Quantifying Rumor Shared on Twitter during COVID19

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UNC ENGL 105

1. Introduction:

The global outbreak of novel coronavirus disease 2019 (COVID19) has caused enormous loss in terms of both public health and economy. As people are facing this new virus and the world is still learning something new about it every day, massive information was spreading very rapidly on both traditional and social media platforms. Within the information, unfortunately, many are lies, half-truth, and unverified rumors. In a public health crisis like COVID-19, where misinformation can literally kill (Bursztyn, 2020), this phenomenon is particularly alarming to an extent that governing bodies are attempting to limit its effect (Chou, 2018). Rumor can be defined as "currently circulating story or report of uncertain or doubtful truth"— and it can spread very rapidly on social media without any reasonable supports.

In this research, I analyzed tweets with popular hashtag #ExposeBillGates and conducted descriptive statistics to compare different features of the posters and the tweets, offering quantifiable insights into the magnitude of misinformation spreading on Twitter and its relation to other features.

2. Materials & Methods

Data collection: I collected the tweets with hashtag #ExposeBillGates

between 2020 Jun. 21st and 2020 Jun. 23rd using Twitter Archiving Google Spreadsheet (TAGS). After clearing up all the retweets (containing "RT" in the spreadsheet generated TAGS), I randomly sampled 100 tweets from the remaining tweets as the primary data to study in this paper.

All the features of the tweets and posters were manually labeled. The tweet posters were divided into two categories: informal individual accounts (labeled as "personal") and accounts dedicated to sharing some specific types of information, including individual journalists, doctors, and NGOs etc. (labeled as "dedicated"). The tweet posters were also categorized into "left", "right", or "unsure" by looking into other posts of the poster.

Poster Type	Political Leaning	Type of Communication	Contain Rumor?	Rumor Association
personal	left	sharing	rumor	dirty
dedicated	right	discussing	indirect	africa
	unsure	supporting	none	vaccine-bad
		motivating		plandemic
		hating		depopulation
				mosquitos
				murder
				obama
				anti-china
				facebook
				global-warming

Table 1: **List of Coding**

Tweets were labeled with the following information: Type of Communication, Rumor Association. I identified five types of communication - sharing, discussing, supporting, motivating, and hating - based on the content

of the collected tweets. ~~Tweets.~~ A tweet is identified as "sharing" if the main purpose is to share certain information that "exposes" Bill Gates; "discussing" if there's actual discussion or analysis; "supporting" if supporting other accounts that "expose Bill Gates" by @ those accounts; "motivating" if trying to call on others to "expose"; "hating" if simply ~~hate or curse on~~ Bill Gates. I also identified ~~if~~ the tweets ~~are~~ associated with certain rumor; if so, which rumor ~~is~~ the prominent one, as most tweets are associated with multiple rumors (Wikipedia, 2020). Some tweets ~~are~~ not directly associate with rumors, but indirectly involv~~ing~~ them by either supporting rumor spreaders or motivating others to "expose". These tweets are labeled as "indirect".

Analysis Methods: ~~All graphs were generated through Google Doc using data described above and descriptive statistics were used to analyze the tweets and their posters.~~

4. Results

Poster and Tweet Characteristics: After removing the duplicated tweets, I used 93 tweets for the following study. More tweets are posted by the "dedicated" posters (58, 62.4%) than the "personal" posters (35, 37.6%) **(Figure 1)**. The majority of posters are right leaning (86, 92.5%) and there are only 2 left leaning posters (2, 2.2%) and a handful that are unsure (5, 5.4%) (**Figure 2**).

