

#filterbubble

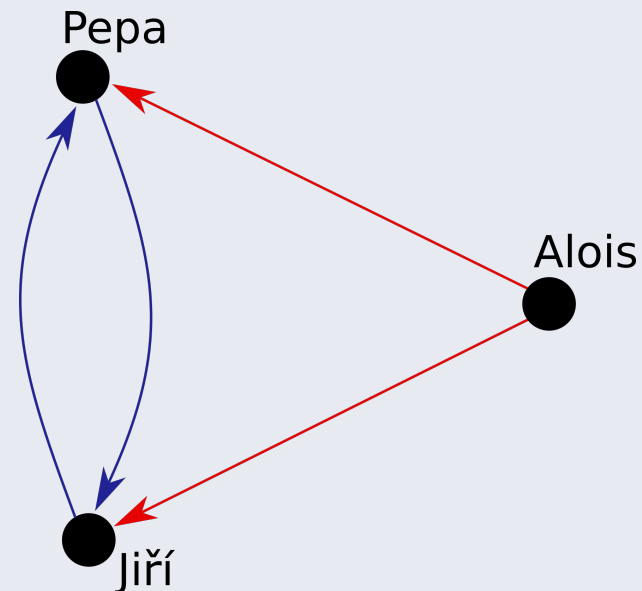
Filter Bubble

Living in one's own information environment.

- ▶ occurs on social networks
- ▶ caused by preferential algorithms
- ▶ first mentioned by Eli Pariser (2011)

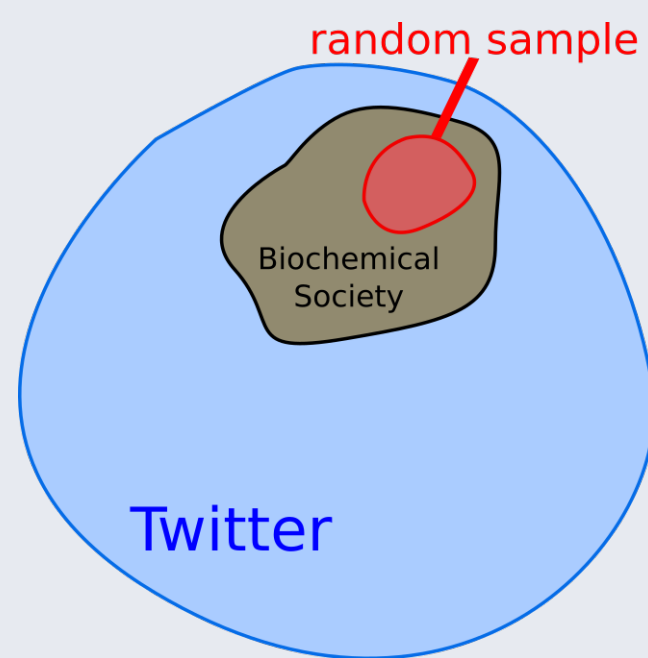
1. Twitter

- ▶ microblogging platform
- ▶ **following, followers** system
- ▶ Twitter API is suitable data source



2. Studied groups selection

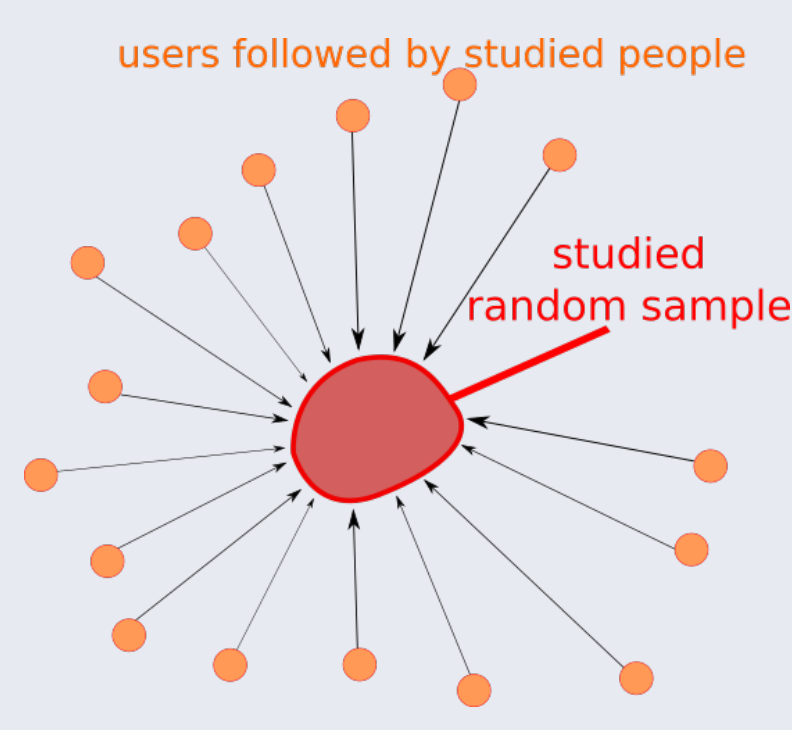
- ▶ random sample from followers of the significant group



