Task 3

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Task 3: sentence-level analysis

Tnum

Because test2 space is too busy, I use test3 space. The first result below is my tnum space "carroll/alice". The second result below is the tnum data frame (a part of it) I got.

```
##  [1] ""                                  "lewiscarrol/alice"
##  [3] "carrol/alice"                      "carroll/alice"
##  [5] "elisa/the_call_of_the_wild"        "handing/hw4"
##  [7] "zara/hw4"                          "handing/sea"
##  [9] "zara/A4"                           "zara/a4"
## [11] "elisa/wild"                        "dostoevsky/hw4"
## [13] "dostoevsky/crime_and_punishment" "handing/game1"
## [15] "handing/game2"                     "sisitzky/scarlet"
## [17] "william/test3"                     "zara/homework4"
## [19] "zara/submission4"
```

```
##                                                 subject property
## 2  carroll/alice/section:0000/paragraph:0008/sentence:0002     text
## 3  carroll/alice/section:0000/paragraph:0008/sentence:0003     text
## 4  carroll/alice/section:0000/paragraph:0008/sentence:0004     text
## 5  carroll/alice/section:0000/paragraph:0008/sentence:0005     text
## 6  carroll/alice/section:0000/paragraph:0008/sentence:0006     text
## 7  carroll/alice/section:0000/paragraph:0008/sentence:0007     text
## 8  carroll/alice/section:0000/paragraph:0008/sentence:0008     text
## 9  carroll/alice/section:0000/paragraph:0008/sentence:0009     text
## 10 carroll/alice/section:0000/paragraph:0008/sentence:0010     text
## 11 carroll/alice/section:0000/paragraph:0008/sentence:0011     text
## 12 carroll/alice/section:0000/paragraph:0008/sentence:0012     text
##                                    string.value
## 2              "Down the Rabbit-Hole  CHAPTER II."
## 3                "The Pool of Tears  CHAPTER III."
## 4     "A Caucus-Race and a Long Tale  CHAPTER IV."
## 5  "The Rabbit Sends in a Little Bill  CHAPTER V."
## 6         "Advice from a Caterpillar  CHAPTER VI."
## 7                   "Pig and Pepper  CHAPTER VII."
## 8                 "A Mad Tea-Party  CHAPTER VIII."
## 9        "The Queen's Croquet-Ground  CHAPTER IX."
## 10           "The Mock Turtle's Story  CHAPTER X."
## 11            "The Lobster Quadrille  CHAPTER XI."
## 12            "Who Stole the Tarts?  CHAPTER XII."
```

