



CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

Name(s) Cassiel T. McEvoy	Project Number S0417
Project Title Music and the Induction of Emotions	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This study focuses on how listening to film music without viewing the concurrent film may induce similar emotions in the listener. This involved the use of a survey in which the listener would begin by introducing their initial emotional state as chosen from 8 of the emotions listed on Plutchik's Wheel. The subject then tracked their own heart rate throughout the test, starting with their initial heart rate before the very first piece, and continuing to report their emotional levels and heart rates after 60 seconds of listening to each piece. The purpose of this survey was to get a general idea of how students of various ages and musical backgrounds relate to film music both physiologically and psychologically.</p> <p>Methods/Materials Survey: listener began by introducing their initial emotional state (chosen from 8 emotional states from Plutchik's Wheel of psychological emotions). Listener tracked their own heart rate and emotional level after 60 seconds of listening to each piece. Used 7 different film scores, each from different movies with different composers.</p> <p>Results There were significant differences between the physiological responses of musicians and non musicians. There were less significant but still promising differences between the emotional responses of musicians and non musicians.</p> <p>Conclusions/Discussion "Non musicians" (who had played for less than 4 years) did not have a significant physiological reactions to the music, though they were able to correctly identify the emotions present in each piece, except for that of tense/nervousness. "Serious musicians" (who had played for more than 4 years) had much higher physiological responses to the music (up to 12 bpm variations), and were able to identify similar emotions to those reported by the non musicians, except that they were able to correctly identify the tense/nervous emotion in three pieces.</p>	
Summary Statement Musicians and non musicians have significantly different emotional and physiological responses to film music.	
Help Received My psychology teacher helped me to design my experiment, and my music theory teacher assisted with my understanding of the theory behind my results.	