathizing with his feelings and perspective, and suggesting a less anger-provoking way of seeing the situation. A=0, B=5, C=5, D=20.
7. A. Take a break of 20 minutes or more. It takes at least that long to clear the body of the physiological arousal of anger -- which distorts your perception and makes you more likely to launch damaging personal attacks. After cooling down you'll be more likely to have a fruitful discussion. A=20, B=0, C=0, D=0.
8. B. Creative groups work at their peak when rapport, harmony, and comfort levels are highest -- then people are freer to make their best contribution. A=0, B=20, C=0, D=0.
9. D. Children born with a timid temperament can often become more outgoing if their parents arrange an ongoing series of manageable challenges to their shyness. A=0, B=5, C=0, D=20.
10. B. By giving yourself moderate challenges, you are most likely to get into the state of flow, which is both pleasurable and where people learn and perform at their best. A=0, B=20, C=0, D=0.

References

- Clark, S. J. (2006). The relationship between fine arts participation and the emotional intelligence of fifth-grade elementary students (Master's thesis, Brigham Young University) (pp. 1-114). BYU ScholarsArchive. Retrieved May 4, 2017.
- Dillard, Geneva H. (1982). The Effect of a Fine Arts Program on the Intelligence, Achievement, Creativity and Personality Test Scores of Young Gifted and Talented Students. Electronic Theses and Dissertations. Paper 2905.
- Dunbar, K. N. (2008, March). Arts and Cognition Monograph: Arts Education, the Brain, and Language. Retrieved February 23, 2018, from <http://www.dana.org/Publications/ReportDetails.aspx?id=44249>

Effects of Self-Fulfilling Prophecy on Test Scores

Audrey Damon-Wynne

NEW High School

Abstract

A self-fulfilling prophecy is the process in which a person's expectation of another elicits behavior from the second person that confirms the expectation (Myers 2010). The most widely known example of this phenomenon is the tendency of students to fulfill the expectations that their teachers have for them; whether that expectation is explicitly expressed through words or implicitly expressed through subtle hints. In our experiment, we tested the effects of a self-fulfilling prophecy by giving a 10-question logic test (see appendix) and randomly selected volunteers. Group 1, the control group, entered with no expectations as to the difficulty of the test; Group 2 was told that the test would be easy; Group 3 was told it would be difficult. The researchers expected the number of correct answers to be higher in Group 2 than in Group 1, and the number of correct answers in Group 3 to be lower than those of Group 1. However, our results showed that self-fulfilling prophecy didn't have an effect on test scores in this case. Group 3, which we expected to be the lowest scores, ended up having the highest average score at 5.56, and Group 2, which we expected to have the highest scores, actually had the lowest at 5.24.

Introduction

The first psychologist to coin the idea of a self-fulfilling prophecy was Robert Merton. In 1948, he defined this phenomenon as "... a false definition of the situation evoking a new behavior which makes the original false conception become 'true'..." In other words, your perception of an event will influence your reaction and outcome of any given situation. Ever since Merton's original statement, there have been hundreds of studies conducted to determine whether or not he was correct in his hypothesis.

Robert Rosenthal studied his version of the self-fulfilling prophecy called the Pygmalion Effect, concluding that having higher expectations lead to excelled performance. His experiment took place

at Oak High School where he told teachers that he would be giving out an IQ test known as the Test of General Ability (TOGA). This is a test that was not relatively common and does not rely on content taught in school. In order for his hypothesis to work, he told the teachers that the test was called the Harvard Test of Inflected Acquisition, which measures the children's "blooming", or academic potential. He then placed the kids on two lists. The teachers of students on the first list were told that their students scored very high even though they didn't. Teachers of students on the second list were told that they didn't score as high as the other students, even though there were no significant differences between the scores from either group. At the end of the year, all the students were re-tested and the kids in the group who were told they did really well and were ready to realize their potential scored higher

than those in the other group. This demonstrates that self-fulfilling prophecy is a valid concept because the kids that had high expectations and therefore believed that they would succeed did indeed perform well.

Stephanie Madon, Max Guyll, Richard Spoth, and Jennifer Willard conducted an experiment to investigate the differences in a positive versus a negative self-fulfilling prophecy. To begin this experiment, they gave seventh graders' parents a questionnaire about how much alcohol they suspected their children consumed. The kids then filled out a questionnaire about how much they actually drank. A year later, the kids had to answer the same questionnaire again. The results showed that kids whose parents overestimated how much their child drank ended up drinking more than those who only one or neither parent overestimated their child's alcohol consumption. This correctly demonstrates the idea of a self-fulfilling prophecy because, as parent's expectations for the amount of alcohol their children would drink rose, the more likely the child would be to drink/the more their child actually did. But when the parents didn't expect their child to, they didn't.

Another experiment investigating self-fulfilling prophecies was conducted by researchers Stewart-Williams and Podd. They decided to test the idea of the self-fulfilling prophecy in relation to the placebo effect. Two groups were given the same placebo pill: one group was told that the pill was a stimulant, and the second was told the pill would help them fall asleep. The first group's participants experiences a faster heart rate, higher blood pressure, and quicker reaction times, while the second groups' participants became relaxed and had lower pulses and blood pressures. This experiment helped them conclude, as many other psychologists have found, that high expectations of a certain result will cause that result to come true.

Method

In order to test the effects of the self-fulfilling prophecy on test scores, six researchers conducted a study on seventy-five McFarland High School stu-

dents. The participants were split into three equal groups: the control (Group 1), the group that was told the test would be easy (Group 2), and the group that was told the test would be hard (Group 3). These groups were formed and tested over the course of two days.

To begin, individuals were randomly selected volunteers-each third block classroom was asked if anybody would like to participate; those who volunteered were administered a ten-question logic test. There were fifteen individuals per group on the first day. To expand the sample size, each group was tested again on the second day, this time with ten individuals per group. When each group entered the quiet testing area, the following script was read with noted variations within the bracketed text (depending on the group):

"You will be taking this logic test on the computer. Please sign the consent form and write down your school email so we can debrief you about the results of the experiment. You guys are group (insert appropriate group) and you will be receiving swag bucks as compensation for your participation. [Group 2: This test will be easy so don't be surprised if you finish quickly] [Group 3: This test is pretty difficult so don't feel bad if it takes a while]. Once you are done, you can return to your class. Thank you for your participation."

The participants then filled out the consent form, which contained a vague purpose of our experiment, as well as other information pertaining to the experimental risks (see Appendix). After turning this form in, participants started the 10-question logic test that was created for them. These questions were taken off of various online logic test and compiled into one quiz created on Google Forms. Participants were allowed as much time as necessary to complete the quiz, and could to go back to their classroom upon completion. One Swagbuck was offered as compensation for participation. The testing area was kept as quiet as possible to allow each individual the same work environment to limit any foreseeable confounding variables.

