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# Fighting Fake News and Biases with Cognitive Psychology

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# FIGHTING FAKE NEWS AND BIASES WITH COGNITIVE PSYCHOLOGY

MARLEE GIVENS, LIZ HOLDSWORTH,  
SETH PORTER, & KAREN VIARS

CREATING THE NEXT®



“What the human being is best at doing is interpreting all new information so that their prior conclusions remain intact.”

— Warren Buffett



Is the tendency to search for, interpret, favor, and recall information in a way that confirms one's preexisting beliefs or hypotheses. It is a type of cognitive bias and a systematic error of inductive reasoning. People display this bias when they gather or remember information selectively, or when they interpret it in a biased way.





WYSIATI







POLITICAL

# Study: Trump and Clinton supporters accept new information when it conforms to their desires

ERIC W. DOLAN — June 8, 2017



LATEST NEWS



Study finds women's romantic partners show some resemblance to their brothers

June 8, 2017



Study: Trump and Clinton supporters accept new information when it conforms to their desires

June 8, 2017





# RESULTS



Understanding how individuals revise their political beliefs has important implications for society. In a preregistered study (N = 900), we experimentally separated the predictions of 2 leading theories of human belief revision—desirability bias and confirmation bias—in the context of the 2016 U.S. presidential election.

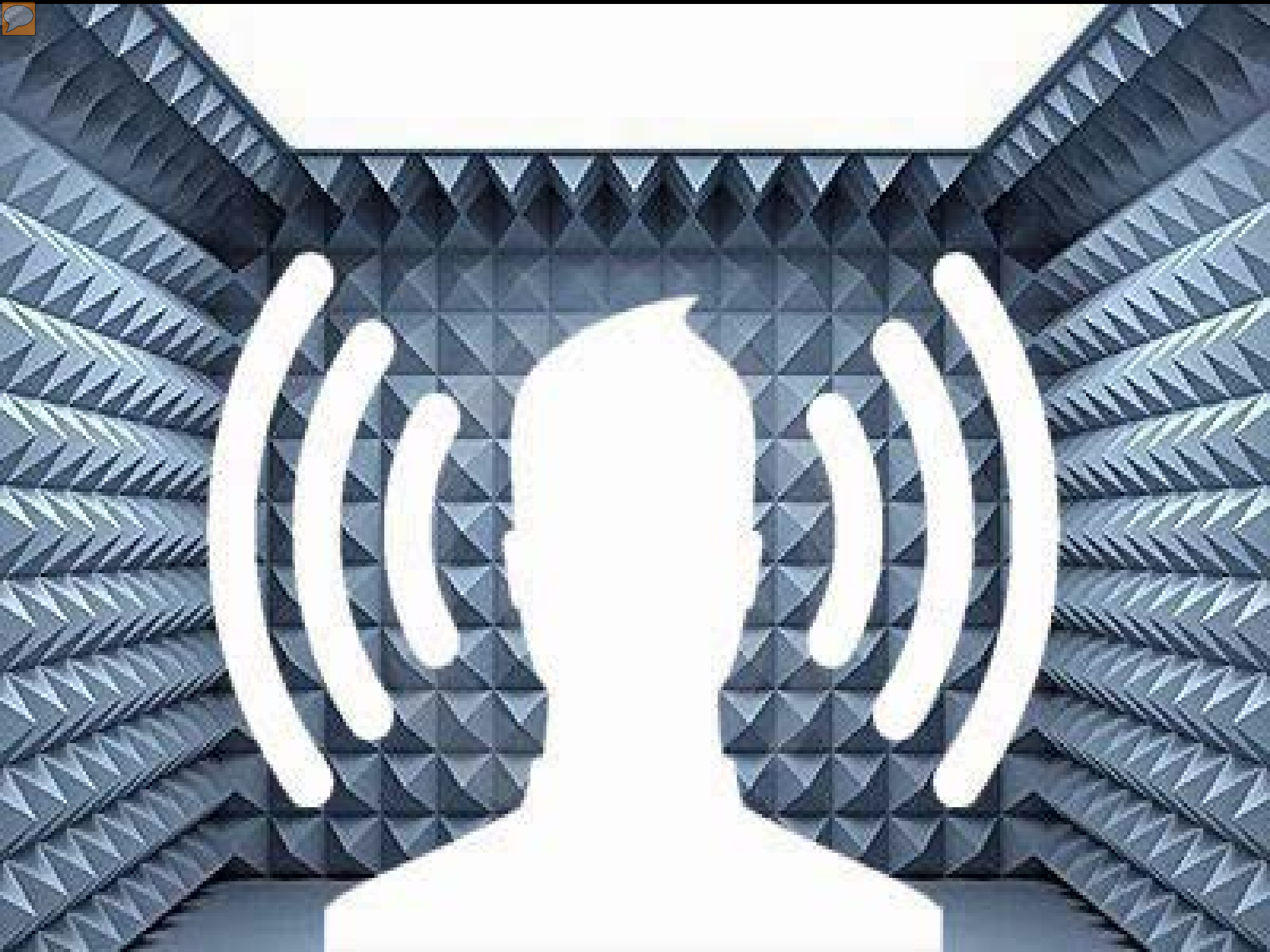
Participants indicated who they desired to win, and who they believed would win, the election. Following confrontation with evidence that was either consistent or inconsistent with their desires or beliefs, they again indicated who they believed would win.

