DHUM 1100 Text Analysis

Question:

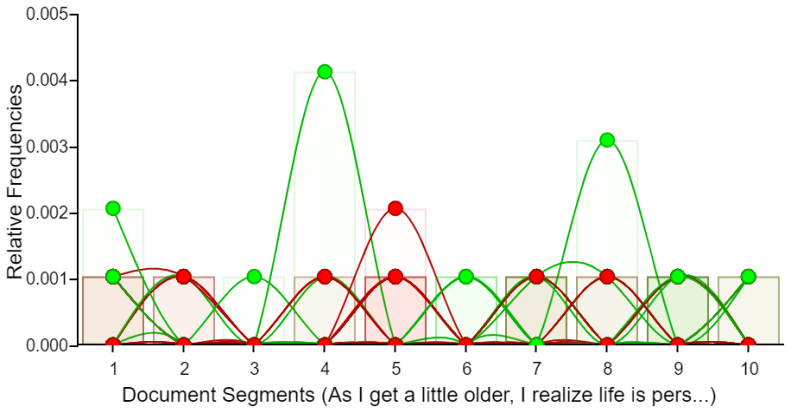
What themes are predominantly portrayed in Kendrick Lamar's lyrics, and do they convey a more positive or negative message?

Prediction:

We predict that Kendrick Lamar's lyrics will convey introspective themes. We also predict that the message will be more positive.

Using Voyant:

Positive/Negative Word Frequencies:



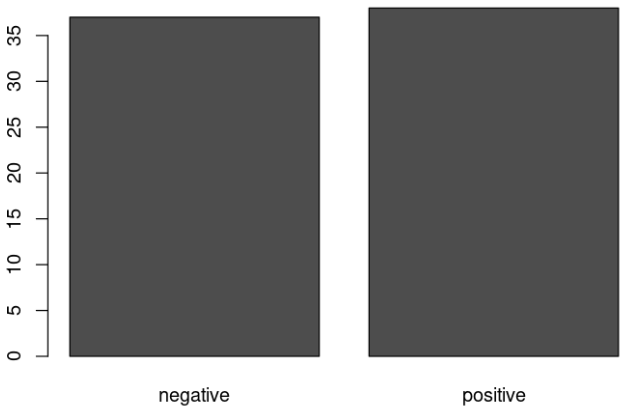
The document segments from Voyant show that a few positive words have a higher relative frequency than negative words. However, overall, positive and negative words hover at similar frequencies throughout the song, despite there being some significant spikes in the relative frequencies for positive words. This data slightly corroborates our hypothesis that there would be more positive lyrics than negative.

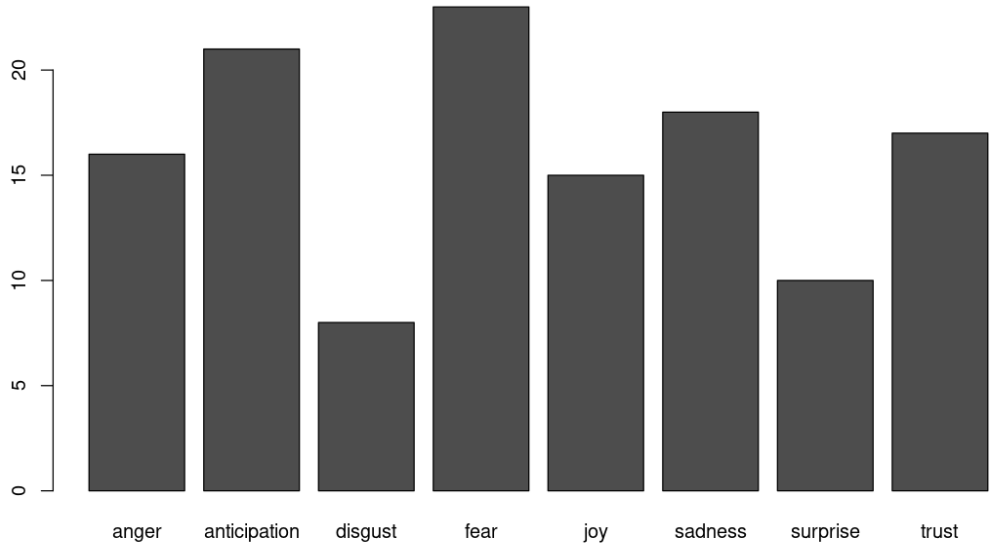
Wordcloud:

