

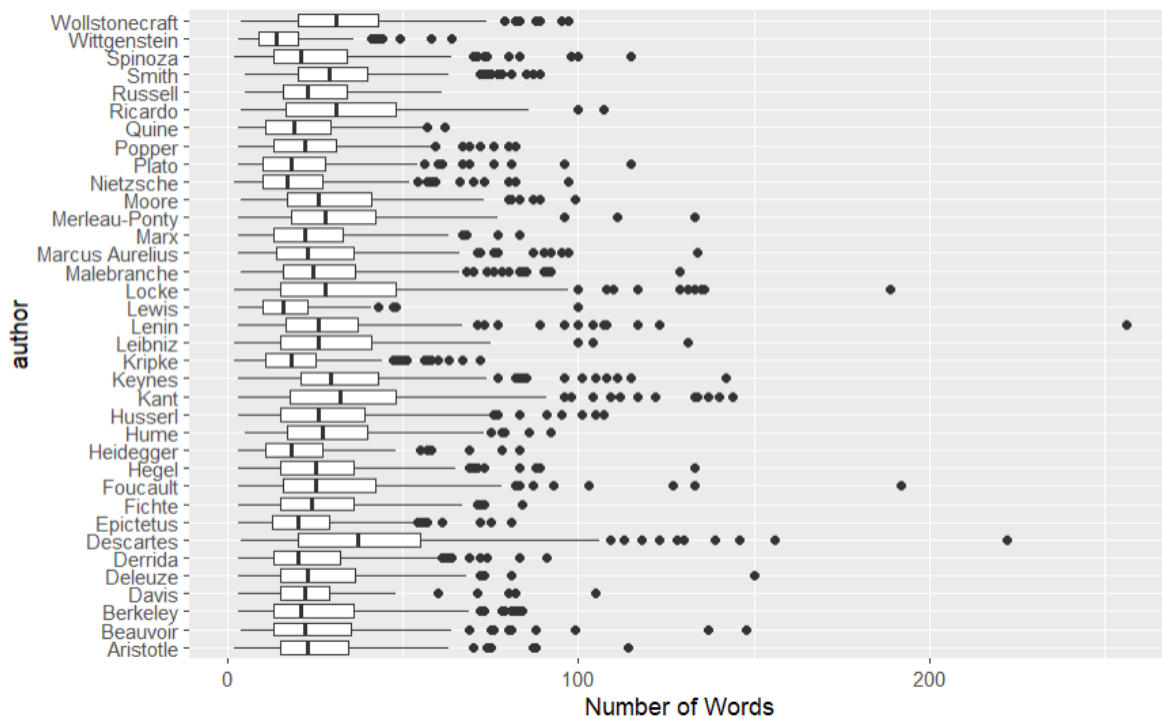
5243 Project1: A data story on the history of Philosophy

