CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Matthew W. Alexander

Project Number
J1701

Project Title
Fat Chance! Does Obesity Jeopardize Your Chance at Success?

Abstract

Objectives/Goals
This research study attempts to identify the traits or qualities that people associate with persons who are obese. Research has shown that obese persons are wrongfully discriminated against because of their weight. Obesity is defined as a state of being #very fat or overweight.# (Webster#s Encyclopedic Unabridged Dictionary, 1996). Approximately 34% of the adult and child population in the United States is obese. This is blamed primarily on the sedentary life style and poor eating habits of many Americans. In a world of video games, television, and fast food restaurants, it is no wonder that obesity is a rising problem. Research has shown that once obese, persons are faced with bias and discrimination in the workplace, schools, basketball courts, and in other aspects of life. This in turn can lead to a life of loneliness, ridicule and social isolation.

Methods/Materials
Sixty-three male and female subjects were surveyed utilizing a three-paged survey. Subjects varied in age from 10 to greater than 60 years. Subjects were asked to complete a written survey which contained personal demographics and ascertained the participant#s opinion on the traits or qualities of the photos of persons on the survey. The persons pictured on the survey were both subjects who were obese and those who were not.

Results
Results of the survey reveal that people have strong biases against obese or overweight subjects. Subject#s overwhelmingly associated negative traits and qualities to obese persons pictured on the survey. Not only did they associate negative traits, but they failed to associate positive traits or qualities to the obese persons pictured in the survey. These results support the hypothesis that if a person is obese, the obesity may jeopardize their chance for success in life.

Conclusions/Discussion
Obese persons were rated by survey participants to possess traits and qualities which are negative and likely to limit their chance at success. The study found that participants demonstrate a bias against persons who are obese. The obese were found to have negative physical traits, poor habits and behaviors, psychological handicaps, and poor quality of life and chances for success. Despite this extensive display of bias against the obese, subjects nonetheless chose the obese persons as the individual most likely to be their best friend.

Summary Statement
More negative traits are associated with obese persons as compared to those who are not obese.

Help Received
Mother and Father took surveys to work for volunteers subjects to complete.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Kim Ysabel M. Anorico

Project Number
J1702

Project Title
Physical Attractiveness

Abstract

Objectives/Goals
My objective was to figure out how a pre-teen's or teenager's own physical features affect his/her choices on what's attractive on the opposite sex.

Methods/Materials
Firstly, I collected images, such as eye colors from google.com and hair colors/lengths from 4 hairstyle magazines. I then cut them up neatly and pasted them on blank, white sheets of papers. The next step was testing 80 individuals (40 males and 40 females) who were showed those 6 sets of pictures:

1. Eye colors. I asked them which color they prefer on the opposing gender.
2. Hair colors. I asked them which color they like most on the opposite sex.
3. Based on what they chose for #2, I showed them 4 different hair lengths in that color. They were to state which hair length they find most attractive on the opposite sex.
4. After all those steps, I asked them why they made those choices. (Answers were provided.)

Results
Among 80 students whom I conducted my experiment on, 41% picked a partner who has a physical feature similar to theirs, while having one that they themselves want. The second most popular answer was being attracted to someone who has no similar feature or whatsoever, coming in at 36%. Lastly, there's the one about liking a person who's a carbon copy, with the result of 22%.

Conclusions/Discussion
My results completely support the hypothesis I'd made in the beginning process of my science fair project. The new information I've just discovered proves that majority of preteens/teenagers DO care about looks, even if they say otherwise. One of the main reasons for this is that deep inside, they really are quite insecure about themselves. Thus, they are out there looking for mates who have features that they desire. But then again, there's also a close amount of people who completely despise what they look like, so they're attracted to someone who's a total opposite.

Summary Statement
My project is about how a preteen's or teenager's own physical features/appearance affect his/her judgment of the opposing gender, such as the way they look.

Help Received
Ian Kastelic (My 8th grade science teacher who was there to approve of this idea, and actually offered extra credit in order to obtain the amount of people needed for my project.); Roy and Cora Anorico (They're my parents who bought me most of the materials, such as magazines, for this experiment.)

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Taylor J. Barrett

Project Number
J1703

Project Title
That's Me

Abstract

Objectives/Goals
I started this project with the question, "Does birth order affect someone's personality. I hypothesized that our persoanlity is affected by our birth position in the family.

Methods/Materials
I gave 280 students a personality test based on the Myers-Briggs Type Indicator. From there, I categorized each student into one of the four groups. I looked at the age demographics for each group, and found a trend between the four different age groups, oldest, middle, youngest, and only.

Results
I found that birth order does affect our personality. Oldest Children tend to be natural leaders, confident, and independent. They are also future- oriented, so they are loyal and family-minded adults. Middle children are the inspirers. They set high standards for themselves, so they are successful and responsible as they grow up.Youngest children hate schedules and are very practical. However, they normally feel left out in their parent's eyes. Only children normally care for themselves and are creative and inspirational, but they are under a lot of pressure to succeed.

Conclusions/Discussion
When I finished testing, I proved that my hypothesis was correct. Birth order does affect our personality. If I were to continue with this project, I would see if the birth position in the family still affects the personalities of twins, triplets, etc. eventhough they are only a few minutes a part.

Summary Statement
I tested and proved that birth order affects our personality

Help Received
Rebekah Newlin (friend, Colina Middle School) helped distribute the test to the 280 students

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Rachel J. Bernhardt

Project Number
J1704

Project Title
Mother of the Groom: The Role of Personality in Choosing a Wife

Abstract

Objectives/Goals
My project is a study in personality and how it may affect a person's decisions. I wanted to see if men really marry women with personalities like those of their mothers'.

