Societal Computing Week 2

Prof. Kenny Joseph

Last week

- What is societal computing?
  - Computing in, for, and ideally, with and by society
- A societal computing lens on machine learning

This week

- Social media
- Social media technology is inherently societal computing
- But we often don't think about societal computing questions when on social media!
  - Who made this technology?
  - Why did they make it?
  - Who does it benefit? Anyone?
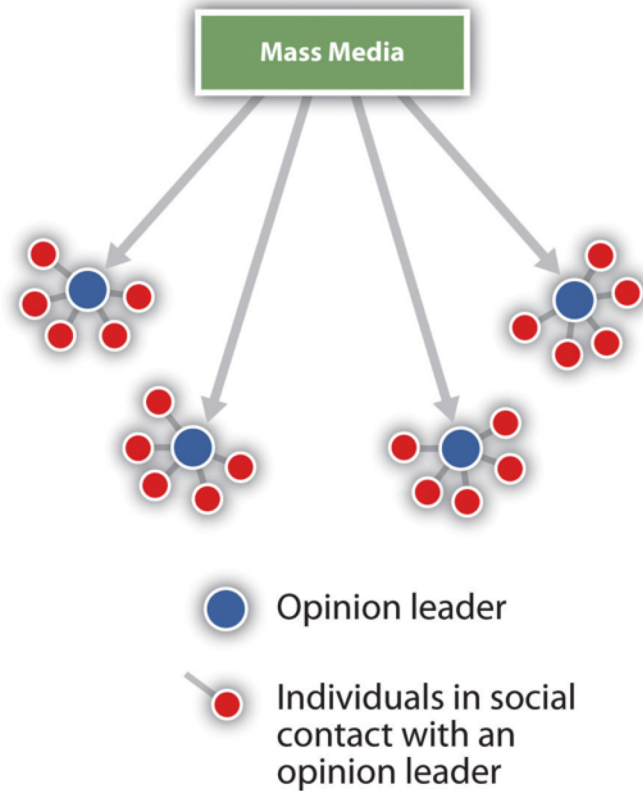 - Who does it harm? Everyone?

- Gets a lot of things right.
- Gets a lot of things wrong/exaggerated
- Ignores almost 70 years of research on the impacts of computing technology on society
- Ignores several centuries of research on society and technology
- So watch, but with a grain of salt

Overview (cont.)

- This week: Social Media and Society
  - Some motivation
  - Where did the social media you used today come from?
  - Detailed case study:
    - 2016 U.S. Election - Fake news, bots, and political ads
  - Looking towards today
    - 2020 election
    - COVID and social media
  - The upsides of social media
  - The downsides of social media

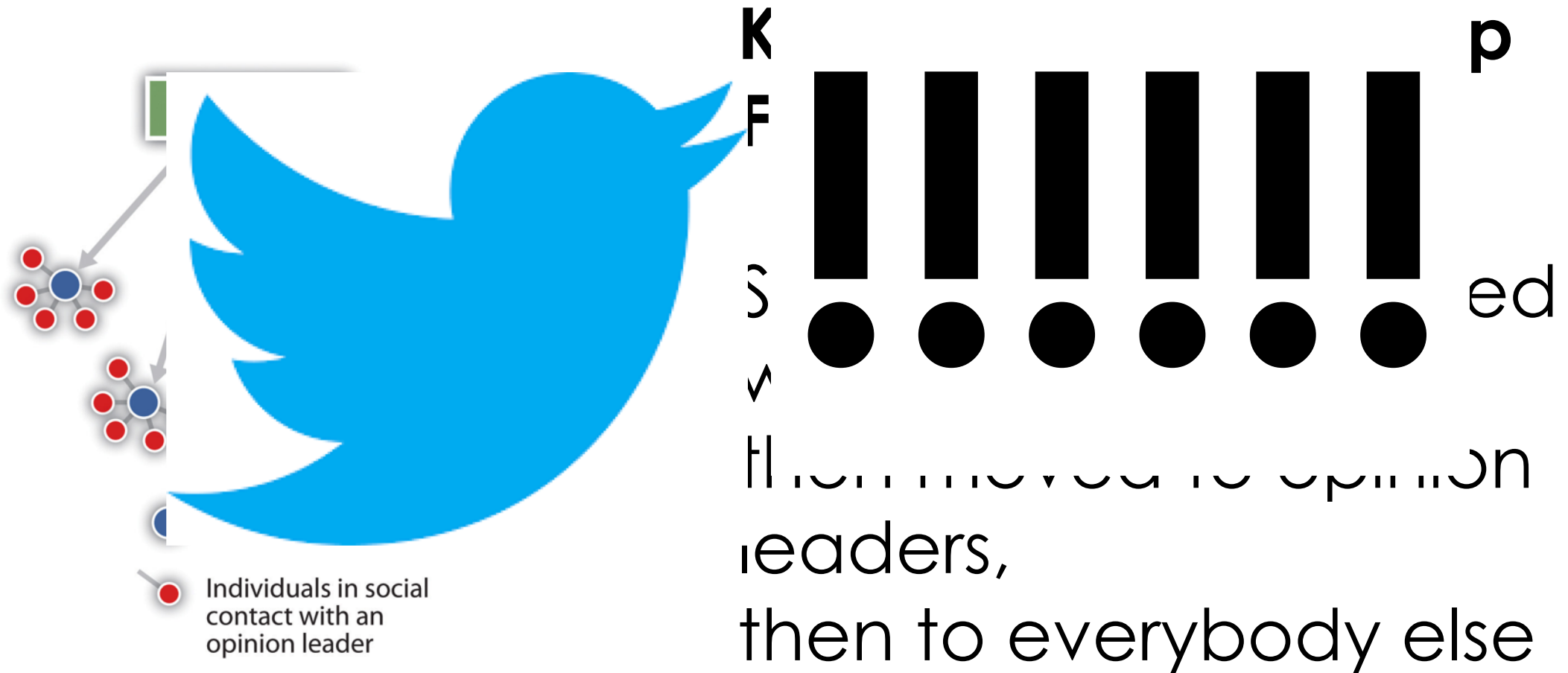# People were originally super excited about social media