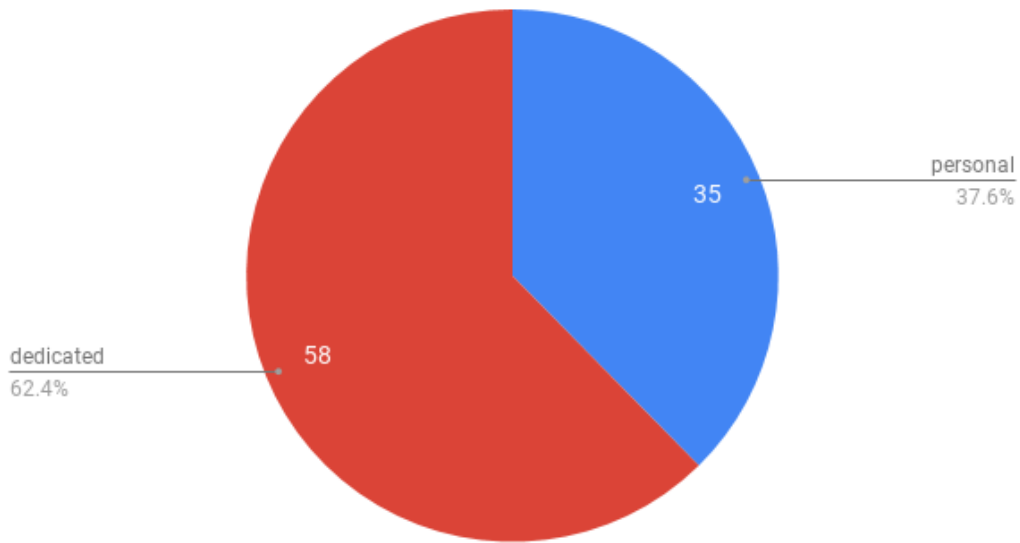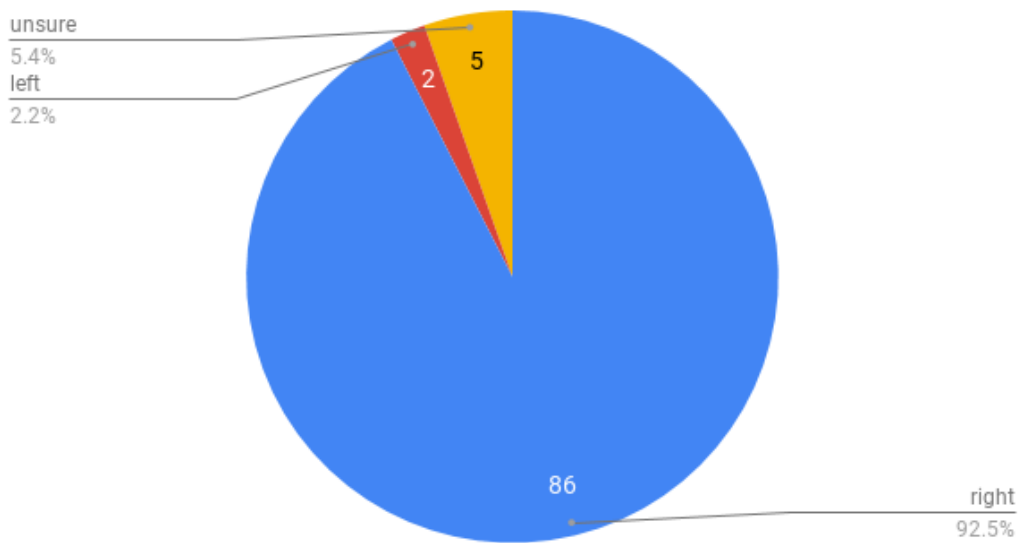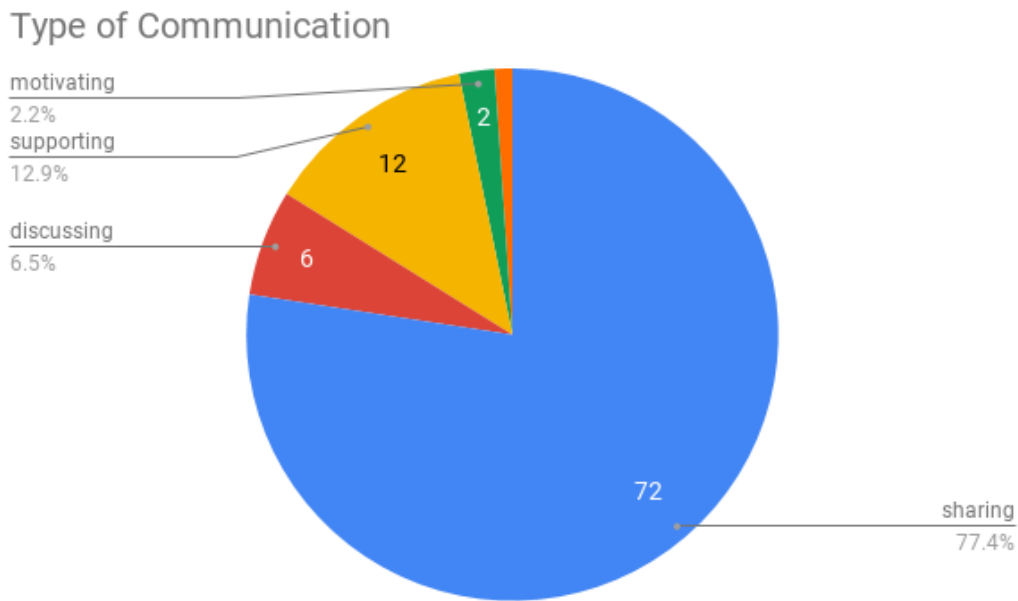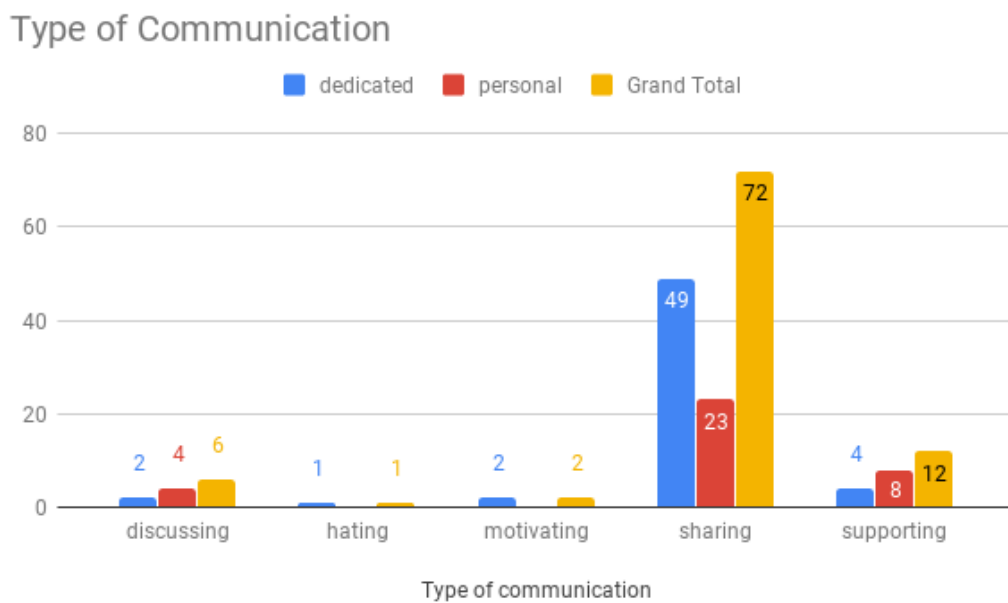Figure 1. **Type of Posters**

