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# Introduction

The Stroop Task is a classic measure of cognitive control and selective attention. In its most common form, participants are shown colour words (e.g., "RED," "BLUE," "GREEN") printed in coloured ink and are asked to name the ink colour, not read the word. The task includes congruent trials, where the word and ink colour match (e.g., "RED" in red ink), and incongruent trials, where they mismatch (e.g., "RED" in blue ink).

Incongruent trials create cognitive conflict, as the automatic process of reading the word interferes with naming the ink colour. This results in slower reaction times and more errors, known as the Stroop effect.

The Stroop Task is widely used to assess executive functions, particularly inhibitory control, the ability to suppress automatic or habitual responses in favour of goal-directed behaviour. It is sensitive to frontal lobe function and is commonly used in neuropsychological assessments of attention, brain injury, aging, and psychiatric conditions.

# Experimental Setup

## Joystick Based Experimental Setup

## LabBench I/O

## LabBench I/O with EEG recording

# Protocol

# Analysis

# Discussion