



# The Impact Emotion has on Recall

*Sadie-Marie Wright*

*Maria Rowlett*

Cleveland State University

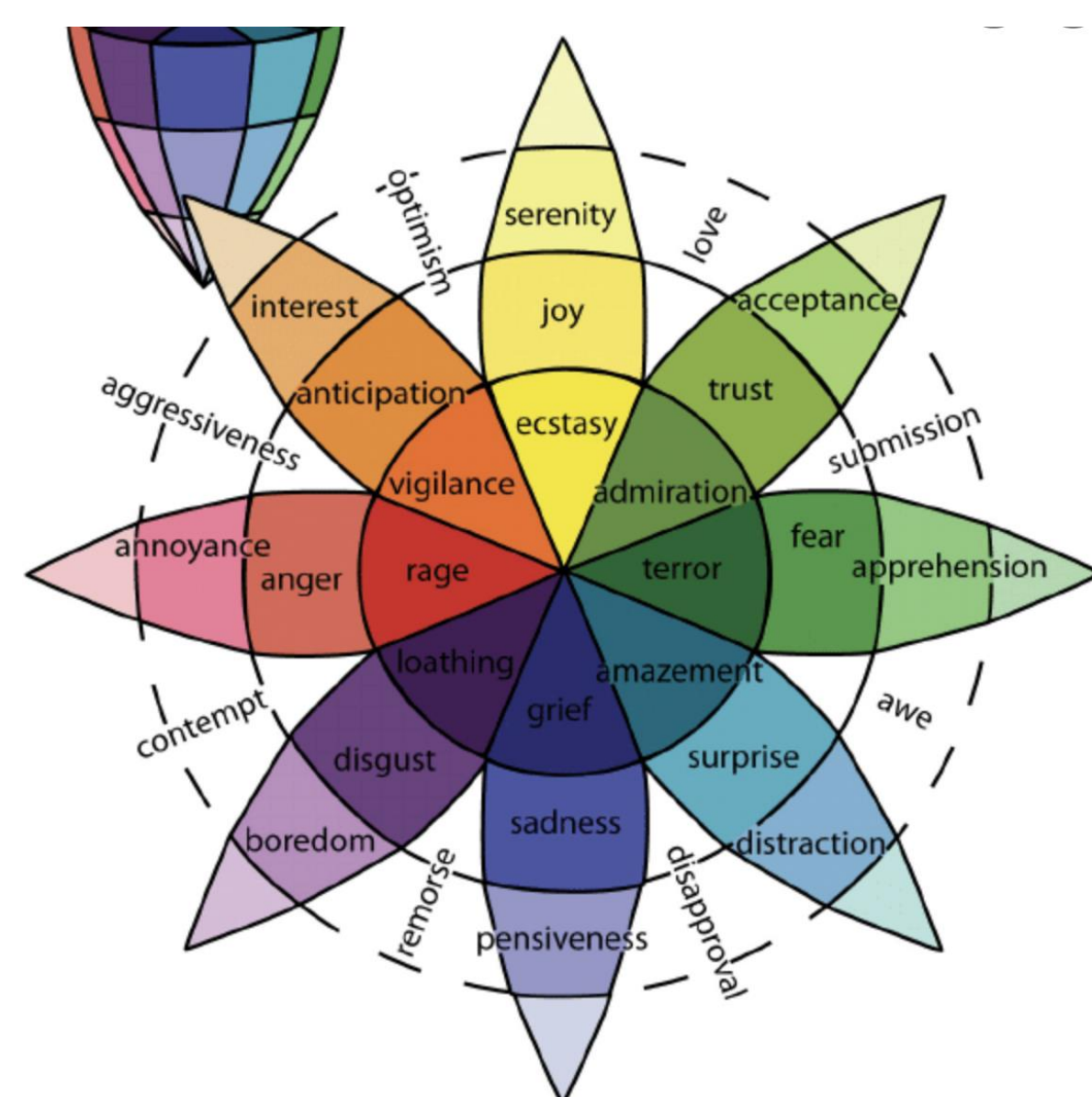
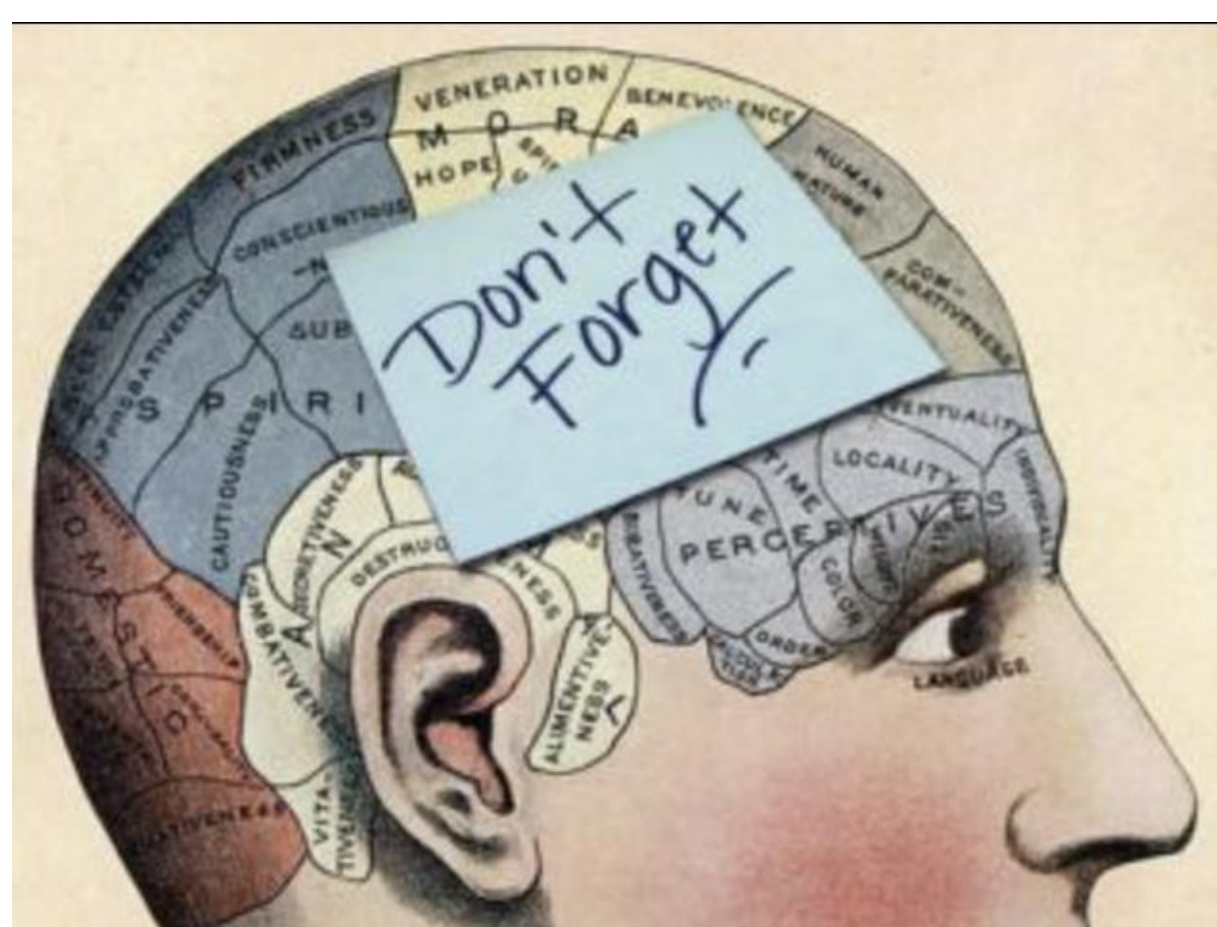


