Name(s)	Project Number
Cherie E. Abramovitz	**J0401**

Project Title

Being Inkquisitive: Tatoos, Self-Esteem, and Social-Anxiety

Abstract

Objectives/Goals
The existing literature regarding social anxiety and self-esteem among those with tattoos is limited and conflicting. Some findings suggest that those considering getting a tattoo need to question their motivation behind getting that tattoo, and even consult a psychologist before doing so, because of possible anxiety and self-esteem problems. The objective of this study was to determine whether there is a difference between individuals with- and without- tattoos, with respect to social anxiety and self-esteem.

Methods/Materials
Fifty two participants, with- and without-tattoos, aged 18 and higher were recruited into this study. After giving their informed consent, the participants completed a survey that asked a series of questions related to demographic characteristics, social anxiety and self-esteem. The Brief Fear of Negative Evaluation-II was used to evaluate social anxiety and Rosenberg Self-Esteem Scale (RSES) was used to evaluate self-esteem. Descriptive statistics such as percentages, means and medians were used to describe the sample, and Chi-Square and Mann-Whitney U tests were used to test for statistical differences between those with- and without-tattoos.

Results
Of the 52 participants, 58% were females and the average age was 39 years old. On average, those without a tattoo were a couple of years older than those with a tattoo (40 vs. 38 years old). The average number of years of education completed was 17 for both groups. A significant difference was found between those with- and without-tattoos with respect to the social anxiety score, with those with tattoos scoring significantly lower on the social anxiety scale than those without tattoos (mean score 21.9 vs. 26.5). Also, even though not statistically significant, the self-esteem score was higher among those with tattoos (mean score 36.3 vs. 34.3).

Conclusions/Discussion
Even though existing literature indicates that people with tattoos may have higher anxiety and lower self-esteem than those without tattoos, our findings indicate otherwise. More specifically, we found that those who get tattoos have significantly lower social anxiety than those without tattoos. Our findings also suggest that those with tattoos may have higher self-esteem than those without tattoos; however, this later finding was not statistically significant and a larger study may be needed in order to determine its significance.

Summary Statement

This project examined the differences with respect to social anxiety and self-esteem between a group of participants with and a group without any tattoos.

Help Received

My mother, a statistician, has taught me how to create a program for data entry using Questionnaire Design Systems (QDS) software. She also helped me with the statistical testing and interpretation of results.

Name(s)	Project Number
Jonah A. Buessing	**J0402**

Project Title

Does Playing Video Games Affect Heart Rate and Focus?

Abstract

Objectives/Goals

The purpose of my experiment is to see if video games have an effect on heart rate and the ability to focus. My hypothesis is that playing video games causes stress and decreases focus. I will test the heart rate and focus of three groups; fourth graders, seventh graders, and adults, before and after playing a video game.

Methods/Materials

Take subject's heart rate using a heart rate monitor to get a baseline heart rate.
Give each subject a focus test to get their baseline focus ability.
Gave each person an iPad with a car racing video game (app). Play for 10 minutes timed.
After playing the game, retake heart rate was taken .
Retest focus level.
Record all results.

Materials: 1-video game, 1-heart rate monitor, 1-iPad or iPhone (used to play video game), 2-focus tests, 1-headphone.

Results

On average the heart rate of fourth graders was + 7.04% after playing the video game. On average the heart rate of seventh graders was + 8.38% after playing the video game. On average the heart rate the adults was + 5.70% after playing the video game. 4th Graders had a higher focus after playing the video games. The average focus before playing the video game was 62.5%. The average focus, after playing video games was 82.5%. The 7th Graders also had a higher focus after playing the video game. The average focus before playing the video game was 48.33%. The average focus after playing video games was 75%. The adults had a higher focus after playing the video game. The average focus before playing the video game was 71.67%. The average focus after playing video games was 81.25%.

Conclusions/Discussion

I found that playing video games increases both heart rate and focus. The 7th Graders also had a higher focus accuracy after playing the video game. The average focus accuracy before playing the video game was 48.33%. The average focus accuracy, after playing video games was 75%. The adults, too, had a higher focus accuracy after playing the video game. The average focus accuracy before playing the video game was 71.67%. The average focus accuracy, after playing video games was 81.25%.

Summary Statement

My project was to see if video games impact focus and heart rate and to see if my parents and other adults were correct about whether playing video games was bad for you.

Help Received

Mom drove me to the subjects houses

Name(s)	Project Number
Marie-Therese A. Chahrouri	**J0403**

Project Title

Are You Mental or Moral? The Effect of Data on the Connection between Moral and Mental Stages from Piaget and Kohlberg

Abstract

Objectives/Goals
To establish and explore the connection between the mental and moral stages taken from Piaget and Kohlberg's theories by analyzing the responses from the test.

Methods/Materials
Using a written test, given to the test subjects, I obtained the responses of three girls and three boys from each of grades second through eighth. I then combined the data that was divided into three sections: conservation of mass reasoning, conservation of number reasoning, and moral reasoning.

Results
The test subjects did poorly on the first section, which was very surprising. On the second section, they did well but not as well as expected. And they did pretty well on the third section, which was expected.

Conclusions/Discussion
Using the data, I found that for the lower school, mental improvement helps with figuring out moral dilemmas, but it holds back those in middle school due to the fact that they over-analyze everything.

Summary Statement

Seeing the relationship between moral and mental stages using collected data and Piaget and Kohlberg's theories.

Help Received

Teacher helped with scheduling testings; Father helped with graphs

Name(s)

Isaac W. Chizhik

Project Number

J0404

Project Title

The "Far Side" of Science: How One's Attitude toward Science Affects One's Perception of Humor in G. Larson's "Far Side"

Abstract

Objectives/Goals
For centuries, researchers have been trying to find the factors of humor. Many of those studies, however, look at what in the jokes themselves strikes a nerve, such as incongruities and affect. The present study, however, attempted to see what affect a person's attitude toward science has on the perceived funniness of a singe panel cartoon.

Methods/Materials
State-of-the-art attitude scales were used, as well as precedents from leading humor scientists to find participants' attitudes towards science and their perception of the humor in ten cartoons that use the scientific language register and ten that use the conversational language register. In total, 20 pairs of conjugate cartoons, each pair having one version for each register, were used in the study.

Results
Results point to the conclusion that people's attitudes towards science affect the perception of humor. In particular, the more positively one regards science, the more one will like cartoons in the scientific language register.

