

# Bovine Tuberculosis in Britain – identifying signatures of polarisation and controversy on Twitter

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- We compare with the less controversial (but no less important!) topic of Bovine Viral Diarrhoea (BVD).

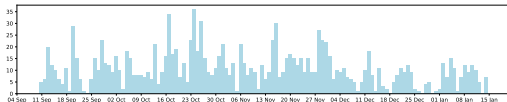
# Volumes / Interaction (snapshot)

- Collected from Twitter public API, over a 120 day period from *September 2018 to January 2019*.
- bTB: **16628** tweets (82.2% retweets, 13.5% quoted, 3.2% replies)



\*Government Bovine TB strategy published 13th Nov

- BVD: **1342** tweets (63.9% retweets, 11.5% quoted, 6.0% replies)

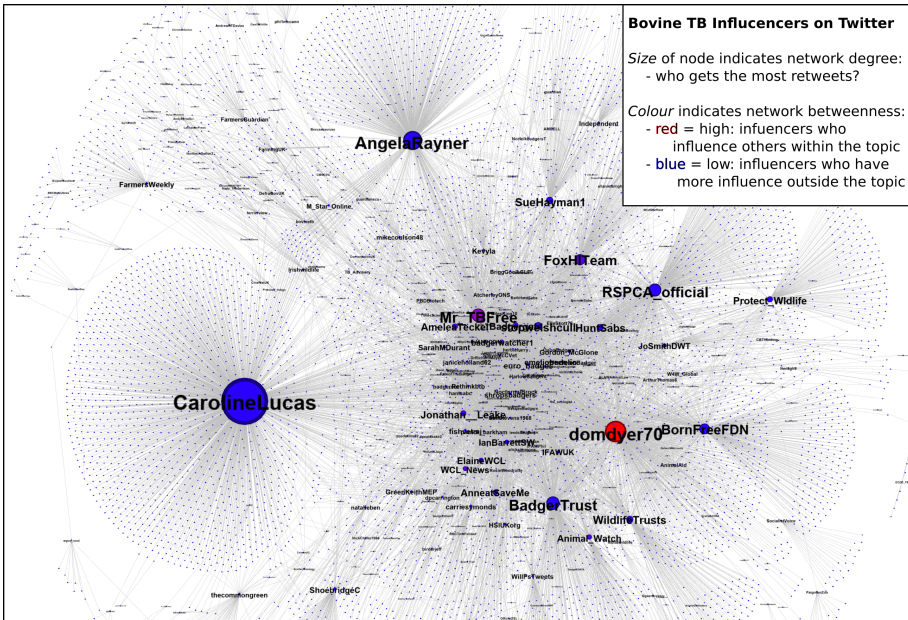


- (Note difference in **volume** and *mode of interaction*.)

- Three networks computed for each set.
- Nodes are users.
- Edges are retweets/replies/follows.

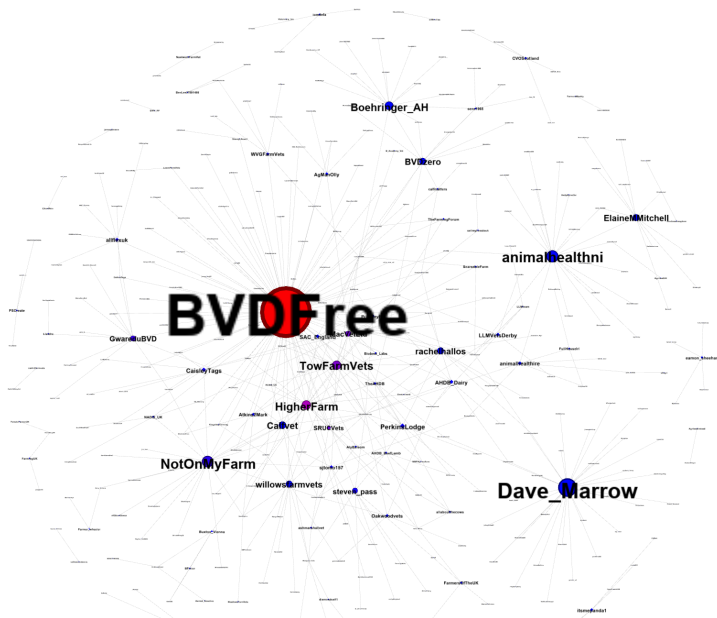
	Retweet	Reply	Follow
bTB	bTB-RT	bTB-Re	bTB-FI
BVD	BVD-RT	BVD-Re	BVD-FI

