

Unknown Facts about Fake News

Asahigaoka Senior High School

Reina Kishida

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1. Introduction

Lying has a fairly long history for mankind. However, in this beginning of the 21st century, false information (=lies) can spread more widely and faster than ever before via social media or the Internet. Fake news has been the subject of debate since the 2016 U.S. presidential election campaign. Lies, scams, and political propaganda were disseminated; much of which included anti-Clinton contents. During the campaign, fake news gained a larger number of engagements on Facebook than the mainstream media (Graph 1). Many people believed in conspiracy theories such as the Pizzagate, which led to a shooting incident at a pizza restaurant on December 3rd 2016. Fake news has been causing some major issues in other countries as well. In Mexico,

two innocent people who were mistaken as kidnappers on social media, were atrociously killed by an angry mob (Figure 1).

In this way, false information may become a tool to manipulate and accelerate human behavior.

Graph 1

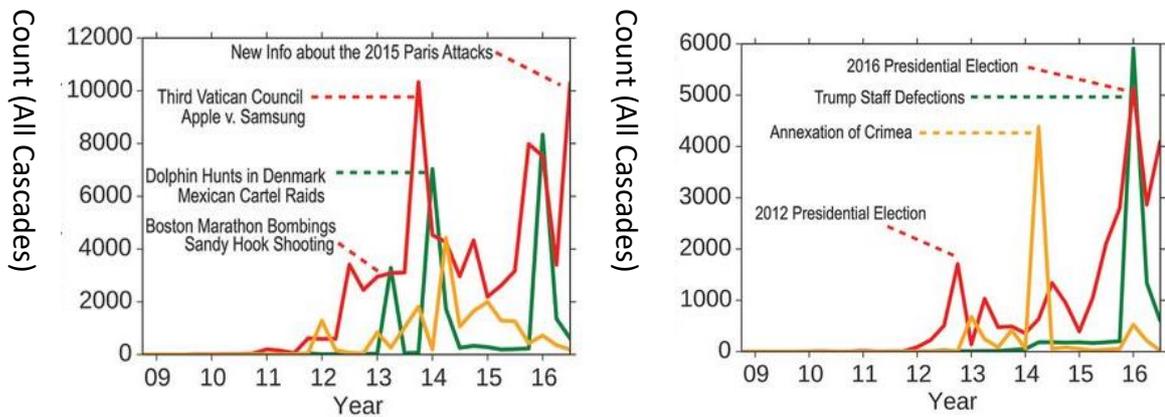


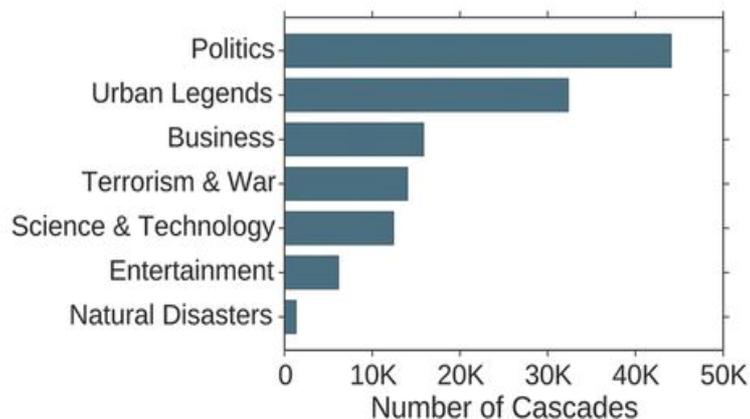
Figure 1: “A host of mobile phones were raised aloft to capture the moment Ricardo and Alberto were set on fire”



(BBC News)

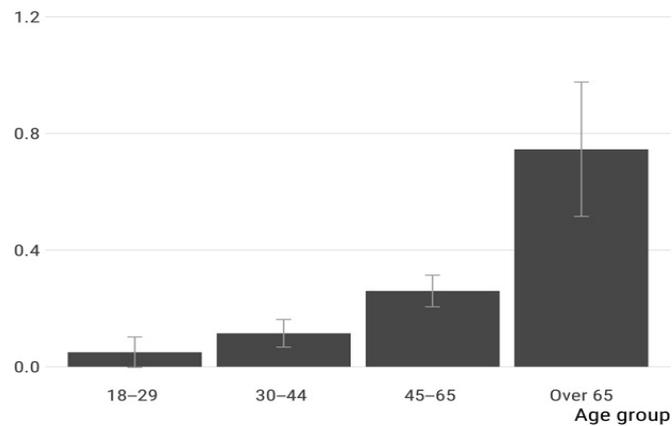
A lot of research on fake news has been conducted during the past decade. For example, it is known that fake news about politics or urban legends are more likely to be disseminated than that about business, science and technology, or entertainment (Graph 2). Moreover, the recent research has indicated that older Americans had a stronger tendency to spread fake news during the 2016 presidential campaign compared to younger Americans (Graph 3).

