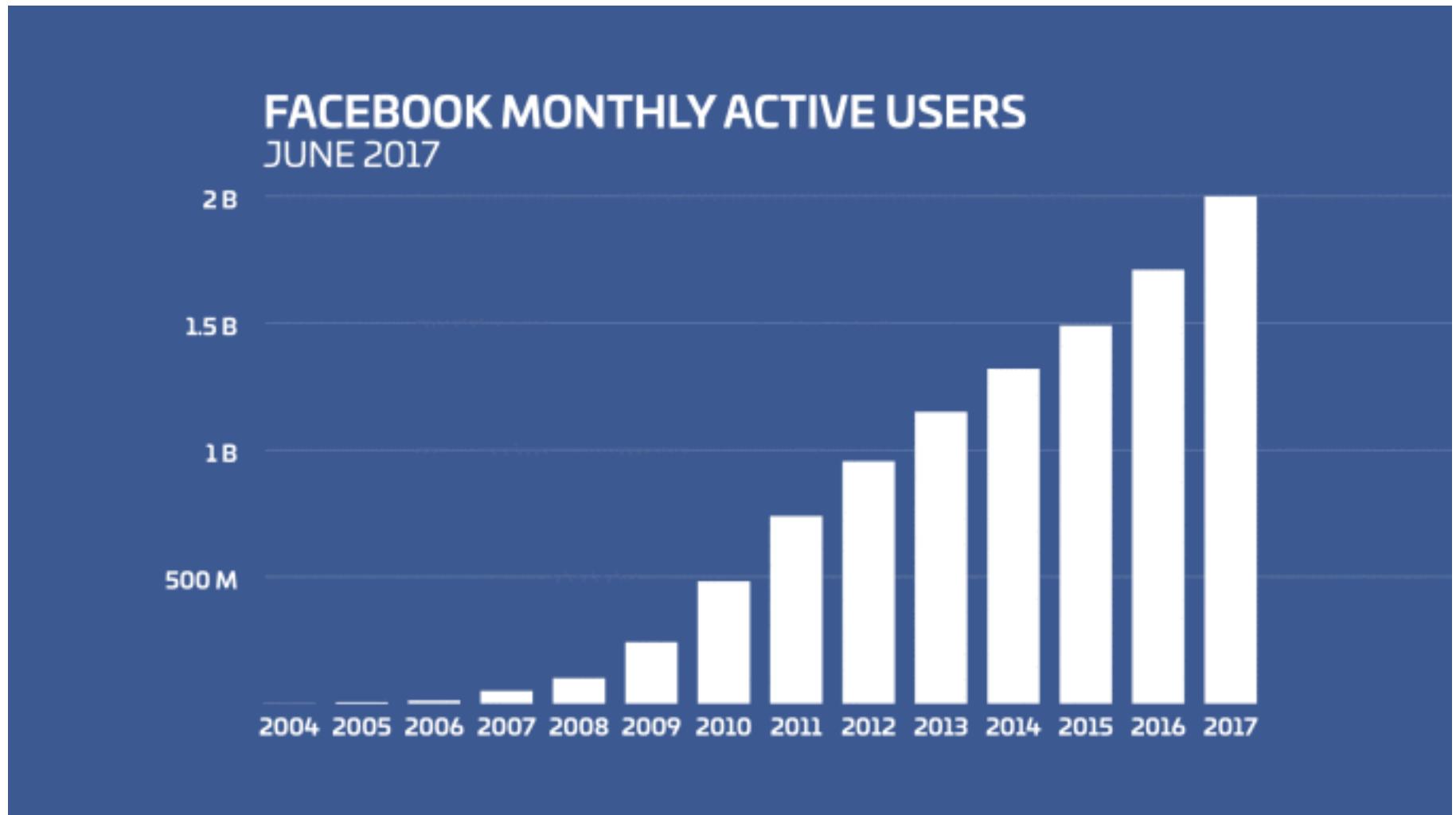


Information Storage and Retrieval

CSCE 670
Texas A&M University
Department of Computer Science & Engineering
Instructor: Prof. James Caverlee

