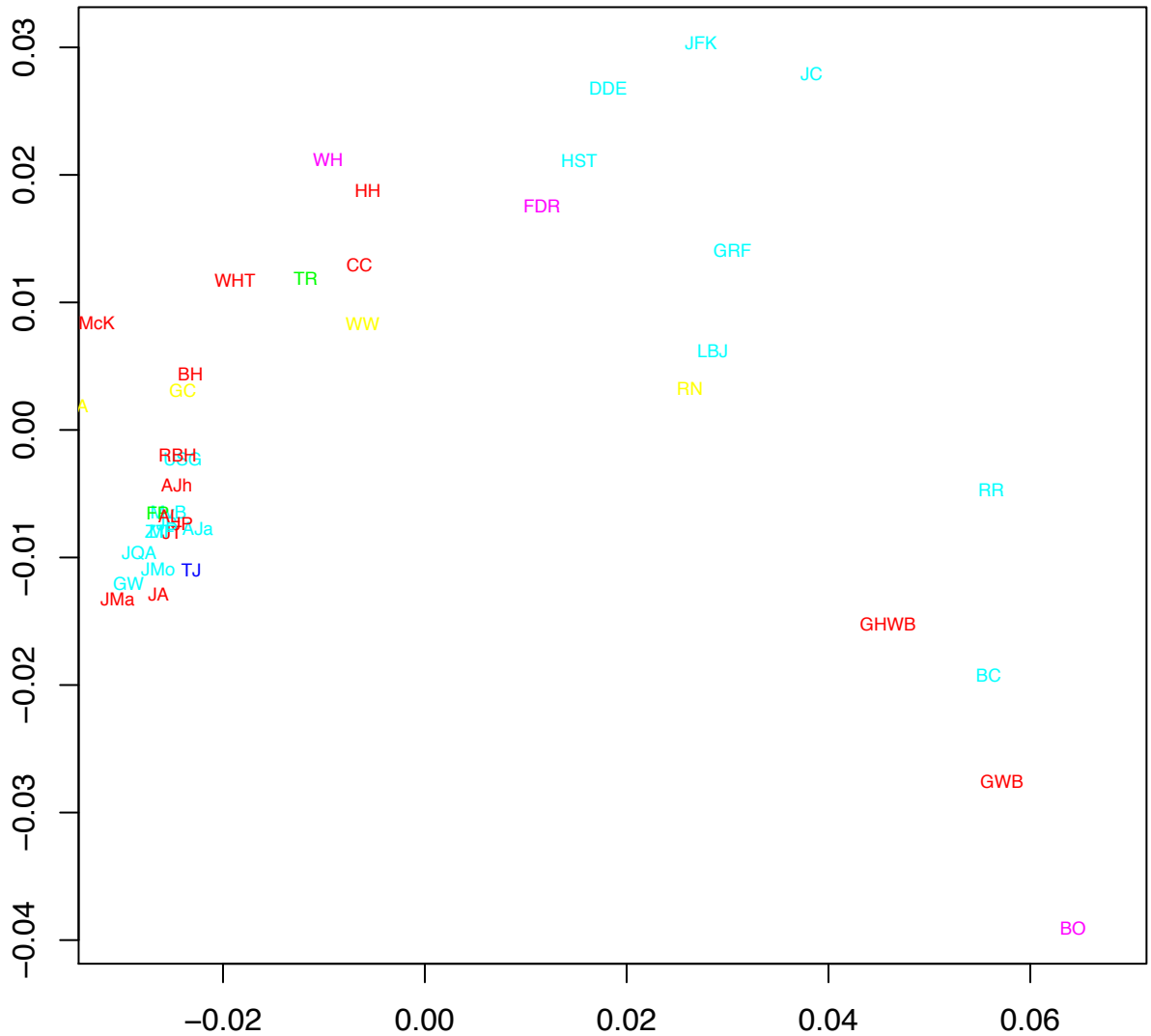