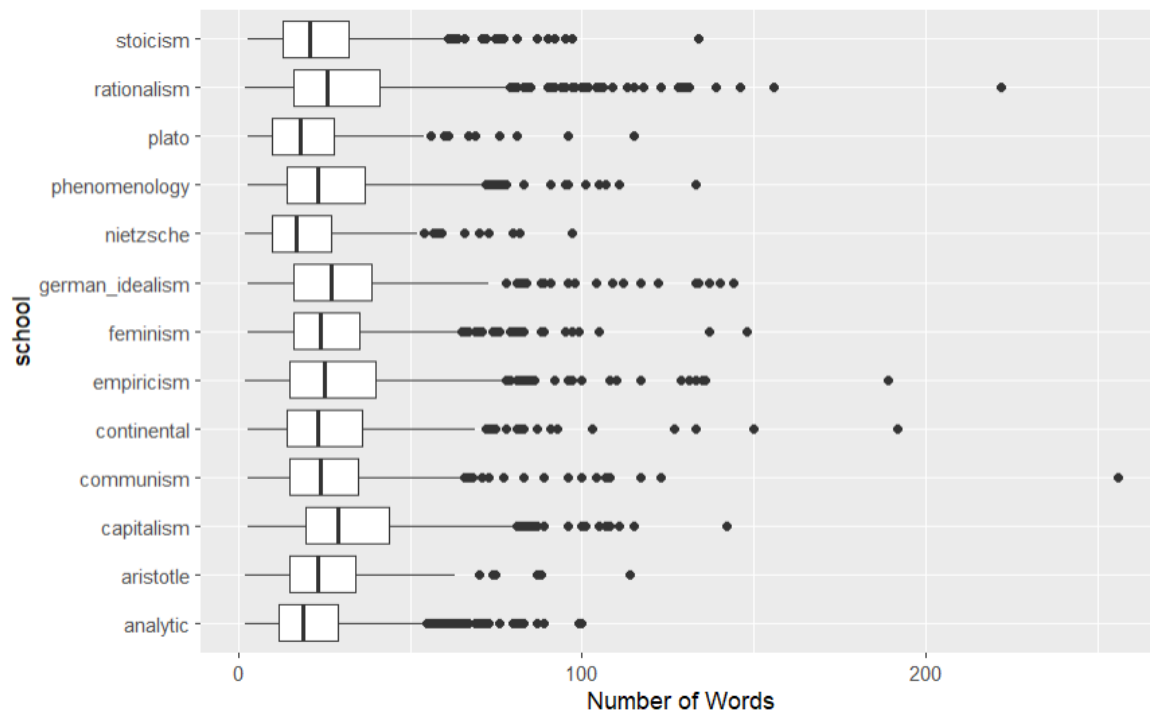
2022-09-18

In this project, I will analyze a philosophy data set which consists over 300,000 sentences from over 50 texts spanning 10 major schools of philosophy. The represented schools included in the data set are: Plato, Aristotle, Rationalism, Empiricism and so on. I am trying to find out the writing pattern of each philosophers; the length of sentences, use of words and sentiment of the texts.

I randomly sampled 10800 sentences from the data set for analysis purpose, which is 300 sentences from each philosopher.

I start with analyzing the length of sentences of each author, trying to find out some patterns between them.