Conclusions/Discussion
Based on the results of this study, jokes interact with people's attitudes to create humor. In contrast, gender does not affect the perceived funniness of cartoons.

Summary Statement

In the study, I ask the question: "what effect does one's attitude towards science have on one#s perception of single panel cartoons?"

Help Received

Name(s)

Nagee N. Clowney

Project Number

J0405

Project Title

Color Thoughts: Word Color Association

Abstract

Objectives/Goals
The purpose of my project was to determine if there were trends in how people associated certain colors with positive and/or negative words.

Methods/Materials
I designed the survey. I spoke to a professor and decided to use Cluster Sampling to select which group to survey. I randomly drew nine teachers' names. I submitted my research plan for how I planned to do conduct surveys. I completed the Certification of Compliance for Research Involving Human Subjects. I got approval from my Project Advisor, the principal, and teachers to distribute the surveys to the students. I also distributed surveys in to each teacher's mailbox (60). I collected the surveys and tallied the results. Finally, I reviewed the results to see if there were any similarities with how people viewed colors. MATERIALS USED: Pencils; Letters to Teachers/Administrators Asking for Permission to distribute surveys; Surveys; and Tally sheets

Results
I received 249 student surveys(17.4% of school's student population and 12 teacher surveys(20%). I tallied results based on whether the word was positive or negative. Blue received the highest number of student responses for positive words (18%). For negative words, red received the highest number of student responses (39%) and black (13%)was the second highest. For teacher responses, black received the highest percentage associated with negative words (32%). For positive words, blue received the highest percentage of responses from teachers (24%).

Conclusions/Discussion
The experimental results partially supported my hypothesis that when people are presented with a list of descriptive words and choices of colors, they will frequently associate positive words with white and negative words with black. In order to determine if there were trends in people's association of words with certain colors, I developed a survey with positive and negative words and color choices. I thought black would have the highest association with negative words. Instead, for students, it had the second highest number of responses overall compared to red; however, it had the highest percentage of responses from teachers. I also thought that more people would associate positive words more often with the color white. Instead, blue received the highest number overall for positive responses (18% from students and 24% teachers).

Summary Statement

This project uses cluster sampling to survey a random group of students and teachers to determine if people's association with certain words to colors is influenced by popular social norms and cultural perceptions.

Help Received

Mother helped type report; Spoke with professor about Cluster Sampling; Teachers distributed surveys; Mother's co-worker showed me how to do tables in Excel

Name(s)	Project Number
Bracha Cohen	**J0406**

Project Title

Time Out

Abstract

Objectives/Goals

My objective was to see if one's time perception is altered based on the activity one is performing. I believe that someone involved in an activity will feel that less time has passed than someone sitting idle or waiting for something special.

Methods/Materials

100 randomly selected students, ranging from ages 8-13 were tested individually in one of three situations. In the first situation, the students were given a word search to do for three minutes. After three minutes the student was asked to estimate the amount of time they thought had passed using a list of times ranging from thirty seconds to over five minutes using thirty second intervals. The second situation was the same except the student was offered a chocolate which they had to spend the three minutes waiting for. For the last situation the student had to sit in a room doing nothing for the three minutes.

Results

The results showed that on average, the students waiting for a chocolate thought the most amount of time had passed and the students doing the word search thought the least amount of time had passed.

Conclusions/Discussion

The results may indicate that when someone is busy they don#t pay attention/realize the amount of time that is passing. It also suggests that when someone is eagerly anticipating something, they pay attention to the amount of time passing, leading them to think more time has passed.

Summary Statement

I tested the difference in the time perception between students doing a word search, waiting for a chocolate and sitting idle.

Help Received

Teacher reviewed project.

Name(s)	Project Number
Skyler R. Cordrey	**J0407**

Project Title

The Effect of "Children at Play" Signs and Being Watched on the Speed of Drivers

Abstract

Objectives/Goals
Parent provided "Children at Play" signs and other unofficial street signs are being used in many neighborhoods and streets throughout the world. Although these signs are supposed to bring awareness of children playing and slow the speed of cars, it is unknown if the signs actually work for their intended purposes. The purpose of this experiment is to answer the question: Do "Children at Play" signs and being watched affect the speed of drivers?

Methods/Materials
After selecting the location for my test, I used a radar gun to measure the speeds of the vehicles. For my experiment, I surveyed 200 cars in all, with and without the "Children at Play" signs present. Additionally, I tested whether being watched versus not being watched affected the speed of the drivers both with and without the sign. I recorded the approximate age, gender and speed of the drivers for each trial and put them into graphs for further analysis.

Results
In all the graphs the trend shows the speed of the driver is decreasing with age. This means the older the driver, the slower they drive. With the four graphs combined, it shows drivers who drove the slowest are those when the "Children at Play" sign was present and when the drivers were being watched. The next slowest group was those with the sign, but not being watched followed by those with no sign and being watched. Finally, those who drove the fastest were those with no sign present and not being watched. Additional observations from the data show when there was no sign and not being watched, all motorists, besides those in there sixties drove above the speed limit. Females, especially in their thirties and forties, exceeded the speed limit. With both the sign and being watched, the trend showed that almost all drivers, but those in their twenties drove the speed limit and below. In addition, with both the sign and being watched about only 25% of males and females drove above the speed limit in this graph. Finally, drivers who drove over thirty-five miles per hour also ran through a nearby stop sign.

Conclusions/Discussion
The combination of "Children at Play" signs and being watched makes a measurable difference in a driver's speed. The older the driver#s age the slower they drive and females tend to drive faster than males. Parents should be aware that the signs do help but they do not work perfectly and should aways have supervision over their kids incase of an emergency.

Summary Statement

The purpose of this experiment was to determine if "Children at Play" signs and being watched affected the speed of drivers.

Help Received

Neighbor taught me how to use Excel for my graphs; Mom was present during my experiment in case a car accident occurred to call 911.

Name(s)	Project Number
Pooja A. Desai	**J0408**

Project Title

Stress Buster

Abstract

Objectives/Goals
To investigate if Transcendental Meditation will have an effect on blood pressure, heart rate, respiratory rate, and skin temperature.