Methods/Materials
Twenty-three trios of husband-wife-mother were tested. A total of sixty- eight people took two different personality tests. One test was the True Colors test and the other was the Myers-Briggs Type Indicator test (MBTI). The True Colors test has four possible personality types, the MBTI sixteen types. A comparison of the results of the tests by the wife and mother of each husband was done.

Results
Fifteen of the twenty-three or sixty-five percent of mothers and wives matched in the True Colors Test, while six of twenty-three, or twenty six percent, of the wives exactly matched their mother in law in the Myers-Briggs Type Indicator. When looking at whether three of the four letter characteristics of the MBTI matched, fifteen of twenty-three, or sixty-five percent, matched.

Conclusions/Discussion
I conclude that men really do marry women with personalities like their mothers'. A mother's personality does play a significant role in the choice of a spouse for men.

Summary Statement
Men choose a wife with a personality similar to that of their mothers'.

Help Received
none

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Brynn S. Cahalan

Project Number
J1705

Project Title
Habit to Addiction: Can Habits Established in Childhood be Predictive of Adult Addictive Tendencies?

Abstract

Objectives/Goals
My youngest brother's persistent thumbsucking habit inspired me to investigate the objective of this study (i.e., whether a habit established in childhood (thumbsucking) can be an early indicator of an adult addictive tendency (cigarette smoking)). If a correlation can be discovered between thumbsucking and cigarette smoking, then preventative measures should be implemented. Such measures include educating known thumbsuckers about the importance of abstinence from smoking experimentation and creating better awareness of the consequences that they (as previous thumbsuckers) might face later in life.

Methods/Materials
I designed a survey that was divided into 3 categories: Childhood, Adulthood, and Personal Profile. The questions in each category asked for basic background information on the test subject and also included questions devised to detect any variables that might have affected why the subject started thumbsucking and/or smoking. I then found adult human test subjects who fulfilled eligibility requirements for the survey (test subjects had to have either thumbsucked in childhood, smoke(d) cigarettes as adults, or both) and had them complete it. I then analyzed the results and charted/graphed the variables that produced the most significant information. Conclusions were then drawn as to whether or not my hypothesis was correct.

Results
Of the completed surveys, 102 results were usable for purposes of this study. There were nearly twice as many thumbsuckers who became smokers than thumbsuckers who did not become smokers. The thumbsuckers who became smokers smoked for a longer period of years than non-thumbsuckers because they possibly had greater addictive tendencies. Thumbsuckers who became smokers also sucked their thumbs longer than thumbsuckers who did not become smokers.

Conclusions/Discussion
The hypothesis was that if adults sucked their thumbs during childhood, then the majority of them would have addictive cigarette smoking tendencies as adults. The hypothesis was accepted because there were nearly twice as many thumbsuckers who became smokers than thumbsuckers who did not become smokers. The results of this study suggest that smoking prevention efforts should particularly be directed at those who sucked their thumbs in childhood.

Summary Statement
My project investigates a commonly accepted childhood behavior (thumbsucking) and identifies a correlation to a harmful adult habit (cigarette smoking), which warrants early smoking prevention tactics directed particularly at thumbsuckers.

Help Received
My brother, for inspiring the topic of my study; Ms. Nelson, for giving overall guidance as my science teacher; my parents, for their advice on design & organization of information; my test subjects, for taking the time to share their experiences by completing my survey.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Kyle Cesena; Jack McNamara

Project Number
J1706

Project Title
Branded

Abstract

Objectives/Goals

PURPOSE: The purpose of this experiment is to find out if brand name causes consumers to have predetermined opinions about a product.

QUESTION: Does a brand name cause consumers to have a predetermined opinion about a product?

Methods/Materials

1. Purchase one half-liter plastic bottles of Safeway, Dasani, Fiji, and Ty Nant brand spring water. Purchase four one-gallon jugs of Safeway brand spring water.
2. Create survey sheets.
3. Set-up testing table: a. Place the four different half-liter bottles, along with a sign indicating price per ounce, on table b. In front of each bottle, place fifty three-ounce cups c. Fill all two hundred cups with Safeway brand spring water d. Place survey sheets with pens at one end of the table.
4. Find fifty people, eighteen and over, who are willing to participate in a water taste test.
5. Give each person a survey sheet and a pen, and tell them the following: a. Taste one sample of each type of water b. Rank the water, with one being the highest and four being the lowest c. Fill out gender and age.
6. Collect the sheets and record the results.

Results

After analyzing the results of the survey, we found that the average ranking for the Safeway brand spring water was 3.04, the Dasani had an average ranking of 3.08, and the Fiji brand spring water had an average ranking of 2.36. The spring water with the highest average ranking was the Ty Nant water with 1.52. When comparing female versus male, the results were very similar. The age comparison revealed that as the respondent#s age increased, they rated the more expensive waters closer to the less expensive waters. They did, however, still follow the trend.

Conclusions/Discussion

We found out that brand names and prices can influence a consumer's opinion. Our hypothesis was correct becaues we believed that the most expensive water would be the highest ranked. We believe that the results came out this way because as consumers we are led to believe that the more something costs, the better it must be. Just like the old saying, "You get what you pay for." We believe that much of this comes from advertising, product name recognition, and brand trust.

Summary Statement

Advertising, name recognition, and brand trust play a big part in a consumer's opinion of a product.

Help Received

Mother helped with water taste test.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Ashley L. daCosta

Project Number
J1707

Project Title
Is Laughter Really Good Medicine?

Abstract

Objectives/Goals
I wanted to find out if laughter eases pain. Would people watching a funny video be able to keep thier hands in cold water longer than they could while watching a documentary or not watching anything at all? My hypothesis was that people watching the funny video would be able to keep their hands in cold water the longest.

Methods/Materials
I had small groups of people, both kids and adults, put thier hands in bowls of ice water (0 degrees Celsius) three different times: once while watching America's Funniest Home Videos, once while watching a Hawaii documentary, and once while watching nothing at all. I asked them to keep their hands in the water as long as they could, but they could take them out when they needed to. I timed how long they kept their hands in for each test and waited about 15 minutes between tests.