Fake News
12 April 2018

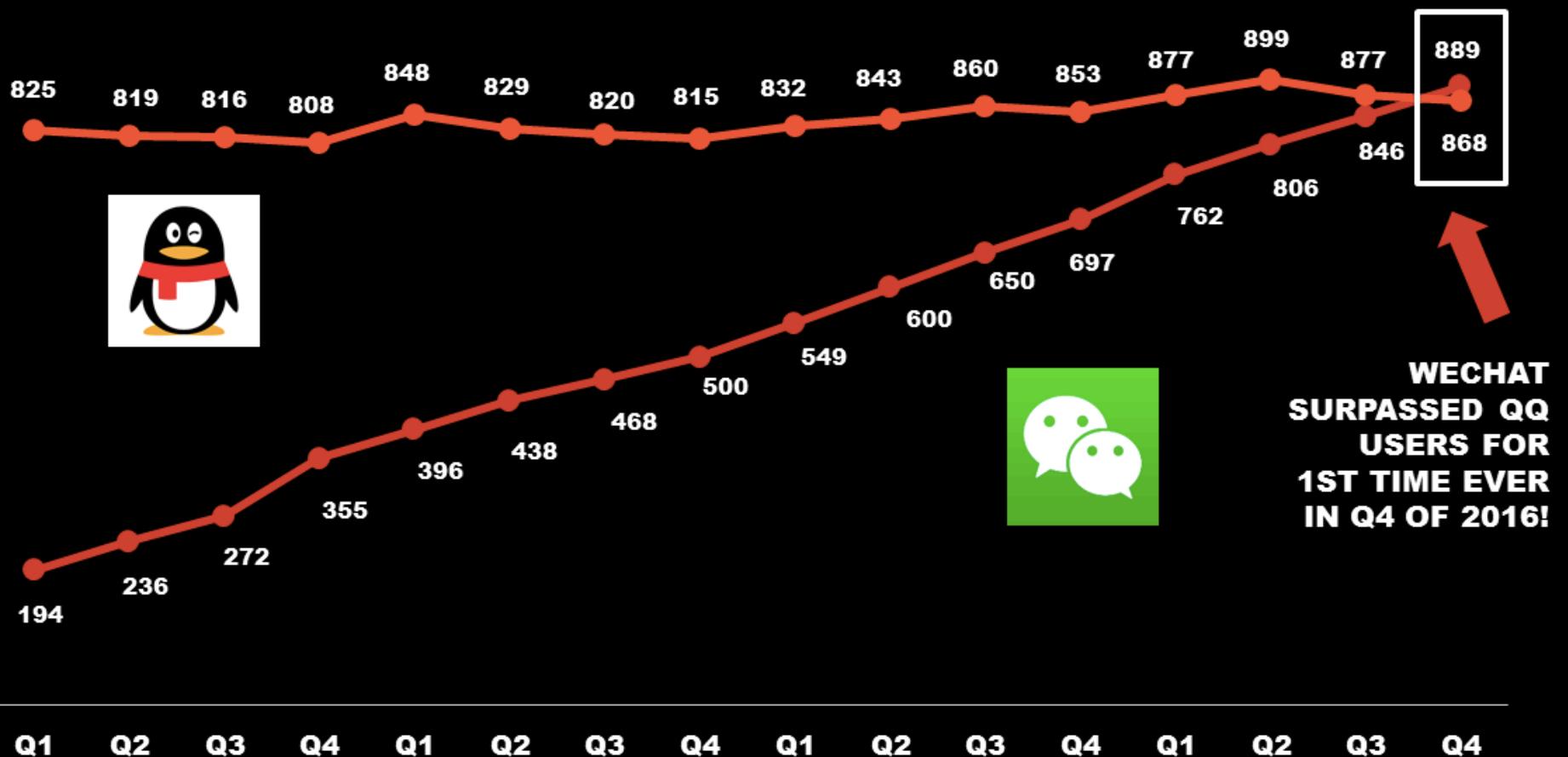
Context: Ubiquitous Platforms



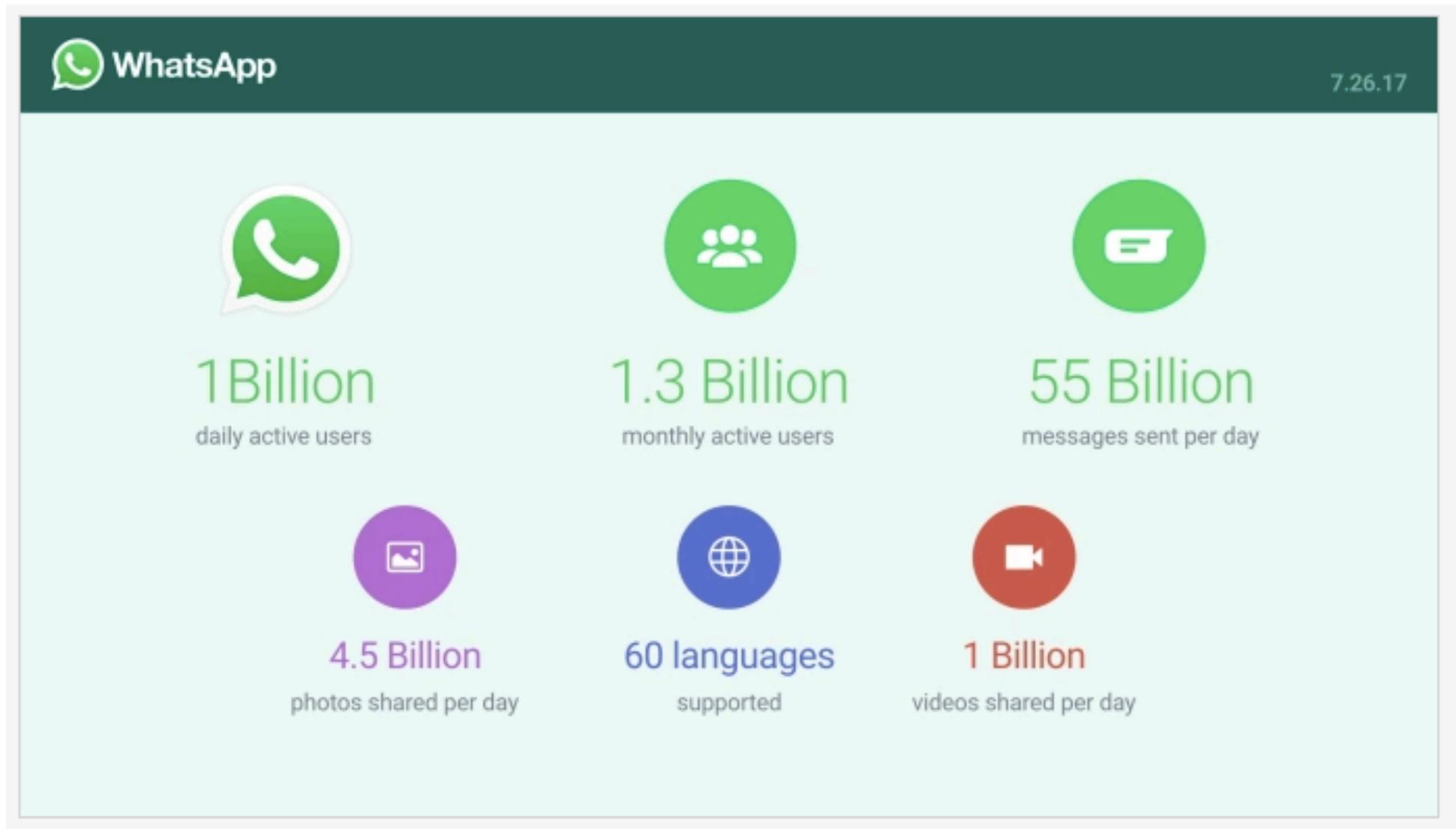
Context: Ubiquitous Platforms

Data Source: Tencent

WECHAT VS. QQ MONTHLY ACTIVE USERS



Context: Ubiquitous Platforms



Context: (?) Ubiquitous (?) Platforms

≡

THE WALL STREET JOURNAL.



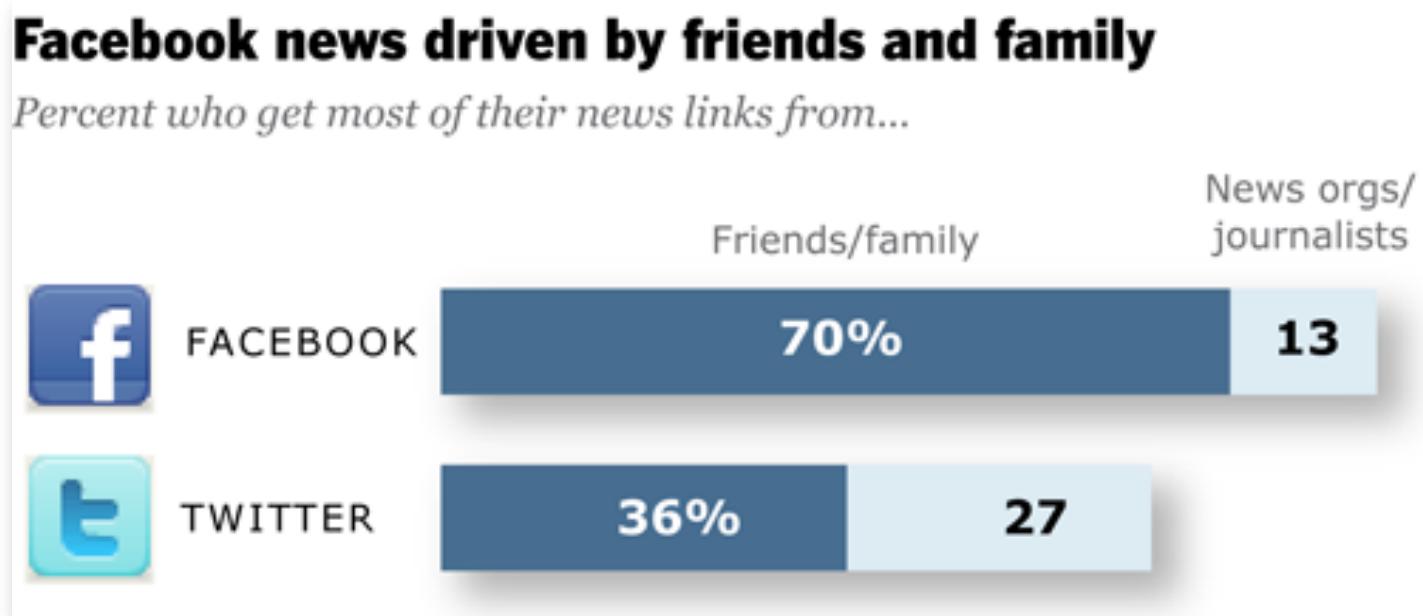
The End of Typing: The Next Billion Mobile Users Will Rely on Video and Voice

Tech companies are rethinking products for the developing world, creating new winners and losers

Growing Number of Social Media Users are Misinformed About Current Events

- People who rely mainly on social media for news are often misinformed on current events or have formed an opinion on a topic without researching or fact checking.
- Journalists sometimes report actual news stories that are based on inaccurate social media updates.

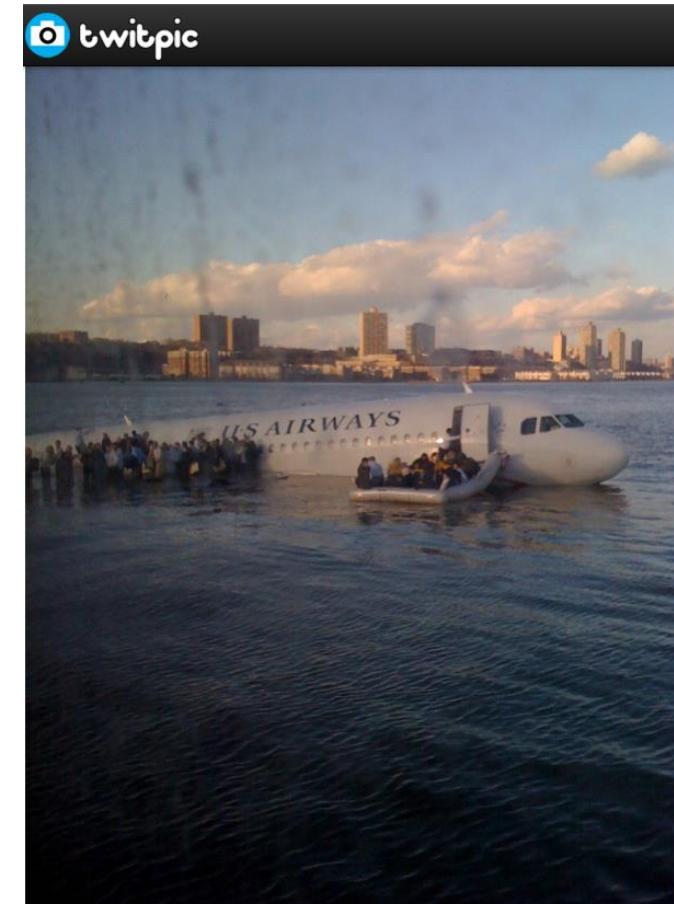
More social media users rely on links from friends/family contacts



Graphic Source: Pew Research Center's Project for Excellence in Journalism / 2012 State of the News Media

While social media can help break real news...

