

DREAM TONES ANALYSIS

ANGER



SADNESS



FEAR



JOY



TENTATIVE



ANALYTICAL



CONFIDENT



“The interpretation of dreams is the royal road to a knowledge of the unconscious activities of the mind.”
— Sigmund Freud

By Mekdi Yilma
04/10/2021

Can the interpretation of dreams be
answered with data?

What kind of emotional responses can we
expect from our dreams?

Are dreams figments of our imaginations or
manifestations of who we are and our daily
experiences?



The aim of this analysis is to provide data-driven insight into dreams with data exploration and statistical hypothesis testing.

The background is a collage of various emotion cards. Each card features a specific emoji and a corresponding emotion label. The emotions shown include Tentative (green), Analytical (blue), Confident (brown), Sadness (grey), Fear (purple), Joy (yellow), Anger (red), and Wink (pink). The cards are arranged in a circular pattern, overlapping each other. The text is centered over this collage.

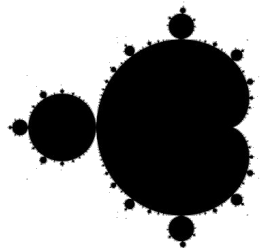
The aim of this analysis is to provide data-driven insight into dreams with **data exploration** and **statistical hypothesis testing**.

Web-Scraped The Database



BeautifulSoup

Applied NLP Analyzers

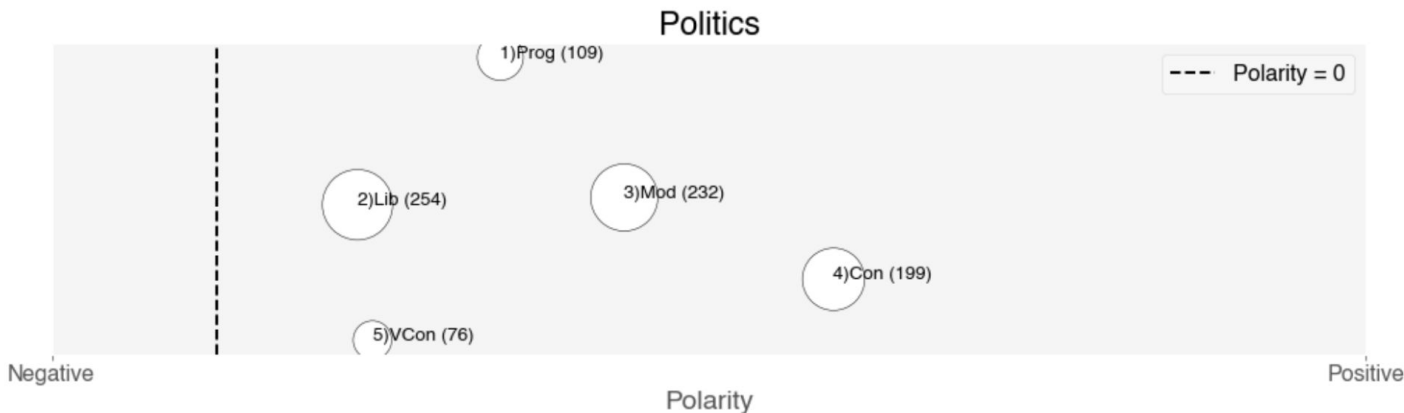
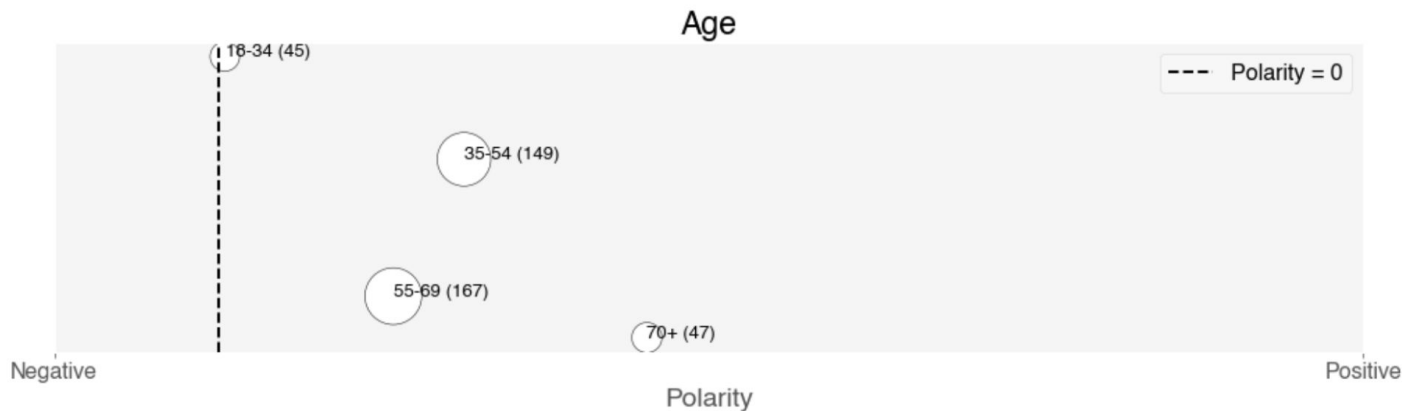


