Breaking your bubble

Matthew J. Salganik

Social Network (Soc 204)
Spring 2017
Princeton University

April 3, 2017

Logistics:

- N for midterm grade

Logistics:

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- Office hours this week: Changed from W 3:30 - 4:30 to Tu 3:30 - 4:30

Logistics:

- ▶ N for midterm grade
- ▶ Office hours this week: Changed from W 3:30 - 4:30 to Tu 3:30 - 4:30
- ▶ Survey will be up soon (interesting questions)

Cross-Race Friendships are…Friendships: Integrating Close Relationships and Intergroup Research

Lindsey Eikenburg, Princeton University
Noon, 101 Peretsman Scully Hall
https://psych.princeton.edu/event/
graduate-students-lindsey-eikenburg-and-yaritza-perez-hook

Pariser:

- Egypt
- BP

Pariser:

- Egypt
- BP

Weisberg

- John Boehner
- Barney Frank
- Ryan Plan
- Obamacare

Pariser:

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Weisberg

- John Boehner
- Barney Frank
- Ryan Plan
- Obamacare

Us:

- marijuana
- vaccination
- Ferguson, MO
- feminism
- immigration crisis
- climate change

Top stories

Medical marijuana lures ex-Eagle, other former players into a new field

Philly.com · 8 hours ago

Lobbying against sin: Baptist leader ready to fight marijuana

AL.com · 4 hours ago

Authorities find $100000 in marijuana during traffic stop near Jamestown

KVLY · 1 hour ago

→ More for marijuana

Cannabis

Drug

Cannabis, also known as marijuana among several other names, is a preparation of the Cannabis plant intended for use as a psychoactive drug or medicine. Wikipedia

Legal status: Schedule I controlled substance

Pregnancy risk: Category C (Risk cannot be ruled out)

Drug class: Cannabinoid

Other drugs in same class: Tetrahydrocannabinol, Nabilone

Feedback

DrugFacts: Marijuana | National Institute on Drug Abuse (NIDA)
https://www.drugabuse.gov/publications/drugfacts/marijuana ▾
Marijuana is the most commonly used illicit drug in the United States. Its use is widespread among young people. In 2015, more than 11 million young adults ...
Marijuana as Medicine · Drugged Driving · Letter From the Director

Cannabis (drug) - Wikipedia
https://en.wikipedia.org/wiki/Cannabis_(drug) ▾
Cannabis, also known as marijuana among several other names, is a preparation of the Cannabis plant intended for use as a psychoactive drug or medicine.
Tetrahydrocannabinol · Medical cannabis · Legality of cannabis · Marijuana (word)

What is Marijuana? How is Marijuana Used? Street Names for ...
www.drugfreeworld.org/drugfacts/marijuana.html ▾
Marijuana is one of the most abused drugs in the world. There is an ever-growing gap between the latest science about marijuana and the myths surrounding it.

How Medical Marijuana Works, and Which Conditions It Treats - WebMD
www.webmd.com/a-to-z-guides/medical-marijuana-faq ▾
WebMD shows you how medical marijuana works where it's legal, what it's used for and for what side

marijuana

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Top stories

Nevada's legal marijuana industry faces banking problem

Las Vegas Review-Journal · 14 ...

Marijuana citation rules expand in Central Florida, but some say not enough

Orlando Sentinel · 7 hours ago

Cowboys' Jerry Jones reportedly wants NFL to drop its ban on marijuana use

CBS Sports · 45 mins ago

→ More for marijuana

Cannabis (drug) - Wikipedia
https://en.wikipedia.org/wiki/Cannabis_(drug) ▾

Cannabis, also known as **marijuana** among several other names, is a preparation of the Cannabis plant intended for use as a psychoactive drug or medicine.

