The Effects of an Eye-closure Technique on the Identification Accuracy from Photo Lineups
By: Meagan Kenney class of 2015

Abstract
The purpose of the research was to test the effects of an eye-closure technique on the accuracy of eyewitness identifications from a photo lineup. Participants from a local college witnessed a live simulated “crime” and were then sorted into two groups; one received the eye-closure technique, the other was the control group. Participants were asked to identify the perpetrator from a photo lineup and indicate their confidence in their identification. The data were analyzed using a Chi-Squared test of independence that resulted in the null hypothesis being retained (p-value = 1.0, alpha = 0.05). The research hypothesis, “if participants were instructed to close their eyes before being prompted with questions to assist their memories in remembering the perpetrator, then those participants would have a higher accuracy rate in their identifications in a lineup,” was not supported. Additionally, a Chi-Square test of independence comparing the accuracy rates of participants who indicated confidence in their identifications versus those who did not was also inconclusive (p-value = 0.386, alpha = 0.05). Therefore, this research suggested that an eye-closure technique utilized during the pre-identification period does not improve accuracy, and higher witness confidence does not suggest greater accuracy either.

Future Research Ideas
1. Further research could be done on how gender affects the accuracy of identifications from photo lineups.
2. The eye-closure technique could be further tested using a more detailed pre-identification procedure.
3. More research could be done on how the eye-closure technique would affect the actual information eyewitnesses could provide.

Pertinent Information to share with a future researcher
1. It can be hard to get the majority of your participants to witness a simulated crime if it is performed as a live event that they are not aware they are going to witness.
2. A foundational paper to read for this study is:
Determining the relationships between years of sports involvement and personality differences.
By Lauren Calvert Class of 2015

Abstract
The purpose of this research was to determine if a relationship exists between the number years of sports involvement and personality differences in reference to introversion and extroversion. The study took place in a local high school cafeteria during one lunch period. Students from grades nine through twelve were involved in the study, where they took a survey called a Jung Test. Answers to the survey were used to classify the participant as either or introverted. The results therefore did not support the original hypothesis that, if students involved in sports and students not involved in sports were given a personality test, then the test would show that the people more involved in sports would have more extroverted personalities than the ones who were not. In conclusion the results of this study showed that there was not a statistically significant difference between years of sports involvement and personality differences.

Future Research Ideas
1. One project that someone could do would be to test how personality differences are affected by the sport you play.
2. Another idea could be how years of sports involvement effects compatibility with others.
3. Also, you could test how personality differences are affected by certain situations.

Suggestions to a future researcher
1. If expanding this project it would be better to have a larger data set to get more accurate results. This would help to verify the findings of this research.
The effects of musical pitch and instrumentation on pre-performance listening on choice reaction time performance.
By: Lisa Lotz-class of 2015

Abstract
The purpose of this study was to examine the effect of musical pitch and instrumentation of music listened to pre-performance on choice reaction time performance. Ten participants that are local lacrosse players between the ages of 13 and 18 played a “hit the dot” game as a choice reaction time test. Instruments including tuba, flute, and violin with ranges between C1 to C8 played the William Tell Overture for participants. A One-Way ANOVA was used to analyze the data. The alpha value was set at 0.05. The resulting p-value was 0.58805. Therefore, the research hypothesis that musical pitch and instrumentation of music listened to pre-performance has an effect on choice reaction time performance was not supported statistically. It is important to note that a general trend appears support the hypothesis. In conclusion, musical pitch and instrumentation were not found to have a statistically significant impact on choice reaction time performance.

Future Research Ideas
1. Further comparative research should be done on all elements of music, specifically harmony and pitch, on choice reaction time performance as well as other athletic and everyday activities.
2. Every part of music should be isolated and studied in order to see the whole picture, and possibly create better athletes.
3. Optimized music could create an alternate as effective or more effective than steroids.