Graph 2: Total number of rumor cascades across the seven most frequent topical categories



(Vosoughi *et al.*, *Science*, 2018)

Graph 3: Average number of fake news shares using domains derived from age group



(Guess *et al.*, *Sci. Adv.*, 2019)

One research paper discusses the two possible causes of this result. First, the “lower levels of digital literacy” of older people. Second, it may be due to the “aging on memory” of the elderly. Both theories make a lot of sense. However, is there any possibility that they tried to spread more because of their stronger interests in politics compared to young people? In fact, most fake news articles shared during the campaign were related to politics.

Do younger people (or “digital natives”) really have a strong immunity towards misinformation online? As far as I know, there has never been cross-cultural research on this subject yet; What implications can we find when we compared the tendency to spread some types of fake news among

people of different countries? This paper will discuss the psychological aspects of fake news, and the possible effects of individual characteristics.

2. Fundamentals

This section explains the basic terms of vocabulary related to this research theme.

- Fake news: “false, often sensational, information disseminated under the guise of news reporting.” (Collins Dictionary)
- Engagement: “Social media engagement measures the public shares, likes and comments for an online business' social media efforts.” (BigCommerce Essentials)
- Cascade: a “rumor-spreading pattern that exhibit an unbroken retweet chain with a common, singular origin.” (Science)
- Pizzagate: “A false rumor that Hillary Clinton and her top aides were involved in various crimes” that “snowballed into a wild conspiracy theory that they were running a child-trafficking ring out of a

Washington pizza parlor.” (New York Times)

- Motivated reasoning: “a form of reasoning in which people access, construct, and evaluate arguments in a biased fashion to arrive at or endorse a preferred conclusion.” (iResearchNet)
- Fact-check: “to check that all the facts in a piece of writing, a news article, a speech, etc. are correct” (Cambridge Dictionary)
- Trolling: “to write false or offensive messages on the internet in order to make other people angry.” (Oxford Advanced Learner’s Dictionary)

3. Methods

My prediction:

- 1) On social media, younger people tend to share fake news about entertainment or urban legends, whereas older people are more likely to share political news.
- 2) In politically or economically unstable countries, people are more susceptible to misinformation.

Dr. Jon Roozenbeek (Churchill College, Department of Psychology, University of Cambridge) and Dr. Kazutoshi Sasahara (Senior Lecturer, Department of Complex Systems Science, Nagoya University) were interviewed about the research topic.

The following questions were asked to Dr. Roozenbeek:

Q1: How do personal interests influence the way people disseminate different topics of fake news? For example, senior people are more interested in politics than younger people. Could this be a reason why the elderly seem to be more susceptible to fake news?

Q2: Could the backgrounds of people such as nationalities affect the tendency to believe fake news? Are there any cultural effects?

Q3: Does the political or economic situation of a country have an effect?

Q4: Education has changed and the digital literacy of the people may have improved. Could this lessen the problems of fake news? Would fake news still be a problem in the future?

4. Results

Q1: How do personal interests influence the way people disseminate different topics of fake news? For example, senior people are more interested in politics than younger people. Could this be a reason why the elderly seem to be more susceptible to fake news?

Dr. Roozenbeek: It's possible. But my intuition is older people are susceptible to all kinds of fake news, especially online. The main reason for this is that elderly people generally have lower levels of digital literacy. I don't think the interest in the topic is necessarily the dropper behind it, although it's absolutely true that older people are more interested in politics. But that might not mean that they are necessarily interested in politics online. And second, anyone who is sharing anything within this realm, is already interested in politics to some extent. Because they are already talking about the 2016 election...My intuition is that it's more of a general problem when it comes to

the reliability of information online, that older people have more difficulty distinguishing the truth from fake. But to be honest with you, I don't know for sure.

Q2: Could the backgrounds of people such as nationalities affect the tendency to believe fake news? Are there any cultural effects?