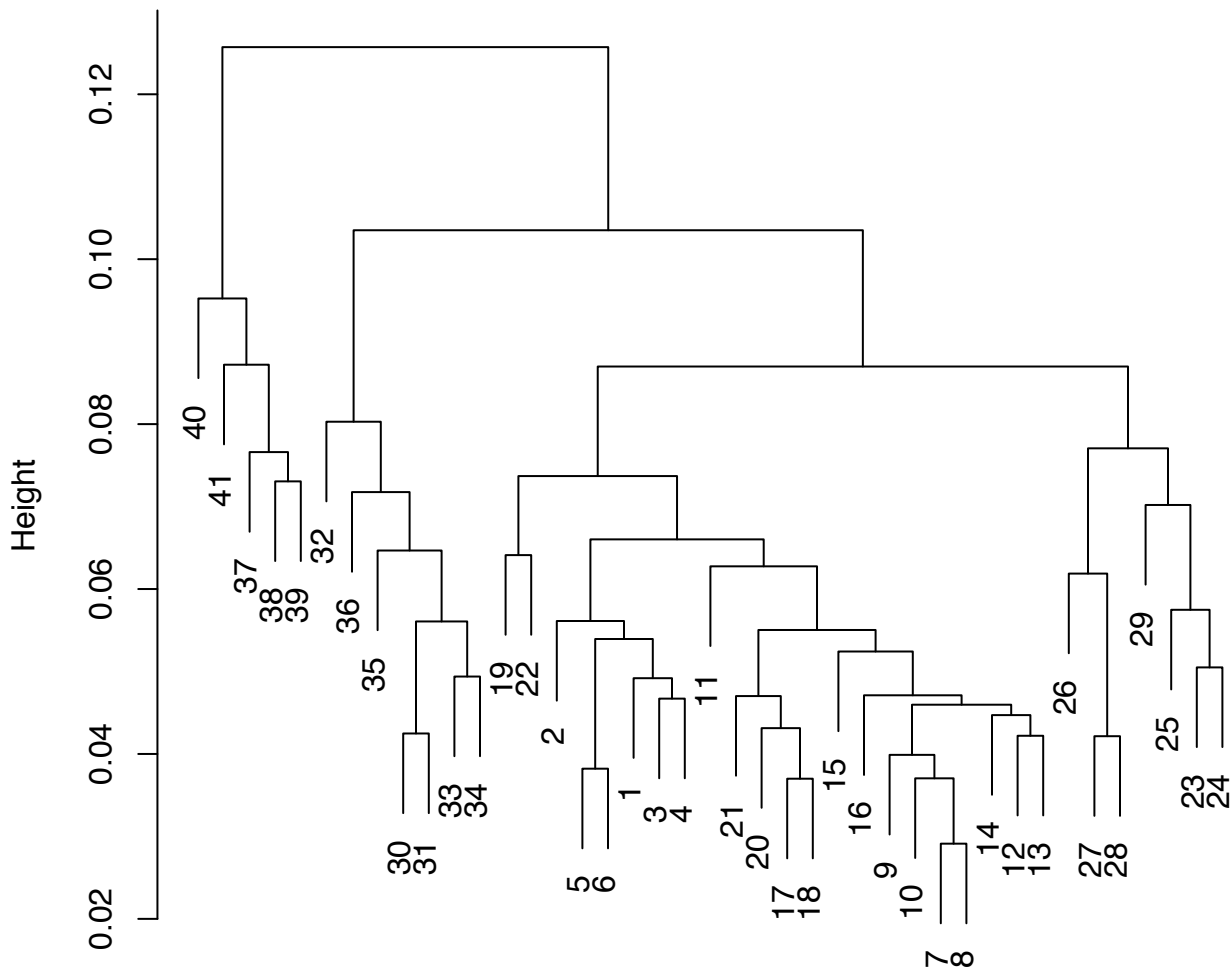


