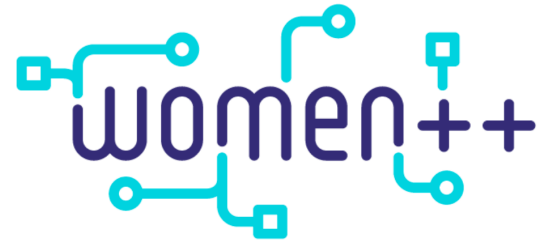




University of  
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# What are fake news?

Applied days of Machine Learning 2019, EPFL

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# Outline

- What is “fake news”?
- Examples
- Sources
- Spread
- Consequences
- Counter-measures

# Now vs Then

- Fake news today spreads faster and the magnitude of its influence is greater.
- Who (sources): Russian state, Macedonian teenagers, and suburban Americans. No longer only newspaper publishers.
- What: Involves distorting the source as well as the content.
- How: Social media and news aggregators are “source-agnostic” The original source isn’t always clear. Second, news stories on social media are conveyed by friends or people you follow, with an implicit or explicit endorsement of their veracity. Third, social media platforms automatically tag articles with indications of their popularity, which makes people more likely to read and believe them.

# Anatomy of Fake News

- The trick is to find a legitimate story that's already trending and make it even more sensational. "The title is the most important part."

# Financial motivation

- Fake news is often intended to increase the financial profits of the news outlet. Clicks yield ad revenue (“clickbait”).
- Google AdSense essentially funds fake news websites and their content.

# Source

- Veles, Macedonia: in 2016 it was revealed that a group of teenagers in the city were controlling over 100 websites producing fake news articles in support of U.S. presidential candidate Donald Trump, which were heavily publicized on Facebook.

# Spread

- Facebook users play a major role in feeding into fake news stories by making sensationalized stories trend.
- Bots: (estimates 2017) 23 million bots on Twitter (8.5% of accounts), 140 million on Facebook (5.5%), 27 million on Instagram (8.2%). Bots are AI/algorithms that simulate internet users' behavior (e.g., posting patterns), which helps in the propagation of fake news. The spread of fake news by bots is possible because of their access to non-curated news. Bots spread fake news in two ways: repeatedly “saying” or tweeting fake news items, or using the same piece of false information to reply or comment on the postings of real social media users.

# Spread | Real People

- The majority of fake news re-transmission is committed by real people.
- “When a post is accompanied by many likes, shares, or comments, it is more likely to receive attention by others, and therefore more likely to be further liked, shared, or commented on.”
- People are more likely to share fake news than real news (e.g., real Twitter users are 70% more likely to retweet fake news than truthful stories).
- Research shows that, psychologically, more Facebook likes about a posting, thumbs up on YouTube, etc., changes readers’ perceptions about the quality of the message and changes their minds about the topic that the message itself is about.



# Spread | Real People

- Emotions play a big role. Reading true news mostly produces feelings of joyfulness, unhappiness, expectation, and trust. Reading fake news produces feelings of amazement, anxiety, shock, and repulsion.
- People like novelty and they like to share it.
- Vosoughi et al. (2018) Science, vol. 359

# Microtargeting

- Social media analytics allows companies to target you with greater precision, either for ads or in an attempt to persuade you to, for example, vote for one candidate or another based on issues and candidates' positions on the issues. They can make you see ads-or fake news stories-when you use the web or social media.
- Microtargeting is the term for using data to show certain messages specifically to those people who are likely to read, like, and share such a post, and click on the (fake news or other) website where it originated.
- Cambridge Analytica: Using their knowledge of people's hopes, fears, and insecurities, information from Cambridge Analytica was used to sway many people's opinions during the UK's 2016 vote on Brexit and during the 2016 US presidential election. Much of the microtargeted content was fake news.

# Indian WhatsApp Lynchings

- Indian WhatsApp Lynchings: a spate of mob violence and killings following the spread of rumors, primarily relating to child abduction and organ harvesting, via the WhatsApp message service. The spate of lynchings began in May 2017 with the killing of seven men in Jharkand and became a national trend the in the following year.
- Fake messages customized with locally specific details are circulated along with real videos attached to fake messages or claims.
- The attacks take place against an unprecedented upsurge in vigilante and mob violence across India since 2014 and the widespread media coverage of real crimes against children.

