CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
S0325

Project Title
The Effects of Aging and Color on Visual Memory

Abstract

Objectives/Goals
This project explores the impact of aging and color on visual memory. This work was based upon a previous study which I did last year, which concluded colored objects were remembered with more accuracy by young subjects (age 13 to 18). This new study explores whether aging exhibits a similar measurable effect on visual memory. Thus the hypothesis was "The effect of color versus black and white images on visual memory will be more significant among older adults (over 55 years old) than on younger subjects (less than 20 years old).

Methods/Materials
This project used two samples, one young and one old to test the subject's ability to remember colored versus black and white objects. 52 subjects between the ages of 13 and 15 years of age and 26 subjects over the age of 55 were given a test consisting of 31 images. Each was allowed 60 seconds to memorize the objects. An instrument which required identification of previously viewed objects and allowed for scoring correctly remembered items as well as scoring items incorrectly remembered.

Results
The results of the study indicated that while color does enhance visual memory for both older and younger subjects, the effect of aging on visual memory was generally not significant, meaning that the positive effect of color on memory was statistically the same whether it was for younger or older subjects. However, it was true that older subjects made more errors identifying black and white objects than younger subjects.

Conclusions/Discussion
In general, the study results did not support the hypothesis, meaning that age did not have a significant effect on color visual memory. However, there was some support that color increased accuracy of perceptions because the younger subjects made significantly less errors when identifying black and white objects. The significance of these results is that color does enhance visual memory, and even supports the position that color decreases the likelihood of older people misperceiving information. Consequently, color should be used whenever communicating critical information where the benefit of color outweighs the increase in cost of producing color versus black and white visual information.

Summary Statement
Does color enhance visual memory more in older versus younger subjects.

Help Received
Father helped with statistics.