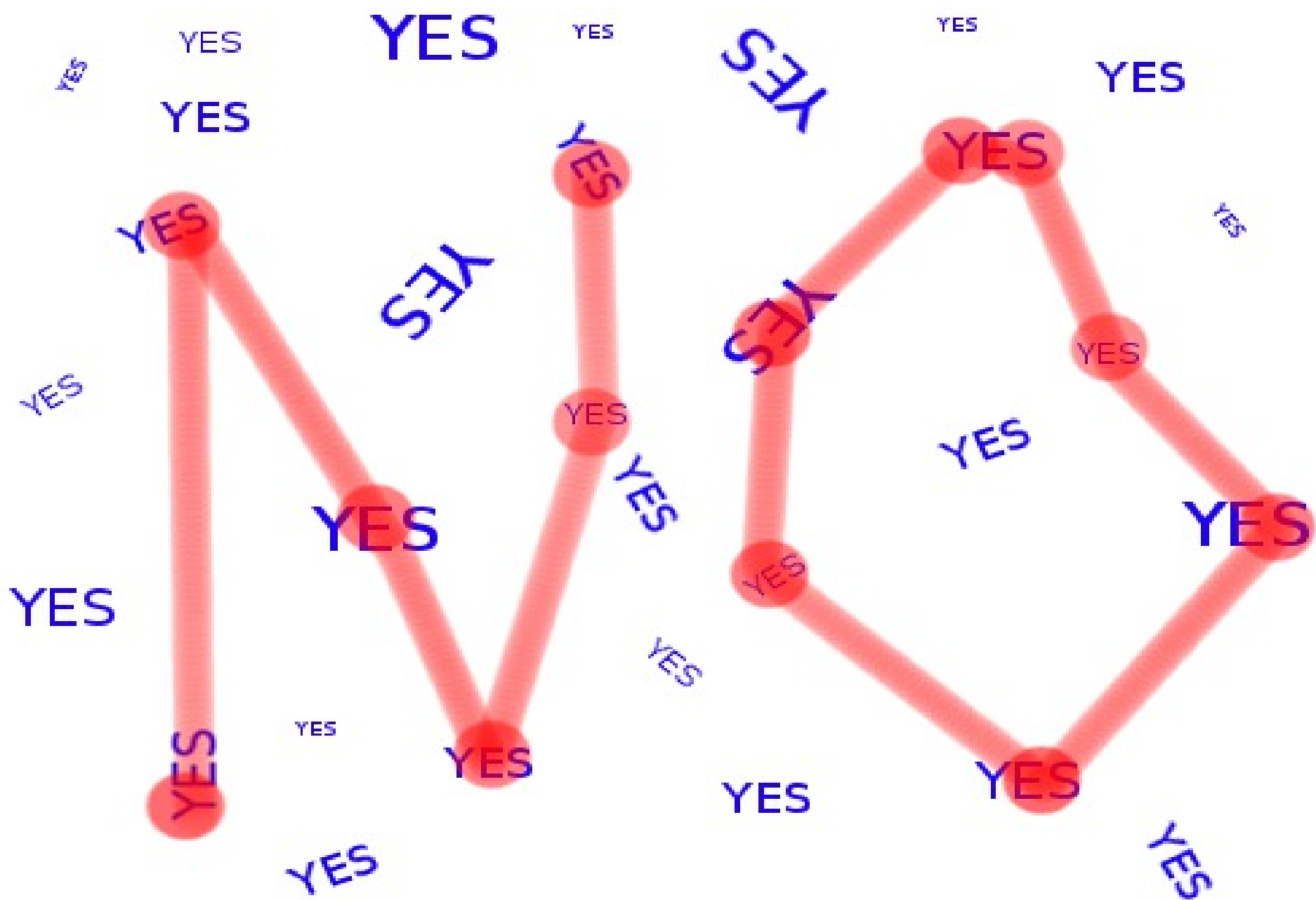
**We observed a robust desirability bias—individuals updated their beliefs more if the evidence was consistent (vs. inconsistent) with their desired outcome. This bias was independent of whether the evidence was consistent or inconsistent with their prior beliefs. In contrast, we found limited evidence of an independent confirmation bias in belief updating. These results have implications for the relevant psychological theories and for political belief revision in practice. (PsycINFO Database Record (c) 2017 APA, all rights reserved)**