# Fake News

## What is fake news?

**Fake News** – News articles that are **intentionally and verifiably false**, designed to manipulate people's perceptions of real facts, events, and statements.

**Fake News** – Fabricated information that **mimics news media content in form** but lacks the news media's editorial norms and processes for ensuring the accuracy and credibility of information.

# Fake News

## **What is fake news?**

**Clickbait** – A headline or leading text of a social media post meant to attract attention and encourage visitors to click a target link to a longer story on a webpage.

Clickbait teasers contain strong nouns and adjectives, but use simple easily readable language. Fake news headlines often look this way.

Clickbait is a common way that fake news is spread.

# Fake News

**What is **not** fake news?**

**Satire** – The definition of fake news does not include openly satirical sources (e.g., *The Daily Show*, *the Colbert Report*, *the Onion*).

**Rumors** – Not intentionally false, but verifiable.

**Conspiracies** – Not verifiable by definition.

# Fake News



Fake news can range from the **innocuous** to the **incendiary**.

# Fake News



Fake news can range from the **innocuous** to the **incendiary**.



# Fake News

**Where does fake news come from?**

Traditional publishers (e.g. newspapers, tabloids)

**Why create fake news?**

**Financial gain** via ad revenue.

# Fake News

## **Where does fake news come from?**

Political actors (e.g. Brexit leave campaign)

## **Why create fake news?**

**Political** advantage via sowing misinformation and/or distrust within the voting bloc (e.g., 350 million GBP a week for the NHS, Obama birtherism).

# Fake News

**Where does fake news come from?**

State actors

**Why create fake news?**

**Political and/or strategic** advantage via destabilization of a geopolitical rival (e.g., Russian interference in U.S. presidential election and disinformation campaigns in Europe).

# Fake News

**Where does fake news come from?**

Macedonian teenagers

**Why create fake news?**

**Financial gain** via ad revenue (Google AdSense).

Negligible entry and upkeep costs, pays better than a “real” job.

# Fake News

**Where does fake news come from?**

Trolls

**Why create fake news?**

Often for no reason at all. Not restricted to any particular country or ideology.

