



CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

Name(s) Lauren R. Fishman	Project Number J0407
Project Title Expressing Emotion: Facial, Verbal, and Physiological Differences	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment is to investigate differences in the way boys and girls (ages 6-13) express emotion, including facial, verbal and physiological differences. These differences will be compared against prior research on adults to understand how gender differences in expressing emotion change with age.</p> <p>Methods/Materials Over 45 subjects (ages 6-13) were individually exposed to three different multi-media videos, each meant to elicit a different emotional reaction (for example, happiness, sadness). Recorded measurements included each subject's facial expressions (mouth, cheek, eyebrow and eye movements), verbal responses and physiological reactions (heart rate) associated with each of the three videos.</p> <p>Results The average and standard deviation were calculated for each of the 6 measurements recorded for boys and girls by video. Analysis of data for the happy video shows that both boys and girls outwardly express happiness to the same extent. Over 70% of boys and girls giggled or smiled after watching the happy video. But there was an inward (physiological) difference. Girls' pulse increased nearly double that for boys, meaning girls express happiness both outwardly and inwardly, whereas boys express happiness mainly outwardly. The sad video was most interesting. Girls outwardly expressed their sadness with about 70% grimacing or looking away, while boys showed significantly less emotion (only 40% grimaced). Inwardly, however, girls' pulse increased slightly, by 0.1 beats per minute, whereas boys' pulse increased by 3.3 beats per minute.</p> <p>Conclusions/Discussion These findings suggest that boys, even as young children, hide their emotions, specifically sadness. On the other hand, girls outwardly express their emotions. In comparing this data to findings on adults from past studies, men showed very little emotion, not even happy expressions, whereas women openly expressed their emotions. This suggests that boys may learn at a young age to hide their sadness, and they later learn to hide their happiness as well. As children get older, boys become less expressive, while girls continue to express their emotions. Many questions remain unanswered for future experiments, such as: Are the differences between boys and girls learned or biological? Would results be similar for other emotions, similar for seniors, or similar for subjects from different cultures?</p>	
Summary Statement There are many differences in the way boys and girls ages 6-13 express emotion (including facial, verbal and physiological differences), and these differences by gender increase with age.	
Help Received Science teacher answered questions about science fair; Father helped with transportation; Mother helped purchase materials	