

# **POL40300: COMPUTATIONAL METHODS**

Lecture 2 by Nikolai Gad

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## THIS WEEK

- An example: Usherwood and Wright "Sticks and Stones"
- Tutorial: More R basics and your first data analysis

**USHERWOOD, S., & WRIGHT, K. A. (2017). STICKS AND STONES: COMPARING  
TWITTER CAMPAIGNING STRATEGIES IN THE EUROPEAN UNION REFERENDUM.**

## RESEARCH QUESTION

“This article considers the basic question of how and why the campaigns on the two sides differed in their content and framing.”

“Do new social media reinforce or subvert the logics of campaigning that existed beforehand?” (p. 372)

# HYPOTHESES

- All groups will use Twitter more to mobilise existing supporters, rather than to convert new ones (H1)
- Leave groups will be more negative in their framing (H2)
- Leave groups will make more use of emotional language and frames (H3)
- Leave groups will make more use of 'sticks' than Remain (H4)
- Remain groups will make more use of 'stones' than Leave (H5)

Sticks: “Sticks are mistakes made by the other side, which are then used to question that side’s competence and credibility.” (p. 376)

Stones: “Stones are identified as core arguments – both substantive and emotional – in an attempt to anchor debate and set agendas.” (p. 376)

## **DATA COLLECTION**

Tweets collected weekly: Tweet content, time stamps, retweets, followers.

### **ADVANTAGES AND DISADVANTAGES OF DATA COLLECTION METHOD?**

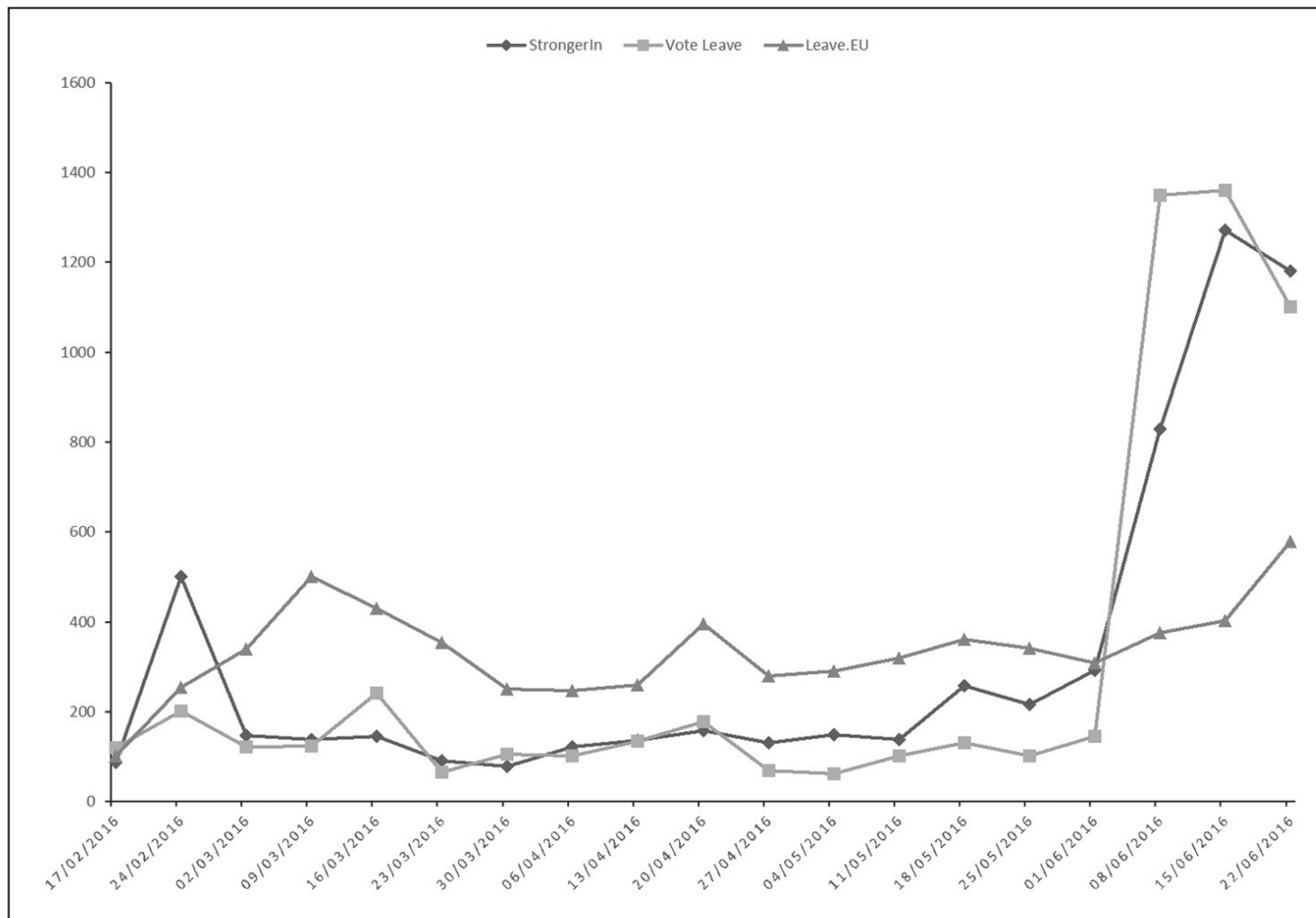
- Data access/availability
- Tweets have not had equal time to be retweeted.
- Deleted tweets.

