CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)

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Project Number

S0416

Project Title

Warped Words and the Stroop Effect

Abstract

Objectives/Goals

The delay in recognizing words printed in various colours is a well-documented phenomenon known as the Stroop effect. This particular anomaly is more prevalent with words to represent colours. In a variation on traditional Stroop testing methods, this experiment also tested modifications to how the words were shaped # forming the words into a clockwise circle, for example # to document any differences in recognition of the Stroop effect. The purpose of this experiment is to find if word shape lessens or compounds the Stroop effect. The aim of our testing is to see if it is possible to completely eliminate the Stroop effect in unbiased testing.

Methods/Materials

For our experiment, we gathered five groups of twenty people and tested them with seven word charts - two common Stroop tests, and five "warped word" variations. We asked our subjects to read the colour of each word on the chart as quickly as possible, without making a mistake. We timed each subject for their completion of each chart, and averaged their scores per chart into their respective groups of twenty.

Results

All of the tests with colours matching words - tests 1, 3, 5, and 7- show both little variation in completion time and relatively low completion time. Tests 2, 4, and 6, the non-matching tests, show a good deal of variation in completion time and relatively high completion time. The range completion for this data set is more than a minute # a full 67.7 seconds. This clearly documents the delay present in the Stroop effect. Warping the words in question reduced the Stroop effect by roughly 25% in all five of our tested data groups.

Conclusions/Discussion

Warping words definitively reduces the reaction of the Stroop effect. The effect created by the warping process shifts your mental priority to identifying the colour before identifying the word, thereby making it possible to circumvent the Stroop effect and greatly reduce the time it would otherwise add to colour recognition. While our results make clear that we did not completely remove the Stroop effect, they still show a visible reduction in its effect.

Summary Statement

In our project, we changed the shape of words to see if it will reduce or eliminate the Stroop Effect.

Help Received

Advice from William Schlegel, inspiration from www.sciencebuddies.org