Figure 2. **Political Leaning of Posters**

The most common type of communicating is "sharing" (72, 77.4%),

followed by "supporting" (12, 12.9%), "discussing" (6, 6.5%), "motivating" (2,

2.2%) and ~~there's also~~ one "hating" tweet (1, 1.1%) **(Figure 3)**. All the "hating"

and "motivating" tweets are posted by "dedicated" posters, while there are

twice as many tweets posted to "discuss" and "support" by "personal" posters than "dedicated" posters. Also, "dedicated" posters posted much more "sharing" tweets in absolute number (49 vs. 23) and in proportion (84.5% vs. 65.7%) (**Figure 4**).

Figure 3. **Type of Communication**

Figure 4. **Type of Communication by Type of Poster**

Misinformation: Most tweets directly contain rumor information (70, 75.3%). There are some tweets indirectly involve rumors (16, 17.2%) and only a few don't involve rumor (7, 7.5%) (**Figure 5**). As **Figure 6** shows, among the tweets that directly contain rumors, "africa" (14), "depopulation" (14), "obama" (11) are mostly mentioned ones, followed by "dirty" (8), "vaccine-bad" (7), "murder" (7), and "plandemic" (5). There are also rumors on "mosquitos" (1), "anti-china" (1), "facebook" (1), and "global-warming" (1).