Results
My results are that 19 times comedy had the longest time, 4 times the documentary had the longest time and 10 times watching nothing had the longest time. The time spans ranged from 9 seconds to 3 minutes. Most people said that the pain in their hands went down while they were laughing and stayed down for a while. I am continuing to test groups of people and will add to this data.

Conclusions/Discussion
My conclusion is that laughter does ease pain.

Summary Statement
I wanted to see if laughter would ease pain.

Help Received
My grandpa cut a strip of cardboard for the title of my project. My grandma took some of the pictures, since I had to time during the experiments.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Samantha A. Erickson

Project Number
J1708

Project Title
Music Gives a Helping Hand to Test Scores

Abstract

Objectives/Goals
My project was to see if music would help improve test scores, specifically in mathematical computations. My hypothesis for this project is that classical music, which is softer, will increase test scores.

Methods/Materials
Materials: Classical and Rap CDs, human test subjects, three different mathematical computation sheets that test the same skills, CD player.
Methods: Fifty-on eighth grade students at a middle school in Riverside County took part in this study. Students were given different tests with the same types of mathematical problems and given 5 minutes to complete the test. The control group had no music played during the computations; the second group heard classical music as they completed the problems; and the final group listened to rap music while they completed the questions. Each of the tests were then graded and the data was interpreted.

Results
The test group that listened to classical music during their computations averaged 16.73 correct items; the group with no music averaged 14.59 correct items, and those listening to rap music averaged 13.25 questions correct.

Conclusions/Discussion
The research hypothesis for this project was proven correct. Softer-- classical music, did help students perform better on tests of mathematical calculations, compared to both the control and group listening to rap music.

Summary Statement
This project supports listening to soft music, specifically classical music, to increase test scores in mathematical computations.

Help Received
My mother helped me type the report and my dad acted as a photographer. The district science fair coordinator also offered suggestions to improve my project for the County Science Fair.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Katharine K. Gifford

Project Number
J1709

Project Title
The Battle of the Sexes: Taking It to the Streets

Abstract

Objectives/Goals
I did this project because I think people are stereotyped for reasons such as one gender drives faster than the other, their parents do, or one gender has a different personality. I wanted to confirm this as well as prove them either right, or wrong.

Methods/Materials
When I surveyed people, I asked their gender, general age, whether or not they had a driver's license and which gender they thought drove faster. I also asked for their reasoning behind their answer. To collect the speeds of males and females, I used a radar gun and tested in two different places. I collected twenty speeds of each gender at a time in different weather and at different times.

Results
People are definitely stereotyped about whether males or females drive faster. Everyone that I talked to thought that males drive faster. On Highway 280, this was true, but males only drove 1.5 MPH faster on average. On Woodside Rd. males and females basically drove the same speed on average (less than a 1/2 MPH different).

Conclusions/Discussion
Although everyone who I surveyed thought males drove faster, everyone who heard about my project, even people who I didn't survey had an imediate opinion, all were different. No one thought that the two populations of people would drive at equal speeds proving that they are all steriotyped incorrectly.

Summary Statement
I proved the people who I surveyed wrong by discovering that males and females drive about the same speed.

Help Received
Mom drove me to test site, helped record data on freeway, bought suplies, helped with display; Dad drove me to test site, helped record data on freeway, helped organize data, taught me about t-test; Mr. Doliniuk advised me, gave me time in class; Survey Participants answered my questions

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Tyler R. Lancaster

Project Number
J1710

Project Title
An International Game of Telephone: Translation and the Transformation of Ideas

Abstract

Objectives/Goals
My research showed that a substantial number of the world#s languages belong to the Indo-European language #family,# with various other languages belonging to four additional major #language groups# that share significant common grammatical characteristics. Based on these #family ties# numerous languages can be said to be #related,# and based on these ties, it is expected that a translator can reliably convey ideas across languages.

Methods/Materials
To test my hypothesis that meaning will survive translation, I routed an original English language description of a sumo wrestler on a pogo-stick through a succession of seven foreign language translations by seven professional translators, until the passage was translated into English once again. Additionally, I requested that each of the translators complete a brief questionnaire regarding the passage and problems with its translation.

Results
Comparing the English versions and analyzing the questionnaires completed by the translators, I found that the original description was changed significantly in its details, but that the essential character of an #oriental warrior# survived this game of #international telephone.#

Conclusions/Discussion
The alteration of details was significant, but on a less refined level, an original meaning was conveyed. If on some level we can communicate the question remains whether the imperfections of that communication accurately and fully convey a given idea or "meaning" as the original writer intended. Translation operates to bridge differences and meaning is carried on that bridge and the reviewed commonalities of language groups.

Summary Statement
My project concerns the communication of ideas across languages and the potential distortions inherent in translation.

Help Received
Mother helped in locating translators.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Meaghan N. Manghera

Project Number
J1711

Project Title
Mathematics: Is There a Gender Difference?

Abstract

Objectives/Goals
The objective of my project was to compare data compiled for boys' and girls' success rates and times when solving tangram puzzles to determine which gender displays stronger spatial reasoning ability at 11 to 12 years of age.

Methods/Materials
I used 60 puzzle papers, 30 sixth grade girls, 30 sixth grade boys, 60 tangrams, and a timer. I timed the sixty subjects making four types of shapes using the seven tangram pieces (2 animal shapes and 2 solid shapes), on two different days. I gave the subjects no more than 20 minutes for each shape, and then I recorded the times in my log. Average times were calculated only for subjects who successfully completed the puzzle. I then compared the times and the success rate for girls versus boys to determine if there is a gender difference in spatial reasoning.

