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The Whitman Journal of Psychology
7100 Whittier Blvd., Bethesda, MD 20817

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Content

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Experimental Psychology

The Effect of Differences in Victims' Wealth and Nationality on Altruism

Kevin Xu and Sarah Cha
Advisor: Allyson J. Weseley
Roslyn High School, NY

Abstract

This experiment pitted the social responsibility norm against intergroup bias in an effort to see which would better explain affluent Americans' desire to help natural disaster victims. One-hundred eleven high school students were randomly assigned to read about a fictional natural disaster whose victims differed in wealth, status, and nationality. They then completed a survey that evaluated their altruism, sympathy, and just world bias. In line with social responsibility norm, the participants were more sympathetic to Indonesian victims than American victims. Interestingly, high levels of sympathy, altruism, and just world bias were expressed in all conditions.

The Effect of Differences in Victims' Wealth and Nationality on Altruism

Participation in charities has served as a crucial component of humankind's ability to help others overcome difficulties in life and has raised tremendous amounts of money for those in need. In 1963, Berkowitz and Daniels proposed the social responsibility norm, which holds that people are driven to help those perceived as needy. However, over the years, Americans have donated several times less in relief funds to disasters occurring in poorer foreign countries than for those occurring in the United States. For example, the 2005 Kashmir Earthquake resulted in 14 times as many casualties than Hurricane Katrina, which occurred two months earlier; however, only 14 million dollars were donated to survivors of the earthquake, 30 times less than was received by Hurricane Katrina victims (CNN, 2005). Such patterns of altruism can be attributed to intergroup bias, which is the tendency to evaluate one's own ingroup members more favorably than their outgroup members (Hewstone, Rubin, & Willis, 2002; Tajfel, 1974). This study sought to determine how affluent Americans' desire to help other affluent Americans compares to their desire to help members of needier groups.

Previous research has supported Berkowitz and Daniels' (1963) social responsibility norm. Research that investigated attitudes towards African American job applicants has found that ingroup members have low expectations of outgroup members, perceiving them to be both dependent and needy (Jussim, Coleman, & Lerch, 1987). In their study, participants reported that they were more willing to hire poor African American job applicants than wealthy job applicants, likely due to the participants' sympathy towards the disadvantaged African Americans. Research has also found many participants to be unprejudiced towards the homeless due to awareness of their suffering (Tompsett, Toro, Guzicki, Manrique, & Zatakia, 2006).

Contrary to Berkowitz and Daniels' findings, other research has suggested that people tend to favor those more similar to themselves (Norris, Baker, Murphy & Kaniasky, 2005; Perdue, Dovidio, Gurtman & Tyler, 1990; Tajfel & Turner, 1979). Tajfel and Turner's (1979) social identity theory maintains that people's interactions are influenced by a need for self confidence. This need for self confidence causes intergroup bias, the tendency to favor ingroup members. Social psychologists have found that intergroup bias protects high ingroup status, provides positive social identity, and satisfies the need for positive self esteem (Tajfel, 1974; Tajfel & Turner, 1979). In addition, research that studied fondness for the pronouns "us and them" found that people hold positive attitudes towards ingroup members and are often more willing to help them because it gives them a feeling of assurance that they are a part of the social group (Perdue et al., 1990).

Just world bias is a type of intergroup bias in which people blame victims for their misfortunes and is likely affected by wealth and nationality (Furnham, 2003). The Just World Phenomenon occurs when people view the world as a fair place; hence, victims are viewed to be responsible for their misfortunes in the resulting just world bias (Furnham, 2003). Research has found that perceiving a group as oppressed led people to dislike that group (Uhlmann, Brescoll, & Paluck, 2006). In this study, an overwhelming majority of participants exhibited just world bias due to their awareness of poor African Americans' socioeconomic plight in the United States. Participants described the African Americans negatively and blamed these hypothetical victims for their misfortunes (Uhlmann et al., 2006). Other studies have found that participants perceived African American faces to be more hostile and were unwilling to help them, even after they were made aware of their low social status (Hugenberg and Bodenhausen, 2004). Contrary to these findings, research on public perceptions of the homeless found that certain needy groups are not blamed for their misfortunes (Tompsett et al., 2006). Despite intergroup bias and the social responsibility norm, participants were aware of the plight of the homeless, but did not blame them for

their misfortunes likely because of compassion and sympathy.

Previous research has suggested that the effects of intergroup bias are likely to prevail over the effects of the social responsibility norm. Past studies have suggested that humans often tend to be egotistical and are more willing to look out for themselves than others (Epley, Carusi, & Bazerman, 2005). Therefore, it is unlikely that people would be more willing to help outgroup members than ingroup members. Also, racial and socioeconomic differences likely bring about feelings of superiority in a social hierarchy. In particular, nationality differences between people can likely cause racism because the very mention of ethnic differences can arouse feelings of prejudice (Sidanius, Shaw, Liu, & Pratto, 1994; Smedley & Smedley, 2005).

This experiment tested the following hypotheses. 1) Compared to participants who read about low-income victims of a natural disaster, participants who read about high-income victims will be willing to donate more money. 2) Compared to participants who read about foreign victims of a natural disaster, participants who read about American victims will also be willing to donate more money.

Method

Participants

The sample for this study consisted of 111 juniors and seniors in a high school located in a suburb within the New York Metropolitan Area. The experiment employed a 2×2 design, and each participant was randomly assigned to one of four conditions. To be included in the sample, participants had to be born in the United States and have family household incomes above $79,000 per year within the top 20% of highest income in the United States.

Materials

Four versions of a news article were created for this study. Each article described a fictional mudslide. Four real locations that differed in wealth and nationality were chosen to be the scene of the mudslides. Menteng, Indonesia and Raleigh Hills, Oregon are both among the richest (top 10%) towns in their respective countries. Kupang, Indonesia and Arvin, California are both among the poorest (bottom 10%) towns in their respective countries.

In order to minimize potential confounds, the articles were the same except for indications of the wealth and ethnicity of the mudslide victims. All four versions had the same format: an Associated Press news article heading, 327 words, 9 paragraphs, identical quotes from victims and paragraphs discussing identical challenges facing the communities affected by the mudslide. All four versions reported the same number of casualties resulting from the disasters, the same amount of damage, and the same costs and extent of destruction. Because the article was adapted from an actual Associated Press news update, the permission of the Associated Press was obtained (AP, 2007).

Two indicators of wealth were inserted into the news articles. For example, an "agrarian town located in a region struggling economically" in a poor location was changed to "a commuter suburb located in a region known for a large informational technology industry" in a wealthy location. Indicators of nationality differences were also placed into the news articles. For example, "an enclave of mostly Americans" in a location representing American ingroup members was changed to "an enclave of mostly Indonesians" in a location representing Indonesian outgroup members.

Procedure

Prior to conducting the experiment, the approval of the school's Institutional Review Board was obtained. The researchers explained in a scripted set of directions that a recent disaster had occurred in one of the four locations described above in the materials. Participants were randomly assigned to read one of the four news articles and were told that the focus of the study was to evaluate charity statistics in response to a recent natural disaster. Participants were allotted as much time as necessary to complete the survey and were assured that their answers would be anonymous. All participants completed the survey within ten minutes after receiving it and then filled out a manipulation check in which they answered content-related questions on the wealth and nationality of the victims. Participants indicated how similar they perceived themselves in comparison to the victims in the manipulation check. Three weeks after data collection, all of the participants were debriefed.

Dependent measures

The first item on the Charity Statistics Survey was answered as an open-ended question in which participants indicated the amount of money they were willing to contribute towards the victims of the natural disaster in dollars. In addition, the Charity Statistics Survey contained two scales: the Just World Bias scale and Sympathy scale. The items of the two scales were mixed throughout the survey. These items were answered on a six-point Likert-type scale from one to six measuring the participants' agreements for particular statements. Participants who marked one for an item indicated that they strongly disagreed with the statement. Participants who marked a six for an item indicated that they strongly agreed with the statement.

The first scale used was the Just World Bias scale, in which three items were modeled after Rubin and Peplau's (1975) belief in a Just World scale and two items were modeled after Lipkus' (1991) global belief in the Just World scale. An example of an item from the Just World Bias scale is: "The victims do not deserve any blame in their present situation." Three items on the Just World Bias Scale were reverse-

scored, and the scale had an overall reliability of .78 on this study's sample.

The Sympathy scale was modeled after Davis' (1980) Interpersonal Reactivity Index. All items were answered on a six-point, Likert-type scale measuring agreement to a particular statement, and two items were reverse-scored. An item read, "The occurrence of the disaster did not genuinely upset me," and participants indicated agreement or disagreement. The scale had an overall reliability of .84 on the sample in this study.

Results

Data analysis

For each dependent variable measured, an overall score was calculated by averaging the total number of items that pertained to the measurement of the dependent variable in the survey. The cutoff for statistical significance was .05.

Three two-way analyses of variance examined the effects of the two independent variables (wealth and nationality) on the amount of money participants were willing to donate, sympathy and Just World Bias.