Presidents



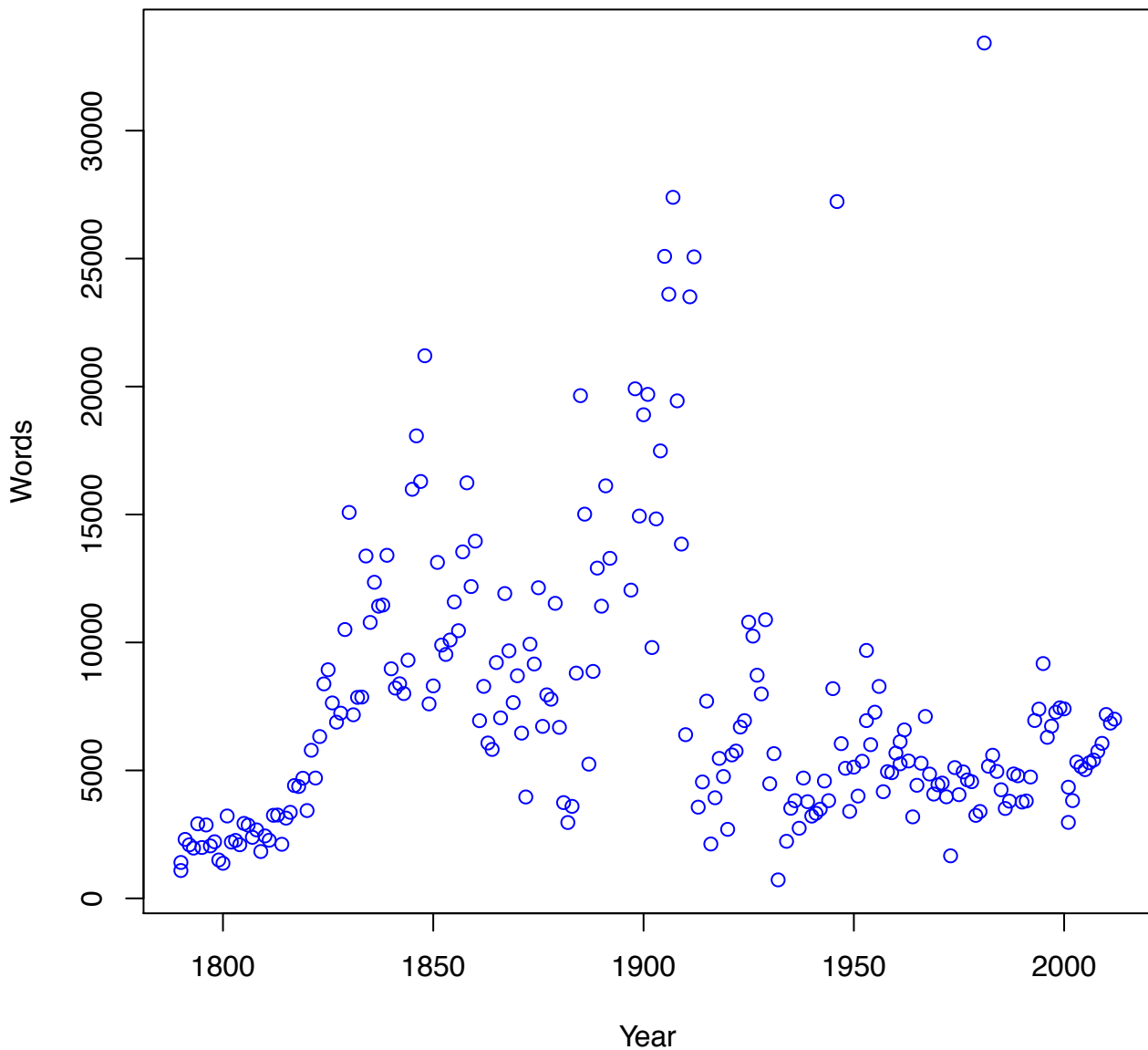
Cluster Dendrogram



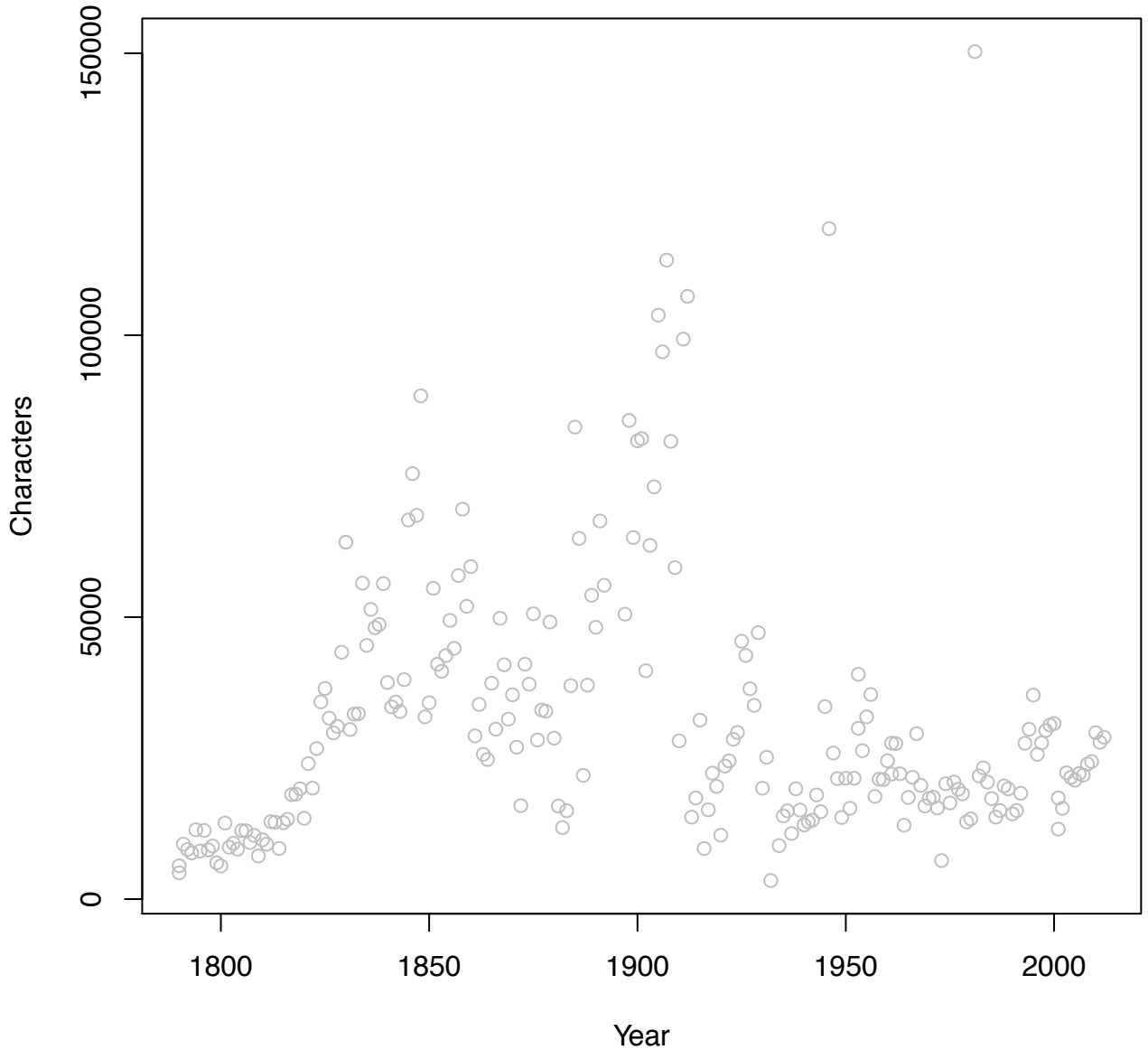
Year vs Sentences



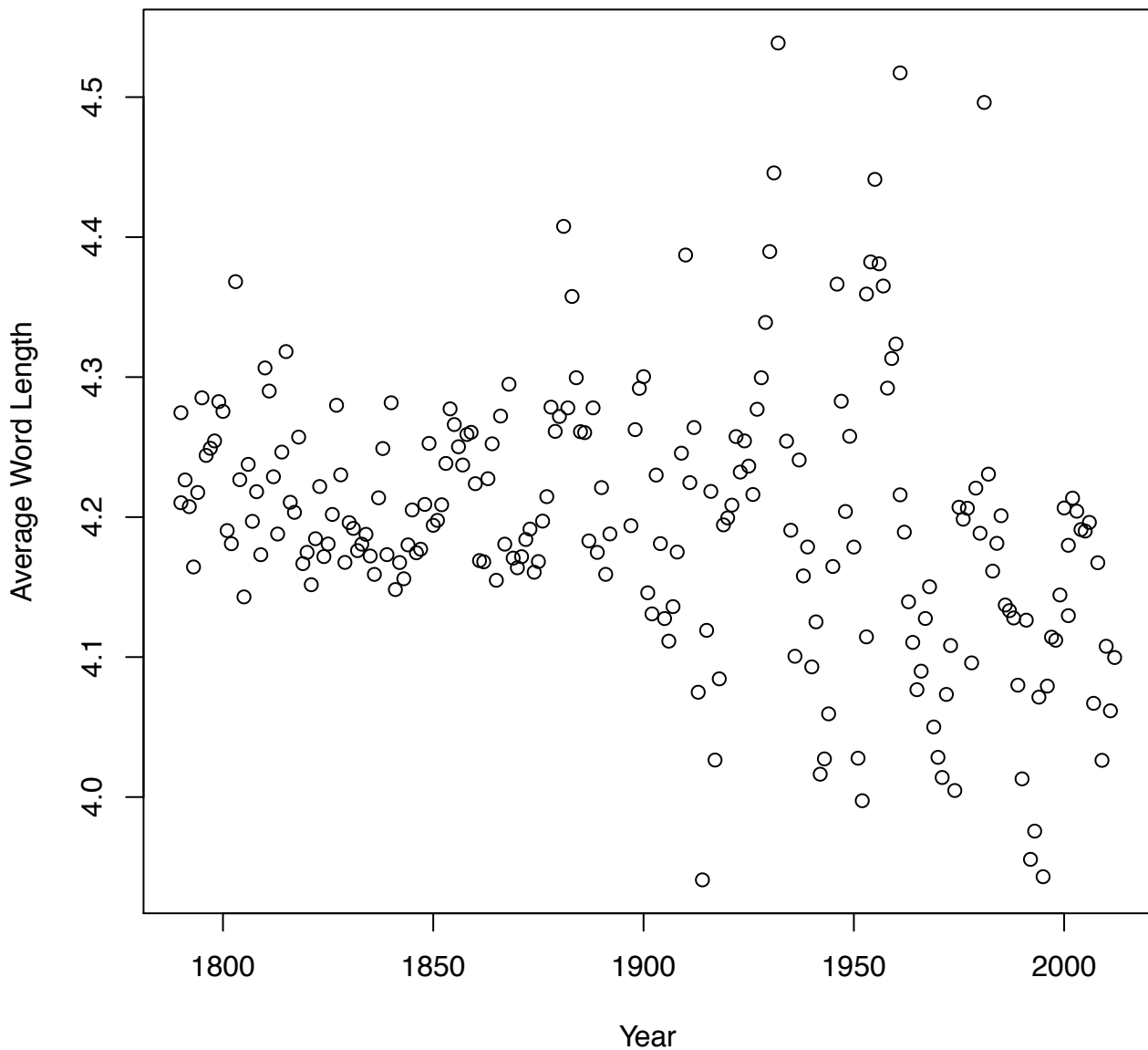
Year vs Words