Mass Media

Opinion leader

Individuals in social contact with an opinion leader

Katz and Braly's 2 Step Flow Model

Said content originated with mass media,
then moved to opinion leaders,
then to everybody else

People were originally super excited about social media

Individuals in social contact with an opinion leader

...ed ...then moved to opinion leaders, then to everybody else

But...

#FactsFirst

Tweets	Following	Followers	Likes	Lists	Moments
201K	1,116	40.3M	1,453	12	48

Tweets	Following	Followers	Lists	Moments
407K	401	18M	12	14

But…

https://www.nytimes.com/2013/09/14/us/suicide-of-girl-after-bullying-raises-worries-on-web-sites.html
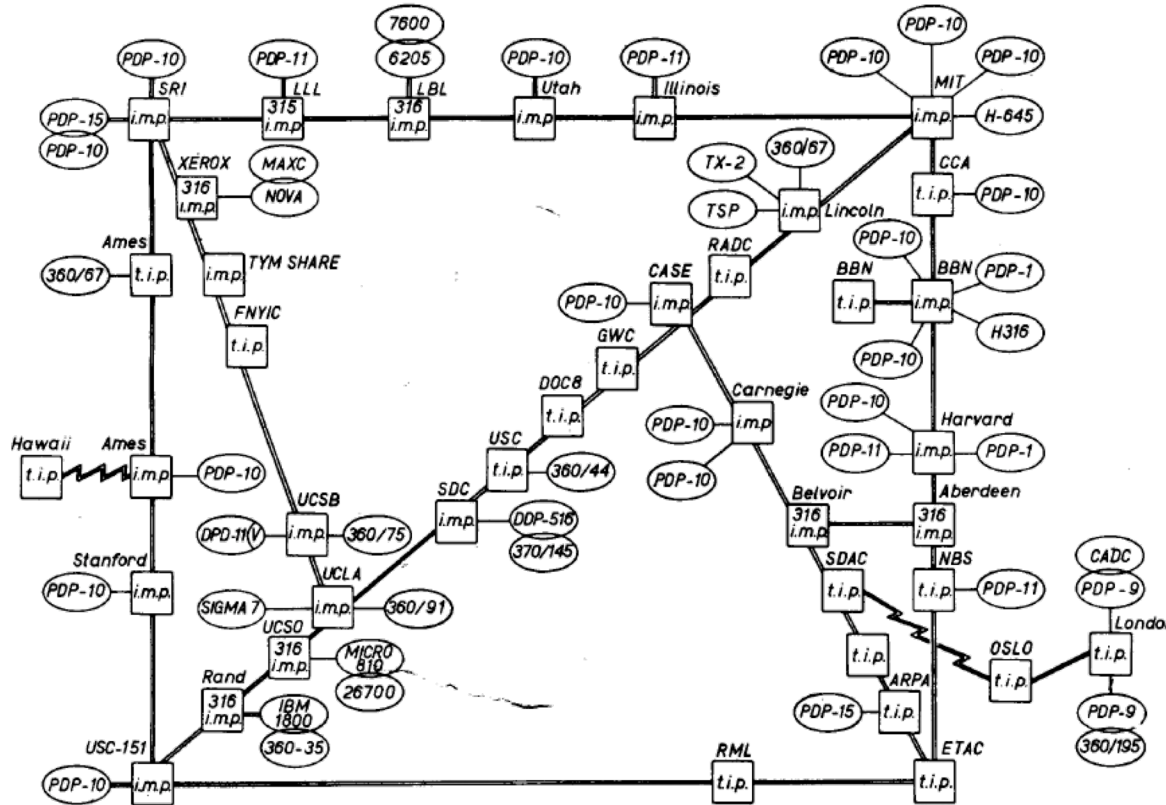
What happened (anything)?