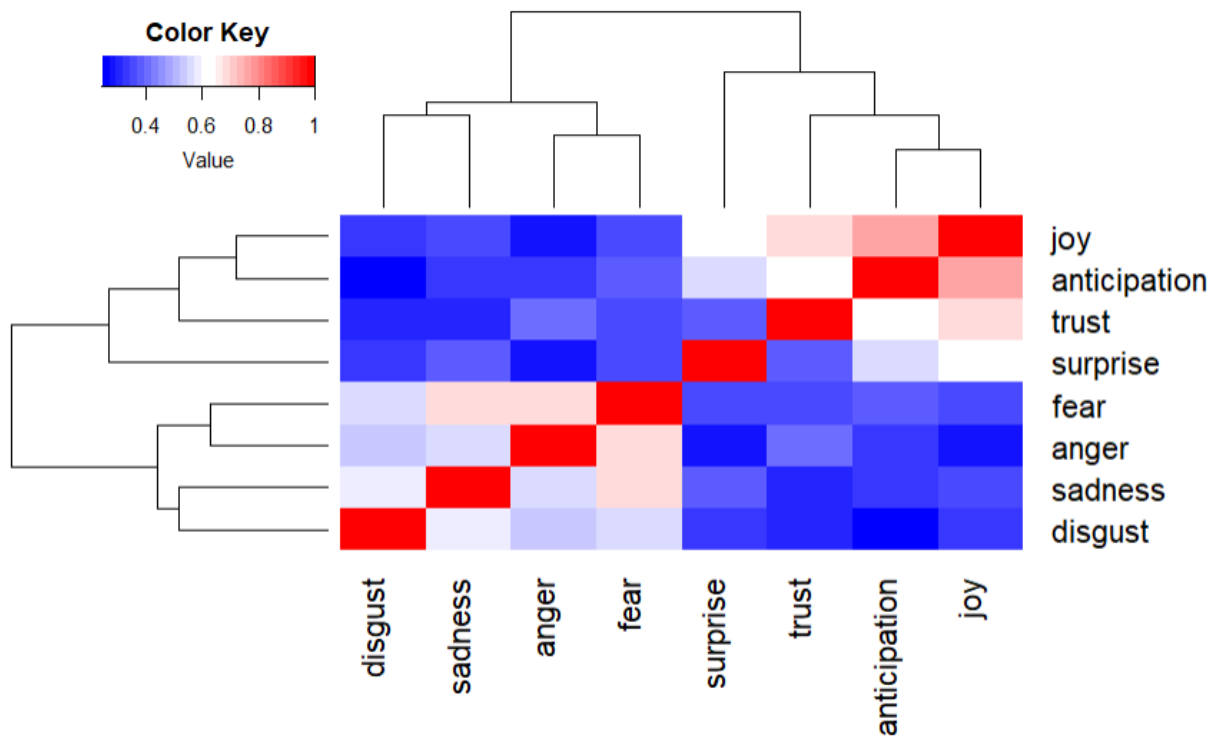
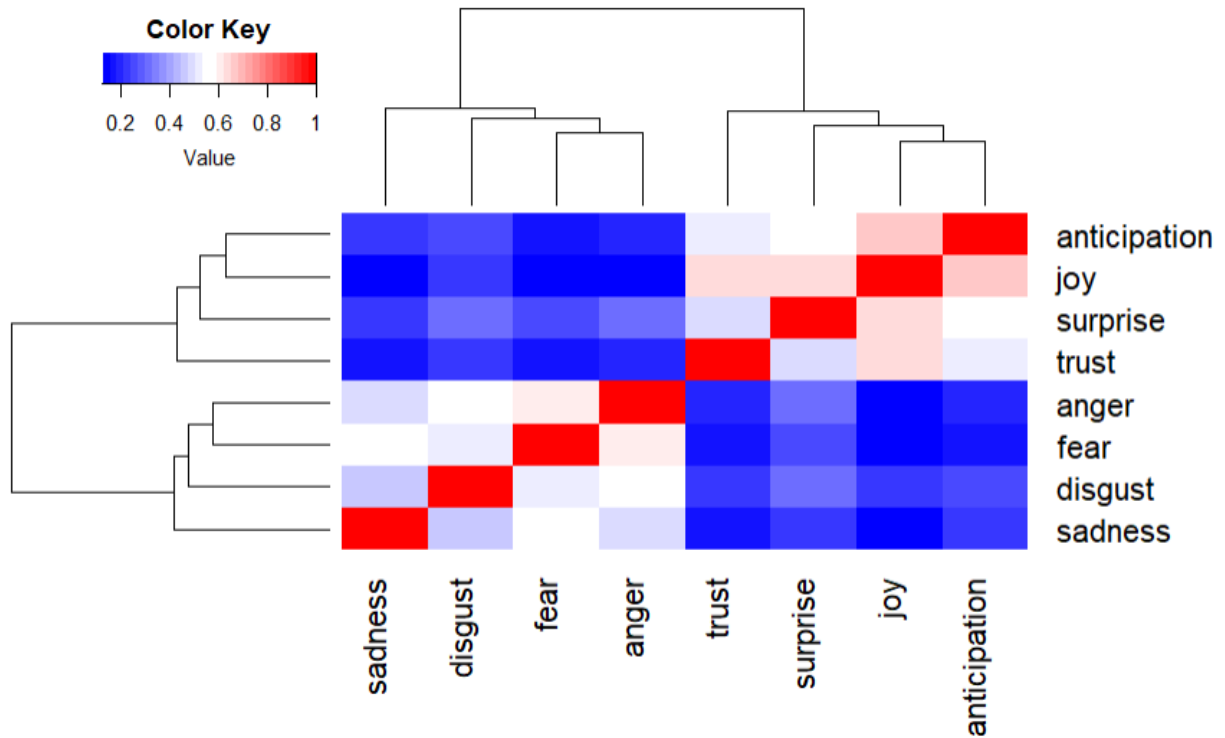




As we can see from the first box plot, the average length of sentence is around 25 words. There is also some large outliers from Lenin's and Descartes' texts, which are over 200 words. On average, sentences today range from 15 to 20 words, which is exceptionally low compared to the sentences in philosophy texts. Almost all of the philosophers wrote sentences of the same length, except for Descartes, whose average length of sentences is around 60. Both philosophers with the shortest length of sentences, Wittgenstein and Lewis, were born in the 1800s and 1900s, so the length of their sentences are more similar to the current ones.