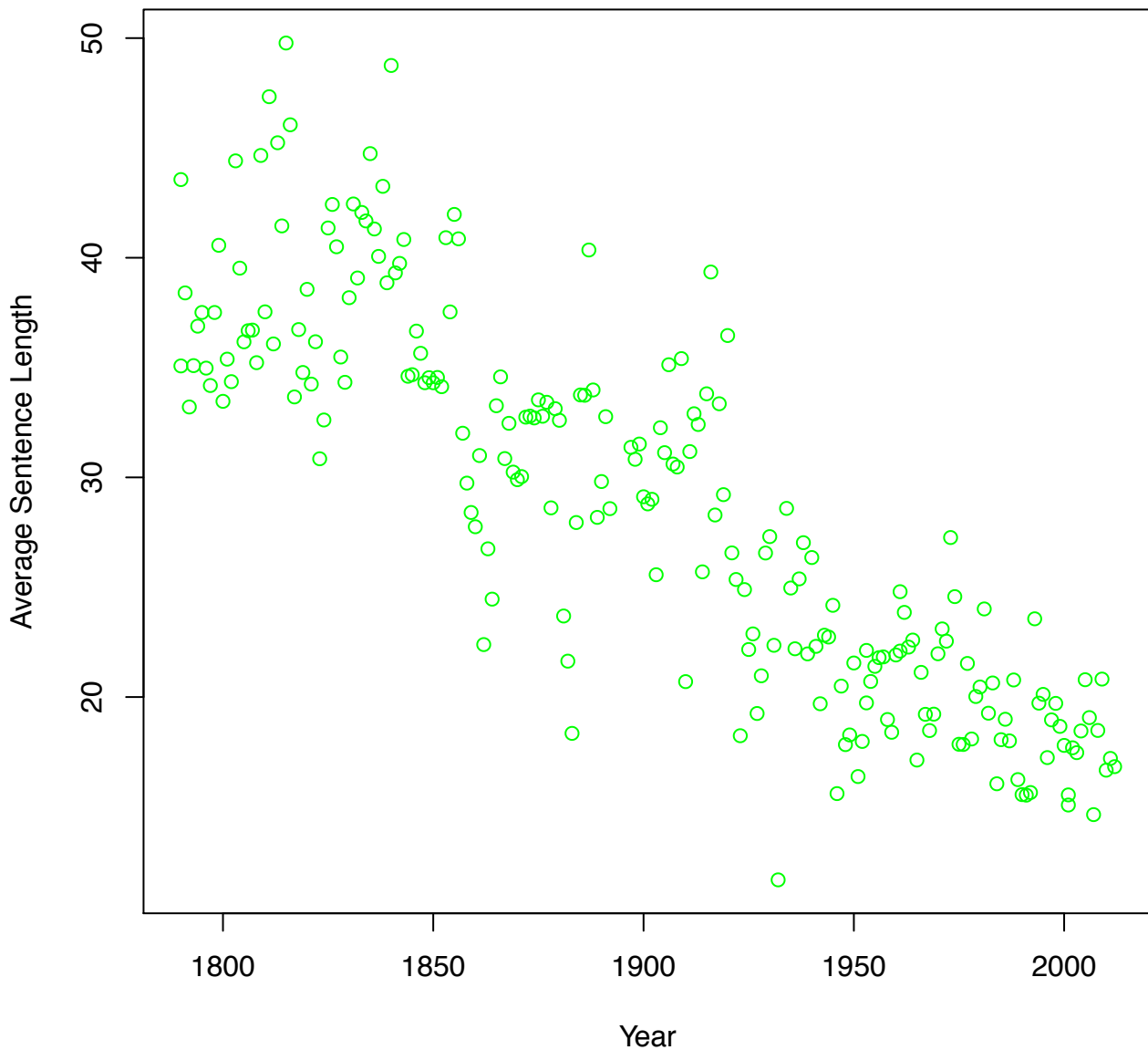
Year vs Characters



Year vs Avg Word Length



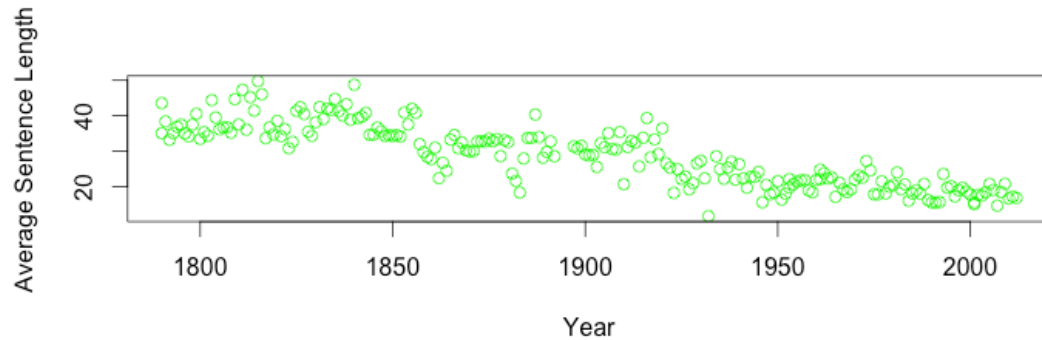
Year vs Avg Sentence Length



Stat 133 Homework 7