Pertinent Information to share with a future researcher
1. It is challenging to get enough human participants involved in the study. I recommend expecting to receive 25% of the forms you hand out.
2. A foundational paper to read for this study is:
The Effect of Music on Stress Levels in Teenagers
By: Jamie May Class of 2015

Abstract

The purpose of this study was to examine the effect of listening to self-selected music on stress levels in high school students. The participants were all eleventh grade students from local high schools. Each participant completed a stress-inducing mathematical test in silence and then afterward rated his or her stress level on a scale from one to five, with one being the least stressed and five being the most stressed. The participants then completed the same test again while listening to music of a preferred genre and rated their stress level. The mean stress level of the control test was 4, while the mean stress level of the experimental test was 2.2. A paired t-test was conducted to analyze the data. The alpha was set at .05, and the resulting p-value was 2.5E-05, so the null hypothesis was rejected. In summary, the data supported the research hypothesis that, if teenagers listen to self-selected music during a stress-inducing test, then their stress levels will be lower than when they did not listen to music.

Future Research Ideas

1. Further comparative research could examine the effects of gender, race, and age on the effectiveness of this strategy.
2. Participants could be allowed to personally select all music rather than having predetermined genre playlists.
3. Research could also study the effects of music on artificial versus real stress.

Suggestions to a Future Researcher

1. Begin distributing consent/assent forms early; it is very difficult to receive forms back from participants.
2. Staying organized from the beginning will greatly help the end.
3. Minimize time that testing will take to maximize participation.
The primary purpose of this study was to see if the placebo effect, and then positive thinking without the use of a placebo, could help children to swim faster. A group of students ages ten and under were timed swimming three twenty five yard sprints. After the first sprint, the students were given a bracelet, told that it would help them swim faster, and then swam another twenty five. A two-sample paired t-test showed a statistically significant difference between the first and second trials. The students were then told that the bracelets did not affect swim times, and swam one more sprint without the bracelets. Another two-sample t-test compared the first and third trial times, but the results were not significantly different which supported the null hypothesis. The research hypotheses that “if students were told that wearing a special bracelet would make them swim faster, then while wearing the bracelet, students’ sprint times would be faster” and “if participants were told that the bracelet did not actually make them swim faster, and that they swam faster due to their positive attitude, then they would still swim faster than they had in the first trial,” were not supported.

1. Future researchers should focus on obtaining more participants by gathering them farther in advance.

2. Also, allowing more time for the children to rest in between trials would be beneficial.

3. Conducting similar research with different sports could perhaps result in a different outcome.

1. It is challenging to get enough human participants involved in the study. I recommend expecting to receive 25% of the forms you hand out.

The effect of submaximal exercise on attention levels in elementary school students

By: Olivia Hsu - Class of 2015

Abstract

The purpose of this study was to determine if submaximal exercise resulted in increased levels of attention in young students. The participants were fourth grade students from a local elementary school. There were 27 total participants – 16 were in the exercise group, and 11 were in the control, or rest, group. Each student took two distractibility tests within an hour and a half. In between the pre- and post-tests, the experimental group participated in a small amount of aerobic physical activity, while the control group went to class as usual. Four paired t-tests were run to analyze the data. Each had an alpha value of 0.05. The distractibility test featured questions with both two and six distractors; the p-values for the control group with two, the control with six, the exercise group with two, and the exercise with six were respectively 0.0838, 0.0394, 0.1697, and 0.1570. As the only test to result in a significant improvement was the control group with six distractors, the research hypothesis that if elementary school students exercise before class, then their attention will greatly improve compared to those who did not was not supported. Oddly, while the exercise group did not have a significant amount of improvement, they maintained higher mean scores on the pre- and post-tests for both types of questions in contrast to the rest group. Overall, exercise did not significantly improve the students’ attention levels.