Methods/Materials
Materials: Biodots, an automatic blood pressure machine, a pen, a notebook, and a timer
Method: The first step was to identify 10 meditators, who have been meditating for last 6 months at least 5 times per a week, and 10 non-meditators as my subjects and get their consents, I labelled them M1-M10 for meditators and NM1-NM10 for non-meditators. I met with my subjects individually and measured the blood pressure, heart rate, respiratory rate, and skin temperature at 0 minutes. Next, I asked the subject to either do transcendental meditation for the meditator group or rest with their eyes open for the non-meditator group for 15 minutes and then measured all the vital signs again. I repeated these steps with every subject two more times.

Results
The average systolic blood pressure change in non meditators for all trials was -4.93 compared to -6.90 for the meditator group.The average change in diastolic blood pressure in non meditators for all trials was -3.53 compared to -3.5 for meditator group. The average change in heart rate in non meditators for all trials was -2.8 compared to -4.43 in meditator group.The average change in respiratory rate in non meditators for all trials was 1.37 compared to -1.90 in the meditator group.The average skin temperature change in non meditator for all trials was 0.47 compared to 3.43 in the meditator group.

Conclusions/Discussion
My hypothesis that Transcendental Meditation will have a greater effect on blood pressure, heart rate, respiratory rate, and skin temperature was correct. I also observed that even resting without doing the TM changes the vital signs, but the difference in the blood pressure, heart rate, respiratory rate, and skin temperature was greater for the meditator group then the non meditator. The strongest evidence of TM being more effective in increasing relaxation was found in the skin temperature.The vital sign that had the least difference between the two groups was the diastolic blood pressure. Overall, the Transcendental Meditation technique would reduce the harmful effects of stress and improve your overall health.

Summary Statement

Effect of Transcendental Meditation on vital signs

Help Received

Mother helped in taking me to the subjects for reading, shopping for the materials and display board

Name(s)	Project Number
Pelin Ensari	**J0409**

Project Title
How to Detect the Undetectable: An Empirical Study of a New Microexpression Training for Adolescents

Abstract

Objectives/Goals
There are currently no trainings designed for adolescents to improve their ability to recognize facial emotions which can impact their social relations and communication. The goal was to innovate a new microexpression training for adolescents, and improve their emotion recognition ability, emotional intelligence (EI), and social skills (SS).

Methods/Materials
A new microexpression training was developed based on Ekman#s METT training. It included a presentation of basic concepts and facial muscles,a presentation of the 7 universal emotions in slow motion (8 young actors were trained on how to exhibit the 7 universal emotions), and information on lie detection. A pilot study ensured that the training was comprehensible, and the microexpressions were presented at a reasonable speed. The main study used a nonequivalent control group pretest-posttest design, and included 132 adolescents. In the treatment condition, the participants completed the pretests (emotion recognition, EI and SS) before and after the training which took about 30-45 min. In the control condition, the participants completed the same measures, but did not have any training. Emotion recognition was measured using 14 fast-motion pictures of 7 emotions. Each picture consisted of a 1 second neutral face, a 60 millisecond emotion, and a 1 second neutral face. The final score was the number of correct answers out of 14.

Results
Emotion recognition increased significantly after the training (Mpretest = 5.61; Mpostest = 9.83), t (83) = -14.52, p <.05. There was no difference between pretest and posttest for the control group (M = 5.81 and 6.06, t (47) = -0.71, p = 0.48). Neither EI nor SS improved after the training, however 2 questions that dealt with the understanding of others# emotions showed a significant improvement. Girls (M= 6.27) had stronger emotion recognition than boys (M=5.29), (t (129) = 2.70, p <.05), however this difference disappeared after the training (M= 8.10 and M= 8.98).

Conclusions/Discussion
My new training improved adolescents# emotion recognition, but not their EI or SS which may take months to improve. The slight increase from the pretest to posttest in the control condition may be due to pretest sensitization. Girls# ability to recognize emotions better may be due to gender stereotypes and social roles.

Summary Statement
An innovative microexpression training for adolescents was found to be effective in improving their emotion recognition, emotional intelligence and social skills.

Help Received
I took a training made by Prof. Ekman, received feedback from Prof. Matsumoto and Prof. Miller, learned statistics from my mom, and had guidance from my science teacher.

Name(s)	Project Number
Elias B. Gilbert	**J0410**

Project Title

Whoa, Bro! Why So Fast? What Makes People Drive Over the Speed Limit in Santa Cruz?

Abstract

Objectives/Goals
My project was to determine why people go over the speed limit in their cars. I expected that men would drive faster than women, and that drivers with kids in their car would go slower than drivers without kids. I also thought that narrower streets would make people go slower, but that street slope would not affect speeding. Finally, I expected having a speed limit sign nearby would make people go slower.

Methods/Materials
I measured the speed of 323 cars at 8 different sites using a radar gun. I also noted the driver gender, if there were kids in the car, the street width, slope, and if there was a speed limit sign.

Results
First of all, everyone speeds. 73% of people go over the speed limit and the average person goes 5mph over. I found that both genders drive at the same speed. I also found that having a kid in the car did not affect speeding, but there was a tendency for both genders to drive slower with kids. There was no correlation between street width and driver speed. People actually went a bit faster uphill. If anything, having a speed limit sign in the area actually makes people go faster.

Conclusions/Discussion
My study provides information to help solve the problem of speeding. Putting out more speed limit signs would probably not be helpful because it does not seem to make people slow down. Do not attempt to widen streets. Insurance companies should not make higher insurance rates for men than women because men do not actually drive faster. On the other hand, if men are paying higher rates on insurance, maybe this makes them more cautious drivers. A bigger sample size would help clarify whether people slow down with kids in their car.

Summary Statement

Using a radar gun I asked whether driver gender, passengers, and street characteristics influenced whether people went over the speed limit.

Help Received

Parents helped organize poster; Prof. Adam Millard-Ball at University of California, Santa Cruz gave me papers on this subject; Father taught me to use R statistics language and helped record data as I collected them

Name(s)	Project Number
Jarett A. Grolman	**J0411**

Project Title

The Stress Effect

Abstract

Objectives/Goals

My objective was to see the effect of stress on a persons ability to multi-task. I hypothesized that the test subjects performance level would be impaired by about 25%.