- **Where did social media come from?**
- Detailed case study:
  - 2016 U.S. Election
- The present day and social media
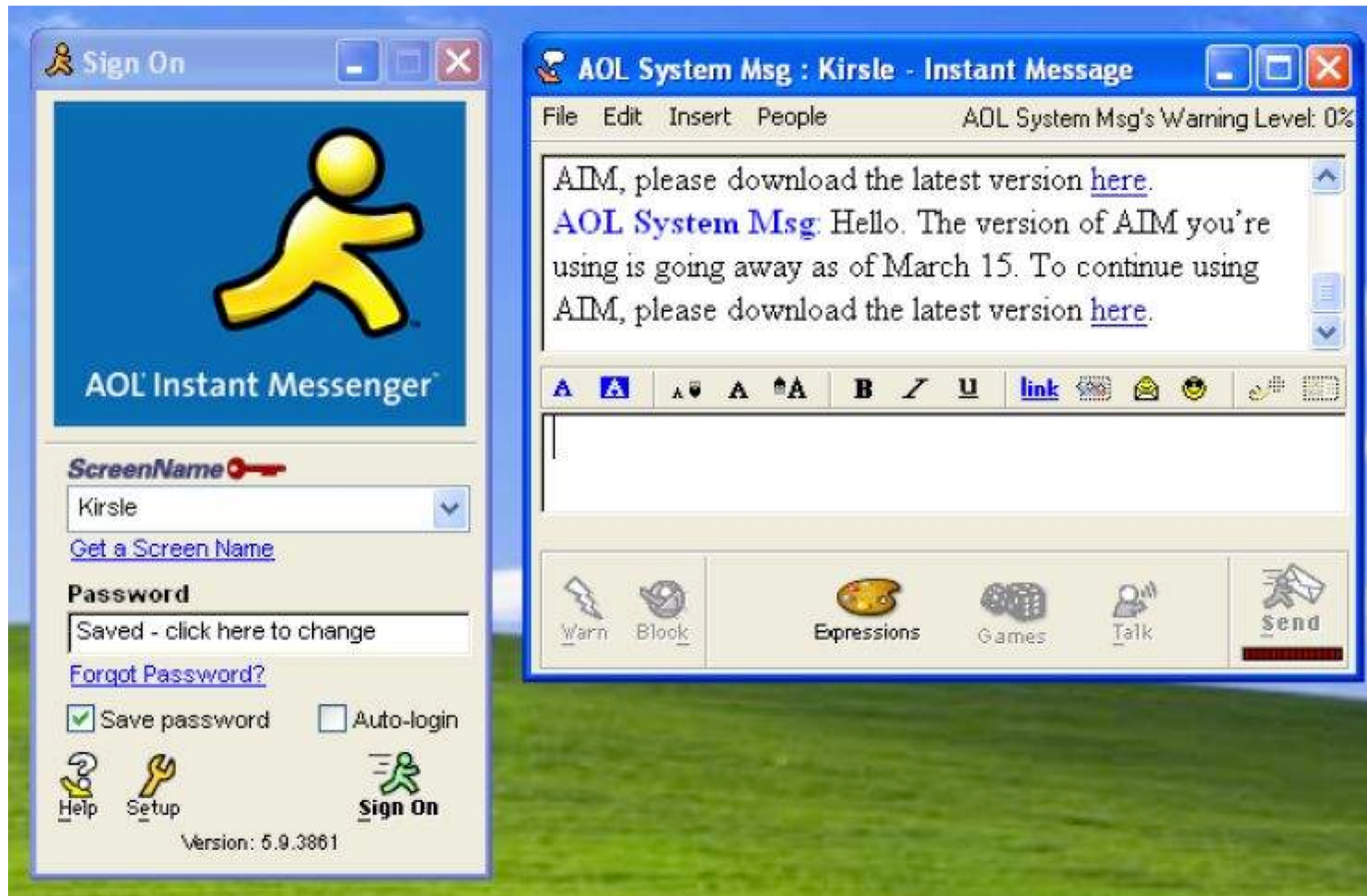- The upsides of social media
- The downsides of social media

Web 1.0

The original focus of the web was to **connect users to information**

https://sites.google.com/site/hciisocialweb/syllabus

The move from Web 1.0 – 2.0

Web 2.0 was a shift to connecting users to **other users ... And then great information followed!**

https://sites.google.com/site/hciisocialweb/syllabus

Wikipedia – moving from Web 1.0 - 2.0

- https://www.youtube.com/watch?v=oVFPW0r4jWk

From Web 2.0 to Social Networking Sites

- As the goal of the web shifted to connecting **users**, social networking sites naturally arose
- In the beginning, there was Six Degrees.com
  - Why do you think a SNS in '97 ultimately failed?
- Slowly, all kinds of social media sites grew
  - Ryze – precursor to LinkedIn
  - LiveJournal – for blogging
  - …

https://onlinelibrary.wiley.com/doi/full/10.1111/j.1083-6101.2007.00393.x

Launch Dates of Major Social Network Sites

Year	Left	Right
'97		Six Degrees.com
'98		
'99	AsianAvenue	LiveJournal / BlackPlanet
'00	LunarStorm (SNS relaunch) / (SixDegrees closes)	MiGente
'01	Ryze	Cyworld
'02	Fotolog	Friendster
'03	Skyblog / LinkedIn / Tribe.net, Open BC/Xing	Couchsurfing / MySpace / Last.FM
'04	Orkut, Dogster / Multiply, aSmallWorld / Catster	Hi5 / Flickr, Piczo, Mixi, Facebook (Harvard-only) / Dodgeball, Care2 (SNS relaunch) / Hyves
'05	Yahoo! 360 / Cyworld (China) / Ning	YouTube, Xanga (SNS relaunch) / Bebo (SNS relaunch) / Facebook (high school networks) / AsianAvenue, BlackPlanet (relaunch)
'06	QQ (relaunch) / Windows Live Spaces / Twitter	Facebook (corporate networks) / Cyworld (U.S.) / MyChurch, Facebook (everyone)

Why did some succeed where others failed?

- **Social factors**

- **Technological Factors**

- Also
  - Timing
  - $$
  - …

Bringing us to the present

- There have been many, many failed social networking sites
  - These failures are due to a lot of things – chance, technology, …
- But there have also been many successes
  - Any many different kinds of successes
- With all of this, social media has become a central part of our daily lives.