Results
Analyzing the results of subjects who solved the puzzle, the boys' average time for shape A was 6:43 minutes with 90% finishing the shape; shape B's average time was 8:05 with 67% finishing; shape C averaged 11:19 minutes with 40% finishing, and shape D averaged 8:28 with 17% finishing. For the solvers only, the girls' average time for shape A was 7:14 minutes with 73% finishing; shape B averaged 7:26 minutes with a success rate of 60%; shape C took 12:23 minutes on the average with 33% finishing; and lastly, shape D took the girls 11:35 on the average, with 20% solving the puzzle.

Conclusions/Discussion
After analyzing the data, my hypothesis that girls would successfully complete more puzzles with a faster time, was proven wrong. I found that the 30 boys were mathematically faster and more successful solving every shape with two exceptions. Although more girls finished shape D, the boys' time was significantly faster. For shape B, the girls' time was faster than the boys' time by 39 seconds, but 7% more of the boys solved the puzzle. For shape A, the boys' time was 31 seconds faster and 23% more boys solved the puzzle; for shape C, the boys were faster by 1 minute and 4 seconds with a 7% higher solution rate; and for shape D, the boys were faster by three minutes and seven seconds, with 3 % more girls solving the puzzle. For both genders, shapes A and B (the animal shapes) were easier than for shapes C and D (the solid shapes) because subjects could use their background knowledge of geometry for clues to pieces on the edges.

Summary Statement
I compared the spatial reasoning abilities of 30 boys to 30 girls and found that boys are faster and more successful because their brains may be structured differently.

Help Received
My mother helped cut tag board and she used the hot glue gun to help me mount the board and read the project for understandability and grammar. Two teachers let me use their classes to test subjects.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Maya B. Mathur

Project Number
J1712

Project Title
Exploring the Uncanny Valley: Quantitative Test of a Theory on Emotional Responses to Humanoid Robotic Faces

Abstract

Objectives/Goals
The purpose of my study was to quantitatively test the scientific validity of the Uncanny Valley theory (proposed in the 1970s by scientist Dr. Masahiro Mori to explain negative emotional responses of humans to some android robots).

Background: The concept of the Uncanny Valley has been very widely cited, for example, to explain the creepiness of zombies, and the unsettling feelings many people experienced at the movie The Polar Express. Despite its widespread acceptance in popular culture, the theory has been disputed by psychologists and roboticists. Resolving this debate will be crucial to the development of android robots that can successfully interact with humans.

Methods/Materials
I used digital editing methods to create a series of images of robot faces that ranged from very mechanical to very human in appearance. Fifty-two subjects were asked to use a visual analog scale to rate the faces based on how much they would like to interact with each. I analyzed the results using statistical methods to determine standard error and significance of results. Many controls were used to minimize unintended sources of variability.

Results
1. My results show, for the first time, that the concept of The Uncanny Valley is scientifically valid and that it presents a real challenge that must be overcome in developing human-like robots.
2. Children have exaggerated responses to the more mechanical robotic faces, causing a higher positive response to mechanical robots and a deeper Uncanny Valley.
3. People who own robots have less positive responses to the human face.
4. The first peak of the Uncanny Valley curve is actually less positive than originally hypothesized by Dr. Mori.

Conclusions/Discussion
The Uncanny Valley does exist. The complex relationship between the humanness of robotic faces and emotional responses of people to those faces is largely as predicted by Dr. Mori three decades ago. However, because the first peak of the curve is much less positive than he theorized, the approach he suggested (to abandon the development of human-like robots to focus on perfecting non-human robots) is not justified. Instead, the best possible interactions of adult humans with robots will only be achieved by striving to create the most human-like robots, even if they cannot be perfect.

Summary Statement
My project demonstrates for the first time that the Uncanny Valley theory is a scientifically valid explanation for negative emotional responses in people to certain types of semi-human robot faces.

Help Received
Father taught me to use Photoshop software; Mother taught me to use statidtical and graphing software.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Sarah Rose McMahon; Lucia White

Project Number
J1713

Project Title
Flour Power: A Test to Determine the General Public's Preference of Flour in Chocolate Chip Cookies

Abstract

Objectives/Goals
The objective was to determine which flour-white, whole wheat or whole spelt-the general public liked best in chocolate chip cookies.

Methods/Materials
Our project entailed making three different batches of cookies, with all variables the same except the type of flour used. The organic flours were processed wheat (white), whole wheat, and whole spelt. Using a blind taste test, we tested 3 different age groups to determine which flour they liked best. There were 25 testers each for 6-18, 18-35, 35 and above age groups. We had the tasters rate the cookies on a scale of 1 to 5. They were blindfolded so could not be influenced by sight.

Results
We found, that on average, age group 6-18 and 18-35 liked spelt the most and age group 35 and up liked white flour the most.

Conclusions/Discussion
We hypothesized that all three age groups would like white flour the best, but in fact only age group 35 and up did. Although our hypotheses was incorrect, we accomplished our goal of surveying the general public and finding out which flour they liked best in chocolate chip cookies. We found that the testers under 35 tended to prefer whole spelt. It is nice to know we can make a treat like a cookie with healthier flour and it will be enjoyed!

Summary Statement
Using a blind taste test we found out by age group which of three flours was preferred when used in a chocolate chip cookie recipe.

Help Received
Mother helped type in application and showed us how to sift and measure flour accurately.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Rebecca K. Miller

Project Number
J1714

Project Title
Don't Judge a Book by Its Cover - Or Should You?

Abstract

Objectives/Goals
My objective is to determine whether or not people do judge books by their covers.

