Sentiment-Analysis.R

karag

2023-08-03

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

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.2     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.0
## v ggplot2   3.4.2     v tibble    3.2.1
## v lubridate 1.9.2     v tidyr     1.3.0
## v purrr     1.0.1
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(tidyr)
library(ggplot2)
library(janeaustenr)
library(stringr)
library(reshape2)
```

```
##
## Attaching package: 'reshape2'
##
## The following object is masked from 'package:tidyr':
##
##     smiths
```

```
library(wordcloud)
```

```
## Loading required package: RColorBrewer
```

```
sentiments
```

```
## # A tibble: 6,786 x 2
##    word        sentiment
##    <chr>       <chr>
##  1 2-faces     negative
##  2 abnormal    negative
##  3 abolish     negative
##  4 abominable  negative
##  5 abominably  negative
##  6 abominate   negative
##  7 abomination negative
##  8 abort       negative
##  9 aborted     negative
```

```
## 10 aborts      negative
## # i 6,776 more rows
```

```
get_sentiments("bing")
```

```
## # A tibble: 6,786 x 2
##    word        sentiment
##    <chr>       <chr>
##  1 2-faces     negative
##  2 abnormal    negative
##  3 abolish     negative
##  4 abominable  negative
##  5 abominably  negative
##  6 abominate   negative
##  7 abomination negative
##  8 abort       negative
##  9 aborted     negative
## 10 aborts      negative
## # i 6,776 more rows
```

```
tidy_data <- austen_books() %>%
  group_by(book) %>%
  mutate(linenumber = row_number(),
         chapter = cumsum(str_detect(text, regex("^chapter [\\divxlc]",
                                                 ignore_case = TRUE)))) %>%
  ungroup() %>%
  unnest_tokens(word, text)


positive_senti <- get_sentiments("bing") %>%
  filter(sentiment == "positive")


tidy_data %>%
  filter(book == "Emma") %>%
  semi_join(positive_senti) %>%
  count(word, sort = TRUE)
```

```
## Joining with `by = join_by(word)`
```

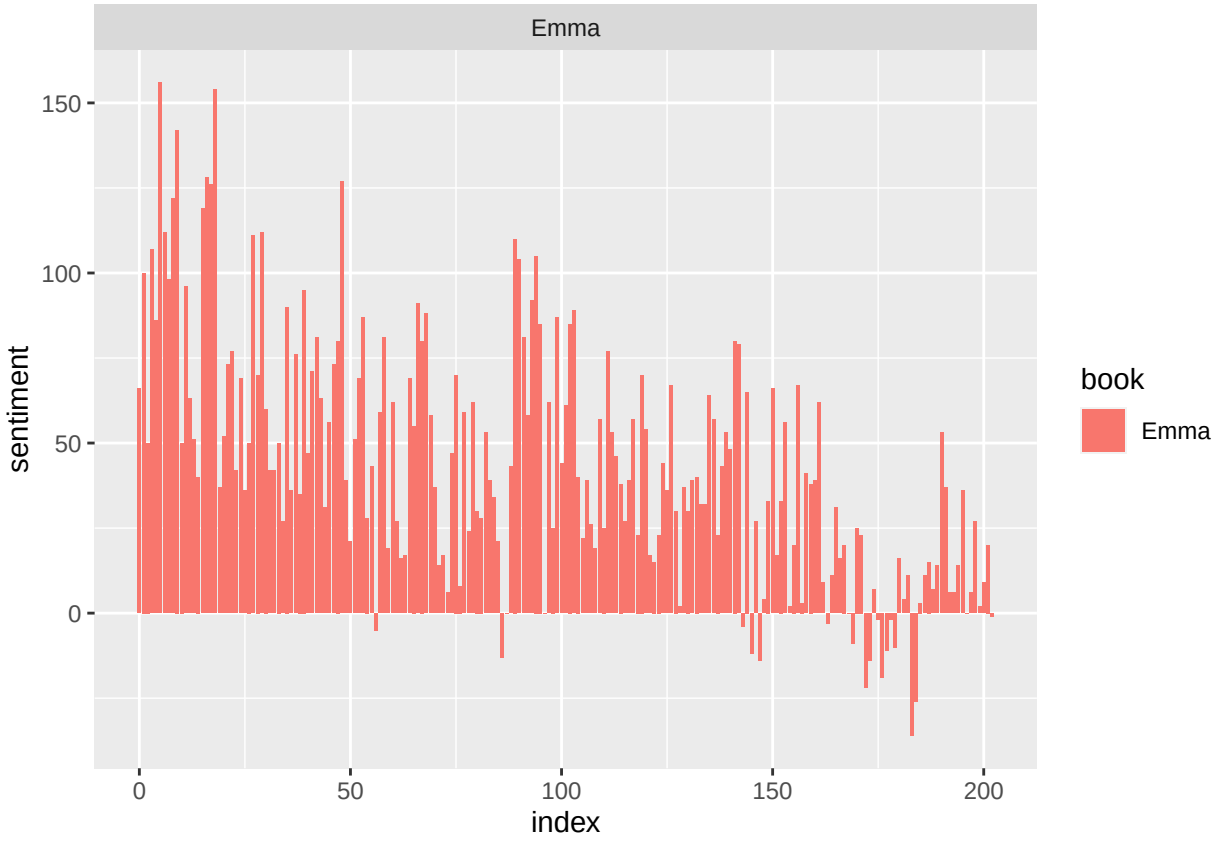
```
## # A tibble: 668 x 2
##    word          n
##    <chr>     <int>
##  1 well        401
##  2 good        359
##  3 great       264
##  4 like        200
##  5 better      173
##  6 enough      129
##  7 happy       125
##  8 love        117
##  9 pleasure    115
## 10 right        92
## # i 658 more rows
```