sentimentr

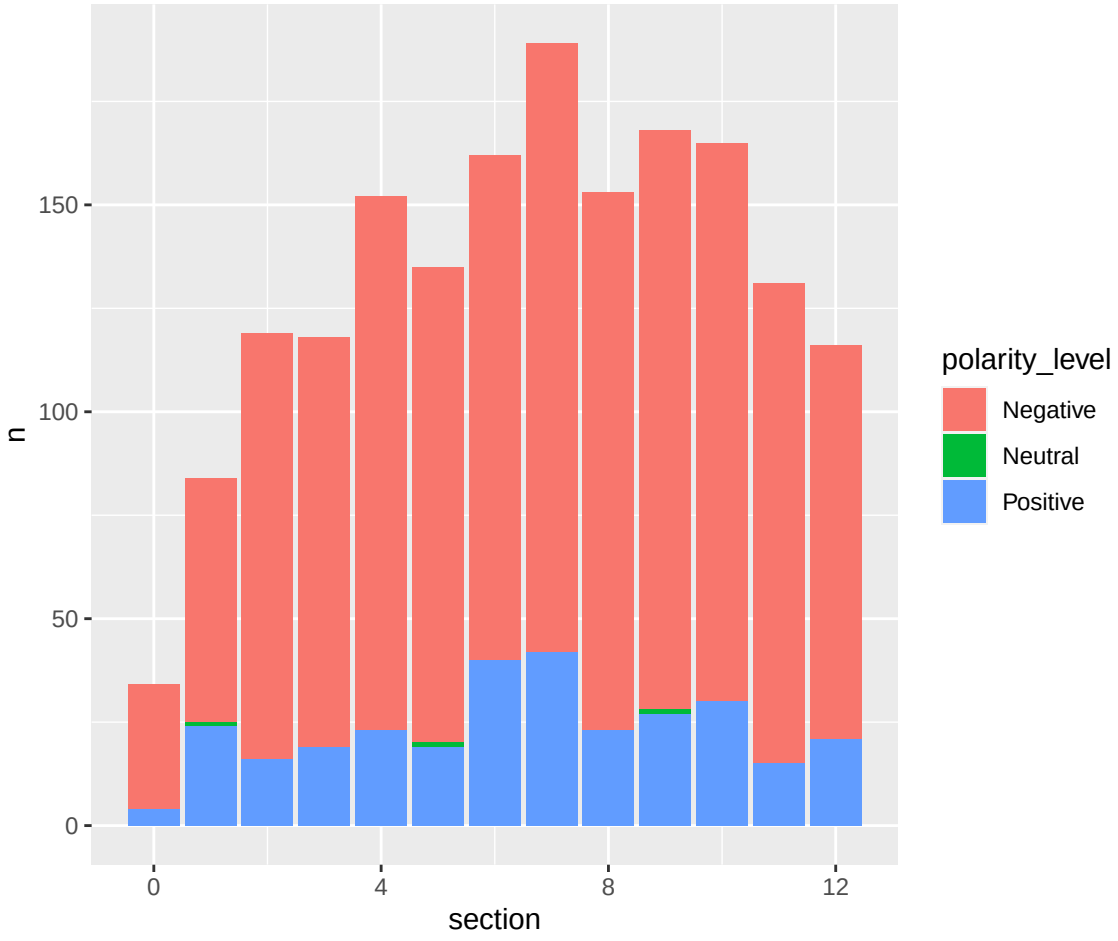


Figure 1: stack plot for each chapter

Figure 1 shows the percentage of emotions in each chapter.

The first chapter is the least emotional. This chapter is the strange experience of Alice falling into a new world, her body getting bigger and smaller, and there are not many emotions described. The eighth chapter is the most emotional. In this chapter, the queen holds a ball game, uses flamingos and hedgehogs as clubs and balls, and orders his subordinates to cut off the head of the Cheshire Cat. The plot of this chapter is intense, and there are many negative emotions expressed.

The ninth and tenth chapters are also very emotional. These two chapters are continuous content, telling the fake tortoise telling that he has been a real tortoise. Then is the story of Gryphon, Tortoise and Alice playing together.