Methods/Materials
Informed consent was obtained from 100 people (25 men, 25 women, 25 boys, and 25 girls). Five unambiguous and five ambiguous book covers with title and author redacted were shown for 30 seconds each to the person being surveyed. After each picture, subjects answered survey questions about what genre they thought the cover represented, and why they came to that conclusion. The subjects also listed their preferred genres, from favorite to least favorite. There were 21 questions on the survey. Each answer was recorded by book genre, type of subject tested, and the subject's genre preference. The results were tabulated using an Excel spreadsheet. Materials included 10 book covers, 100 questionnaires, 1 watch, 5 three-hole punch folders, 50 clear plastic folders, 1 computer, 1 pair of scissors, 1 packet of construction paper, and 1 copying machine.

Results
The majority of all subjects tested recognized the unambiguous fantasy, science fiction, historical, and romance book covers. On average, 77% of the time people correctly identified the genre of the unambiguous cover. The short answers confirmed that people based their answers on easily recognized symbols. The exception was recognition of the mystery genre. The short answers revealed that people were confused by other symbols in the mystery picture. With regard to ambiguous book covers, test subjects had difficulty correctly identifying a book's genre. On average, people gave correct answers only 23% of the time. People were most likely to choose the genre of ambiguous books based on their two favorite or two least favorite genres. The range differed for women (88%, 88%, 60%, 56%, and 52% for the 5 different genres), boys (84%, 80%, 52%, and 16%), girls (64%, 64%, 56%, 48%, and 44%), and men (60%, 60%, 42%, 16%, and 8%).

Conclusions/Discussion
People are highly likely to identify correctly the genre of books with covers that have well-known symbols, using the principle of the representativeness heuristic. Judgments about ambiguous book covers are based on people's familiarity with the genres they prefer or least prefer, using the principle of the availability heuristic.

Summary Statement
My project examines the type of "snap judgments" people make about the genre of a book based soley on the cover picture, and whether the basis of the judgment changes if the picture is unamiguous or ambiguous.

Help Received
Mr. Kaleikau for use of his classroom; my sister Laura for the topic idea; my mother for helping me put together the surveys; Mr. Anderson and Mr. Eichenblatt for help with Excel.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Alden J. Moir

Project Number
J1715

Project Title
What Is the Best Way to Reduce Fuel Use in Our Community?

Abstract

Objectives/Goals
The objective of this project was to determine how much gas could be saved in my community by having fuel-efficient cars, building shopping centers closer to home or providing an easy to use public transportation system.

Methods/Materials
A questionnaire was made and given to all the parents of sixth, seventh and eighth graders and all of the teachers at Quail Lake School (a rural k-8 school in Central California). The questionnaire asked respondents annual miles driven, the gas mileage of their cars, whether they would drive a less functional car that got better mileage, and how much more they would pay for a car that got significantly better mileage. It also asked whether they wanted to drive less, whether they would use public transportation if it was easy to use, and if respondents would use a shopping center built closer to their homes. Finally it asked what were the top three places people drove to.

Results
96 questionnaires were distributed and 40 were returned completed. Respondents drove an average of 17,238 miles per year. Their average gas mileage was 21.1 MPG. About half the respondents would drive a less functional car that got better gas mileage and the average that people would pay for a similar car to theirs that got much better mileage was $4,500. 92% of people would like to drive less, but only 40% of respondents would ride an easy to use public transportation system. 92% of respondents would use a shopping center closer to home, but shopping was the second most frequent destination (26%) behind work (31%).

Conclusions/Discussion
My conclusion was that improving the fuel efficiency of cars was the best way to reduce fuel use in my community. People were willing to pay a good deal more for more fuel efficient cars, and my background research showed that this amount could improve economy by as much as 70%. Most people were not willing to use public transportation, and moving shopping closer to home had less impact because it was not the place people drove to the most.

Summary Statement
My project is about how to reduce fuel use the most by understanding the preferences and needs of drivers in my community.

Help Received
My father helped find background research for this study. My mother helped mount graphs and research paper on presentation board.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Ryan J. Nowicki

Project Number
J1716

Project Title
Project Payphone

Abstract

Objectives/Goals
The objective is to determine if and why people answer ringing public payphones. I believe that people will only answer if they are attempting to use the phone and find it ringing.

Methods/Materials
Three payphone locations were selected after observing and testing nearly 20 different locations. Most payphone locations were eliminated because the phone either did not ring, there wasn#t enough foot traffic or the ring could not be heard by people passing by. A hidden video camera was mounted inside of a car parked nearby the payphone so that conversations and passersby could be recorded. A cell phone with a speakerphone was used to call the payphone from inside the car and record the conversation. The percentage of people picking up, reason for answering and age/sex of person answering was recorded.

Results
Several hundred people were observed passing by each of three different payphones on several different days. One payphone had a 10% pick-up rate for people that were passing by. The other two phones had less than a 2% pick-up rate. More men answered than women and the age of people answering was fairly well distributed. Although there were many different reasons for picking up the phone, the predominant reason (85% of the time) was that people were just curious to know who was on the other side of the phone.

Conclusions/Discussion
My overall conclusion is that people do in fact still answer ringing payphones, however, not very often. Even with the most popular payphones, the pick-up rate is less than 10%. When people do answer payphones, the most common reason (85%) is that they are just curious to see who is calling. This result does not support my hypothesis. In fact, only 2% of the people that answered did it because they wanted to use the phone (my hypothesis). This overall result suggests the notion that payphones are a dying breed. It appears that cell phones have taken their place to a large extent. Many people that still use payphones appear not to have a cell phone. And finally, many people that answer ringing payphones appear to be people that are just #hanging around# and not in a particular hurry.

Summary Statement
Project Payphone is a social science experiment to determine if and why people answer ringing payphones in busy, public areas.

Help Received
Father helped with video taping, driving me to payphone locations and showed me how to use video editing software; My teacher helped me to prepare my observations; Mother helped me to purchase a mini payphone; Grandma taught me how to print out large fonts.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Julia F. Ostmann

Project Number
J1717

Project Title
The Lego Experiment: Does Gender Play a Role in the Ability to Create a 3D Object from a 2D Representation?

