



# Outline

- **What is fake news?**
  - Identifying the problem
- **Consequences for Social Cohesion:**
  - Evaluating the social consequences
- **A Psychological Vaccine Against Fake News**
  - Finding (practical) solutions

What is “fake news”?

**INVASION  
OF  
FAKE NEWS!**





# What is “fake news”?

Report

**#FakeNews: innocuous or intolerable?**



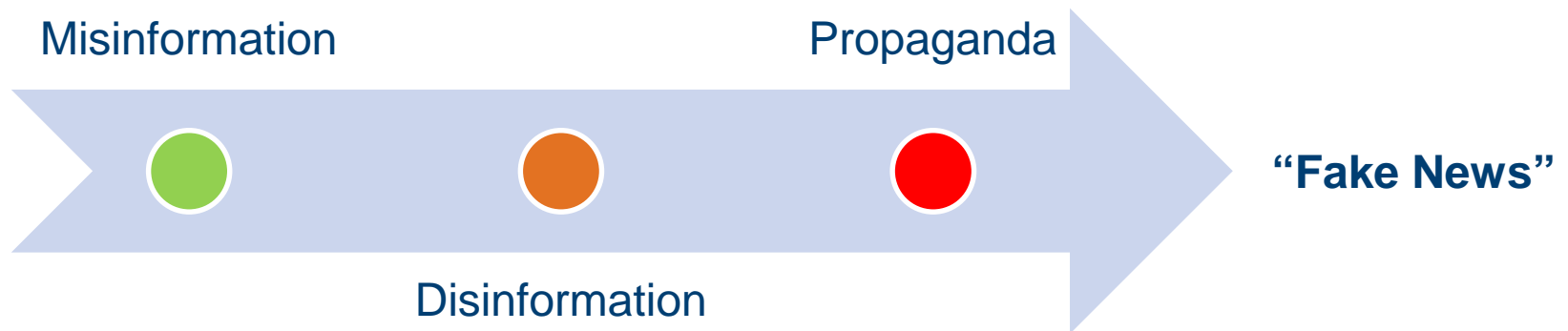
**Wilton Park**  
Harnessing the power of dialogue



**facebook**

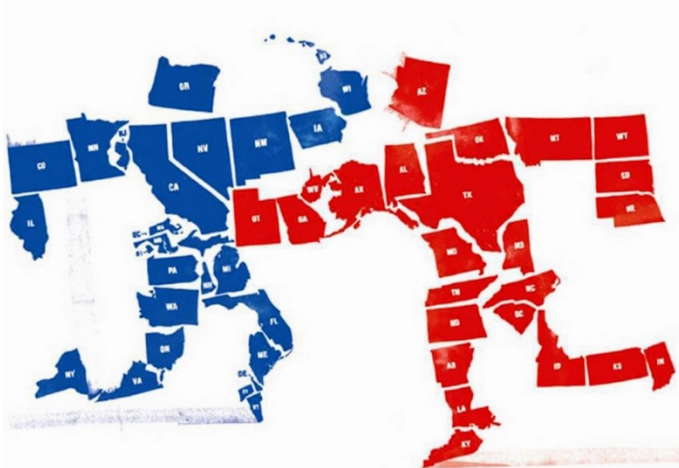
# What is “fake news”?

- **Misinformation**
  - “False or incorrect information” (including human error).
- **Disinformation** (misinformation + intent)
  - “The purposeful spread of false or incorrect information with the explicit intent to cause harm or to confuse and deceive others”.
- **Political Propaganda** (disinformation + political agenda)
  - “Institutionalized or state-run public indoctrination campaigns”.