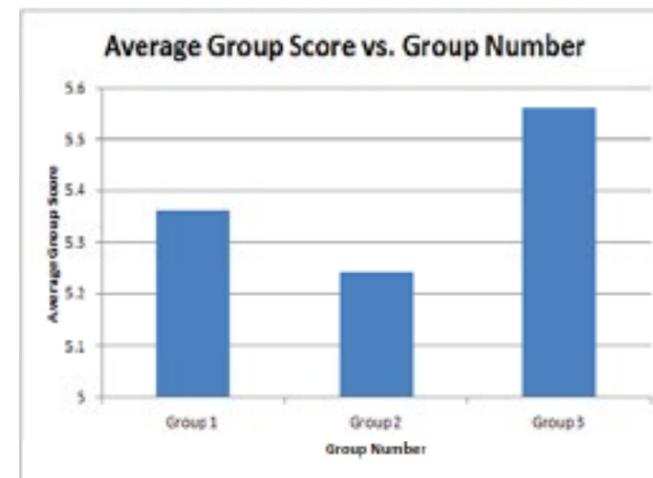
The independent variable was the instruction each group received pertaining to the difficulty of the logic test. The dependent variable was how well each group performed. The operational definition of how well the participants performed was their score out of ten. Confounding variables that could have affected the results are the age/grade of participants because the experimental group ranged from freshmen to seniors in high school. The testing environment was identical for each group; however, some groups were more talkative despite being given warnings about remaining quiet, which could have been distracting to some individuals. In addition, some participants may have rushed through the test because they were in a hurry to arrive at their next location or finish at the same time as others in the room.

Results

Once the results were calculated, it was determined that the averages for the three groups were as follows: 5.36 for Group 1, 5.24 for Group 2, and 5.56 for Group 3. Before the experiment was conducted, it was hypothesized that Group 2 would have a mean score that exceeded those of the control group and that Group 3 would have a mean score lower than both of the other groups. This was hypothesized due to the definition of the self-fulfilling prophecy: a process in which a person's expectation about another elicits behavior from the second person that confirms the expectation (Myers, 2010). If the experiment were to run smoothly, based on this definition, the group that was informed that the test was hard would take this to mean that they won't do well and vice versa. Prior to doing the statistical analysis, the hypothesis was proven incorrect because the mean score of Group 3 was actually higher than both of the other two groups' mean scores.

After doing the statistical calculations, the results were not statistically significant. When the standard deviation of each group was calculated, there wasn't a large enough difference between the average scores of each group to draw any conclusions about the data (the error bars overlapped).

The standard deviation for group one was 1.7408, for group two it was 1.7269, and for group three it was 1.899. When the error bars are inserted into the graph below they cross, proving that our data is statistically insignificant. Due to this, we cannot draw any definite conclusions meaning that we can neither confirm nor deny the null hypothesis. Further, the statistics also show that our hypothesis isn't completely disproven-tweaks to the method have the potential to yield statistically significant results.



Discussion

Considering that the hypothesis can neither be confirmed nor denied and that the results weren't statistically significant, these results cannot be generalized to anybody. Had the experiment yielded statistically significant results and the effects of self-fulfilling prophecy been evident, it still would have only been generalizable to the students of McFarland High School, as our entire sample was from this population.

Even though our particular experiment did not prove the effects of self-fulfilling prophecy, its validity isn't necessarily in question. It's more likely that errors within our experiment skewed the results, and that self-fulfilling prophecy is still a perfectly valid concept. It has implications in many different fields, especially within the workforce and in the ed-

ucation system. The main application of this concept is how the expectation of superiors (boss, teacher) influences the performance of inferiors (employees, students). If self-fulfilling prophecy does indeed apply to this, the performance of inferiors will be better if the superior's expectations (whether explicitly or subtly expressed) are high and worse if the superior's expectations are low.

Within this experiment, some of the potential errors include that participants shared information about the test. One of the participants from the first group warned a friend that the test was difficult. This may have skewed the other participant's data because they were a part of the second group, which was told the test would be easy. Even so, this probably did not have a significant effect on the data due to the fact that it was only one person. Another potential error for this experiment was that the test may have been too difficult for our participants. If the test was too hard originally, the test won't show the results. One last thing that may have skewed the results is our being unclear as to how we expected the participants to perform on the test-rather than directly telling them that they would fail or succeed, we only implied that the test would be difficult or easy, which would not necessarily be enough to show the effects of self-fulfilling prophecy.

Because of the potential errors and lack of insignificant data, redesigning this experiment may eliminate some of the errors. If we redesigned this, we would clearly state that the test is difficult therefore that we didn't expect them to do well. Also, it would be important to tell the participants that they need to focus more based on the difficulty of the test. Another way to improve this experiment would be to plant a person outside the test area. This person would warn the participants that the test was either easy or hard before they took this, which would fur-

ther show them how we expected them to do. In addition, we could make the groups smaller in order to ensure that participants are paying attention to our instructions and actually hear our warning about the difficulty level. Another change we would make is to require participants to stay for a specific amount of time, rather than letting the participants leave when they were finished, as some of the participants were rushing through the test and did not take it seriously. Also, when students began to leave, those still testing may have felt more pressure to move through the rest of the questions quicker. With an emphasis on how we expected them to do well, they would be more willing to take their time.

Aside from the errors we encountered, an explanation for our findings is that age played a larger role than expected. In Group 3, the majority of the participants were juniors or seniors. Because they were older, they had a natural advantage due to a more developed frontal lobe which is in control of logic and reasoning (which was being tested for in this experiment). Group 2 consisted of mainly freshmen and sophomores and subsequently they had the lowest average score-this may be attributed to their less developed frontal lobe.

After the test is redesigned, the research could be extended by exploring the idea of how people will do when wanting to exceed the experimenter's expectations instead of simply meeting them. This would be the opposite of the self-fulfilling prophecy, giving us an opportunity to contrast the two ideas and their results.

Appendix

Research Description for the Institutional Review Board (IRB)

Project Title: Effects of Self-Fulfilling Prophecy on Test Scores

Investigators: Jordin White, McKenna Lacy, Lindsey Medenblik, Noah Fischer, Henrik Bakk, Gina Ruchti

Adult Sponsor: Mrs. Audrey Damon-Wynne

1. What is the purpose of this study?

a. The purpose of this study is to see if self-fulfilling prophecy has an effect on test scores. We will tell participants that the administered test will be easy, hard, or not say anything at all. By comparing scores between these three groups, we will see if their attitudes towards the test changed how well they did on the test.

2. What activities/procedures does participation in the study involve?

a. Participants will be given a multiple choice logic test.

3. Who will the participants in the research be, and how will they be selected?

a. The participants will be students of McFarland High School. We will ask for five volunteer per classroom and aim for 15-20 participants for each of the three experimental groups.

4. Will participants be paid?

a. Participants will be paid for their services with candy. They will receive this payment after they complete the logic test.

5. What risks or discomforts can be reasonably expected due to participating in this research?

a. There are no foreseeable risks or discomforts within this experiment.

6. What potential benefits can the research offer to participants?

a. After debriefing the participants, they will have a better understanding of the self-fulfilling prophecy. This will benefit them because it may help them change their test taking success.

7. How will the confidentiality of data be maintained?

a. To maintain confidentiality of the participants once they have been selected, we will assign individuals a subject code; once the numbers have been assigned, the tests will no longer be linked to their names. There will be no record of which number corresponds with which participants.

8. Where will the research take place?

a. The research will take place at McFarland High School in three separate classrooms

Email Sent to Debrief Participants

Thanks to everyone who participated in our AP psych experiment.