The impact of nationality and wealth differences on sympathy

Overall, participants were sympathetic towards the natural disaster victims with a mean sympathy score of 4.07 out of 6.00. An ANOVA revealed a significant main effect of nationality on sympathy towards victims of a natural disaster, $F(1, 111) = 6.22$, $p < .01$, $\eta p^2 = .06$. As depicted by Figure 1, American participants were more sympathetic towards Indonesian victims ($M = 4.36$) than American victims ($M = 3.81$), which was contrary to the hypothesis. Wealth did not significantly affect people's sympathy toward wealthy victims of a natural disaster ($M = 4.04$) as compared to poor victims ($M = 4.12$), $F(1, 111) = 0.01$, $p = .98$, $\eta p^2 = .006$. In addition, there was no significant interaction between nationality and wealth, $F(1,111) = 0.81$, $p = .37$, $\eta p^2 = .008$.

Table 1. For perceptions of similarity, Just World Bias and the amount of money participants were willing to donate

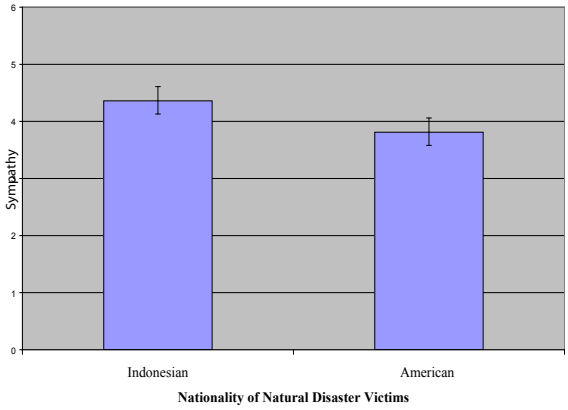

Figure 1. Effect on nationality on sympathy towards natural disaster victims

The impact of nationality and wealth on the amount of money participants would donate

The average amount of money each participant reported being willing to donate was $138.45, and 89% of the participants indicated that they would donate to the victims. Contrary to the hypotheses, nationality had no effect on the amount of money participants were willing to donate to victims of a natural disaster $F(1, 111) = 0.53$, $p = .47$, $\eta p^2 = .005$. Wealth had no effect on the amount of money participants would donate, $F(1, 111) = 0.95$, $p = .33$, $\eta p^2 = .009$. In addition, there was no significant interaction between nationality and wealth, $F(1,111) = 0.05$, $p = .83$, $\eta p^2 = .000$.

The impact of nationality and wealth differences on Just World Bias

Participants harbored Just World Bias to all victims of the natural disaster, regardless of nationality and wealth with a mean score of 5.16 out of 6.00. The amount of Just World Bias shown towards the victims did not differ significantly between American victims ($M = 5.22$) and Indonesian victims ($M = 5.09$), $F(1, 111) = 1.24$, $p = .27$, $\eta p^2 = .009$. The amount of Just World Bias shown towards the victims did not differ significantly between poor victims ($M = 5.15$) and wealthy victims ($M = 5.16$), $F(1, 111) = 0.01$, $p = .92$, $\eta p^2 = .00$. In addition, there was no significant interaction between nationality and wealth, $F(1, 111) = 1.22$, $p = .27$, $\eta p^2 = .011$.

		Perceptions of Similarity			Just World Bias			Amount of Money Participants Were Willing to Donate		
Victim Characteristics		N	Mean	SD	N	Mean	SD	N	Mean (in $)	SD
Wealthy	American	24	2.17	1.20	24	5.33	0.51	24	87.9	108.0
	Indonesian	19	2.89	1.41	19	4.93	1.14	19	132.6	226.0
	Total	43	2.48	1.33	43	5.15	0.86	43	107.7	169.6
Poor	American	29	2.53	1.29	29	5.14	0.91	29	144.1	257.2
	Indonesian	39	2.14	0.95	39	5.14	0.99	39	168.1	286.6
	Total	68	2.32	1.13	68	5.14	0.95	68	157.9	272.7
Grand Total		111	2.38	1.21	111	5.15	0.93	111	138.5	238.5

Discussion

The impact of nationality and wealth on sympathy

The participants were sympathetic toward all victims with an average sympathy rating of 4.07 out of 6.00. The results of this study are consistent with Tompsett et al.'s (2004) study and can be explained by the social responsibility norm (Berkowitz & Daniels, 1963), which suggests that people are often willing to help those in need. This desire to help the needy likely arouse the participants' sympathy and compassion for the natural disaster victims.

Interestingly, the participants were more sympathetic to Indonesians than Americans. Jussim et al.'s (1987) study on perceptions of outgroup job applicants found that people expect outgroup members to be more dependent and in need of help than their own ingroup members. Therefore, participants likely perceived the Indonesian outgroup members to be needier than the Americans.

While participants were more sympathetic towards Indonesians than Americans, they were equally sympathetic to wealthy and poor victims. Given that wealthy Americans are often perceived to have good fortune with social mobility (DiPrete, 2005), Gilens' (1996) study on common American misperceptions found that people negatively associate poor Americans with laziness. Participants in this study likely may have been more sympathetic towards the Indonesians than Americans because the Indonesians' ethnic identities precluded these stereotypes unique to Americans. Participants may not have perceived the rich Indonesians to be lavishly propitious and poor Indonesians as lazy (Tajfel, 1974).

The impact of nationality and wealth on the amount of money participants would donate

Overall, 89% of the participants were willing to donate money and the mean figure for donations was $138.45. This high altruism is another indicator of the social responsibility norm and also jibes with the high levels of sympathy expressed. Because the victims were likely perceived as needy, the participants' resulting sympathy likely caused them to be extremely generous.

Even though participants were more sympathetic to the Indonesian victims than the American victims, the amount of money participants were willing to donate was not affected by the nationality or wealth of the victims. This finding is different from past research, which found that participants were more altruistic and helpful toward those similar to them. In past studies, participants were more willing to help perceived ingroup members (e.g., Norris et al., 2005; Uhlmann et al., 2002). One possible explanation for this difference lies in the fact that participants did not perceive themselves to be similar to any of the victims. As participants found themselves to be dissimilar to all of the victims, all victims were seen as outgroup members; it did not matter whether they were Indonesian or American or whether they were rich or poor.

The impact of nationality and wealth on Just World Bias

The participants showed Just World Bias to all of the victims with an average score of 5.16 out of 6.00, blaming the victims for their misfortunes. Interestingly, wealth and nationality did not affect Just World Bias, suggesting that participants blamed all the victims despite their nationality and wealth status. The participants obviously did not identify with any of the victims as shown by the manipulation check. The participants likely blamed the victims in an attempt to distance themselves from the victims as a form of self protection (Hewstone, 2002).

Limitations and further study

While a random sample was utilized, all participants were 11th and 12th grade students whose views and ideas might not be representative of the general population of adults. Even though participants were asked whether they would contribute money to the natural disaster victims, participants did not actually contribute money. Therefore, their willingness to donate $138.45 might not reflect the actual amount of money they would donate in reality.

As the sample for this experiment was wealthy Americans, it would be valuable to extend this line of research by designing studies that tested whether poorer Americans would be more altruistic towards their ingroup. It would also be interesting to examine whether the social responsibility norm would still exist on poorer Americans' perceptions of wealthy American outgroup members. Lastly, an additional purpose of this project was to investigate whether intergroup bias and the social responsibility norm would be evident in this experiment if participants were asked to donate to natural disaster victims that differ in race independent of nationality, such as altruism towards African Americans versus Caucasian participants.

Most Americans are undoubtedly aware of the importance of charities in helping others overcome challenges after natural disasters. This research suggests that people are often reluctant to relate to natural disaster victims even if they are sympathetic, altruistic, and clearly similar to them. This reflects the people's attempts to protect their confidence by distancing themselves from needy groups, causing sentiments of indifference towards the suffering of others. It is critical in preparing for future disaster relief for people to be aware of their innate tendency to blame victims for their misfortunes as a result of an unbalanced desire for confidence. Most importantly, it is crucial to increase awareness that human tendency to feel indifferent to people who are perceived as different from them has cost billions of dollars in potential relief aid over the years.

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Investigating the Effects of the Availibility Heuristic with Respect to an Indivial's Perception of a Group

Julianna Thiessen and Genevieve Hutchings
Advisor: Ryan Balch
Riverwood High School, GA

Abstract

The aim of this experiment was to investigate the effect of familiarity on an individual's perception of a group. This experiment was done by creating three different slideshows, each with ten headshots of blonde women and ten headshots of brunette women. The three different conditions consisted of one control slideshow with no celebrity headshots, an experimental slideshow that included four celebrity blondes, and an experimental slideshow that included eight celebrity blondes. The participants watched one of the slideshows and then guessed how many blondes and brunettes they thought were in the slideshow. The hypothesis stated that the mean number of blondes would increase with the addition of celebrity blondes in the slideshow. The independent variable was the number of celebrity blondes in a slideshow and the dependent variable was the number of blondes estimated by the participants. There were 35 participants total, all students from Riverwood High School over the age of 16. Using the Mann-Whitney U test, the significance of the results was found. While experimental group one yielded statistically significant results, group two did not. The null hypothesis was retained. It was concluded that familiarity had no significant effect on the estimates of the participants.