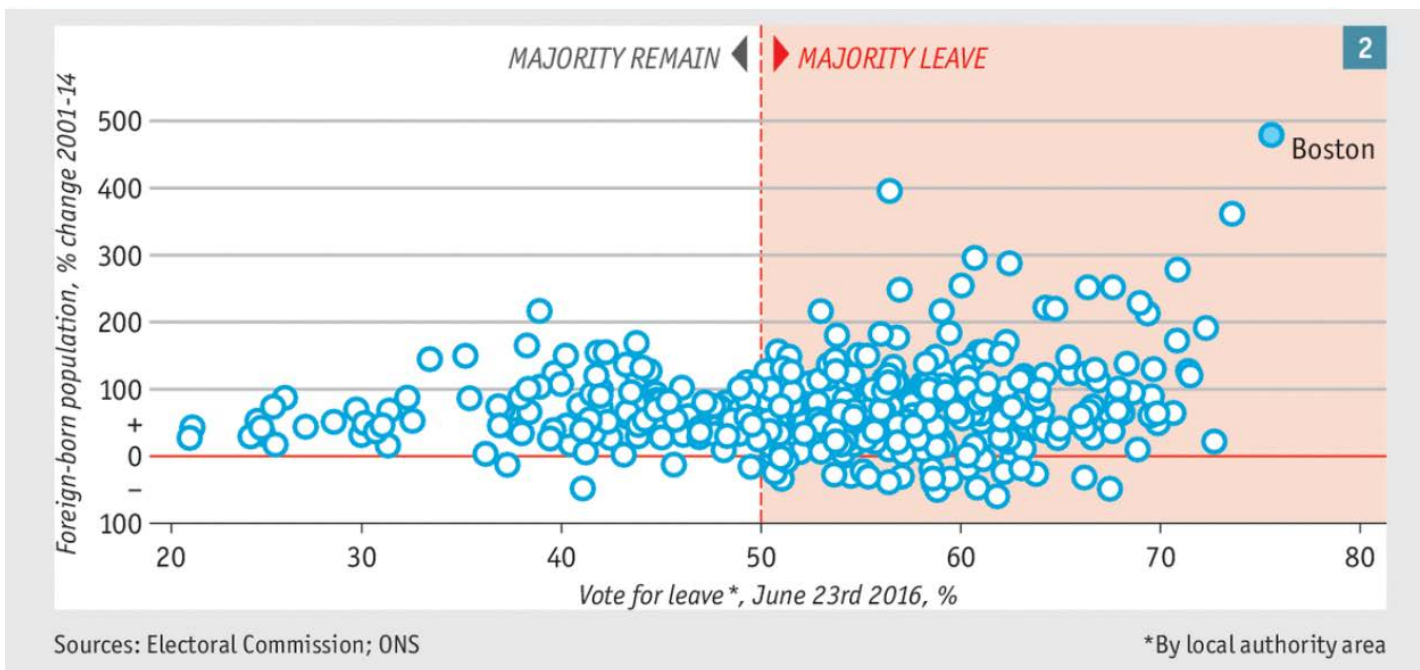
# Group Consensus and Polarization



## Explaining Brexit

# Britain's immigration paradox

*Areas with lots of migrants voted mainly to Remain. Or did they?*





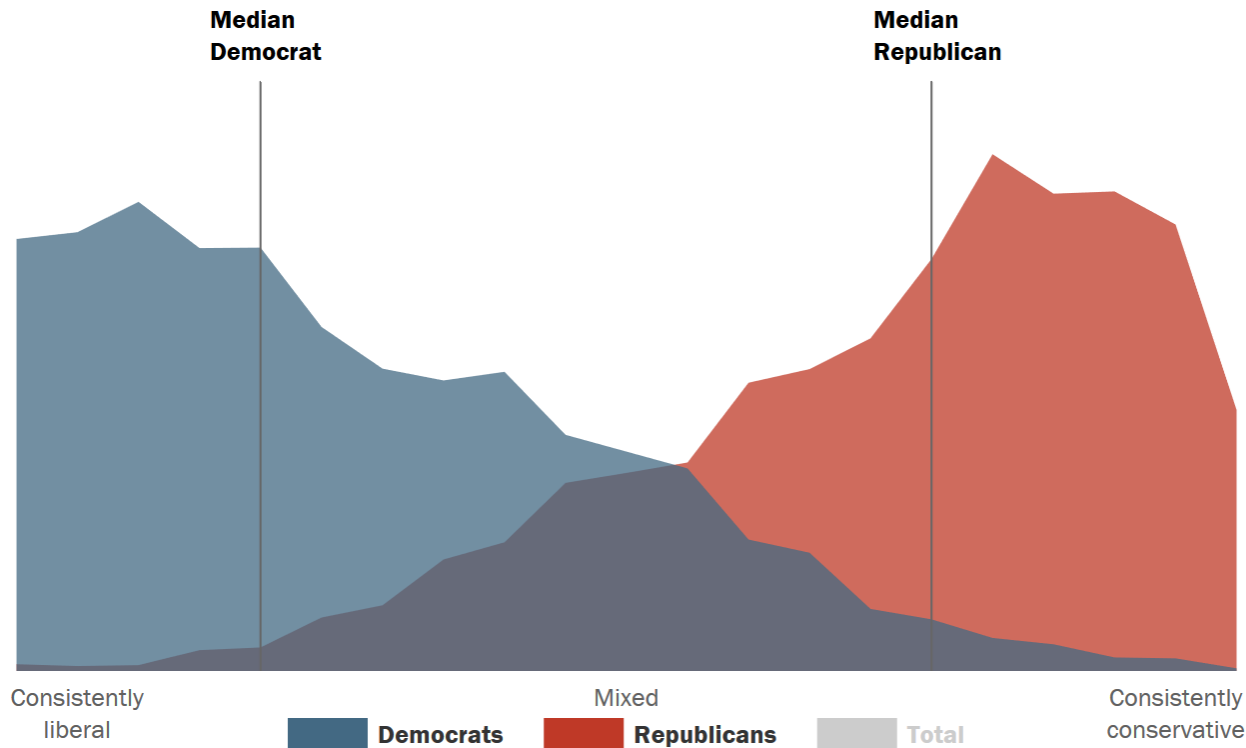