We were testing the effects of self fulfilling prophecy which to put simply is how one performs based off their expectations. Depending on which group you were in, you were told nothing about how difficult the test would be, that it would be easy, or that it would be very difficult.

Our hypothesis predicted that groups told the test would be difficult would perform worse than groups told it would easy. The results proved the opposite to happen.

Group 1 (control) avg: 5.36

Group 2 (easy) avg: 5.24

Group 3 (hard) avg: 5.56

Thank you again for your participation. Don't spend that swag buck all in one place!

References

- Compass, Social And Personality Psychology. Social and Personality Psychology Compass 5/8 (2011): 578–590, 10.1111/j.1751-9004.2011.00375.x Self-Fulfilling Prophecies: Mechanisms, Power, and Links to Social Problems (n.d.): n. pag. Web.
- “American Psychological Society: Two Self-fulfilling Prophecies Are Stronger, and More Harmful, Than One.” Association for Psychological Science. Stephanie Madon, n.d. Web. 22 May 2017. Retrived from <https://pdfs.semanticscholar.org/854d/0e7d7f4d359bd78cf2169e67badd4cf5d8d8.pdf>
- Rosenthal’s Work on Expectancy Effects. N.p., n.d. Web. 27 May 2017.

The New F Word: A Study on Perceptions of Feminism

Johanna Kann & Mayeesa Rahman

Roslyn High School

Abstract

According to Merriam-Webster, feminism is the advocacy of women’s rights on the basis of the equality of the sexes. Despite this innocuous definition, people often assume negative characteristics of feminists. This delegitimizes calls for women’s social reform and leads to a reluctance to identify as feminist, even if one shares feminist values. The present study sought to determine contemporary perceptions of feminists. Two hundred and five participants were recruited online. Participants were randomly assigned to view one of four mock interview transcripts in which gender (male or female) and feminist identification (feminist or non-feminist) of the person being interviewed were manipulated. Participants were then asked to evaluate their perceptions of the interviewee in terms of the characteristics potency, attractiveness, and sexual orientation and to indicate their own feminist sentiments. The experiment revealed that feminists were perceived as significantly more potent, more attractive, and more likely to be gay than non-feminists. In particular, male feminists were seen as significantly more attractive than non-feminist males, and female feminists were seen as more potent than female non-feminists. In addition, we found that our participants who identified as feminists perceived the feminist in our stimulus as more potent and more attractive than the non-feminist. Our research helps shed light on perceptions of feminism in the today’s politically charged society, highlighting reasons behind the disinclination to identify as feminist.

Introduction

According to Merriam-Webster, feminism is defined as the theory of the political, economic, and social equality of the sexes. Recent studies, however, have shown that there is a negative stigma surrounding the label feminist. For example, feminists are often viewed as overly aggressive, unattractive, and imperious (Anastospoulos & Desmarais, 2015; Precopio & Ramsey, 2016). Additionally, research has demonstrated that there is a significant difference in the perceptions of male and female feminists, with male feminists appearing to be viewed less favorably in comparison to their non-feminist counterparts than female feminists (Anderson, 2009; Breen & Karpinski, 2008). The present study

aims to discover contemporary perceptions of feminists in order to explore the causes of the negative feminist stigma and the lack of feminist association.

Research has demonstrated that many unfavorable characteristics are often assumed of feminists. For example, feminists are often regarded as being radical, anti-male, anti-family, anti-marriage, and overaggressive. These unflattering stereotypes can have many negative real-life repercussions. For example, the negative stigma surrounding feminism can place feminists at an increased risk for sexual harassment and cause people to become reluctant to advocate for women’s issues (Anderson, 2009). In addition, a 2015 study by Anastospoulos and Desmarais determined that identifying as feminist places an individual at risk for hiring discrimination. In

this experiment, 200 participants between the ages of 18 and 25 were randomly assigned to listen to an interview in which a woman was questioned by a male in a mock job interview. In order to manipulate the feminist label condition, the job candidate either identified as feminist or non-feminist. After listening, participants filled out a scale which addressed common stereotypes (assertiveness, sexual orientation, political orientation) about the candidate and determined whether or not they would hire her. The results of the study demonstrated that the feminist label significantly reduced the hiring rate.

Previous studies have shown that male feminists are perceived more unfavorably than both their non-feminist counterparts and female feminists. A 2008 study by Breen and Karpinski studied the effect of feminist gender on feminist perceptions. Sixty participants of mixed race and gender were assigned to read a vignette about a typical college student engaging in ordinary activities, such as watching a film, and some feminist activities, such as protesting against gender discrimination. Each condition differed in terms of the gender of the individual and his/her feminist identification. After reading the vignette, participants completed scales in order to gauge their perception of the individual. The results of the experiment showed that male feminists were perceived to be less assertive and more likely to be gay than both their female counterparts and non-feminist males. Additionally, a 2012 study by Rudman, Mescher, and Moss-Racusin showed that male feminists were perceived as more feminine, weak, and likely to be gay compared to non-feminist males, possibly causing a disinclination for males to identify as feminist.

Research has shown people are more likely to favor those who are similar to them rather than those who are not (Ben-Ner & Kramer, 2006). This indicates that a greater support for feminism may be found in those who share values with feminists or/and are feminists themselves.

The current study sought to examine modern perceptions of feminism by determining the impact of gender and feminist values on impression formation. In order to do so, the following hypotheses were tested: (1) Feminists will be seen as a) less attractive b) more potent and c) more likely to be gay

than non-feminists. (2) Female feminists will be perceived as more potent than female non-feminists (3) Male feminists will be perceived as less potent than male non-feminists (4) Participants who identify as feminists will perceive feminists as a) more potent and b) more attractive than non-feminists.

Method

Design and Procedure: The study employed an experimental design to measure people's perceptions of feminists. A mock interview transcript was adapted from a 2013 study by Rudman. This interview transcript consisted of four questions asking the fake interviewee about issues surrounding the women's rights movement, and the interviewee's responses. We manipulated two independent variables through this transcript: the gender of the person being interviewed and whether or not he or she identified as a feminist. Gender had two levels, male or female, and was manipulated by changing the name of the interviewee. John represented the male condition, and Jennifer represented the female condition. These names were chosen because they are not gender neutral and are typically attributed to strictly one sex. Feminist identification had two levels: supported women's rights and identified as feminist and did not support women's rights nor identify as feminist. Each participant was randomly assigned to one of the four conditions. The dependent measures in this study was how the participant evaluated the interviewee.

In order to measure the perception of the person being interviewed, items were adapted from previous research (Anderson, 2009). We included 8 items on potency, 3 items on attractiveness, and one item on homosexuality. Our survey also included a manipulation check that asked the name of the interviewee and whether or not he or she identified as a feminist. The responses of the 12 participants who failed the manipulation check were excluded from data analyses.

The second part of the study explored how gender and the belief in feminist values predict feminist identification and perception. Participants were first asked to answer whether or not they identify as

feminist. In order to measure their agreement with feminist values, they were presented with the 9-item liberal feminism scale (Henley, Meng, O'Brien, McCarthy, & Scoloskie, 1998). The items were measured on a five point Likert-type scale, with 1 being Strongly Disagree and 5 being Strongly Agree.