Abstract

Objectives/Goals
My experimental objective was to determine whether gender plays a role in the ability to create a 3D object from a 2D representation.

Methods/Materials
Materials:
150 2 x 4 full-height Lego bricks
1 computer with Gryphon Bricks software
20 printed pictures of experimental 3D object
1 stopwatch
1 camera

Procedure:
A. Design a 3D shape out of identical Lego bricks on the Gryphon Bricks computer program.
B. Print 20 representations of the front and rear views of the 3D shape.
C. Recruit 20 subjects, 10 male, 10 female, ages 11-13, all in the 6th grade.
D. Give each subject 14 Lego bricks and a 2D representation of the object.
E. Record the time taken to recreate the object in 3D.
F. Evaluate the accuracy of each recreated object.
G. Calculate the average time, accuracy, and composite performance score for all subjects.
H. Record the data on a chart.
I. Analyze the data and come to a conclusion.

Results
Male subjects were faster but less accurate, and female subjects took more time but made fewer errors. On a composite scale using a ratio of accuracy to time, male subjects outperformed female subjects.

Conclusions/Discussion
Gender plays a role in the ability to create a 3D object from a 2D representation. My hypothesis was correct. Male subjects performed better overall on the test.

Summary Statement
My project demonstrates that males perform better on certain spatial ability tasks when comparing sixth grade boys and girls.

Help Received
Parents helped edit report and obtain materials.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Riley W. Pannkuk

Project Number
J1718

Project Title
Predicting Phenomenon

Abstract

Objectives/Goals
The purpose of this science experiment was to study group accuracy, and how a group#s average compares to expert judgment.

Methods/Materials
Four containers were filled with beads, jolly rancher candies, and marbles, and fifty people from a shopping center were asked to randomly guess how many of each type of item was in each container. I then asked a math teacher to use a measuring method of their choice to determine the number of items in the containers. I performed three trials with the marbles, jolly rancher candies, and the marbles, with the same expert each time and different people each time.

Results
Surprisingly, the results turned out that the #group accuracy# was not accurate in some trials. In the bead trials, the group average was surprisingly less accurate on the low side than the expert, but in the Jolly Rancher Candies trial the group was extremely accurate in some trials. My results show that a large number of a substance negatively changes the accuracy of the group as shown in the bead trial as opposed to the group#s judgment of the smaller number of Jolly Rancher Candies which was extremely close.

Conclusions/Discussion
My conclusion is that an expert is best used when there is a wide range of possibilities and a large group#s averaged judgment should be used when there is a smaller range. The shape of the object also makes a difference, because the regular shape of the marble makes it easier to predict how many can fit in a container, versus an irregular object such as the jolly rancher candy.

Summary Statement
The study of whether or not the average of a group is more accurate than an expert using a method to find an answer to a problem.

Help Received
My science teacher held meetings and help sessions for the county fair; UCSB students came and gave us suggestions for the boards.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Dana C. Pede

Project Number
J1719

Project Title
How Much Is Too Much? Are Students' Backpacks Too Heavy?

Abstract

Objectives/Goals
I noticed on some days my school backpack was very heavy, and I noticed my friends complaining of the same problem. This project was designed to figure out if students routinely carry too much weight in their backpacks. I wanted to raise awareness, so that students, parents, and teachers would become conscious of how the students might be putting their backs at risk.

Methods/Materials
In this experiment, 213 weights of students and their backpacks were recorded and compared to national recommendations. The subjects were in grades 4-8. The backpack weights were divided by the subjects# body weights to calculate the backpack weights as a percentage of the child#s body weight. A digital scale was used to record students weights, and a Microsoft Excel spreadsheet was used to calculate the percentage.

Results
51% of the fourth and fifth grade subjects carried loads that exceeded 15% of their body weight. 48% of the middle school subjects also carried loads that were more than 15% of their body weight.

Conclusions/Discussion
Many health and chiropractic associations recommend carrying loads of no more than either 10% or 15% of the child#s body weight, but the results show that many students may be putting their backs at risk by carrying too much. Approximately half of all the subjects tested carried a load that exceeded 15% of their body weight.

Summary Statement
In this experiment, 213 weights of students and their bakcpacks were recorded and compared to national recommendations.

Help Received
Parents helped format report and record data; Teacher helped improve report.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Alexis R. Sadakane

Project Number
J1720

Project Title
Too Close For Comfort

Abstract

Objectives/Goals
Many people are not aware of the existence of personal space. The results from this experiment will educate people on the need to recognize individual spatial requirements.

Methods/Materials
Materials:
1. Measuring tape
2. Digital sphygmomanometer
3. Subject
4. Male and Female Experimenter
5. Log

Method:
1. I will take subjects initial pulse rate to establish their normal rate.
2. I will have the subject stand on one edge of the measuring tape (leaving the cuff on).
3. I will have an experimenter of the same or opposite sex approach the subject and stop when the subject indicates (by saying stop) that they are feeling uncomfortable.
4. When the subject says stop I will take the subjects pulse rate.
5. I will record how far the experimenter was from the subject when they had them stop.

Results
64% of the time when males approached females their pulse rate rose, it lowered 27% of the time and stayed the same 9% of the time. When males approached males 54% of the time their pulse rate rose, 38% of the time it lowered and the remaining 8% it remained the same. When a female approached a male the pulse rate did not rise. 78% of the time it lowered and the remaining 22% it showed no change. When a female approached another female the pulse rate never rose, it lowered 83% of the time and remained the same 17% of the time.

