

RESEARCH ARTICLE

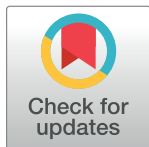
An automated pipeline for the discovery of conspiracy and conspiracy theory narrative frameworks: Bridgegate, Pizzagate and storytelling on the web

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Citation: Tangherlini TR, Shahsavari S, Shahbazi B, Ebrahimzadeh E, Roychowdhury V (2020) An automated pipeline for the discovery of conspiracy and conspiracy theory narrative frameworks: Bridgegate, Pizzagate and storytelling on the web. PLoS ONE 15(6): e0233879. <https://doi.org/10.1371/journal.pone.0233879>

Editor: Yu-Ru Lin, University of Pittsburgh, UNITED STATES

Received: July 15, 2019

Accepted: April 25, 2020

Published: June 16, 2020

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Data Availability Statement: Although the authors cannot make their study's data publicly available at the time of publication, all authors commit to make the data underlying the findings described in this study fully available without restriction to those who request the data, in compliance with the PLOS Data Availability policy. For data sets involving personally identifiable information or other sensitive data, data sharing is contingent on the data being handled appropriately by the data requester and in accordance with all applicable

Abstract

Although a great deal of attention has been paid to how conspiracy theories circulate on social media, and the deleterious effect that they, and their factual counterpart conspiracies, have on political institutions, there has been little computational work done on describing their narrative structures. Predicating our work on narrative theory, we present an automated pipeline for the discovery and description of the generative narrative frameworks of conspiracy theories that circulate on social media, and actual conspiracies reported in the news media. We base this work on two separate comprehensive repositories of blog posts and news articles describing the well-known conspiracy theory Pizzagate from 2016, and the New Jersey political conspiracy Bridgegate from 2013. Inspired by the qualitative narrative theory of Greimas, we formulate a graphical generative machine learning model where nodes represent actors/actants, and multi-edges and self-loops among nodes capture context-specific relationships. Posts and news items are viewed as samples of subgraphs of the hidden narrative framework network. The problem of reconstructing the underlying narrative structure is then posed as a latent model estimation problem. To derive the narrative frameworks in our target corpora, we automatically extract and aggregate the actants (people, places, objects) and their relationships from the posts and articles. We capture context specific actants and interactant relationships by developing a system of supernodes and subnodes. We use these to construct an actant-relationship network, which constitutes the underlying generative narrative framework for each of the corpora. We show how the Pizzagate framework relies on the conspiracy theorists' interpretation of "hidden knowledge" to link otherwise unlinked domains of human interaction, and hypothesize that this multi-domain focus is an important feature of conspiracy theories. We contrast this to the single domain focus of an actual conspiracy. While Pizzagate relies on the alignment of multiple domains, Bridgegate remains firmly rooted in the single domain of New Jersey politics. We hypothesize that the narrative framework of a conspiracy theory might stabilize quickly in contrast to the narrative framework of an actual conspiracy, which might develop more