# Group Consensus and Polarization

Year shown:

**2014**

View an individual year:

2014



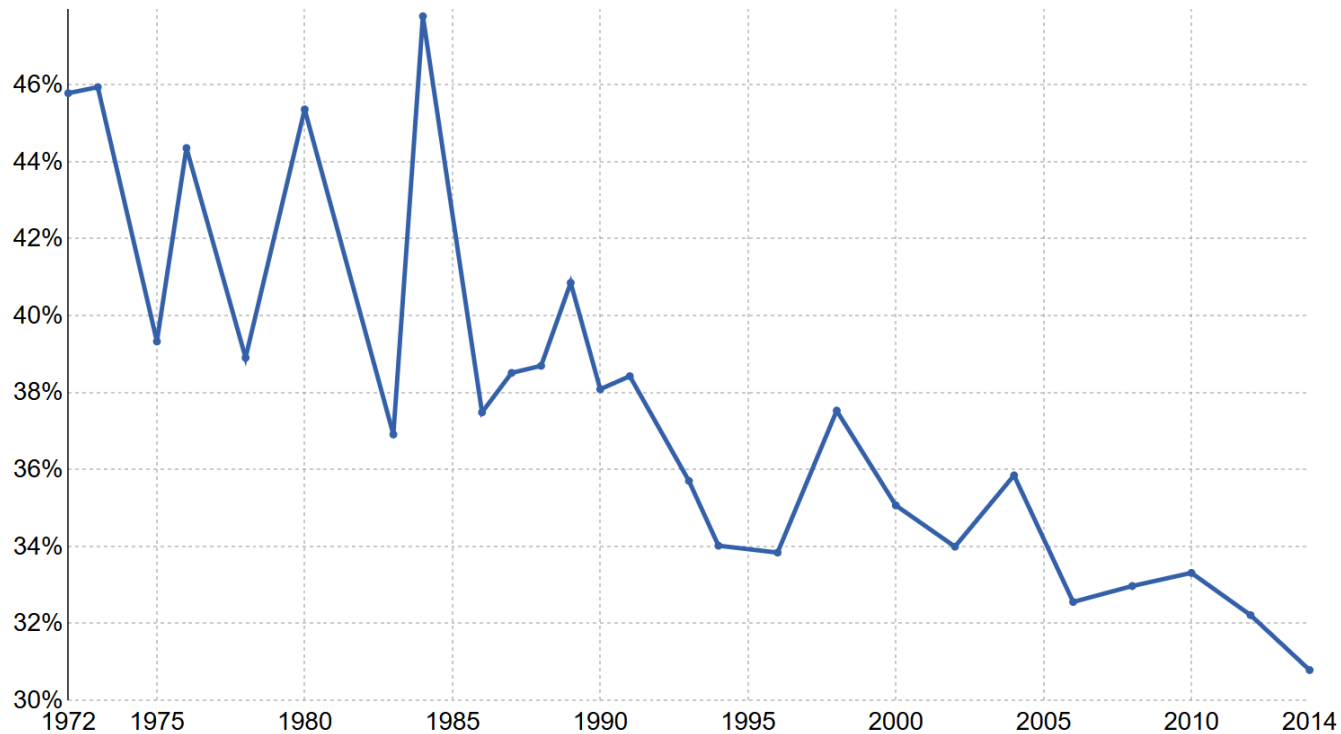
# Social trust

## Interpersonal trust attitudes, United States

Interpersonal trust (% who think that "most people can be trusted").