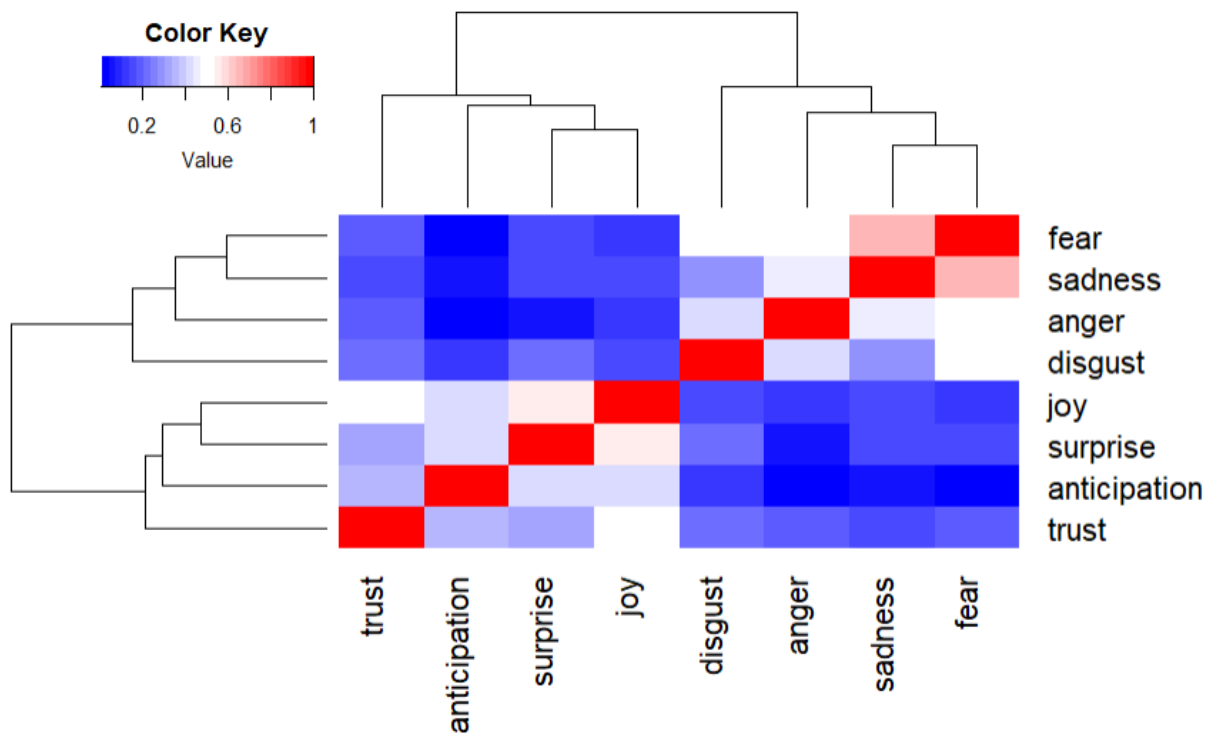
The second box plot shows the length of sentences within different schools of philosophy. It turns out that there is not much difference between these schools. The two outliers that are over 200 words are communism and rationalism. These two schools are which Lenin and Descartes are in.

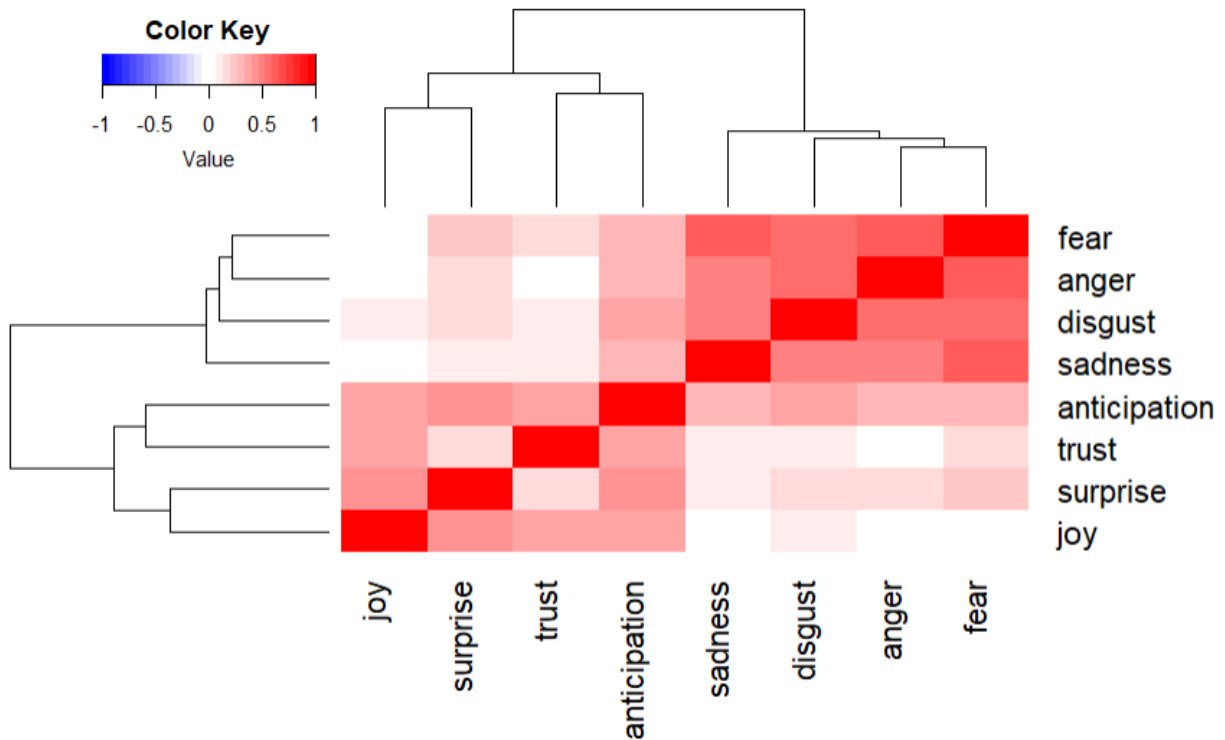
Overall, I did not find out any significant difference in writing patterns by simply analyzing the length of sentences of different philosopher. The only thing we might conclude from this part is that philosophers who wrote relatively short sentences were born closer to the present.