- In 2009, Twitter user Janis Krumms (@jkrums) tweeted photos of the US Airways “Miracle on the Hudson” plane that crashed in New York’s Hudson River. He was on one of the ferries that responded to the crash site before traditional news outlets knew about the incident.



There's a plane in the Hudson. I'm on the ferry going to pick up the people. Crazy. 880,678 1486 days ago

- SOURCE: Social Media Today
<http://socialmediatoday.com/dlawrence/475239/social-media-now-major-source-breaking-news>

While social media can help break real news...

- In 2011, Twitter user @reallyvirtual tweeted about a helicopter annoying him over his home in Abbottabad, Pakistan, at 1am local time. He was live-tweeting about the US raid that killed Osama Bin Laden.

The image shows three separate tweets from a Twitter account named @ReallyVirtual. Each tweet includes a small profile picture of a man with glasses. The first tweet reads: "Helicopter hovering above Abbottabad at 1AM (is a rare event)." The second tweet reads: "A huge window shaking bang here in Abbottabad Cantt. I hope its not the start of something nasty :-S". The third tweet reads: "Go away helicopter - before I take out my giant swatter :-/". Each tweet is timestamped "2 YEARS AGO · ORIGINAL LINK" and includes standard Twitter interaction icons (retweet, favorite, etc.).

- SOURCE: Washington Post.
http://www.washingtonpost.com/blogs/blogpost/post/sohaib-athar-tweeted-the-attack-on-osama-bin-laden%20--%20without-knowing-it/2011/05/02/AF4c9xF_blog.html

...Not everything published online is necessarily true.

- Jackie Chan died in March 2011...according to numerous Facebook posts.

The actor then had to release a statement, via his Facebook page, to prove that the rumors were false and that he was alive.

Source: People.com

<http://www.people.com/people/article/0,,20477260,00.html>



...Not everything published online is necessarily true.

- Morgan Freeman died in December 2010 and the news was credited to CNN... according to numerous “tweets” on Twitter.

CNN then had to clarify that they never reported the news and that Morgan Freeman was, in fact, alive.

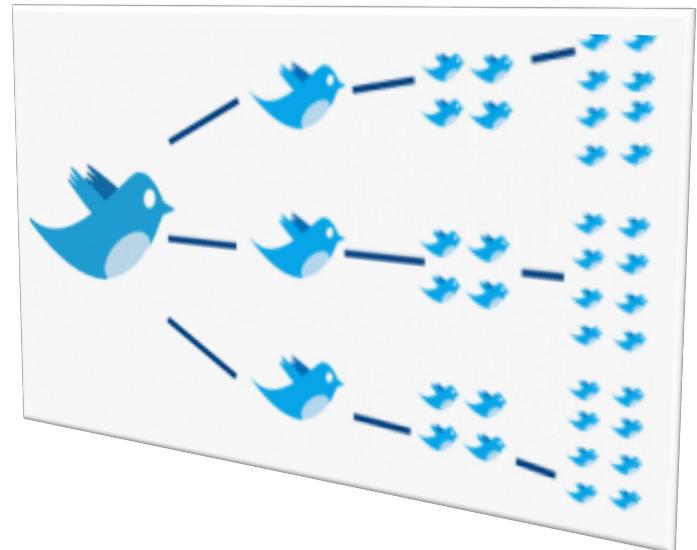
Source: Mediate

<http://www.mediate.com/online/cnn-says-no-it-never-sent-out-tweet-reporting-death-of-actor-morgan-freeman-whos-alive/>