Introduction

The availability heuristic is the tendency for someone to base their perceptions on readily retrievable examples rather than on hard data. It has the biggest impact on the perception of frequency and size judgments. People base their judgments on information that is vivid in their mind. The availability heuristic can also have an effect on how people judge themselves and others around them. For example, in the Schwartz (1991) study, people who were asked to give six examples of times that they were assertive later rated themselves as more assertive on a self survey than those that were not asked to remember any examples of when they were assertive.

Previous experiments have also found that the availability heuristic plays a key role in perceiving repetition frequency and making set-size judgments. (e.g., Maley, Hunt, & Parr, 2000). Research has shown that the availability heuristic can have an effect on a person's perception of repetition frequency with any given list of words. One such study, Stuart J. McKelvie's "Quantifying the Availability Heuristic with Famous Names", also showed the effect of the availability heuristic with a list of famous and nonfamous names and the subject's perception of whether there were more male or female names within the list. However, McKelvie did not find a high correlation between the number of famous names and the subject's perception of male or female frequency.

This experiment was adapted from McKelvie's experiment but still had several main differences. First, it was modified to investigate visual cues instead of audio cues, so female headshots were chosen instead of lists of names. Secondly, the two categories were blonde and brunette instead of male and female. Headshots of blonde celebrities were used instead of famous names.

In this study, the availability heuristic would suggest that familiarity with celebrity blondes would lead the participants to estimate that there were more blondes in the slideshow than brunettes. This prediction can be made because the subjects would likely be familiar with the celebrity faces and should naturally recall them when they are making their estimates about the number of blondes and brunettes in the slideshow.

Aim:
Investigate the effects of familiarity on group perception by applying the principles of the availability heuristic to slideshows with famous celebrities.

Research Hypothesis (H1):
The mean estimate for blondes will be significantly greater than the mean estimate for brunettes as the number of celebrity blondes increases.

Null Hypothesis (H0):
There will be no significant difference in the mean estimates for number of blondes as the number of celebrity blondes per slideshow increases.

Method

Design

This was an experimental method. This method was chosen because it was the best way to manipulate variables to obtain the desired results. The experiment was also single blind – the participants were not informed of the hypothesis of this experiment. Slideshows were chosen because time per slide could be standardized. The independent variable was the number of celebrity faces in the slideshow. The dependent variable was the number of blondes and brunettes estimated by the participants. There was a control slideshow wherein there were no celebrities. Informed consent was obtained from each participant and they were notified of their right to

withdraw. They were also debriefed on the aims of the experiment once they had finished the study.

Participants

The 35 participants used in the experiment were Riverwood High School students between the ages of 15 and 18. Both boys and girls participated in the experiment and were randomly assigned to the two experimental groups or the control group. Each of the experimental groups had 12 participants in them; however the control had only 11. They were either required to participate by their teachers or were offered extra credit, donuts, or community service hours for participation. Random sampling was not practical because students could not be taken out of class or forced to participate. The only criterion for participation was that the students had not taken a psychology class.

Materials

3 Laptops, to play the slideshows
3 Slideshows of 20 headshots each
50 Questionnaires
50 Briefing Forms
50 Debriefing Forms
50 Informed Consent Forms

Procedure

Three slideshows had to be created. Google Image Search was used to find headshots of average people. Pictures were selected and placed into a PowerPoint presentation randomly, using one picture per slide. Every slide in the PowerPoint presentation had a black background and headshots were placed in the center of the slide. It is highly unlikely that any of the participants would have recognized the headshots that were selected. After the control slideshow was created, the other two experimental groups were created using the designated number of celebrity faces. A number correlating with the experimental condition was added at the end of each slideshow and participants were asked to record it on their questionnaire.

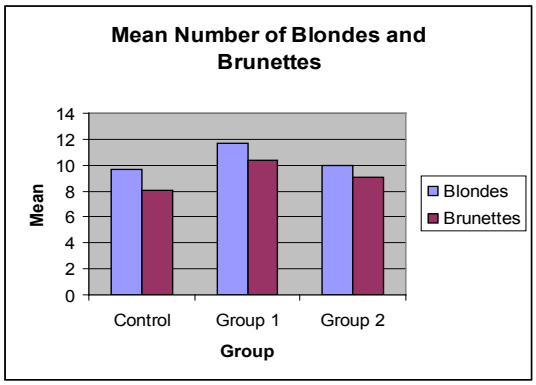
On the experimental days, the participants were allowed to come into the testing room as they desired. When they were in the room, they were approached and asked to participate in our experiment. They were given an informed consent form to read and sign. They were then allowed to choose one of two desks at which to sit. Each desk had a laptop, which was set up to play one of the three slideshows – group 1, group 2, or the control group. However, when the participant was choosing a desk, all the screens were black. The laptops had been set up and loaded with the slideshows before the participants arrived. They were then read standardized instructions and instructed to click the screen when they were ready to begin. The participants then watched the slideshow. Once the slideshow was finished, the participants were given the short questionnaire and asked to write their slideshow number off to the side of the questionnaire before answering the questions. After they had answered the questions on the questionnaires, they were given a debriefing form and were asked not to share the debriefing form or the procedure of the experiment with any of the other participants. Once they had left, the slideshows were reset so that the screen was black again and it was ready for the next participants.

Results

Description of Results

Mean numbers of blondes and brunettes for each group:

	Blondes	Brunettes
Control	9.67	8.08
Group 1	11.72	10.36
Group 2	10	9.08



Analysis of Results

The Mann-Whitney U Test[1] was used to evaluate the significance of the data because our data was interval and nonparametric. The number of blondes from the control group was compared to that of Groups 1 and 2.

The first Mann Whitney U Test compared the Control group and Group 1.

The smaller sample size (N_B) is Group 1. U was calculated to be 99.5 and U' was calculated to be 32.5. At the value of $N_A = 11$ and $N_B = 12$, the critical value was 38. Therefore, U' was found to be significant for a one-tailed test at $p > 0.05$.

The second Mann Whitney U Test compared the Control group and Group 2. The results were not found to be significant for a one tailed test at $p > 0.05$.

Although the results for Group 1 were found to be significant, the experimental hypothesis must still be rejected and the null hypothesis must be retained. The experimental hypothesis stated that as the number of celebrity blondes increased, the participants' estimates of the number of blondes

in a slideshow would also increase. Since the experimental condition with the most celebrity blondes is not significant, the null hypothesis is retained.

Discussion

The results were surprising and unusual. The results show that the slideshow with four celebrity blondes elicited higher guesses for blondes than brunettes. However, the slideshow with eight celebrity blondes showed no significant difference when compared to the control. This means that the first experimental group fit with the experimental hypothesis, but the second group did not. This was an unexpected result.

The results of the first experimental group show consistency with the studies upon which this study was based. According to Tversky and Kahneman (1974), participants should recall that which they find most familiar. In this way, the results are valid; the participants recalled significantly more blondes in comparison to the control group. This group is also in accord with the experiments of Schwartz (1991) and McKelvie (2000), since the availability heuristic led the participants to remember more from the group with familiar faces.

However, the second experimental group did not follow the predicted pattern. There were fewer blondes estimated by the participants even though this was the group with the most celebrity blondes. This may be attributed to poor experimental design or other confounding variables.

One of the limiting factors of this experiment was the testing environment. The room was noisy and at any given time there were up to five other experiments being conducted. It is possible that the participants were so preoccupied with their chaotic surroundings that they were unable to give their full attention to the slideshow. Their estimates may simply have been random and this may have drastically affected the results of our experiment.

A second limiting factor was the participant selection. Random sampling was impractical because permission could not be granted to take students out of class. Instead, experimenters were limited to the participants that were attracted by the promise of free breakfast or community service hours. Had there been a greater variety and number of participants, the results may have been more accurate or more representative of the expected results of the experimental hypothesis. The better the data an experiment can glean, the more reliable its results are.

Furthermore, there is the obvious question of how recognizable the celebrities were to the participants. Although the celebrities were chosen using websites that listed the most famous contemporary blondes, it is still possible that the participants may not have recognized their faces. This would have affected the experiment because the availability heuristic is based on familiarity. Different sectors of the student body would have been more familiar with different celebrities. This variable could be eliminated by pre-rating pictures before the experiment to get an idea of what faces the average person is most familiar with. Also, it is possible that the participants would have identified more with the people they saw to be most like themselves. Since all the slides showed female headshots, a female may have responded differently than a male. However, random assignment should have minimized such confounding variables. Once again, increased number of participants may have helped to further eliminate problems. Finally, the slideshows may have gone too fast for the subjects to wholly notice the characteristics of the person on each slide. Perhaps the slideshow should have shown each slide for more than two seconds.

The difference between Group 1 and Group 2 is difficult to explain. Further research may find a point where the availability heuristic is no longer applicable. Perhaps if the participants are familiar with the majority of the faces, there is no longer a significant difference between groups.