Conclusions/Discussion
In conclusion my hypothesis is correct. Towards men women require larger spaces and towards other women they need smaller spaces. Males approaching males need larger spaces and when approaching females they demand smaller spaces. I believe that both males and females need smaller spaces when approaching females because they are less intimidating than males.
There are many variables that affect proxemic research. The age, appearance and ethnicity of the experimenter as well as location could affect the outcome of a proxemic experiment. The need for a

Summary Statement
The purpose of this experiment is to identify and measure proxemic behavior.

Help Received
I would like to thank my mom for helping me with this experiment. She helped me purchase my items, stayed at the beach for six hours while I did my primary testing and videotaped my secondary testing. My grandma and grandpa let me borrow their sphygmomanometer. My aunt and uncle were the

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
K. Armin Samii

Project Number
J1721

Project Title
The Most Attractive Banners

Abstract

Objectives/Goals
Of all the banners on the internet, only few are effective. The rest just sit there unnoticed or are so annoying that viewers have no intent on clicking on them. The purpose of the experiment is to figure out which banners are effective and which are irritating or are overlooked. To find out, the location, color, size of text, and whether or not to use animation are the tested variables.

Methods/Materials
In order to conduct this experiment, the following took place. First, the test was created using Macromedia Fireworks MX# and Macromedia Dreamweaver MX 2004#. Fifty subjects were tested with this test. Another test was then created with the order of the images in the Colors and Font Size Tests reversed. Next, fifty more subjects were tested for results. Lastly, the data was analyzed using Microsoft Office Excel#.

Results
The most effective location for banners was the top. During the first Colors Test, black (which was the color closest to the top of the page) was most effective. When the Colors Test was reversed, red (a color close to the top) was the first noticed. The largest font (which was closest to the top of the page) were most attractive during the first test. The second test showed that the second to largest font (50pt) was most effective. The 50pt font was near the top of the page. Animated banners were extremely effective.

Conclusions/Discussion
Using the collected information, many facts can be concluded about banners. The most effective location for banners was the top. Bold (dark) colors which were near the top of the page were most noticed. Large fonts were the most attractive, as long as they were near the top of the page. Larger objects are not as effective as animated objects are. Using this data, advertisers can use ads on the internet, feeling confident that people will go to their sites.

Summary Statement
The purpose of my experiment is to figure out which banners on the web are the most effective and noticed first.

Help Received
Friend helped find experimental subjects; Teacher gave overview and guidance throughout project.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Kelsey L. Schuetz

Project Number
J1722

Project Title
Fast Food Fear: Statistical and Microbial Analysis of the Cleanliness of Fast Food Restaurants

Abstract

Objectives/Goals
My objective was find out which fast food chains in Orange County are the cleanest, as measured by the gum underneath their dining tables and what is the effect of waste materials commonly found in fast food restaurants (including used gum) on the cleanliness of the restaurant as measured by bacterial growth. My goal was to evaluate the cleanliness of fast food restaurants in Orange County.

Methods/Materials
I visited 50 fast food restaurants (5 chains in 10 cities) and counted the number of tables at each restaurant that had used gum stuck underneath them and calculated the percentage of tables with gum. I tabulated the data including the number of tables at the restaurant, the number accessible for evaluation, the number with gum, and the percentage with gum. I evaluated the data both by restaurant chain and by city. I then collected a sample of used gum and some ketchup and mustard packets. I divided a board into 4 sections with coins, used gum, ketchup, and mustard. After 2 weeks, I prepared 20 auger plates and swiped each section of the board 4 times. I collected 4 samples of each of the four materials on the board and left 4 prepared auger plates as control. I counted the number and types of bacteria on each of the auger plates once a day for seven days and tallied the results.

Results
Most cities averaged around 50 to 70 % of tables with used gum. Santa Ana had the highest average at 80.69%. Stanton was the cleanest with 48.52% average. Most restaurants averaged between 40 and 60 % of tables with gum. Jack in the Box was the #dirtiest# restaurant with an average of 90.78%. Taco Bell was the #cleanest# with an average of 44.29%. Of waste products found in fast food restaurants, ketchup had the most bacteria, followed by coins, then mustard, then chewed gum. Although the mustard samples started growing first and grew the highest variety of colonies, they did not grow the greatest amount of bacteria, ketchup did.

Conclusions/Discussion
I was correct that Santa Ana had the highest percentage of gum under tables but I think it may have been for different reasons than I first expected. Although I thought used gum would have the most amount of growth, it ended up having the least and ketchup had the most. Used gum is probably not the most accurate indicator of uncleanliness in restaurants. Other concerns such as waste food products (e.g., ketchup) may pose more serious health concerns.

Summary Statement
My project evaluates the cleanliness of local fast food restaurants.

Help Received
My mom drove me around to the 50 restaurants and to collect the gum and ketchup/mustard packets. My dad got the Formica boards at Home Depot.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Christopher R. Shea

Project Number
J1723

Project Title
Is Seeing Believing?

Abstract

Objectives/Goals
To see if age or gender has an affect on the ability to percieve an optical illusion.

Methods/Materials
Board with images was exposed to subjects and questions were asked
Subjects exposed for 20 seconds from 2 feet
Subjects were asked if they saw illusion 1 illusion 2 or both

Results
Age does have an affect on the ability to perceive an optical illusion but gender does not.

Conclusions/Discussion
Younger subjects were not able to perceive the optical illusion but with increase of age there was an increase in the ability to differentite the images of illusion. Gender did not have an affect on the ability to perceive an optical illusion thus confirming my hyptothesis.

Summary Statement
Whether or not age or gender has an affect on the ability to perceive an optical illusion.

Help Received
Subjects that took part in my project.

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Alexander E. Tavlian

Project Number
J1724

Project Title
Popcorn Consumption and the Impact of Film Genre

Abstract

Objectives/Goals
The objective of my project was to determine whether the genre of a motion picture has a measurable impact on a moviegoer's popcorn consumption.