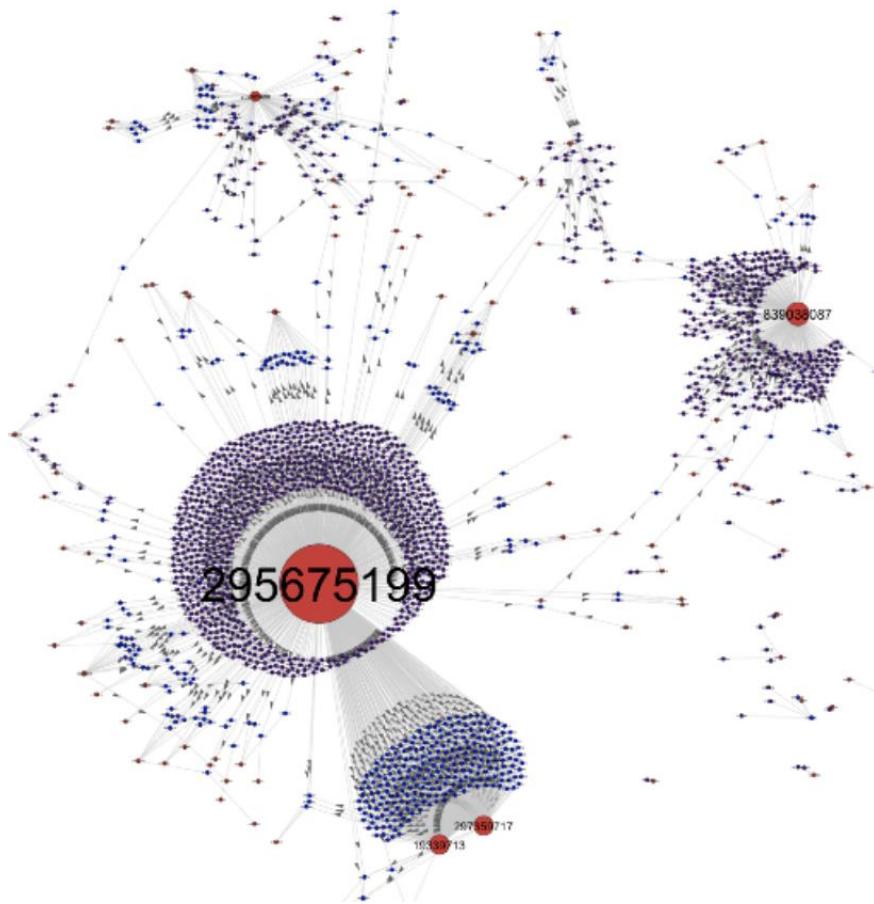


Fake News Goes “Viral” Online

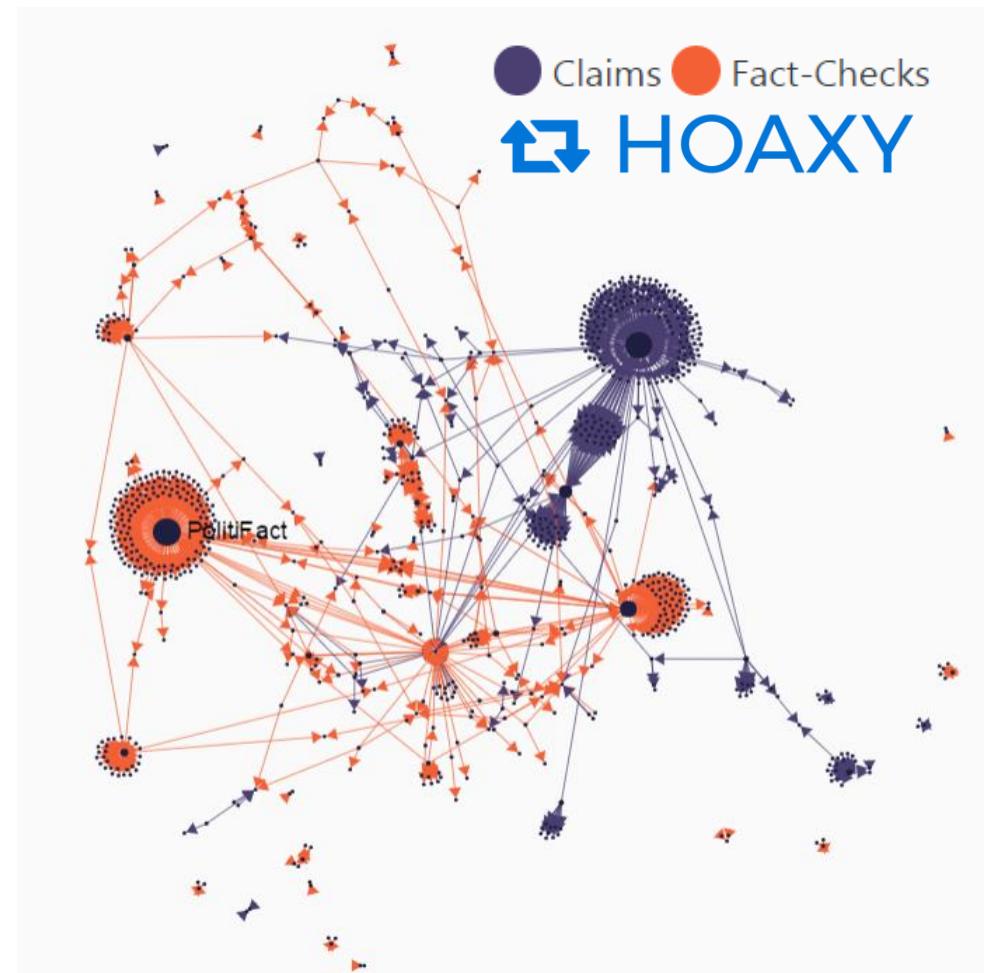
- Many social media users “retweet”, “share”, and “like” these erroneous reports.
- These users include average citizens and journalists who don’t fact-check before spreading the news.



False information spreads quickly

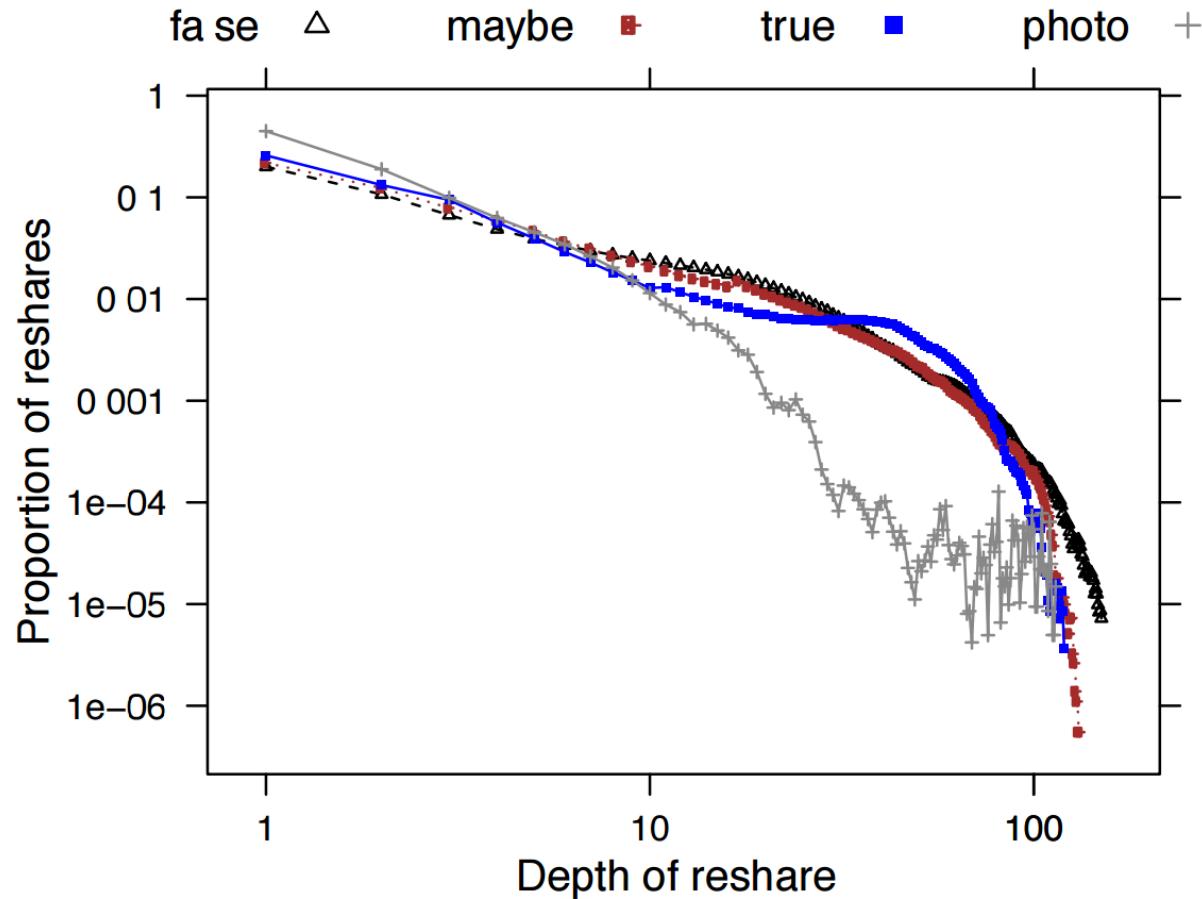


Tweets and retweets for
spread of a fake image
during first 2 hours



Tweets and retweets by
users on claims and fact
checks on a topic

False information cascades deep



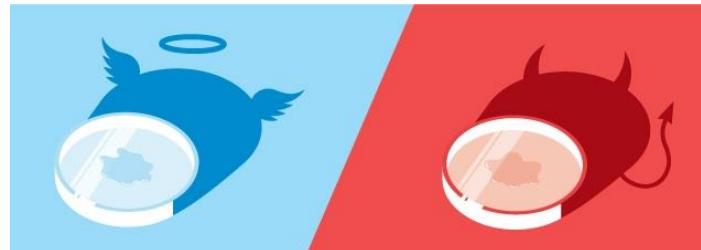
Rumor cascades tend to be deeper, in that more reshares are at greater depths, than the reference cascades.

Challenges in analyzing antisocial behavior



Population imbalance

Smaller proportion of behavior (< 10%) is antisocial



Limited labels

Little known information about antisocial behavior



Deceptive behavior

Antisocial behavior tends to masquerade as benign

Examples



<http://abcnews.com.co/obama-signs-executive-order-banning-national-anthem/>

NEWS FASHION ▾ TECH ▾ VIDEO ▾ WORLD ▾



Home > News > Obama Signs Executive Order Banning The National Anthem At All Sporting Events...

NEWS

Obama Signs Executive Order Banning The National Anthem At All Sporting Events Nationwide

By Jimmy Rustling, ABC News - November 11, 2016 1421 4

SHARE



Recent Comments

DOCS on *Gay Wedding Mobile Vans Cashing In On The Legalization Of Gay Marriage*

eric turner on *Obama Signs Executive Order Declaring Investigation Into Election Results; Revote Planned For Dec. 19th*

friols on *Obama Signs Executive Order Declaring Investigation Into Election Results; Revote Planned For Dec. 19th*

Brian on *Obama Signs Executive Order Declaring Investigation Into Election Results; Revote Planned For Dec. 19th*

Top 5 Fake Election Stories by Facebook Engagement

(three months before election)

**“Pope Francis Shocks World, Endorses Donald Trump
for President, Releases Statement”
(960,000, *Ending the Fed*)**

**“WikiLeaks CONFIRMS Hillary Sold Weapons to ISIS...
Then Drops Another BOMBSHELL! Breaking News”
(789,000, *The Political Insider*)**