**The answer is clearly NO!**



# WHAT'S HAPPENING WITH OUR STUDENTS



“Evaluating information: The cornerstone of civic online reasoning” by Wineburg, McGrew, Breakstone, & Ortega (2016)

- Middle school students struggle to identify ads
- Most high school students are not skeptical about images
- College students may not be able to recognize an organization’s intent or put it in context


**We know you've got a story.**  **GOTHAM WRITERS**

**SAVE \$20**  
USE CODE: SAVE20  
LIMITED TIME ONLY

**Should California Stop Growing Almonds?**

The nut has been vilified for drinking up the state's water supply. It doesn't deserve such a bad rap.

*By Eric Holthaus*



**Slate**   

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45M AGO - L. BRADLEY & A.M. LINDEMANN - 2M TO READ  
**When is Cheryl's Birthday? Solving a Logic Problem That Quickly Spread Around the World.**




**When Is Cheryl's Birthday?**

A simple chart that explains the logic problem that spread around the world.

*By Laura Bradley and Marie Lindemann*

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**right here**  **slow**  
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## Fukushima Nuclear Flowers

by [pleasegoogleShakerAamerpleasegoogleDavidKelly](#) • a month ago



Not much more to say, this is what happens when flowers get nuclear birth defects







MoveOn.org

@MoveOn

Follow

New polling shows the @NRA is out of touch with gun owners and their own members  
[ampr.gs/1Pyw4qg](http://ampr.gs/1Pyw4qg) #NRAfail

**TWO OUT OF THREE GUN OWNERS  
SAY THEY WOULD BE MORE LIKELY TO  
VOTE FOR A CANDIDATE WHO SUPPORTED  
BACKGROUND CHECKS**

**CAP**

Source: Public Policy Polling Survey of 816 gun owners on November 11-12, 2015

RETWEETS

36

LIKES

29



4:20 PM - 17 Nov 2015



# WHAT'S HAPPENING IN ACADEMIA



“Lateral reading: reading less and learning more when evaluating digital information” by Wineburg and McGrew (2017)

- Three challenges comparing the abilities of factcheckers, historians, and students
- Performance on challenges evaluated in both time and accuracy
- Factcheckers consistently outperformed historians and students in both time and accuracy

## WHAT WOULD YOU DO?



In the study, factcheckers, historians, and students had to determine which of these organizations was reliable. They were encouraged to use any resources they would normally use to make these judgements. How would you approach evaluating these two groups?

American College of Pediatricians: <https://bit.ly/2zx3bJt>

American Academy of Pediatrics: <https://bit.ly/2hmJIQS>



## Lead Your Child to Good Health!

Teach good sleep habits, get your child outside, practice healthful family eating, model an active lifestyle, be involved, protect your child's mind, discipline your child, turn the television off, and monitor your child's activities.

[Learn More](#)



The American College of Pediatricians is a national organization of pediatricians and other healthcare professionals dedicated to the health and well-being of children. The College produces sound policy, based upon the best available research, to assist parents and to influence society in the endeavor of childrearing.

### Search

Enter search keywords...



### Recent Releases

- Sex-Segregated Bathroom and Locker Room Access is Best for Children
- #Simon's Law
- Medical Coalition opposes Comprehensive Sex Education
- Gender Ideology Harms Children
- Pornography and Children: A Crying Shame

### Child Health

Information and resources on the physical, mental and emotional health of children can be found on the College website.

[READ MORE](#)

### For Policy Makers

The American College of Pediatricians periodically releases statements that relate to current issues affecting the lives of children and their families.

[READ MORE](#)

### For Parents

An Objective of the College is to cultivate and encourage parental responsibility for and involvement in the child's life.