Methods/Materials

1. The testing device is made out of gold copper tubing that was bent into its current shape. The test subject will use the stylus that has a hook on one end and is attached to a current generating mechanism on the other.   2. Ipad timer 3. Set of headphones 4. Container of ice water

To make this testing device I used copper tubing that I bent into its current shape. I then attached this to a current generating mechanism that is located within the clear box. A stylus was attached to the mechanism on one end and the copper tubing on the other. When the stylus contacts the tubing a light illuminates and a buzzer sounds, this indicates that an error has been made.

Step 1: A test subject is needed to conduct this experiment.

Step 2: Have the test subject sit down and use the test device. The subject will attempt to pass the stylus around the copper tubing with the least amount of touches.

Step 3: If the stylus touches the copper tubing, the mechanism buzzes and the light goes on, making it easy to record this error event. Count how many times the subject makes this error. This determines their performance level.

Step 4: Once they have completed the task for the first time, have them put their hand, wrist deep, in a container of ice water for the duration of Test 2. (usually 30 to 60 seconds.) Simultaneously they must answer a set of questions that will be played through a set of headphones. In addition, place an IPad timer in front of them. This is to create a mental stressor and their time will not be taken into an account.

Results

On analysis of the data the following was found: the mean number of errors for the total group of test subjects between performing the test under a state of calmness and a state of stress was 1.94. The median was 2, the mode was also 2, and the range varied from -4 errors to positive 8 errors. The results clearly demonstrate that stress does impair a person#s performance on a simple task.

Conclusions/Discussion

The results supported the hypothesis. Using a simple device, which could be a proxy for everyday tasks and using distraction that occur on a daily basis, we must realize that our performance is impacted and

Summary Statement

My objective was to test the effect of stress on a person's ability to multi-task.

Help Received

Father helped build the device. Parents proof read and edited documents.

Name(s)	Project Number
Marion Hall-Zazueta	**J0412**

Project Title

Are Negative Consequences or Positive Rewards More Effective as Motivation?

Abstract

Objectives/Goals
My objective was to discover if negative consequences or positive rewards are more effective as motivation and whether gender is a factor.

Methods/Materials
I tested participants# ability to trace concentric circles under time pressure. In the positive reward group I promised participants a raffle ticket for a $25 gift certificate for every five segments they completed. In the negative consequence group I gave participants 16 raffle tickets for a $25 gift certificate and told them I would take a ticket back for every five segments they made a mistake in. The control group received neither a reward nor a consequence.

Results
I found that both males and females completed the most segments on average when they were in the control group, second most in the negative group, and fewest in the positive group.

Conclusions/Discussion
My hypothesis was partially correct; males do better with negative consequences than with positive rewards. Contrary to my hypothesis, females did slightly better with negative consequences than with positive rewards. Males were more affected by the motivation type. On average they did 11 segments better in the negative group than the positive group and 11 segments better in the control group than the negative group. Females did on average 2.13 segments better in the negative group than the positive group, and an average of 4.37 segments better in the control group than the negative group. The most significant finding is that males show much greater variation in the effects of motivation type than females.

Summary Statement

My project tested whether positive rewards or negative consequences are more effective as motivation when compared to a control group.

Help Received

I received help revising my procedure from Craig Hall.

Name(s)	Project Number
Catherine N. Herberg	**J0413**

Project Title
People, Numbers, and Gender Bias

Abstract

Objectives/Goals
For this year#s science fair project I chose to investigate if numbers make people gender biased.

Methods/Materials
I used test subjects and a survey with the face of a baby next to an even or odd number. I gave the survey to 56 test subjects.

Results
When I separated the odd numbers from the even numbers, 75% of the answers were said to be male, which is 6 out of the 8 photos with odd numbers on them. About 47 people responded to each photo. When I separated even numbers from the odd numbers, 62% were said to be female, which is 5 out of 8 pictures. 46-49 people responded to each photo with an even number. The overall gender biased for all pictures, with even and odd numbers is 61%, including repeats of numbers and baby pictures, which is 11 out of 16 photos. Eight of these photos were odd and eight were even numbers. When I broke apart the even and odd numbers, the even number#s pictures were perceived as female and for the odd numbers, they were perceived as male. In my data, it shows that there was an even number gender bias of 62%, and an odd number gender biased of 75%.

Conclusions/Discussion
In conclusion, if the number next to a baby#s face is even, the majority of people would say that it is female, while if the number is odd, the majority of people would say that it is male. My hypothesis was correct. An odd number paired with a baby#s face is perceived as male and an even number paired with a baby#s face is perceived as female.

Summary Statement
I developed a survey to determine if an odd or even number placed next to baby's face would create gender bias, thus influencing a person's decision on the baby's gender.

Help Received
Used freeonlinesurveys.com to get my survey online. My mother posted the link to my survey on her facebook.

Name(s)	Project Number
Skylar R. Heyveld	**J0414**

Project Title

Positive and Negative Ads

Abstract

Objectives/Goals

I hypothesize that if volunteers watch two different campaign speeches, one including positive ads, the other including negative ads, then the voters will elect the candidate who gave positive advertisements about themselves.

Methods/Materials

Video Camera, Headphones, Professional Setting to film the speeches, Volunteers to act as voters, Volunteer to act as candidate, Voting Slips, Pencils, Folder.

1. Create voting slips similar to the following:
Name and Age:
Gender: M / F
Please circle the candidate that you would vote for in a real election.
Candidate A / Candidate B
2. Select a volunteer to act as Candidate A and Candidate B who will be running against each other in an election. (The same volunteer to act as both candidates will eliminate age, gender, and appearance bias.)
3. In the first campaign speech, Candidate A will only use positive ads about him or herself.
4. Afterwards in the next campaign speech, Candidate B will use only negative ads against Candidate A.
5. During the campaign, video tape each candidate discussing their or the opponent#s qualities while using the same formula for negative and positive ads.
6. Play the video for volunteers/ voters and instruct them to vote for the preferred candidate.
7. Once all of the volunteers has voted, analyze the results to find out which candidate was most influential in an election.

Results

My data table and graph show that Candidate A was obviously the winner in my experiment. Thirty one people voted for Candidate A while only eleven people ended up voting for Candidate B. Not only does my graph show which candidate won the election, but my data table also shows the volunteer information such as the voters age, gender, and which candidate that they voted for.

Conclusions/Discussion

My hypothesis was correct. Given my research on positive and negative campaigning, I hypothesize that if my volunteers watch two different campaign speeches, one including positive ads, the other including negative ads, then the voters will elect the candidate who gave positive advertisements about themselves.