## Abstract

The relationship of how emotions impact the way a person remembers events has helped improve fields outside of psychology, such as criminal justice and biology. Most studies that explore emotions and recall have had inconclusive results due to factors such as participants being tasked with free recall in response to stimuli such as the study done by Gorlin et al., (2018). With that knowledge, the current study focused on a task of recall from a short list of words along with a direct stimulus in the form of an emotional or non-emotional passage with hopes that it would affect the short-term memory enough to result in lesser recollection amongst the group of participants who received the emotional stimuli passage. Sixty-four participants were recruited through email and social media, they received either the non-emotional passage or the emotional passage. An independent t-test was conducted to test whether participants that read the emotional passage recalled fewer words than those who read the non-emotional passage. The results, however, were found to be not significant. A limitation to this study was the sample size, and a larger number of participants is needed. Due to the study being conducted online over the summer months, finding an adequate number of participants proved to be very challenging. Future research should host a larger sample size to have a better chance for a significant finding.

## Introduction

- Emotion has been studied in relation to memory.
- Prior studies about emotion deal with the way people recall experiences in response to stimuli, while other studies aim to see how stimuli can alter the response to images.
- The current study will focus on the emotional impact that is given from a stimulus and see if that affects the number of words the participants can remember.



## Methods

- Sixty-four volunteers were recruited on social media platforms.
- Participant's demographics:  
Ages 18-69  
Race: 28.6% Caucasian, 66.7% African American, 3.2% Hispanic or Asian American, 1.6% undisclosed
- The participants were split into two groups  
Control group: N=29 participants  
Treatment group: N=34 participants
- Participants were asked to memorize 5 words.
- The control group read an *Emotional Stimuli None (ESN)* passage while the treatment group read the Emotional Stimuli Study (ESS) passage.
- Participants were asked to recall the memorized words
- The number of correctly recalled words were quantified and analyzed for statistical significance.

**SAND BOX DRY FREE STAR**

**Figure 1. Words participants were asked to memorize for this study.**

Participants were asked to memorize this words before reading a passage.

## Emotional Passage

*Just over a year and a half ago the tragic deaths of Kobe Bryant and his 13-year-old daughter Gianna, along with eight others, passed away in a helicopter crash in California. This Father's Day would be the second Father's Day that Bryant's other three children, Natalia, Capri, and Bianca Bryant, have endured without their father. Vanessa Bryant honored her late husband in a post on Father's Day calling him "the best girl dad".*

## Neutral Passage

*Water is the most valuable resource we as humans have, yet most people won't know certain facts about it. A gallon of water weighs about 8 pounds. Seventy percent of the human brain is made up of water. Hand washing dishes uses five times more gallons of water than an efficient dishwasher. Coffee uses more water to make than tea does. Hopefully at least one of these facts was of interest to you.*

**Figure 2. Passages used in the study.**

These two passages were presented to their respective groups with the emotional passage (E.) being presented to the treatment group and the neutral passage (NE.) was presented to the control group.

## Results

Group	N	Words recalled	Std. Deviation	Std. Error Mean
Non-Emotional	29	3.55	1.478	0.274
Emotional	34	3.47	1.619	0.278

t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
0.206	61	0.837	0.081	0.393

**Figure 3. Quantification of words recalled by participants after reading E or NE passages.**

*Upper Panel:* The number of correctly recalled words was measured, and a mean was calculated. *Lower Panel:* A t-test was performed to calculate statistical significance of the two means.

## Conclusions

There were no statistical differences in the number of correct recall responses between groups that read emotional or neutral passages before being tested.

Limitations to this study include sample size, the ease of word association between the selected words, and the method of self-reporting.

## Acknowledgements

I would like to thank the librarians, Mandi Goodsett and Theresa Nawalaniec, who guided me in searching for reference and articles.

I would like to thank the McNair Program for allowing me this opportunity and trusting me to conduct research in their program.

Funding: McNair Scholars Program