[READ MORE](#)

### For Health Professionals

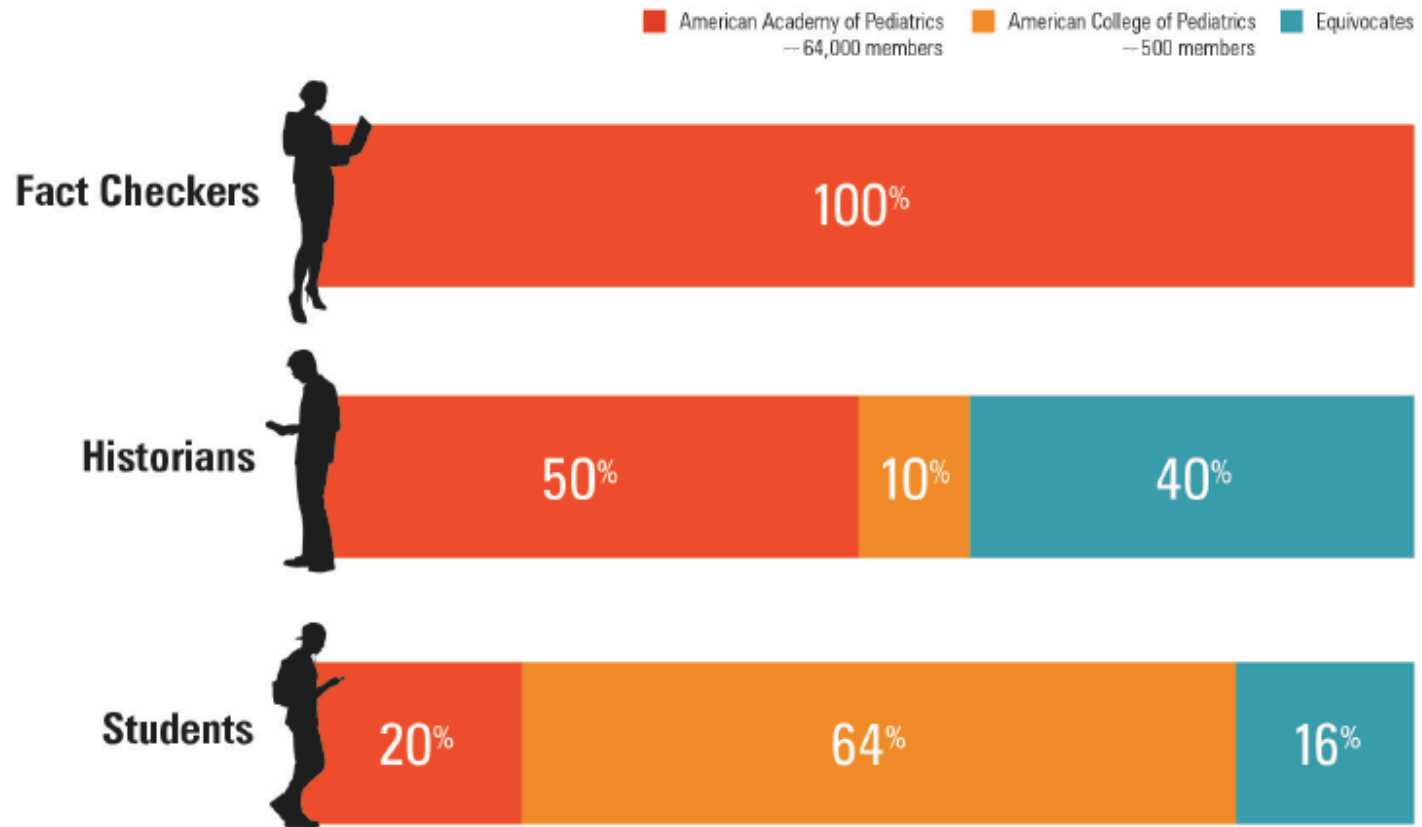
Pediatricians and other health professionals caring for children need reliable information to deliver the best care for children.

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*Figure 1. Percentage of participants in each group selecting the College or the Academy as more reliable.*





# LATERAL VS VERTICAL READING



## Lateral reading

- Brief view of a website or document before \*leaving\* it
- Takes into account interests of organization
- Searches authors and organizations

## Vertical reading

- Stays within a single document
- Uses internal checks for authors' credibility and discipline-based knowledge
- Relies on tone and imagery for credibility

# IN CLASS ACTIVITIES

GET THE UPSHOT IN YOUR INBOX

SHARE

## A Quick Puzzle to Test Your Problem Solving

By DAVID LEONHARDT and YOU JULY 2, 2015

A short game sheds light on government policy, corporate America and why no one likes to be wrong. [RELATED ARTICLE](#)

### Here's how it works:

We've chosen a rule that some sequences of three numbers obey — and some do not. Your job is to guess what the rule is.