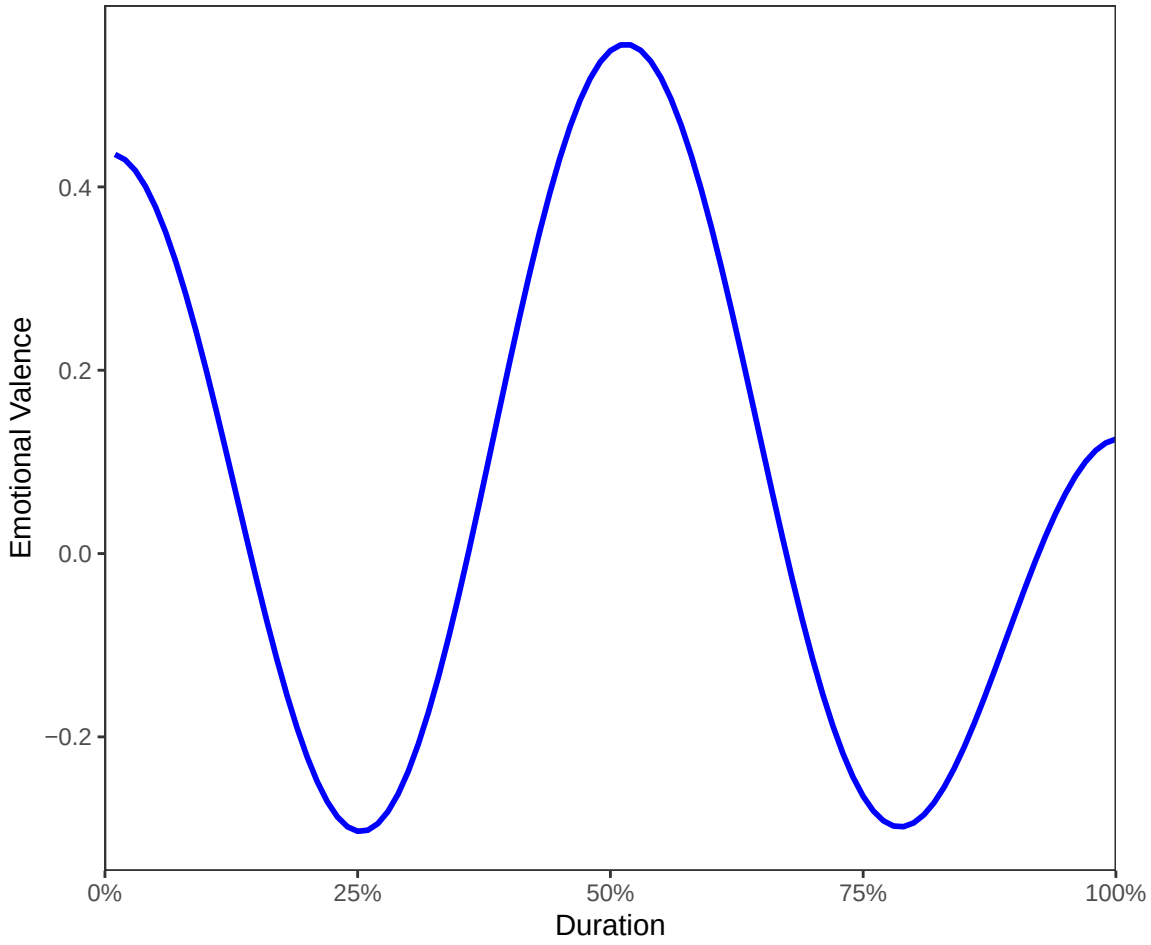
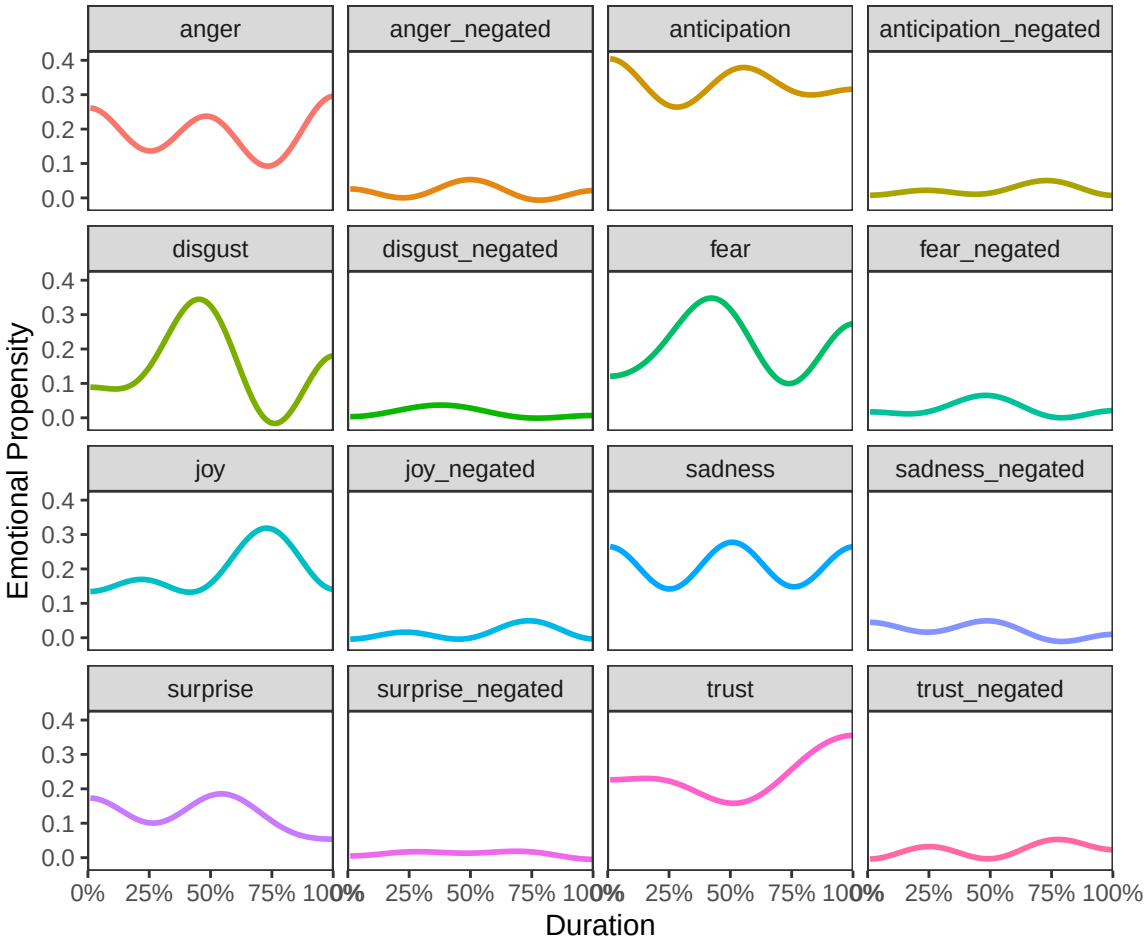


Figure 2 a gentle curve, showing the emotional fluctuations of the book.



