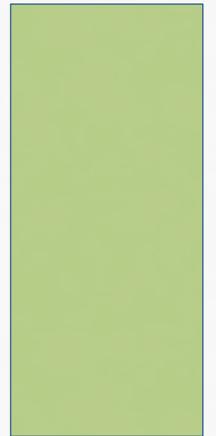


IN CLASS EXPERIMENT

STROOP TASK



AUTOMATED PROCESSES

- When you first learn anything, you will need to think carefully through each step of the process before it becomes automatic (i.e., Automatic Process).
 - For example, if you were tying your shoes for the very first time, you would need to think of each of the steps. Now, you hardly think about each step as you tie your shoe laces.
- Many behaviors can become automatic:
 - typing, reading, writing, bicycling, piano playing, driving, etc.
- *To explore the properties of automatized behaviors in cognitive psychology:*
 - *psychologists often put subjects in a situation in which an automatized response is in conflict with the desired behavior*

STROOP (1935)

- The **Stroop Effect** experiment demonstrates a well-known example of this type of influence.
- Stroop (1935) noted that
 - observers were slower to properly identify color of ink when the ink was used to write the color of another word.
 - For example, using red ink to spell the word GREEN.

GREEN

GREEN

- Observers are told to not pay any attention to the word names and simply report the color of the ink.
- However, this seems to be a nearly impossible task, as the name of the word seems to interfere with the observer's ability to report the color of the ink.

STROOP EFFECT

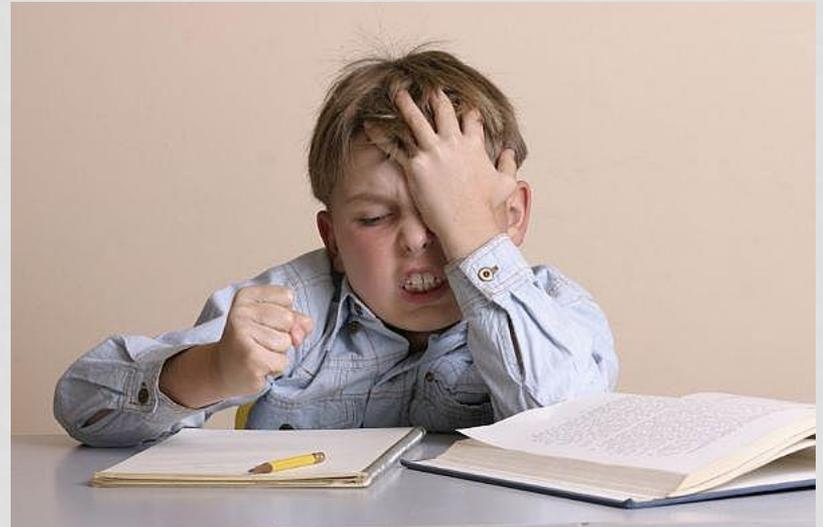
- A common explanation for the Stroop effect is that observers have automatized the process of reading.
- The words for the color names are always processed very quickly, regardless of the color of the ink used to spell the word.
- On the other hand, identifying colors is not a task that observers have to report on very often, and because it is not automatized it is slower.
- The fast and automatic processing of reading the word interferes with the reporting of the ink color.

STROOP TASK EXPERIMENT

- We will be conducting the Stroop experiment.
- Step 1: Gather raw data
 - Go to the drop down for this week on “Labs” webpage on the class website and click the “Take the Stroop Test!” button to take the test.
 - **Remember, try to name the color of the lettering and try NOT to read the words.**
 - **Control Condition:** Write down your reaction time for all words in the control condition (blue written in blue)
 - **Experimental Condition:** Write down your reaction time for all words in the experimental condition (“blue” written in red lettering)
 - Click the “Record Your Times!” button on the class website and enter your scores

STROOP TASK

- Step 2: Open the Worksheet for this assignment on our class Labs webpage and find the class Means for Each Condition
- Step 3: Answer the questions on your handouts about the variables used in your experiment.
- Step 4: Begin the APA write-up for your experiment
- Title Page
 - Abstract
 - Introduction
 - Methods
 - Participants
 - Materials
 - Procedure
 - Discussion
 - References



APA WRITE-UP

- Title Page
 - What's included?
- Abstract
 - Word limit?
 - State your hypothesis
- Introduction & References
 - Read and briefly summarize the article provided
 - What did the author's study do and what did he find?
 - Use your own words and make it precise and concise
 - State the purpose of the study
 - Re-State your hypothesis
- Methods
 - What's included?
 - Participants
 - Measures (Materials)
 - Procedure

SPSS: PAIRED SAMPLES T-TEST

- Open **IBM SPSS Statistics** on your computers
- Perform a **Paired Samples T-test**
 - **Analyze > Compare Means > Paired-Samples T-Test**
 - (For more detailed instructions on the statistical analysis, see class webpage [How-To-Statistics](#))
 - Select the variables Consistent Word/Color and Inconsistent Word/Color, and click the right-arrow to move them to the Paired Variables box
 - Click OK
 - Is there significance?

CALCULATE EFFECT SIZE (Cohen's d)

Effect Size in Paired Samples T-Test Using SPSS

Cohen's d

Small, Medium, Large Effects: .20, .50, .80

$$d = \frac{\text{Mean difference}}{\text{Standard deviation of the difference in scores}}$$

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	JUMP1 - JUMP2	-.03400	.03185	.00712	-.04891	-.01909	-4.773	19	.000

RESULTS

- **Use the Following Sentence for the Results Section in your paper, inserting your own scores:** “A paired-samples t-test indicated that scores were significantly higher for the Interfering Color Test ($M = 26.4$, $SD = 7.41$) than for the Non-interfering Color Test ($M = 18.0$, $SD = 9.49$), $t(721) = 23.3$, $p < .001$, $d = 0.87$.”
- **More examples of sentences to use for Writing Statistical Results:**
 - See [Statistics/Results Section](#) on the Toolbox page for help

DISCUSSION & REFERENCES

- Discussion
 - Did the result support your hypothesis?
 - Were the results consistent with past research?
 - What other variables should be examined or controlled?
 - Any limitations in terms of external validity?
- References
 - Should include only the references cited in the Introduction and/or Method sections.
 - Article to cite in your papers (**Use proper APA Format!**).
 - Use Stroop (1935) journal article (See class Labs webpage)