Tetrahydrocannabinol · Effects of cannabis · Bhang · Marijuana (word)

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marijuana

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Top stories

The way people buy legal marijuana will change in 2019 — here's what to expect

Business Insider · 11 hours ago

Maher, Roger Stone share marijuana cake on TV | TheHill

The Hill · 11 hours ago

Ex-Jet Washington: NFL must give medical marijuana green light

New York Daily News · 2 hours ...

→ More for marijuana

Cannabis (drug) - Wikipedia
https://en.wikipedia.org/wiki/Cannabis_(drug) ▾
Cannabis, also known as **marijuana** among several other names, is a preparation of the Cannabis plant intended for use as a psychoactive drug or medicine.
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Marijuana: similar search results, some difference in additional content, some difference in news (possible caused by variation in time of search)

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immigration crisis

About 1,450,000 results (0.63 seconds)

The 2014 American **immigration crisis** refers to the surge in unaccompanied children from Central America seeking entrance to the United States.

2014 American immigration crisis - Wikipedia
https://en.wikipedia.org/wiki/2014_American_immigration_crisis

Is this helpful?   Yes · No

About this result

European migrant crisis - Wikipedia
https://en.wikipedia.org/wiki/European_migrant_crisis ▼
The European migrant **crisis**, [n 2] or the European refugee **crisis**, [n 3] began in 2015 when rising numbers of people arrived undocumented in the European Union (EU), travelling across the Mediterranean Sea or overland through Southeast Europe.

2014 American immigration crisis - Wikipedia
https://en.wikipedia.org/wiki/2014_American_immigration_crisis ▼
The 2014 American **immigration crisis** refers to the surge in unaccompanied children from Central America seeking entrance to the United States.

Top stories

US has a fear crisis, not an immigration crisis
National Catholic Reporter · 18 hours ago

→ More for immigration crisis

Trump's travel ban: What we know - CNNPolitics.com - CNN.com

See results about
European migrant crisis
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→   More for immigration crisis

Trump's travel ban: What we know - CNNPolitics.com - CNN.com
www.cnn.com/2017/01/29/politics/immigration-crisis-what-we-know/ ▾
Jan 30, 2017 - (CNN) President Donald Trump has issued an executive order banning travel to the US from seven Muslim-majority countries. The order has ...

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European migrant crisis - Wikipedia
https://en.wikipedia.org/wiki/European_migrant_crisis ▾
The European migrant crisis, [a] [b] or the European refugee crisis, [c] [d] began in 2015 when rising numbers of people arrived undocumented in the European Union (EU), travelling across the Mediterranean Sea or overland through Southeast Europe.

2014 American immigration crisis - Wikipedia
https://en.wikipedia.org/wiki/2014_American_immigration_crisis ▾
The 2014 American immigration crisis refers to the surge in unaccompanied children from Central America seeking entrance to the United States.

Top stories

US has a fear crisis, not an immigration crisis
National Catholic Reporter · 20 hours ago

A Hungarian diplomat talks about working with Trump, handling the migrant crisis and being the black sheep of Europe
Los Angeles Times · 1 day ago

→ More for immigration crisis

Trump's travel ban: What we know - CNNPolitics.com - CNN.com
www.cnn.com/2017/01/29/politics/immigration-crisis-what-we-know/ ▾
Jan 30, 2017 - (CNN) President Donald Trump has issued an executive order banning travel to the US from seven Muslim-majority countries. The order has ...

Trump's border wall attacks the wrong immigration crisis - Politico
www.politico.com/.../trumps-border-wall-attacks-the-wrong-immigration-crisis-00028... ▾
Jan 25, 2017 - The U.S. faces an immigration crisis. But it has nothing to do with Mexicans coming across the border.

Italy immigration crisis: Calls for migrant deportations as half a million ...
www.express.co.uk › News › World ▾
Jan 2, 2017 - TERROR attacks across Europe have sparked a new push to see illegal immigrants sent home from Italy as the police are told to toughen up on ...