# SAMPLE STATISTICS

**Table 1.** Twitter follower growth.

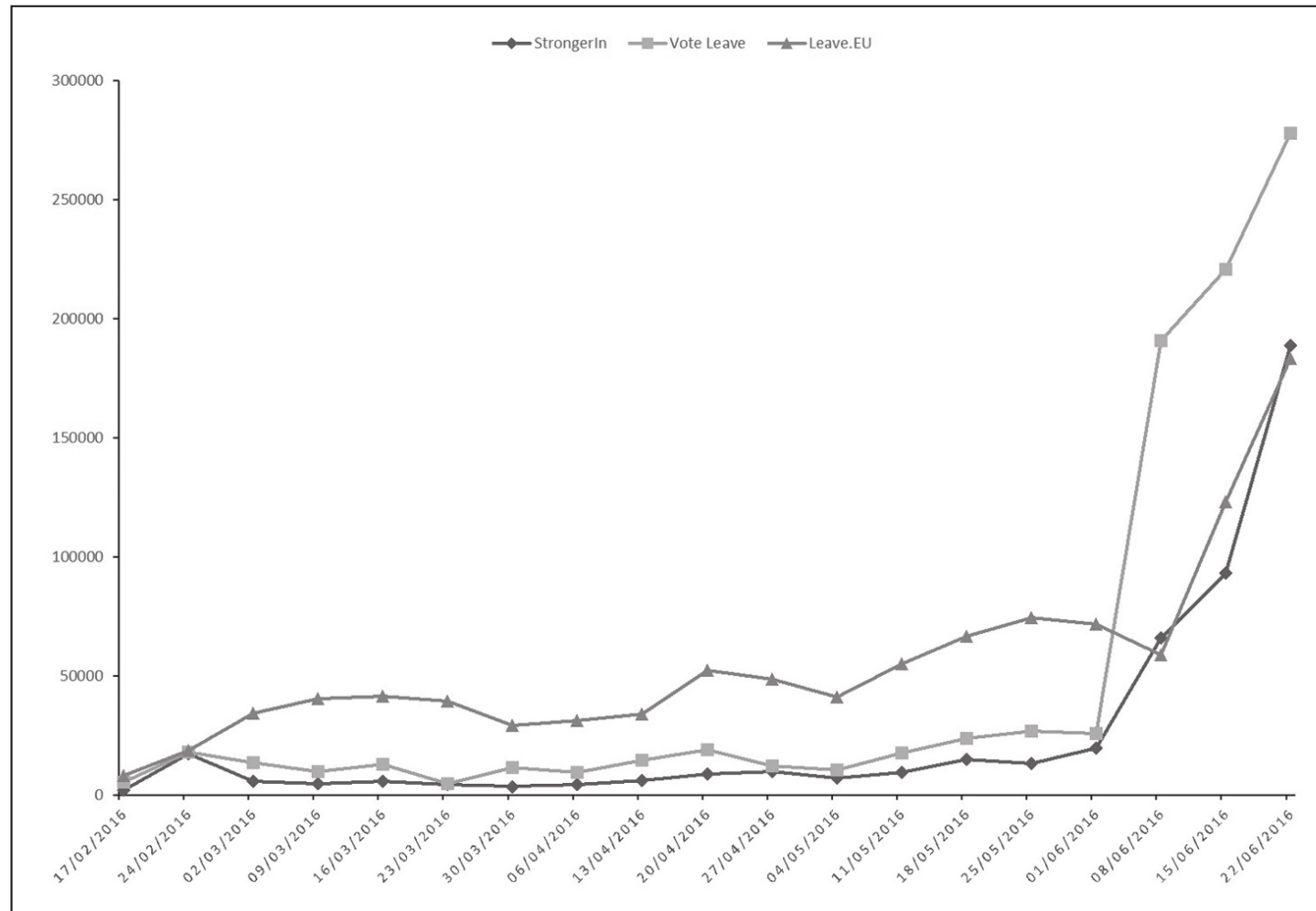
	11 February	13 April	1 June	22 June
Stronger In	10,496	22,447	32,487	48,314
Vote Leave	17,455	33,813	49,140	68,791
Leave.EU	61,546	84,065	89,466	94,437