All 11 "obama" rumors are shared by only 2 "dedicated" posters and the 1 "anti-china", 1 "facebook", and 1 "global-warming" rumors are shared by only "dedicated" posters. Except for the one "mosquitos" and "africa" rumor, "dedicated" posters share more rumors than the "personal" posters (**Figure 7**).
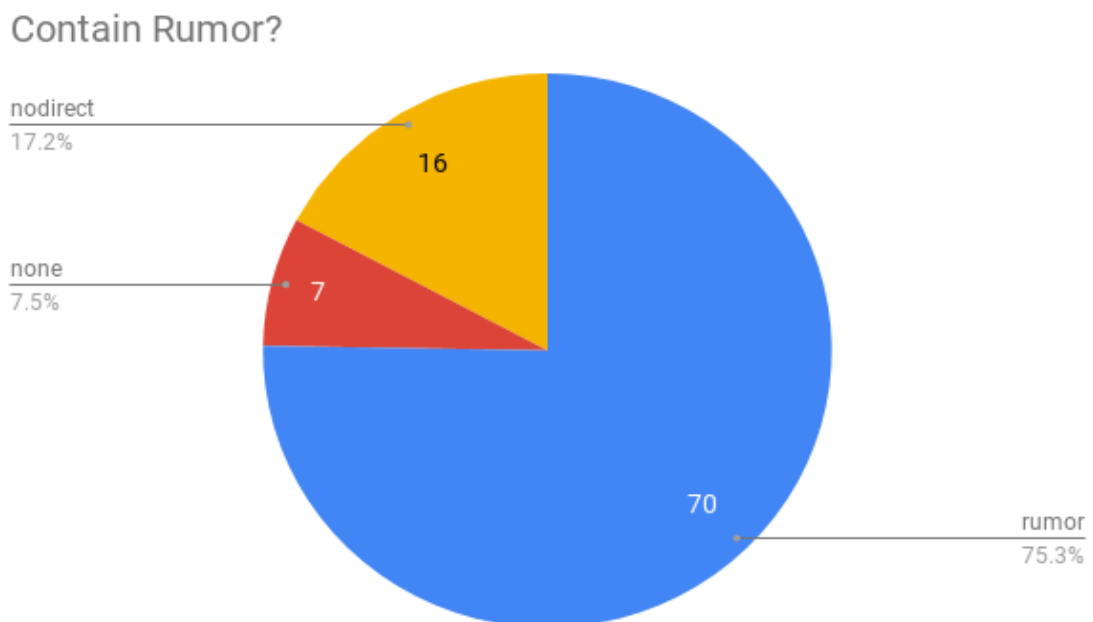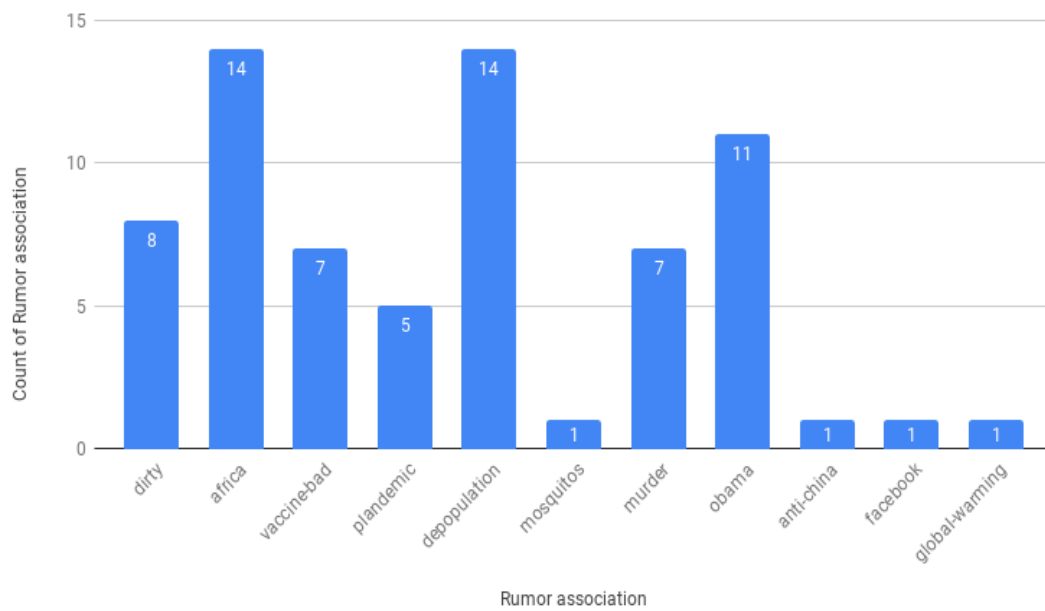