Immigration Crisis - CBS News
www.cbsnews.com/immigration-crisis/ ▾
A flood of immigrants seeking the American dream has turned up the heat in D.C.

Europe's immigration crisis is just beginning - The Washington Post
https://www.washingtonpost.com/news/.../europes-immigration-crisis-is-just-beginning/ ▾
Jul 1, 2016 - The debate over immigration has thrown politics on both sides of the Atlantic into confusion. In the United States, Republicans are divided over ...

The Immigration Crisis Is Tearing Europe Apart | Foreign Policy
foreignpolicy.com/2016/07/20/the-immigration-crisis-is-tearing-europe-apart/ ▾
Jul 20, 2016 - The Immigration Crisis Is Tearing Europe Apart » | Foreign Policy The Global Magazine of News and Ideas.

A Refugee Crisis, Not an Immigration Crisis - The New York Times
https://www.nytimes.com/2016/07/16/.../a-refugee-crisis-not-an-immigration-crisis.html ▾
BookbyReviews | Opinion: The Children of the Drug War. A Refugee Crisis, Not an Immigration Crisis. By SONIA NAZARIO JULY 11, 2014.

Refugee Crisis: What's Behind Denmark's Harsh New Immigration Law?
www.theatlantic.com/international/archive/2016/01/.../immigration-law/431520/ ▾
With its new immigration law, Denmark is once again sending a blunt message to migrants

Beyond the border: the US's deadly immigration crisis | World news ...
https://www.theguardian.com/.../sp-texas-border-deadliest-state-undocumented-migrant... ▾
Texas has become the deadliest state in the US for undocumented immigrants. This four-part series from the Guardian and The Texas Observer ...

Exclusive: Google creates $4 million crisis fund for immigration cause
https://plus.google.com/+104098479113019629100/posts/ADCbJTsJjEW ▾
Life at Google
Jan 30, 2017 - Exclusive: Google creates $4 million crisis fund for immigration cause

Searches related to immigration crisis

migrant crisis germany   refugee crisis
immigration crisis in america   immigration crisis europe
migrants germany   syrian refugee crisis
italy migrants   migrants definition

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European migrant crisis

The European migrant crisis, or the European refugee crisis, began in 2015 when rising numbers of people arrived undocumented in the European Union, travelling across the Mediterranean Sea or overland through Southeast Europe. Wikipedia

Start date: 2015

feedback

Immigration crisis: first two results sometimes in different order

Similar results for:

- ▶ vaccination
- ▶ Ferguson, MO
- ▶ feminism
- ▶ immigration crisis
- ▶ climate change

Pariser vs Weisberg

Pariser vs Weisberg

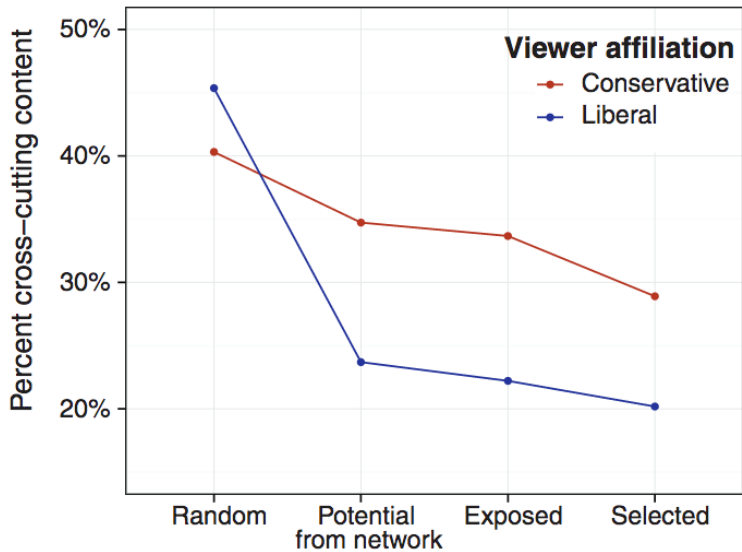## Salganik's poor defense of the Facebook study

"Salganik's dismissal of the critique of the biased sample was frankly ridiculous. . . ."

