This Great Flood of Words[1]

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April 27, 2022

1. Rep. 1: 344 d1

Phasal Analysis ī

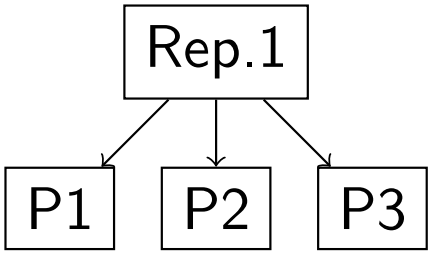
- Register: style based on context
- Phase: like a subregister
  - unit of discourse
  - consistent style based on specifics
    - familiarity, topic, venue, etc.

Phasal Analysis II

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

Goals

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



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)

Code II

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

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)

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

Turn Density II

```
# A tibble: 6 × 5
  speaker       mean median  mode    sd
  <chr>        <dbl>  <dbl> <int> <dbl>
1 global        1.69    1        1 1.79
2 cleitophon    1.33    1        1 0.577
3 glaucon       1.25    1        1 0.463
4 polemarchus   1.75    1.5      1 0.957
5 socrates      1.99    1        1 1.90
6 thrasymacus   1.41    1        1 1.72
```

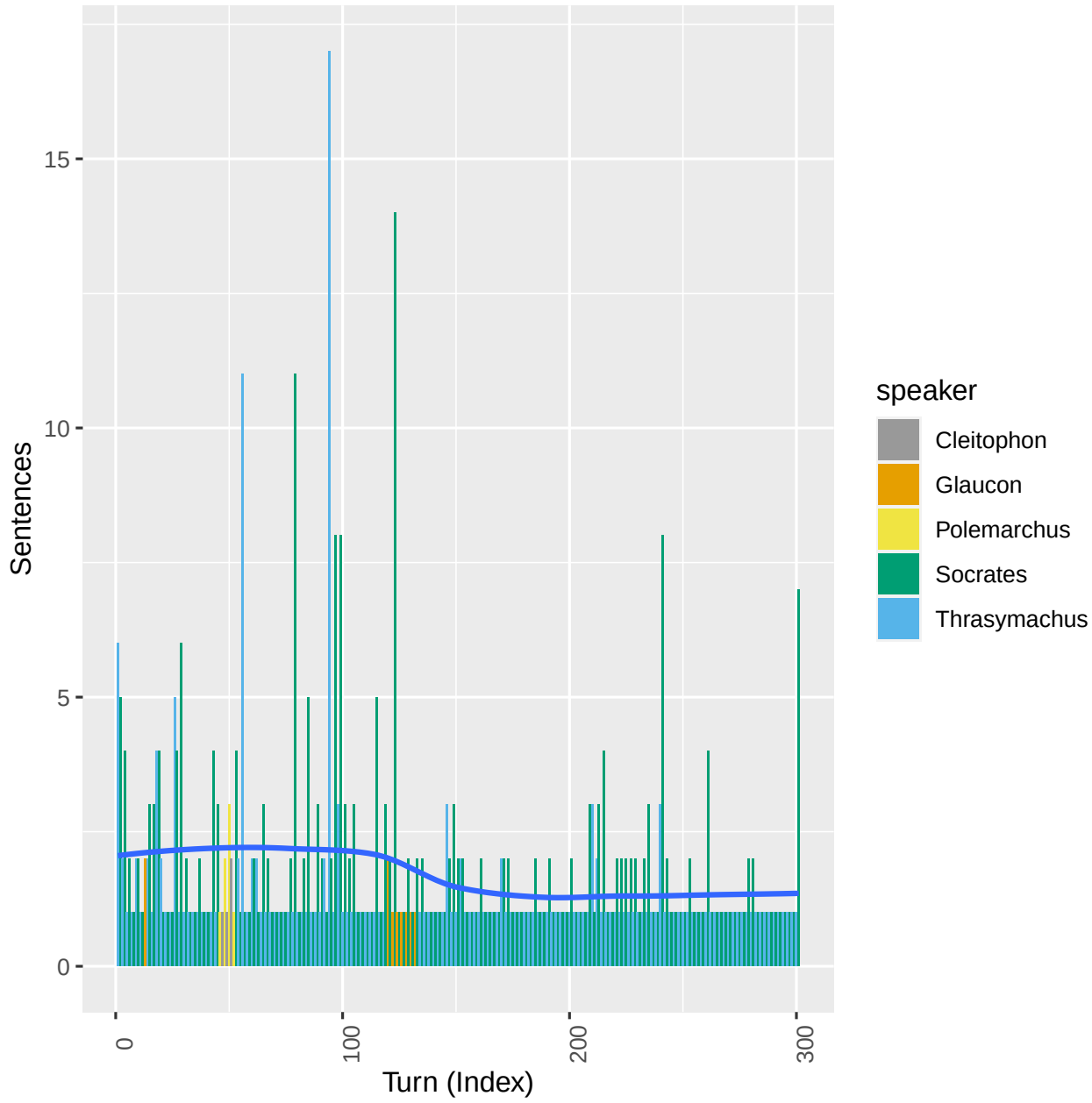
Turn Density III

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

Turn Density $\overline{\text{IV}}$

- 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

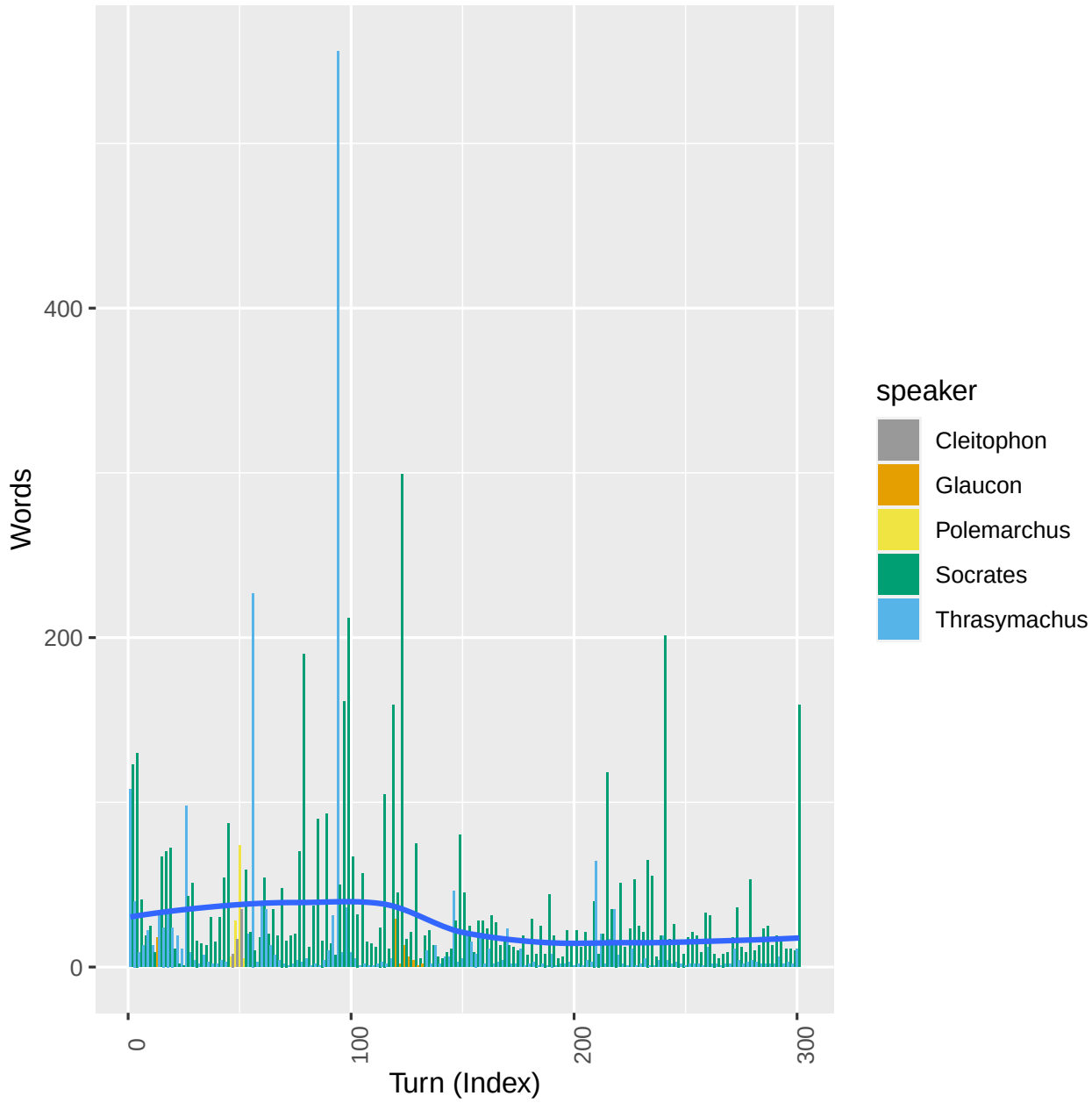
Turn Density $\bar{v}$



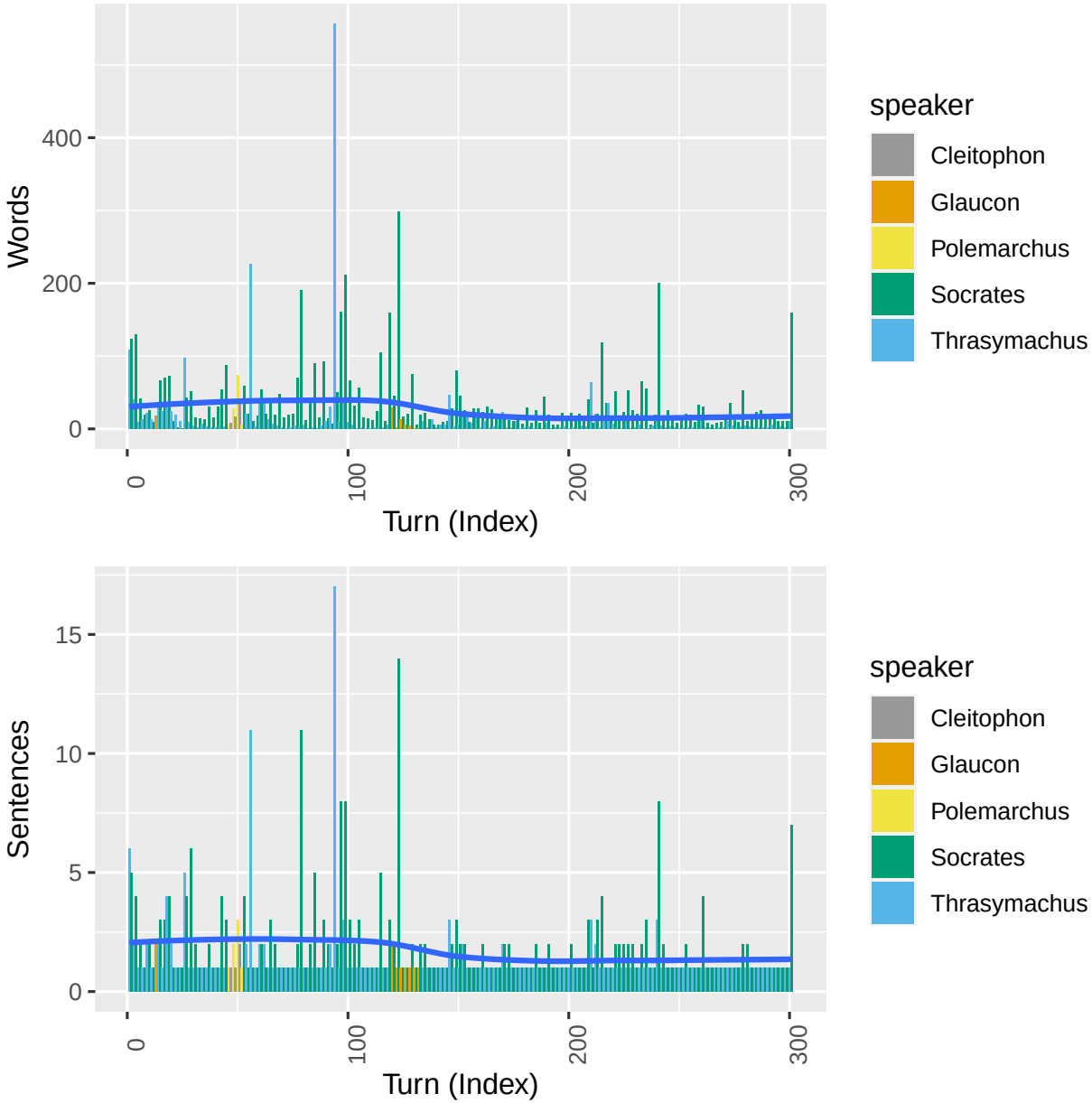
Turn Length ī

- 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

Turn Length II



Turn Size Index ī



Index ī

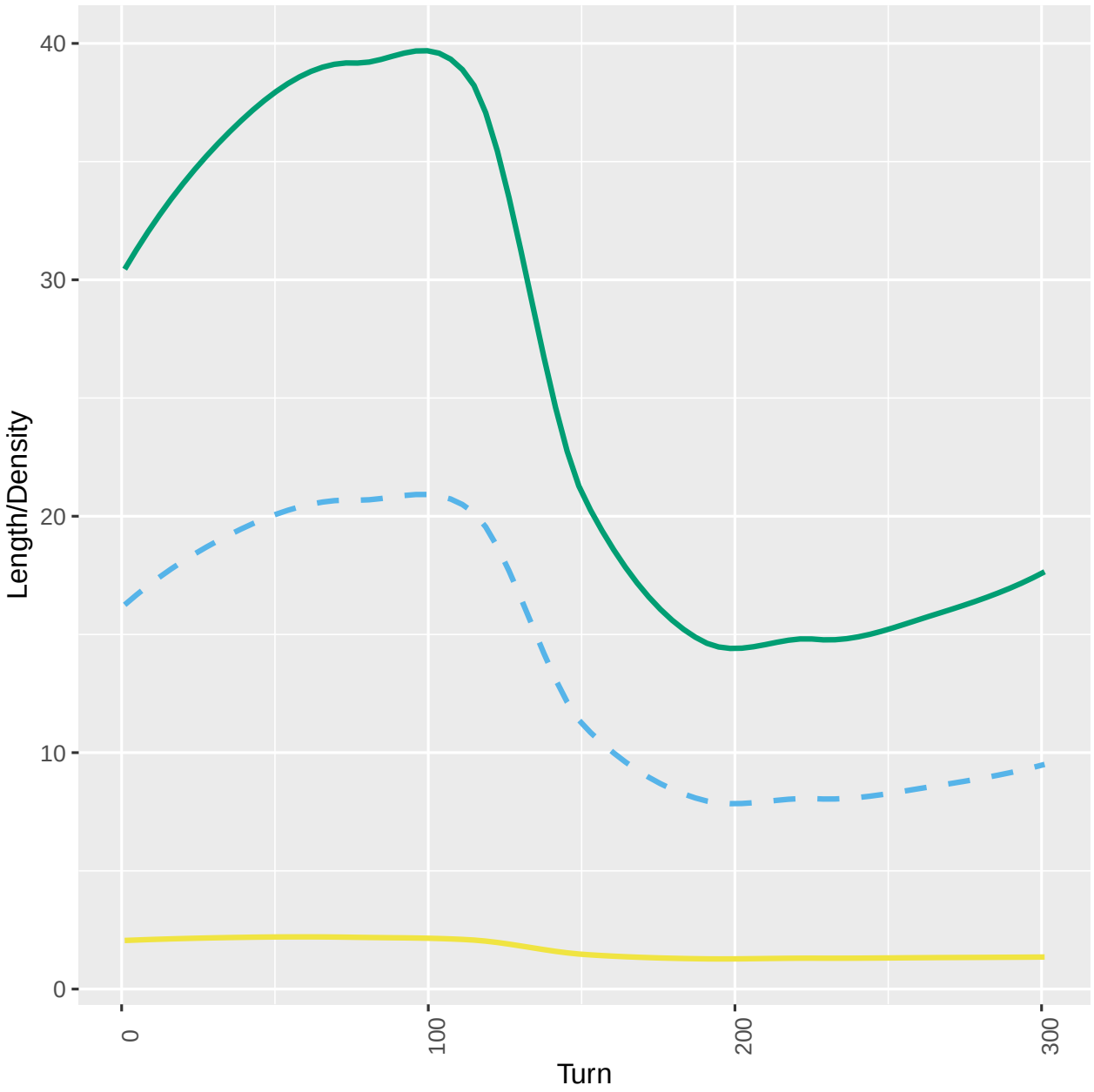
Density / Length Correlation Coefficient

```
[1] 0.9294758
```