Summary and moving on

- **Where did social media come from?**
  - Web 1.0 -> Web 2.0 -> Social Networking Sites -> All kinds of social media
- **Why did some platforms succeed and others fail**
  - Right place, right time, good tech, a lot of luck
- **Is social media just ~~Snapchat~~ Instagram stories or (? TikTok? Myspace?)**
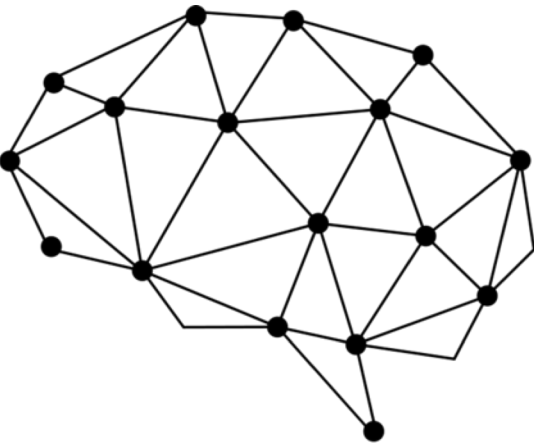 - NO! Social media is a lot more than that.

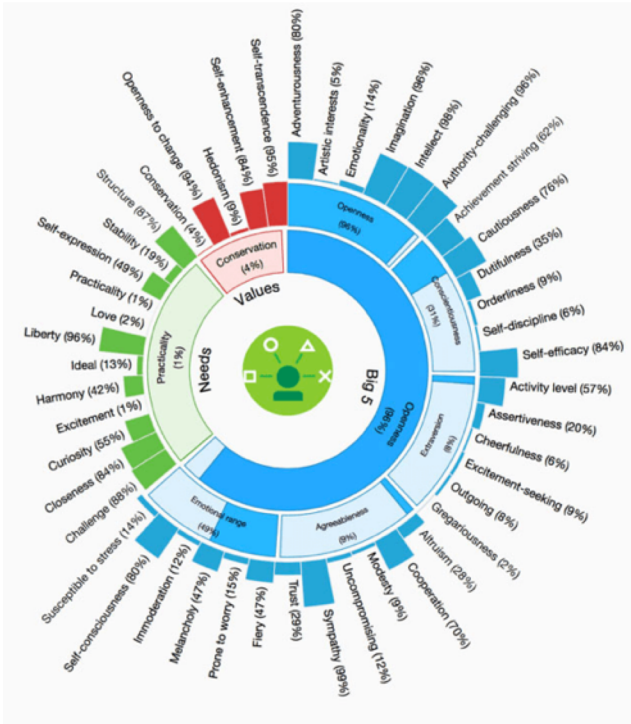# Case Study: the 2016 US Election

Social Media and the 2016 Election

- What we will talk about (briefly)
  - Political ad targeting
  - Manipulation – bots, trolls, fake accounts
  - Fake News
- Did social media *cause* Trump to be elected?
- What we won't talk about
  - Trump's tweets
  - Hate speech/harassment

Political ad targeting

Manipulation – How?

Bots

Cyborgs

Coordinated Campaigns

Fake pages

Hijacked accounts

Manipulation of the 2016 election came from a variety of sources

Fake News

Total Facebook Engagements for Top 20 Election Stories

MAINSTREAM NEWS

FAKE NEWS

15 million
12 million
9 million — 8.7 million
6 million — 7.3 million
3 million

Feb.–April   May–July   Aug—Election Day

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

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

https://www.buzzfeednews.com/article/craigsilverman/viral-fake-election-news-outperformed-real-news-on-facebook#.jepaXOx1m

What *is* fake news?

- What do you think?

- One increasingly accepted definition:
  - Fake news is content produced with all the trappings of a legitimate news organization but without any of the actual journalistic scrutiny

- Can you spot fake news?
  - http://factitious.augamestudio.com/#/

http://science.sciencemag.org/content/359/6380/1094

Why did fake news come about?

- Thoughts?

Apache 2 Test Page
powered by CentOS

This page is used to test the proper operation of the Apache HTTP server after it has been installed. If you can read this page it means that the Apache HTTP server installed at this site is working properly.

If you are a member of the general public:

The fact that you are seeing this page indicates that the website you just visited is either experiencing problems or is undergoing routine maintenance.

If you would like to let the administrators of this website know that you've seen this page instead of the page you expected, you should send them e-mail. In general, mail sent to the name "webmaster" and directed to the website's domain should reach the appropriate person.

For example, if you experienced problems while visiting www.example.com, you should send e-mail to "webmaster@example.com".

If you are the website administrator:

You may now add content to the directory `/var/www/html/`. Note that until you do so, people visiting your website will see this page and not your content. To prevent this page from ever being used, follow the instructions in the file `/etc/httpd/conf.d/welcome.conf`.

You are free to use the images below on Apache and CentOS Linux powered HTTP servers. Thanks for using Apache and CentOS!

Powered by APACHE   **CentOS powered**

About CentOS:

The Community ENTerprise Operating System (CentOS) Linux is a community-supported enterprise distribution derived from sources freely provided to the public by Red Hat. As such, CentOS Linux aims to be functionally compatible with Red Hat Enterprise Linux. The CentOS Project is the organization that builds CentOS. We mainly change packages to remove upstream vendor branding and artwork.

For information on CentOS please visit the CentOS website.