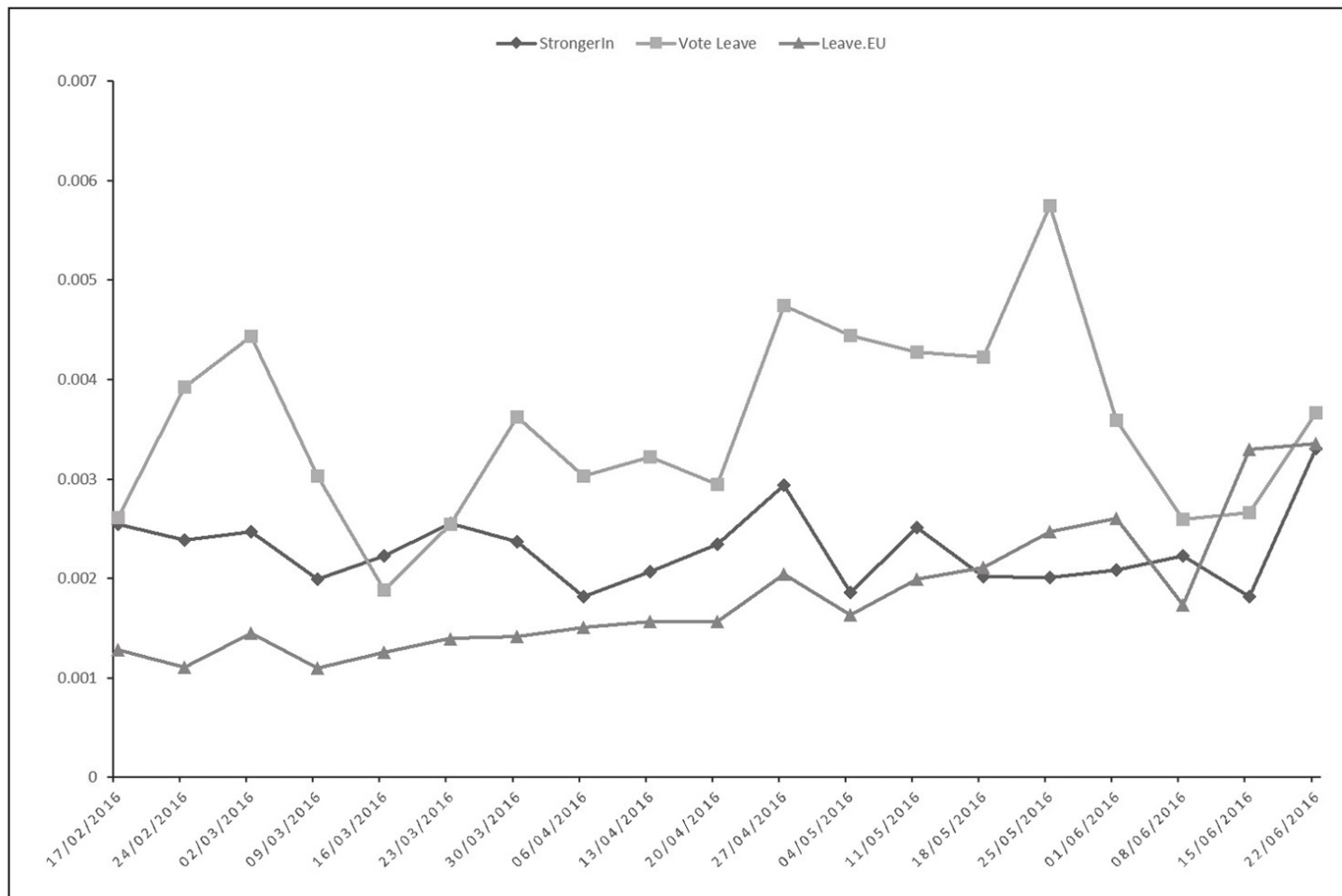


**Figure 1.** Number of tweets, per group.

# FOLLOWER ENGAGEMENT



**Figure 2.** Absolute retweets, per group.



**Figure 3.** Engagement (mean retweets/tweet/follower), per group.

## **VALIDITY OF MEASURES: WHAT ARE THEY ACTUALLY TRYING TO MEASURE? AND DO YOU THINK THESE MEASURES ARE VALID?**

Does retweeting “...suggest it has an increased value for (...) individuals and scope to become viral, spreading out to an ever-wider set of users and thus creating opportunities to inform or sway voters.”?

- Can we imagine that a retweet tends to mean something different for followers of one group than another?

Reliability of measure:

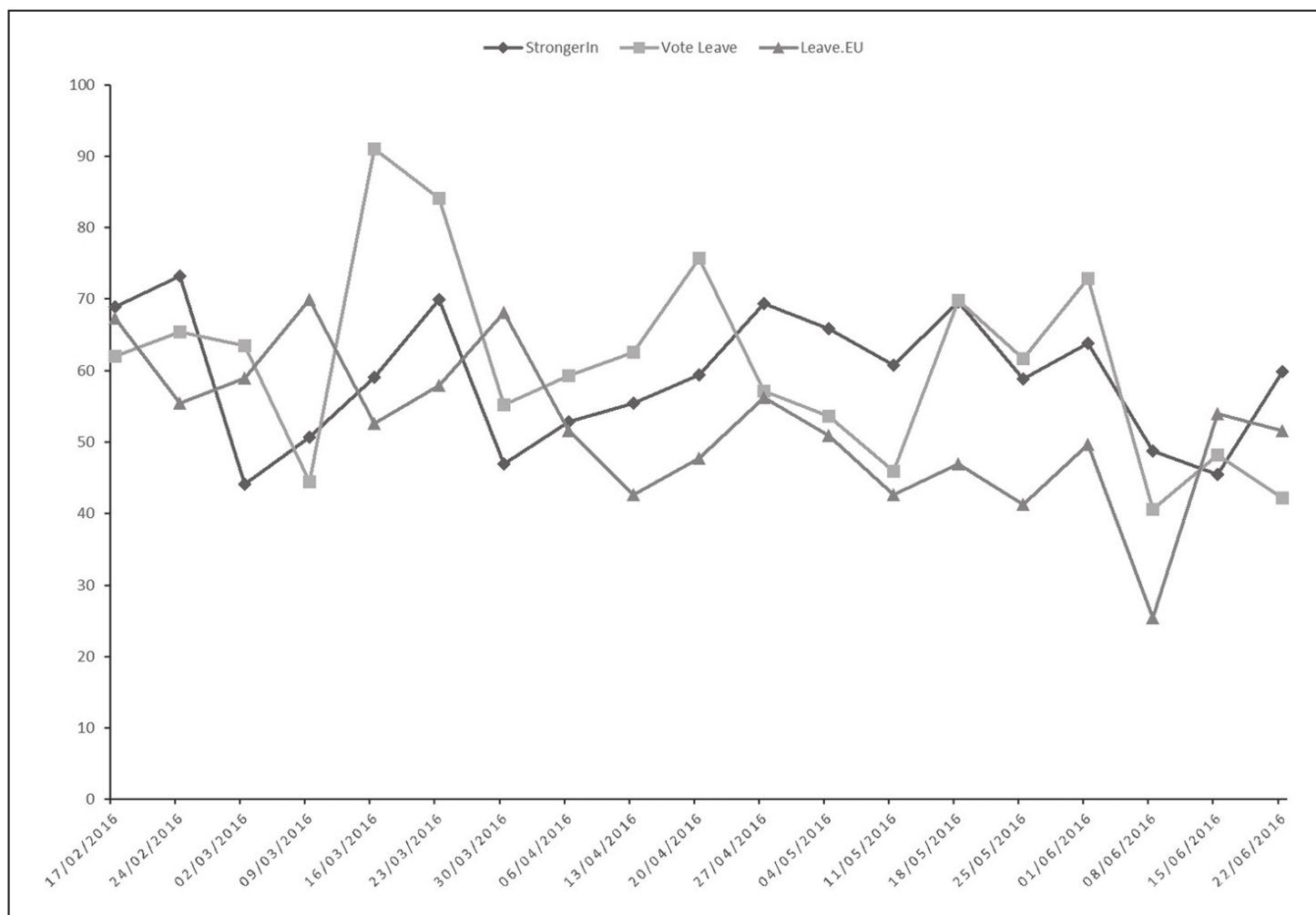
- Mean retweets/tweet/follower – is this a fair measure to compare engagement across groups? Bias towards how much each group tweet?