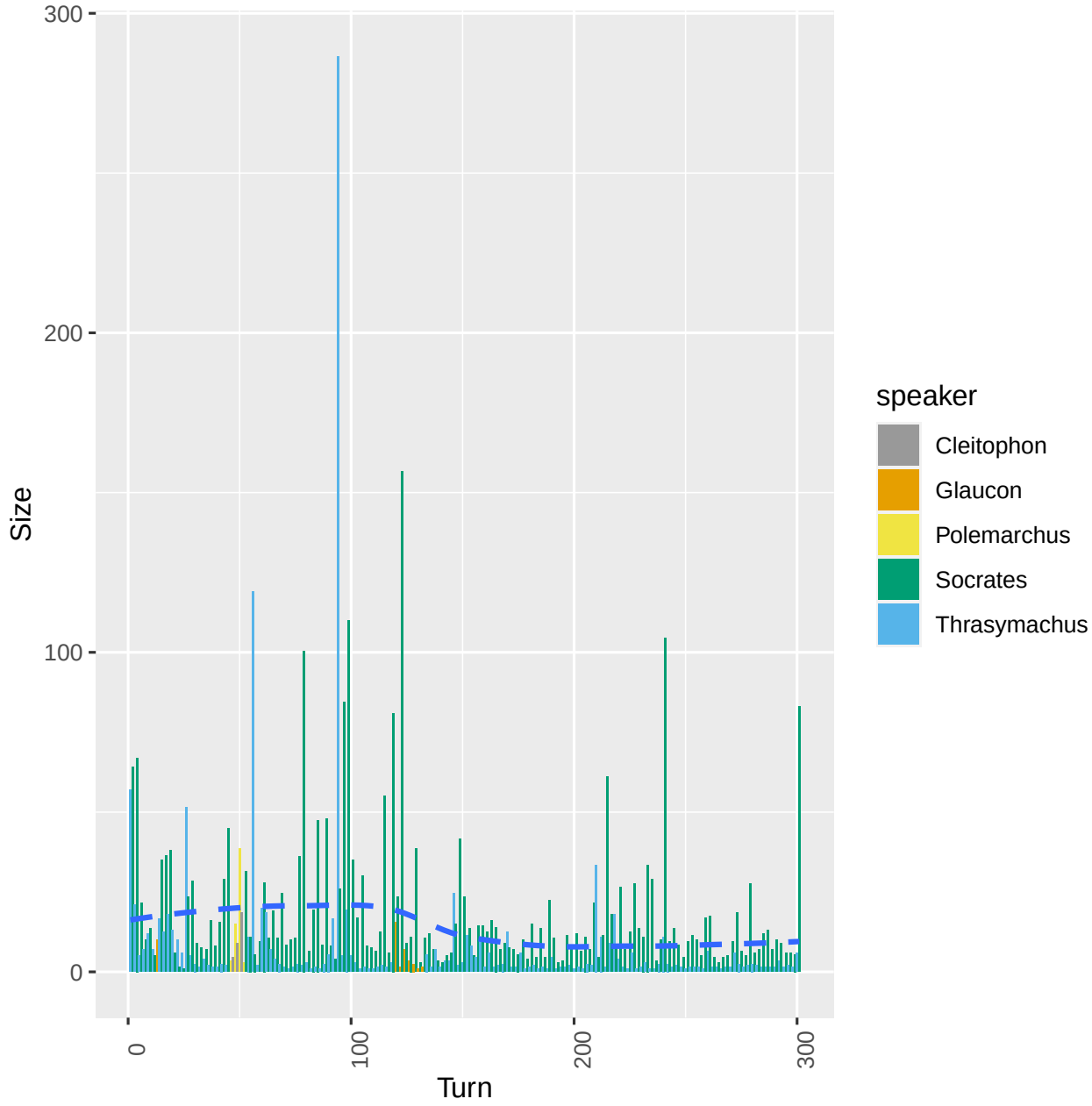
Index $\bar{\text{ı}}$

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

Index III



Index IV


300
200
100
0
Size
0
100
200
300
Turn
speaker
Cleitophon
Glaucon
Polemarchus
Socrates
Thrasymachus