Note:

CentOS is an Operating System and it is used to power this website; however, the webserver is owned by the domain owner and not the CentOS Project. **If you have issues with the content of this site, contact the owner of the domain, not the CentOS Project.**

Unless this server is on the CentOS.org domain, the CentOS Project doesn't have anything to do with the content on this webserver or any e-mails that directed you to this site.
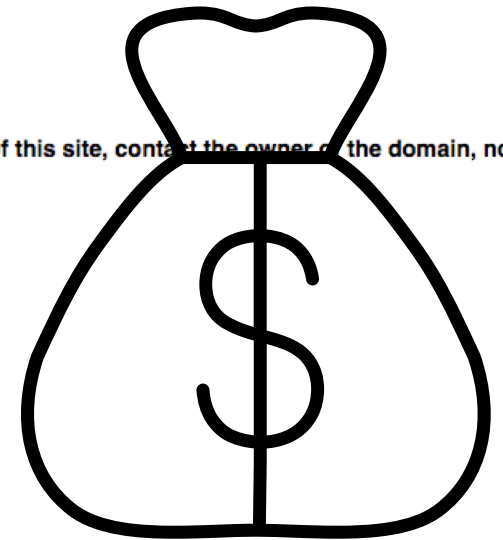
For example, if this website is www.example.com, you would find the owner of the example.com domain at the following WHOIS server:

http://www.internic.net/whois.html

THE SEVEN COMMANDMENTS OF FAKE NEWS

OPERATION INFEKTION PART 2/3
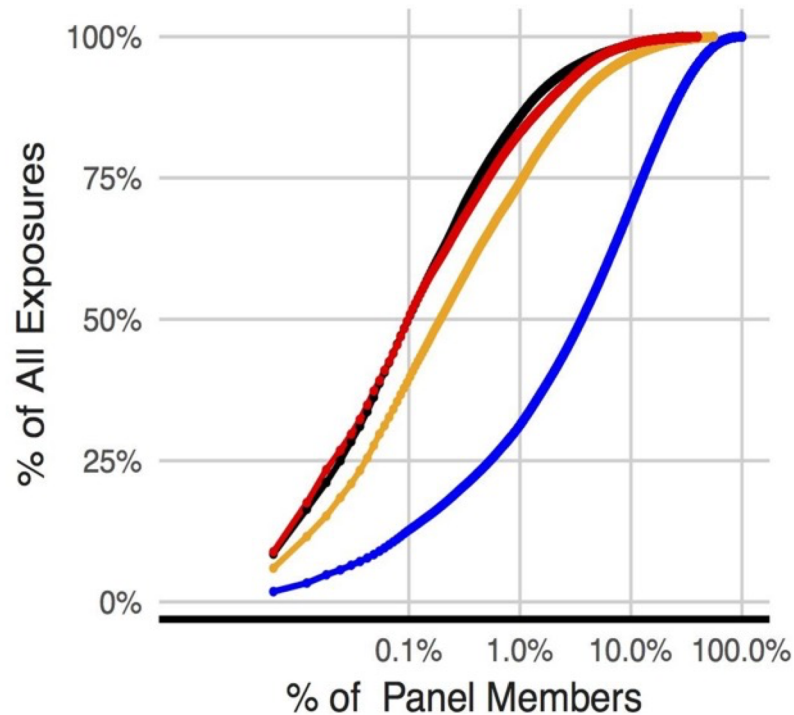
Why did fake news come about?

- Why was/is there fake news?
  - Money and power!
    - Imagine that...
- Who saw fake news in 2016?
  - What percent of **timelines** do you think contained link to fake news?
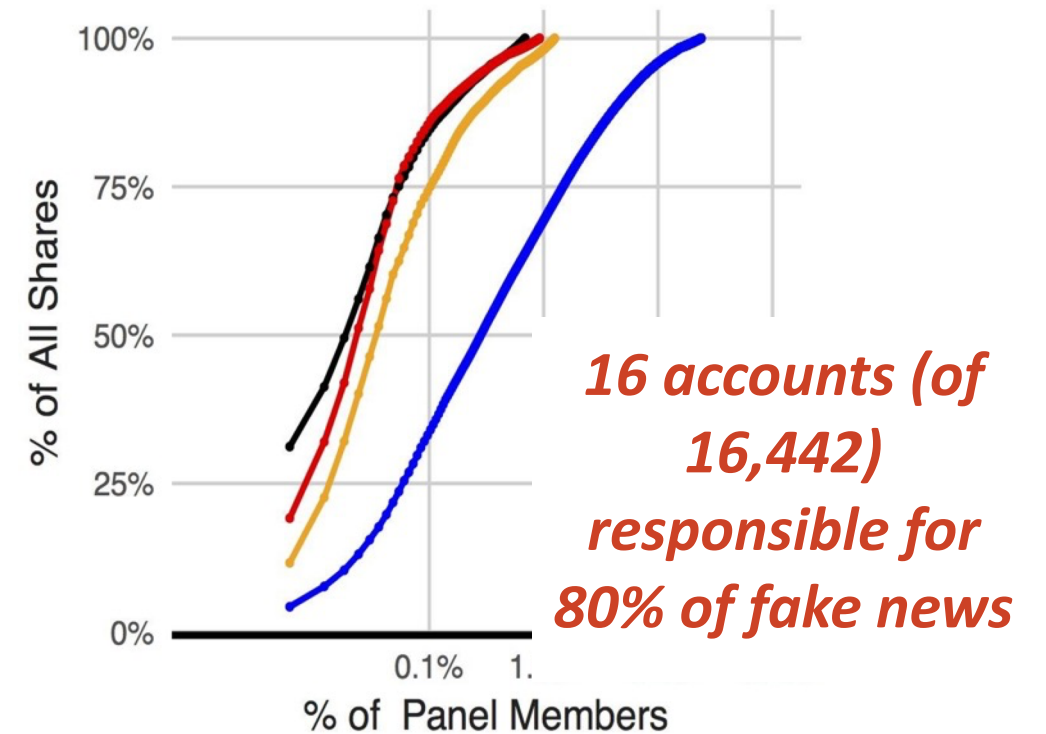 - What percent of **people** saw fake news?