According to the word cloud, we can observe that words with neutral sentiments such as "want", "look", and "culture" appear quite frequently. However, we can also see some frequently occurring positive and negative words such as "friends", "love", "heaven", and "pain". Overall, this indicates that most of the words fall into the "neutral sentiment" category. Therefore, a word cloud in Voyant might not be the most effective method to analyze sentiment in this case. We can instead use R to obtain more insights into the data and answer our question more accurately.

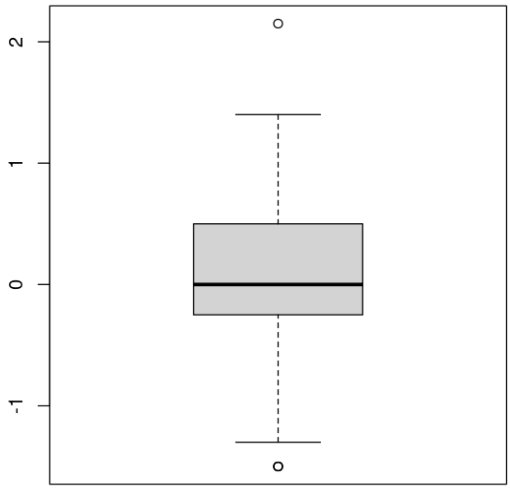
Using R:

Positive vs Negative Words:





Word Cloud + Sentiment Vector (Method: syuzhet):



Analysis:

Using the above code in posit cloud, the lyrics from Lamar's "The Heart Part 5" were analyzed with the "syushet" method for sentiment analysis, and the results are displayed in the figures above. In the first bar graph comparing the number of positive and negative lines in the song, it appears that the quantity of positive and negative lyrics is fairly balanced, unlike what we had predicted in our initial hypothesis. However, based on the sentiment box plot, although the

median lies roughly at zero, the variance in sentiment among positive words (from the median to the 75th percentile) appears to have a wider range. These results indicate that, in the song, the positive lyrics have greater fluctuations in intensity than the negative lyrics, despite both being the same in quantity. Additionally, in the second bar graph, the most frequent emotions are "fear," "anticipation," and "sadness," which somewhat align with our initial hypothesis that the lyrics in the song would be introspective. Many of the words in the word cloud support this claim, such as "feel," "felt," and "want," which are typically introspective in nature.

Sentiment Analysis Methodology & Reasoning

Sentiment_vector method ("syuzhet")

```
> sentiment_vector = get_sentiment(g_speech_sen, method = "syuzhet")
> sentiment_vector
  [1]  0.00  0.00  0.50  1.35  0.00 -1.10  0.00 -0.75 -0.75 -1.10  0.00  0.30 -0.75  0.00  0.00
 [16] -0.50  0.15  0.00 -0.40 -0.25  0.35  0.80  0.35  0.00 -0.25 -0.25  0.00  0.00  0.60  1.00
 [31]  0.00 -0.40  0.00 -0.35  0.00 -0.25  1.40  0.80 -0.80  0.00  0.80 -1.30  0.00  0.00  0.80
 [46]  0.10 -0.75 -0.50 -0.75  1.40 -1.50 -0.60  0.25  0.00  0.00 -0.75 -0.40  0.00 -0.25 -0.25
 [61]  0.00  0.00  0.00  0.00  0.00  0.00  1.30  0.00  0.75  1.20 -0.25  0.00 -0.75  0.25 -1.00
 [76]  0.00  0.40  0.50  0.00  0.75  0.00 -0.50 -1.00  0.00  0.00  0.00 -0.10  1.20  0.80  0.80
 [91]  0.50  0.60 -1.50  0.50 -1.15  0.50  0.55  2.15  0.00  0.75  0.00  1.00  1.25  0.00  0.00
[106]  0.25  0.50  1.25 -0.80  0.50  0.00 -1.50  0.00  1.00  0.00  0.00
```