Keun Gang Kyen(23983641)

Have speeches become longer or shorter over time?



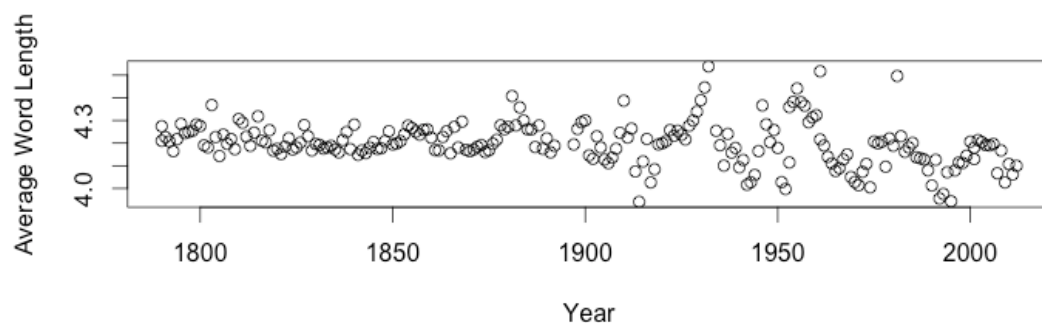
->As you can see the graph above, the length of average sentence is decreasing as time goes by. So we can conclude that the speeches have become shorter over time. This may be interpreted that people pay more attention to short and impressive speeches rather than long speeches.