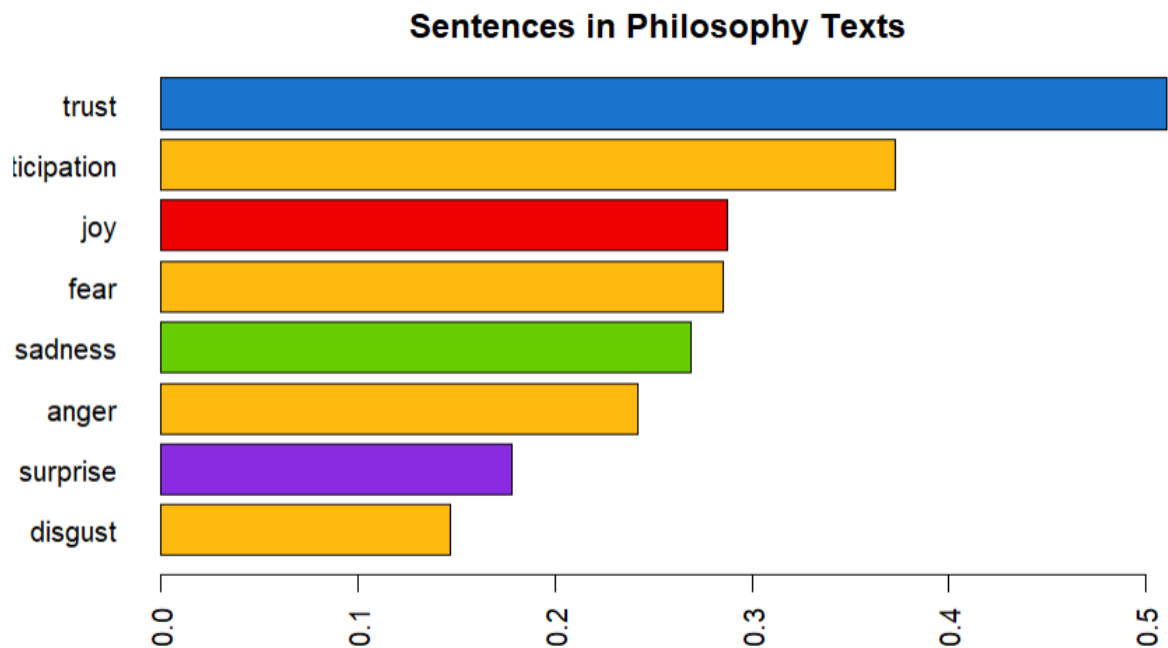
I chose two greatest figures of Western philosophy, Aristotle and Plato, to analyze the heatmap of their emotions. Blue indicates weak relationship and red indicates strong relationship. One interesting finding is that joy is related to anticipation, surprise and trust

for Aristotle, whereas for Plato joy is only related to anticipation and trust. Moreover, for Aristotle, fear relates to none of the other emotions whereas for Plato, fear is more related to anger and sadness.

