

Frames, Projection, and Character Attacks

Tracking Political Narratives with Human-In-the-Loop NLP

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ABSTRACT

The erosion of fact-based discourse over the last several years has exposed the extent to which open societies are vulnerable to cognitive terrorism, in the form of disinformation, spin, polarization, and decreasing trust in public institutions. Cognitive malware is analogous to cyber malware in that it is highly distributed, originates from a variety of state and private actors, and seeks to disorient its targets; combating it will require a similar level of collaboration among state, industry, and private actors.

In the political sphere, spin or narrative formation are often more nefarious and damaging than straight-up lies, but harder to detect and less subject to regulation by social media platforms or government agencies. At the same time, journalists reporting on social-media conversations must be able to sort through large amounts of content and separate authentic voices from troll, bot, and cyborg armies pushing specific agendas.

MarvelousAI, an early-stage startup, is building StoryArc, a hybrid social listening and cognitive security platform. In this demo, we will focus on how this technology can be used by journalists and social-media researchers, along with case studies of prior and ongoing research.

The key premise behind our approach is that each piece of media content or social commentary serves to reinforce one or more *narratives* about a topic or political candidate. Narratives are salient, persist over time, and can be

expressed by a variety of specific stories [1, 2], e.g. “Crooked Hillary” in the 2016 election.

The StoryArc platform integrates data collection pipelines from publicly available sources, third-party ratings of media bias and social media user authenticity, and state-of-the-art natural language processing and active learning techniques. Bolstered by an expert-in-the-loop iterative process, StoryArc provides tools and analysis of political narratives along various dimensions such as gender bias [2, 3], support vs. attack [4, 5], political bias/credibility [6, 7], and emotional content.

Case Study: Pete Buttigieg

The 38-year-old former mayor of South Bend, Indiana Pete Buttigieg became a surprise winner in the Iowa caucuses and close second in the New Hampshire primaries. Predictably, this makes him the target of increased attacks on social media. StoryArc can help trace some of these attacks.

Based on ratings of bias and credibility of news sites provided by the [Media Bias Fact Check](#) project, we infer political leanings and credibility of twitter users’ link-sharing behavior, visualized on a 2-dimensional scale. For most of the campaign, conversation about Mayor Pete has been firmly in the credible left quadrant. Here’s a look at the week of 2/4-2/10/2020, illustrated with screenshots from the StoryArc platform.

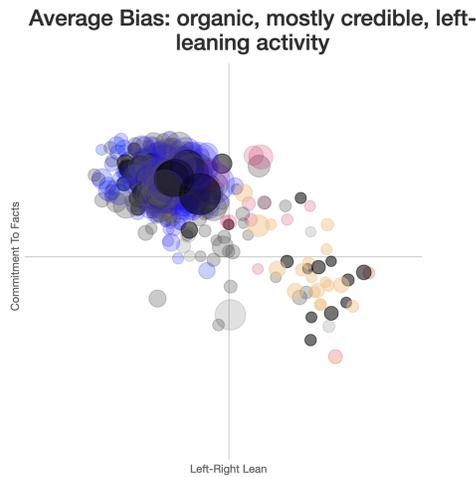


Fig. 1: Tweets about Buttigieg 2/4-2/10-2020. X-axis: left <-> right political lean. Y-axis: credibility (greater Y = more credible). Each dot is a Twitter user, size of dot = number of tweets from that user.

A look at the top narratives reveals many lines of attack, primarily from the left accusing Buttigieg of being too centrist / corporate-friendly.

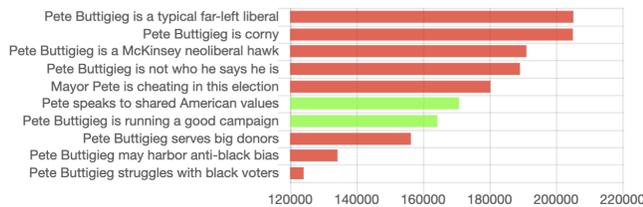


Fig. 2: Top narratives about Buttigieg 2/4-2/10-2020. Red=attack, green=support. Bar size = number of tweets (incl. retweets). Narratives assigned by human coders reviewing clusters of related tweets that were computed by unsupervised methods.

However, the most prevalent recent narrative aims to paint Buttigieg as a far-left liberal. A large contributor to this narrative is a Washington Examiner article from April 2019 claiming that Buttigieg’s father was an Italian marxist, and therefore Buttigieg himself harbors communist sympathies:



Fig. 3: Example tweet in “Buttigieg is a far-left liberal” narrative.

Mentions of Buttigieg being communist appeared on and off throughout the campaign, primarily among the right-leaning / less credible corner of the Twitterverse, but have really spiked in the days after the Iowa caucuses.

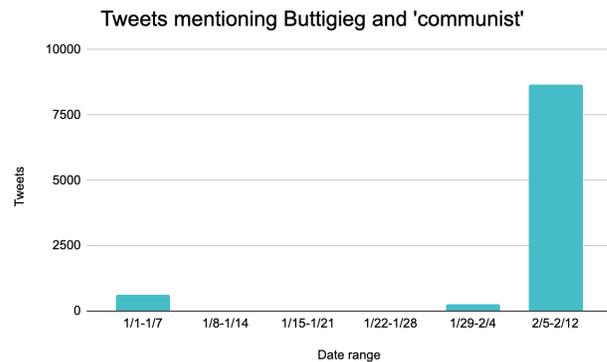


Fig. 4: Mentions of Buttigieg and “communist” by week, 1/1/2020-2/12/2020 (incl. retweets)

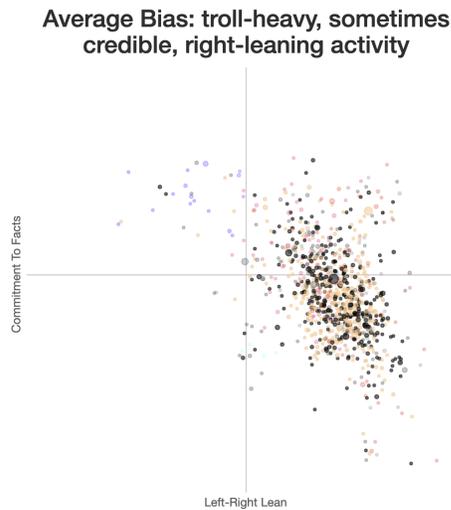


Fig. 5: Tweets about Buttigieg and “communist”, 1/1/2020-2/12/2020.

If Buttigieg continues to be a viable candidate, this line of attack will likely be amplified on social media. StoryArc provides tools to track the emergence and spread of such narratives. Our election-focused data and dashboards are freely available by signing up through marvelous.ai. We welcome collaborators.

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