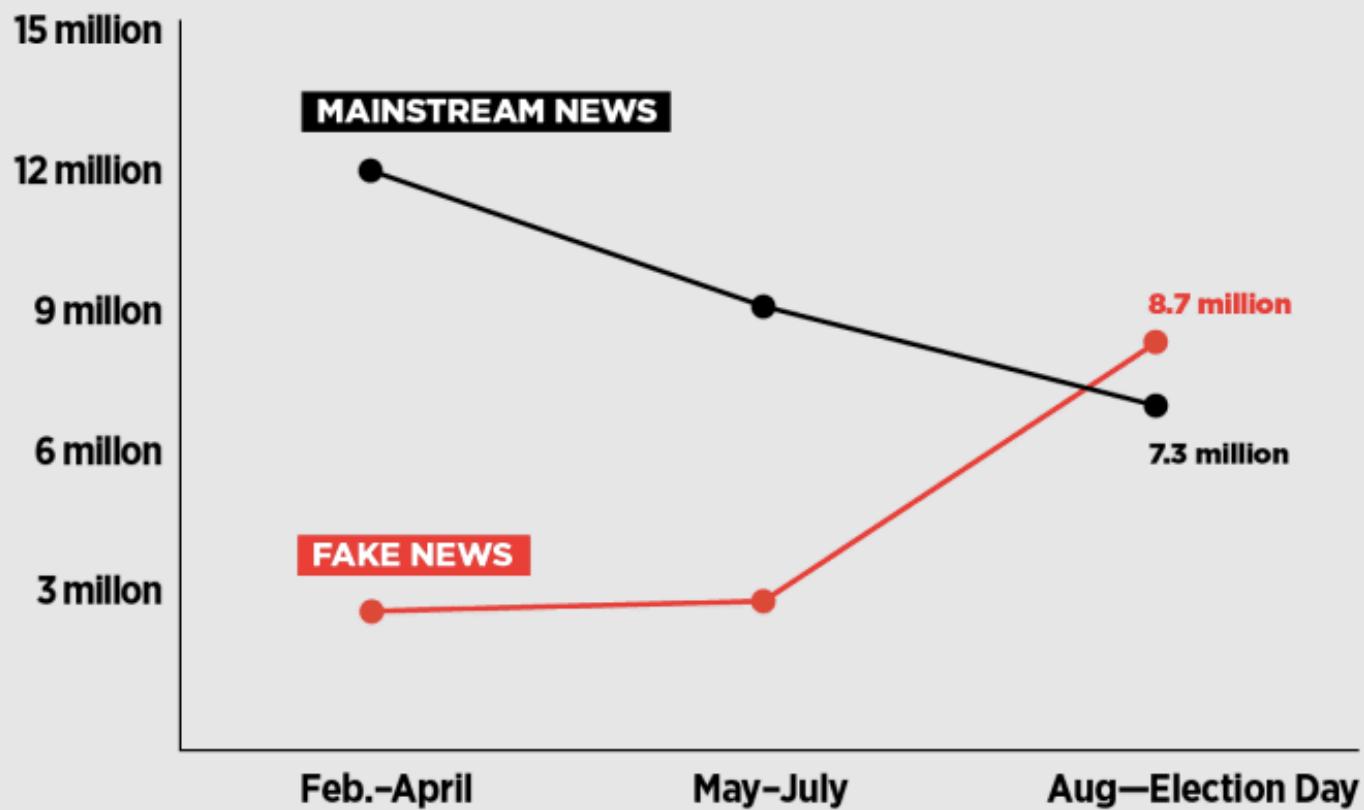
**“IT’S OVER: Hillary’s ISIS Email Just Leaked &
It’s Worse Than Anyone Could Have Imagined”
(754,000, *Ending the Fed*)**

**“Just Read the Law: Hillary Is Disqualified
From Holding Any Federal Office”
(701,000, *Ending the Fed*)**

**“FBI Agent Suspected in Hillary Email
Leaks Found Dead in Apparent Murder-
Suicide” (567,000, *Denver Guardian*)**

ENGAGEMENT REFERS TO THE TOTAL NUMBER OF SHARES, REACTIONS, AND COMMENTS
FOR A PIECE OF CONTENT ON FACEBOOK SOURCE: FACEBOOK DATA VIA BUZZSUMO

Total Facebook Engagements for Top 20 Election Stories



ENGAGEMENT REFERS TO THE TOTAL NUMBER OF SHARES, REACTIONS, AND COMMENTS FOR A PIECE OF CONTENT ON FACEBOOK SOURCE: FACEBOOK DATA VIA BUZZSUMO



The Eagle

[ALL SECTIONS](#)[News](#) [Obituaries](#)[AggieSports](#)[BrazosSports](#)[MyAggieNation](#)

Letters for November 20

11 hrs ago

**NEXT UP****Letters for November 18**

Keep up nonsense on funding College Station government

If you're interested in submitting a Letter to the Editor, click here.

[Submit](#)**Most Popular**

- 1** [Jury takes less than an hour to sentence Hudson to death](#)
- 2** [Texas A&M reportedly interested in Florida](#)

The 2018 elections will have enormous impact on our children's and grandchildren's future. All who are eligible to vote in the primaries should heed a warning by Thomas Jefferson: "we in America do not have government by the majority - we have government by the majority who participate . . . All tyranny needs to gain a foothold is for people of good conscience to remain silent."

My frustration with oppressive state and federal regulations attracted me to a U.S. Constitution Boot Camp sponsored by a local group. Prior to the six-hour Boot Camp I believed that each of the three branches of federal government exerted control over the other two. I quickly learned that "We the People who participate" are the only control over elected officials and government bureaucrats who conspire to expand their power and wealth.

Sparse participation in recent elections saddled Texas families with huge bond indebtedness for a generation which illustrates Thomas Jefferson's warning. Parents and grandparents surely do not wish for their families to live under the tyranny of the sort imposed on the colonies by European kings and queens who claimed they ruled by divine right. Modern day self-anointed elites can expand their corrupt foothold on power when parents and grandparents are so distracted by year-end holiday rituals that they do not prepare to participate fully in the 2018 election process.

Participation requires more than registering and appearing on primary election day. Copies of the U.S. Constitution and the Declaration of Independence could be excellent stocking-stuffers for teens through octogenarian family members. Reading and discussing both of these foundations of our culture would help assessing candidates running at all levels before and after the election.

Jefferson

Thomas Jefferson, A Brief Biography

Timeline

Quotations

Spurious Quotations

Bad government results from...

The beauty of the Second Amendment...

The Bible is the source of liberty (Quotation)

Chain Email with 10 Jefferson Quotations

The Christian god is a three headed monster

Democracy is nothing

Home > Jefferson > Spurious Quotations



All tyranny needs to gain a foothold...(Spurious Quotation)

AN ARTICLE COURTESY OF THE
**THOMAS JEFFERSON
ENCYCLOPEDIA** [MORE »](#)

Quotation: "All tyranny needs to gain a foothold is for people of good conscience to remain silent."

Variations: This quotation has hundreds of variations, which generally are composed of some combination of the following components:

conscience to remain silent.

Variations: This quotation has hundreds of variations, which generally are composed of some combination of the following components:
(All that is necessary/needed/required) OR (all it takes) OR (the best way)) for evil to (triumph OR succeed OR prosper OR prevail OR "win in the world" OR "gain a foothold") is for ("good men" OR "good people" OR "good men and women" OR "people of good conscience") to ("do nothing" OR "say nothing" OR "remain silent")

Sources consulted:

1. Papers of Thomas Jefferson Digital Edition
2. Thomas Jefferson Retirement Papers
3. Thomas Jefferson: Papers collection in Hathi Trust Digital Library