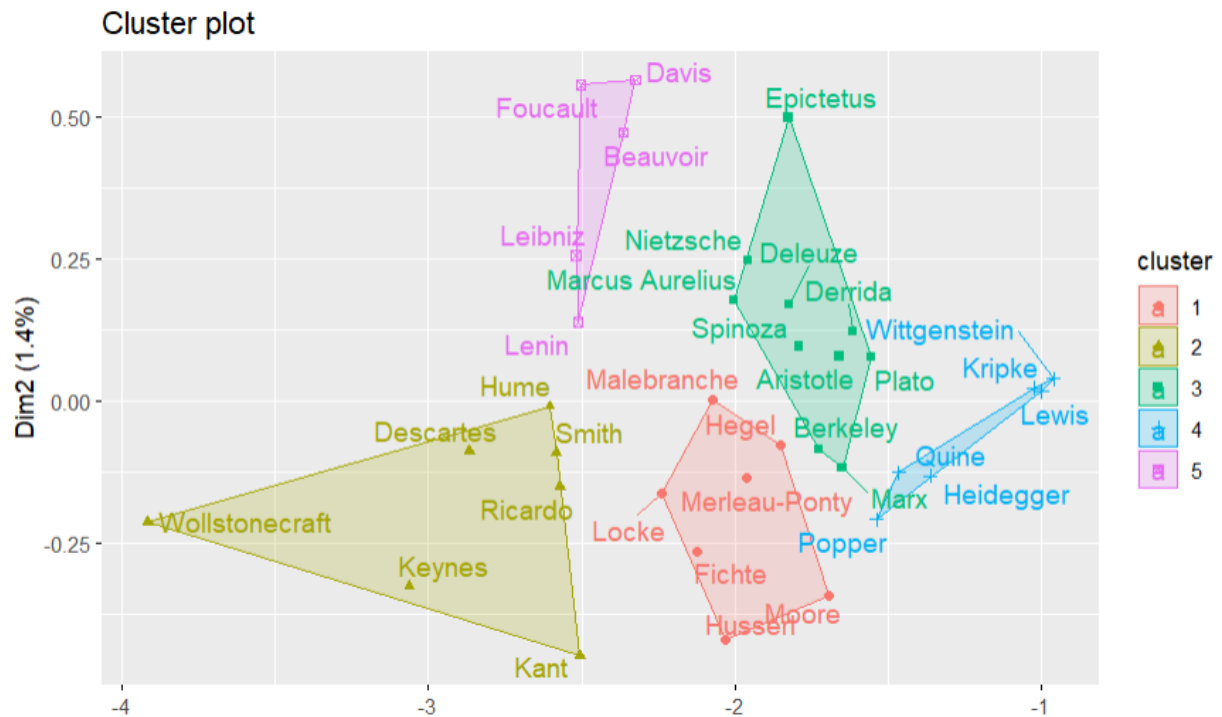




Then I chose two atheist philosophers, Russell and Quine. Interestingly, these two philosophers are really different in clustering of emotions. It turns out that Russell's emotions are almost independent from each other whereas Quine's heatmap shows most of the emotions are related to other ones.



Most of the emotions of the sentences in philosophy texts are trust, followed by anticipation and joy.



The clustering plot puts philosophers into five groups by analyzing the emotions of their texts. Philosophers share same distribution of emotions are more likely to be distributed into the same cluster and philosophers in the same cluster are very likely from the same school. For example, Quine, Wittgenstein and Lewis from the blue cluster are all in the analytic school; Hegel and Fichte from the red cluster are all in German idealism.

sciences male sight makes
number later instance grow
possible since white line neither
others must good greater present towards
one nature parts two fact every object state
will also like cause figure
man now body can way many may come well people
movement place come clearly point
motion different look
sense straight substance something
states rather
thought form just whether case time
become make thus men said anything longer
term comes terms
single causes exist result
upon impossible heat whole animals organ quantity water less
order

called men laws view present part sensation whole time
world thought
object desire
can act without know form
one may mind say
knowledge two case
fact must shall
past sense true things upon belief
thing images man data
experience way question now
physical find much mental memory words will image see

In order to see the difference in words used by philosophers, I chose Plato who believed that deity exists and Russell who was an atheist. Some common words used by Plato are one, man, body, animals, whole and so on. For Russell, common words are one, knowledge, mental memory, physical, sensations and so on. We can see the different focus between these two philosophers simply from the word cloud.