TextBlob

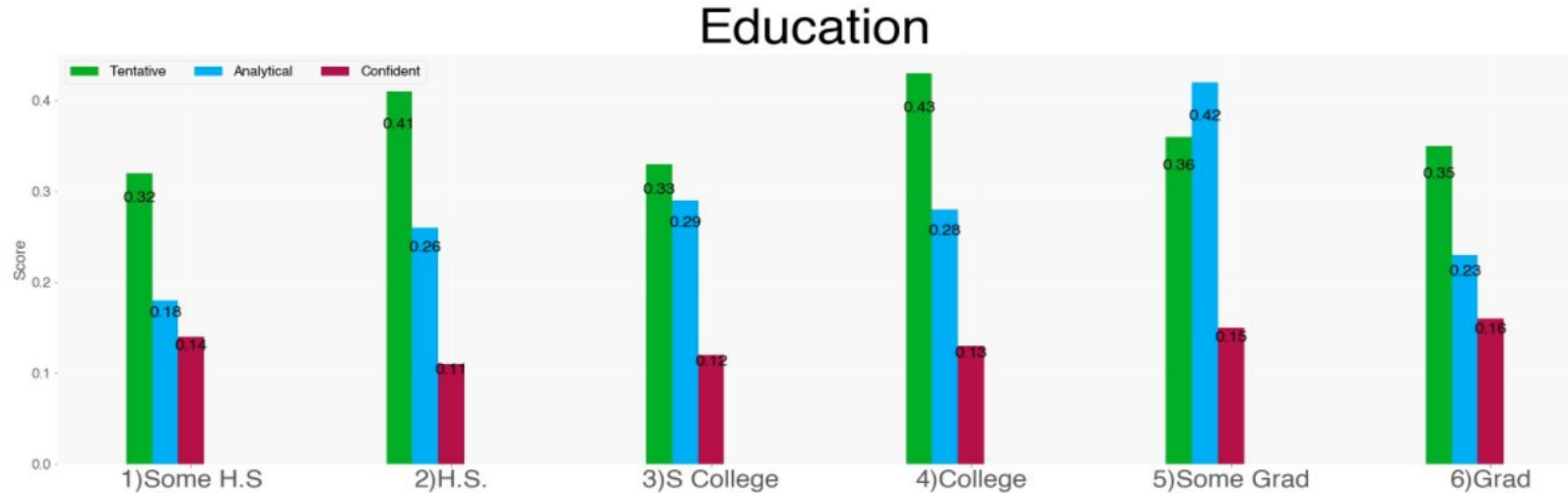
Performed Data Exploration



Average Polarity By Demographics Show Majority of Groups with Neutral or Slightly Positive Dreams



Higher Tentative Tone Across All Demographics; Higher Analytical Proportion Associated with those Higher Academic Achievements



Two-Tailed Z-Test Supports that Sad Dreams Proportions Are Different For Younger Adults vs Older Adults