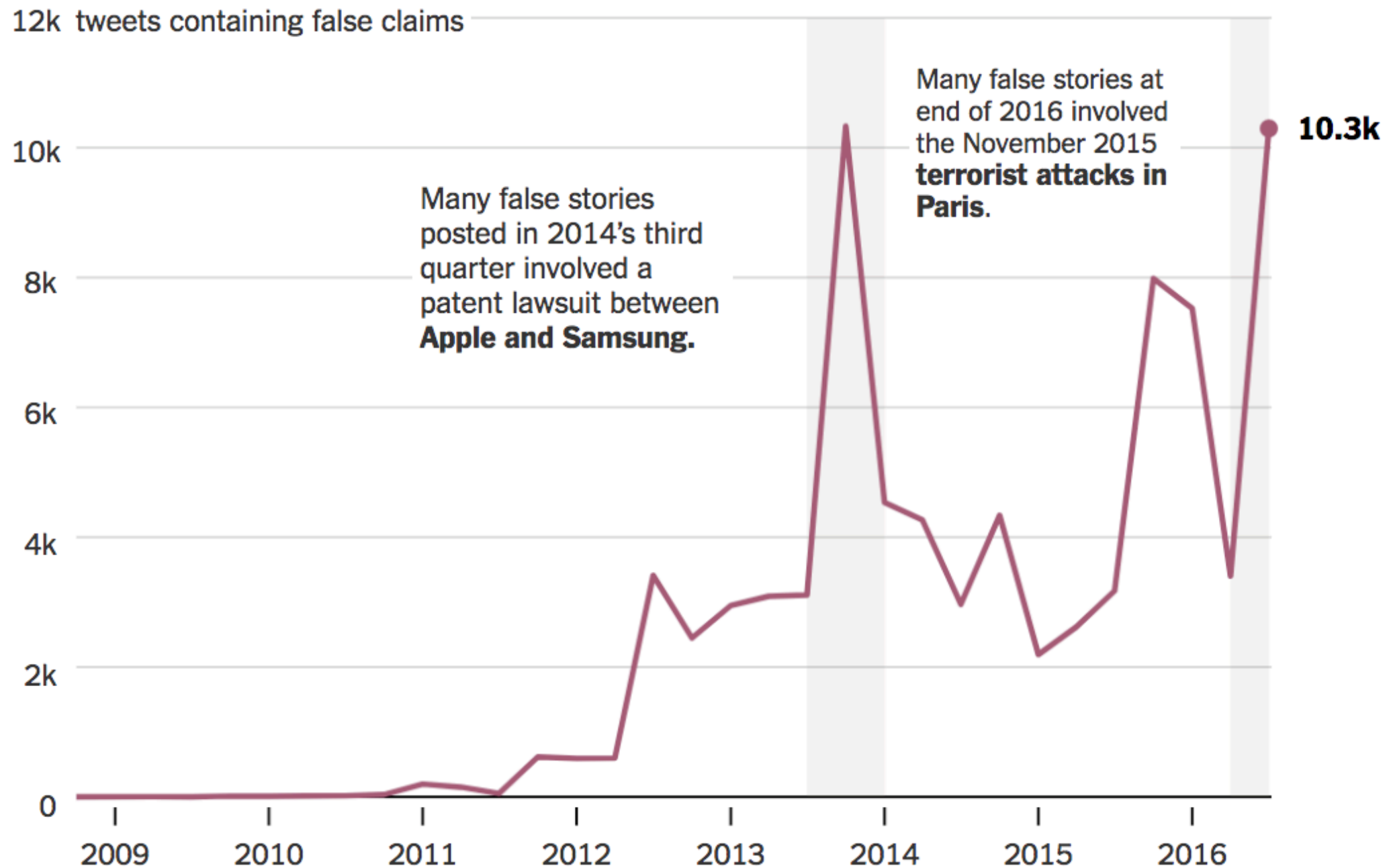
# Fake News

## **Who/what are the targets of fake news?**

Fake news is not only a political problem. Fake news also affects **technology, science, and business.**

Political and geopolitical rivals, competing companies, personal vendettas.

# Fake News



# Fake News

## **How is fake news spread?**

Social media (Facebook, Instagram, Twitter), messaging apps (WhatsApp, Telegram), your grandmother's generous use of "FWD: all"

People are more likely to share fake news than real news (e.g., real Twitter users are 70% more likely to retweet fake news than truthful stories).

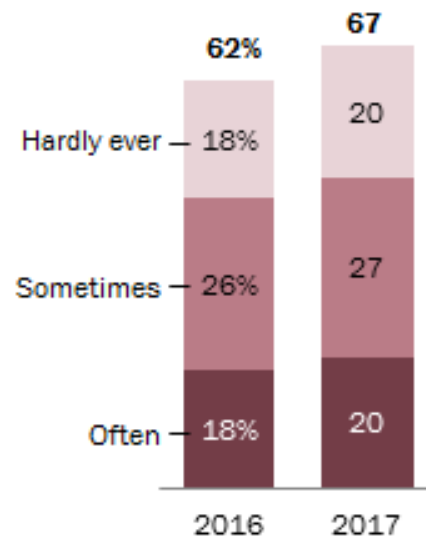


# Fake News

## How is fake news spread?

### In 2017, two-thirds of U.S. adults get news from social media

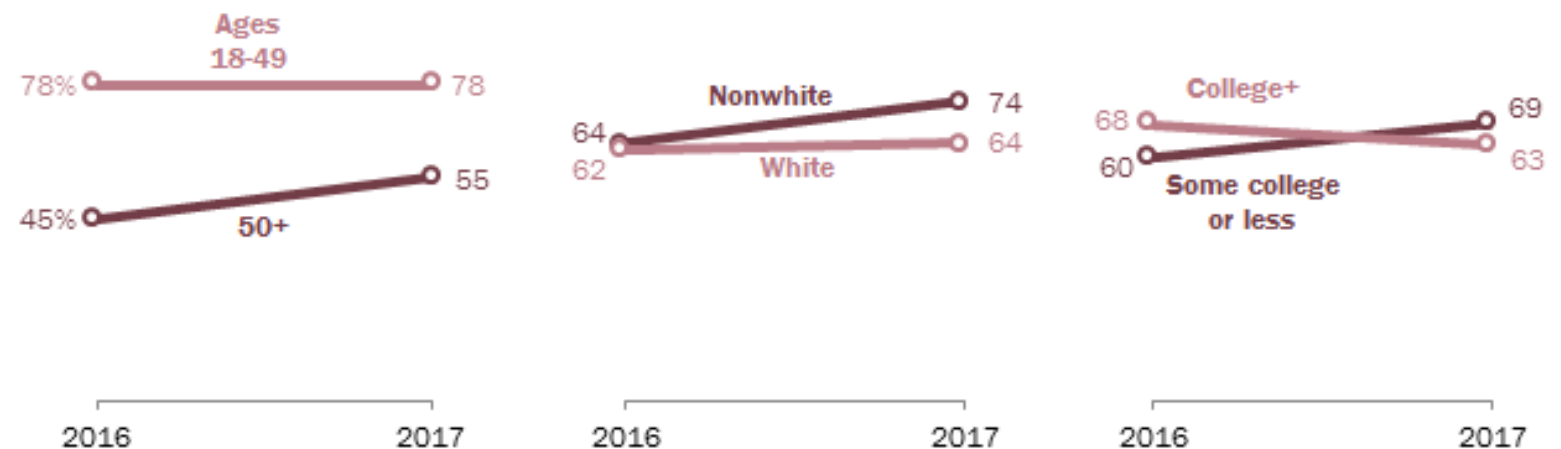
% of U.S. adults who get news from social media sites ...