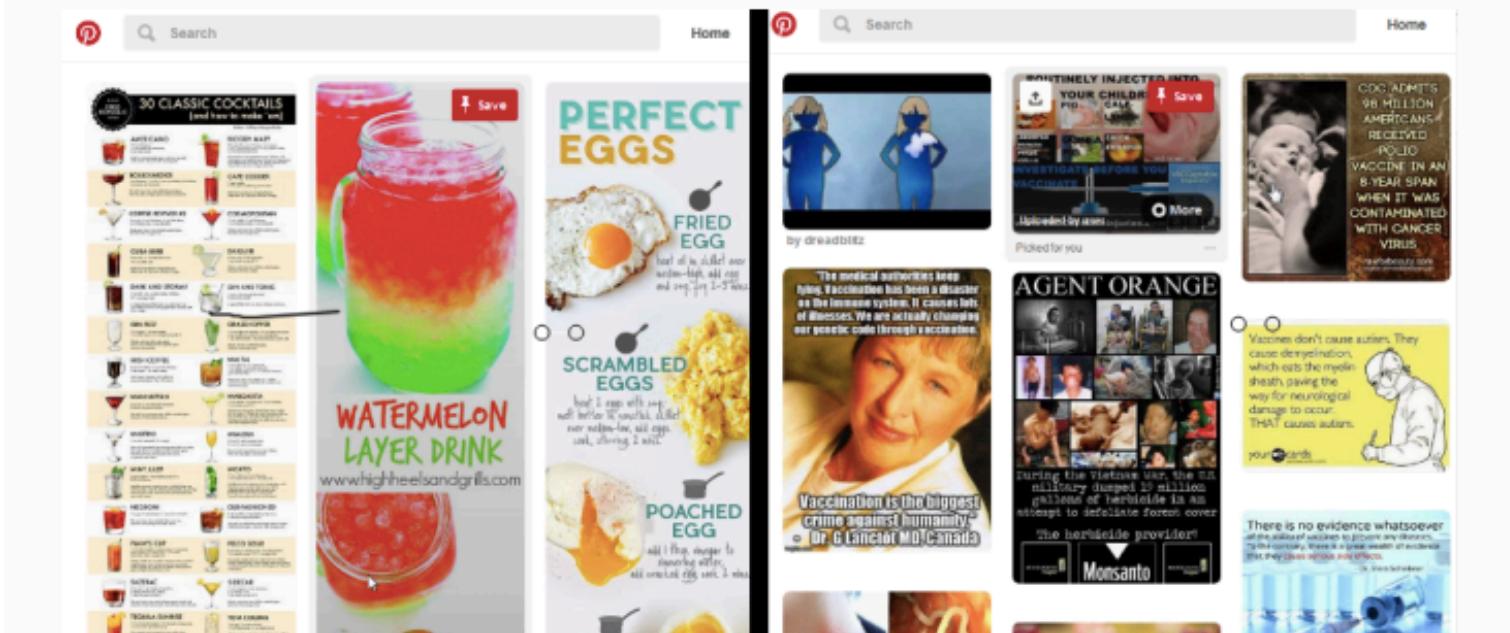
Earliest known appearance in print, attributed to Jefferson: 2005¹

Status: This quotation has not been found anywhere in Thomas Jefferson's writings. Curiously, the variant of this quotation almost exclusively attributed to Jefferson is "all tyranny needs to gain a foothold is for people of good conscience to remain silent." Other variants are not attributed to Jefferson at

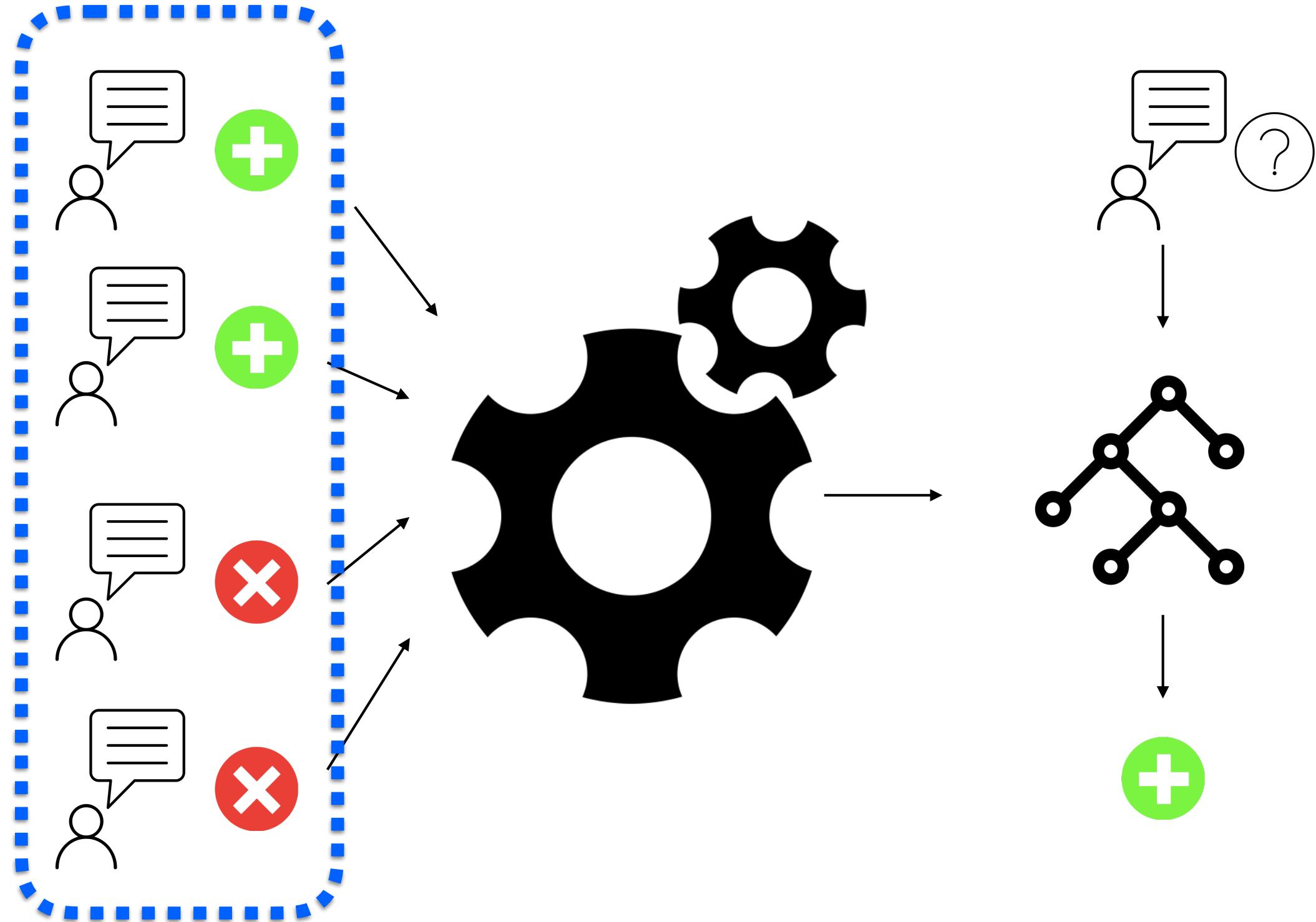
Digital Polarization on Pinterest Is Scary Aggressive

NOVEMBER 13, 2017 / MIKECAULFIELD

The speed with which Pinterest radicalizes your feed with conspiracy-based disinfo is shocking. I speed up this video by 400% but the entire process takes less than 13 minutes I think. Here's the final frame. I got here without taking a single explicit antivax action (e.g. I didn't follow any antivax boards):



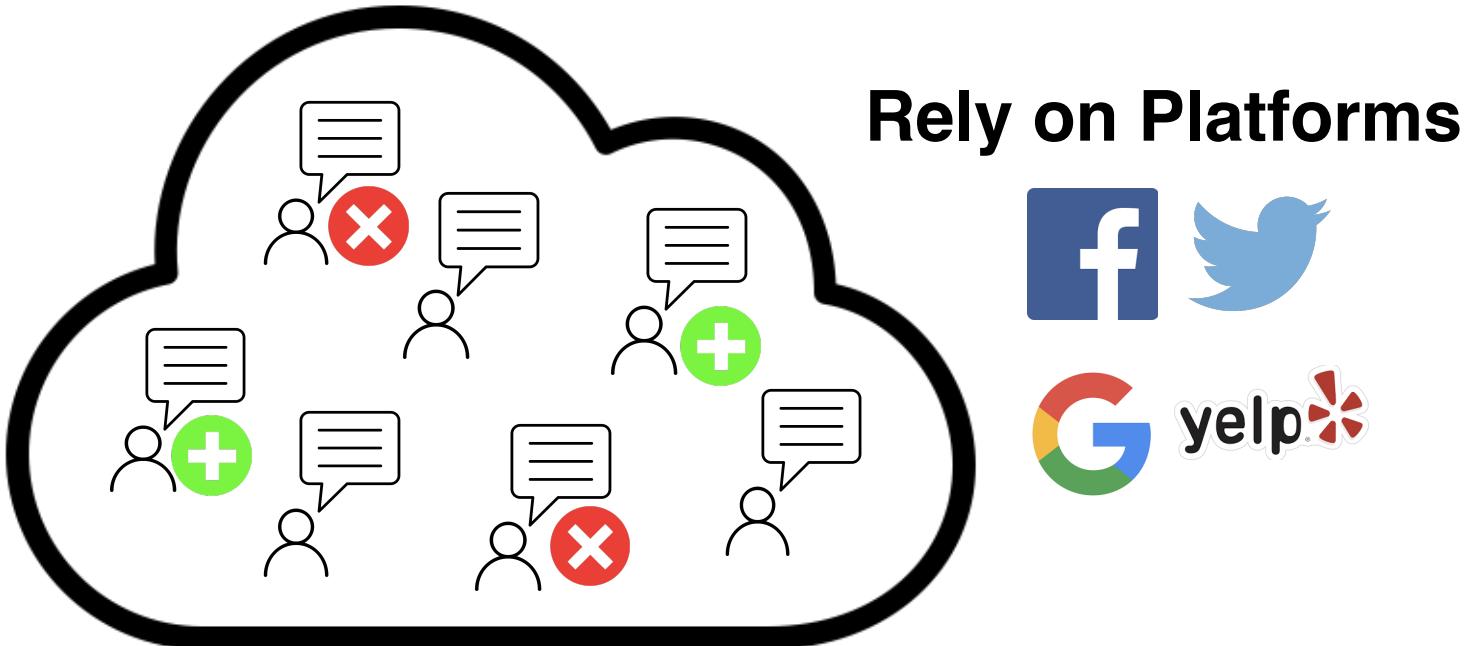
https://www.youtube.com/watch?v=iZ17h4e7k_s