Sad Dreams Proportion For Different Age Groups

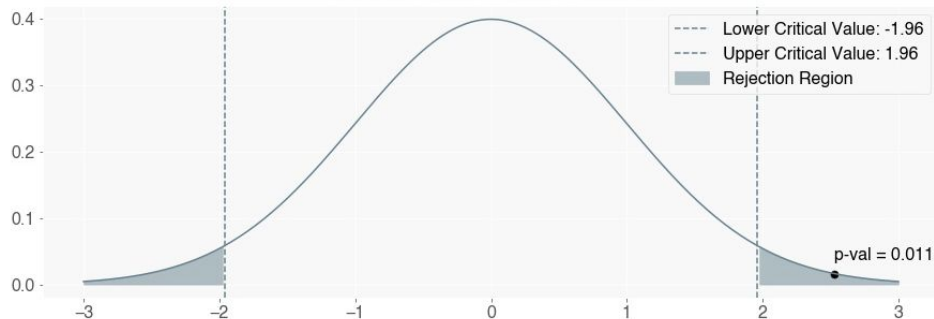


$$H_o: p_y - p_o = 0; p_y = p_o$$

$$H_a: |p_y - p_o| \neq 0;$$

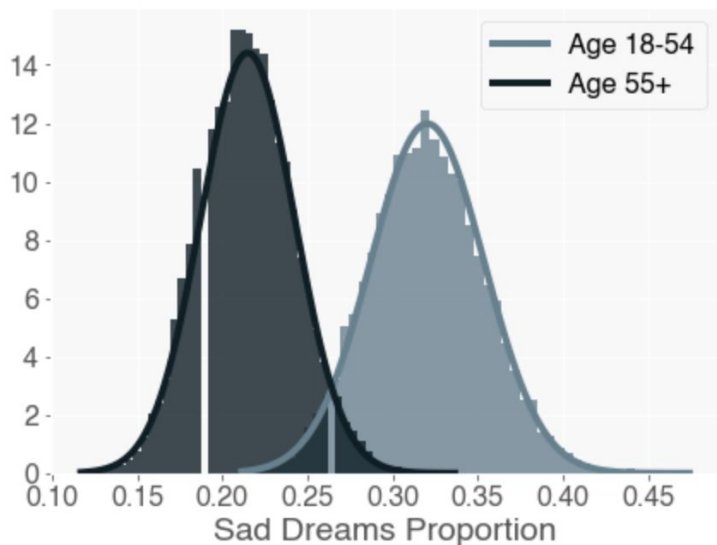
$$\alpha = 5\% \quad \alpha = 5\%/2 = 2.5\%$$

Two-Tailed Test Z-distribution



Right-Tailed Z-Test Further Demonstrates Younger Adults Have Higher Proportion of Sad Dreams than Older Adults

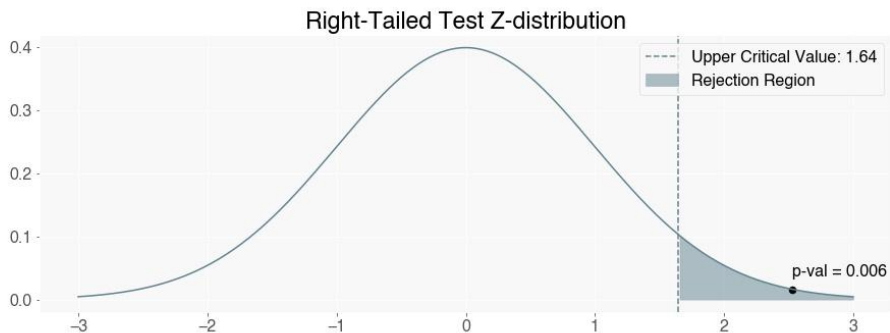
Bootstrap Sample Proportion Distribution for Two Age Groups