Figure 5. **Rumor Involvement**
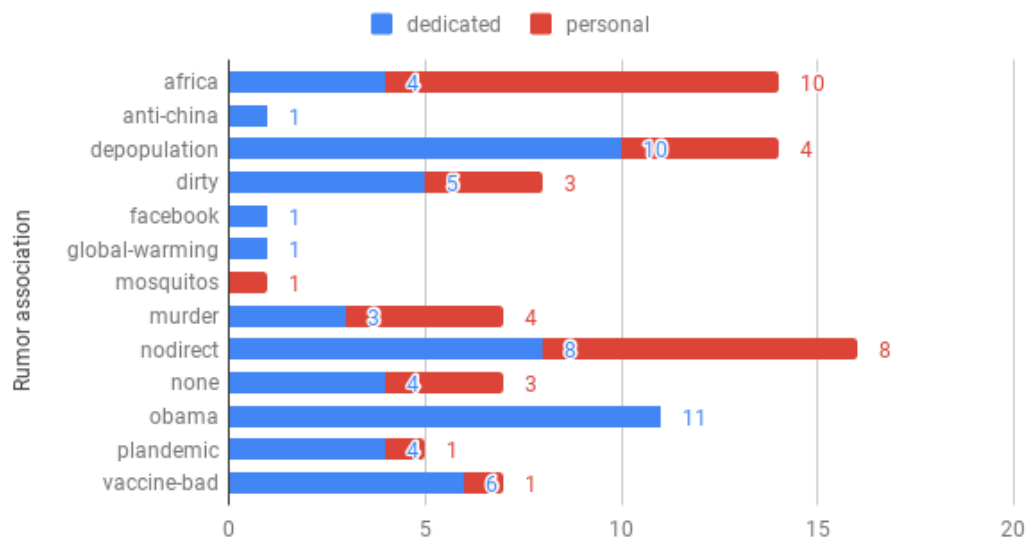
Figure 6. **Rumor Association**

Figure 7. **Rumor Association by Type of Poster**

5. Discussion

The results above showed an alarming rate of rumor association, political association, and lack of critical communication on Twitter within the hashtag that we studied. Most tweets directly or indirectly involved rumors about Bill Gates. In general, most tweets simply shared rumors or supported posters that share rumors. Very few tweets discussed related issues. There is also a surprisingly political leaning to the right within #ExposeBillGates hashtag. It at least showed that certain rumors are highly politically related, even if they mostly involve health-related information. Also, there is an alarming number of tweets from "dedicated" twitter account spreading rumors and an alarming number of individuals supporting them. These "dedicated" posters are more likely to share rumors in general (especially politically related rumors), more likely to hate and persuade others to share rumors, and less likely to actually discuss the related issues.

This study is limited to only one hashtag and 100 tweets. So further study can be done by extending the number of hashtags and tweets to gain more insights on the topic.

6. Reference

Chou, W.-Y. S., Oh, A., & Klein, W. M. P. (2018). Addressing Health-Related Misinformation on Social Media. JAMA, 320(23), 2417. Retrieved from

https://doi.org/10.1001/jama.2018.16865

Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E., Zarka, J., Traboulsi, C., Akl, E. W., & Baddour, K. (2020). Coronavirus Goes Viral: Quantifying the COVID-19 Misinformation Epidemic on Twitter. Cureus, 12(3), e7255. Retrieved from https://doi.org/10.7759/cureus.7255

Misinformation related to the COVID-19 pandemic. (n.d.). In Wikipedia. Retrieved from

https://en.wikipedia.org/wiki/Misinformation_related_to_the_COVID-19_pandemic

Bursztyn, Leonardo, et al. Misinformation During a Pandemic. w27417, National Bureau of Economic Research, June 2020, p. w27417. Retrieved from

https://www.nber.org/papers/w27417