Summary Statement

My project determined if positive or negative campaign ads are most influential in an election.

Help Received

None

Name(s)	Project Number
Krystal Rose Horton	**J0415**

Project Title

Dispositional Attitude Measure

Abstract

Objectives/Goals

My objective was to use the Dispositional Attitude Measure developed by two university professors to determine what percentage of the population has a positive dispositional attitude and what percentage has a negative DA. Additionally, I want to see if there are differences in this ratio by educational level, state, political party, and age.

Methods/Materials

I used the research-based survey, converted it a Google Form, and got nearly 1,000 people to take the online survey. I used Excel to analyze the data and the subgroups.

Results

My results followed an almost perfect bell curve for most of the categories with the majority within one standard deviation of average (which was very close to "neutral" on the 7-point scale). One category showed a correlation with average DAM score. It appears that the more education a person has, the more positive their Dispositional Attitude. This makes sense. There was an approximate correlation with age, but the reverse of the "Grumpy Old Man" idea. The data showed that people over 50 were slightly more positive than those under 18. There was no correlation with the state of residence or the political party.

Conclusions/Discussion

This information is very important to advertisers, politicians, and bosses. It shows that a very positive or very negative campaign will only reach a very small number of people. Researchers have also shown that those with a positive DA make better decisions about health and wellness.

Summary Statement

I used a research-based survey to measure the Dispositional Attitude of groups of people to inform advertisers and politicians.

Help Received

My mother helped stick items to my board. My father helped me with Excel and Google Forms.

Name(s)	Project Number
Analise A. Irigoyen	**J0416**

Project Title

Deal or No Deal?

Abstract

Objectives/Goals
The objective was to see if a person's perceived value will be affected by store marketing tactics. Decide on the type of products. Products were chosen for the project and information about price per unit was recorded at each store. A survey was sent out through email and Facebook asking where people shop and what is most important reason for their choice.

Methods/Materials
Materials
Paper, pencil, calculator
List of household products, List of food products
Facebook and email surveys

Set up a data table to compile information of household products and food products; product, unit amount (same for all stores), import/domestic, and store brand or other. Go to each store and record required data. Get the average price of all household/food products for each store.
Create a two surveys: where do they buy their household/food items(percentage out of 100%),and what drives their shopping decision (price, service, convenience, cleanliness).

Results
The original hypothesis was correct. The survey results showed that most people felt that finding the best price was the most important. However, most people shop at some of the most expensive stores. This shows that people are led to believe that some stores have the best prices even when they do not. All of a store's marketing techniques really do help raise the perceived value of an item. Store brand does not necessarily mean lowest price. It was also interesting to discover that store brand items were often more expensive than name brand products that are sold in all stores.

Conclusions/Discussion
This was a very interesting time consuming project. As in any experiment there are a few ways that it could be improved. One way is by testing the same brand for all of the products in every store, because it costs the same amount to produce so it really is all about the markup. Doing this project again would gain different results because prices change in stores every day.
 Both survey questions, where do you shop most and why gave surprising results. Seeing how a person decides and how they really shop was the most interesting part of the project.

Summary Statement

A person's perception of value is affected by marketing, therefore, people who shop at the stores they think have the lowest prices are not actually shopping at stores with the lowest prices for both food and household goods.

Help Received

Mother proofread report. Father drove to all of the stores so I could gather pricing information. Survey participants were accessed by mom's facebook and email.

Name(s)	Project Number
Caroline G. Jordan	**J0417**

Project Title

Does Beauty Really Lie in the "Eye of the Beholder," or Is It Just Math?

Abstract

Objectives/Goals

My experiment will examine if photographs of people with facial measurements closer to the Golden Ratio will be considered "more beautiful" in the eyes of test participants than the photographs of people with facial measurements farther from the Golden Ration. This experiment will determine if specific symmetry and proportion (the math of the Golden Ratio) make one face more appealing than another. This will show if there is any correlation between the Golden Ration and beauty, or that beauty simply lies in the "eye of the beholder."

Methods/Materials

I will use photographs of ten randomly selected subjects (printed from the internet) and measure their facial features. Once all the measurements are collected, I will use a calculator to calculate and log the ratios of these features. When the ratios are computed I will then compare them to the Golden Ratio to see which come closest to the Golden Ratio. I will then rank the subjects in order of how close each is to the Golden Ration. Then I will have ten test participants order the photographs from most appealing to least appealing and record the rankings. I will then look for a correlation between the participant's "beauty" rankings and the rankings determined by the closeness to the Golden Ratio computations.

Results

Subjects with facial proportions closest to the Golden Ration were consistently considered more beautiful.

Conclusions/Discussion

My conclusion is that symmetry and proportion (Golden Ration math) strongly affects people's perception of beauty. Facial features with Golden Ration proportions definitely seem to be more appealing.

Summary Statement

My project will examine if there is a correlation between perceived beauty and mathematical proportions (the Golden Ratio).

Help Received

Father checked my calculations and taught me how to use an excel worksheet.

Name(s)	Project Number
Rachel F. Kanevsky	**J0418**

Project Title

Correlation of the "Marshmallow Test" and Children's Response to Advertising

Abstract

Objectives/Goals

This project was inspired by the Stanford Marshmallow Experiment, which tested children#s ability to delay gratification by not eating a marshmallow treat for a while, and earning a second one. I investigated whether outcome and/or timing of this kind of a test would correlate with desire to own an advertised product, and whether there would be gender or age differences.

Methods/Materials

I performed two tests, the Treat Test and the Ad Test, on 204 students in grades 1-6 in a classroom setting, with privacy partitions. The Treat Test consisted of selecting a subject#s preferred treat, providing one serving of that treat, and asking the subject to wait in order to get a second serving. If the subject did not consume the treat before five minutes passed, he or she would receive a second serving. For the Ad Test, I showed subjects in grades 1-3 an ad for ModularToys and in grades 4-6 an ad for an iPhone 6. The subjects then rated on a 5-point scale how much they wanted the product. For half of the classes, I first conducted the Treat Test followed by the Ad Test. I reversed the test order for the other half of the classes.