Our World  
in Data

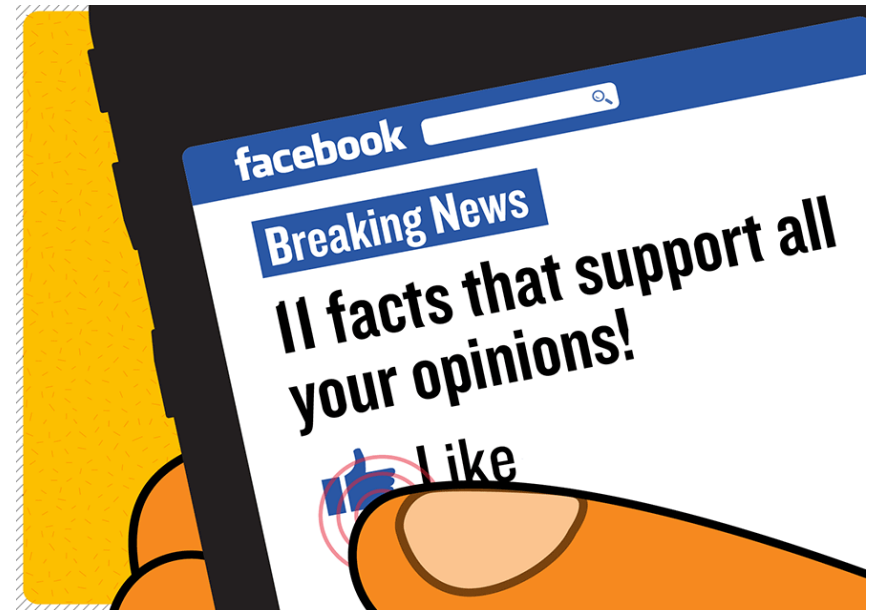
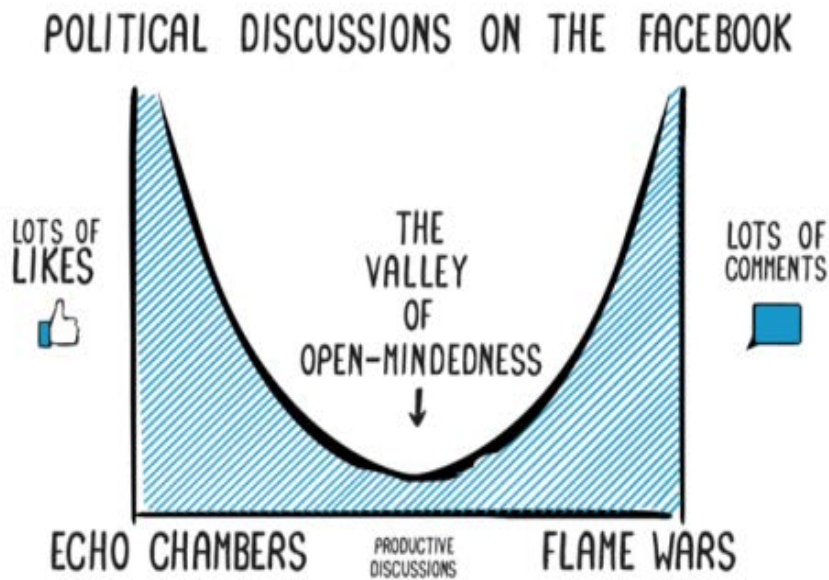
United States



Source: US General Social Survey

OurWorldInData.org/trust • CC BY-SA

# Social Echo Chambers



- Greater access to information via online **news** and **social media** fosters selective exposure to ideological content, resulting in a so-called “**echo chamber**” of like-minded opinions that promote social extremism and political polarization.

# Social Echo Chambers

## Clinton and Trump supporters live in their own Twitter worlds

**Clinton Supporters**

Hillary Clinton supporters in this user group are not as cohesive as Trump supporters and they interact more frequently with users who follow both or neither candidate. They have few mutual follower networks in common with the far-right conservative cluster.

This large cluster of Trump supporters on Twitter have little mutual follower overlap with other users and are a remarkably cohesive group. They exist in their own information bubble.

**Trump Supporters**

- Follow only Trump
- Follow only Clinton
- Follow both
- Follow neither

Source: The Electome | The Laboratory for Social Machines at the MIT Media Lab



# Concerted disinformation campaign

## prop-a-gan-da

**pră-pə-'gan-də** **noun** 1. Derogatory information, especially of a biased or misleading nature, used to promote or publicize a particular political cause or point of view.

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ROBERT KENNER

## MERCHANTS OF DOUBT

FROM THE DIRECTOR OF "FOOD, INC."

