Analyzing Polarization in Social Media:
Method and Application to Tweets on 21 Mass shootings

Author: Demszky et al, 2019
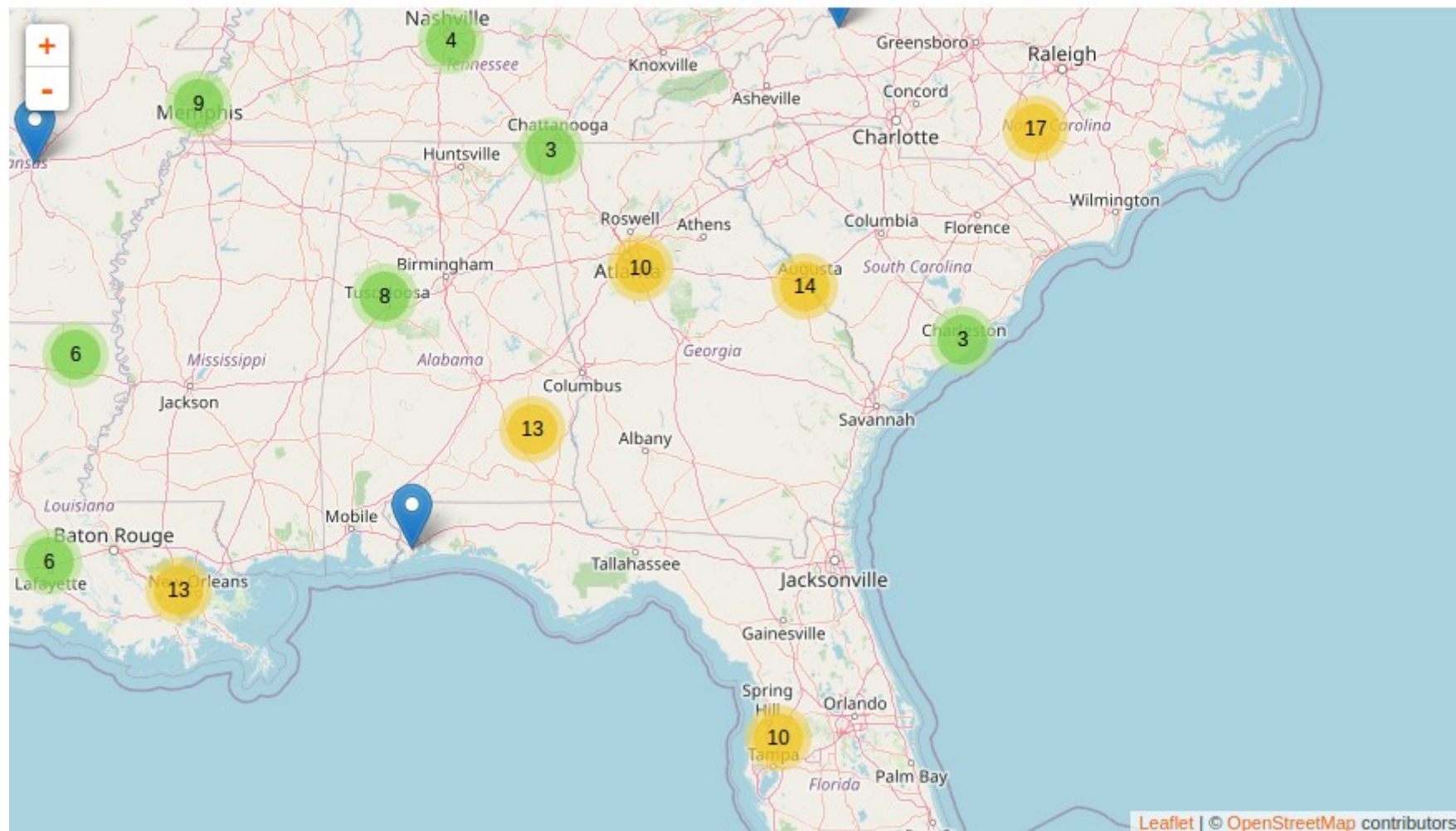
Presenter: Zhaoran Ma

Motivation & Background

Atlanta Massage Shooting, 03/16/2021

MASS SHOOTINGS IN 2021

View Results | Export as CSV | Interactive Map

Leaflet | © OpenStreetMap contributors

What are we talking about on Twitter?