Participants: Participants were recruited online, and every participant was provided a \$0.20 incentive to take the survey. Of this sample, 66 participants were male while 139 were female, which may be due to a larger female interest in the study of feminism. Participants were between the ages of 19 and 65. Seventy-one percent of participants were white, eleven percent were Asian, seven percent were black, six percent were Latino and four percent were multiracial.

Results

Potency: As shown in Figure 1, the expected interaction between target gender and feminist beliefs did appear on the potency variable, $F(1, 132) = 5.622, p = .016, \eta^2p = .044$. A woman feminist was perceived as more potent than a woman non-feminist; however, there was almost no difference between the perceptions of men based on whether or not they identified as feminists. The second part of this finding was contrary to what we hypothesized, as we predicted that feminist males would be viewed as less potent than their non-feminist counterparts.

In addition, as hypothesized, feminists, overall, were rated more potent than non-feminists, $F(1, 132) = 7.858, p = .006, \eta^2p = .060$, as shown in Figure 3. This result is most likely due to the differences in perceptions of female feminists shown in Figure 2.

As predicted, there was also a significant interaction between participant feminist identification and their perceptions of feminists, $F(1, 132) = 18.639, p < .001, \eta^2p = .131$, as shown in Figure 3. Feminists perceived a feminist as more potent than non-feminists; the opposite result was shown in the case of a non-feminist.

Attractiveness: An interaction between feminist beliefs and gender also emerged on the perceived attractiveness variable, $F(1, 132) = 5.347, p = .022, \eta^2p = .040$ (see Figure 4). While women were rated fairly similar in terms of attractiveness regardless of their beliefs, men were rated much more attractive when they identified as feminists than when they were not.

Contrary to the hypothesis, participants perceived feminists overall as more attractive than non-feminists, $F(1, 132) = 7.978, p = .005, \eta^2p = .058$, as shown in Figure 5. This difference seems largely due to the perceptions of male feminists as seen in Figure 4.

As hypothesized, there was a significant interaction between participant feminist identification and their perceptions of feminists, $F(1, 132) = 22.152, p < .001, \eta^2p = .151$, as shown in Figure 6. Though there was little difference in the perceptions of non-feminists, feminists perceived a feminist as more attractive than a non-feminist.

Sexual Orientation: As expected, participants perceived feminists as more likely to be gay than non-feminists, $F(1, 132) = 20.228, p < .001, \eta^2p = .136$ (see Figure 5). There were no other significant main effects interactions among the sexual orientation dependent variable.

Discussion

Potency: Female feminists were perceived as more potent than non-feminist women, just as hypothesized. We most likely found this result because feminists are generally seen as more formidable than non-feminists because they challenge sexist events and engage in collective action (Anastopoulos & Desmarais, 2015). Contrary to what was hypothesized, the study showed that that male feminists were perceived to be no less potent than male non-feminists. This result demonstrates a departure from traditional beliefs regarding male feminists, as male feminists in previous studies were seen as weaker than non-feminist males (Breen & Karpinski, 2008; Rudman, Mescher & Moss-Racusin, 2012). This effect may be attributed to improving perceptions

of feminism, as feminist men are beginning to be cast in a more positive light, as evidenced by this result and our finding of male feminists being seen as more attractive than non-feminists.

In general, feminists were perceived as more potent than non-feminists. This result, however, is most likely due to a large difference in perceptions of female feminists compared to female non-feminists. It can also be attributed to feminists generally being viewed as more powerful than non-feminists because they take decisive action – such as participating in demonstrations – against gender inequality.

We also found that participants who identified as feminists rated the feminist from our stimulus as significantly more potent than the non-feminist, while the opposite result held true for participants who identified as non-feminists. This result makes sense, as the respective groups would perceive themselves, and people with similar views as them, as more powerful than people with opposing views because they are naturally inclined to hold positive perceptions of those who are alike to them (Breen & Karpinski, 2008; Houvouras & Carter, 2008; Liss et al., 2001).

Attractiveness: Our data showed that male feminists were perceived to be more attractive than male non-feminists. Just as with our potency result, this result could demonstrate a change in perceptions towards male feminists, as previous studies found feminist male as less attractive than non-feminist males. However, this result may also be due to the high incidence of women in our sample, as females are more likely to see people advocating for their rights as more attractive. Therefore, due to the high prevalence of women in our sample, this result possibly only occurred due to our uneven gender proportion.

Female feminists were also perceived approximately equal to female non-feminists in terms of attractiveness. Although this result is not as encouraging as that of male feminists, it is still an improvement from past studies where female feminists were seen as less attractive than female non-feminists (Anderson, 2009; Rudman & Fairchild, 2007). This result may be attributed to improving

perceptions of feminism, or to the high incidence of women in our sample, as females may be more likely than males to rate feminists as more attractive than their non-feminist counterparts.

Overall, we found that feminists were perceived more attractive than non-feminists. This result is contrary to what was hypothesized, because in the past, there has always been a negative stigma surrounding feminists (Anderson, 2009; Breen & Karpinski, 2008; Fitzpatrick Bettencourt et al., 2011; Twenge & Zucker, 1999). Considering this result along with our potency result, the data appears to display a trend towards more positive perceptions of feminists.

In addition, we found that participants who identified as feminists rated the feminist from our stimulus as significantly more attractive than the non-feminist, while there was no difference in perceptions of attractiveness among non-feminist participants. This result was expected as feminists would most likely see people who share their views more positively than those who do not (Hewstone, Rubin, & Willis, 2002).

Sexual Orientation: As researchers predicted, the data revealed that feminists were perceived as significantly more gay than non-feminists. These results are most likely because feminists are often associated with characteristics stereotypically presumed of gay people. For example, male feminists are often viewed as effeminate and impotent, leading them to be viewed as gay (Anderson, 2009; Rudman, Mescher, & Moss-Racusin, 2012; Twenge & Zucker, 1999). Additionally, in terms of female feminists, there is common stereotype that “all feminists are lesbians” (Twenge & Zucker, 1999).

Limitations: There were many limitations in this study that could lead to further exploration in additional research. One such limitation was the use of an interview excerpt as the experimental stimulus. When participants read a stimulus such as this, they often have different reactions and perceptions than they would in a real-life situation (Gould, 1996). In a future study, researchers could explore if perceptions differ after participants view a real-life simulation. One way to carry this out would be to show

participants a video of the interview using confederates. Another way would be to have the participants be interviewed along with the confederate and then to have the participant complete a survey detailing their perceptions of the confederate after the interview. Another limitation to this study was the inclusion of only people within the United States. In a future study, one could explore whether perceptions of feminists differ from country to country. It would be especially interesting to explore amongst developing countries, where women are so often mistreated and abused. It would also be interesting to see perceptions of the feminist movement in first-world countries where it is not as active as in the United States, such as the Nordic countries.