NEW YORK TIMES: "A masterful piece of filmmaking... 'Merchants of Doubt' is a powerful and timely work." (4/11/13)  
"Merchants of Doubt" is a powerful and timely work. It is a masterful piece of filmmaking that exposes the tactics of the tobacco, oil, and climate change industries to delay regulation and shift the blame. The film is a must-see for anyone interested in the truth about these industries and their impact on society.  
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# Promoting “fake experts” to manufacture doubt about science

Sometimes, inconvenient scientific facts threaten the interests of industry groups and organisations. For example, the scientific evidence linking smoking with lung cancer threatened the profits of the tobacco industry. Similarly, scientific evidence linking fossil fuel emissions with global warming threatens the profits of the fossil fuel industry.

According to a recent nationwide survey:

## MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE



YOUR “T-ZONE” WILL TELL YOU...

T for Taste...  
T for Throat...

that's your proving ground for any cigarette. See if Camels don't suit your “T-Zone” to a “T.”

• Not a single branch of medicine was overlooked in this nationwide survey made by three leading independent research organizations. To 113,597 doctors from Canada to Mexico, from the Atlantic to the Pacific went the query — *What cigarette do you smoke, Doctor?*  
*The brand named most was Camel.*  
Like anyone else, a doctor smokes for pleasure. He appreciates rich, full flavor and cool mildness just as any other smoker. If you don't happen to be a Camel smoker now, try Camels. Let your “T-Zone” give you the answer.

**Camels** *Costlier Tobaccos*

In these cases, a common tactic for industry groups and organisations is to manufacture doubt about the science through the promotion of “**fake experts**”. Fake experts are spokespeople who convey the impression of expertise in a given area without possessing actual relevant experience. Groups wishing to cast doubt on science often use fake experts to convince the public that the science isn't settled.

# Fake Experts



**@realDonaldTrump**

Donald J. Trump

 Follow @realDonaldTrump

According to Bill O'Reilly, 80% of all the shootings in New York City are blacks-if you add Hispanics, that figure goes to 98%. 1% white.

June 5, 2013 7:55 am via Twitter for Android   Reply   Retweet   Favorite

# A “psychological vaccine” against fake news

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SCIENCE NEWS**

[www.advancedsciencenews.com](http://www.advancedsciencenews.com)

Global  
Challenges

[www.global-challenges.com](http://www.global-challenges.com)

## Inoculating the Public against Misinformation about Climate Change

*Sander van der Linden*,\* *Anthony Leiserowitz*, *Seth Rosenthal*, and *Edward Maibach*