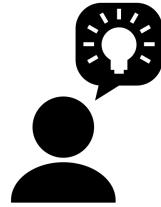
Icons from thenounproject

Key foundation for robust, on-going, and trustworthy **detection** is how we define the **ground truth** for input to our methods /algorithms

- E.g., for detecting hoaxes, misinformation, fake news, propaganda accounts, bots, compromised users, ...



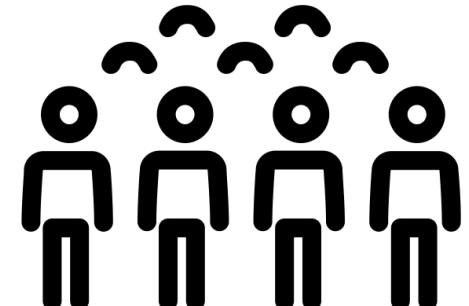
Encode our intuitions



Ask the Experts



Exploit Crowd Signals



Pros/cons

- Encode our intuitions
- Rely on platforms
- Ask the experts
- Exploit crowd signals

MEDIA

Tagging fake news on Facebook doesn't work, study says

A Yale survey of 7,500 people shows little benefit, and possible detriments, to fact-check programs.

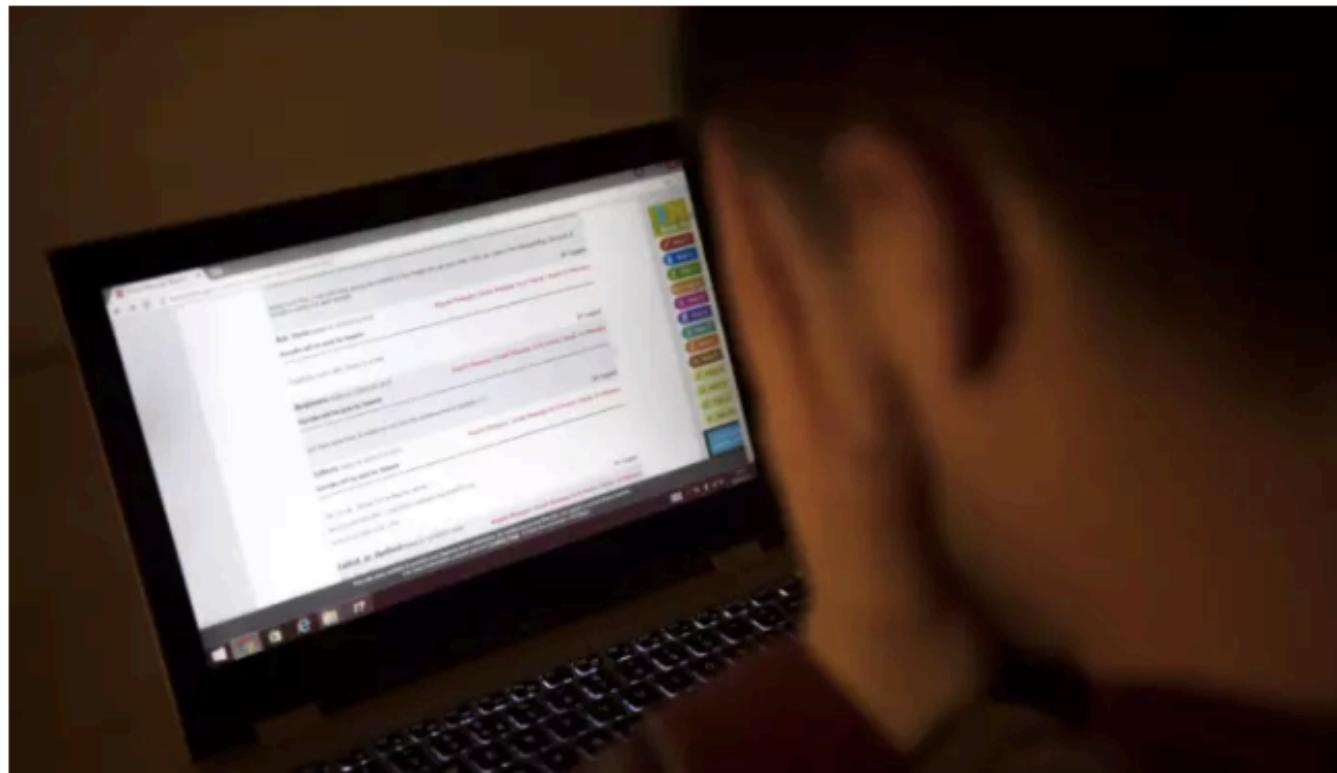
By JASON SCHWARTZ | 09/11/2017 06:20 PM EDT



<https://www.politico.com/story/2017/09/11/facebook-fake-news-fact-checks-242567>



'I'm not a Russian troll - I'm a security guard from Glasgow'



<http://www.scotsman.com/news/politics/i-m-not-a-russian-troll-i-m-a-security-guard-from-glasgow-1-4614102>

Exercise

Which of these news is false?

BREAKING BOMBSHELL: NYPD Blows Whistle on
New Hillary Emails: Money Laundering, Sex Crimes
with Children, Child Exploitation, Pay to Play, Perjury

Preexisting Conditions and Republican Plans to
Replace Obamacare

Which of these news is false?

**BREAKING BOMBSHELL: NYPD Blows Whistle on
New Hillary Emails: Money Laundering, Sex Crimes
with Children, Child Exploitation, Pay to Play, Perjury**

**Preexisting Conditions and Republican Plans to
Replace Obamacare**

How is fake news written?

BREAKING BOMBSHELL: NYPD Blows Whistle on
New Hillary Emails: Money Laundering, Sex Crimes
with Children, Child Exploitation, Pay to Play, Perjury

Lot of information in
title

Simple and repetitive
content





ANTIFA Leader: “November 4th [...] millions of antifa supersoldiers will behead all white parents”

by Lucian Wintrich 1249 Comments

a 49.0K Share

d 795 Tweet

v Email

Tom Bloke, considered to be one of the leaders of the domestic terrorist group ANTIFA, took to Twitter today to threaten violence against “white parents” and “small business owners”.

can't wait for November 4th when millions of antifa supersoldiers will behead all white parents and small business owners in the town square

– Tom Bloke (@21logician) **October 30, 2017**

Adding to the open display of anti-white racism and coupled with violence against small business owners (for whatever reason), the top-rated reply doubled down:

we, ANTIFA, ARE going to Explode the white USA race with acme tnt crates UNTIL they are cobered with soot and waving a white rag on a stick

– spoilt teat (@offalnaut) **October 30, 2017**

Rep. Brian Higgins, D-Buffalo, claimed the House Republican tax reform bill could slash middle-class incomes as much as 9 percent.

New York state taxpayers would lose money if Congress decides to end the federal deduction of state and local taxes, he said.

