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Linguistic Analysis of the State of the Union Addresses

2018-01-20 BY GENE

This weekend I harvested 231 State of the Union addresses up to 2017 and put them through NLP processing.

Here are the unigram TF-IDF values, generated with this code of mine, in context of all other addresses (full output – sotu-1-gram). Each file is named with *"YYYYMMDD-Name"* format.

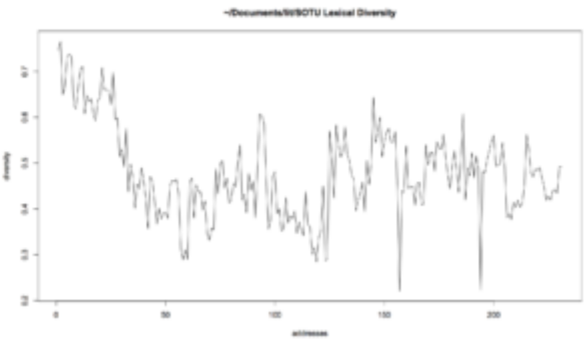
```
1. 17900108-Washington.txt
        1. licentiousness = 0.0045366833
        2. intimating = 0.0045366833
2. 17901208-Washington.txt
        1. misemployed = 0.0036363261
        2. empowers = 0.0036363261
        3. residuary = 0.0036363261
...
230. 20160112-Obama.txt
        1. isil = 0.0058471495
        2. retrain = 0.0016751325
        3. rigged = 0.0013369885
        4. brothers = 0.0012484422
        5. online = 0.0012484422
        6. automated = 0.0008375663
        7. cop = 0.0008375663
        8. peddling = 0.0008375663
        9. clocked = 0.0008375663
        10. spilling = 0.0008375663
231. 20170228-Trump.txt
        1. obamacare = 0.0043560855
        2. oliver = 0.0034848684
        3. megan = 0.0034848684
        4. susan = 0.0034848684
        5. megan's = 0.0034848684
        6. jenna = 0.0034848684
        7. jamiel = 0.0034848684
        8. jessica = 0.0026136513
        9. denisha = 0.0026136513
        10. shaw = 0.0017424342
```

And here are the bigrams (full output – sotu-2-gram):

```
1. 17900108-Washington.txt
        1. work allowed = 0.0161891231
        2. inviolable respect = 0.0161891231
        3. fund designated = 0.0161891231
        4. punish aggressors = 0.0161891231
        5. learning already = 0.0161891231
        6. though arduous = 0.0161891231
        7. also render = 0.0161891231
        8. government receive = 0.0161891231
        9. competent fund = 0.0161891231
        10. particularly recommended = 0.0161891231
2. 17901208-Washington.txt
        1. case submitted = 0.0132045362
        2. national impressions = 0.0132045362
        3. northwest side = 0.0132045362
        4. shall cause = 0.0132045362
        5. attention seems = 0.0132045362
        6. uniform process = 0.0132045362
        7. peculiarly shocking = 0.0132045362
        8. stock abroad = 0.0132045362
        9. friendly indulgence = 0.0132045362
        10. us abundant = 0.0132045362
```

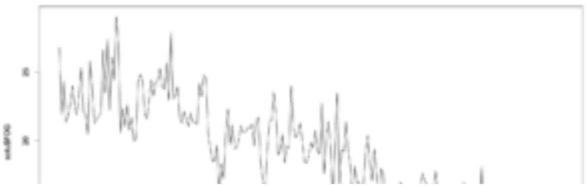
```
...
230. 20160112-Obama.txt
        1. pass muster = 0.0050289617
        2. big question = 0.0050289617
        3. unarmed truth = 0.0050289617
        4. unconditional love = 0.0050289617
        5. respects us = 0.0050289617
        6. many issues = 0.0043884723
        7. economy contracts = 0.0025144808
        8. everybody willing = 0.0025144808
        9. new terrorist = 0.0025144808
        10. offering every = 0.0025144808
231. 20170228-Trump.txt
        1. joining us = 0.0098689435
        2. american child = 0.0064590250
        3. th year = 0.0049649083
        4. rare disease = 0.0049344718
        5. incredible young = 0.0049344718
        6. megan's life = 0.0049344718
        7. jamiel shaw = 0.0049344718
        8. recent threats = 0.0049344718
        9. jessica davis = 0.0049344718
        10. republican president = 0.0049344718
```

The lexical diversity is shown in the following graph:

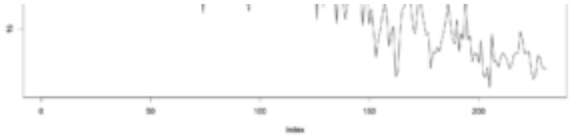


```
R> df$file[ which( df$div == max(
[1] "17901208-Washington.txt"

R> df$file[ which( df$div == min(
[1] "19460121-Truman.txt"
```

The reading level has steadily declined, as shown in this graph:



```
R> sotu$Name[ which( sotu$FOG ==
[1] 18151205-Madison

R> sotu$Name[ which( sotu$FOG ==
[1] 19920128-Bush
```



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And here are two excellent sites with their own analysis:
http://www.presidency.ucsb.edu/sou.php &
http://stateoftheunion.onetwothree.net/

FILED UNDER: MATHEMATICS, SOFTWARE
TAGGED WITH: LEXICAL DIVERSITY, PERL, SOTU, TF-IDF

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