Mass Shooting Contagion and Collective Attention

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Abstract

In this study, we try to investigate the contagious nature of mass shooting events which is previously known by using network analysis. We will create a network of mass shooting incidents based on the data retrieved from Gun Violence Archive(GVA), Mother Jones(MJ) mass shooting datasets and twitter data collected from OSome. We expect our approach will provide comprehensive understanding on mass shooting incidents' contagious nature in terms of collective attention in social network.

Introduction

The gun-related deaths rate in the United States is exceptional among developed countries and mass shooting is considered as a chronic problem due to its prevalence[4]. Despite of such facts and ongoing tragedies in U.S., few researches about the nature of the mass shooting was conducted and it is very early stage.

However, past studies found evidences that mass shooting seems to be contagious[8][1], and mass media coverage triggers potential perpetrator's action[6][2]. The results from these studies contribute to suggest a guideline for media coverage safer[5][3] and leads to "Don't Name Them" campaign by FBI and ALLERT research center at Texas State University which aims to shift the media focus from the suspects who commit these acts to the victims, survivors, and heroes who stop them (https://www.dontnamethem.org/).

Even though the researches and the campaign seemingly have plausible theoretical and empirical background, but it only relies on relatively small number of dataset about 30[6] to 360 data points and independent results. Considering that 2,342 mass shooting incidents happened since 2013[4], a research that involve more comprehensive data is required. Also, in recent years, news media's influence on the public seems to be contracted because of the rise of social network services[7].

In this point of view, we try to investigate the contagious nature of mass shooting and relationship between mass shooting occurrence and collective attention in Twitter as a representation of social network service.

Specifically, we want to find answers for following hypothesis:

1. the network consists of mass shooting events shows contagious property.

   - the out-degree of the mass shooting event is proportional to the number of people killed and the number of people injured.

2. the social media coverage increases as the size of a mass shooting incident increases.

   - the out-degree of the mass shooting event is proportional to the number of twits contain mass shooting related hashtags.

Methods

Data

The mass shooting incident data is retrieved from two different sources, Gun Violence Archive and Mother Jones. We merge both datasets and gather the coordinates for all mass shooting incidents by using Google Maps API for further analysis.

Twitter data is collected from Observatory on Social Media(OSome) at Indiana University, Bloomington based on mass shooting related hashtags. The list shown in below is a part of seed hashtags currently we are considering.

- $massshooting(s)$

- $gunviolence\ stopgunviolence$

- $prayfor < region >$

Methods

Based on the collected data, we will construct an unified network. In this network, a node represents a single mass shooting event and nodes will be connected by using the timestamp and contagion parameter. Also, each node will contain a collective attention parameter as an attribute.

References

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