Methods/Materials
I reviewed film catalogs, texts, and databases to determine four distinct genres of motion pictures--Comedy, Romance, Action, and Family. I then selected one motion picture from each group that is clearly identified in those resources as belonging to the specific genre. After obtaining informed consent from six human subjects, I arranged for the subjects to attend four screening sessions at my home, each session devoted to a film from a single genre. Before each screening, I prepared seven-liter batches of popcorn in six numbered bowls, one for each subject. The subjects watched each movie, consumed popcorn from their respective bowls, and received measured refills as requested. At the end of each film, I measured the remainder in each bowl to determine total consumption for the screening. I recorded the results in my Project Notebook for comparison and analysis.

Results
The Family film generated consumption of 43.5 liters of popcorn, compared with 40.1 liters at the screening of the Action film, 37.6 liters at the screening of the Comedy film, and 37 liters at the screening of the Romance film.

Conclusions/Discussion
I believed a Comedy film would generate more popcorn consumption than a film from one of the other genres. The Family film actually generated the most popcorn consumption by my moviegoers and the Comedy film came in third place. Therefore, I did not prove my hypothesis.

Summary Statement
The impact of film genre upon the consumption of popcorn by moviegoers.

Help Received
My mother physically popped the popcorn in the West Bend Stir Crazy Popcorn Popper. Approximately 60 percent of the time, my parents started the movies on a DVD player. The rest of the time, I started the movies on the player. My parents also used a paper cutter to cut paper for placement on my display

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Jessica P. Wallach

Project Number
J1725

Project Title
Laugh Your Worries Away

Abstract

Objectives/Goals
My objectives were to find out if something easy, like laughing, would lower blood pressure, and if so, would the gender effect the amount of change in the blood pressure.Over all, I think the project objectives were all met and that from this experiment and I achieved to discover that laughter does lower blood pressure and gender does effect the results.

Methods/Materials
Materials: 1.Comedy tape, 2.Tape player, 3.Automatic blood pressure monitor.
Methods: Step 1: Funny, clean comedy tape to use to test students.
Step 2: Edit the tape down to about seven or eight minutes.
Step 3: Take blood pressure of student before letting them listen to the tape.
Step 4: Test one student at a time.
Step 5: Play tape for the student.
Step 6: Immediately after tape is over, again take the blood pressure of the student.
Step 7: Compare the results of the blood pressure of the student before and after playing the tape.

Results
I tested twelve students in the eighth grade class between the ages of thirteen and fourteen years old. The average blood pressure for the female subjects before listening to the tape was 118/75. After, it was 110/70.The national average blood pressure for thirteen to fourteen year old girls is 109/62. For the males, the average blood pressure before listening to the tape was 102/65. After, it was 93/61. The national average blood pressure for thirteen to fourteen year old boys is 108/63.I also discovered that the systolic pressure,was lowered significantly more than the diastolic pressure in both the male and female subjects.I have found out that the female subjects have a higher blood pressure than the national averages, even after the tape was over. The male subjects, however, had a lower average blood pressure than the national averages, even before the tape was played. By this, I have proved that the section of my hypothesis that the female subjects will have a lower average blood pressure is incorrect.

Conclusions/Discussion
I have concluded that laughing does lower blood pressure and gender does affect the outcome of the results. I have also concluded that the male subjects, had a lower average blood pressure than the female subjects, which proves my hypothesis to be incorrect.Laughing only for about ten minutes substantially lowered blood pressure for both sexes, if people could sit down and laugh for a half hour every day, it could lead to a much lealthire life.

Summary Statement
The main focus of my progect is to see whether laughing lowers blood pressure and if gender will effect the outcome of the results of the amount of blood pressure reduced.

Help Received

CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Courtney A. Wicks

Project Number
J1726

Project Title
Hamming It Up: Is Laughter the Best Medicine?

Abstract

Objectives/Goals
My project was to determine if laughter had an affect on blood pressure, heart rate, oxygen saturation and/or blood glucose.

Methods/Materials
Twelve subjects were tested in two sessions each. The first session was the control session, where a non-emotional video was watched. The second session was the experiment session, where a humorous video was watched (laughter stimuli).

Sessions were held at the same time each day, with instructions not to eat or drink anything after 1:00 pm. Vital signs were taken before and after each session using a blood pressure monitor, oximeter, and glucose meter. Subjects completed a questionnaire to identify any possible variables; such as medication, or illness. Subjects' behavior was observed and documented during both sessions, for possible unanticipated reactions.

The pre and post session vital signs were recorded and differences noted. The differences for the experiment session were compared with the differences for the control session to arrive at the difference attributed to laughter (example: control session decrease in oxygen saturation of 1, experiment session increase in oxygen saturation of 2 = net difference attributed to laughter of +3).

Results
Out of the twelve research subjects; 75% showed an increase in systolic blood pressure (overall average increase of 12), 75% showed an increase in diastolic blood pressure (overall average increase of 18), 58% showed an increase in heart rate (overall average increase of 13), 58% showed an increase in oxygen saturation (overall average increase of 1), and 60% showed a decrease in blood glucose (overall average decrease of 1).

Conclusions/Discussion
The data and research prove that laughter does affect blood pressure, heart rate, oxygen saturation and blood glucose. Specifically, my experiment showed the hypothesized increase in the following vital signs: systolic pressure, diastolic pressure, heart rate and oxygen saturation. While the research data did not show any specific study indicating the affect of laughter on blood glucose, the experiment for blood glucose did show the majority of subjects resulting in a decrease of blood glucose as hypothesized.

Summary Statement
My experiment proves that laughter has a short term affect similar to exercise on the human body.

Help Received
My teachers, Mr. Rex and Mrs. Priest, helped me with my research report, my 12 research subjects who put in several hours and agreed to poke their fingers, my mother supervised the experiment & use of medical equipment, instructed me how to use Excel to create charts and graphs, and helped with graphics.