Sentiment_vector method ("nrc")

```
> sentiment_vector = get_sentiment(g_speech_sen, method = "nrc")
> sentiment_vector
  [1]  0  0  0  1  0 -2  1 -2 -1  0  0 -1 -1  0  0 -1  1  0 -1 -2  1  0  0  0 -1 -1  0  0  1  1  0
 [32]  0 -1  0 -1 -1  1  0  0  0  0  0  0  0  1  0  0 -1 -1  1  0 -1  1  1  0  0  1  0 -1 -1  0  0
 [63]  0  0  0  0  0  0  1  0  1  0 -1  0  0  0  2  0  0  1  0 -1  0  0  0  0  1  1  0  0  1  0 -1
 [94]  2 -1 -1 -1  1  0  1  0  1  2  0  0  0  1  2 -1  2  0 -2  0  0  0  0
```

Sentiment_vector method ("bing")

```
> sentiment_vector = get_sentiment(g_speech_sen, method = "bing")
> sentiment_vector
  [1]  0  0  1  2  0 -2 -1 -1 -1 -2  0  0 -1  0  0 -1  0  0  0  0 -1  0 -1  0  0  0  0  0  0  1  0
 [32]  0  0 -1  1  1  0  1 -1  0  0 -1  0  0  0 -1 -3  0 -1  0 -1  0  0  0  0 -1 -1  0  0  0  0  0
 [63]  0  0  0  0  1  0  1  1  0  0 -1 -1 -1  0  1  1  0  1  0  0 -1  0  0  0 -1  1  1  1  0  1 -2
 [94]  0 -1 -1  1  1  0  1  0  2  2  0  0  0  1  1  0 -1  0 -2  0  1  0  0
```

Sentiment_vector method ("afinn")

```
> sentiment_vector = get_sentiment(g_speech_sen, method = "afinn")
> sentiment_vector
  [1]  0  0  2  3  0 -4  0 -3 -2  0  0 -3 -2  0  0 -2 -4  0  0 -5  0  0  1  1  1  1  0  0  0  2  0
 [32] -1  0 -3 -5  0  1  0 -6  0  0 -2  0  0  0  0 -3 -1 -2  1 -4  0 -1 -1  0 -2 -4  1  1  1  0  0
 [63]  0  0  0  0  3  0  2  2  1  0 -3 -1  0  0  1  3  0  3  0 -1 -2  1  0  0  0  2  2  2  3  0  0
 [94]  1 -2 -1 -1  5  2  2  0  5  1  0  0  1  0  3  0  0  2 -5  0  2  0  1
```

The sentiment analysis method used in our analysis was “Syuzhet”. Syuzhet sets itself apart from other sentiment analysis tools like Bing, NRC, and AFINN with its sophisticated approach. While the others mainly rely on matching words in lists to gauge sentiment, Syuzhet delves deeper. It considers how words are used together and the overall context of a sentence, leading to a more accurate understanding of sentiment. Additionally, the quantification of sentiment is more accurate since the model includes decimal numbers to quantify emotions and sentiment. The others strictly use integer whole numbers, making the data more discrete. Given the amount of subjectivity involved in sentiment analysis and the quantification of abstract feelings and emotions into data, more continuous data is easier to analyze and more meaningful to interpret.

Conclusion:

Lamar's lyrics in "The Heart Part 5" do not lean entirely towards a decisively positive or negative perspective but rather present a realistic portrayal of life's multifaceted experiences. By addressing topics such as racial inequality, personal accountability, and the potential for redemption and change, Lamar encourages listeners to reflect on their own lives and the wider societal context. This balanced approach underscores the power of introspection and the possibility of transformation, suggesting that while acknowledging pain and injustice is crucial, so is the belief in the potential for positive change. However, he does seem to have a higher frequency of positive words found in his lyrics which prove his message is inspirational and positive rather than negative.