Future Research Ideas

1. Further research could examine the effects of multiple intensities of exercise in children.
2. The test should be administered by a familiar person, such as a teacher, because a stranger could cause distraction in the students.
3. The participants should practice the test multiple times before the experiment so their true attention levels can be scored.

Pertinent Information to Share with a Future Researcher

1. It is difficult to get a school and participants to help with human participant research.
2. Set aside extra time during experimentation in case something goes wrong (ex: slow computers).
3. The test used for this study:
The Effect of Varying the Length of Interview Responses on a Subject’s Overall Employability
By: Samuel Howard Class of 2015

Abstract
The purpose of this study was to examine the relationship between the length of interview responses and the overall employability of an interview subject. The lengths of interview responses ranged from short, to moderate, to elaborate and were rated on a level of employability that was determined by a generalized scale of one to ten; ten being most employable and one being least employable. There were three male interview subjects in addition to six male and six female interviewers. An ANOVA test was performed to analyze the data and resulted in a p-value of 0.01911 (α = 0.05). Since the data was statistically different in the results, a post-hoc test (Tukey test) was carried out. This test revealed that the only statistically significant difference amongst the group means was the responses of moderate length and the responses of the greatest length. The research hypothesis that the short, pointed responses would be rated most employable, while the elaborate responses would be rated least employable, was only partially supported. In summation, there was a relationship discovered between the length of interview responses and overall employability of a subject.

Future Research
- One should establish a common posture among the interviewees.
- One should try to acquire a greater number of participants.
- One could study the effects of gender on employability in a interview.
- One could attempt to have each interviewer only interview one subject.

Suggestions to a Future Researcher
1) You should try to pick a topic that you’re passionate about so that you will actually care about your study.
2) You should obtain as much research on your topic as possible early on.
3) Don’t overdo it on every assignment.
4) You should try to get ahead in the beginning. It will help you stay on track throughout the year.
The Effects of Electronic Brain Games on Cognitive Function
By Laura Saunders Class of 2015

The purpose of this experiment was to determine if electronic brain games improve cognitive function in adults. Pre and post-test scores of cognitive function were taken by the participants to figure out their initial cognitive function. During the testing week, each of three groups played a different amount of electronic games. One experimental group played three games every day, the other experimental group play three games every other day, and the control group did not play any games during the testing week. A single factor ANOVA was run on the pre and post test score differences (p-value=.014, alpha=.05). A post-hoc Tukey test revealed that the mean difference between pre and post-test scores for the group who played brain games every day was statistically significantly higher than those of both other groups. The findings of this experiment supported the research hypothesis that playing brain games on a regular basis would increase cognitive function.

Future Research Ideas

Future studies might focus on figuring out why nursing home residents might not volunteer for these types of studies, even though the research would likely be beneficial. Also, focus on determining which part of the brain declines the most with age. This would enable scientists to focus on that specific part of the brain and to better determine if cognitive decline can be stopped, and maybe even reversed, with treatments like brain games.

Suggestions to Future Researchers

1. Make the electronics more appealing in order to attract the older age group.
2. Have enough computers so that no one has to wait to take pre and post-tests.
3. Find a website that can provide the free brain games, but does not force you to make an account.

http://www.lumosity.com
The Effect of Truthful and False Statements on the Blink Rate of High School Students.
By: Sierra Foster-Class of 2015

Abstract
The purpose of this study was to determine if there was an effect on the blink rate of a high school student when telling a lie compared to a high school student when telling the truth. Participants were brought into a room where they wrote down two truthful statements and one false statement, they then recited their statements while being recorded and the videos were later watched in order to determine blink rate. A Two-Sample Paired t-test was used along with the alpha value of 0.05. The resulting p-value was 0.829 and did not support the research hypothesis that if a high school student was telling a lie, then he or she would have a higher blink rate than a high school student who was telling the truth. In conclusion, there was no effect found of truthful and false statements on the blink rate of high school students.