Results

Only 6 subjects did not wait for the second treat. However, the subjects who were in the Ad First condition wanted the advertised product more that the subjects who were in the Treat First condition. The average rating of product desirability (how much a subject wanted the product) was 15% higher in the Ad First condition in grades 1-3 and 18% higher in grades 4-6. The differences between the conditions were significantly higher for boys than for girls. In grades 1-3, the average ratings difference for girls was 2% compared to 22% for boys. The average rating differences in grades 4-6 were only 6% for girls compared to 22% for boys.

Conclusions/Discussion

I was unable to determine a direct correlation between delayed gratification and impulsivity in response to advertising, most likely because of the group testing conditions. However, the results reveal that subjects in the Treat First condition appeared to exhibit greater self-control with regards to desiring an advertised product than the subjects in the Ad First condition. This result may indicate that exercise of self-control (such as during the Treat Test) may condition respondents to exercise more self-control in a following enticement.

Summary Statement

This project investigated whether outcome and/or timing of a delayed gratification test would correlate with desire to own an advertised product.

Help Received

Mother helped obtain materials, make graphs, and print report; classroom teachers helped manage their students and allowed them to participate

Name(s)	Project Number
Thomas X. Kenton	**J0419**

Project Title

Talk Is Cheap: How Does News Affect Social Media?

Abstract

Objectives/Goals
The goal of my project was to see how news affects social media. My results showed that sports had the most tweets per article on average. They also showed that sports had a 5x greater ratio of tweets to articles than the next closest, technology. I concluded that news does indeed affect social media.

Methods/Materials
My project studies how news affects social media. I chose four categories of news (entertainment, sports, politics, and technology) and chose dozens of articles (Google News; http://www.news.google.com/) and chose the stories with the most longitudinal traction. Then I used Topsy (http://www.topsy.com/) to measure the number of tweets per article. I also used the Google News data from before as more information for my spreadsheet.

Results
My results showed that sports had the most tweets per article on average. They also showed that sports had a 5x greater ratio of tweets to articles than the next closest, technology.

Conclusions/Discussion
I concluded that news does indeed affect social media.

Summary Statement

My project studies the affect of news on social media.

Help Received

My dad helped me with Microsoft Excel.

Name(s)	Project Number
Julie Laporte	**J0420**

Project Title

In Gender We Trust

Abstract

Objectives/Goals
The goal of this project was to determine whether gender has an influence on whom people choose to trust. The experimenter hypothesized that when trusting people, 90% of females are more likely to trust other females, while 10% of females will trust males. On the other hand, 60% of males will trust females, and 40% will trust males.

Methods/Materials
The first part of this project involved recruiting one male and one female, who read three scripts with three different scenarios into a recorder. 200 male and 200 female middle school students, the test subjects for this experiment, listened to 3 pairs of recordings. Students wrote down their age, grade, and which person they would trust if it were a real life scenario. All of this information remained anonymous throughout testing. The first half of the test subjects listened to the male recording first, whereas the second half of the test subjects listened to the female recording first.

Results
The results showed that for scenario 1, the majority of both male and female students trusted the male speaker. For scenario 2, there was not a large difference between those who trusted the male speaker and those who trusted the female speaker. For scenario 3, the majority of both male and female students trusted the male speaker. The order of the speakers and grade of the students did have a visible impact on whom the student chose to trust.

Conclusions/Discussion
The results showed that the experimenter#s hypothesis was incorrect; the male speaker was most trusted in some cases. The preference pattern for the most trusted gender was very dependent on the scenario. Due to the fact that the subject of the scenario had an influence on whom each students chose to trust.

Summary Statement

The hypothesis was showed to be incorrect, and if further experimentation us to be conducted, a more even distribution of test subject gender may have an influence on the outcome of the experiment.

Help Received

Dr. Regent Laporte proofread my papers; Gail Heyman gave great advice and helpful input on my papers; Mrs. Elaine Gillum guided me through this process and helped me find test subjects, as well as giving me space and time to work on my project.

Name(s)

Jacob W. Litvin

Project Number

J0421

Project Title

Point of Views

Abstract

Objectives/Goals

The objective of my project was to determine whether the number of views applied to an article affected adolescents' opinions of its credibility.

Methods/Materials

I manipulated the number of likes on an online article, formed a questionnaire, and had test subjects read the story and answer the questions. To record how believable the test subjects thought the article to be, the questionnaire asked the subjects to rate the credibility of the article on a scale of one to ten.

Results

I had two experiments, my first experiment's data proved too varying, with no relevant pattern. I then made alterations to the article to omit variables. Through the revised test I collected results that revealed that the more views an article displayed, the more believable it appeared to be.

Conclusions/Discussion

My results did support my hypothesis, that the more views an article had, the more credible it would seem to someone between the ages of 12 and 14. Eighty percent of those test subjects attributed the amount of views to their opinion on the story, meaning there is a correlation between the number of views an online story has, and how believable it appears to be.

Summary Statement

My project attempts to discover the correlations between social influence and credibility online.

Help Received

Aunt sparked concept idea

Name(s)

Jacqueline A. Monteon

Project Number

J0422

Project Title

Measuring the Golden Ratio on Celebrity Faces

Abstract

Objectives/Goals

The purpose of my project was to see how close celebrities facial measurements come to the Golden ratio, and whether the Golden Ratio which is commonly used in the modeling and movie industry, is a valid mathematical standard for attractiveness. The Golden ratio is a number that comes between 0.618-1.618. The golden ratio is measured by comparing two facial features by adding them together and dividing by the larger number. There are several commonly used parameters that are measured.

Methods/Materials

I printed out nine pictures of celebrities currently in the media spotlight, who are by several social and modeling standards considered attractive, unattractive, and/or unpopular. I measured the celebrities faces using seven commonly used parameters such as length of lips and width of nose, where the distance in centimeters of both measurements was added and then divided by the longer measurement to establish the ratio. Each ratio was recorded and the total number of ratios meeting the golden ratio for each celebrity was analyzed.

Results

After counting how many times each celebrity within each ratio parameter fell within the golden ratio and when they did not, all three categories of social attractiveness, unattractiveness, and popularity each had the same results: a summary of 14 (total parameters did not make the golden ratio) : 7 (total parameters did make the golden ratio).

Conclusions/Discussion

I have concluded that my hypothesis that the Golden Ratio is a valid mathematical standard for determining attractiveness by media standards was not supported by the data. The data indicated that twice as many parameters of measurement did not meet the golden ratio standard between 0.618-1.618. This suggests that the commonly accepted standard of the golden ratio is not really a valid mathematical standard for determining attractiveness or popularity by industry standards, and that there are more complex factors that need to be considered if that is the industry goal.