Twitter → Biochemical Society → **studied people**

3. Tweets collection

- ▶ analysing content affecting the studied people



- ▶ i. e. content from **followed people**

4. Tweets filtering

- ▶ filter only tweets on given topic

Keyword "**Trump**":

- ✗ I had fish and chips for lunch.
- ✓ I'm glad Donald **Trump** is the president of the USA.

5. Sentimental analysis

- ▶ measure sentiment of collected tweets
- ▶ **positive** vs. **negative** tweets
 - Donald Trump is a terrible person.*
(0.14)
 - Donald Trump is a great person.*
(0.95)

Motivation

Threats for democracy:

content **homogeneity**
↓
loss of objectivity
↓
radicalization

Goals:

- ▶ filter bubble detection
- ▶ filter bubble quantification

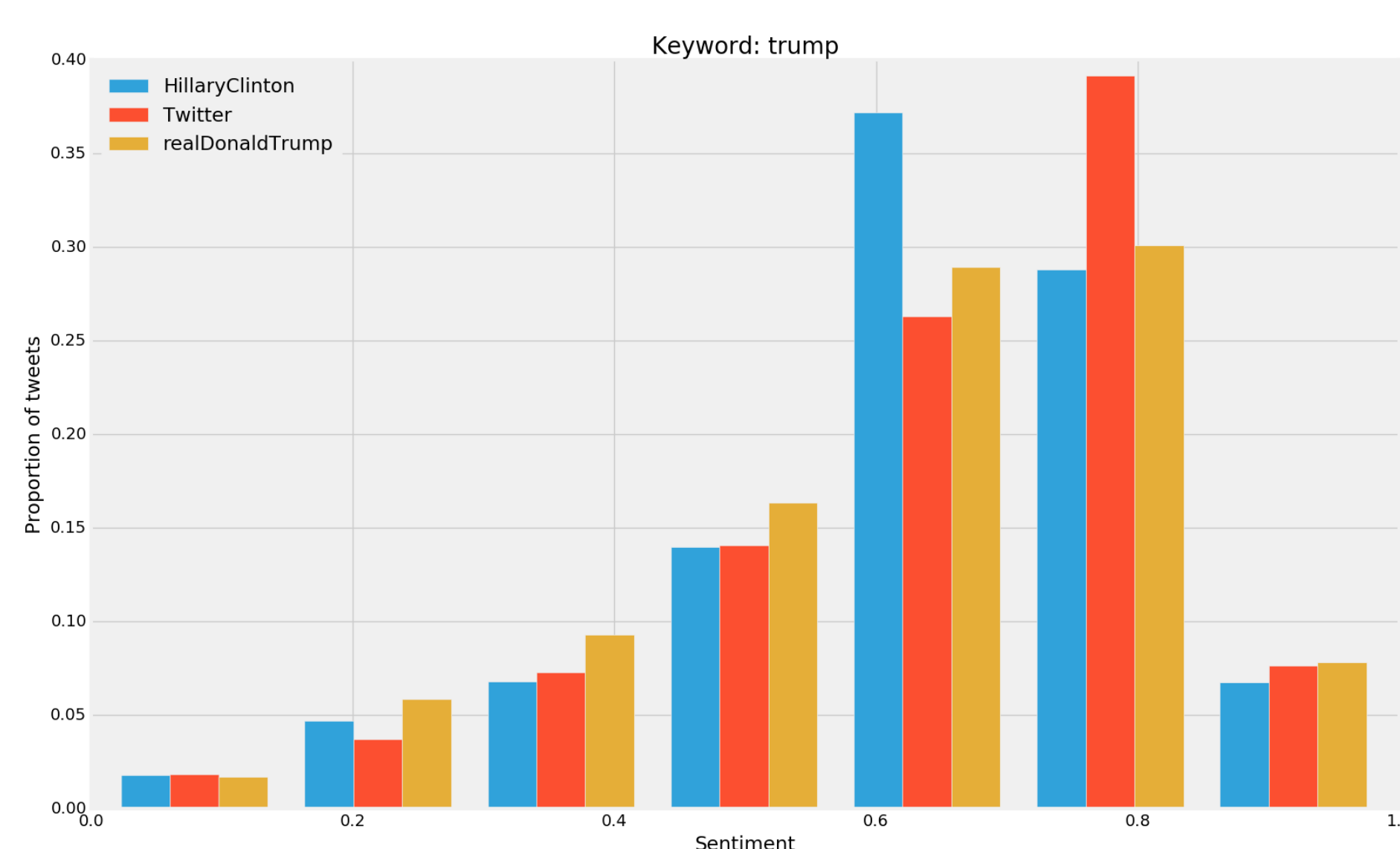
Measurements

Studied groups:

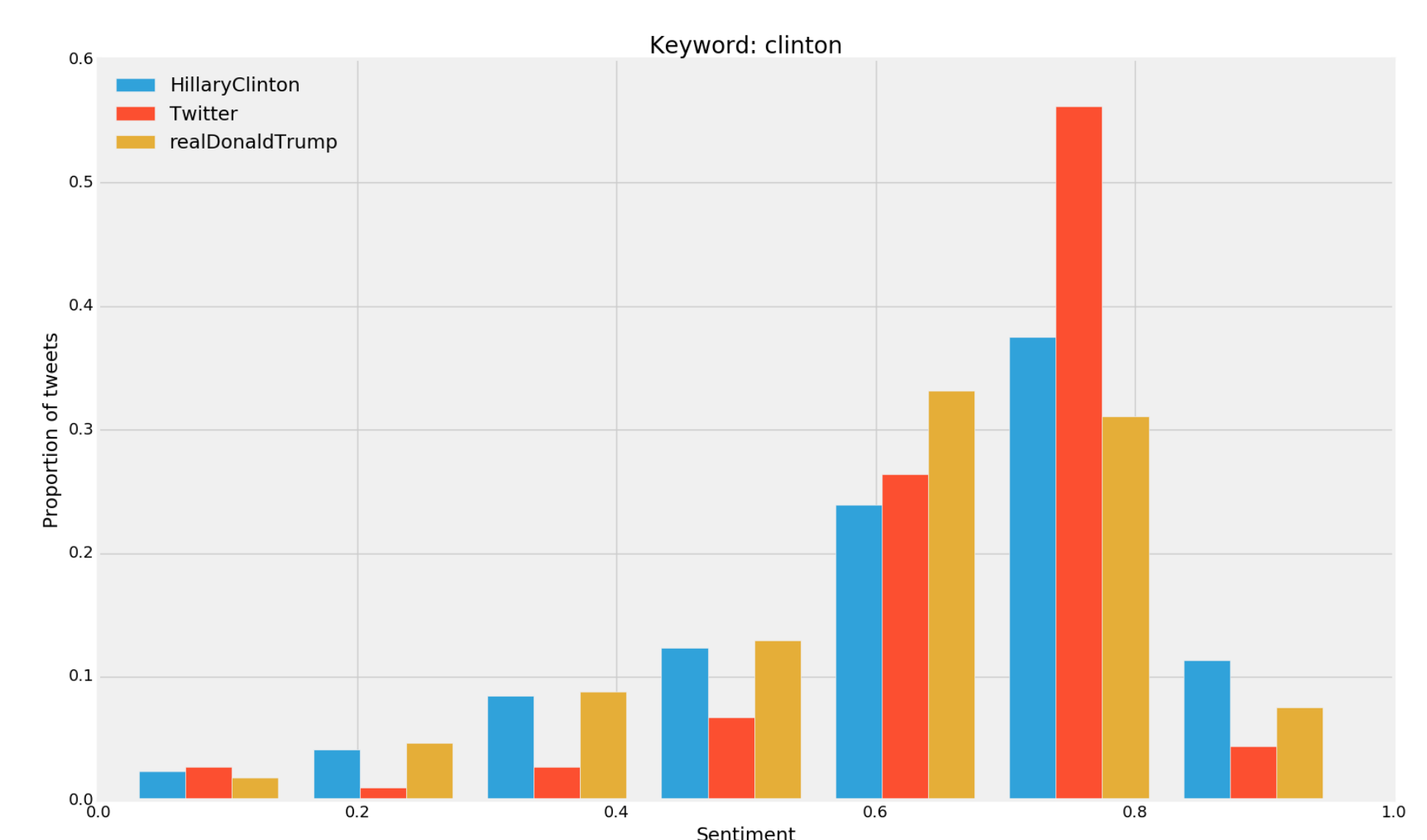
- ▶ Hillary Clinton's supporters
- ▶ Donald Trump's supporters

Topics:

- ▶ Hillary Clinton
- ▶ Donald Trump



Normalized sentiment histogram for topic "*Trump*".