In conclusion, although there were several distinct variables that may have limited the reliability of this experiment, they can be easily rectified. Had the experiment been conducted in a quiet room with more participants and more time per slide, the results may have been more consistent with the findings of previous researchers.

This study found that although one experimental condition was consistent with the experimental hypothesis, it has been altogether ascertained that familiarity has no effect on the participants' estimates of the number of blondes in a slideshow. The null hypothesis has thus been retained.

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An Experiment to Investigate the Effects of Character Evidence on Decision Making in Juries.

Alexis Pinsky and Nicole Reisman
Advisor: Ryan Balch
Riverwood High School, GA

Abstract

The aim of this experiment is to determine whether character evidence and other extralegal factors influenced a juror's decision about the sentence of a perpetrator. The research hypothesis states that character evidence will have an effect on the judgments of the guilt of the perpetrator. It is believed that when the perpetrator is portrayed negatively and the victim positively, the perpetrator will have a higher prison sentence than when the perpetrator is portrayed positively and the victim is portrayed negatively. An experimental design was used to ensure maximum control over the investigation. The independent variable was the character evidence, and the dependent variable was the number of years that the perpetrator was sentenced to prison. The control condition did not have any extralegal information. The sample population consisted of 73 high school students ages 16-18. While the results did not definitively prove causation, the data points to a strong correlation between character evidence and the length of the sentence given.

Introduction

This experimental study was conducted under the discipline of social psychology. It focuses specifically on behavior and experience with respect to social stimuli. This branch of psychology will be used in terms of theories on decision making and the integral part it plays in the holistic understanding of social psychology.

In a legal sense, judgments and decision making is manifested into the role of a juror. A jury and/or jurors are expected to render an impartial, rational verdict and make judgments based on hard facts, rather than on extraneous or irrelevant information regarding the character or life circumstances of the witness. One must not forget that jurors, like normal people, have perceptions before they enter the courtroom and that they play a vital part in the decision making process. Sheflin and Van Dyke (1980) recall that when making decisions in the courtroom "juries are often swayed by legally irrelevant information."

Forgas (1995) found that positive and negative affect influence social judgments and decisions. In relation to victim and perpetrator extralegal factors, positive and negative stimuli can manifest itself within past experiences, character, and life circumstances.

The primary defendant attributes that affected jurors in one experiment were prior criminal record, general courtroom appearance, and sympathy-related factors. Defendants' employment status and criminal record also influenced actual juror's verdicts in other studies (Reed, 1965; Myers 1979). Many studies report that if the victim is portrayed with a poor character, then subjects are lenient in their judgments of the defendant (Calhoun, Selby, Cann, and Keller, 1978; Field and Bienen, 1980; Jones and Aronson, 1973). Further, Visher (1987) conducted an experiment to test the impact of evidence and extralegal factors on the juror's decision. The study states that factors that affect a juror's judgments fall under three categories; one of which is victims and defendants characteristics, also known as extra legal influences. In Visher's study, only educational level of defendant was a significant determinant of juror decisions. Visher's study did show that a defendant's educational level, seen as "negative", correlates positively with the assessment of their guiltiness. In the end, Visher concluded that "both victims' and defendants' attributes exerted some influence on jurors' initial decisions."

In this study, the investigation is based on whether certain positive and negative extralegal factors will affect the sentence given to the perpetrator for vehicular homicide, given that the perpetrator was already rendered guilty. The extralegal factors included past criminal records, character evidence, marital status, and alcohol use. These factors are assigned to both the victim and the perpetrator, either extralegal factors are positive and the other negative or vice versa. The participants will be given a case account and then asked to sentence the perpetrator to a number of years in prison. The control group will have no descriptions of either. The aim of this investigation is to asses how extra legal factors, concerning the victim and the perpetrator, affect the sentence of a perpetrator in a case account.

Research Hypothesis (H1)

Character evidence will have an effect on the sentence of the perpetrator. When the perpetrator is portrayed negatively and the victim positively, the perpetrator will be sentenced to a higher number of years in prison than when the perpetrator is portrayed positively and the victim is portrayed negatively.

Null Hypothesis (H0)

There will be no significant differences in the sentencing of the perpetrators based on their character evidence.

Method

Design

In this investigation, an experimental design was used because experimental designs assure maximum control over the experiment. There were three conditions involved: a control group and two experimental groups. Within the first experimental group, the perpetrator was described with negative extralegal factors, and the victim was described with positive extralegal factors. In the second experimental group, the perpetrator was described with positive extralegal factors while the victim was portrayed with negative extralegal factors. Within the control group, no extralegal factors were provided. The independent variable was the extralegal factors (either positive or negative). The dependent variable was the number of years, from one to twenty-five, that the perpetrator was sentenced to prison. A survey was used to collect data because it allowed the participants to remain anonymous. Each participant signed an informed consent form before they took part in the experiment. Participants were also given the right to withdraw from the experiment, their names were not recorded, and they were debriefed at the conclusion of the experiment.

Participants

There were 73 participants in this experiment. Twenty-five participants were in the control group, 23 participants were in experimental group one (perpetrator-negative and victim-positive), and 25 participants were in experimental group two (perpetrator-positive and victim-negative). The participants were all high school students with ages ranging from 16 to 18 years, with a mean age of 17 years. Thirty-three of the participants were male, and 40 were female. The students were chosen based on the availability of classes that were able to participate. The feasibility of a random sample did not exist because there were not enough people available, and classes could not be interrupted. The participants were randomly allocated to groups by receiving case accounts that had been sorted prior to their participation.

Apparatus/Materials

The materials used were the three case accounts (control and two experimental groups) with attached questionnaires, pens for the subjects to record their answers to the final questions, and a debriefing sheet.

Procedure

Participants were placed in a quiet room where they received and signed an informed consent form. The experiment was performed on multiple people at one time; however, they were seated far away from each other so that they would not be influenced by their peers. They were then randomly assigned one of three different case accounts. The case accounts had previously been numbered according to a key that allocated case accounts with numbers (either the control, or one of the two experimental groups). Participants were then instructed to read over the case account and answer the questions that followed. Upon completion of the questions, the case account sheets were collected, and the participants were presented with a debriefing sheet that explained the experiment.

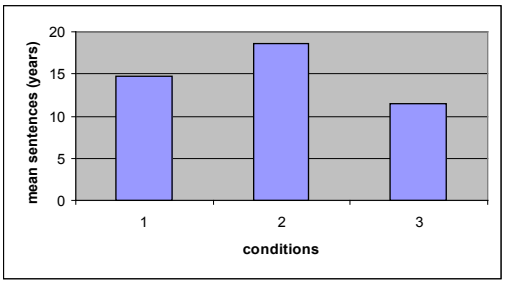
Results

The following tables show the mean sentence for each of the two experimental groups as well as the control. For Experimental Group One, the sentence ranged from 2-25 years and the mean sentence was 18.61 years. For Experimental Group Two the sentence ranged from 1-25, and the mean sentence was 11.48 years. For the Control, the sentence ranged from 5-25 years, and the mean sentence was 14.68 years. The standard deviation for Experimental Group one is 7.031, two is 8.171, and the Control is 7.515.

To test the significance of the results, a Mann Whitney U test was used. This test is appropriate because the experiment is an independent design, as each participant in each group only experiences one condition of the independent variable. The data used in this experiment is interval, as the difference between the sentences is meaningful. It was a one tailed non-parametric test because the direction of the results was predicted in the hypothesis. The results at the one tailed test are significant because they are close enough to .05 to be applicable. The probability of getting these results by chance or random error is almost equal to .05%. As a result, the null hypothesis can be rejected and the research hypothesis can be accepted. There was a significant difference between the mean Experimental Group one and two sentence and the mean control sentence. At the one tailed test ($P > .05$), but the results are practically significant and therefore applicable.

	N	Min	Max	Mean	Std. Dev
Control Sentence	25	5	25	14.68	7.515
Experimental Group 1 Sentence	23	2	25	18.61	7.031
Experimental Group 2 Sentence	25	1	25	11.48	8.171

The following figure is a graph of the mean sentences of the control and experimental groups.



Control vs. Experimental Group 1:

n_1	n_2	U	P (one-tailed)
25	23	367.0	0.051416

Control vs. Experimental Group 2:

n_1	n_2	U	P (one-tailed)
25	25	394.0	0.05874

Discussion

The results from the experiment show that positive and negative extralegal factors concerning the victim and perpetrator presented in the case account had a significant effect on the sentence of the perpetrator. The research hypothesis can be supported by the results of the study. Thus, the means of the sentences differ enough to prove that the difference was not due to chance. The standard deviation in each group was very close. That means that the number of years that the sentence varied from the mean in all three groups was similar.