Notably, only a small percentage of our participants identified as feminists (30.7%) and an even smaller percentage are actually involved in the feminist movement (8.3%). These data demonstrate that there is still a reluctance to identify as feminist, likely caused by the fear of being labeled with the negative stigma surrounding feminism. However, the results of the present study show that, contrary to previous research, feminists were rated more positively than non-feminists in terms of both attractiveness and potency. Male feminists were also evaluated as more attractive than and equally potent to their non-feminist counterparts, while female feminists were seen as more potent than and equally as attractive as non-feminist females. These findings suggest that the adverse stereotypes regarding feminism are gradually dissipating, paving the way for rise in support of the women’s movement.

References

- Anastopoulos, V. & Desmarais, S. (2015). By name or by deed? Identifying the source of the feminist stigma. *Journal of Applied Psychology, 45*(4). 226-242. doi:10.111/jasp.122290.
- Anderson, V. N. (2009). What's in a label? Judgements of feminist men and feminist women. *Psychology of Women Quarterly, 33*(2). 206-215. doi:10.1111/j.1471-6402.2009.01490.x
- Ben-Ner, A. & Kramer, A. (2006). Do we prefer people who are similar to us? Experimental evidence on giving and work behaviors. Retrieved from <http://conf.som.yal.edu/obsummer07/PaperBen-NerKramer.pdf>
- Bowerman, M. (2017). Survey: What singles really think of dating feminist women. Retrieved from usatoday.com.
- Breen, A. & Karpinski, A. (2008). What's in a name? Two approaches to evaluating the label feminist. *Sex Roles, 58*(5). 299-310. doi:10.1007/s1119-007-9317-v.
- Gould, D. (1996). Using vignettes to collect data for nursing research studies: how valid are the findings? *Journal of Clinical Nursing, 5*(4). 207-212. doi:10.1111/j.1365-2702.1996.tb00253.x
- Henley, N., Meng, K., O'Brien, D., McCarthy, W., & Sockloskie, R. (1998). Developing a scale to measure the diversity of feminist attitudes. *Psychology of Women Quarterly, 22*(3), 317-345. doi: 10.1111/j.1471-6402.1998.tb00158.x
- Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup Bias. *Annual Review of Psychology, 53*(1). 575-604. doi:0084-6570/02/0201-0575.
- Houvouras, S. & Carter, J. (2008). The F word: college students' definitions of a feminist. *Sociological Forum, 23*(2). 234-256. doi:10.111/j.1573-7861.2008.0072.x
- Liss, M., O'Connor, C., Morosky, E., & Crawford, M. (2001). What makes a feminist? Predictors and correlates of feminist social identity in college women. *Psychology of Women Quarterly, 25*(2). 124-133. doi:10.1111/1471-6402.0014.
- Precopio, R. F. & Ramsey, L. R. (2016). Dude looks like a feminist!: moral concerns and feminism among men. *Psychology of Men & Masculinity*. Advance Online Publication. doi:10.1037/men0000042.
- Rudman, L.A. & Fairchild, K. (2007). The F word: Is feminism incompatible with beauty and romance? *Psychology of Women Quarterly, 31*(2). 125-136. doi: 10.1111/j.1471-6402.2007.00346.x
- Rudman, L.A., Mescher, K., & Mass-Racusin, C.A. (2012). Reactions to gender egalitarian men: Perceived feminization due to stigma-by-association. *Group Processes of Intergroup Relations, 16*(5). 572-599. doi:10.1177/1368430212461160
- Twenge, J. M. & Zucker, A. N. (1999). What is a feminist? Evaluations and stereotypes in closed- and open-ended responses. *Psychology of Women Quarterly, 23*(3). 591-605. doi:10.1111/j.1471-6402.1999.tb00383.x
- Wilcox, C. (1990). Race, gender role attitudes, and support for feminism. *The Western Political Quarterly, 43*(1), 113-121. doi:10.2307/448508.

Appendix

Perceptions of Feminist Key

A six-point bipolar scale was used to measure participants' perceptions of the person being interviewed in the provided interview. The participants were asked to rate the person on the following qualities based on the prompt:

I think it is likely this person is...

Potency
Fragile - Tough
Weak - Strong
Submissive - Dominant
Emotional - Unemotional
Certain - Uncertain
Assured - Unsure
Disciplined - Undisciplined
Decisive - Indecisive
Attractiveness
Attractive - Unattractive
Desirable - Undesirable
Beautiful - Ugly
Homosexuality
Homosexual - Heterosexual

Feminist Identification

Do you consider yourself a feminist?

I do not consider myself a feminist at all, and I believe that feminists are harmful to family life and undermine relations between women and men.

I do not consider myself a feminist.

I agree with some of the objectives of the feminist movement but do not call myself a feminist.

I agree with most of the objectives of the feminist movement but do not call myself a feminist.

I privately consider myself a feminist but do not call myself a feminist around others.

I call myself a feminist around others.

I call myself a feminist around others and am currently active in the women's movement.

Feminist Support

The following items were measured on a 5-point Likert scale, with 1 being Strongly Disagree

and 5 being Strongly Agree.

Whether one chooses a traditional or alternative family form should be a matter of choice.

People should define their marriage and family roles in ways that make them most comfortable.

Women should receive an equal chance at education and employment to men.

The availability of adequate child care is central to a woman's right to work outside the home.

Social change for sexual equality will best come about by acting through federal, state, and local government.

Legislation is the best means to ensure a woman's choice of whether or not to have an abortion.

Women should try to influence legislation in order to gain the right to make their own decisions and choices.

Men need to be liberated from oppressive sex role stereotypes just as much as women do.

Examining the Psychological and Physical Effects of Straw Size Diameter on Consumption

Jake Stoller and Yasin Badawy

Roslyn High School

Abstract

In the United States, people of all ages drink large amounts of soda and other beverages with high sugar levels daily. This finding is frightening: these drinks are associated with numerous pernicious health effects, such as weight gain, obesity, type two diabetes, heart disease, kidney disease, non-alcoholic liver disease, tooth decay, gout, and arthritis (CDC, 2017). Past research showed that using a straw with a diameter of 4 mm reduced the rate of consumption of water compared to an 8 mm straw (Harding et al., 2014). The present study extended this line of research by investigating how manipulating the internal diameter of a straw affects soda consumption, perceived thirst, and perceived fullness. Participants were asked to drink soda from a straw with an internal diameter of 3 mm straw, 8 mm, or directly from the cup while they watched a 10-minute video clip. The straw's diameter had a significant relationship with perceived thirst of male participants, revealing that boys who drank from a thin straw perceived themselves as thirstier than boys who drank straight from the cup ($p=.014$). Furthermore, straw diameter also had a significant effect on perceived fullness ($p=.033$); people who drank from the wider straw reported feeling more full than those who drank from the narrow straw. However, interestingly, straw condition had no statistically significant effect on the actual amount of soda actually consumed. The difference between our results and those of Harding et al. (2014) highlight a need for further research on the effects straws have in reducing fluid consumption.

Introduction

Currently the United States is ranked second in the world in soda consumption, a worrying statistic given soda's various pernicious health effects (worldatlas.com). Therefore, it is critical that we work to limit the amount of soda consumption in the United States. In 2012, the mayor of New York City, Michael Bloomberg, proposed a ban on large sugary drinks, which ultimately failed as it was rejected by a court (Grynbaum, 2014). In this study we investigated another approach: manipulating straw diameter in order to to limit the consumption of soda.