Future Research Ideas
1. Further research should be done by comparing the blink rates of males and females to determine if there are any physiological differences.
2. Have the participants tell the same number of truthful and false statements (i.e. two truthful and two false statements).
3. Always try to get more participants!!!
The effect of reverse order recall on lie detection accuracy  
By Cassie Smith Class of 2015

Abstract

The purpose of this study was to see if participants, who watched videos of liars and truth tellers, could more accurately detect the veracity of the individuals’ statements if the individuals told their stories in reverse order. This study was conducted using both male and female high school students. Collaborators participated in a certain activity and then would either tell their story or make up a cover story. The collaborators would then be videotaped, telling their story or cover story, once in chronological order and once in reverse order. The videos were then edited. Participants watched the videos, never watching a collaborator twice, and then wrote down whether they believed the video was of a truth-teller or a liar. A paired t-test was conducted, and the research hypothesis was not supported. There was an alpha value of .05 and a p-value of .417. This experiment showed that reverse order recall had no significant aid on lie detection accuracy.

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Future Research Ideas

- The researcher could create a more real life, stressful, situation for the collaborator to do and then either lie or tell the truth about to increase verbal cues.
- The researcher could give basic training to the participants prior to watching the collaborator videos, so that they would be more apt to detect cues of lie detection.

Table 1. The effect of reverse order recall on lie detection accuracy.

<table>
<thead>
<tr>
<th>Lie Detection Accuracy Out of Ten</th>
<th>Chronological Order</th>
<th>Reverse Order</th>
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<tbody>
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</tbody>
</table>

Average 3.8 3.4

Suggestions to a future researcher

1. The researcher should work with video technology before starting the project.
2. The researcher should plan adequate time for method of project.
3. Techniques should be practiced with multiple test subjects before project.

Figure 1. The effect of reverse order recall on lie detection accuracy.
Abstract

This study was designed to test the effect that heading a soccer ball has on the memory function of the brain. Because of the growing numbers of high school and youth soccer players around the world, the possible negative effects of heading a soccer ball must be studied. The measured variables for this study were: the average number of headers taken per week over the previous twelve months as reported by the participants and, the participants’ scores on a computerized memory test, the Automated Operation Span (AOSPAN) task. Participants consisted of high school soccer players between 14 and 18 years old from local high schools. A correlation test suggested that no relationship exists between heading a soccer ball and memory function (p-value = .119, alpha = .05). Thus, the research hypothesis, that if a high school soccer player reported a greater number of headers taken per week over a period of twelve months, then his or her score on a computerized memory function would be lower than a participant who reported a lower number of headers taken was not supported.

Future Research Ideas

1. Future research should include a larger number of participants to better demonstrate the whole population of high school soccer players.
2. A history of previous concussions should be accounted for as a possible confounding variable.
3. Projects in the future should include a more efficient way to assess the number of headers taken by participants than by participant recollection.

Suggestions for a Future Researcher

1. It is a challenge getting participants for any human participant study. Expect less than fifty percent of the forms you hand out to be given back and even fewer people to actually show up on the test day.
2. The versions of the AOSPAN available online are a little less reliable than a real test; go to http://englelab.gatech.edu/tasks.html to download a proper task (follow the instructions on the page to download).
The effect of a relaxation technique on stressful task completion efficiency
By Beth Terry Class of 2015

Abstract
The purpose of this study was to examine the relationship between breathing deeply and slowly and the difference in Stroop Test scores. Twenty-nine high school juniors and seniors participated in this project. Each participant began by taking a one-minute practice version of the electronic Stroop Test, then completed a two-minute pretest while listening to a metronome. A fingertip pulse oximeter on the non-dominant forefinger measured heart rates. During the three minute break, the participants in the experimental group were told to use the breathing technique and biofeedback in order to lower their heart rates. Both groups were given a second two minute trial of the Stroop Test. A two sample t-test analyzed the difference in scores, resulting in a p-value of .126. The alpha value was set at .05, so the data did not support the research hypothesis, “If a participant learned to breathe deeply and slowly to decrease his or her heart rate prior to a stressful task completion event, then his or her performance during the event would improve,” and the null hypothesis was retained. In conclusion, breathing deeply and slowly had no apparent effect on the results of timed Stroop Tests.

