Thomas Broadwater

Introduction

R Scripting

The Study

Turn Laurah

Size Index

The Decula

THE IVESUI

This Great Flood of Words¹

Thomas Broadwater

April 27, 2022

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Phasal Analysis

Phasal Analysis ī

- Register: style based on context
- Phase: like a subregister
 - unit of discourse
 - consistent style based on specifics
 - familiarity, topic, venue, etc.

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Phasal Analysis

Phasal Analysis II

- Phases: characterized by shared features
 - word choice, mood (indicative, imperative, etc.)
 - topic, sentence length

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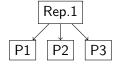
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Goals

- 1 broad phasal analysis of Rep.1
- 2 demonstration of programmatic methods



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R Scripting

Code ī

- R script written for analysis
- analyzes on turn-by-turn basis
- searches for 3 key metrics
 - turn density (sentences per turn)
 - turn length (words per turn)
 - turn sentiment (sentimental impact per turn)

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R Scripting

Code īī

- requirements for this script:
 - "stop words"
 - "lemmatizer"
 - "sentiment dictionary"

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R Scripting

Caveat Emptor...

- Do these resources exist for Ancient Greek?
 - No
 - And they typically require whole departments to build
 - Using translation by GMA Grube and CDC Reeve (1992)

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Introduction

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Sentiment Analysis

Rare Result

Turn Density ī

- Turn Density: number of sentences per turn
 - i.e. consecutive sentences per speaker
- need a broad picture
 - mean, median, mode, standard deviation
 - global (i.e. across Rep.1)
 - per speaker

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R Scripting

Turn Density

Sentiment Analysis

Turn Density II

A tibble: 6	× 5			
speaker	mean	${\tt median}$	mode	sd
<chr></chr>	<dbl></dbl>	<dbl></dbl>	<int></int>	<dbl></dbl>
global	1.69	1	1	1.79
cleitophon	1.33	1	1	0.577
glaucon	1.25	1	1	0.463
polemarchus	1.75	1.5	1	0.957
socrates	1.99	1	1	1.90
thrasymacus	1.41	1	1	1.72
	speaker	<pre><chr> <chr> global 1.69 cleitophon 1.33 glaucon 1.25 polemarchus 1.75 socrates 1.99</chr></chr></pre>	speaker mean median <chr> <dbl> <dbl> global 1.69 1 cleitophon 1.33 1 glaucon 1.25 1 polemarchus 1.75 1.5 socrates 1.99 1</dbl></dbl></chr>	speaker mean median mode <chr> <dbl><dbl><int> global 1.69 1 1 cleitophon 1.33 1 1 glaucon 1.25 1 1 polemarchus 1.75 1.5 1 socrates 1.99 1 1</int></dbl></dbl></chr>

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Turn Density III

- What does any of that mean?
 - Very little until you run it through a t-test
 - I won't make you suffer that

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Turn Density

Turn Density _{IV}

- means, medians, and modes are too regular
 - makes sense: call-and-response style
- statistically significant standard deviations:
 - Socrates and Thrasymachus
 - also widest range of turn densities

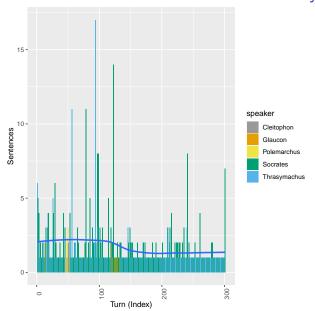
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Turn Density

Turn Density ⊽



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Turn Length

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Turn Length ī

- Turn Length: number of words per turn
- different calculations, same results
 - means, medians, modes all too regular
 - Socrates and Thrasymachus show statistically significant standard deviations

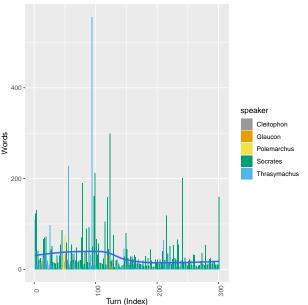
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Turn Length