In the past, research regarding the size of ta-

bleware has demonstrated an effect on people's perceived consumption. For example, a study by Wansink and Van Ittersum revealed that manipulating plate size can cause people to misjudge the amount of food served. In the study, larger plates made participants perceive a serving of food as smaller, and smaller plates made participants perceive the same serving of food as larger (Wansink & Van Ittersum, 2006). Furthermore, another study revealed that larger serving bowls resulted in an increase in the amount served and consumed (Wansink & Cheney, 2006). A study also revealed that regardless of bowl size, participants served themselves and ate more when given a larger spoon (Wansink, Van Ittersum

& Painter, 2006). The results from these studies show that it is possible to reduce the amount of food consumed by an individual through the means of manipulating tableware.

Further research has investigated how to reduce fluid consumption. For example, a study by Wansink and Van Ittersum in 2003 examined whether the manipulation of glassware can affect consumption. The results indicated that the elongation of a cup directly affects the amount of a drink that is poured and consumed. Participants who drank from small, wide glasses consumed significantly more liquid compared to participants who drank from tall slender glasses (Wansink & Van Ittersum, 2003). Therefore, we became interested in investigating an alternative method that used the manipulation of straw size to reduce fluidic consumption.

Our study sought to examine how manipulating straw width affects consumption. Previous research in this field has shown that taking a single drink straight from a cup produces larger intake volumes than a single sip from a straw (Bender, Lawless, Oman, & Pelletier, 2003). This is important to note, as smaller sips could imply decreased overall consumption volume. Likewise, another study revealed that participants who used wider straws (8 mm) drank water at a faster rate than those who used narrower straws (4 mm); however, consumption was not measured in this study, just drinking rate. (Harding, Morris, Fitzpatrick, & Aloysius, 2014). Based on this study, it might be anticipated that the faster consumption speed from a wider straw could result in an increase in actual consumption. In addition, a study by Anderson, Clark, and Hietpas (2014) revealed that smaller diameter straws produced smaller bolus volumes in discrete sips compared to straws of larger diameters. Seven straws were used in this study with internal diameters varying from 0.65 mm to 5 mm. Lastly, a study conducted by Lin, Lo, and Liao (2013) demonstrated that participants who drank from thin straws (4 mm) perceived themselves to have consumed more of a beverage compared to those who drank from thick straws (12 mm). Therefore, we questioned whether manipulating a straw's internal diameter would have an effect on one's perceived sense of thirst or fullness.

Although existing research has examined the effects of manipulating straw diameter on the perceived consumption, drinking speeds, and bolus volumes, no prior study had actually examined how manipulating a straw's diameter can affect fluid consumption. Our study investigated how changing the internal diameter of a straw affects the consumption of a soda, perceived thirst, and perceived fullness. This study tested three main hypotheses: 1) Participants given a narrow straw will consume less soda compared to participants given no straw or a wide straw; 2) Participants who drink from a narrow straw will perceive themselves as thirstier than participants given no straw or a wide straw; and that 3) Participants who drink from a narrow straw will perceive themselves as less full than participants given no straw or a wide straw.

Method

Participants: Participants were recruited from high school AP Psychology classes and the high school cafeteria during lunch periods at a 1,000 student northeastern high school. Potential participants were told that the study was meant to assess how watching T.V. affects perceived thirst. Participants were not aware that consumption and perceived fullness were being assessed in order to avoid any participant biases. Participants and their parents signed an informed consent form. In addition, participants were also told that they would receive free Coca-Cola™ to drink while they participated. The informed consent form notified them that the study involved drinking Coca-Cola™. Incentives for participation included the chance to win a \$25 Visa™ gift card. We recruited a total of 31 participants (females = 17, males = 14) between the ages of 14 and 18, and all were included in the data analysis except for one due to an experimenter error. The study was run on 5 days over the course of two weeks in a high school classroom. Conditions were randomly assigned to each time slot; however, we controlled for a repeat of the same condition twice in one day. After data analysis, all participants were debriefed via an email that explained the actual purpose of our study as well as the findings of our study.

Independent Variable: Our study compared three conditions: a strawless condition, a small internal diameter straw condition (SID) of 3 mm, and a wide internal diameter straw (WID) of 8 mm. In the strawless condition, participants drank directly from the cup. The cups that were used were 22 ounces and opaque. Both straw types were the same length, of the same color, and made of the same plastic material. Coca-Cola™ was poured into the 22 fluid ounce cups. If a straw was being used by participants then a lid was placed on the cup.

Dependent Measures: We examined three dependent variables: consumption, perceived thirst, and perceived fullness. A digital scale was used to measure the mass of soda in grams that was left in the cup after the experiment. This mass was subtracted from the mass of 22 ounces of Coca-Cola™, which is 572.29 grams. We used a digital scale instead of a volume measurement tool in order to minimize experimenter error. A survey was administered to participants following the video clip. The survey consisted of 7 items; three questions measured perceived thirst and one item measured fullness, all on a 5-point Likert-type scale. Questions 5-7 asked for participants' gender, age, and race. The items measuring thirst were: 1. I feel thirsty right now, 2. It would be pleasant to drink some water right now, and 3. My mouth is moist (reverse scored); the third item was eliminated from the analysis in order to raise the scale reliability to above .8. Fullness was measured by a question that read "My stomach feels full."

Procedure

The study used a between-participants design. Participants reported to a room at either the 3:00 or 3:30 time slot based on their schedule and availability. Each time slot was exposed to only one condition at a time. At each desk in the room, a filled cup of soda with the experimental condition was present. Extra cups of soda were placed on a table at the back of the room. Participants were told that they could get additional cups of soda if they finished

their first cup. Participants watched a 10-minute clip of the T.V. show Phineas and Ferb. At the end of the video, participants were given stickers with a number that they would place on the survey and any cups of soda they drank from, allowing us to match the cup(s) of soda to the corresponding survey. Participants were then asked to move to a second room to take a survey. As the first group of participants completed the survey, the other room was cleaned, cups were stored for later measures, and new cups of Coca-Cola™ for the next condition were filled. At the conclusion of both time slots for that day, the cups of soda were measured to see how many grams of soda were left. Each cup was filled to a specific line on the cup, meaning that all cups weighed approximately 572 grams. All results were then entered into SPSS for analysis.

time slot; however, we controlled for a repeat of the same condition twice in one day. After data analysis, all participants were debriefed via an email that explained the actual purpose of our study as well as the findings of our study. time slot; however, we controlled for a repeat of the same condition twice in one day. After data analysis, all participants were debriefed via an email that explained the actual purpose of our study as well as the findings of our study.

Results

The study's hypothesis proposed that drinking from a SID straw would result in a lower consumption volume compared to a WID straw. However, Figure 1 shows there was no significant effect caused by straw size on the amount consumed, $F(2, 24) = 0.993, p = .385$. Figure 1 demonstrates that the people in strawless condition drank the most soda (191.47 grams), while unexpectedly, but not significantly, the WID straw condition had the lowest mean consumption volume (grams = 128.47).