These results can be specifically explained by identifying the research that predicted them. The theoretical evidence explained by Sheflin and Van Dyke (1980) can be affirmed by the experiment because the jury was swayed by extra legal factors. The results show that the jury obviously did not make the decision based solely on the crime, as the sentences of the two experimental groups differed significantly from the control. Research showed that if the victim was portrayed with poor character, the judgments would be more lenient (Calhoun, Selby, Cann, and Keller, 1978; Field and Bienen, 1980; Jones and Aronson, 1973). Therefore, the assumption can be made that if the victim was portrayed with good character, the judgments of the perpetrator would be less lenient. Visher (1987) proved that some of the defendants' negative characteristics correlate positively with the assessment of their guiltiness. As a result, it can be assumed that when the perpetrator was portrayed in a negative light, he or she would be viewed as guiltier, and therefore deserving of a longer sentence. When pairing a positively portrayed perpetrator and a negatively portrayed victim, the sentence should be significantly lower since each of these conditions produces a low sentence. When pairing a negatively portrayed perpetrator and a positively portrayed victim, the sentence should be significantly higher since each of these conditions produces a high sentence. The results of the experiment coincide with the previously described conditions.

To shed some more light on the subject matter, perhaps the experiment should specifically measure the effect that each individual variable of the perpetrator's and victim's characteristics had on the sentence. It is important to take into account that there were two independent variables present in the experiment, including that of both the victim and perpetrator.

Since the methodology of the experiment proved to be simple, there are few weaknesses within this area. One weakness within the methodology concerns participant representation. Although teenagers are most likely produce the same results as adults, it would be more realistic if adults participated since they are more representative of the population that serves as a jury. Students were more available than adults, which is why they were used in the study. Factors out of the experimenter's control during the study were whether the subjects had prior exposure to information concerning the jury system, and the time of day during which the experiment was conducted. Since our experiment was purely a survey, there are not many confounding variables that could have had an effect on the outcome other than the content of the actual survey. Limitations to the study include the fact that in a real courtroom, the jury does not assign the sentence to the perpetrator. The judge has the role of assigning the sentence. The jury only assesses whether the defendant is guilty or innocent. If the experiment was to be replicated over, there are a variety of aspects or strengths that would not change. The survey method was a particular strength because it provided anonymity of the subject and flexibility for the experiment regarding participants and areas to conduct the experiment. Also, within the surveys, one strength was the male gender of the character. This prevented gender from having an effect on the sentence, as it is not an extra-legal factor. To further strengthen the experiment, it could be changed so that the jury was only assessing the guiltiness of the defendant, not assigning a sentence, thus producing more realistic experimental data.

Conclusion

The research hypothesis was supported, meaning that character evidence did affect the sentences of the participants. The results were almost completely significant due to significance levels of 0.051416 and 0.05874.

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Correlational Psychology

The Effect of Stress on the Intensity of Insomnia in High School Students

Kristin Biskup
Chatham High School, NJ

Abstract

Eighty-six ninth through twelfth graders in regular English classes at Chatham High School filled out a survey on how factors of stress contribute to insomnia. The results revealed that sophomores and juniors experience the most incidences of insomnia and at the highest degree with the most lasting effects. Freshmen experienced the least amount of insomnia, followed by seniors. The insomnia does increase with the progression of grades and drops at the end of senior year. The study demonstrated an increase in incidences of insomnia with the progression of grades and a subsequent decrease at the end of senior year.

Discussion

Insomnia is the most common sleep disorder and the least understood. It affects one out of three adults. It is characterized by difficulty falling asleep, problems staying asleep, and prematurely waking up. When sleep does occur, it is poor in quality and non-restorative. These symptoms may be associated with daytime functional impairment. Studies have shown that the time-released formulation of the hormone melatonin has been found to increase the quality of sleep among the elderly (Hormone, 1995). Melatonin also regulates the body's internal clock and it is a nocturnal hormone produced in the pineal gland in the center of the brain. The hormone induces sleep. A deficiency of melatonin could be an important factor in the cause of insomnia.

Medicine, such as Indiplon, has been developed for people with insomnia. It is a selective non-benzodiazepine sedative hypnotic that selectively bonds to the alpha 1 subtype of the GABA-A receptors in that brain. The drug promotes sleep, which can help people deal with their insomnia (Gryskiewicz, 2006).

There are many other factors that can cause insomnia. Drug usage, barbiturates that are taken beyond recommended dosages, and alcohol withdrawal could influence symptoms of insomnia (Petri, 2004). A study has shown that the consumption of certain types of food, such as spicy foods, may be a factor in the difference in the severity of insomnia (Biskup, 2007).

Many high school students suffer from insomnia, leading some to believe that stress could be a cause. If stress is a major cause of insomnia, then instances of insomnia should peak in junior and senior year, reflecting the heightened levels of stress in these grades.

Method

A survey was used to gather the experimental data. The self report survey included the following questions: (See Survey). The subjects were a random sample of high school students of all grade levels. Four separate regular level English classes that spanned over the four grades were chosen at random to administer the surveys. This range allows the results to cover the entire span of high school life. The students volunteered to part take in the survey. The study was done in four different sessions. There was one session per grade where the grade class would fill out the survey. The participants were anonymous. They filled out the survey by circling and/or writing in responses to the questions. The results were placed into data tables for analysis.

Results

Nineteen ninth graders filled out the survey. The results were calculated and averaged. Most ninth graders experienced insomnia one time a month, and on average identified two factors that induce insomnia. Most ninth graders did not attribute insomnia to their stress.

Twenty tenth graders filled out the survey. The majority of tenth graders experienced insomnia two to five times a month, and attributed around five factors to the insomnia. The tenth graders agree that most of their stress results in insomnia.

Eighteen eleventh graders filled out the survey. The majority of eleventh graders experienced insomnia six to ten times a month and attributed around five factors to the insomnia. The eleventh graders moderately agree that most of their stress results in insomnia.

Nine twelfth graders filled out the survey. The majority of twelfth graders experienced insomnia one time a month and attributed around three factors to induce the insomnia. The twelfth graders moderately agree that most of their stress results in insomnia.

Conclusion

Tenth and eleventh graders both experienced insomnia most frequently, which usually occurred two to five times a month. Twelfth graders experienced the least amount of insomnia. Eleventh graders had the most insomnia inducing factors, while ninth graders had the least. No one in the study expressed chronic insomnia. Tenth graders had the highest rating of insomnia due to stress with a moderate rating. Ninth graders scored the least in each category. Even though many participants said they experienced numerous factors that cause stress, they failed to attribute those factors to their personal acknowledgement of how stress affected their insomnia.

The original hypothesis was proven accurate. Reasons why data from tenth and eleventh graders are so similar are that colleges mostly look at the two previous years of high school when students apply for college at the beginning of senior year. This could lead to more stress on said grade levels to get the grade scores wanted to impress colleges. It seems justified that eleventh graders deal with more insomnia inducing factors because juniors take additional tests. Juniors need to take standardized tests in order to graduate high school and most take the ACTs or SATs for college transcripts. The hypothesis was correct about seniors. At the end of the school year, most seniors are already admitted to college and therefore less stressed. The numbers of participants from each grade could have been a confounding variable in the experiment. New studies on level of education within a grade could affect these conclusions along with gender. Insomnia is a mysterious disorder that has many aspects of itself that are still open for discovery.

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The Effect of Self-Esteem on Obsessive- Compulsive Disorders

Clare Gibson
Chatham High School, NJ

Abstract

A random sample of high school students filled out a survey to investigate the relationship between self-esteem during childhood and the likelihood of having an obsessive-compulsive disorder in the future. Students were asked questions about their childhood to determine their relative self-esteem at that time. They were then asked questions about any current OCD symptoms that they experience. The results did not confirm the hypothesis because the data showed that self-esteem had a small effect on the frequency of obsessive-compulsive tendencies. Instead, it leaves room for further research to be performed in alternative settings to prove this hypothesis.

Introduction

More than five years ago, a member of my family was diagnosed with Trichotillomania. This disease is characterized by repetitive pulling of hair from the scalp, eyebrows, eyelashes, pubic hair, body hair, and facial hair that leads to noticeable hair loss, distress, and social or functional impairment (Chamberlain 2007). No one in my family had ever heard of the disease before, so we began to research the disease hoping we could help in some way. However, we immediately found out that Trichotillomania is a very rare and relatively mysterious illness.

One thing we were able to research was Trichotillomania's association with obsessive-compulsive disorders. They are often compared because both Trichotillomania and OCD involve repetitive behaviors that are performed unwillingly the same way each time (Penzel, 2003). Also, both disorders involve repetitive thoughts and feelings that cause the person to feel anxiety and therefore react to impulses to sooth these feelings (Brüne, 2006).

We also discovered several proposed treatment options for Trichotillomania. Most psychologists treat it as an obsessive-compulsive disorder because it relates closely to OCD. Some of the treatments include cognitive behavioral therapy, dynamic psychotherapy, fluoxetine (Prozac), fluvoxamine (Luvox), sertraline (Zoloft), paroxetine (Paxil), citalopram (Celexa), and clomipramine (Anafranil) ("When Thoughts" 2006). Although a few of these treatments have worked in select situations, there is still no universal cure.