Summary Statement

The purpose of this project is to examine the mathematical validity of the "Golden Ratio" as an industry standard for determining attractiveness.

Help Received

I received no help.

Name(s)	Project Number
Benjamin J. Schall	**J0423**

Project Title

Finding the Most Effective Delay for Delayed Auditory Feedback: Improvements on Speech Jamming

Abstract

Objectives/Goals

My objective was to see at what delay is "Delayed Auditory Feedback"(DAF) most effective at inducing difficulty in speech. I believed that it would be 200ms, which is what a previous study deduced.

Methods/Materials

Informed consent was received by 20 different people ranging from ages 9-69; 11 were female and 9 were male. They were subjected to DAF under a delay of 100, 150, 200, and 250 milliseconds using noise-cancelling headphones, a microphone, and a DAF program; a control was also used with no feedback. The subjects were instructed to answer 5 questions under the influence of DAF. They were then instructed to answer on a scale of 1-10, 1 being "without any troubles" and 10 being impossible, how hard it was for them to say the answer to the question. They repeated this process untill all delays and control were tested.

Results

I found that the average difficulty of Control was 1.16, 100ms was 3.33, 150ms was 3.75, 200ms was 4.14, and 250ms was 4.84.

Conclusions/Discussion

250ms, my maximum delay, had the highest difficulty, with all other delays having difficulties corresponding to amount of time delayed; with lower delays having lower difficulties and higher delays having higher difficulties. This indicates that something higher than 250ms would result in harder difficulties. This project therefore shows that more research needs to be conducted to determine the peak of DAF effectiveness, and that 200ms is not the most effective.

Summary Statement

What delay causes the most difficulty in people under DAF.

Help Received

Mother helped with transport of myself and patients; Dad's friend lended the headphones

Name(s)	Project Number
Sophia Eliz Seibert	**J0424**

Project Title

Interacting with an Autistic Child

Abstract

Objectives/Goals
The point of my experiment was to prove that being educated about autism does help that person if they were to meet a special needs child on the street or if they have to be with one for a long time.

Methods/Materials
I used 32 eight grade students, paper, legos, 1 basketball, pencils, 1 autistic child, and a computer. To test my theory I taught 16 of the students about autism and the effect it has, while the other half had no idea what was happening. Three days later I brought my autistic brother in to meet them and had them hang out with him for about 30 min. After, I had them fill out a survey that told me how they felt around him.

Results
The result proved that I had been correct, the majority of the ones who had been more active and comfortable with the child had been in the class about autism.

Conclusions/Discussion
In conclusion I am lead to believe that in every school it should be mandatory to do something to educate the student population about autism at least once in the school year. It would make everyone more comfortable especially the autistic child.

Summary Statement
Does being taught about autism affect how you behave around an autistic child?

Help Received
My mom helped my with the graphs and my dad went over my report.

Name(s)	Project Number
Will J. Shadley	**J0425**

Project Title

What Influences People to Pick Up Coins?

Abstract

Objectives/Goals

I decided to do my project because my father and I always enjoy watching people pick up coins. I have always been intrigued by psychology. One day, my dad and I were bored while my mother was shopping so we decided we would put some coins on the ground and watch people make a fool of themselves. Along with entertainment value, doing this also posed some interesting questions that I wanted to find an answer for. What influences these people to pick up the coins?

Methods/Materials

For my project, I used 10 pennies, 10 nickels, 10 dimes, 10 quarters, 40 permission slips, a clipboard, a notebook, and a stopwatch (phone). To begin my experiment, I grabbed a coin from the bag, placed it on the ground when no one was looking, started the stopwatch, waited for a subject to pick up the coin, approached the subject, had them sign the permission slip, recorded the data, and repeated the process 39 more times. I made sure to avoid bias by not using any data that may be inaccurate if the subject had seen me place the coin. I also, started the stopwatch as soon as the coin was placed on the ground to get the most accurate information for my study.

Results

In my study, I tested what gender was most likely to pick up coins, which coin was picked up the fastest, and a few other minor details that cannot necessarily be graphed. While I originally hypothesized that men would be slightly more likely to pick up coins based on the fact that men generally have slightly better eyesight then women, I found that men and women were about equal in chances of picking up coins. The most quickly picked up coin was a quarter, which is to be expected. However, the nickels were picked up much faster than the dimes. This leads me to believe that the value of the coin is not as important as the size of the coin.

Conclusions/Discussion

My study sheds some light on the vexing puzzle of human behavior. The study can be used in a few applications. The most obvious is advertising. What catches people#s attention and makes them want to #pick up# the advertised product. It may be more likely the size of the advertisement as opposed to the real value based on the findings of nickels being picked up faster than dimes. Most of all, this was a topic that excites and intrigues me and I could not have asked for a more enjoyable project.

Summary Statement

I wanted to understand the motivation behind people's actions and what influenced them to pick up the coins.

Help Received

Father sat with me at the pier while I conducted research; Mother helped me glue and cut materials for the display board.

Name(s)	Project Number
Persephone R.J. Shelley	**J0426**

Project Title

Comparing Various Test Anxiety Self-Regulation Methods and the Effect on Math Fact Scores

Abstract

Objectives/Goals
Do various test anxiety self-regulation methods affect math fact test scores?

Methods/Materials
Consent was obtained from fifteen elementary school individuals. Students completed a control assessment of mixed multiplication math facts over a period of three days. Students then completed the same mixed math fact assessment while being exposed to one of three variables: student chewing gum (spearmint), after completing a relaxation breathing exercise, and while holding/squeezing a handheld manipulative (homemade play dough # no color). Students completed three assessments per variable over a course of multiple days.

Results
Average results for all variables and for the control showed that students scored between 45 percent correct to 48 percent correct on the math fact assessments. The control results had an average of 48 percent correct, deep breathing averaged 48 percent correct, gum had an average of 47 percent correct, and play dough had an average of 45 percent correct. There was no significant difference between the comparable averages.

Conclusions/Discussion
Based upon comparable averages, no significant difference was shown between the average control assessment results and the average variable assessment results. While my results do not show an immediate significant difference, I surmise that if the subjects used the self-regulation method more often, it might impact their assessment results.

Summary Statement

This project determines if self-regulation methods can help decrease test anxiety and therefore increase math fact test scores.