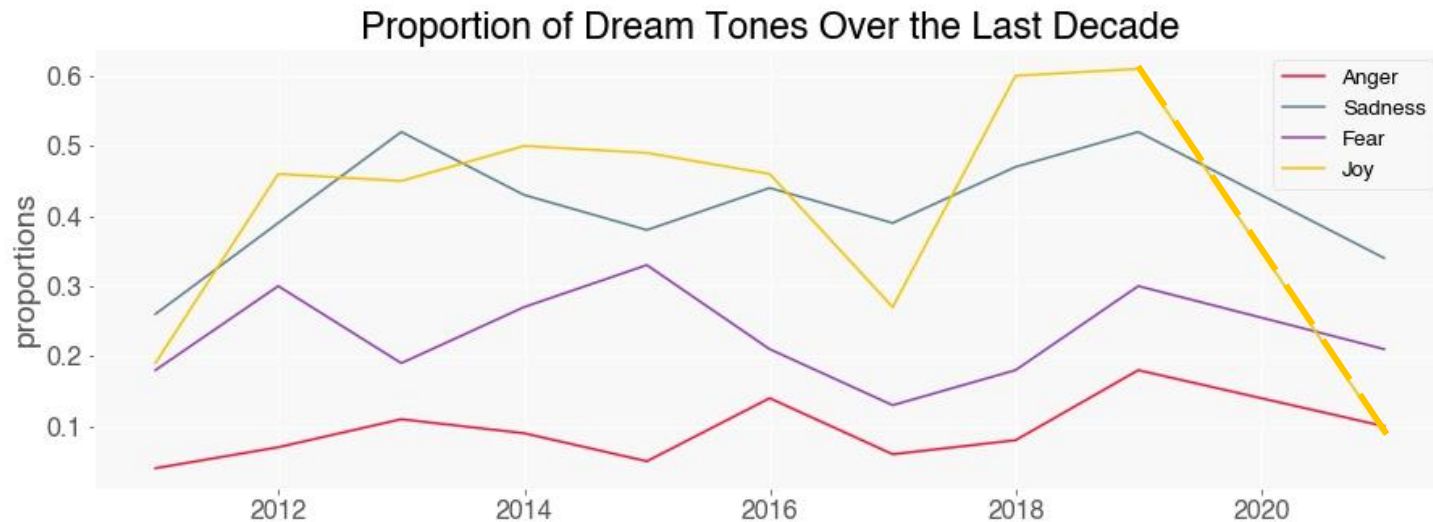
$$H_o: p_y \leq p_o$$


$$H_a: p_y > p_o$$

$$\alpha = 5\%/2 = 2.5\%$$



Proportions Relatively Maintained a Flat Rate Except for Joy Which Plummeted Starting Early 2020 From 61% to 9%



The background is a collage of various emotion cards and emojis. The cards are rectangular with rounded corners and feature a specific emotion name in a bold, sans-serif font at the top. Below the name is a corresponding emoji. The emotions shown include: TENTATIVE (green card, sad face), ANALYTICAL (blue card, thinking face), CONFIDENT (red card, sunglasses face), SADNESS (grey card, sad face), FEAR (purple card, scared face), JOY (yellow card, happy face), ANGER (red card, angry face), and SURPRISE (green card, surprised face). The cards are layered and tilted at various angles, creating a dynamic and colorful background.

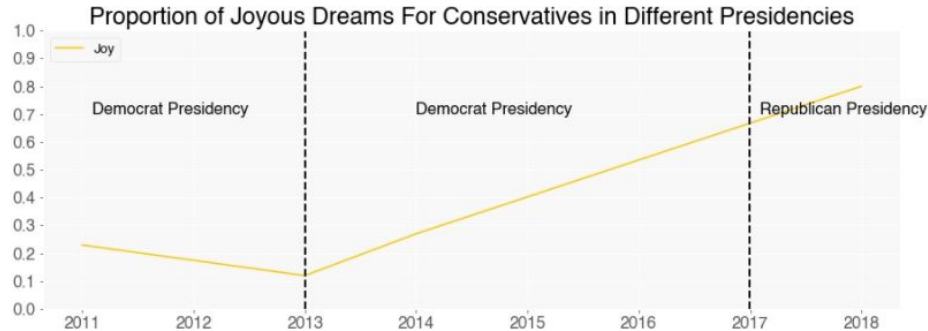
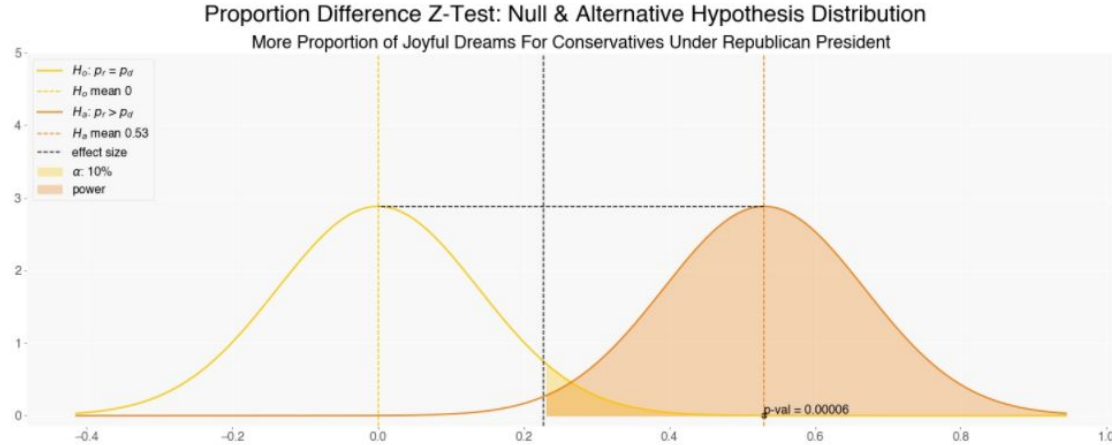
Test the joyous dreams difference in proportions for liberals and conservatives during different presidencies.