Does any president stand out as having a long/short speech?

->According to "SpeechesDF", the president who used the most sentences(1745) for his speech is Harry S.Truman. On the other hand, thte president who used the least sentences(25) for his speech is George Washington.

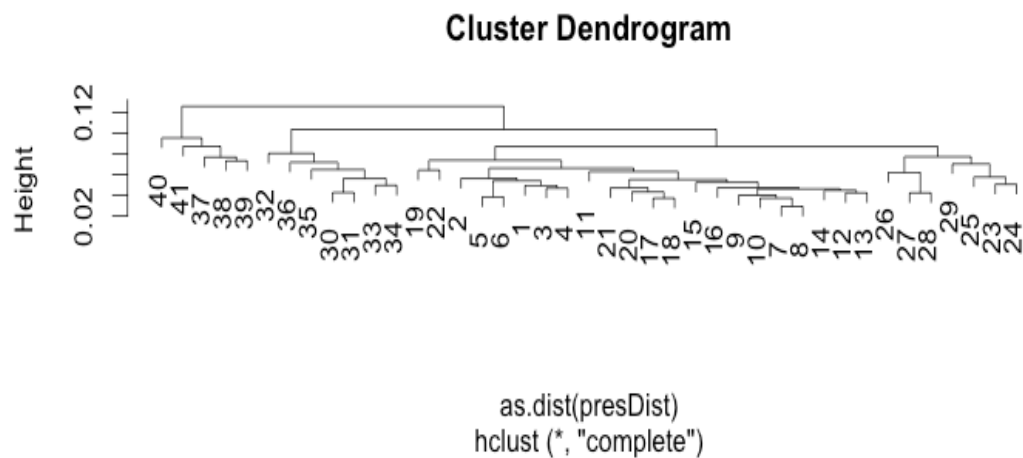
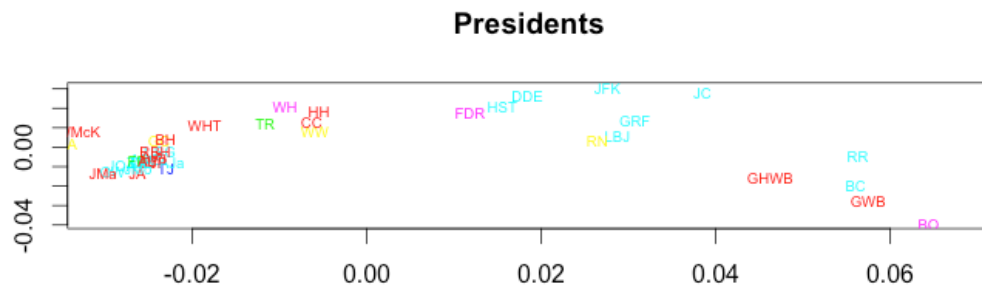
Write a one-two sentence caption for your plot that points out the interesting things that you have discovered.

->One of the most interesting things that I have discovered is that as time goes by, it can be clearly seen that presidents speeches were getting shorter and shorter (according to the Year vs Average Sentence Length graph). However, according to other graph "Year vs Average Word Length" graph , you can see that presidents in 1900s used more words than other period' s presidents.



Do the presidents cluster by era more than by party or vice versa? Are there any anomalous presidents? Write a one-two sentence caption for one of your plots that points out the interesting things that you have discovered.

-> As you can see the graph below, most of other pink color presidents are in high position but exceptionally, the president Barack Obama is located in very bottom of the graph. Also, another thing to notice is that many skyblue color of presidents cluster in top of the graph and the left middle. Also, most of red presidents cluster left bottom of the graph



Therefore, as you can see the graph, you can see some very concentrated area (same color) in the plot. This implies that presidents cluster by party at especially around $X = -0.032$ to 0.035 and from around 0.02 to 0.03 . However, other than these intervals, presidents cluster by era.