As can be seen in Figure 3, anger, participation and sadness have the same trend. Disgust and fear has the same trend. Trust also has a specific significant trend.

More visualization

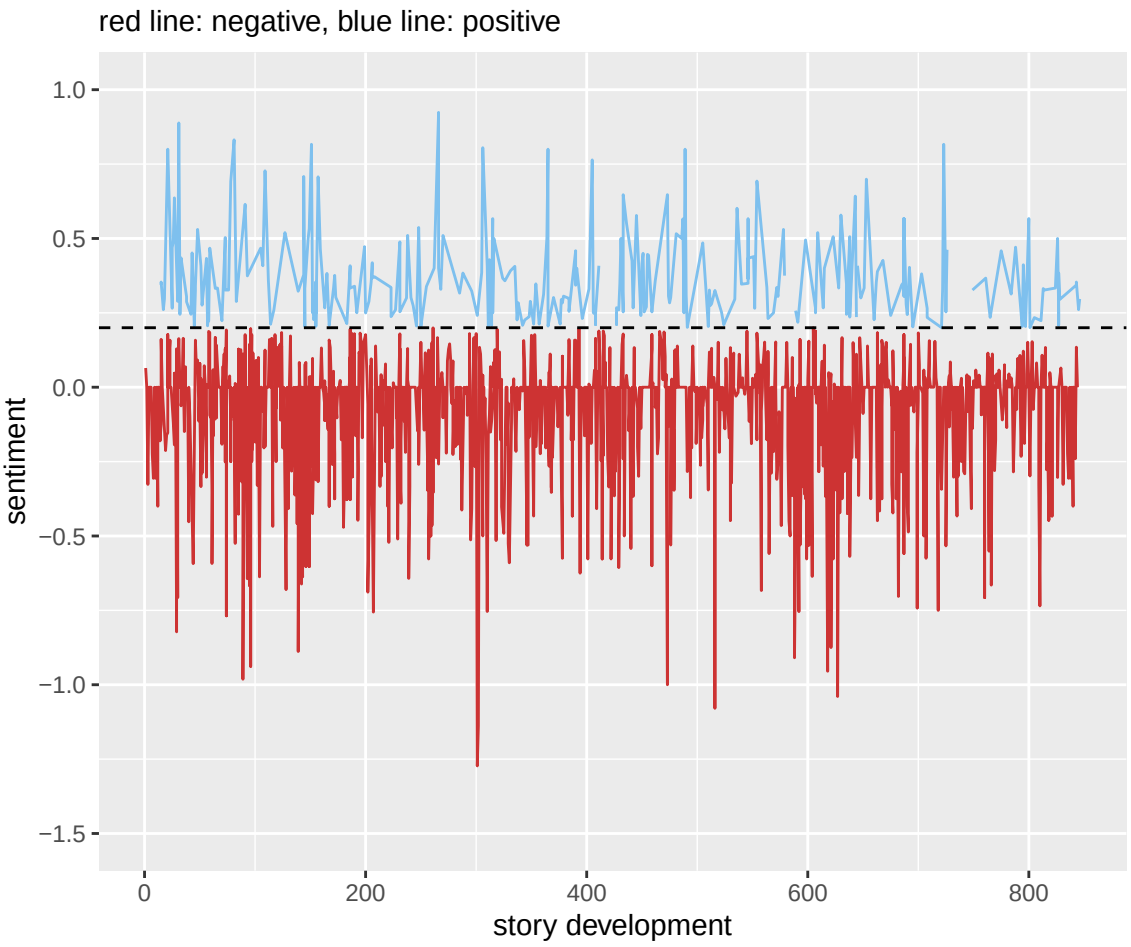


Figure 2: negative and positive line plot

The figure above shows the changes in positive and negative emotions as the storyline develops. The two lines are like two time series.

It can be seen that as the book goes forward, the positive emotions are lower and the negative emotions appear more and more dense. This coincides with the middle and later part of the story, that is, Alice met the Red Queen, participated in the chaotic ball game and the allegations of stealing pie, etc. The adventure plot is becoming more and more exciting and thrilling, and more and more negative emotions.