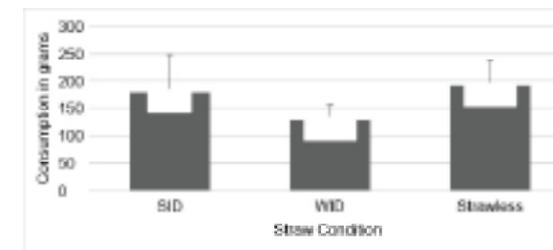


Figure 1. The Effects of Straw Condition on the Consumption of Soda

We also looked at the effect of gender on consumption. As shown in Figure 2, males consumed almost three times more soda than females, $F(1, 24) = 16.581, p < .001$. The ANOVA revealed that there was no statistically significant interaction between straw condition and gender on consumption.

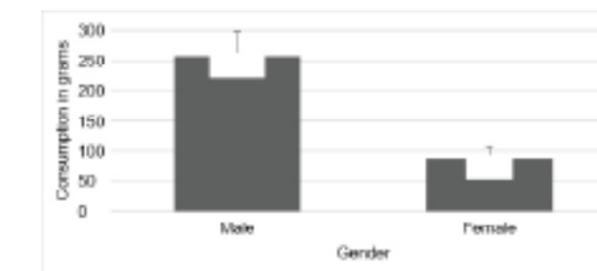


Figure 2. Differences Between Genders on the Consumption of Soda

The study's second hypothesis on perceived thirst was largely rejected. Figure 3 shows a significant interaction between the gender and straw condition ($p < .05$). The interaction showed that while girls reported similar levels of thirst across conditions, boys in the strawless condition had a lower perceived thirst than the boys in the SID condition with boys in the WID condition falling somewhere in the middle.

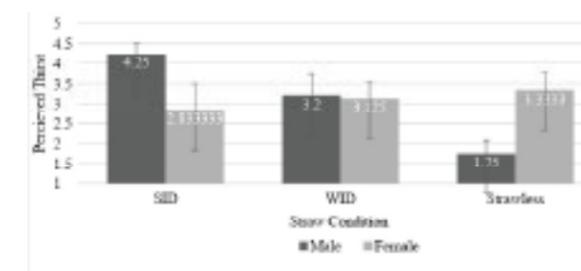


Figure 3. Interaction Between and Straw Condition on Perceived Thirst

As hypothesized, the SID straw led to the lowest fullness ratings, $F(2, 24) = 3.937, p = .033$. A Tukey-Kramer post hoc analysis revealed that the significant difference was present between the SID and strawless conditions. As shown in Figure 4, the SID straw condition yielded the lowest mean for perceived fullness while the strawless condition produced the highest mean for perceived fullness. There was no statistically significant interaction between gender and perceived fullness.

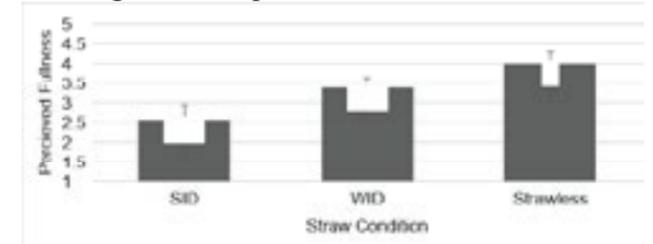


Figure 4. The Effect of Straw Condition on Perceived Fullness

Discussion

Although the different straw conditions did not result in different amounts of consumption in this study, the thirst and fullness results suggest the potential role that straw diameter can play in drinking. We had predicted that drinking from a narrow straw would lead participants to report greater thirst; interestingly, this result only occurred in boys. Using the SID straw could make individuals feel that they have to work harder in order to drink their soda and this intensified approach to drinking could cause individuals to feel thirstier. The participants likely had to exert more energy to drink from the SID straw, yet as explained in Clark, Anderson, and Hietpas (2014), a SID straw results in smaller bolus volumes per sip. An interesting extension of the research could assess how straw diameter affects how long an individual drinks from a cup. Based off

of our findings, we would expect that the SID straw condition would cause people to drink for a longer period of time, while individuals in the WID straw condition would drink for a shorter period of time.

Participants in the SID condition reported the least fullness. We believe this finding was a direct result of the fact that the SID straw condition likely deceived participants into thinking they consumed less, while being able to drink directly from the cup could lead participants to believe they had consumed more. This effect seems to contradict the one found in the Wansink and Van Ittersum (2006) study, where an increase in spoon size caused participants to serve and eat more. Yet, there is definitely a distinct difference in the role of eating utensils and drinking utensils in consumption which could explain this discrepancy. Thus, it seems that avoiding straws and drinking directly from a cup may reduce a person's hunger which could help them consume less while eating or drinking.

It is possible that the insignificant finding on consumption was due an inadequate sample size. Furthermore, we believe that the 10 minutes of drinking time may not have been enough time to produce significant differences in the consumption of soda amongst conditions. Therefore, in future studies, we would like to extend the drinking time. Furthermore, in future studies, controlling for prior

perceived thirst and fullness could make our results even more meaningful. Future studies should also investigate the drinking behaviors between different ages since our sample reflects the behaviors of adolescents between the ages of 14 and 18 only. Additionally, we would also investigate whether the effects of straw diameter on consumption varies between individuals of a different weight classes, and whether the differences that were observed would become further pronounced when evaluating this variable.

Although straw diameter had no effect on actual consumption in this study, its psychological effects could potentially be utilized to reduce consumption. On the basis of our results, using WID straws should lead to a decrease in soda consumption volumes. However, further study is necessary with a larger sample size, across a greater range in age and body mass index to investigate the demographic, temporal, and regional factors that may affect drinking behaviors.

References

Clark, H. M., Anderson, C. C., & Hietpas, F. (2014). Volumes of discrete sips from straws of varying internal diameters. *American Journal of Speech-Language Pathology*, 23(1), 84. doi:10.1044/1058-0360(2013/13-0032)

Get the facts: Sugar-sweetened beverages and consumption. (April 7, 2017). Retrieved from <https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html> on September 27th, 2017.

Grynbaum, M. (2014). New York's Ban on Big Sodas is Rejected by Final Court. *The New York Times*. Retrieved from: <https://www.nytimes.com/2014/06/27/nyregion/city-loses-final-appeal-on-limiting-sales-of-large-sodas.html>

Harding, C., Morris, A., Fitzpatrick, E., & Aloysius, A. (2014). Drinking speed using a Pat Saunders valved straw, wide-bore straw and a narrow-bore straw in a normal adult population. *International Journal of Evidence-Based Healthcare*, 12(4), 255-261. doi:10.1097/xeb.0000000000000021

Higgs, S., & Thomas, J. (2016). Social influences on eating. *Current Opinion in Behavioral Sciences*, 1-6, doi: 10.1016/j.cobeha.2015.10.005

Khushboo Sheth. (April 25, 2017). World facts: Countries with the highest soft drink consumption. Retrieved from <http://www.worldatlas.com/articles/countries-with-the-highest-levels-of-soft-drink-consumption.html> on September 27th, 2017.