As my sister battles Trichotillomania, there are many changes that she is experiencing. One of the most notable changes is in her self-esteem. She has always had a low self-esteem, but after she was diagnosed, it decreased dramatically. This caused me to wonder about the relationship between self-esteem and other obsessive-compulsive disorders similar to Trichotillomania.

Since Trichotillomania is such a new and misunderstood disease, it was necessary to expand the topic to all obsessive-compulsive disorders. This worked out nicely because most people with trichotillomania and OCD suffer from a lower self-esteem after their diagnosis. In fact, depression has been known to worsen pre-existing OCD symptoms ("When Thoughts", 2006). The most severe cases even leave patients unable to function socially (Merlo, 2006).

Many psychologists believe that depression often follows obsessive-compulsive disorders. There are several possible reasons for this. One of them is caused by the doubt that first accompanies the obsessive-compulsive disorder. Many patients are convinced that they do not have a disorder, so they become very confused and frustrated when they notice the symptoms.

Depression may also appear when patients attempt to handle the disease on their own. This behavior is extremely difficult and frustrating. People often end up feeling defeated when they realize that they cannot control the disorder.

However, the most common cause of depression is the shame that patients feel about their disease. Many people with OCD feel that the disorder separates them from society and makes them different in a negative way. This causes them to become very self-conscious and often drives them to try to conceal their disease ("Obsessive-Compulsive" 2005).

Psychologists Paula Barrett and Lara Farrell further confirmed that OCD becomes more severe with age and that side effects become increasingly visible (Farrell, 2006). Although subtle symptoms can be detected in children, they are often much more developed and dramatic in adults. Even when there are observable symptoms, children are generally unable to understand their thoughts and actions. Since they cannot recognize problems with their thoughts or actions, they often conceal them. Consequently, it is often very difficult to diagnose a child with OCD. However, one of the early signs of an obsessive-compulsive disorder is lower self-esteem in conjunction with difficulties in the classroom and in social settings. (Adams, 2004).

The purpose of this particular study is to determine how self-esteem at a young age correlates with the presence of OCD in the future. It is known that depression and a low self-esteem are associated with OCD, however, it is possible that depression was always present. Often times, depression can go unnoticed if it does not have a direct impact on daily life. Therefore, if it can be proven that a low self-esteem

during childhood increases the risk of being diagnosed with OCD in the future, then it may be possible to detect OCD and treat it at a much younger age. As a result, it is hypothesized that those who had a lower self-esteem during childhood have more OCD tendencies in the future.

Method

Subjects

The subjects included 47 students from Chatham High School. The students ranged from 9th-12th graders, All of the students were volunteers who agreed to fill out the survey.

Materials

The data for this experiment was taken from a survey that was issued to the students. In the survey, the participants were asked questions about their childhood. These questions pertains to their outgoing nature, self-image, school participation, comfort in social situations, and relationships with friends.

A point-scale accompanied these choices to make them easier to score. For this survey, the points were distributed as follows: Always=4; Often=3; Rarely=2; Never=1. The purpose of the questions was to determine the relative self-esteem of the participant during childhood. All of the participants recorded having a reasonably high self-esteem so the scale was shifted in order to accommodate this so it was decided that those scoring 18-20 had a higher self-esteem and those
scoring 13-17 had a lower self-esteem.

There was also a current portion of the survey, which included two questions about repetitive thoughts and rituals. The purpose of the current questions was to determine the frequency of any evident OCD tendencies. It is understood that most of the participants probably do not suffer from any OCD. However, it is not uncommon for people to have OCD symptoms even if they do not actually suffer from the disorder.

The choices and point-scale for the current portion of the survey were identical to that of the childhood section. Therefore, participants scoring 6-8 were recorded as having higher OCD tendencies, those scoring a 5 were right in the middle, and those scoring 2-4 had fewer OCD tendencies.

Procedure

The surveys were handed out throughout different times of the day. They were also distributed in all different classes of all different age levels which included a 11th and 12th grade AP psychology class, a 10th and 11th grade Honors Chemistry Class, and a 9th grade history class.

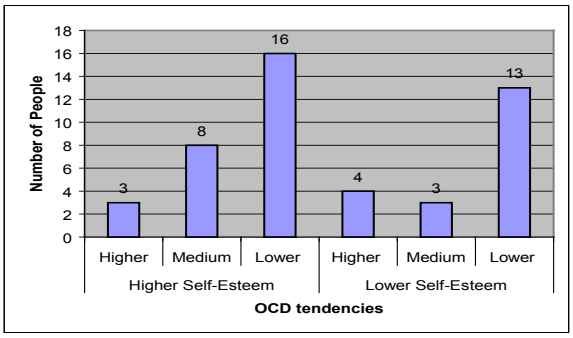
At the beginning of each period, the students were asked to fill out the anonymous survey and then return it face down into a folder. This was done in an effort to make the students feel more comfortable while taking the survey. If the students believed that no one could see their responses, they were more likely to answer honestly and therefore give better data.

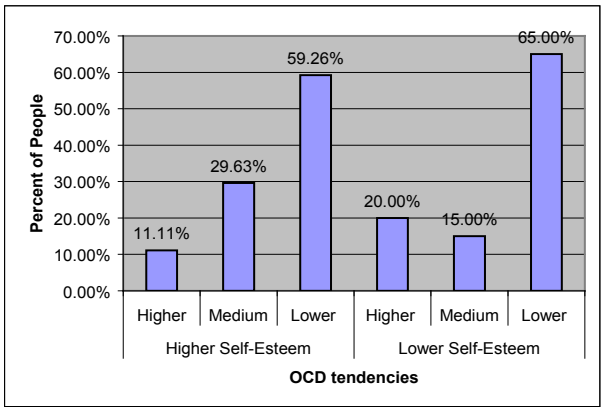
Results

The data is represented on bar graphs so that the it can easily be viewed and compared. The information is also labeled clearly so that all of the variables of the survey can be defined and understood. Two graphs were created in order to display the data from the surveys.

The first graph divided the subjects into two groups based on their high or low self-esteem (determined from the previous scale). Then each of these groups were further divided into sub-groups depending on their level of OCD tendencies. These ranged from high to low (also depending on the previous scale). The numbers represent the number of people that fit into that group.

This first graph displays the similar data collected for each of the self-esteem groups. Both groups had the most subjects fall into the lower OCD symptoms category. They also
had significantly fewer people in both the medium and high OCD tendency
categories. The only real difference
was that the low self-esteem group





had more people demonstrating more OCD symptoms than those in the medium category. The high self-esteem group showed the opposite.

The high self- esteem group had seven more participants than the low self-esteem group. As a result, a second graph was created to account for this difference.

The second graph shows the percent of people of each individual self-esteem group that experienced a certain frequency of OCD symptoms. Since this graph dealt with percentages based on the number in each group, it didn't matter that one group had more participants than the other. This graph allows the two

groups to be compared more easily and accurately.

Although the data is still fairly similar to the first graph, there is one change that is obvious. In the second graph, the lower self-esteem group had more participants demonstrating lower OCD tendencies than the higher self-esteem group. This was the only real visible difference between the graphs.

Discussion

The data taken from the students did not agree with the hypothesis that a lower self-esteem during childhood is accompanied by OCD in the future. Instead, self-esteem had an insignificant effect on the occurrence of obsessive-compulsive tendencies.

Subjects from the survey with lower childhood self-esteems were about 9% more likely to experience OCD characteristics than those having higher self-esteems. However, people with lower self-esteem were also 6% percent more likely to have fewer OCD tendencies. Therefore, the hypothesis was not proven.

Although there was a slight variation in the data for each group, the number of people demonstrating different levels of OCD symptoms was extremely similar regardless of their self-esteem during childhood.

Even though there was no correlation with the data from this survey, more research should definitely be done on this topic. It is known that depression worsens after OCD is diagnosed. So, there may very well be a way to detect this lower self-esteem in children and treat it before the OCD fully develops.

There may have been confounding variables in the experiment. For one, students are often very self-conscious while answering personal questions in school. Many feel as though someone will see their responses and judge them for their answers.

A larger sample would have improved the data because the larger the sample, the more accurate the data is. Also, the sample could have been more varied. All of the subjects were high school students living in Chatham. The students all had similar social and natural environments that may have affected the data. If larger samples were taken from students from different geographic regions and from all different ages, more accurate data could have been received.

One more thing that affected the findings was the fact that OCD is not an extremely common disease, especially in teens. Many people experience OCD characteristics but do not classify them as such. Therefore, the questions about OCD may have been answered falsely because the participants did not correctly identify their own behavior.

This experiment may have been performed better if the survey was distributed to people who are actually clinically diagnosed with OCD. A population such as this compared to a random sample would probably give a much better idea of the possible correlation between self-esteem and OCD.

Further research such as this should definitely be preformed to prove the hypothesis. If this can successfully be done, then it is almost certain that psychologists will be able to detect this disorder earlier in life and treat it before it is able to fully develop.