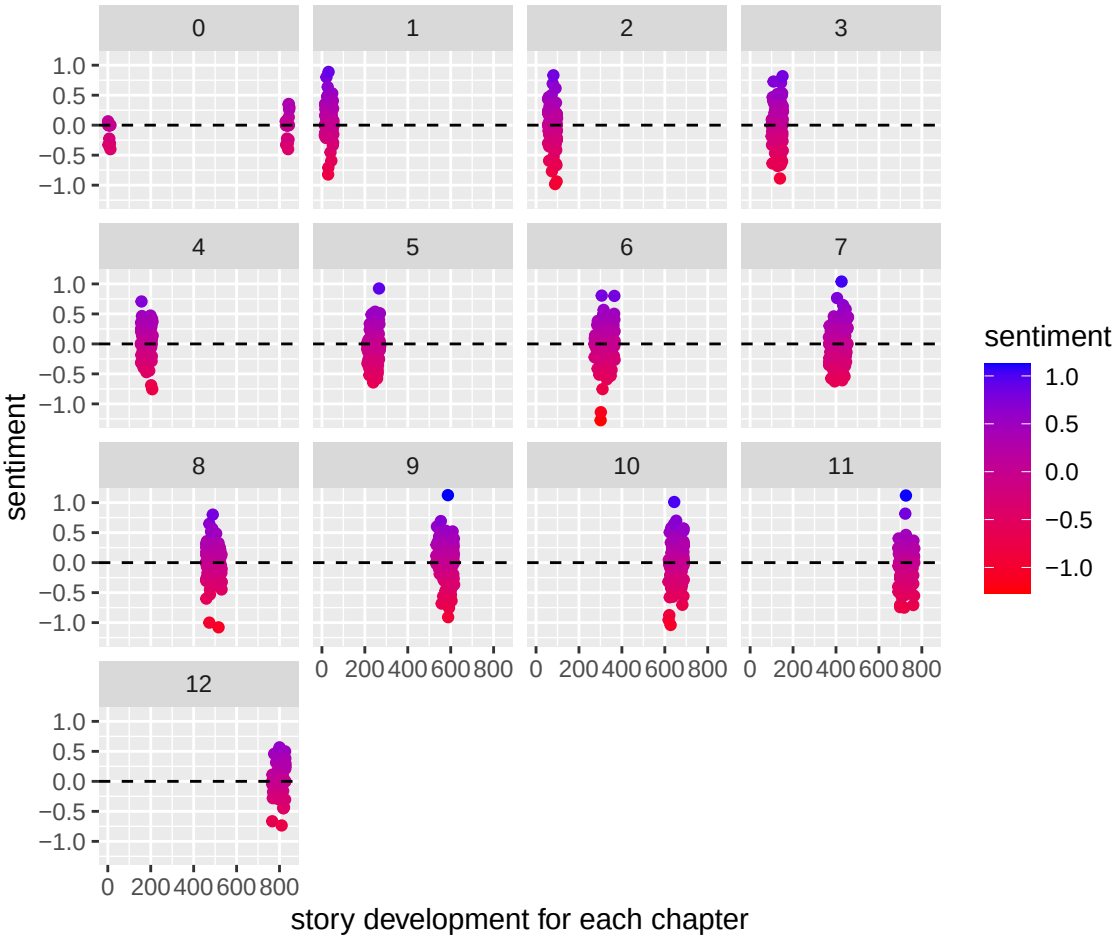


Figure 3: sentiment point plot in each chapter

The above plot is a point plot of the emotions of each chapter. Each box represents a chapter, and each dot represents a sentence in the chapter. Positive sentiments are blue, and negative sentiments are red.