```
bing <- get_sentiments("bing")


Emma_sentiment <- tidy_data %>%
  inner_join(bing, relationship = "many-to-many") %>%
  count(book = "Emma" , index = linenumber %/% 80, sentiment) %>%
  spread(sentiment, n, fill = 0) %>%
  mutate(sentiment = positive - negative)
```

```
## Joining with `by = join_by(word)`
```

```
ggplot(Emma_sentiment, aes(index, sentiment, fill = book)) +
  geom_bar(stat = "identity", show.legend = TRUE) +
  facet_wrap(~book, ncol = 2, scales = "free_x")
```




```
counting_words <- tidy_data %>%
  inner_join(bing, relationship = "many-to-many") %>%
  count(word, sentiment, sort = TRUE)
```

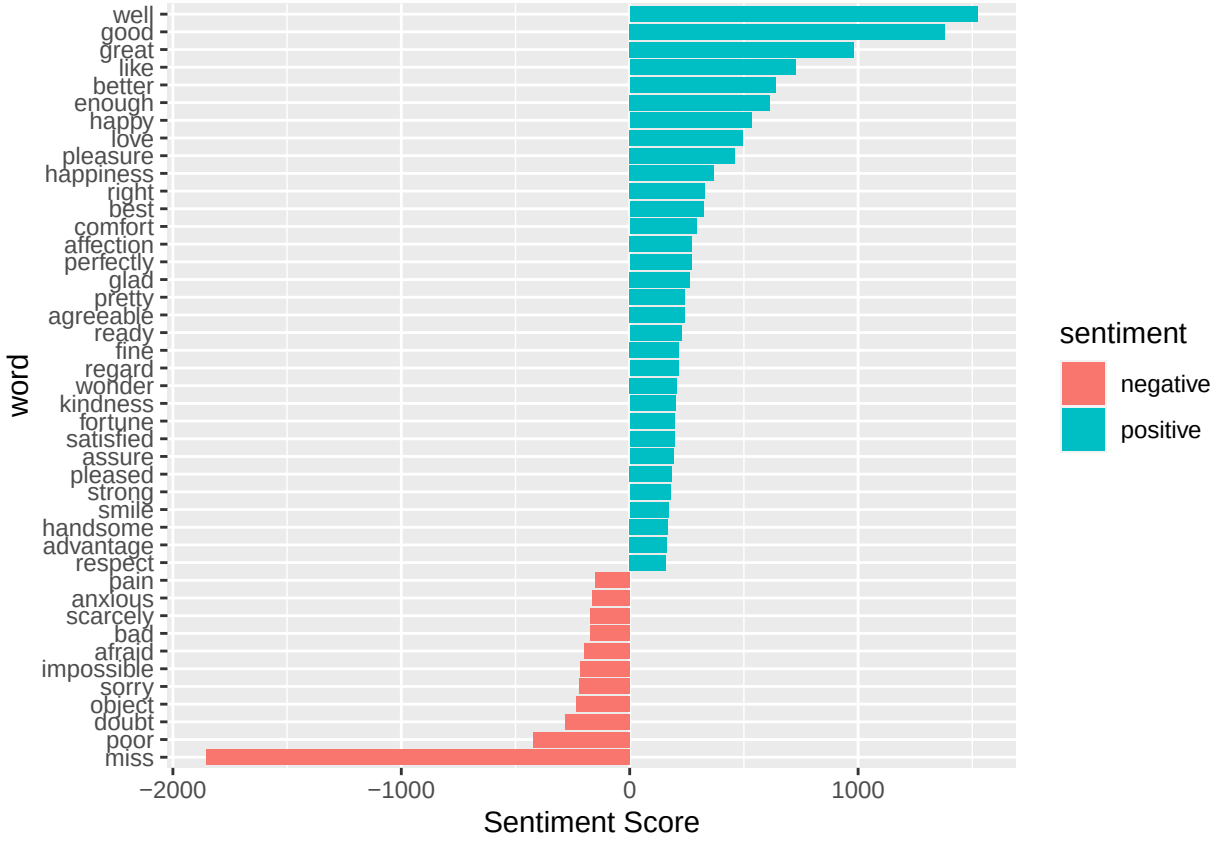
```
## Joining with `by = join_by(word)`
```

```
head(counting_words)
```

```
## # A tibble: 6 x 3
##   word   sentiment     n
##   <chr>  <chr>     <int>
## 1 miss   negative   1855
## 2 well   positive   1523
```

```
## 3 good   positive   1380
## 4 great  positive    981
## 5 like   positive    725
## 6 better positive    639
```

```
counting_words %>%
  filter(n > 150) %>%
  mutate(n = ifelse(sentiment == "negative", -n, n)) %>%
  mutate(word = reorder(word, n)) %>%
  ggplot(aes(word, n, fill = sentiment))+
  geom_col() +
  coord_flip() +
  labs(y = "Sentiment Score")
```




```
tidy_data %>%
  inner_join(bing, relationship = "many-to-many") %>%
  count(word, sentiment, sort = TRUE) %>%
  acast(word ~ sentiment, value.var = "n", fill = 0) %>%
  comparison.cloud(colors = c("red", "dark green"),
                   max.words = 100)
```

```
## Joining with `by = join_by(word)`
```

negative

positive