We'll start by telling you that the sequence 2, 4, 8 obeys the rule:

2 4 8 **Obeys the rule**

Now it's your turn. Enter a number sequence in the boxes below, and we'll tell you whether it satisfies the rule or not. You can test as many sequences as you want.

Enter your first sequence here:



## FACTITIOUS

A game that tests your news sense  
by JoLT and AU Game Lab

can you tell real news from fake news?

Swipe **right** or click  if you think the article is **real**

Swipe **left** or click  if you think the article is **fake**

quick start

full start

The Washington Post  
*Democracy Dies in Darkness*

## Can you tell fake news when you see it?

A [study published](#) in the journal Cognitive Research measured how often people can tell a photo has been doctored. When presented randomly selected photos – some real, some altered – only 60 percent of participants could pick out the manipulated photos. Of those, only 45 could pinpoint what had been altered. We've assembled a short version of the test used in the study. Can you tell which of these five photos are real or faked?

[f](#) [t](#) [e](#) [+](#) More

## AND THIS LEADS TO...



- Including “fake news” curriculum in the GT1000 classes
- Based on our shared concerns about students’ unpreparedness for media literacy
- Taking advantage of a cultural moment distinctive to 2017

# FAKE NEWS NOW



- Last year, provided a sense of urgency that drove instruction
- Now, the moment is passing (has passed?)
- New challenge: how to gain and keep attention on this topic



According to Pulitzer Prize-winning website Politifact:

“Fake news is made-up stuff, masterfully manipulated to look like credible journalistic reports that are easily spread online to large audiences willing to believe the fictions and spread the word.”



# TYPES OF FAKE NEWS



**Fake news** - These are the easiest to debunk and often come from known sham sites that are designed to look like real news outlets. They may include misleading photographs and headlines that, at first read, sound like they could be real.

**Misleading news** - These are the hardest to debunk, because they often contain a kernel of truth: A fact, event or quote that has been taken out of context. Look for sensational headlines that aren't supported by the information in the article.

**Highly partisan news** - A type of misleading news, this may be an interpretation of a real news event where the facts are manipulated to fit an agenda.

**Clickbait** - The shocking or teasing headlines of these stories trick you into clicking for more information -- which may or may not live up to what was promised.

**Satire** - This one is tough, because satire doesn't pretend to be real and serves a purpose as commentary or entertainment. But if people are not familiar with a satire site, they can share the news as if it is legitimate.

These definitions are taken from a CNN [article](#) with Dr. Melissa Zimdars, of Merrimack College and Alexios Mantzarlos, head of the International Fact-Checking Network at the Poynter Institute.



# IDENTIFYING FAKE NEWS



**Consider the source** – Is it reliable?

**Read beyond headlines** – A study from Columbia University & the French National Institute shows that 6 in 10 people share news without reading past the headline. Be one of the 4 who do.

**Check author credentials** – Search for the name in the byline. Who are they?

**Supporting sources** – Are there any? Are they reliable?

**Check the dates** – Sometimes old stories (or parts of them) are repackaged as relevant up-to-the-minute news.

**Is it satire?** - Consider whether it could be a joke or social commentary.

**Check your biases** – Pause and consider (To be covered soon).

**Ask experts** – When you really aren't sure, invest the time to talk to someone who knows.

# FAKE NEWS: WHY IT MATTERS FOR YOU



Accurate information is vital for you to make wise decisions about where to live, what jobs to take, when and whether to make major purchases, initiatives to support, investments to make, etc.

Your reputation – personal and professional – depends on giving other people reliable information.

Fake news can be harmful, for example, about medical or health information.





# FAKE NEWS, THEN AND NOW



## 2017

- Sense of urgency drove instruction
- Fake news was gaining attention
- The concept was new and threatening

## 2018

- Sense of urgency varies widely
- Fake news isn't news anymore
- Concept is familiar and parodied

# APPROACH TO TEACHING



- Collaborative development of curriculum
  - Fake news – Karen
  - Cognitive biases – Seth
- Shared approach to teaching, managed by Liz and Fred
  - Distributed teaching model
  - Shared slides & materials
  - Instructor is free to choose methods, activities, etc. as long as goals are achieved

THANK YOU!



Questions?