# FRAMING ANALYSIS

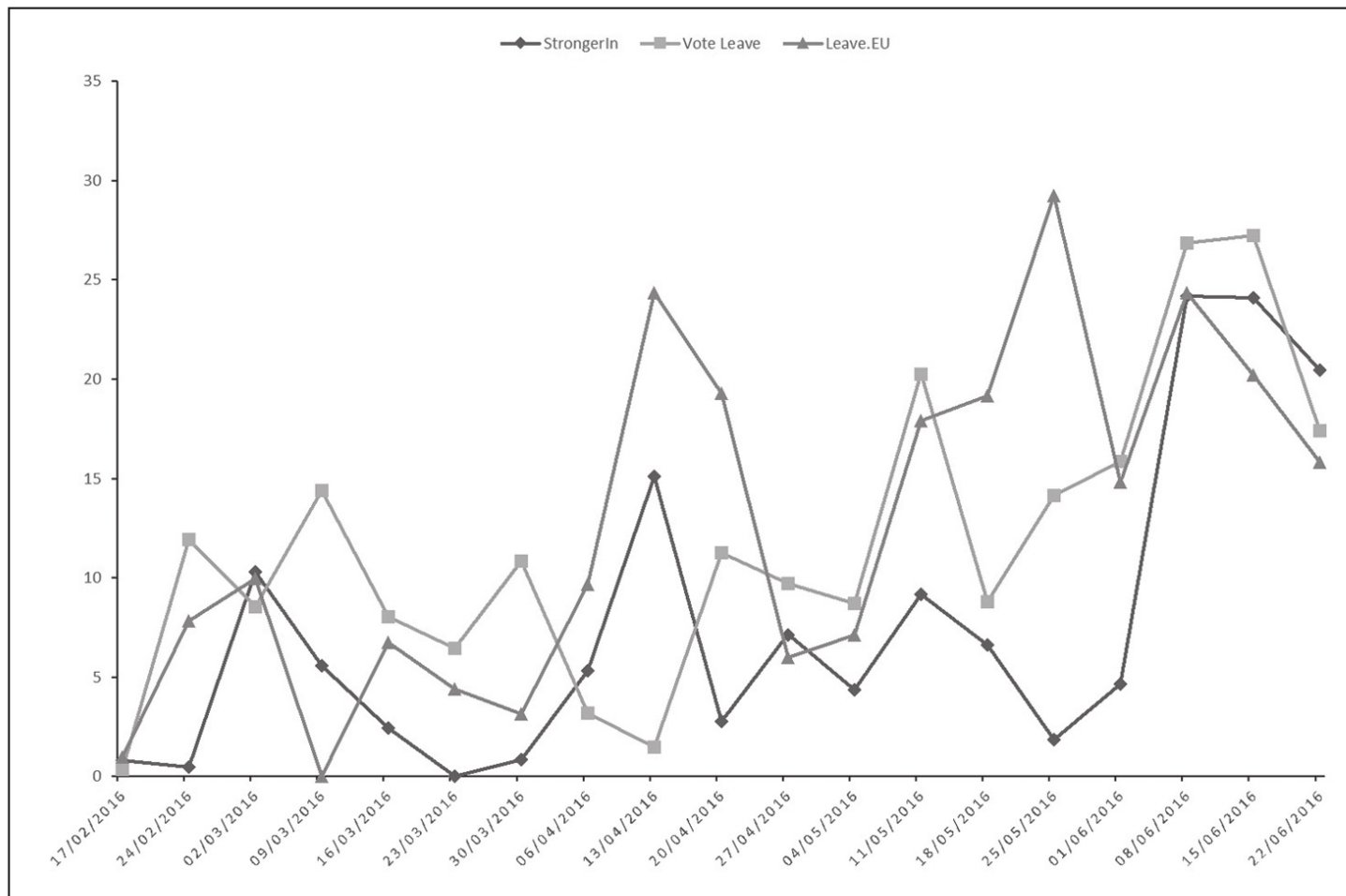
	<b>Positive:</b>	<b>Negative:</b>
Substantial:	Argument for benefits of preferred outcome.	Argument against negative consequences of outcome not preferred.
Presentation of group/opponent:	Positive mention of own group.	Negative mention of other group.

**Table 2.** Groups' tweets containing frames, percentage.

	Stronger In	Vote Leave	Leave.EU
Positive arguments	27.34	16.07	16.48
Negative arguments	27.78	35.82	33.78
Positive mentions of own group	33.53	39.88	38.20
Negative mentions of other groups	19.45	18.63	13.68



**Figure 4.** Positively framed tweet, per group (%).



**Figure 5.** Tweets with negative comments about other groups, per group (%).



**IS THIS A COMPUTATIONAL METHOD?**

# **THEMATIC ANALYSIS**

**INDUCTIVELY DRIVEN BY RESEARCH QUESTION A NUMBER OF THEMES WERE IDENTIFIED AND EACH TWEET WAS CODED WITH IT'S PRIMARY THEME.**

