

# Understanding how Fake News spreads on social media and how to stop it

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## **Summary:**

- Lies and fake news spread faster than the truth
- Fake news makes people react (like, share, retweet, emojis etc.) more. This information is used by bots (programs) to spread the news.
- What can you do? Verify every post before reacting to it; a few minutes is usually enough time for the vast majority of these posts). This will stop the cascade of fake news being spread.

## **Long (and interesting!) version (that you should verify):**

“You’ll have to pay to use Facebook from tomorrow! You can avoid it by posting this message on your wall and share it to your friends”.

I always saw a lot of fake news and rumors on social media. Some don’t have major consequences, like the example above, but some influence and manipulate the reader’s opinion on various topics. During the COVID-19 lockdown I began to see a lot more such posts on my screen. I started reacting to some, contacted the person and explain nicely why the information they’ve posted is wrong. People are usually understanding, but others are not! One post from a scientist really surprised me, so I went and did some detailed research. This research showed me that this post was a rumour, created by this scientist. But by the time I had gathered all the information, it was already too late and a lot of friends and family had already reacted to the post. Taking a closer look at this scientist’s posts, I realized that many of these were fake news on various topics. This situation made me realize how important our role as a scientist is for both society and our loved ones. So I questioned myself on why does fake news happen and how is it spread, and what should scientist do about it?

### 1. Why do we see so much fake news on our screen?

Social networks don’t only show you posts of accounts that you follow. They use algorithms to organize what is shown on your screen depending on your interaction and interest. Some posts only affects some users, and the more the user reacts to it (positively or negatively), the more other users will see it.

### 2. Where do bots get their fake news from?

Researchers have found that many disinformation stories come from regular websites or blogs before being picked up on different social platforms and amplified. Different types of stories also have different provenance patterns. Those claiming, for example, that the COVID-19 virus is a bio-weapon, mostly come from so-called “black news” sites, fake news pages designed to spread disinformation that are often run outside the USA. In contrast, the “re-open America” rhetoric mostly comes from blogs and Facebook pages run in the USA.

Unfortunately, lies, extreme content and fake news are usually the posts that people react to the most, and by doing so, the information is spreading very fast to a very broad audience. Bots help to relay the information. Bots can look like real accounts but are not linked to a real person. They are actually automatic software interacting with informatics servers controlled by “pirates”. For example, during the COVID-19 pandemic, researchers reported that more than half of the Twitter accounts in America (45 to 60%) talking about the virus were bots. Bots were spreading and amplifying misinformation, including false medical advice, conspiracy theories about the origin of the virus, and pushes to end stay-at-home orders and reopen America. Through their analysis, they identified more than 100 types of inaccurate COVID-19 stories and found that not only were bots gaining traction and accumulating followers, but they accounted for 82% of the top 50 and 62% of the top 1,000 influential retweeters.

A study published in Science looked at false news spread in Twitter from 2006 to 2017. About 126,000 rumors were spread by ~ three million people. False news was found to reach more people than the truth. The top 1% of false news cascade diffused between 1,000 and 100,000 people, whereas the truth rarely diffused to more than 1,000 people. Falsehoods diffused significantly farther, faster, deeper, and more broadly than the truth in all categories of information. False news was more novel than true news, which suggests that people were more likely to share novel information. False stories inspired fear, disgust, and surprise in replies, true stories inspired anticipation, sadness, joy, and trust.

Contrary to conventional wisdom, robots accelerated the spread of true and false news at the same rate, implying that **false news spreads more than the truth because humans**, not robots, are more likely to spread it.

### 3. How to get the right information?

- I. Learn skills in avoiding emotional manipulation, verifying sources and credentials, detecting paid content and hate speech, and debunking fake videos and photos.
- II. **VERIFY SOURCES!!!** Media and social media are a passive source of getting information. It is good to be exposed to a broad range of topics. However, there is a low level of trust in media and social media. The best way to make up your opinion is to actively look at a specific topic. Make the effort to compare multiple sources (internet websites, articles etc..). Ask yourself this question for every topic:
  - where, when, by whom it is published?
  - Is the author somebody you can trust? Look for his previous work and criticism.
  - Find somebody who is an expert on a topic that you are interested in, and look for articles/videos of what this person says. Also, try to find the same person with the opposite point of view and make your own opinion. That will also develop your critical skills.
- III. Teach that to your kids! They are spending more time on, and are more efficient than us on social networks. They see more information than us. You have the duty to teach them how to distinguish fake news and misinformation and not to spread it.

- IV. Verify the account spreading the news, or the original account, if the news was relayed. Fake accounts are used for many purposes, use a fake identity, and are too many to count. Usually, fake accounts have no or few friends, pictures, post only on one topic, and were created recently.

There are plenty of websites and apps that are easy to find and will help you “information check”. Here are just few of them:

- <https://www.politifact.com>
- Twitter account bots: <https://botometer.iuni.iu.edu/#/>
- <https://www.poynter.org/fact-checking/2018/10-tips-for-verifying-viral-social-media-videos/>
- <https://factcheckingday.com>
- where does a picture come from: <https://tineye.com>

Final thought:

Bots and other algorithms are not the problem, they only relay and increase the visibility of information that humans like, share, tweet and interact with. The root of the problem comes from humans interacting with info they don't verify. If you want to slow down misinformation, don't like/tweet/interact with any post just because it says what you want to hear, or because it is surprising. Verify it before you do so! And report it if you think it is fake. Bots could also be used to help spread real information, if people are willing to make an effort and to interact with the truth. Remember, it takes few seconds to tell a lie, but it takes a tremendous amount of time and effort to debunk it and show the truth. By that time, unfortunately, nobody cares. So it's better not to spread a lie (intentionally or not) from the beginning.

### **Sources:**

Cascade structures of real and fake information:

<https://science.sciencemag.org/content/359/6380/1146>

Example of bots propagation:

<https://www.technologyreview.com/2020/05/21/1002105/covid-bot-twitter-accounts-push-to-reopen-america/>

Facebook algorithm:

<https://blog.hootsuite.com/facebook-algorithm/>

Cascade structure of fake news:

<https://www.microsoft.com/en-us/research/wp-content/uploads/2016/04/twiral.pdf>

Learn more about social science with a really good lectures:

<https://www.youtube.com/watch?v=gykNdC2CLVg>

[https://www.youtube.com/watch?v=mG6\\_KieEuXU](https://www.youtube.com/watch?v=mG6_KieEuXU)

<https://www.youtube.com/watch?v=JORhEzwTY18> (in French, but very good!)