Source: Survey conducted Aug. 8-21, 2017.  
"News Use Across Social Media Platforms"

### Social media news use increases among older, nonwhite and less educated Americans

% of U.S. adults who get news from social media sites ...



Note: Nonwhite includes all race and ethnic groups other than non-Hispanic whites.  
Source: Survey conducted Aug. 8-21, 2017.  
"News Use Across Social Media Platforms 2017"

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# Fake News

## How is fake news spread?

Russia's Social Media Influence Operations – Multi-platform, Full Spectrum		
Objective	Platforms	Purpose & Advantages
Placement	Primary: <b>4Chan, Reddit</b>	<ul style="list-style-type: none"> <li>• Insert forgeries into social media discussions</li> <li>• Seed conspiracies into target audiences</li> <li>• Spread kompromat on targeted adversaries, both true &amp; false information</li> <li>• Hides Kremlin attribution, provides plausible deniability</li> </ul>
	Secondary: <b>8Chan, YouTube, Facebook</b>	
Propagation	<b>Twitter</b>	<ul style="list-style-type: none"> <li>• Spread narratives through overt Kremlin accounts &amp; covert troll farm personas</li> <li>• Amplify select target audience stories &amp; preferable narratives supporting Kremlin goals (<i>Computational propaganda make falsehoods appear more believable through repetition &amp; volume</i>)</li> <li>• Inject stories into mainstream media worldwide</li> <li>• Attack political opponents, foreign policy experts &amp; adversarial media personalities</li> </ul>
Saturation	Primary: <b>Facebook</b>	<ul style="list-style-type: none"> <li>• Amplify political &amp; social divisions, erode faith in democracy through discussions &amp; ads</li> <li>• Pull content from other platforms into trusted friends &amp; family discussions</li> <li>• Recruit target audience for organic propaganda creation/distribution or physical provocations (protests, rallies or even violence)</li> </ul>
	Secondary: <b>Google, LinkedIn, Instagram, Pinterest</b>	
Hosting	<b>YouTube</b>	<ul style="list-style-type: none"> <li>• Overt propaganda posts obscuring Kremlin hand (RT)</li> <li>• Sharing of video content to target audience via producers &amp; reporters rather than standard television channels</li> </ul>

Source: C. Watts (Foreign Policy Research Institute, Alliance For Securing Democracy, Center For Cyber & Homeland Security)

# Fake News

## **What are the consequences of fake news?**

Political and economic uncertainty, ethnic and religious strife, vigilante and mob justice. Fake news is routinely weaponized.

# Fake News

**What are the consequences of fake news?**

**Indian WhatsApp lynchings** – Mob violence and killings following the dissemination of fake news and rumors via the messaging service.

Fake messages are customized with locally-specific details are circulated along with real videos attached to fake claims.

# Fake News

**What are the consequences of fake news?**

**Myanmar Rohingya** – Fake news and hate speech spread on Facebook are stoking violence against the Rohingya ethnic group in Myanmar. More than 600'000 Rohingya have fled to Bangladesh.

Facebook users in Myanmar grew from 2 million in 2014 to more than 30 million today.