# A psychological vaccine against fake news

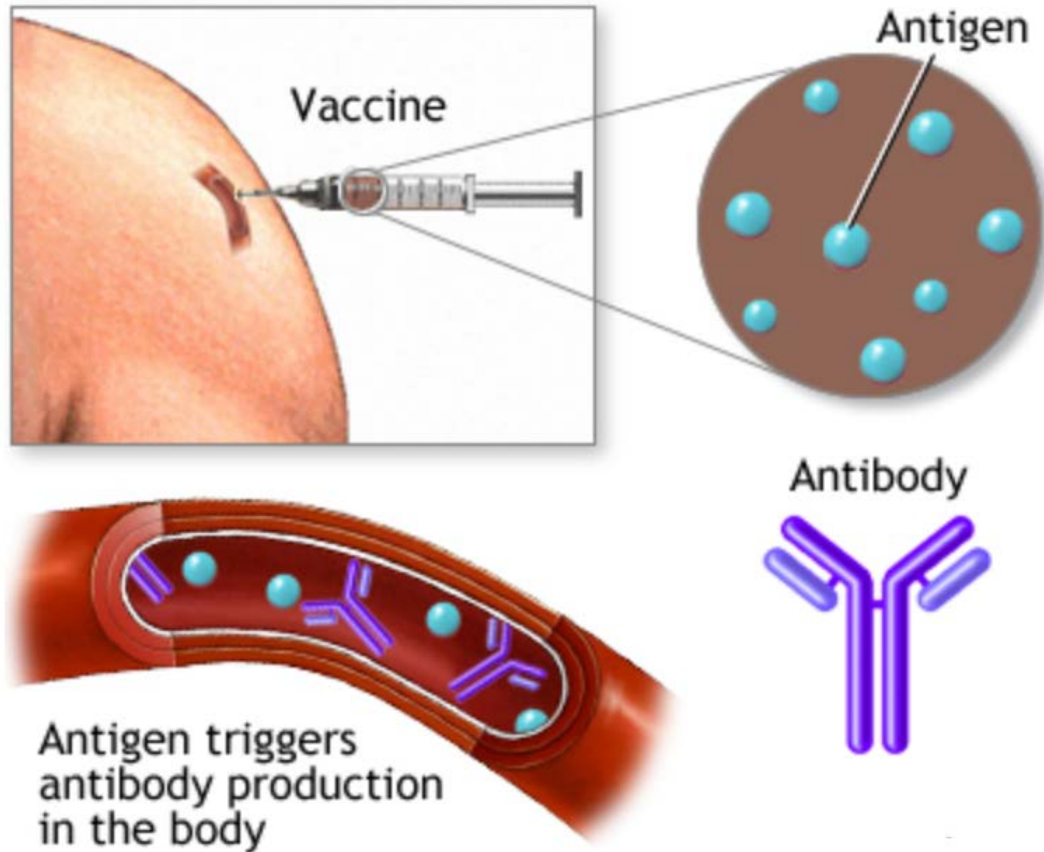


# A psychological vaccine against fake news

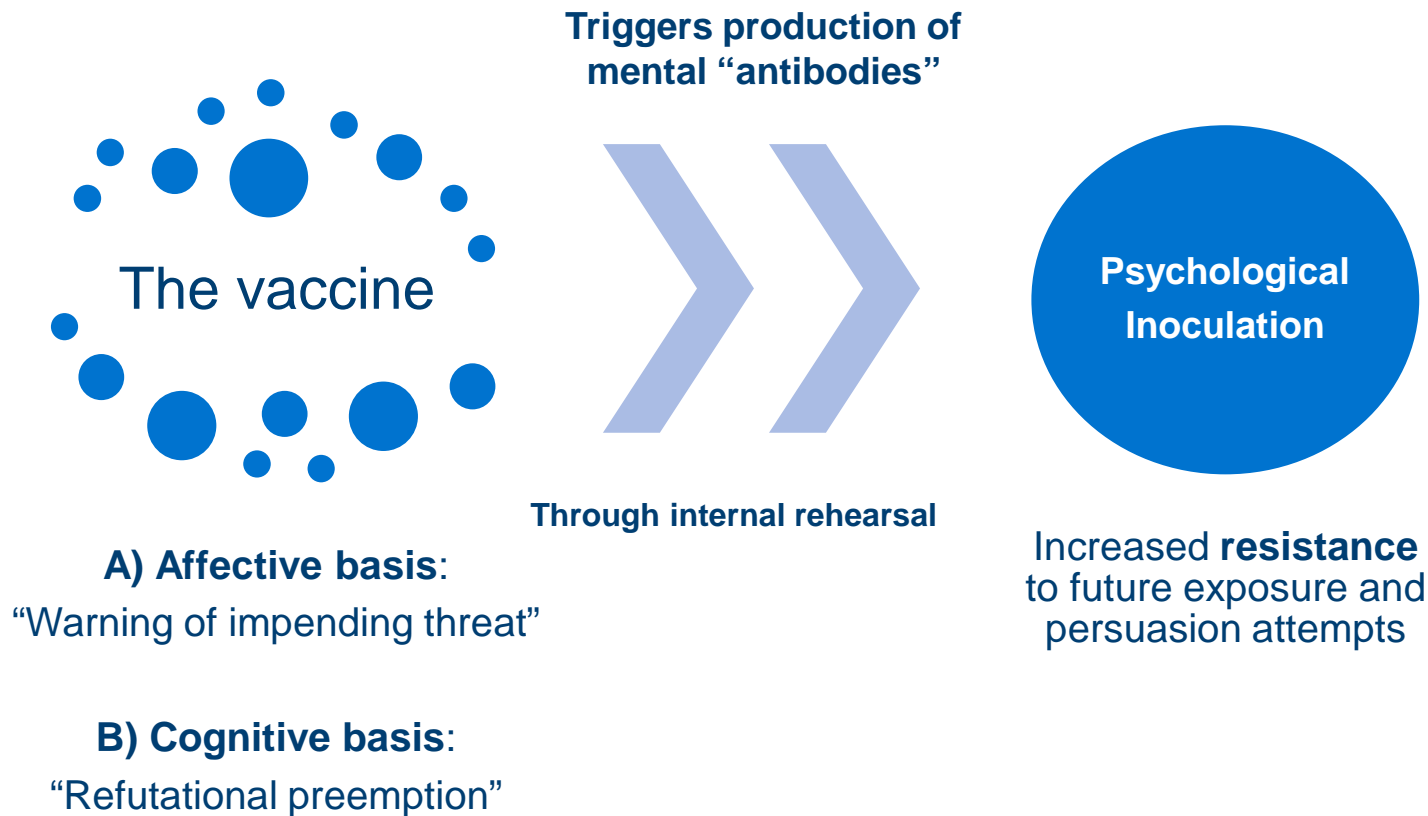


## Cambridge scientists consider fake news 'vaccine'

# The biological “inoculation” metaphor

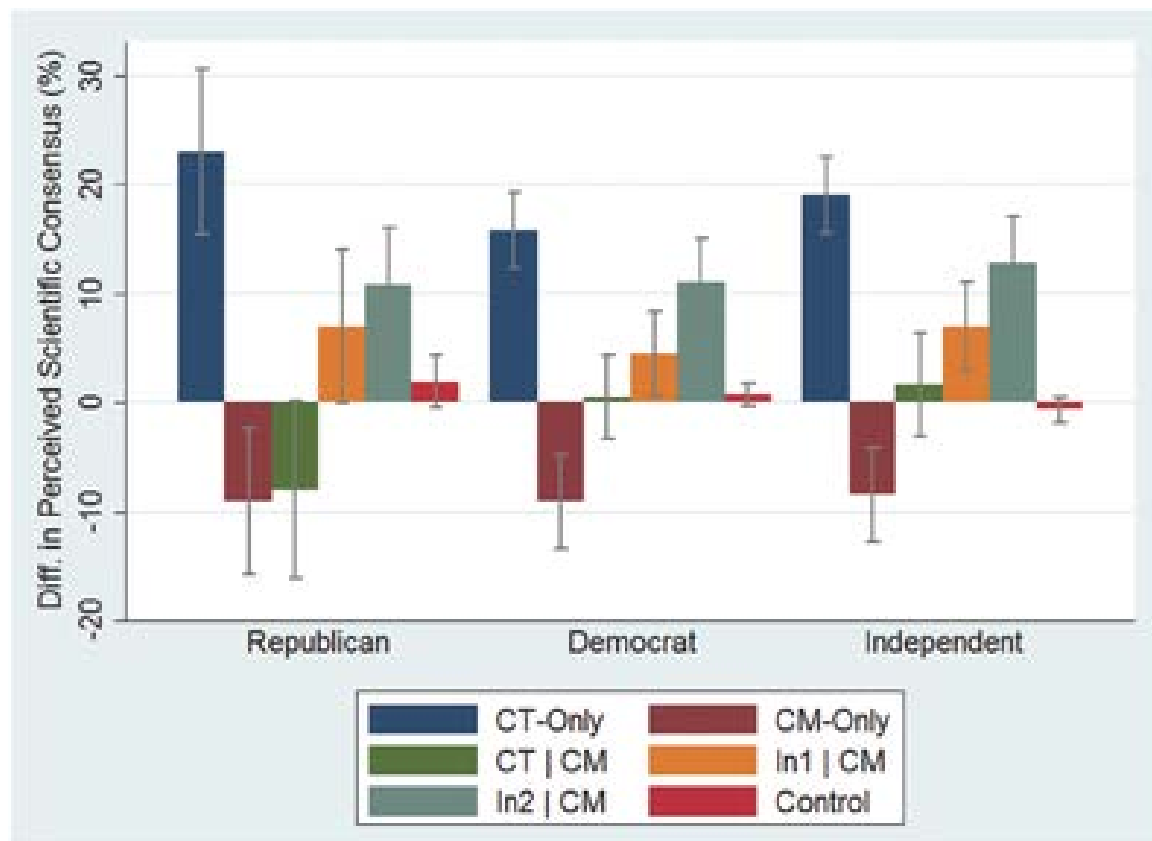


# The process of psychological “inoculation”





# A Psychological Vaccine Against Fake News



Note: CT = Consensus Treatment, CM = Counter-Message, In1 = General Inoculation, In2 = Detailed Inoculation. Error bars represent 95% confidence intervals.

# World War II Propaganda

Nazi **indoctrination** was most effective where it could tap into **pre-existing** prejudices (Voigtländer & Voth, 2014).