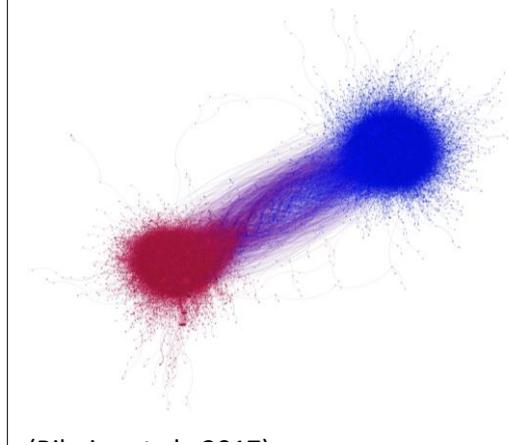
Dr. Roozenbeek: No one really knows the answer to this question. But there are a few ideas that make some sense. There are effects when it comes to education levels, but that will matter a little bit, I would say. If you are more intelligent, and better at coming up with arguments to justify your beliefs, you might not admit that it's fake (this is called motivated reasoning). Second, my impression is the actual effects of culture would be quite small. But it's incredibly hard to fully answer this question. You will need more than a comparison between two countries, and even if you do, you will never know which particular difference between the countries are causing the results. But

my impression, to summarize, is that those effects might exist. Although, it's very likely that other effects such as education or ideological belief are much more important.

Q3: Does the political or economic situation of a country have an effect?

Dr. Roozenbeek: In a country that is polarized (C.f. Figure 2), fake news can have a more serious, direct effect, and people might be more susceptible to manipulation. This also makes a lot of sense in the individual level. For example, if

Figure 2: Network of retweets showing democrats (in blue) and republicans (in red) divided into two distinct communities.



Q4: Education has changed and the digital literacy of the people may have improved. Could this lessen the problems of fake news? Would fake news still be a problem in the future?

Dr. Roozenbeek: Potentially yes. But it's very difficult because fake news keeps changing all the time. What you learn in school today might not be useful in twenty or thirty years. Although, it's definitely useful when growing up. Learning how to distinguish reliable information from unreliable information can help people become better at spotting fake news, but the problem is not going to disappear. Sometimes people want to believe in fake stories regardless of their education—people believe what they want to believe. In that sense, a really sustainable solution is probably to have an unpolarized society. This would take years and years of time to accomplish, if it ever happens.

Comments received from Dr. Kazutoshi Sasahara (Senior Lecturer, Department of Complex Systems Science, Nagoya University)

- Now, there is a new approach to fake news research. In this new approach, we will have some participants create fake news by letting them edit an

actual news article. This could offer us information about what expressions used in news articles are considered false by people. In other words, we may find out the contextual and linguistic characteristics of fake news. This could be called reverse thinking.

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- We would then let the participants in Japan decide whether they would disseminate the fake articles or not. Personal data such as gender, birthplace, age, and ideology are necessary for the investigation. We would also need to balance the numbers of each category.
- Factors such as human biases have a large influence on the way fake news spread online.

5. Discussion

Based on the interview, I discovered that these research questions would be extremely difficult to solve due to the countless aspects that need to be

considered. According to Dr. Roozenbeek, age and nationality are likely to have few effects on the fake news topics that people tend to share online. Especially when the entire analysis is based on news shares limited to political content, the people viewing and sharing the content would already be interested in the topic, and therefore, the differences of their personal interests would be of little importance. However, he also emphasized that this was based on his speculation, and that more research would be necessary.

When we can find an answer to these questions, there may be some possibility that we would have better understanding of what kind of misinformation we need to especially look out for individually.

6. Conclusion

Fake news has the power to anger and manipulate people, and it can be a threat to our democratic society. Therefore, it is extremely important for us to acquire a critical perspective on online information, supposedly through

education. However, the current digital literacy education in the classroom may no longer be as effective in the future as now, because as technology evolves, so will the digital society and its problems.

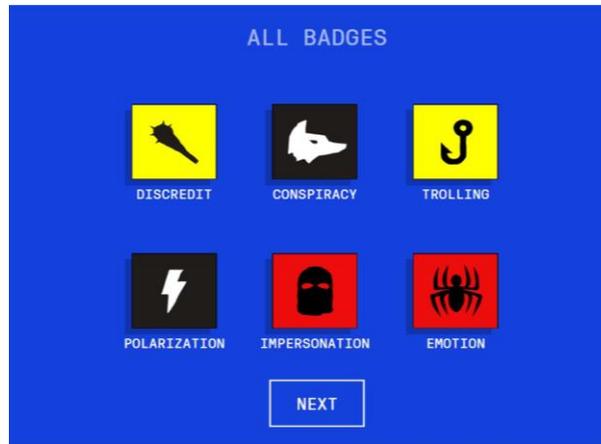
One alternative solution is to create a new form of education for everybody— including people who are not students. For example, there has been a new concept called “inoculating” against fake news. By playing fake news games (Figures 3,4), players acquire the literacy skills to better distinguish falsity from the truth. New approaches such as this one, suggest that there should be chances for new breakthroughs in this field of research, and I’m looking forward to their realization.

Figure 3: The “Bad News Game” intro screen



(www.getbadnews.com)

Figure 4: The 6 badges that players earn throughout the game after successfully mastering a misinformation technique



(www.getbadnews.com)

7. Acknowledgements

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