Conservatives Have Higher Proportion of Joy Dreams During Republican Presidency Than Democrat Presidency (Reject Null)

$$H_o: p_r \leq p_d$$

$$H_a: p_r > p_d$$

$$\alpha = 2.5\%$$

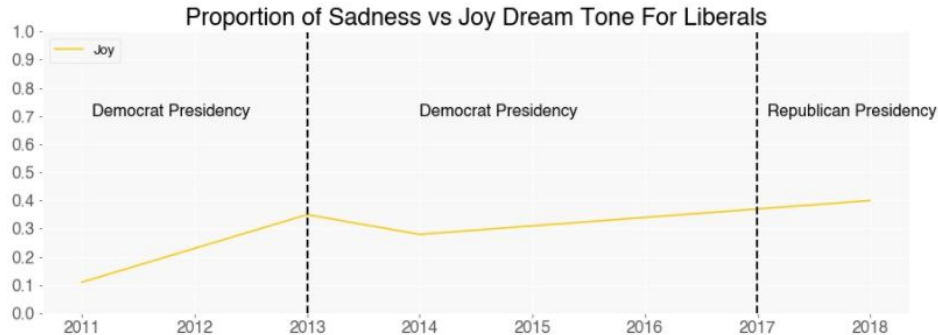
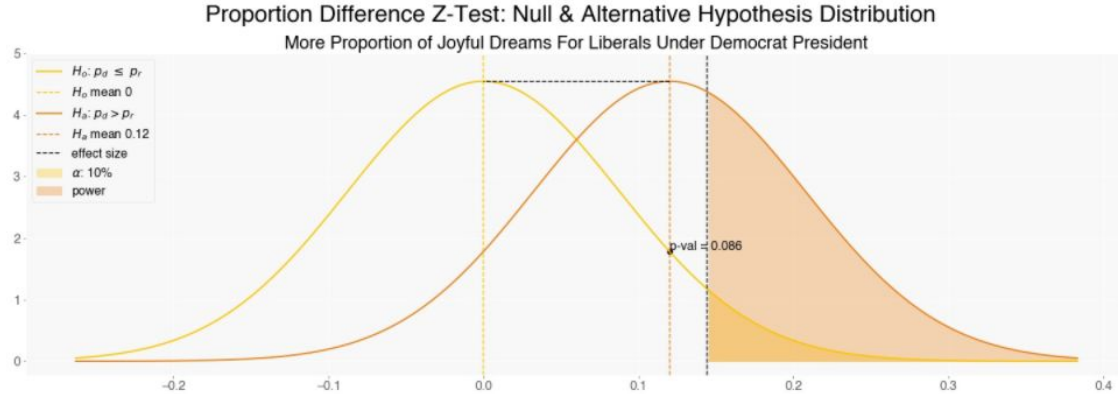


Liberals Had a Slightly Higher Proportion of Joyous Dreams in the Republican Presidency than under a Democrat (Fail to Reject Null)

$$H_0: p_d \leq p_r$$

$$H_a: p_d > p_r$$

$$\alpha = 2.5\%$$



The background is a dense, overlapping collage of various emotion cards and emojis. The cards are rectangular with rounded corners and feature a specific emotion name in a bold, sans-serif font at the top. Below the name is a corresponding emoji. The emotions represented include: Tentative (green card, green emoji with a questioning expression), Analytical (blue card, blue emoji with a hand on chin), Confident (red card, red emoji with sunglasses), Sadness (grey card, grey emoji with a sad face), Fear (purple card, purple emoji with wide eyes and a hand to the mouth), Joy (yellow card, yellow emoji with a wide smile), Anger (red card, red emoji with a furrowed brow and clenched teeth), and Analytical (blue card, blue emoji with a hand on chin). The cards are scattered across the entire frame, creating a vibrant and chaotic visual field.

Dreams are more than meaningless
flashing of fragmented thoughts.

Thank you for your time.