Future Research
1. More efficient ways of inducing and treating stress should be researched thoroughly.
2. Also study and research different kinds of stress other than stress that is just intellectually-based.

Suggestions to a future researcher
1. Keep track of your participants, particularly when you give and receive their consent/assent form and when they participated.
Kinesio Tex tape (KT tape) is often used to help the healing process of injured athletes. However, little is known about the effects of KT tape on athletic performance. In this study, KT tape was applied to the quadriceps of high school age athletes prior to a 400 meter running event. Twelve male and female track athletes ran a 400 meter trial with KT tape and then without tape on separate days in order to compare performance. After data collection, a paired two-tailed t-test was used to determine if there was a statistically significant difference between the groups. The paired t-test resulted in a statistically insignificant p-value of 0.907 when compared to the set 0.05 alpha value. There were no significant differences found between the two different trials (with and without tape). The results suggest that Kinesio Tex tape has no effect on the athletic performance of high school age athletes.

Future Research Ideas

- There could be testing with how KT tape affects endurance instead of speed.
- There could be testing with how KT tape affects the strength of the target area.
- There could also be testing on whether KT tape actually affects muscles or if it is just placebo.

Pertinent Information to share with a future researcher

- The weather is a big factor on how athletes perform. I recommend using an indoor environment.
- High school age athletes are typically not very dedicated to the sport, so I would recommend using a college tract team.
- To insure consistent taping, a researcher should seek out a trained professional.
The effects of Techno, Irish Pop, and Classical Music on Heart Rate during Rest and Relaxation. 
By: Tristan Harrison-class of 2015

Abstract

The purpose of the research study was to examine the relationship between music genre and the change in heart rate of an individual. All participants were eleventh grade males and females from a local high school. There were a total of twelve voluntary participants, and they were not discriminated against for any reason. The students had their heart rates measured in beats per minute at rest prior to performing the experiment. They then listened to techno, Irish pop, and classical music for ten minutes each while having their heart rates measured in beats per minute.

Future Research Ideas

1. Heart Rates compared using different pitches, volumes, or tempos.
2. Heart rate measured after listening to music for a longer period of time.
3. Heart rate measured using three different music genres

Pertinent Information to share with a future researcher

1. The possibility of a heart murmur or a naturally faster heart rate could effect the data.
2. A foundational paper to read for this study is:
The effect of psychological pressure on golf putting performance
By Zeke Shen Class of 2015

Abstract
The purpose of this study was to determine the effects of psychological pressure on golf putting performance. This study was conducted at a local golf course. Members of a local high school golf team were asked to attempt ten putts, each five feet in length in the control run to gauge a baseline. The subjects were then asked to attempt the same putt again, but this time were told that they were being recorded for stroke analysis in order to give them psychological pressure. The average number of putts each individual made out of ten in the control run was 5.54 and 4.62 in the control. A paired t-test was performed, giving a p-value of .152, higher than the acceptable alpha of .05. Therefore, the null hypothesis that psychological pressure has no effect on golf putting performance was retained.

Even though a slight increase was observed between the control and experimental groups, a correlation between putting performance and pressure was not supported by the data.

Future Research

1. Further research could be done to investigate golfer’s performance in a broader range of skills instead of only putting.
2. Since better golfers performed under pressure better, a factor of experience could be added in measurement.
3. Broader studies could be applied to other sports such as free-throw shooting in basketball and field goal kicking in football.

Suggestions to a future researcher

1. It is extremely challenging to motivate teenagers to get consent forms signed so make extra time in your study to allow for this.