5.1%

of political content in voters' Timelines was fake news
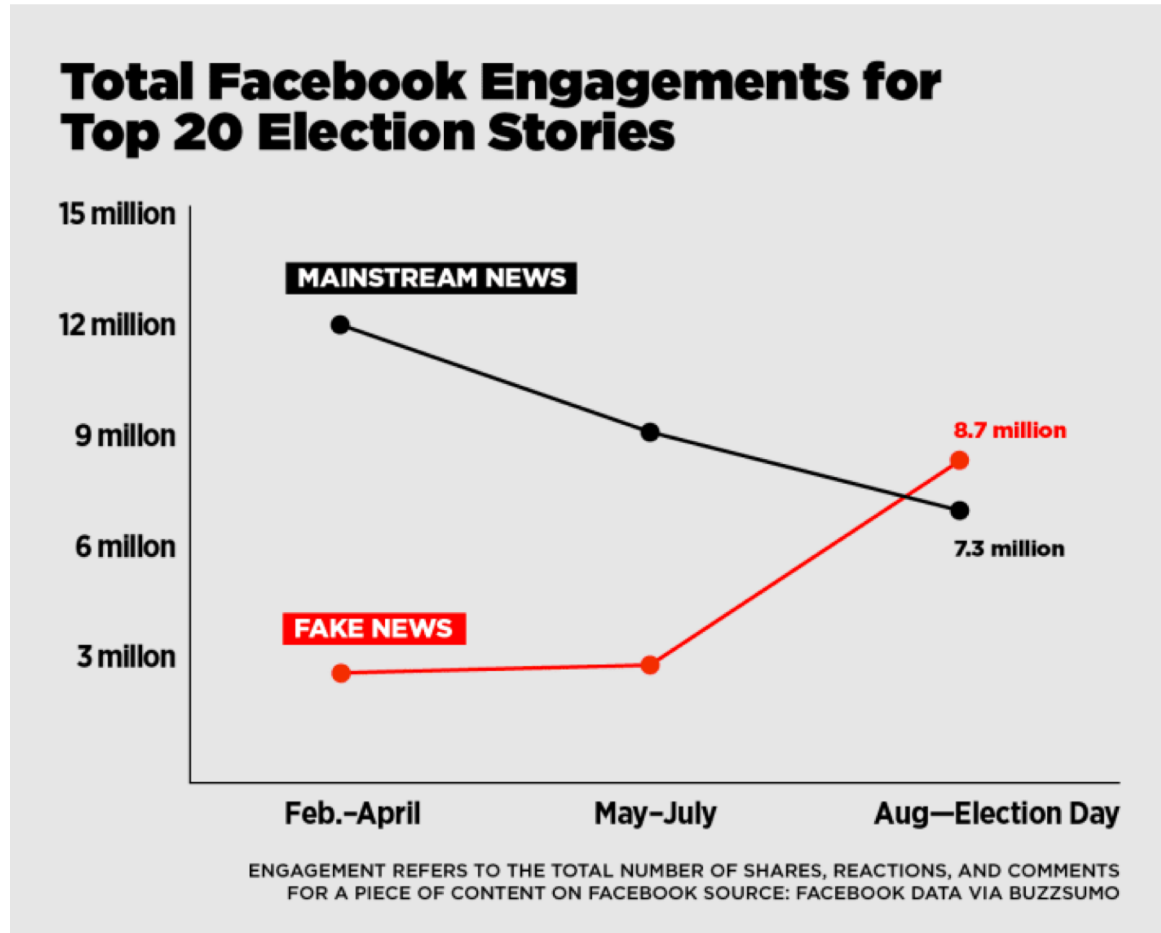
Fake news **is highly concentrated!**

Exposures

Sharing

16 accounts (of 16,442) responsible for 80% of fake news

Did you see fake news?

Total Facebook Engagements for Top 20 Election Stories. Mainstream news declined from 12 million (Feb.–April) to 9 million (May–July) to 7.3 million (Aug.–Election Day). Fake news rose to 8.7 million. Engagement refers to the total number of shares, reactions, and comments for a piece of content on Facebook. Source: Facebook data via BuzzSumo.

Summarizing

- For Political Ad targeting, Bots, & Fake News, we see the same story:
  - Its not new
    - Ad targeting existed for centuries
    - Bots were impacted elections at least as early as 2010
    - Fake news has been around since the Romans
  - But, it came into focus because of new/increased use in 2016
    - Ad targeting – via FB and semi-private data
    - Bots – because there were so many, and because we know Russia was behind some of them
    - Fake news - a vast increase in its spread

- And they likely had an impact
- But…

Would Trump have been elected without social media?

