Sense and Sensibility Wordcloud

Andrew Innes

October 30, 2017

Abstract

In this article we construct a wordcloud, using the tidytext R package, for Jane Austen's Sense and Sensibility.

Sense and Sensibility is a novel by Jane Austen, published in 1811[1]. Below we construct a wordcloud for the most common words appearing in the novel.

1 The Jane Austen Package

There is a relatively new package for R, janeaustenr, that gives one access to all of the novels written by Jane Austen (Silge and Robinson, 2017). One first has to install this package and bring it in with library. You may then call the following function and store the result. The result will be a data frame.

```
library(janeaustenr)
sns<-austen_books()
```

This dataframe has two columns, one for each line in Austen's novels, and one for indicating which book the line is from. Let's first filter, using dplyr, so that we have only the lines from Sense and Sensibility:

```
library(dplyr)
sns<-sns%>%
  filter(book == 'Sense & Sensibility')
head(sns)
```

```
## # A tibble: 6 x 2
##                    text                book
##                   <chr>              <fctr>
## 1 SENSE AND SENSIBILITY Sense & Sensibility
## 2                       Sense & Sensibility
## 3        by Jane Austen Sense & Sensibility
## 4                       Sense & Sensibility
## 5               (1811) Sense & Sensibility
## 6                       Sense & Sensibility
```

[1] The novel was published anonymously.

Now we are ready for some data cleaning.

2 Some Data Cleaning

We would like to remove all of the 'Chapter' lines. We can use dplyr again, along with the package stringr.

```
library(stringr)
sns<-sns%>%
  filter(!str_detect(sns$text,'^CHAPTER'))
```

Next, we would like to remove the front matter. By inspection, we have determined that the front matter ends on line 11. Therefore we can redefine sns to begin on line 12:

```
sns<-sns[12:12574,]
```

3 The Wordcloud

To make the wordcloud, we first have to break up the lines into words. We can use a function from the tidytext package for this:

```
library(tidytext)
words_df<-sns%>%
  unnest_tokens(word,text)

words_df

## # A tibble: 119,850 x 2
##                   book     word
##                 <fctr>    <chr>
##  1 Sense & Sensibility      the
##  2 Sense & Sensibility   family
##  3 Sense & Sensibility       of
##  4 Sense & Sensibility dashwood
##  5 Sense & Sensibility      had
##  6 Sense & Sensibility     long
##  7 Sense & Sensibility     been
##  8 Sense & Sensibility  settled
##  9 Sense & Sensibility       in
## 10 Sense & Sensibility   sussex
## # ... with 119,840 more rows
```

We can remove the common, unimportant words with the stop_words data frame and some dplyr:

```
words_df<-words_df%>%
  filter(!(word %in% stop_words$word))

words_df
```

```
## # A tibble: 36,225 x 2
##                   book      word
##                 <fctr>     <chr>
##  1 Sense & Sensibility    family
##  2 Sense & Sensibility  dashwood
##  3 Sense & Sensibility   settled
##  4 Sense & Sensibility    sussex
##  5 Sense & Sensibility    estate
##  6 Sense & Sensibility residence
##  7 Sense & Sensibility   norland
##  8 Sense & Sensibility      park
##  9 Sense & Sensibility    centre
## 10 Sense & Sensibility  property
## # ... with 36,215 more rows
```

Now, we need to calculate the frequencies of the words in the novel. Again, we can use standard dplyr techniques for this:

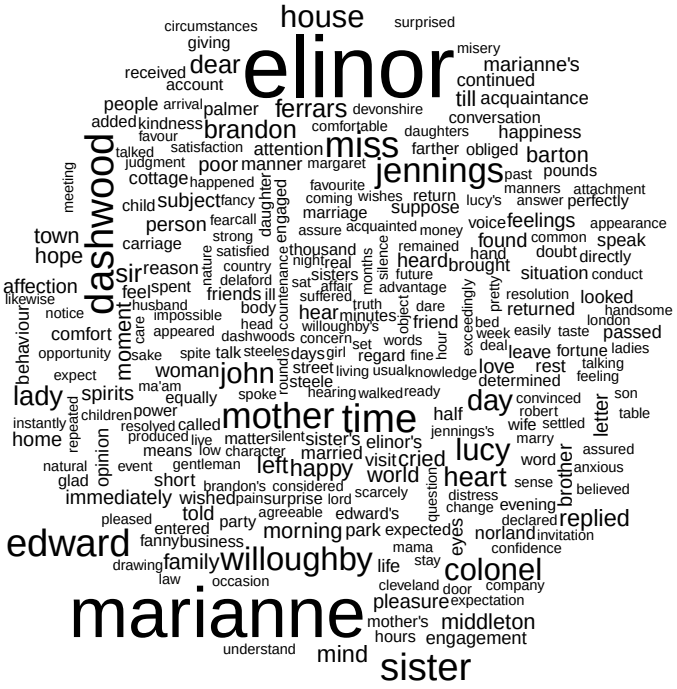
```
word_freq<-words_df%>%
  group_by(word)%>%
  summarize(count=n())

word_freq
```

```
## # A tibble: 5,844 x 2
##          word count
##         <chr> <int>
##  1          1     1
##  2        200     1
##  3      70001     1
##  4  abandoned     1
##  5  abatement     1
##  6  abbeyland     1
##  7      abhor     1
##  8   abhorred     2
##  9 abhorrence     4
## 10  abilities     9
## # ... with 5,834 more rows
```

Finally, it's time to generate the wordcloud:

```
library(wordcloud)
wordcloud(word_freq$word,word_freq$count,min.freq = 25)
```



References

Silge, J. and Robinson, D. (2017). *Text Mining with R: A Tidy Approach*. O'Reilly Media.

Wickham, H. and Grolemund, G. (2017). *R for Data Science: Import,Tidy, Transform, and Model Data*. O'Reilly Media.