

Lesson 13 - Motion Charts

Erin M. Buchanan

04/11/2019

Language Topics Discussed

- ▶ Language change over time!

Future Markers

- ▶ Future markers are words like *will* and *going to*, which we can examine their change over time
- ▶ *Shall* was used for a long time, but it changed over to *will*
- ▶ Farming n-grams for trends in the data, like the culturomics lecture
- ▶ https://books.google.com/ngrams/graph?content=will%2C+shall%2C+going+to&year_start=1800&year_end=2000&corpus=15&smoothing=3&share=

Motion Charts

- ▶ Allow you to see change over time
- ▶ Visualize the relative frequency of different lexemes in constructional slots
- ▶ So you could do something like we did in previous lectures over time

Motion Charts

- ▶ Specifically, we can examine the “territory” of words - when a dominant word in the lexicon is slowly taken over by a synonym
- ▶ Using data from Corpus of Historical American English
- ▶ Usually these charts are two different collexemes paired with a bunch of words like distinctive collexeme analysis over time

Motion Charts

- ▶ For this example, we will look at *will* versus *going to* paired with other verbs
- ▶ This analysis will tell us if there is semantic change over time
- ▶ You will use the `googleVis` package, with an internet connection and Flash

Look at the data

```
library(Rling)
library(googleVis)
```

```
## Creating a generic function for 'toJSON' from package 'jsonlite'
##
## Welcome to googleVis version 0.6.3
##
## Please read Google's Terms of Use
## before you start using the package:
## https://developers.google.com/terms/
##
## Note, the plot method of googleVis will by default use
## the standard browser to display its output.
##
## See the googleVis package vignettes for more details,
## or visit https://github.com/mages/googleVis.
##
## To suppress this message use:
```

Charts

- ▶ Words are plotted against each other
- ▶ Bubbles show the relative frequencies (like ratios of one to the other) so check out the x and y axis strengths
- ▶ You can click the button to watch it over time - slow motion indicates a slow take over versus fast motion meaning a quick change

Let's look at a chart!

```
motionchart = gvisMotionChart(fut, idvar = "Verb", timevar  
plot(motionchart)
```

```
## starting httpd help server ... done
```

Results

- ▶ Will is still popular, but slowly changing to going to
- ▶ If you pick a specific word, you can view it's trail over time
- ▶ Use this to help determine what other analyses you might want to run with logistic regression, etc.

One more version

```
data(should_ought)
head(should_ought)
```

##	Verb	Year	should	ought_to
## 1	DO	1990	1766	371
## 2	DO	1995	1814	258
## 3	DO	2000	1602	145
## 4	DO	2005	1509	135
## 5	GO	1990	1381	173
## 6	GO	1995	1309	142

Motion chart

```
motionchart2 = gvisMotionChart(should_ought, idvar = "Verb")  
plot(motionchart2)
```

Summary

- ▶ Learned how to view change in terms over time
- ▶ Paired with geographic change charts, we could examine trends in time and space