"The elimination of income and sales taxes in New York is equal to 9 percent of taxable income, meaning that if you make \$100,000 a year you lose \$9,000," Higgins [said](#) at a hearing. "If you make \$50,000 a year, you lose \$4,500."

About 3.3 million people in New York state take advantage of the state and local tax deduction, according to the Urban-Brookings Tax Policy Center, a tax policy and research organization. More than half of those who take the deduction make \$100,000 a year or less.

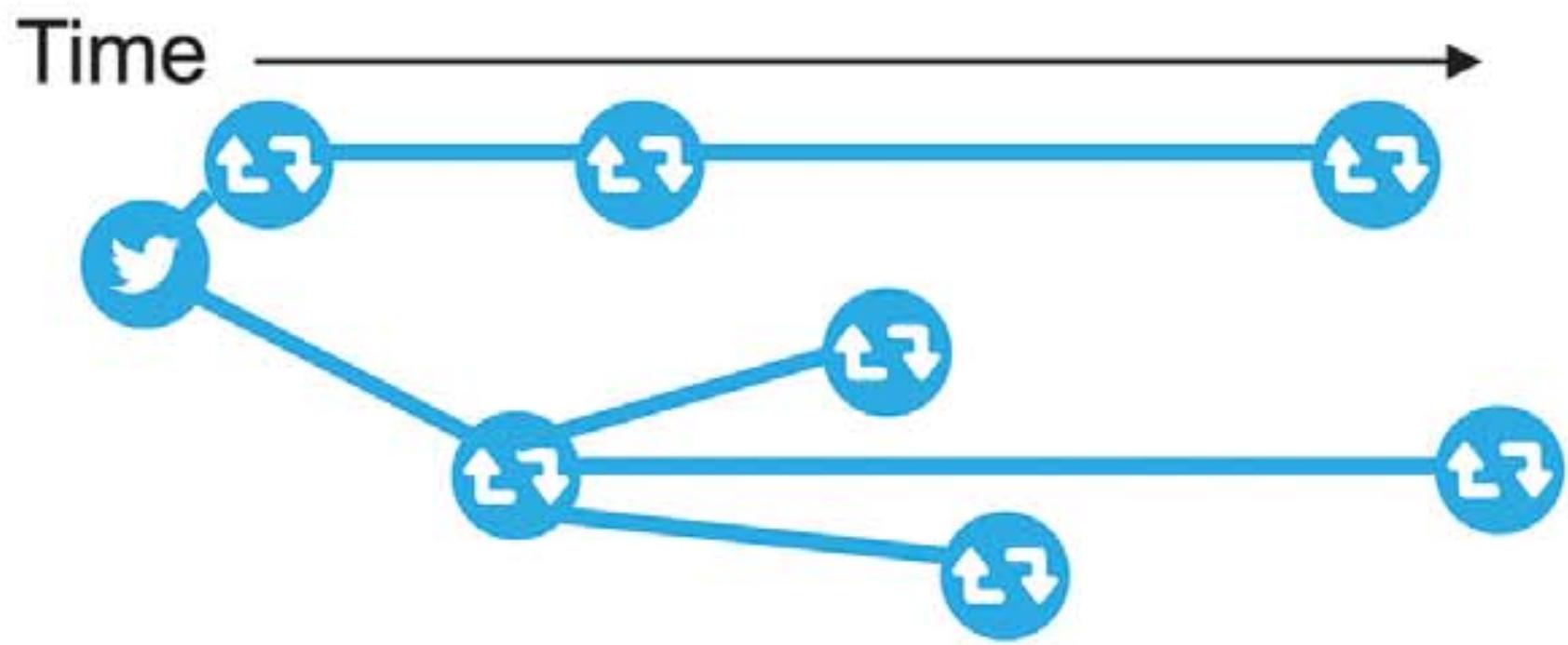
Is Higgins right that those taxpayers could lose as much as \$9,000?

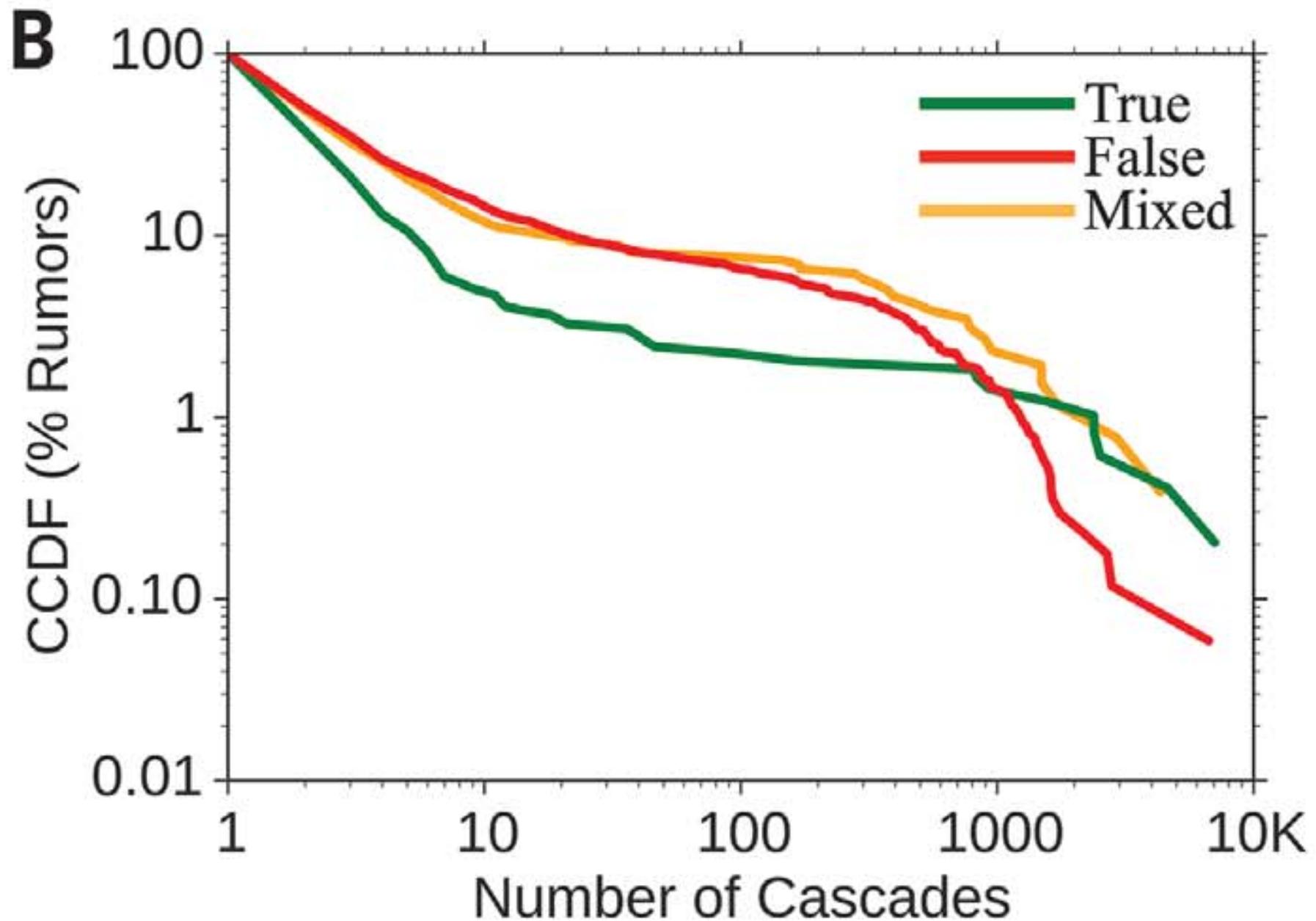
SOCIAL SCIENCE

The spread of true and false news online

Soroush Vosoughi,¹ Deb Roy,¹ Sinan Aral^{2*}

We investigated the differential diffusion of all of the verified true and false news stories distributed on Twitter from 2006 to 2017. The data comprise ~126,000 stories tweeted by ~3 million people more than 4.5 million times. We classified news as true or false using information from six independent fact-checking organizations that exhibited 95 to 98% agreement on the classifications. Falsehood diffused significantly farther, faster, deeper, and more broadly than the truth in all categories of information, and the effects were more pronounced for false political news than for false news about terrorism, natural disasters, science, urban legends, or financial information. We found that false news was more novel than true news, which suggests that people were more likely to share novel information. Whereas 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.





C