Sentiment Analysis ī

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

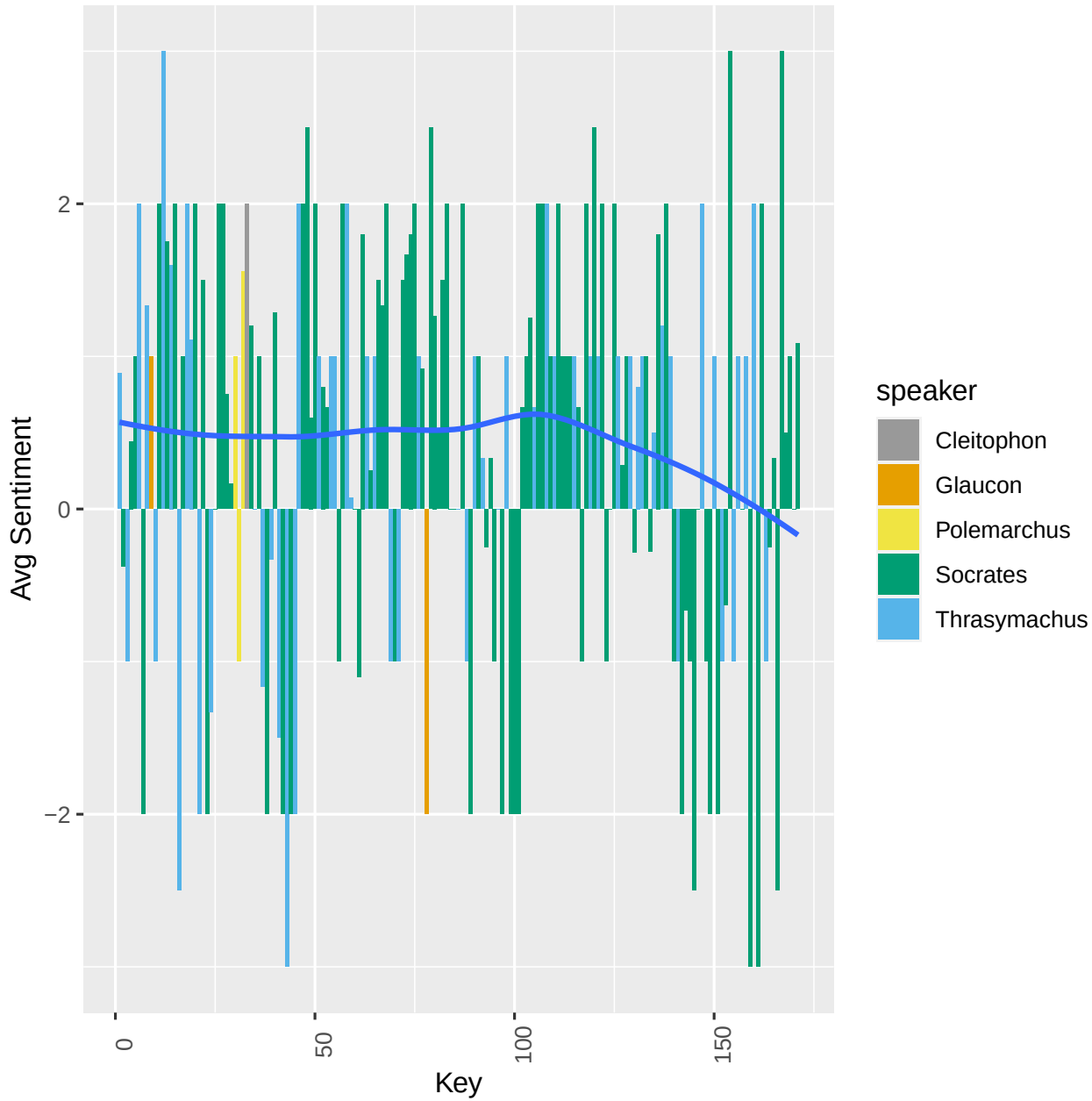
Sentiment Analysis II

```
# A tibble: 6 × 5
  speaker       mean median  mode    sd
  <chr>        <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 polemarchus  0.519  1         NA  1.34
5 socrates     0.433  0.775     2  1.50
6 thrasymacus  0.380  1         1  1.30
```