Compare task 3 with task 2

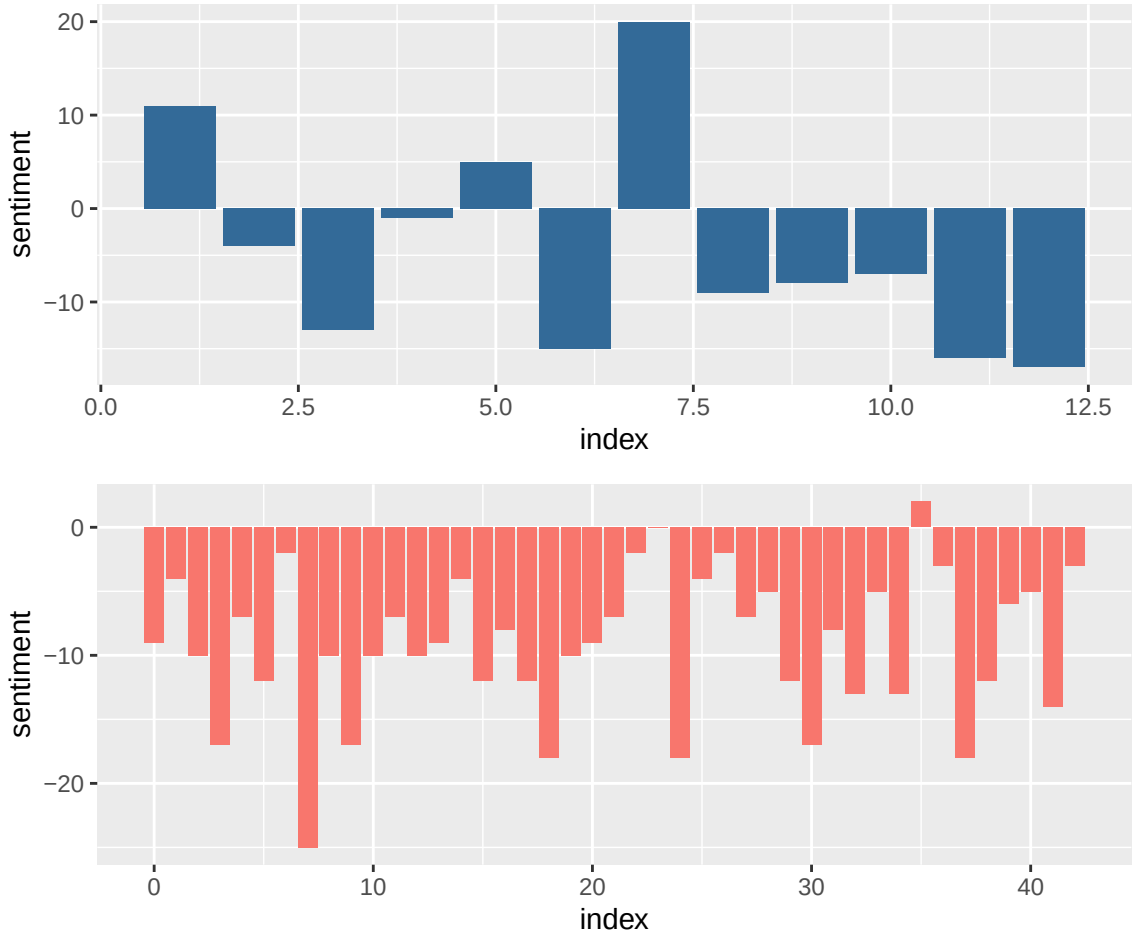


Figure 4: compare task 3 with task 2 version 1

The above figure shows that task 2 and task 3 use the same method-Bing method to calculate emotional scores. From a trend point of view, the result of task 3 revealed more positive emotions than the result of task 2. The positive emotions in Chapters 1, 4 and 6 do not match the results of Task 2.