News: San Francisco police responding to reports of a shooting at a UPS facility.

Victim & Location: Synagogue shooting in Pittsburgh: what we know

Shooter's identity & ideology: Who is surprised that the San Bernardino shooters were radicalized Muslims?

Investigation: Waffle House gunman's father facing charges for GIVING him gun used to kill four

Laws & Policy: I will not just #prayforsutherlandsprings, today I vote for @PhilMurphyNJ and stronger gun control laws in NJ #ElectionDay #GunControlNow

Solidarity: My heart goes out to the friends and family of the victims in that parkland shooting :-(

Remembrance: Photo: US flag flying at half-staff at White House for victims of Roseburg, Ore., school shooting

Quantifying Overall Polarization

Topic and Framing

Specific Framing Devices

Affect

Modality and Illocutionary Force

Data Collection

Data Retrieved from a Stanford lab's archive on Twitter firehouse based on a list of mass shooting between 2015 to 2018

Partisian Assignment

To label a user either Democrat or Republican, check if they follow more Democrat or Republican

Quantifying Overall Polarization

$$\pi^{LO} = \frac{1}{2}\left(\frac{1}{|D|}\sum_{i\in D}\hat{\mathbf{q}}_i\cdot\hat{\boldsymbol{\rho}}_{-i} + \frac{1}{|R|}\sum_{i\in R}\hat{\mathbf{q}}_i\cdot(1-\hat{\boldsymbol{\rho}}_{-i})\right)$$
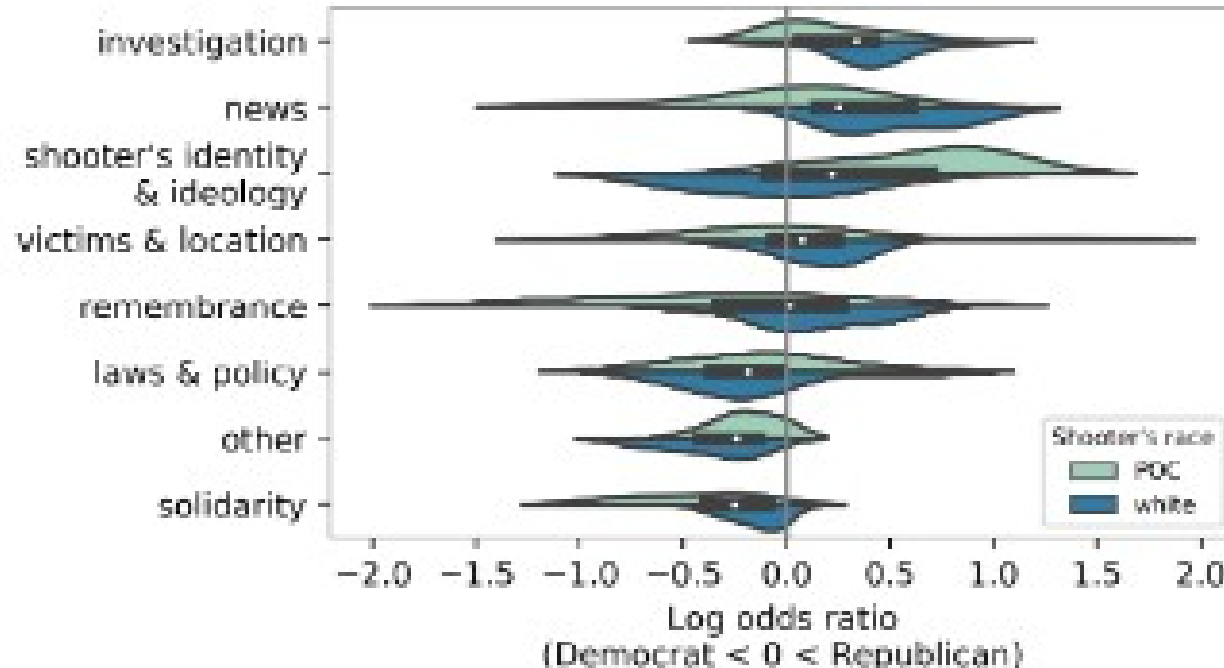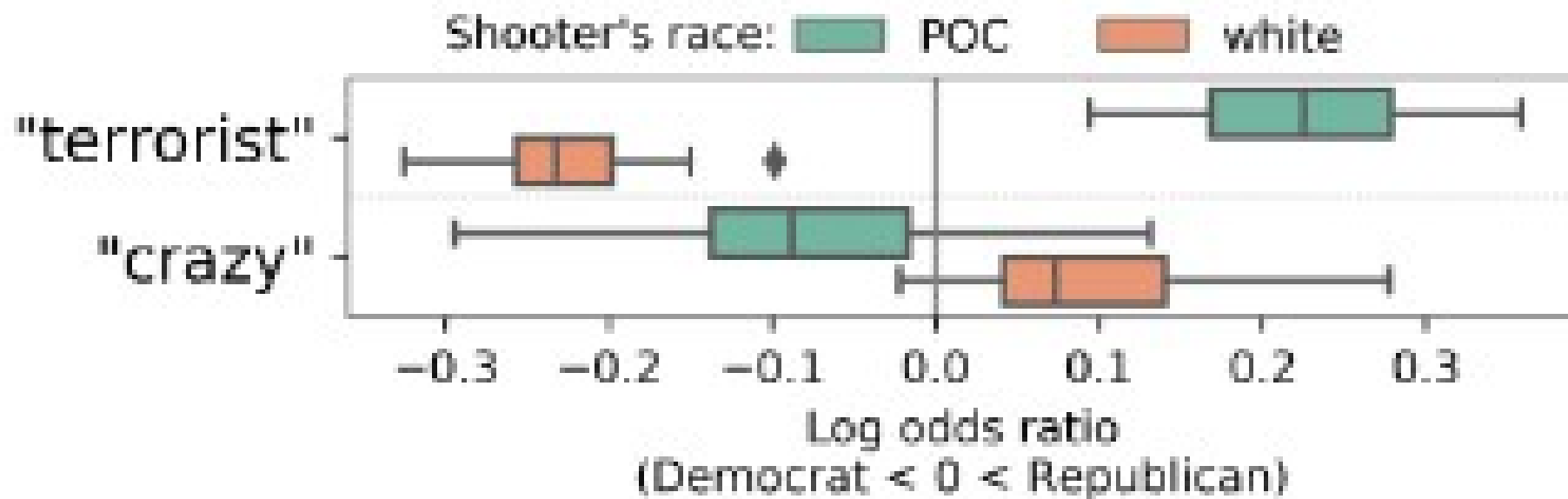
Topic and Framing