Turn Length II



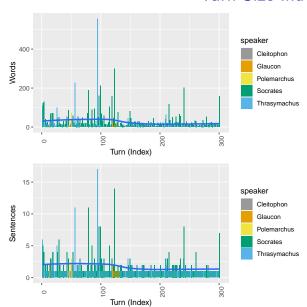
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Turn Length

Turn Size Index ī



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Index ī

Density / Length Correlation Coefficient

[1] 0.9294758

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Size Index

Index ii

- density and length are closely correlated
- new variable: Size index
 - per-turn average of density and length

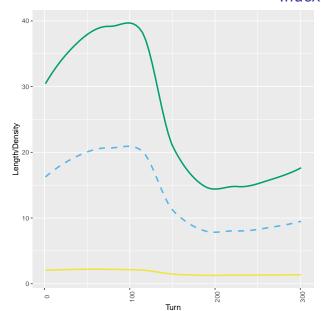
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Index III



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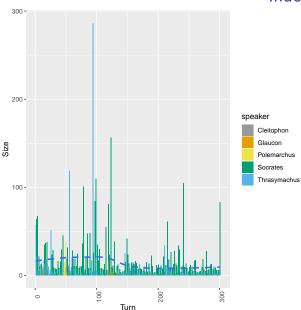
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Sentiment Analysis ī

- Sentiment Analysis: measuring vibes
- AFINN Lexicon
 - Ranks sentiment from -5 to +5
 - −5: most negative
 - +5: most positive
 - 0: neutral

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R Scripting

Sentiment Analysis

Sentiment Analysis II

#	A tibble: 6	× 5			
	speaker	mean	${\tt median}$	mode	sd
	<chr></chr>	<dbl></dbl>	<dbl></dbl>	<dbl></dbl>	<dbl></dbl>
1	global	0.415	1	1	1.43
2	cleitophon	2	2	2	NA
3	glaucon	-0.5	-0.5	NA	2.12
4	${\tt polemarchus}$	0.519	1	NA	1.34
5	socrates	0.433	0.775	2	1.50
6	thrasymacus	0.380	1	1	1.30

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Sentiment Analys

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Sentiment Analysis III

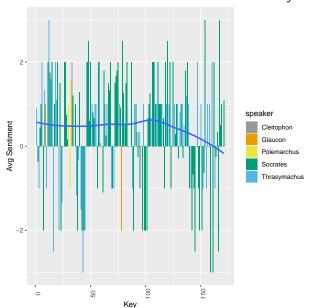
- more interesting results:
 - Socrates and Thrasymachus show statistically significant means
 - Polemarchus, Socrates, and Thrasymachus show statistically significant standard deviations

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Sentiment Analysis

Sentiment Analysis _{IV}

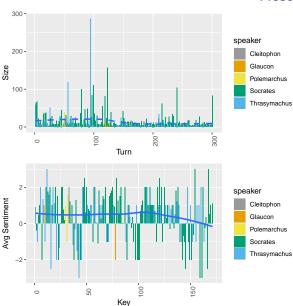


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Results ī



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Results ii

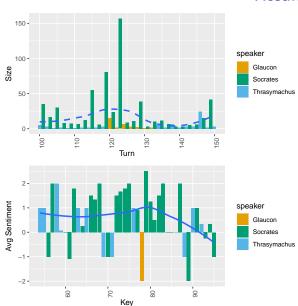
- size index shows turning point between x100 and x150
 - corresponding points on sentiment chart: x54 and x94
 - corresponding with 347.d7 T40 and 348.e5 S73
- sentiment analysis shows slight inverse turning point in same range

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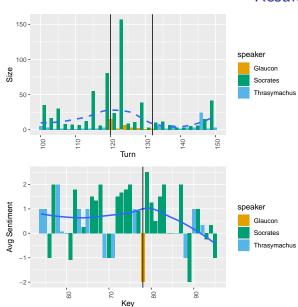
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Results IV



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Results ⊽

- 347.e6 G4 to 348.b6 G8
- Following Thrasymachus' "great flood of words" speech

343.a2 T42

Tell me, Socrates, do you still have a wet nurse?

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Bars

Results VI

Cleitophon Glaucon

Polemarchus Socrates Thrasymachus