# bTB Retweet Network

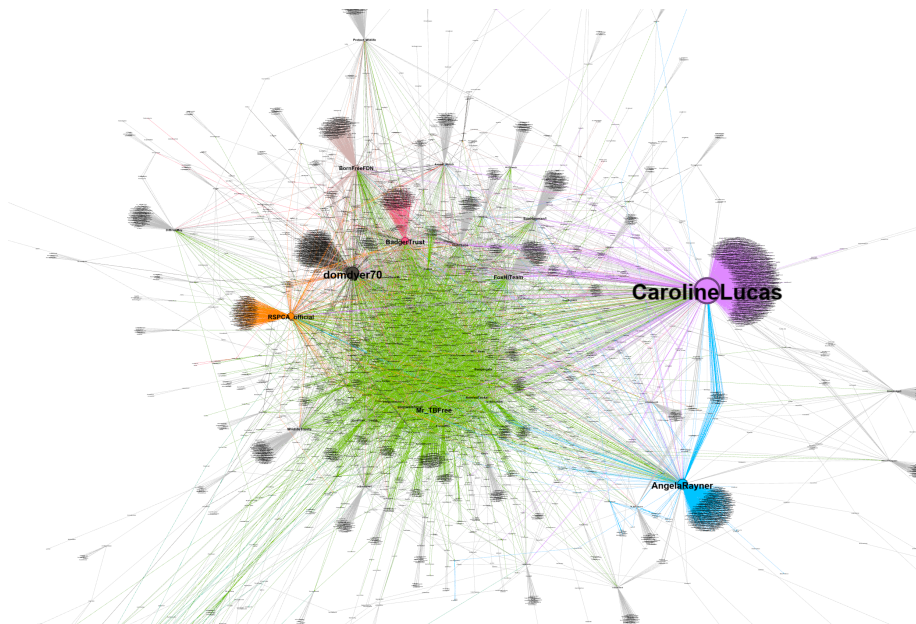




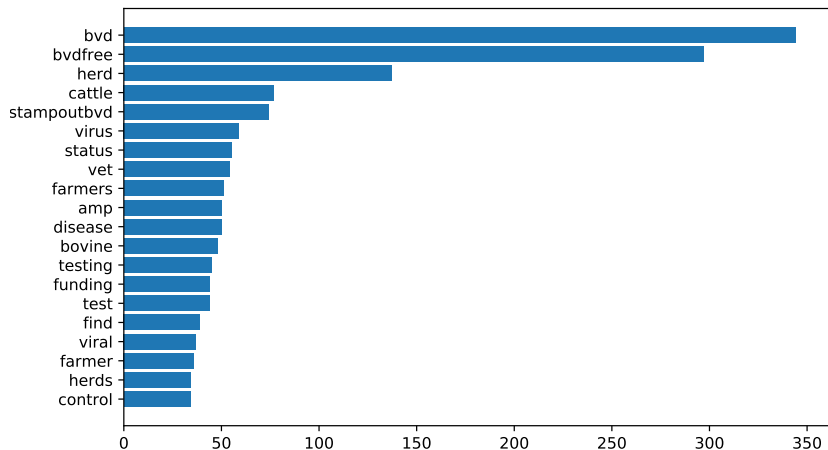
# BVD Retweet Network



# Community detection (Girvan-Newman): bTB-RT

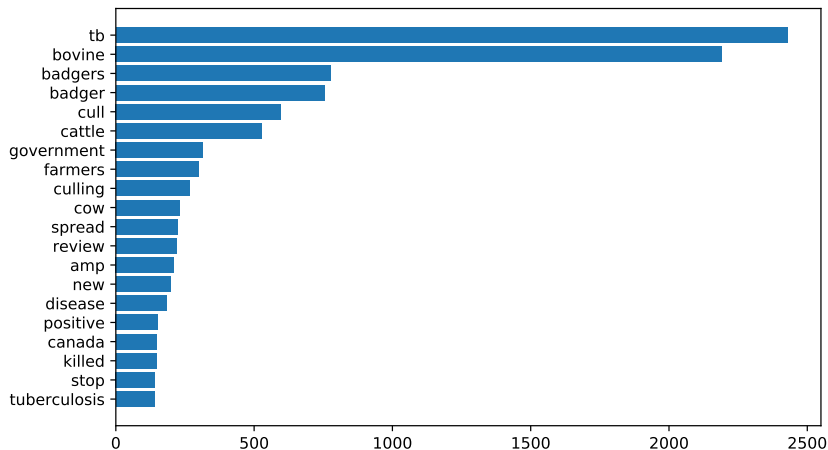


# Word frequencies: BVD



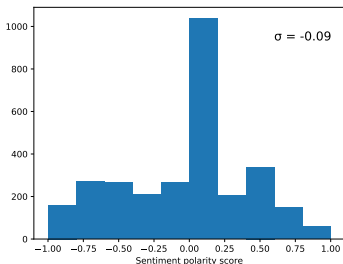
Dominated by language about agriculture/disease.