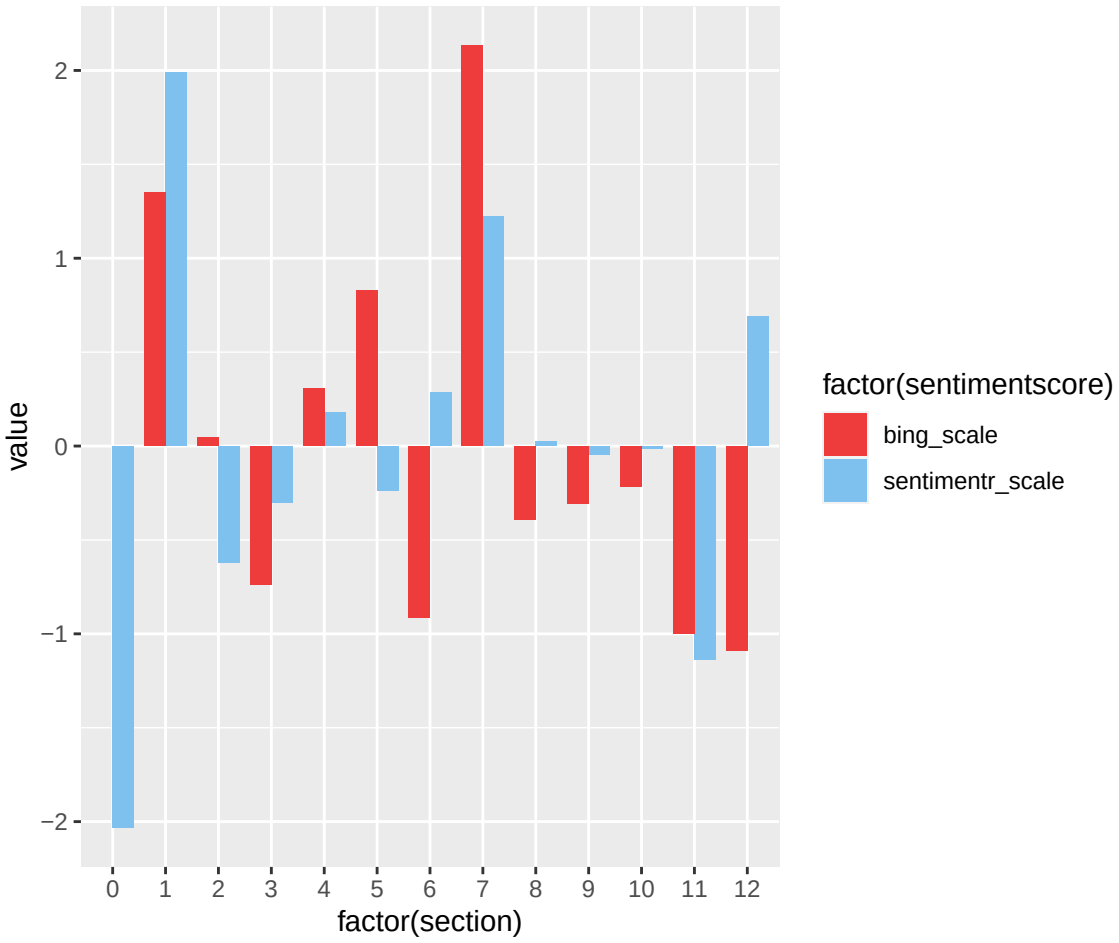


Figure 5: compare task 3 with task 2 version 2

This method more accurately compares the difference between the results of task 2 and task 3. Because this method scales the data of two different scales, and finally becomes the same scale.

It can be seen from the figure that the two methods are almost the same in some chapters. There are also individual chapters where the analysis is the opposite. Overall, the direction of analysis is similar.

Extra credit: character-level analysis

According to Task 2, I selected six characters with the highest frequency. They are Alice, Queen, King, Turtle, Hatter and Gryphon.