Help Received

My coach helped me by proof reading, overseeing testing within the classroom, and helping me understand the scientific method.

Name(s)	Project Number
Angelia M. Silva	**J0427**

Project Title

What Creeps You Out? Physical Features Affecting the Uncanny Valley in Animated Movies

Abstract

Objectives/Goals
My objective was to determine which physical feature of computer generated characters in animated movies has the greatest negative effect on responses to the Uncanny Valley. The Uncanny Valley theorized that when robots closely resemble, but are not quite human-like, we perceive them to be creepy. Computer generated eyes often appear dull and glassy which make the characters look zombie like, therefore I hypothesized that eyes are the physical feature that would have the greatest negative effect on reactions to the Uncanny Valley.

Methods/Materials
I created a PowerPoint survey containing 14 animated movie clips, and one live action movie clip as my control. A questionnaire was developed asking participants to rate each movie clip on a scale of one (very repulsive) to ten (very appealing). Participants selected the physical feature (skin texture, facial wrinkles, jerky movements, eyes, poorly synched voice to animation, or none of the above) that most affected their rating. This survey was administered to 82 subjects, 53 females and 29 males, ranging in age from 13 to 79 years. Responses that fell into the very repulsive to somewhat repulsive range (a score of 1 to 4 on the 10 point scale) were categorized by physical feature.

Results
Eyes had the greatest negative effect on responses falling into the Uncanny Valley, with a total of 62 responses. Skin texture was a close second with 57 responses, followed by facial wrinkles with 50 responses. Jerky movements and poorly synched voice to animation had the least effect with 30 and 24 responses, respectively.

Conclusions/Discussion
Although eyes had the greatest impact on reactions to the Uncanny Valley, the data only partially supports my hypothesis, because skin texture had an almost equally significant impact. My research could help movie studio animators focus their attention on the physical features that most affect audiences# responses as they work to keep their characters out of the Uncanny Valley. This could also be applied to animation in video games, computer software, and robotics.

Summary Statement

After surveying 82 subjects, my hypothesis was partially supported by the data with eyes scoring 62 responses, followed closely by skin texture with a total of 57 responses.

Help Received

Name(s)	Project Number
Elias Sitton	**J0428**

Project Title

Sugar: The Silent Killer

Abstract

Objectives/Goals

My goal was to learn if students know the actual amount of sugar that is in beverages.

Methods/Materials

Materials: 6 different types of drinks: 20 FL OZ Gatorade, 20 FL OZ Coke, 16 FL OZ Rock Star energy drink, 23 FL OZ Arizona, 13.7 FL OZ Starbucks Frappuccino, 20 FL OZ Minute Maid Lemonade.1 ProCook Glass Top Electronic Scale.10 Safeway HOME plastic clear cups.10 Safeway HOME plastic spoons.1 4 LB C&H pure CANE SUGAR (granulated white).1 Sistema 67.6 OZ plastic container. Methods: I will begin the testing by showing them a drink (there will not be a nutritional label) and handing them sugar and a plastic cup. After they have seen the drink, I will ask them how much sugar they think is in the drink I showed them. They will show me by pouring how much sugar they think is in the drink into a clear plastic cup. Once they have poured what they think is the amount, I will weigh how much they put and show them the actual amounts. In the last step I will write down what was the amount of grams and compare the true amount of sugar to the amount they thought was in the drink.

Results

The results of this experiment indicated that my hypothesis was true. Only 8 guesses out of 396 were close to the actual amounts. The percentage of kids that did not know the actual amounts was 98%, the same as my hypothesis. The results pertain to my objective because it shows that kids do not know what they are drinking, therefore one can say that students are not aware of what they are drinking.

Conclusions/Discussion

My results supported my hypothesis because the percentage of kids that did not know the actual amounts of sugar in beverages was the same as my hypothesis, 98%. My results enabled me to obtain my objective because my objective was to see if kids know the actual amount of sugar that is in beverages, so my results showed that they don#t know. This project expands our knowledge about this topic because now we know that students are not aware of what they are drinking, so the next step is to create more awareness for students to know what they are drinking.

Summary Statement

My project is about testing students to see whether or not they know the actual amounts of sugar that are in sweetened beverages they drink daily.

Help Received

Teacher helped guide me through the project

Name(s)	Project Number
Rhitishah Yuva Raju	**J0429**

Project Title

Light Up Study

Abstract

Objectives/Goals

If there are bright light and right wall paint, then I can study well because straining eyes in bad lighting can tire a person quickly and bad wall paint will absorb surrounding light that makes one not to be successful in studies.

Methods/Materials

I interviewed Dr and I learned the functions of the eyes and how eyes absorb light from Dr.Barathi Venkat#s interview. Took a trip to Sacramento Municipal Utility District (SMUD) meet with Engineer Connie Samla - learned about types of light bulbs. Result: chose two light bulbs: LED and fluorescent best study rooms. Also, conducted experiments with different color temperature (in Kelvin), different wall paints and how Kelvin affects light quality (lower Kelvin 2700 produces orange light, high Kelvin 6500 produce a blue light and Kelvin 4100 - neutral light. A trip to Home Depot and Sherwin Williams (talked to Jeremy - paint expert). There, I learned about Light Reflective Value (LRV); the visible and usable light reflected from a surface of a paint color. If LRV higher than 75 green color brought out. If LRV lower than 65 light dim. There is difference between Kelvin and Watt. I conducted a survey on light bulbs buying pattern. I found that 9 out of 10 people are aware and depends on watt to buy light bulbs; only 2 people aware of Kelvin. The wall paint colors I used -white, light red, dark red, light green, dark green, light blue, and dark blue.

Results

I found that wall paints of light green (LRV 66) or light blue (LRV 69), a fluorescent light bulb or LED light bulb, and with a Kelvin of 4100 works the best for the study room of a student to succeed.
I also studied on how different color impact people#s moods. I found that white color impact kids IQ.

Conclusions/Discussion

The best light and wall paint for study room:
1) Type of light bulbs
  i) Fluorescent tube
  ii)Light Emitting Diode (LED)
2) Color Temperature (Kelvin)
  i) 4100 for fluorescent tube
  ii) 4000 for LED
3) Wall Paint (Color)
  i) Light Green

Summary Statement

Light Up Study

Help Received

Parents watch electrical safety usage and drove trips