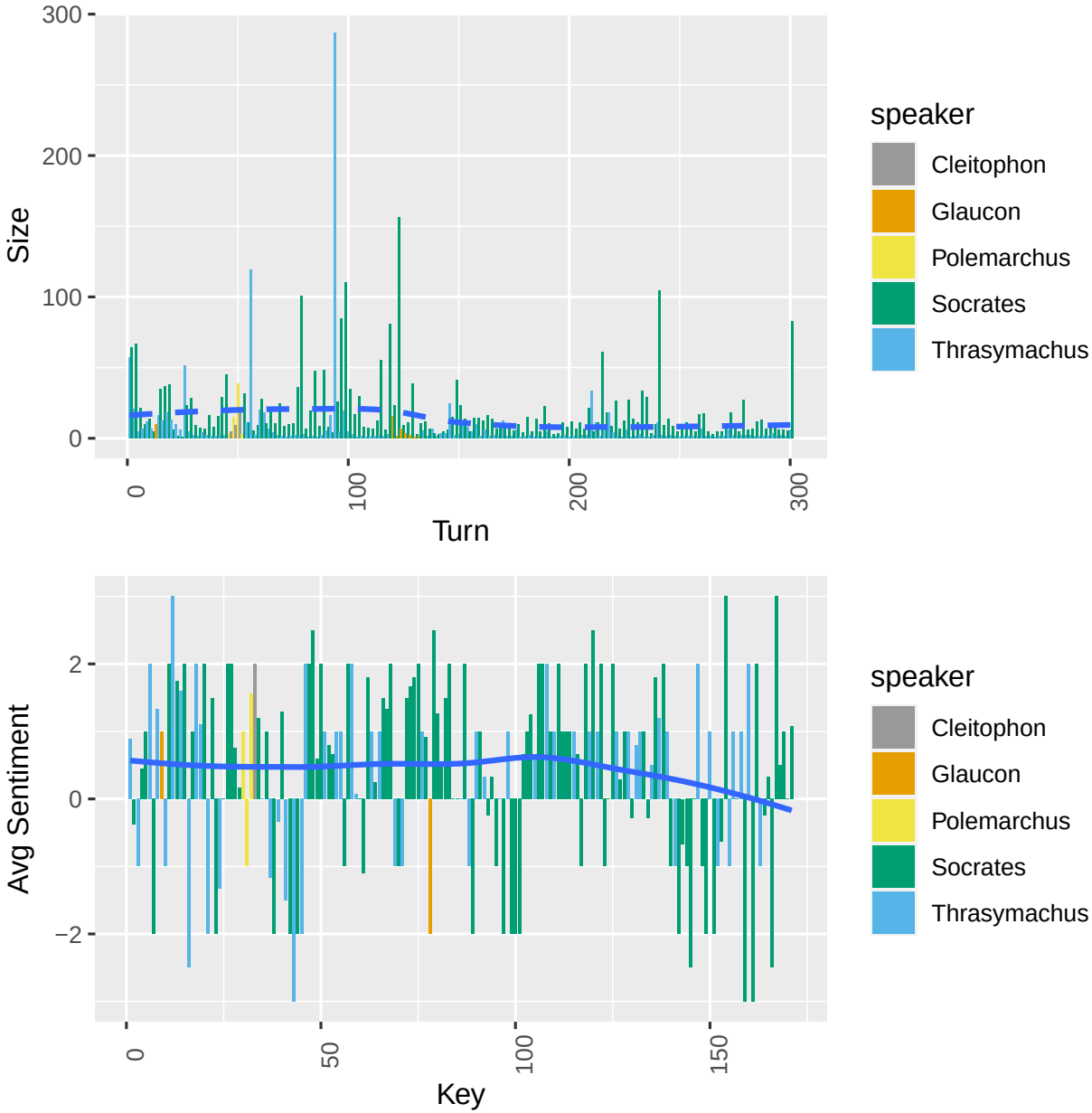
Sentiment Analysis III

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

Sentiment Analysis IV



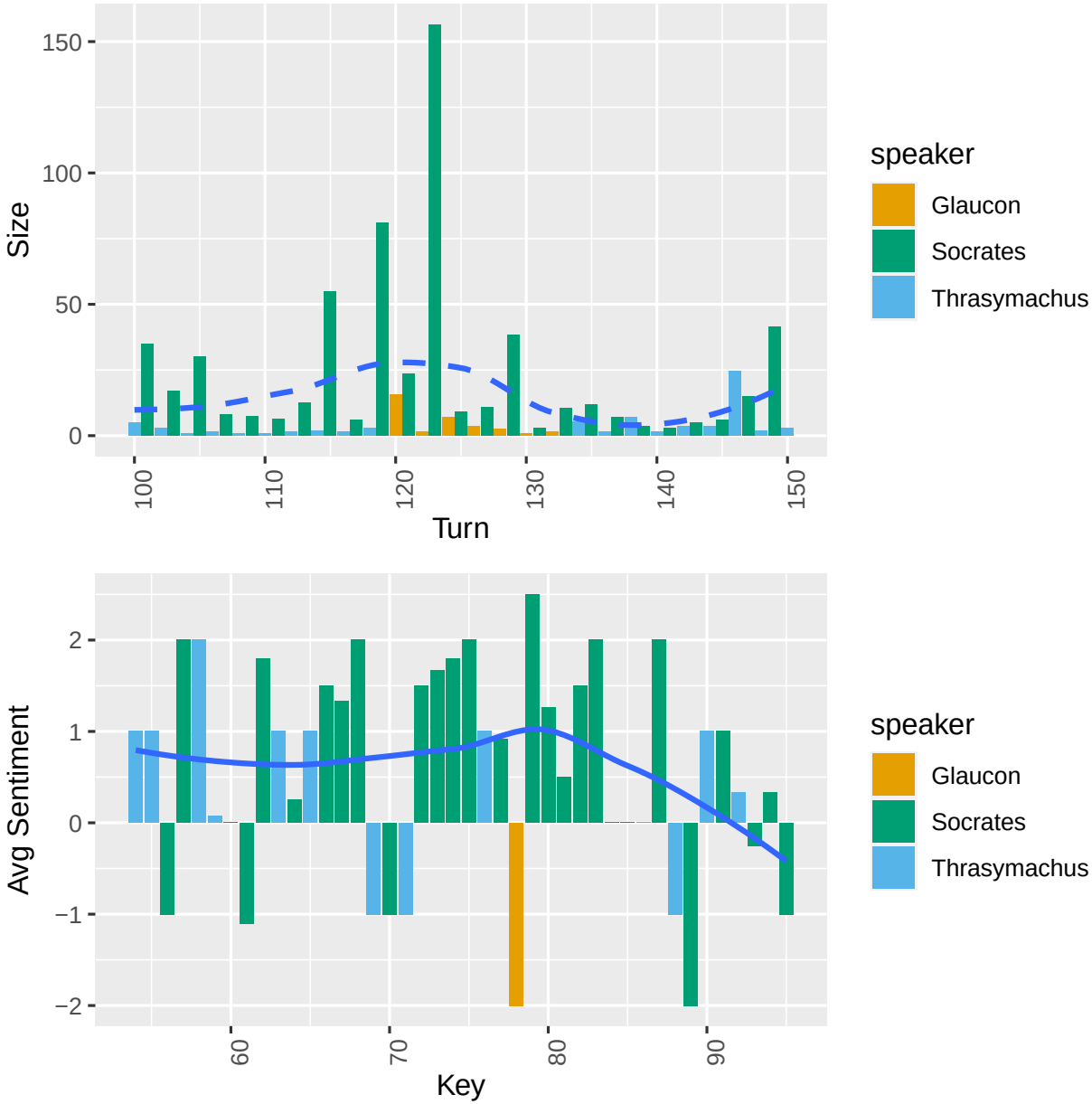
Results ī


Size
300
200
100
0
0
100
200
300
Turn
speaker
Cleitophon
Glaucon
Polemarchus
Socrates
Thrasymachus
Avg Sentiment
2
0
−2
0
50
100
150
Key
speaker
Cleitophon
Glaucon
Polemarchus
Socrates
Thrasymachus