- Anonymous

Exposure to ideologically diverse news and opinion on Facebook

Eytan Bakshy,[1]*† Solomon Messing,[1]† Lada A. Adamic[1,2]

Who is included?

- "we utilize a large, comprehensive dataset from Facebook."
- "we examined how 10.1 million U.S. Facebook users interact"
- in appendix: "we consider active U.S. adults on Facebook who report their political affiliation."

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- ▶ "self-report their ideological affiliation in a way that was interpretable"

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Salganik's poor defense of the Facebook study

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Salganik's poor defense of the Facebook study

"Salganik's dismissal of the critique of the biased sample was frankly ridiculous. . . ."

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Salganik's poor defense of the Facebook study

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- ▶ "Only those with very few friends of the opposite ideology might indicate their ideology, since those with many friends want to avoid antagonizing the opposite side"

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- ▶ "There could be educational, wealth, etc gaps in who indicates ideology"

- ▶ "Given what we know about how strongly people model their actions off of the groups they're part of, that 9% could represent a subset of groups, with a group either all indicating political ideology, or no one indicating it, in which case we're seeing data only for a small (just 4%!) subset of groups."

Hierarchy of scientific critique

Hierarchy of scientific critique

- ► Good: point out potential problems

Hierarchy of scientific critique

- ▶ Good: point out potential problems
- ▶ Better: point out potential problems and their likely effects

Hierarchy of scientific critique

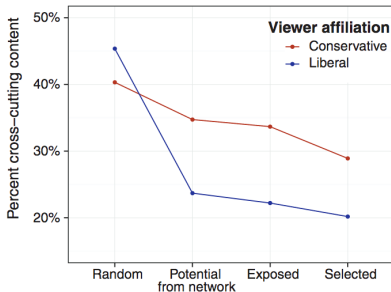- ► Good: point out potential problems
- ► Better: point out potential problems and their likely effects
- ► Best: Point out potential problems and recommend a better way

Hierarchy of scientific critique

- ▶ Good: point out potential problems
- ▶ Better: point out potential problems and their likely effects
- ▶ Best: Point out potential problems and recommend a better way

Critique is not just about destruction. The best critique involves creation.

Possible critique: Only those who are more politically engaged will post their ideology.

- possibly over-estimate difference between "random" and "potential from network"
- possibly over-estimate difference between "potential from network" and "exposed"
- possibly over-estimate difference between "exposed" and "selected"

Best: Point out potential problems and recommend a better way

Problems that we will encounter if we took a random sample of Facebook users and gave them a survey:

- ► low response rate (which means the same is no longer a random sample)

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Best: Point out potential problems and recommend a better way

Problems that we will encounter if we took a random sample of Facebook users and gave them a survey:

- low response rate (which means the same is no longer a random sample)
- without large sample of labeled respondents, it is hard to label the posts

Maybe there is a better way? Maybe this would be a great topic for a senior thesis?

Bakshy et al (2015) is not perfect. No study is perfect. But, we can still learn things.

Favorite reading:

1. Eslami, et al. (2015) "I always assumed that I wasn't really that close to [her]:" Reasoning about invisible algorithms in the news feed. Proceedings of the 33rd Annual SIGCHI Conference on Human Factors in Computing Systems, Association for Computing Machinery (ACM): 153-162. (and summary video).
2. Constine, J. (2016) How Facebook News Feed Works.
3. Roberts, S. (2001) Surprises from self-experimentation: sleep, mood, and weight. Chance.
4. Rubin, D.B. (2001) Comment: self-experimentation for causal effects. Chance.

