



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Maya B. Mathur	Project Number J0323
Project Title The Differential Effects of Visual vs. Auditory Distractions on Memory	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose was to investigate how performance in an auditory memory task is affected by visual and auditory distractions</p> <p>Methods/Materials A random series of letters was read aloud to the subject, who then either read or listened to another series of letters before being asked to recall the original series. The number of characters recalled correctly was recorded and analyzed statistically. (No special materials were required.)</p> <p>Results This study progressed in three stages: (1) Preliminary experiments determined that an optimal test stimulus for further memory testing would be a series of 12 letters. (2) When the effect of distraction was compared for all subjects grouped together, visual and auditory distractions seemed about equally effective. However, when the effect of both modes of distractions were compared in individual subjects, it was evident that some people were especially sensitive to one mode or the other. (3) This result lead me to investigate whether enhanced sensitivity to particular modes of distraction in some individuals might be related to deeper differences in cognition. Initial studies suggest that people who have demonstrated a definite predisposition toward visual tasks in their lives (professional visual artists) may be more sensitive to visual distraction than to auditory distraction.</p> <p>Conclusions/Discussion Contrary to my hypothesis, visual and auditory distractions were about equally effective in most subjects. This leads me to speculate that memory for auditory stimuli may occur in areas of the brain where those sensory inputs are more equally intermixed than they are in primary auditory cortex (for example, secondary association cortex). The observation that some people were especially sensitive to one mode of distraction or the other suggests that, in addition to the widely accepted idea of visual and auditory "learners," some people may also be visual or auditory "distractees." Mode of distractibility may be related to a person's fundamental cognitive "style." This may be an important factor to consider in designing teaching strategies.</p>	
Summary Statement This study shows that for most people, visual and auditory distractions had a similar effect on memory performance, but that certain individuals like artists may be especially sensitive to one mode of distraction.	
Help Received This study was my original idea and I performed the experiments and analyses on my own. My mother taught me how to use Microsoft PowerPoint software to create graphs.	