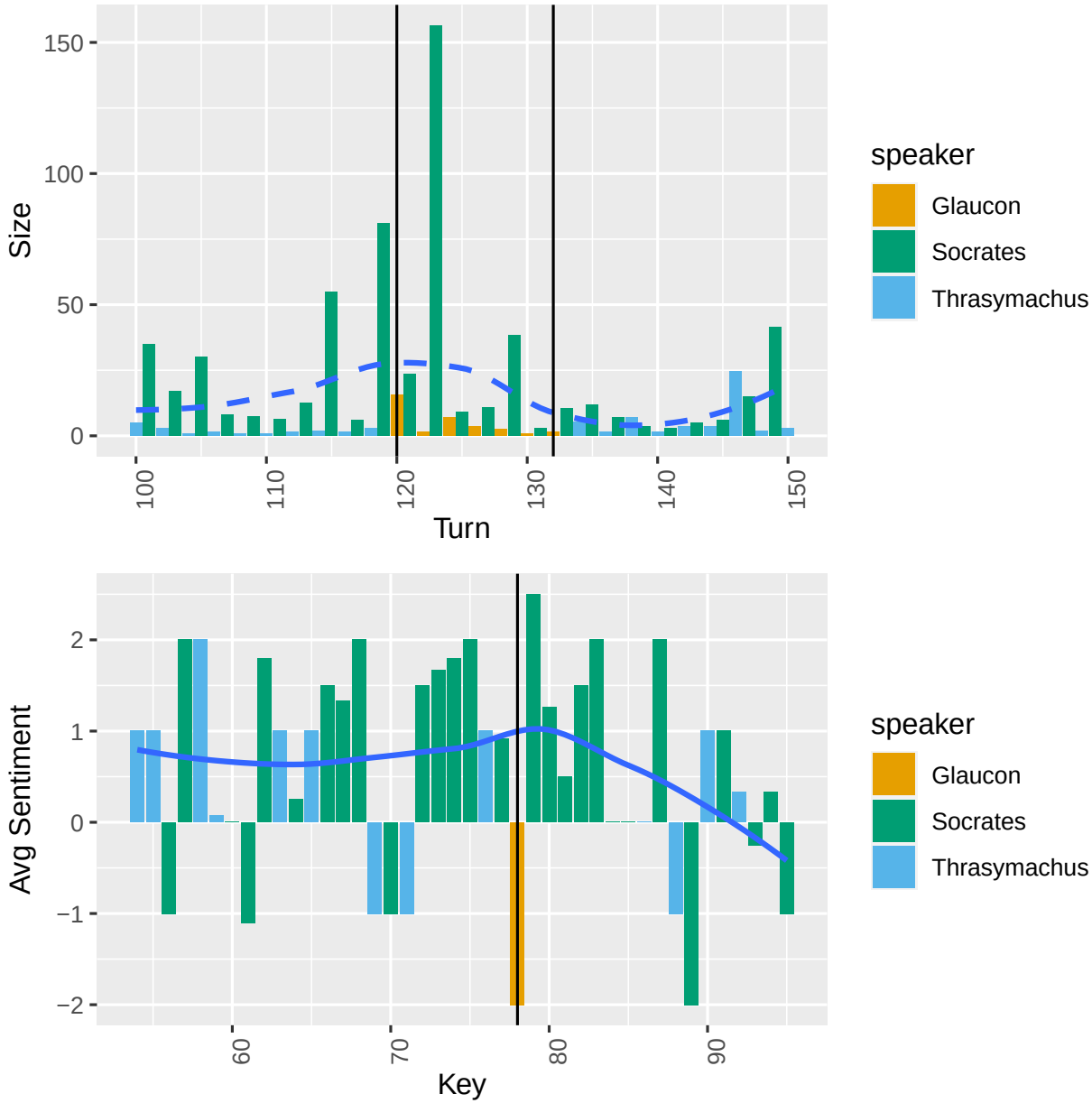
Results II

- 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

Results III


Size
150
100
50
0
100
110
120
130
140
150
Turn
speaker
Glaucon
Socrates
Thrasymachus
Avg Sentiment
2
1
0
−1
−2
60
70
80
90
Key
speaker
Glaucon
Socrates
Thrasymachus

Results IV


Size
150
100
50
0
100
110
120
130
140
150
Turn
speaker