Lin, H., Lo, H., & Liao, Y. (2013). More than just a utensil: The influence of drinking straw size on perceived consumption. *Marketing Letters*, 24(4), 381-386. doi:10.1007/s11002-013-9225-6

Oman, C., Pelletier, C., Bender, S., & Lawless, H. T. (2003). Gender, age, vessel size, cup vs. straw sipping, and sequence effects on sip volume. *Dysphagia*, 18(3), 196-202. doi:10.1007/s00455-002-0105-0

Rolls, B. J., Roe, L. S., Kral, T.V.E., Meengs, J.S., & Wall, D.E. (2004). Increasing the portion size of a packaged snack increases energy intake in men and women. *Appetite*. 42, 63, 69. 10.1016/

S0195-6663(03)00117-X

Spence, C., & Doorn, G. V. (2017). Does the shape of the drinking receptacle influence taste/flavour perception? A review. *Beverages*, 3(3), 33. doi:10.3390/beverages3030033

Vandermark, L. W. (2016). Relationship of perceived thirst to measures of hydration during and following exercise. UCONN Library, 1-130. Retrieved from <http://digitalcommons.uconn.edu/dissertation/1201>

Wansink, B., & Cheney, M., M. (2005). Super bowls: serving bowl size and food consumption. *JAMA – Journal of the American Medical Association*, 293(14), 1727–1728.

Wansink, B., Painter, E., J. & North, J. (2005). Bottomless bowls: Why visual cues of portion size may influence intake. *Obesity Research*, 13(1), 93–100. doi: 10.1038/oby.2005.12



Psychological vs. Pharmacological Treatment of Antisocial Personality Disorder

Amy C. Lucas

Howell High School

Abstract

For years there has been debate over the best way to treat Antisocial Personality Disorder (ASPD), or if it can be treated at all. There are two available approaches to treatment: psychotherapy and pharmacology. Psychotherapy comes in many different forms, including direct dialect with the patient, group therapies, and therapeutic communities. A number of these therapies have proven effective in the treatment of ASPD. In addition to psychological therapy, there are several medications prescribed to treat the symptoms that come with ASPD. This paper will analyze the benefits and drawbacks of both forms of treatment, and draw a conclusion on which treatment is more effective and safer for the patient.

Discussion

Since treatment for Antisocial Personality Disorder (ASPD) began, there have been issues with its effectiveness. There is conflicting research on whether psychological or pharmaceutical approaches are more effective in treating symptoms. Overall, most research points in a single direction: psychotherapeutic methods have broad applications to ASPD.

Borderline Personality Disorder (BPD) is similar to ASPD; both are classified by impulsive behaviors and are included in cluster B of personality disorders in the DSM-5 (Hoermann, 2016). A study done in 2006 and later updated in 2012 has shown evidence that psychotherapy is effective in BPD. Among many treatment options analyzed, dialectical behavior therapy (DBT) was the most extensively reviewed. Although the study recognizes that more research must be done on the topic, the findings indicate that psychotherapy plays a substantial role in the treatment of BPD (Stoffers, 2012). Democratic Therapeutic Community (DTC) is another common psychotherapeutic treatment for ASPD. In a study done over 24 months, self and other directed

aggression was significantly improved in patients who received DTC along with their normal treatment (Pearce, 2017).

The same study on BPD was completed in 2006 and updated in 2010, but focused on pharmacological treatment. Antipsychotics and mood stabilizers seemed especially effective; however, these conclusions must be drawn carefully due to limitations in evidence. Pharmacological approaches had no effect on core BPD symptoms, like abandonment and identity disturbance, which are linked to overall impulsivity (Stoffers, 2010). Without treating impulsivity, the effectivity of the ASPD treatment is significantly lowered. Some medications can be used to treat byproducts and symptoms of the disorder. There is some evidence that Nortriptyline can reduce misuse of alcohol, and phenytoin could improve the intensity of impulsive acts. These two medications are no longer widely used and have been largely replaced by newer drugs ("The Use of Medication," 2008). Selective serotonin reuptake inhibitors can decrease aggressiveness, primarily for those with anxiety or depression ("Antisocial Personality Disorder," 2013). Some ethical complications can arise when prescribing medications

to treat ASPD, namely the possibility of substance abuse by the patient. Currently, there are no medications approved by the Food and Drug Administration to treat ASPD (Mayo Clinic Staff, 2017).

Overall, there is a lack of relevant literature focused entirely on treating ASPD using a pharmacological approach. Most studies focus on byproducts of the disorder, such as alcoholism and drug abuse. Others focus on symptoms of the disorder, which include impulsivity or anxiety. ASPD is by nature very difficult to treat using medications as it has been found to be most likely caused by impairments in the brain. The areas most commonly impaired are the prefrontal cortex, the superior temporal gyrus, the amygdala-hippocampal complex, and the anterior cingulate cortex. Deficits in these areas can be linked to antisocial behaviors when their key functions are considered (Yang, 2008). Medications cannot change the structure of the brain, making them largely ineffective.

With regard to psychotherapeutic treatment, the biggest challenge is convincing the patient to participate. Many people with ASPD do not want to be treated, and it can be difficult to change be-

haviors and ways of thinking if a person has lived that way for a long time. Treatment is most effective when the patient is younger, and it can be customized based on a person's primary needs. Group therapy, psychotherapy, cognitive therapy, and behavior therapy are all methods that could be used ("Antisocial Personality Disorder," 2013). Some treatments will be more effective for specific people than others.

Conclusion

There are many forms of psychotherapy that can treat different aspects of ASPD, and treatment can be chosen based on the needs of the individual patient. Pharmacological approaches are less effective in the treatment of core aspects of the disorder, but can be used to treat some byproducts and symptoms. When drugs are prescribed, however, the risks of potential drug abuse must be considered. Due to insufficient research conducted on treating the disorder itself, any conclusions about the effectiveness of different treatments must be drawn carefully.

References

- Antisocial Personality Disorder. (2013, March). Harvard Health Publishing. Retrieved from <https://www.health.harvard.edu/mental-health/antisocial-personality-disorder>
- Hoermann, S., Zupanick, C., Dombek, M. (2016, April, 26). DSM-5: The Ten Personality Disorders: Cluster B. Retrieved from <https://www.mentalhelp.net/articles/dsm-5-the-ten-personality-disorders-cluster-b/>
- Mayo Clinic Staff. (2017, August 02). Antisocial Personality Disorder. Mayo Clinic. Retrieved From <https://www.mayoclinic.org/diseases-conditions/antisocial-personality-disorder/diagnosis-treatment/drc-20353934>
- Pearce, S. (2017, February). Democratic therapeutic community treatment for personality disorder: randomised controlled trial. *The British Journal of Psychiatry*. Retrieved from <http://bjp.rcpsych.org/content/210/2/149>
- Stoffers, J. (2010, June 16). Pharmacological interventions for borderline personality disorder. US National Library of Medicine. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/20556762>
- Stoffers, J. (2012, August 15). Psychological therapies for borderline personality disorder. US National Library of Medicine. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22895952> The use of medication to treat people with antisocial personality disorder. (2010, August 4). National Library of Medicine. Retrieved from https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0014563/#_PMH0014563_pubdet_
- Yang, Y., Glenn A., Raine A. (2008). Brain abnormalities in antisocial individuals: implications for the law. National Library of Medicine. Retrieved from <https://www.ncbi.nlm.nih.gov/m/pubmed/18327831/>