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Inside Psychology

Theories on Happiness
Laura Aragon
Walt Whitman High School, MD

Theories on Happiness

Ever since Freud, the biological and psychological bases of emotion have been the subject of scientific inquiry and speculation. Recently, a great deal of attention has been placed on understanding happiness. Researchers are searching for explanations of what causes happiness on biological, as well as psychological levels. Our lives seem to revolve around the pursuit of happiness, and making the right decisions to maximize our satisfaction. A number of new theories have been proposed that attempt to explain the vast and abstract subject of happiness.

Among many recent discoveries about happiness, one of the most interesting is the counterintuitive finding that characteristics which people tend to associate with life satisfaction do not affect happiness at all. Wealth, age, sex, and race all appear to play no role in one's ability to be satisfied with his or her life (Myers, 1993).

One widely accepted theory of happiness is the "set point" theory introduced by David Lykken and Auke Tellegen. This theory recognizes happiness as a genetic predisposition, and states that each person has a predetermined "set point" of happiness. Although life events may temporarily affect one's immediate happiness, one's happiness will always settle back at its set point. This theory is based on Lykken's and Tellegen's research from studying twins and how genetics play a role in happiness. His research found that two main factors contribute to levels of happiness: genetics and life circumstances (Lykken, 1996). This explains the concept that those who may experience even the most drastic changes in life circumstances, such as winning the lottery or getting plastic surgery, will eventually return to the same amount of happiness that they once experienced. The set point theory recognizes genetics to be a significant cause of happiness, or the lack thereof.

Different research has pointed to a few main causes of happiness, such as social relationships, sexual activity, success/achievement, physical activity, nature/reading/music, food/drink, and finally alcohol (Argyle, 1991). Although some of these causes of happiness are relatively self explanatory, others seem somewhat surprising to see play a role in happiness. Some causes such as food and drink are satisfying because they are connected to pleasure centers in the brain, while others, such as achievement, cause happiness because people have been conditioned to be satisfied by them (Argyle, 1991).

Observing nature, reading, and music are all ways that one's environment can provide stimulus to the brain. A study by James Olds and Peter Milner (1954) determined through testing on rats that organisms find stimulation of the brain to be enjoyable. Stimuli seem to increase the amount of released neurotransmitters such as dopamine present in the brain, and these neurotransmitters increased immediate happiness (Olds, 1954; Argyle, 1991).

Also, physical activity can impact one's mood and amount of immediate happiness. While exercising, one's brain will release endorphins, or hormone-like substances, that can act as painkillers. Endorphins can cause feelings of euphoria and well-being and decrease negative effects of stress as they travel through the body (Stopple, 2007).

Recently, Dan Gilbert has been developing a theory on the existence of a type of happiness called "synthetic happiness". Synthetic happiness is a manufactured construct of the brain that can subconsciously change people's thinking about a situation. Subjects can become convinced that they are pleased with the outcome of a situation, whether or not the outcome is necessarily what they had originally wanted. Gilbert recognizes humans' ability to synthesize happiness as a type of "psychological immune system." He differentiates between synthetic happiness and the happiness that results from getting what we want, which he terms Natural Happiness (Gilbert, 2004).

Gilbert discusses a study in which seven Monet prints were placed in front of subjects, They were asked to order the seven prints in order of how much they liked them (1 being their favorite). Then, the subjects were told that they could choose to keep their third or fourth favorite print to take home, and naturally the subjects chose their third favorite. Then, after a set period of time, the subjects were brought back and asked to reorder the prints again from favorite to least favorite. This time however, there was a trend in which subjects changed the order of the prints. The subjects moved the print that they had taken home to their second favorite, and the print that they chose not to keep, to their fifth favorite. This experiment illustrated that people will subconsciously convince themselves that they made the right choice, and change how much they believe they like a certain print, and are thus synthesizing happiness (Gilbert, 2004).

In an interesting twist, Gilbert then repeated the experiment, but this time the subjects were all patients with Anterograde Amnesia because it would test whether synthetic happiness was entirely subconscious. The patients put the prints in order of how much they liked them and were allowed to keep either print 3 or 4. After a half hour, the patients have no memory of ever seeing the prints before. The patients are asked to order the prints again and the trend that was seen in non-amnesiacs continued with

the amnesiac patients. The patients moved the print they had previously chosen to second, and the one they had left to fourth. These results are astonishing because these patients had changed their opinions on the painting so that they prefer the one that they own, and yet the patients are not even consciously aware that they own it (Gilbert, 2004).

Synthetic Happiness has been found to be most powerful when subjects are in irreversible situations. Gilbert talks about an experiment in which a college course in photography was created where students were to take pictures, choose two to develop, and were allowed to keep just one. The students were put into two experimental groups: one allowing the students to exchange their picture later if they decided they want to keep the other picture, and the other not allowing students to exchange the picture. The students' satisfaction with the picture was measured over time and the students who were in an irreversible situation developed a greater appreciation for their chosen picture, while students who had the opportunity to exchange the picture developed a disliking for the picture. This experiment showed that the reversible condition does not allow for synthetic happiness to develop (Gilbert, 2004).

Ultimately, with an emotion as complex as happiness, it is near impossible to develop a complete understanding of it, as demonstrated through the fact that different research recognizes different causes. Gilbert's experiments indicate that happiness is something that the mind develops subconsciously, while Lykken suggests that one's happiness is predetermined by genetics, and still others such as Olds and Milner claim that happiness occurs due to brain stimuli and the presence of neurotransmitters. Theories such as Gilbert's and Lykken's uproot the basic principle in today's society of maximizing material success to increase satisfaction. All of the theories suggest that material belongings will not ensure happiness. The lack of certainty that exists on the topic of happiness causes a great deal of curiosity in psychology today. While newer theories continue to develop, even the basics of happiness remain speculations rather than certainties.

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Binaural Beats

Zack Shapiro
Walt Whitman High School, MD

History of Binaural Beats:

Brain entrainment was first discovered in 1934, shortly after the discovery of alpha waves in 1929. Early researchers found that brain waves of different frequencies could be induced using flickering light in a process known as "phonetic driving" (The Transparent Corporation). Over time, brain entrainment began to be seen as a tool rather than a neurological phenomenon and was put to practical use. It was found that not only light, but sound can trigger an altered mental state that can be beneficial to meditation, learning, physical activity, and a host of other disciplines. In 1973, Gerald Oster published an article in an issue of Scientific American entitled "Auditory Beats in the Brain". In his article, Oster examines how two pure tones of differing frequencies, if played at the same time, will produce a rhythmic beat called a monaural beat. If played simultaneously in either ear, two pure tones of differing frequencies can produce a new kind of beat, a binaural beat, which Oster says can have strong cortical responses in the brain (Oster, 1973). Studies on binaural beats continued throughout the 1980s and 1990s with the findings of Norman Shealy, Glen Solomon, and David Siever, but the practical uses of binaural beats that were found by these researchers were mostly ignored in deference to pharmaceutical companies and the success of drugs (The Transparent Corporation). Today, several companies exploit binaural beats such as iMusic which sells music with embedded binaural cues and Gnaural which provides a computer program for generating one's own binaural beats.

How Binaural Beats Work:

When the brain is exposed to a rhythmic stimulus, anything from a drum beat to the constant whirring of a ceiling fan, it recreates that rhythm in the form of electrical impulses. If the rhythm is of a high enough frequency, and is persistent over a sufficient period of time, those electrical impulses can start to resemble brainwaves, the natural internal rhythms of the brain (The Transparent Corporation). If the electrical impulses from the rhythmic stimulus resemble brainwaves closely enough, the brain begins to synchronize its natural brainwaves to match the artificial ones in a process known as Frequency Following Response (FFR). FFR is the driving force behind brain entrainment as it leads to the induction of different types of brainwaves that may be beneficial to performance and achievements in a variety of fields and can treat several conditions. For example, a binaural beat with a frequency of 4Hz can be used to treat insomnia. Because a 4Hz brainwave is associated with sleep, a 4Hz rhythm produced by a binaural beat could induce sleep in the brain. This concept works for most mental states including, alertness, learning, meditation, concentration, and even "lucid dreaming or altered consciousness (The Transparent Corporation). The rhythms essential for binaural beats are manufactured through two dissonant tones, played in either ear. The tones vary only slightly in pitch (frequency) and that slight disparity produces a rhythmic pattern in the human brain. The difference between the frequencies of the two tones determines the manufactured frequency of the binaural beat. These tones can be from virtually any source, whether it be tuning forks or digital sounds, and can be played by themselves or digitally incorporated with music or white noise.

The following is an interview with Vivek Kumar of Volition Thought House, the company that produces and sells iMusic. iMusic is an increasingly popular brand of music with pre- programmed binaural beats implanted in a subliminal fashion.

How is the iMusic software applied to music?

iMusic sounds just like regular music, with some added but subtle elements in the soundscape. Our IMAGINCE technology allows us to transform regular music into iMusic with very little change in the listening experience, so you will only notice very soft differences in the soundscape. Most changes are inaudible to the majority of people; those with a musical ear, may detect more of the changes. If you hear fluttering, or what sounds like distortion when listening to iMusic, what you are hearing, is actually the key to iMusic's success. The changes and subtle fluctuations in the iMusic are very crucial to brain enhancement.

