



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Elizabeth T. Nevins	Project Number J0416
Project Title Reactions Based on Robert Plutchik's Wheel of Emotions	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of this experiment was to test Robert Plutchik's psychoevolutionary theory of emotion, particularly the pairs of opposite emotions he depicts on his Emotions Wheel. Using my results, I was hoping to be able to understand people's emotional reactions. Ultimately, this would aid psychologists in developing a type of therapy that could help people refocus negative emotions.</p> <p>Methods/Materials I used 110 identical surveys, a spare pencil, and 110 random people of varying genders, ethnicities, and ages in my experiment. First, I would approach a group of people or a singular person. Then, I would ask them to fill out a survey for my experiment. I wouldn't tell them what my experiment was, though. Once they were done, I would thank them and take the data home in a folder before typing it into a chart.</p> <p>Results When I got my 110 survey results, I split them into gender and age based groups. I used a Pearson correlation, and the significance was found using a two-tailed test. I correlated the emotions on the opposite sides of Plutchik's Emotions Wheel. I then did the same with age group one and age group two as well as with the females' results versus the males' results. To summarize all those numbers, the females' correlations seemed to be weaker in general with small bursts of significant correlations. In the males' correlations, the correlations were average in questions one and three, but six out of eight were significant in questions two and four. In age group one, the correlations all tend to be on the weaker side, and the correlations were more defined in age group number two. There were also lots of significant correlations between happiness and sadness throughout the data.</p> <p>Conclusions/Discussion The data did not support my hypothesis which said that if someone was exposed to an emotion on one side of the Emotions Wheel during a certain situation, then that same person would react to the opposite kind of situation with the emotion on the opposite side of the Emotions Wheel. Some of the correlations supported Plutchik's Emotions Wheel, but there weren't enough good, strong correlations to prove that the wheel was constructed correctly. There were surprising correlations between the age and gender groups that I tested. My data could be used to help other scientists formulate new types of therapy or medicine for people with mental illnesses.</p>	
Summary Statement My project tested Robert Plutchik's psychoevolutionary theory of emotion, particularly the pairs of opposite emotions he depicts on his Emotions Wheel.	
Help Received Dr. Mayer reviewed the survey; Mother helped glue on papers; Friends/Family helped pass out some surveys	