- Its quite likely...
  - The demographics most likely to vote for Trump were the least likely to be online
  - Fake news was very concentrated
  - Best estimates are that targeted ads would have had to be tens of times more effective than TV ads to have swayed enough voters
- But, we don't really don't know!
  - some academics disagree with this
  - and it is likely impossible for us to ever figure it out

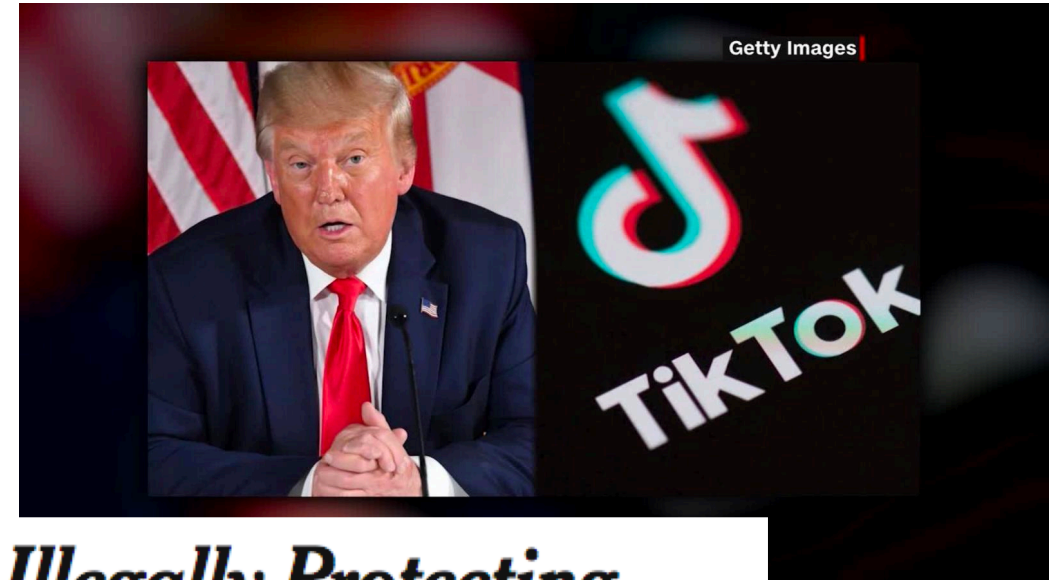# SOCIAL MEDIA TODAY

What is different about 2020

1. The platform landscape
   - Twitter is more important, because of Trump
   - Facebook is *really* just for old people now
   - Snapchat came and went, Tiktok has caused a ruckus
2. The sociopolitical landscape
   - There is a global pandemic
   - Trump is the most polarizing force in U.S. political history
3. Platforms are being forced to take a more active role

2020, social media, pandemics, politics

NEWS · 13 MAY 2020

Anti-vaccine movement could undermine efforts to end coronavirus pandemic, researchers warn

Studies of social networks show that opposition to vaccines is small but far-reaching – and growing.

Getty Images

U.S. Accuses Google of Illegally Protecting Monopoly

A victory for the government could remake one of America's most recognizable companies and the internet economy that it has helped define.

Platforms new responses

Donald J. Trump @realDonaldTrump

This Tweet violated the Twitter Rules about glorifying violence. However, Twitter has determined that it may be in the public's interest for the Tweet to remain accessible. Learn more

....These THUGS are dishonoring the memory of George Floyd, and I won't let that happen. Just spoke to Governor Tim Walz and told him that the Military is with him all the way. Any difficulty and we will assume control but, when the looting starts, the shooting starts. Thank you!

12:53 AM · May 29, 2020 · Twitter for iPhone

Twitter Still Blocking a NY Post Story Based on Alleged Hunter Biden Emails, Newspaper's Account Remains Frozen
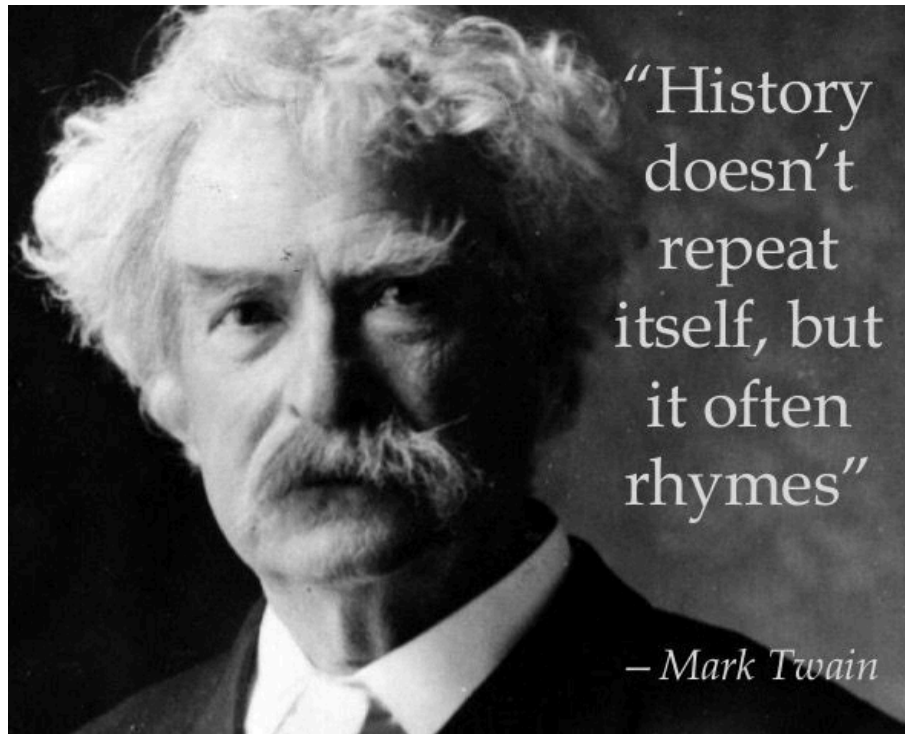
By Todd Spangler ∨

Facebook is working to persuade advertisers to abandon their boycott. So far, they aren't impressed.

More than 750 advertisers are boycotting Facebook, asking for better policing of hateful content. Facebook's concessions so far haven't won them over.

Take homes

"History doesn't repeat itself, but it often rhymes"

– Mark Twain

Is there anything good about social media?