# Word frequencies: bTB



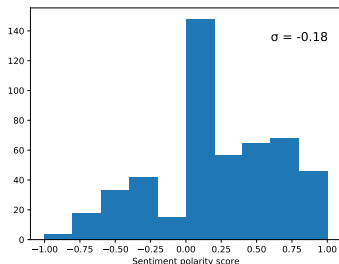
Dominated by badgers/culling.

# Sentiment analysis



bTB

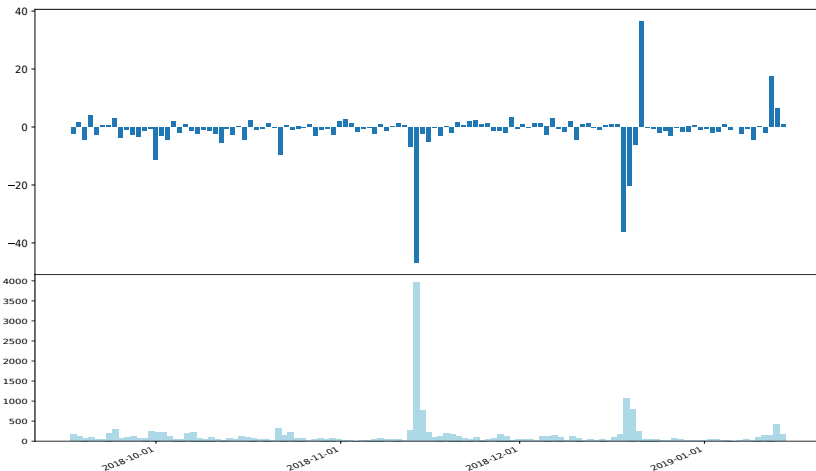
- Analyses language in each tweet
- Computes a score for positive/negative sentiment
- Magnitude reflects level of emotion



BVD

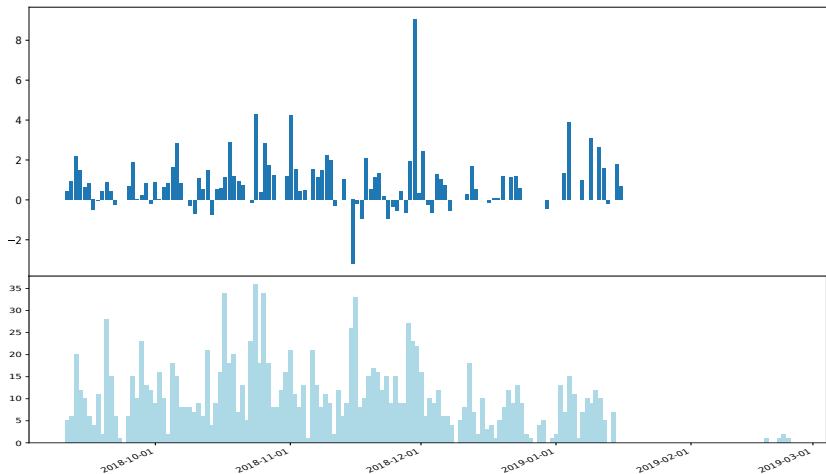
- bTB: largely neutral, but with more extreme negatives than BVD.
- BVD: also largely neutral, but a skew towards positive.

# Sentiment over time: bTB



- *Above:* Sum of daily polarity scores; *Below:* Daily volume.

# Sentiment over time: BVD



- Above: Sum of daily polarity scores; Below: Daily volume.

Tweeters:

bTB	%	BVD	%
Activist	42.9	Vet	39.2
Conservationist	37.9	Farmer	26.4
Academic	13.7	Academic	17.6
Politician	7.7	News Source	7.2
News Source	7.1	Politician	1.6
Vet	6.6	Activist	1.6
Farmer	6.0	Conservationist	0.0
bTB-centric?	22	BVD-centric?	4



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- Analysis of the language reveals differences:
  - Agricultural terms were most important for BVD, but bTB was dominated by badger culling.
  - Sentiment analysis reveals BVD discourse was more neutral or positive, but bTB had more extremely negative content.
  - User classification shows bTB was dominated by activists and conservationists, whereas BVD was dominated by farmers, vets, and related companies.

## Ongoing / future work

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- A deeper look into how polarisation distinguishes fact from opinion/emotion. . .
- and how centrality distinguishes engagement types.
- . . .