Can someone tell when they are hearing music with binaural cues?

To date, the most well known form (but certainly not the most effective) of brainwave entrainment methods is called binaural beats, where a slightly different tone is presented into each ear. Binaural beats have become very popular over the years, so much so that for many people the idea of "brainwave entrainment" is inseparable from them.

What are binaural beats? When pure tones are mixed together, their waveforms add and subtract from one

another, resulting in a pulse. In the case of binaural beats, the two tones are mixed by the brain itself (one in each ear). The pulses, called "beats", formed by mixing these tones, cause brainwave entrainment to occur, as brainwaves are affected by rapid pulses of sound, light and other sensory stimuli. However, binaural beats induce very weak brainwave entrainment when compared with more effective, modern entrainment methods.

Because any kind of pulse can be used to entrain the brain, more effective methods that allow more control than binaural beats have been developed by neuroscientists and people intimately involved in brain science. One simple and far more powerful method is called Isochronic Tones; a tone is manually spaced, turning on and off in a precise pattern.

The facts about Binaural Beats

1) Binaural beats require headphones or special speaker assignments. This creates a tremendous constraint, limiting the usability and applications for binaural beats. Brainwave entrainment with iMusic does not require headphones or speaker assignments. For veteran users of brainwave entrainment, this may seem strange since headphones have always been a traditional part of the brain training experience. The reality of the matter is that headphones have never been required for use with anything except binaural beats, and are part and parcel of a poor brainwave entrainment experience.

2) Binaural beats are not capable of entraining the Hemispheres individually (because they require BOTH ears). This can be a major disadvantage because many of the modern entrainment protocols used in clinical studies today involve separate stimulation to each ear, useful for deeper meditation, cognitive enhancement and particularly for depression and ADD reduction.

3) Binaural beats are not as effective as Volition's IMAGINCE entrainment technology methods. Dr. Gerald Oster, in the 1973 issue of "Scientific American", introduced binaural beats to the main stream. According to Oster, because of the way the brain processes binaural beats, the depth or intensity of the resulting "beat" is only around 3db, or 1/10th the volume of a whisper (which is why the "beats" are usually so hard to detect). He concluded that binaural beats produced very small evoked potentials within the auditory cortex of the brain, while monaural beats and other methods produced far greater potentials.

There are many more effective, precise and powerful ways to stimulate the brain and induce peak performance. Leading edge methods, all of which which have been integrated into IMAGINCE, the power house technology behind iMusic.

What types of brainwaves does iMusic induce?

Just as our physical system operates at peak exertion during intense athletics and at a relaxed pace while sleeping, our brain operates at different levels of intensity— consistently cycling through these different levels throughout the day and night.

The chart on page 31 outlines the four main levels of brainwave activity with a description of the mental state they induce.

What is a peak performance state?

iMusic is music packed with scientifically proven audio technology, remastered to optimize your brainwaves for peak performance. You do not need to listen to iMusic, but simply hear it to create the ideal environment for high performance.

Each iMusic release delivers peak performance and peak experience brain states for different applications, actions and tasks.

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Brainwave Frequency	Brainwave Type	Associated Mental State
13-40 Hz	BETA	ATTENTIVE, CONSCIOUS, NARROW FOCUS, COGNITION You are awake, attentive, highly cognitive and alert. Your mind is sharp and focused. It makes connections quickly and easily, as you're primed to do work that requires your full attention. In the Beta state, neurons fire in great number and in rapid succession, helping you achieve heightened performance—but barring you from flashes of intuition. When you are creating excessively high beta brain waves, anxiety and panic is the result. * A low Beta brainwave frequency will make you feel focused and increase mental abilities, cognition and IQ. Use iMusic | Intelligence Suite to enter this mental state and realize these benefits. * A mid Beta brainwave frequency will put you in a super focused, physically relaxed, hyper alert, mentally quick state: optimizing attentive abilities. This specific Beta state is best for tackling intense information and making the initial effort to understand something.
7-13 Hz	ALPHA	VISUALIZATION, RELAXATION, INGENUITY Your brain activity slows from the brisk patterns of Beta into the more mellow waves of Alpha. In the Alpha state, you are truly relaxed and your awareness expands. Accelerated learning occurs. A creative energy begins to surface. New ideas and solutions to problems flash like lightning into your mind. Fears vanish. A liberating sense of peace and well being is experienced. When Alpha brain waves become more dominant, logical left-brain activity—which normally acts as a filter or censor to the subconscious—drops its guard. This allows the more intuitive, emotional and creative depths of the mind that exist just below the threshold of consciousness to become increasingly influential.
4-7 Hz	THETA	INTUITION, DEEP THOUGHT As your brain slows, you fall into a subtle and mysterious theta state of deeper relaxation, where your mind slows almost to the point of sleep. Theta is the brain state where the unexplainable occurs in the wake of your own neurological activity. Theta brings forward flickers of dreamlike imagery, heightened receptivity, early memories and surges of inspiration. Theta can bring you deep states of meditation, where you experience a sensation of suspension or floating. As Theta is an expansive state, you may feel your mind expand beyond the boundaries of your body and enter the energy fields that circulate around youphysical self.
0-4 Hz	DELTA	DETACHED AWARENESS, SLEEPING The slowest of all brain wave frequencies, Delta brain waves are long, deep and undulating, most commonly associated with deep dreamless sleep. Your deep Delta state of brain wave activity is one of harmonious relaxation, where both sides of the brain work in synchronization. The Delta state promotes accelerated physical healing.
* The human brain typically operates in all of the above brain wave frequencies however there always exists a dominant brain wave frequency. It is this dominant and abundant brain wave frequency that determines our state of mind.		

Confidence In Baseball

Daniel Fleshner
Walt Whitman High School, MD

Background

In baseball, batting average is probably the most well-known statistic. If a player has a good average, he is generally considered to be more valuable to a team than a player with a poor average, and so he would likely hit near the top of the batting order. The reason that average is deemed to be so critical is that it measures what percentage of the time the hitter succeeds in getting a hit, rather than a less desirable result. Also, sacrifice bunts and sacrifice flies- which are both considered to be productive at bats without being hits- do not count against a player's average.

Batting average is calculated by taking the total number of hits achieved and dividing it by the total number of at bats. An at bat is defined as any time that the player finishes an at bat without walking, getting hit by the pitch, or successfully using a sacrifice bunt or sacrifice fly. Average is calculated on a scale from zero (never recording a hit) to one (getting a hit in every at bat). The league average for Major League Baseball (MLB) players is generally slightly below .270.

Summary

It has been proven that the outcome of an activity involving inanimate objects, such as flipping a coin, is completely random; however, it is a common perception that when humans succeed, they are more likely to succeed on the ensuing attempt, due to the effect of confidence. In the game of baseball, players often claim to catch a "hot streak" or go into a "slump"; however, it is unclear whether or not confidence actually has an effect on future results. Through the statistics from the 2008 season of ten different MLB players, found on the Yahoo! Sports database, I have determined that the effect of confidence, if existent at all, is minimal.

Process

The subjects I chose for this experiment were chosen using a random number generator, from the population of all eligible MLB players. In order for a player to be eligible they must have fulfilled the following requirements:

1. They had at least 400 at bats in the 2008 season
2. They did not go more than two weeks without playing in a game
3. They remained on the same team throughout the entirety of the season
4. They are not on the same team as any of the other subjects

I began by sorting the players in the MLB, so that the players who were randomly assigned a number had at least 400 at bats, remained on the same team, and never went two weeks without playing in a game. Once I obtained the numbers from the generator, I sifted through the players chosen to ensure that they were not on the same team. If two players on the same team were selected, I eliminated the player whose number came up last and chose a new player.

Analysis

The total batting average of the players for the entire season was .291, which was exactly the same as the total batting average following a "bad" game, which is a game during which a player has at least one at bat, but does not record a hit. Additionally, on the other end of the spectrum, the average following great games is only five percent higher than the full season average, which is statistically insignificant. Furthermore, four of the ten players posted an average after great games that was worse than their average in any of the other instances. Similarly, the season average after bad games (.291) was better than the average after average games (.262). Also, the player with the largest sample size (653 at bats) had a higher average following bad games than he did on the season as a whole.

Since there is a minimal difference between the averages following each of the tested instances, it can be determined that confidence likely did not cause the differences. There are a few confounding variables that are more likely to have caused the slight difference between the average following great games, as compared to the average following good, average, or bad games. For example, luck plays a role in this study. Even if the average following great games should theoretically be the same as the season average, chance can account for a five percent difference. Another confounding factor could have been the sample size. Although I only used players who had played for an entire season, all ten players had less than 100 at bats following great games. Therefore, the effect of chance is higher, since a couple atypical games by the player could cause the data to be skewed.

As a whole, the data shows that confidence does not have nearly as large an effect as many baseball experts believe it to have. There are many players who are considered to be "second half players" or "first half players", even though stats show that this is likely not the case. There is no way to definitively prove or disprove the effect of confidence in baseball, but there does not seem to be a correlation between confidence and future results.

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