MALLET and BTM (biterm topic model)
Train GloVe embedding on vocabs from extracted tweets

Specific Framing Devices

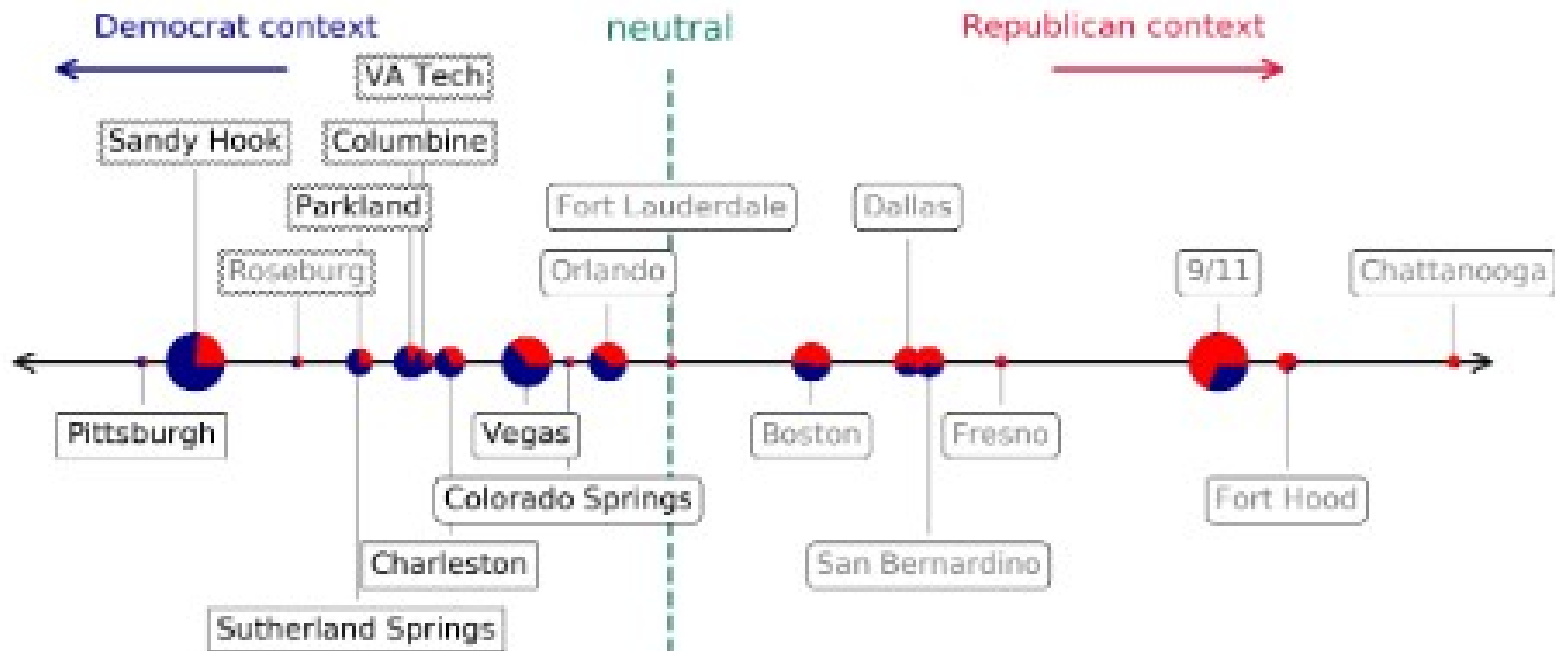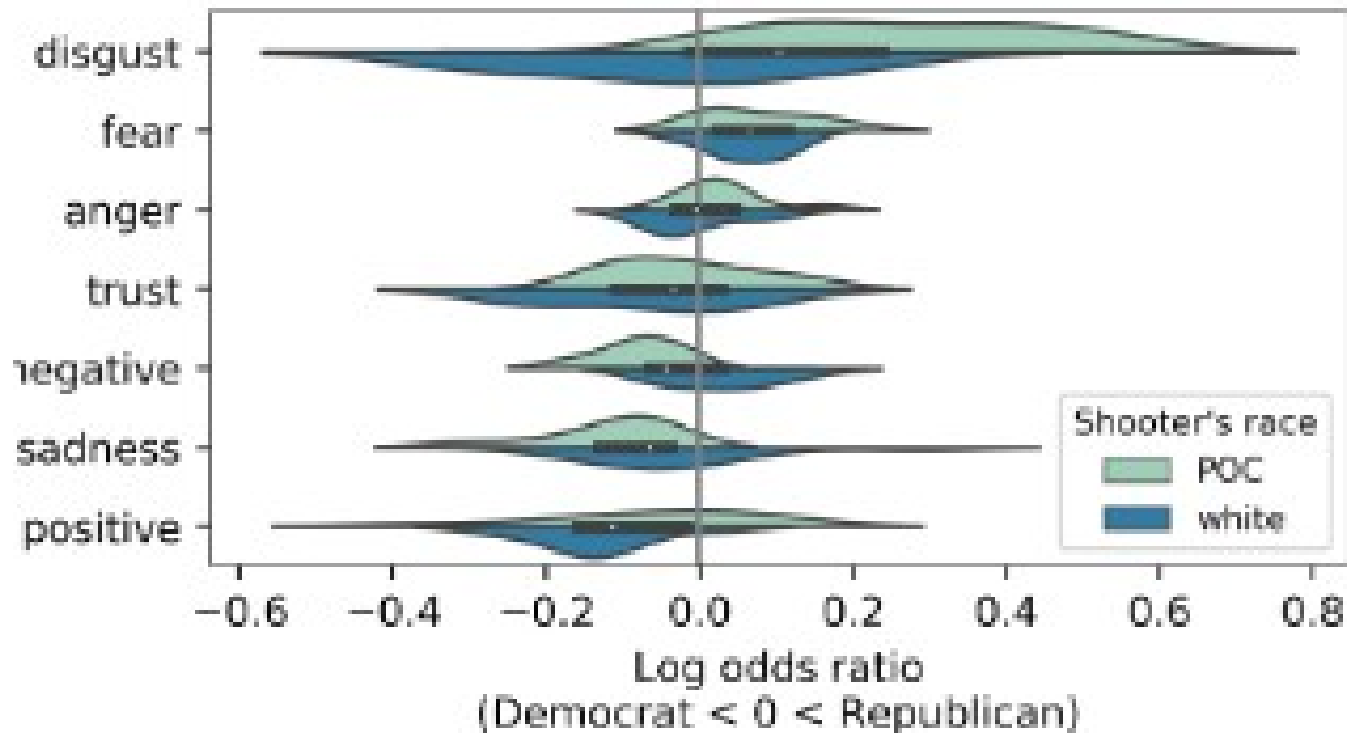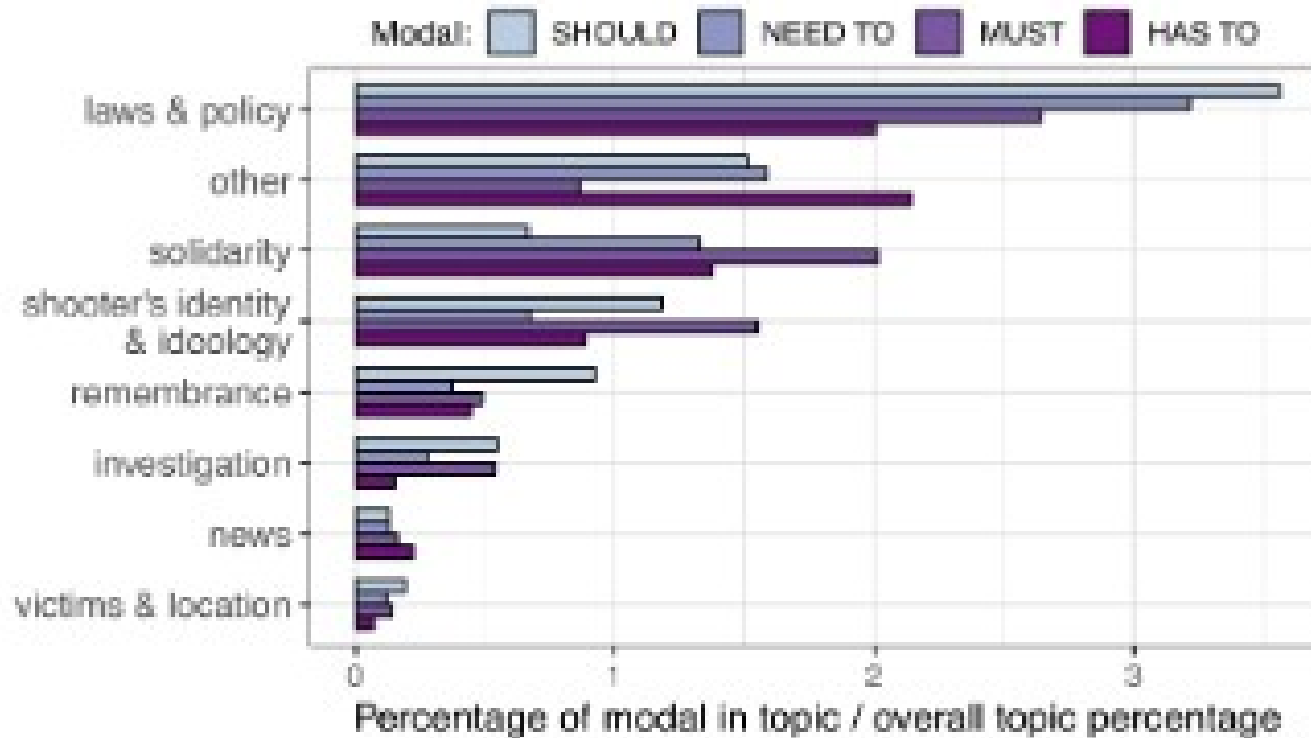# Specific Framing Devices
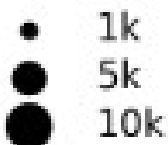
Affect
NRC Emotional Lexicon

Modality and Illocutionary Force

Interesting findings & Future Steps

Ziems and Yang, 2021, To Protect and To Serve? Analyzing Entity-Centric Framing of Police Violence