Connecting us internationally

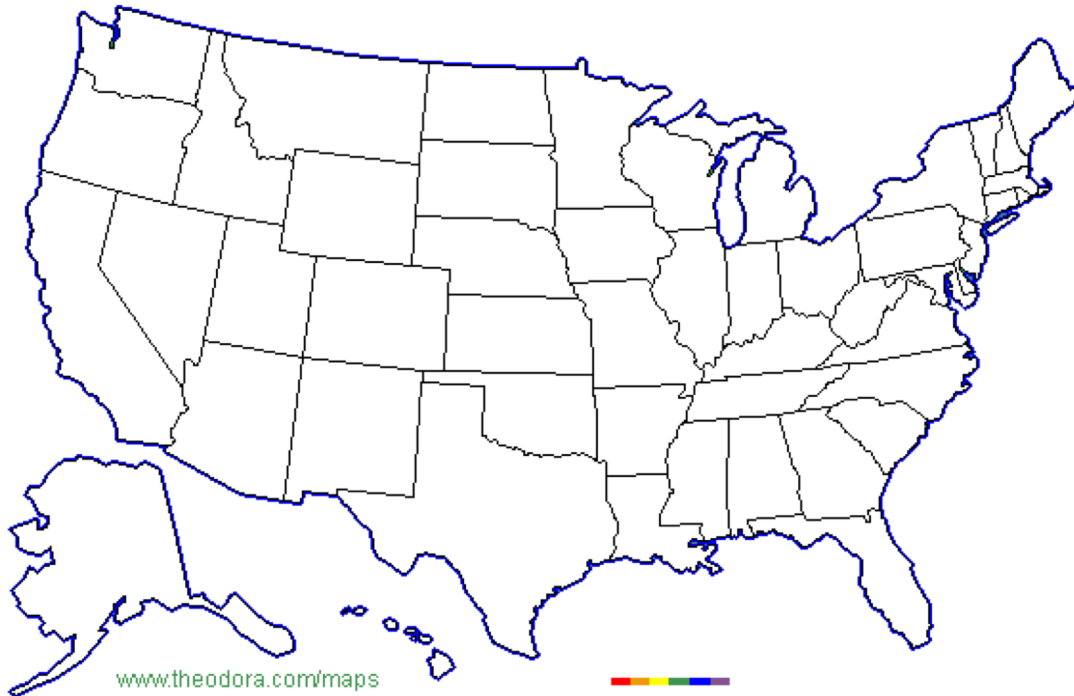Assisting the creation of social movements

Giving voice to networked counterpublics

The upside of social media

- Reasons to be positive about social media
  - Connectivity
  - Aides in the creation of social movements, here and abroad
  - A new source for immediate news

Social media is the worst thing in the world

Facebook friendships in space

www.theodora.com/maps

- Which counties do you think had the most *absolute* friendships in common with Erie county?
- But that's not that interesting! We want to look at the relative likelihood that any two people living in two different counties are connected on Facebook, controlling for population size
- What about on this relative scale

Facebook and Myanmar

The New York Times

A Genocide Incited on Facebook, With Posts From Myanmar's Military

- Nearly 700K Rohingya have become refugees in Myanmar
- False information spread on Facebook was a critical part of this

https://www.nytimes.com/2018/10/15/technology/myanmar-facebook-genocide.html

Bullying and Instagram

- A survey done by the Pew Research Center shows that **59%** of teens have been bullied online.

- Cyber bullying **doubles the chance of attempted suicide** and has resulted in the development of low self-esteem, depression, academic difficulties, and school violence

Abuse of female journalists on Twitter

- Study of tweets @ 778 Journalists in the US and UK
  - A female journalist or politician harassed **every 30 seconds**
  - 7.1% of tweets sent to the women in the study were problematic or abusive.
  - Online abuse against women cuts across the political spectrum. Politicians and journalists faced similar levels of online abuse and we observed both liberals and conservatives alike

Privacy concerns

More Than Half of Employers Have Found Content on Social Media That Caused Them NOT to Hire a Candidate, According to Recent CareerBuilder Survey
- Seven in ten employers (70 percent) use social networking sites to research job candidates during hiring process
- Nearly half of employers (48 percent) check up on current employees on social media
- A third of employers (34 percent) have reprimanded or fired an employee based on content found online

Carmakers' ultimate objective, Lanctot said, is to build a database of consumer preferences that could be aggregated and sold to outside vendors for marketing purposes, much like Google (GOOGL) and Facebook (FB) do today.

Think of the last time you did something you didn't want people to know about

Now, think about what would happen if everybody in the world could access that fact about you, forever.

Some final thoughts on social media

Summarizing – 3 Key Points

1. By and large social media companies have not taken responsibility for their actions, many of which have negative consequences

2. But, social media still has the potential to aid social movements (E.g. #MeToo, #BlackLivesMatter, #TransLivesMatter, …)

3. Open question as to how, and to what extent

My Take

- Many benefits
  - Connecting people to new friends, opportunities
  - Spreading great things to millions of people (Ice Bucket Challenge, #MeToo, #Blacklivesmatter)
  - Wikipedia - I mean, come on.
  - Cancer survivor sites
- Many, many drawbacks, esp. from the big sites
  - For you (privacy, cyberbullying, hate speech)
  - For our country (fake news, a potential increase in polarization)
  - Internationally (Genocide, Censorship)
- We need you all to do better, to think bigger and brighter

Thanks!

- Reach out for more resources on these topics
- I will begin teaching a Spring course on *Computing and Society,* although mostly for juniors and seniors
- Get involved! Join DivTech!