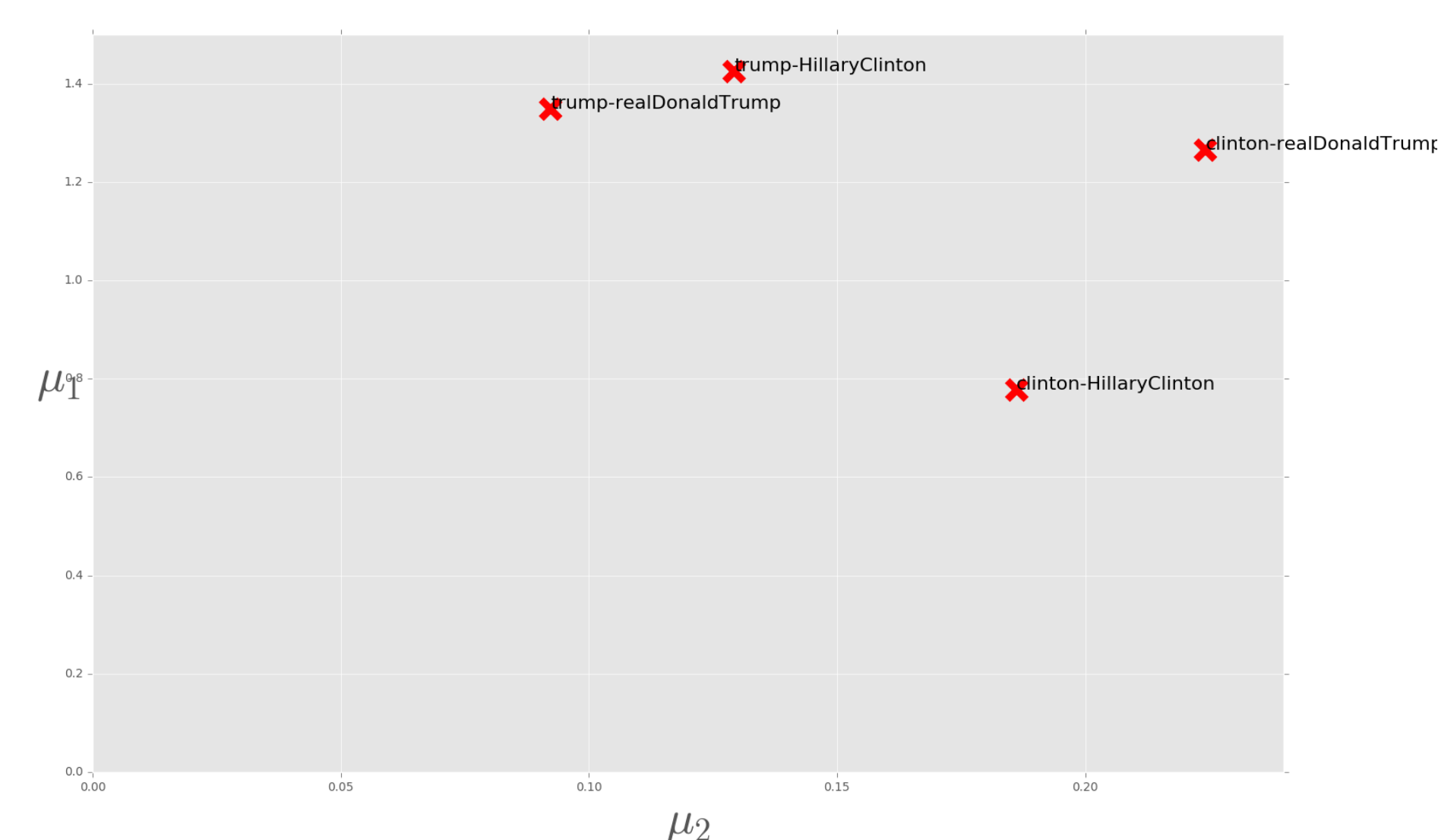


Normalized sentiment histogram for topic "*Clinton*".

Proposed measure

We define group affected by *Filter Bubble* as the group that lays in different information environment than average twitter user. The environment may differ in two ways:

1. the number of tweets on given topic
2. sentiment distribution.



Phase diagram of our measurements. Further from origin means they receive **less balanced** information.

Conclusion

We save the World.