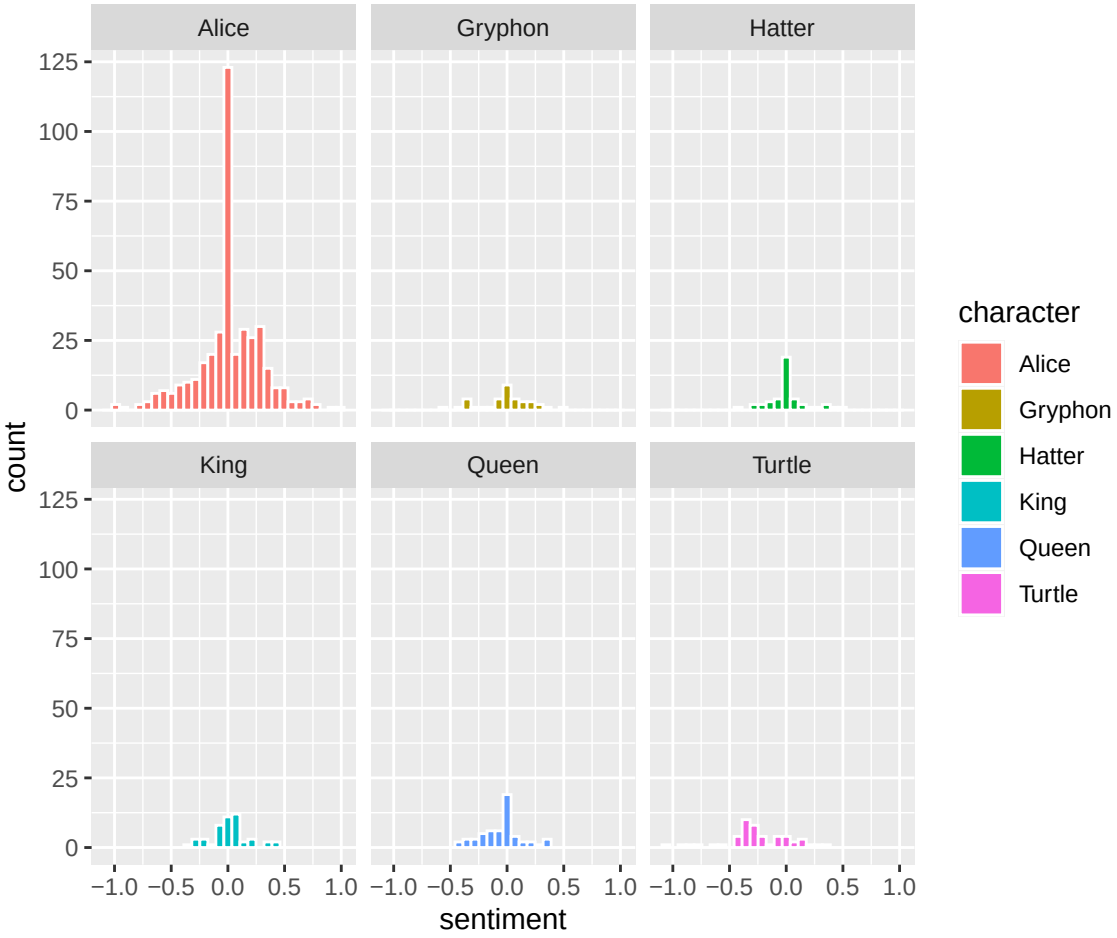


Figure 6: single character analysis

Then, I filtered them from each chapter, each paragraph, and each sentence. Draw a histogram of their emotional scores.

It can be seen that the emotional scores of Gryphon and Hatter are positive, Turtle and Queen are negative, and Alice and King are relatively neutral.

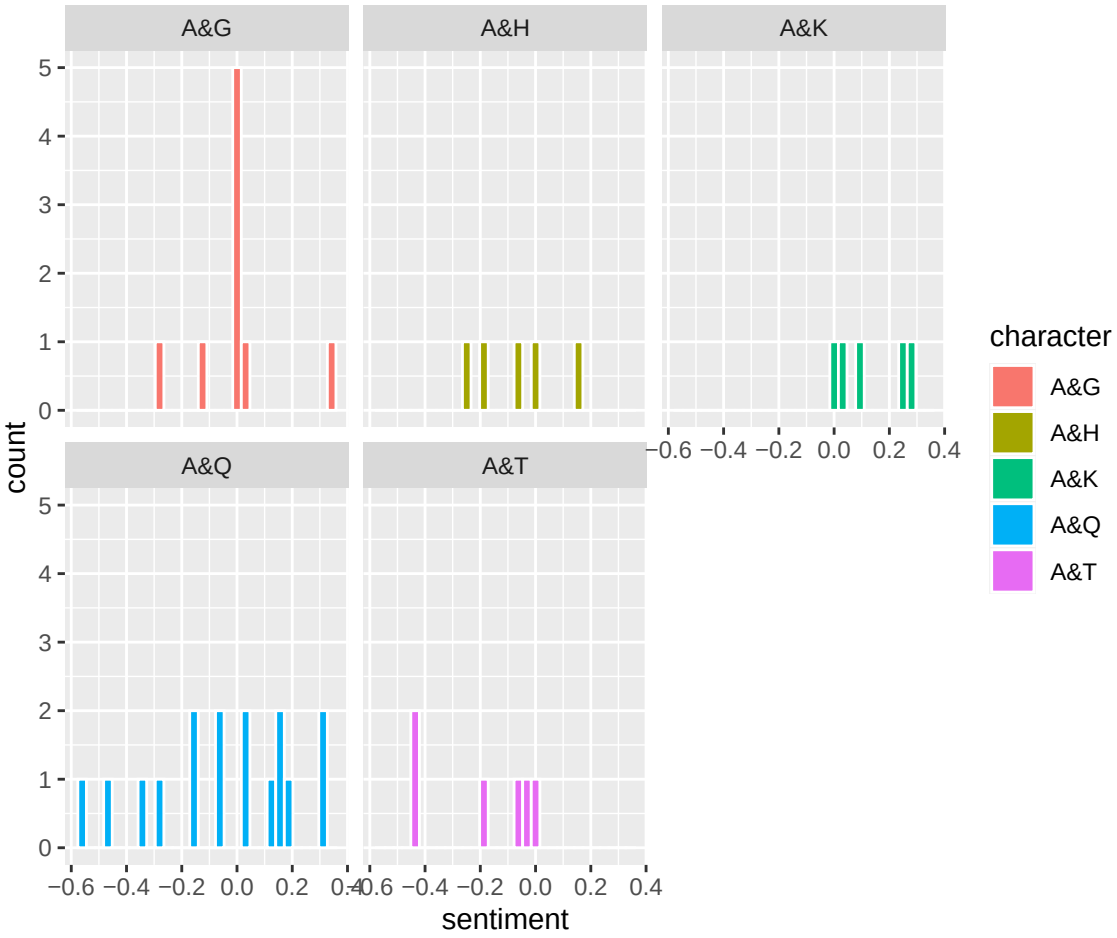


Figure 7: two characters analysis

Since Alice is the absolute protagonist of the book, I also calculated the emotional scores of the other 5 characters when they met her.

It can be seen that Alice and King had a very positive mood when they met. But her encounter with Turtle was negative. It can be inferred that when Alice is with different characters, the direction of the storyline is good or bad.

Reference

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