

Sentiment Analysis of Star Wars (4-6) Movie Scripts

Contents

1	Dependencies	1
2	Reading in clean data	1
3	Tokenize and remove stop words	1
4	Check which sentiment lexicon categorizes most words	2
5	Visualisations of sentiments	3
5.1	Set theme for all plots	3
5.2	Create dataset with all NRC-categorised script words	3

1 Dependencies

```
library(tidyverse)
library(tidytext)
```

2 Reading in clean data

```
sw_scripts <- read_csv("clean_data/original_sw_trilogy.csv")
```

3 Tokenize and remove stop words

I will use single words as my token as I am interested in the sentiments of words.

```
sw_tokens <- sw_scripts %>%
  unnest_tokens(
    word,
    dialogue
  ) %>%
  anti_join(stop_words)

sw_tokens
```

4 Check which sentiment lexicon categorizes most words

Before analysing the sentiment of the text, I want to check which lexicon is able to categorise/rate most words.

Available lexicons in `tidytext::get_gentiments()`:

- **Bing**
 - 2 categories: positive or negative
- **AFINN**
 - 11 ratings: integer between -5 (negative) and +5 (positive)
- **Loughran**
 - 6 ratings: negative, positive, litigious, uncertainty, constraining, or superfluous
- **NRC**
 - 10 categories: 8 basic emotions (anger, fear, anticipation, trust, surprise, sadness, joy, or disgust) and 2 sentiments (negative or positive)

```
unique_words <- sw_tokens %>% distinct(word)

# available lexicons in tidytext::get_sentiments()
lexicons <- c("bing", "afinn", "loughran", "nrc")

# create list of joined datasets with available lexicons
nested_df <- lexicons %>%
  map(~left_join(unique_words, get_sentiments(.), by = "word"))

# attach lexicon names to list
names(nested_df) <- lexicons

for (lexicon in lexicons){

  # 2nd element is sentiment category or rating
  sentiments <- nested_df[[lexicon]][[2]]

  # count all values without attached sentiment
  missing <- sum(is.na(sentiments))

  print(str_glue("{lexicon}: {missing} uncategorised words"))

}
```

```
## bing: 1930 uncategorised words
## afinn: 2018 uncategorised words
## loughran: 2170 uncategorised words
## nrc: 1690 uncategorised words
```

Seems like the NRC lexicon is able to categorise most words, so I will use it for my sentiment analysis.

5 Visualisations of sentiments

5.1 Set theme for all plots

```
theme_set(theme_minimal())
```

5.2 Create dataset with all NRC-categorised script words

```
sw_sentiments <- sw_tokens %>%  
  inner_join(get_sentiments("nrc"), by = "word")
```

```
sw_sentiments %>%  
  filter(sentiment == "anger") %>%  
  group_by(character) %>%  
  summarise(anger_count = n()) %>%  
  ungroup() %>%  
  arrange(desc(anger_count)) %>%  
  slice_head(n = 10) %>%  
  ggplot(aes(  
    x = reorder(character, anger_count),  
    y = anger_count,  
    fill = anger_count == max(anger_count))  
  ) +  
  geom_col() +  
  coord_flip() +  
  labs(  
    x = NULL,  
    y = "Number of words with angry sentiment",  
    title = "Which Star Wars character expresses most anger?",  
    subtitle = "Data from the original trilogy (Episodes 4-6)"  
  ) +  
  scale_fill_manual(values = c(`TRUE` = "red", `FALSE` = "grey50"), guide = F)
```

Which Star Wars character expresses most anger?

Data from the original trilogy (Episodes 4–6)