**Table 3.** Groups' tweets by theme, percentage.

	Stronger In	Vote Leave	Leave.EU
Positive on EU	5.67	0.00	0.00
Criticism of EU	0.00	13.56	15.96
Politics	6.05	12.60	15.91
Domestic	10.35	6.29	5.22
Business/trade	26.37	7.46	12.76
Security	3.99	2.85	2.78
Role in the world	3.60	0.73	1.79
Immigration	1.20	11.18	6.55
External views	3.53	0.59	4.13
Celebrity/public figures	2.70	0.40	1.08
Public opinion	0.20	0.43	1.87
Campaign	20.25	20.90	24.26
Opposing campaigns	19.09	13.04	6.68

EU: European Union.

**IS THIS A COMPUTATIONAL METHOD?**

# SENTIMENT ANALYSIS

- Methods to systematically identify, extract, and quantify affective states and subjective information computationally.
- Many different approaches.
- Usherwood and Wright uses the most simple approach.
- Dictionary based - lexical semantics (contrary to supralexicical or lexicogrammar)
- A list of positive words and a list of negative words predefined.
- Count how often each group use each word (per individual tweet and per group).

## ANY DRAWBACKS ON THIS METHOD TO SENTIMENT ANALYSIS?

- Negation ("I do not dislike...", "Disliking the environment is not really my thing")
- Sarcasm and irony.
- Sentiment expressed without "affective words"?
- Ambiguity (lexical, scopal, and referential)
- Cultural references.
- Positive/negative distinction relevant/satisfactory cover affects?

**Table 4.** Groups' use of affect.

	Stronger In		Vote Leave		Leave.EU	
	By tweet	By words	By tweet	By words	By tweet	By words
Negative Affect	0.36	1.99%	0.37	2.07%	0.42	2.43%
Positive Affect	0.65	3.62%	0.55	3.04%	0.46	2.63%
Total Affect	1.01	5.61%	0.92	5.11%	0.88	5.06%

# WORD FREQUENCIES

**Table 5.** Twenty most frequent word-stems, by group.

Stronger In		Vote Leave		Leave.EU	
Word	Weighted %	Word	Weighted %	Word	Weighted %
leaving	2.26	@voteleave	2.99	Brexit	1.51
@strongerin	2.18	voting	1.56	@leaveeu	1.44
Europe	1.49	#takecontrol	1.23	leaving	1.07
voting	1.15	leaving	1.23	voting	0.78
campaign	1.09	Gove	0.68	grassroots	0.73
remain	0.91	campaign	0.65	#euref	0.53
Britain	0.8	control	0.59	remain	0.46
jobs	0.79	#itveuref	0.58	trading	0.41
#bbcdebate	0.55	immigration	0.57	campaign	0.41
Brexit	0.54	#bbcqt	0.56	Farage	0.38
#itveuref	0.53	Cameron	0.55	Britain	0.37
@strongerinpress	0.48	#Inorout	0.5	Nigel	0.37
better	0.44	#bbcdebate	0.48	Cameron	0.36
rights	0.44	remain	0.45	back	0.34
economy	0.42	Brexit	0.43	people	0.33
means	0.41	lets	0.42	Going	0.33
today	0.41	Boris	0.42	European	0.3
clearly	0.41	join	0.41	referendum	0.29
busy	0.41	today	0.41	support	0.28
trading	0.4	back	0.4	June	0.28



## **IS THIS A COMPUTATIONAL METHOD?**

Could be considered a (very) simple kind of topic modelling?

# CONCLUSIONS

## RESEARCH QUESTION

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## TAKE AWAYS

- Are your study driven by a research question or data? (or methods)
- Is your data a sample? What is it a sample of? And is it representative?
- Have you defined the concepts you are studying clearly enough to be measured?

**TOMORROW: TUTORIAL ON DATA MANAGEMENT IN R**