1. measure your algorithmic filter bubble
2. break your algorithmic filter measure
3. measure the effects of breaking your algorithmic filter bubble

- How does the Facebook NewsFeed work?

- How does the Facebook NewsFeed work? We don't know exactly.

- How does the Facebook NewsFeed work? We don't know exactly.
- Why can't they tell us?

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- Why can't they tell us? It will be gamed

- How does the Facebook NewsFeed work? We don't know exactly.
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- What are they trying to maximize?

- How does the Facebook NewsFeed work? We don't know exactly.
- Why can't they tell us? It will be gamed
- What are they trying to maximize? "Engagement" (not ads in my experience)

https://techcrunch.com/2016/09/06/
ultimate-guide-to-the-news-feed/

For each post, for each alter:

- ► estimated probability[click]
- ► estimated probability[like]
- ► estimated probability[comment]
- ► estimated probability[share]
- ► estimated probability[you want in your feed] (see: https://newsroom.fb.com/news/2016/02/news-feed-fyi-using-qualitative-feedback-to-show-relevant-stories/

Score = ($w_1\times$ estimated probability[click]) +($w_2\times$ estimated probability[like]) +($w_3\times$ estimated probability[comment]) +($w_4\times$ estimated probability[share]) +($w_5\times$ estimated probability[you want in your feed])

estimated probability[like] $= f(creator, post, type, recency)$

Now what? One approach is to compare filtered and unfiltered content

"I always assumed that I wasn't really that close to [her]": Reasoning about Invisible Algorithms in News Feeds

Motahhare Eslami, Aimee Rickman[†], Kristen Vaccaro, Amirhossein Aleyasen, Andy Vuong
Karrie Karahalios, Kevin Hamilton, Christian Sandvig[‡]
University of Illinois at Urbana-Champaign, [†]California State University, Fresno, [‡]University of Michigan
{eslamim2, kvaccaro, aleyase2, avuong3, kkarahal, kham}@illinois.edu
[†]arickman@csufresno.edu, [‡]csandvig@umich.edu

Seamless design vs Seamful design

"Awakenings of the Filtered: Algorithmic Personalization in Social Media and Beyond"
Christian Sandvig
https://socialmediacollective.org/2016/06/20/
awakenings-of-the-filtered/

1. measure your algorithmic filter bubble
2. break your algorithmic filter measure
3. measure the effects of breaking your algorithmic filter bubble

https://commons.wikimedia.org/wiki/File:Reflection_in_a_soap_bubble_edit.jpg

Surprises From Self-Experimentation: Sleep, Mood, and Weight

Seth Roberts

Quantified Self

Table 2 — A Gap in Scientific Methodology

| | Time period | |
Goal	Before and during data collection	After data collection
Generate ideas	?	Exploratory data analysis
Test ideas	Experimental design	Statistics (e.g., t test)
	Clinical trials	Model fitting

Generate ideas by trying many treatments & measuring many outcomes

Must be careful not to fool yourself

Summary:

- our tests did not reveal large algorithmic filters in Google searches

Summary:

- ▶ our tests did not reveal large algorithmic filters in Google searches
- ▶ critiques are great, and constructive critiques are even better

Summary:

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Summary:

- our tests did not reveal large algorithmic filters in Google searches
- critiques are great, and constructive critiques are even better
- Facebook NewsFeed is complicated, but you can control it
- You can generate ideas from your own experience (if you are careful); it is much hard to generate evidence that will convince others

http://bit.ly/socnet204

http://bit.ly/socnet204

- Marsden, P.V. and Campbell, K.E. (1984) Measuring tie strength. Social Forces.
- Gilbert, E. and Karahalios, K. (2009). Predicting tie strength with social media Proceedings of the SIGCHI Conference on Human Factors in Computing Systems.
- Jones, J.J., et al. (2013). Inferring tie strength from online directed behavior. PLOS One. **(Note: When reading this paper, please read the Materials and Methods section after the Introduction and before Results.)**