Glaucon
Socrates
Thrasymachus
Avg Sentiment
2
1
0
−1
−2
60
70
80
90
Key
speaker
Glaucon
Socrates
Thrasymachus

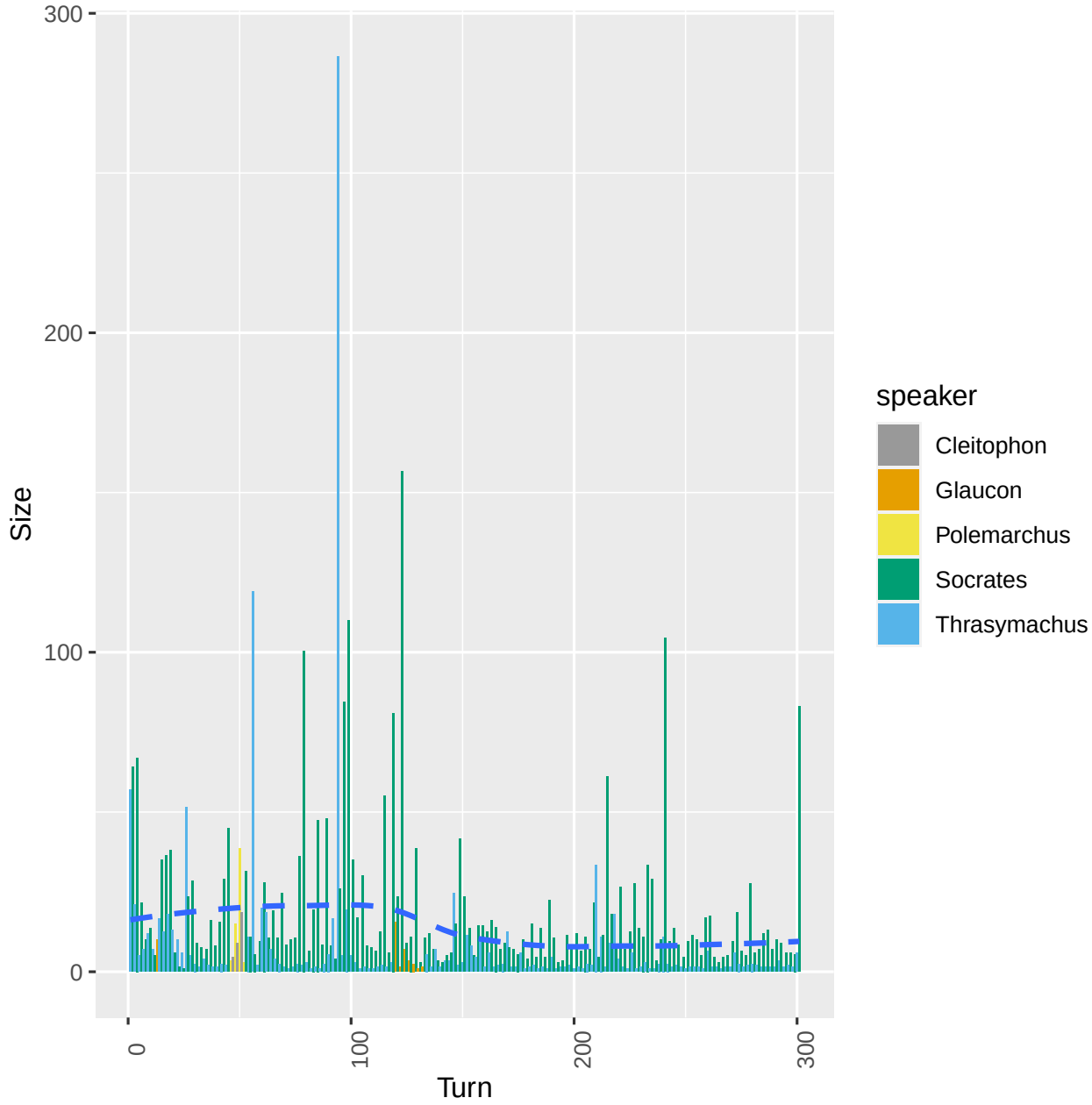
Results $\overline{\text{V}}$

- 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?

Results VI


300
200
100
0
Size
0
100
200
300
Turn
speaker
Cleitophon
Glaucon
Polemarchus
Socrates
Thrasymachus