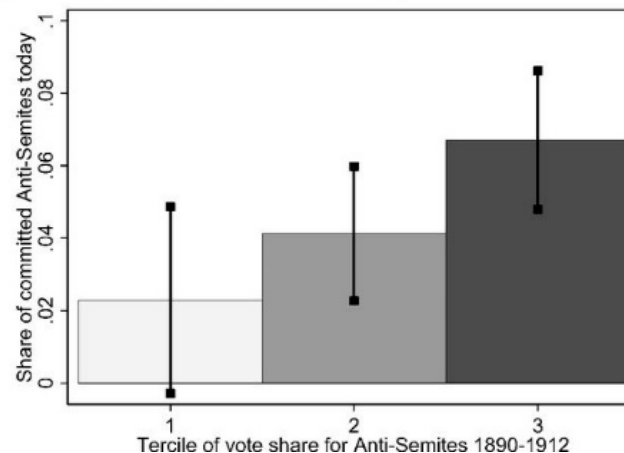
## German General Social Survey (2006)

*“Jews living in Germany should have equal rights with Germans in all respects”*

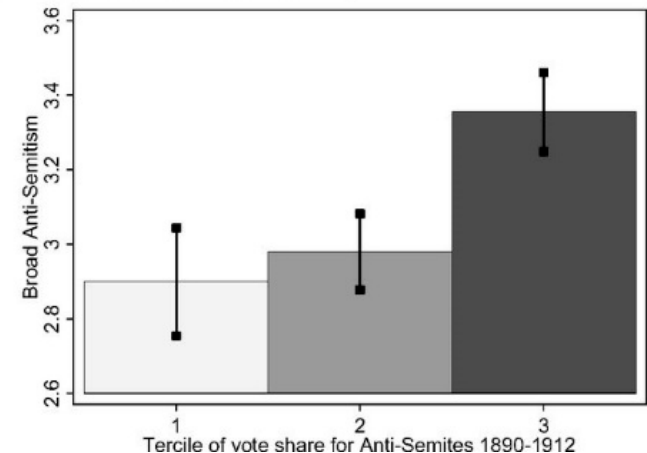
10% Disagreed in Hamburg

48% Disagreed in Lower Bavaria

A Committed Anti-Semitism Today

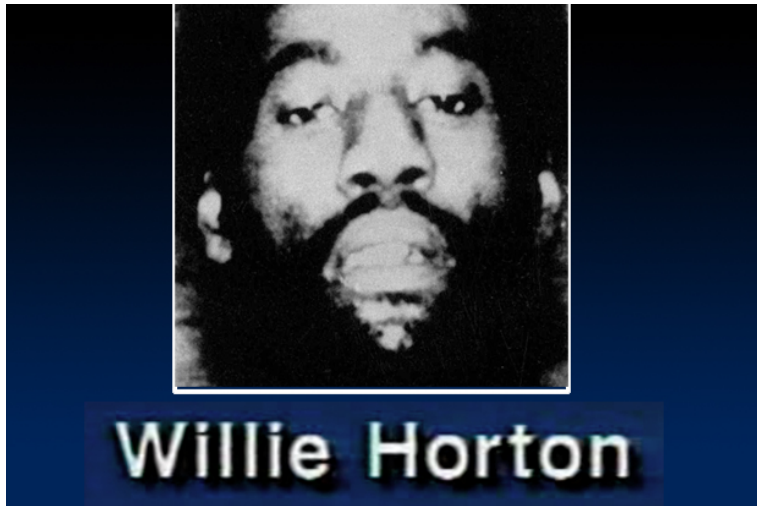


B Broad Anti-Semitism Today



# Social conflict

Archival studies have shown that people exhibit **heightened authoritarian** propensities and behaviors during periods marked by social, economic, and political threat, including toughness, aggression, cynicism, and submission to power and authority (e.g., see Lavine et al., 1999).



Prejudiced individuals were **40% more likely** to oppose racially egalitarian policies compared to non-prejudiced individuals after ad campaign exposure (Mendelberg, 1997).

# Fake News Policy?

## Truth seekers: inside the UK election's fake news war room

In an office in London, fact checkers part-funded by Google and Facebook are hard at work attempting to stem the endless flow of fake stories



## Inquiry launched into targeting of UK voters through social media

Information commissioner's investigation to go further than current exploration of practices used in EU referendum

● [General election 2017 - latest updates](#)





# Fake News Policy?



## Current Opinion in Behavioral Sciences

Volume 18, December 2017, Pages 1–6



## Policy and population behavior in the age of Big Data

Kai Ruggeri<sup>1</sup>, , [Hojeong Yoon](#)<sup>2</sup>, Ondřej Kácha<sup>3</sup>, Sander van der Linden<sup>4</sup>, Peter Muennig<sup>5</sup>

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### Highlights

- Policies increasingly utilize Big Data to target sub-groups of populations.
- Big Data studies may not reflect psychological insights from traditional research.
- If done appropriately, Big Data may produce high-power, nuanced policy insights.
- Ethical and scientific topics call for legislative and professional guidance.
- A simple test may promote appropriate use leading to ideal population outcomes.

**Thank you**