

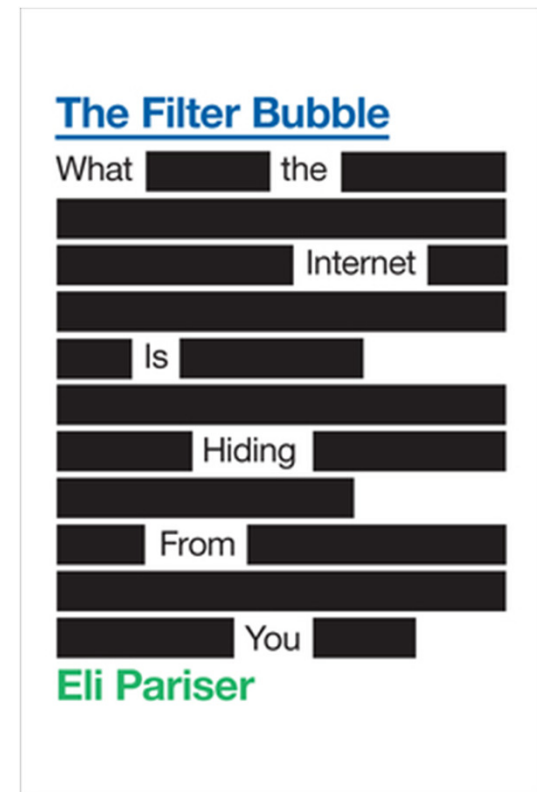
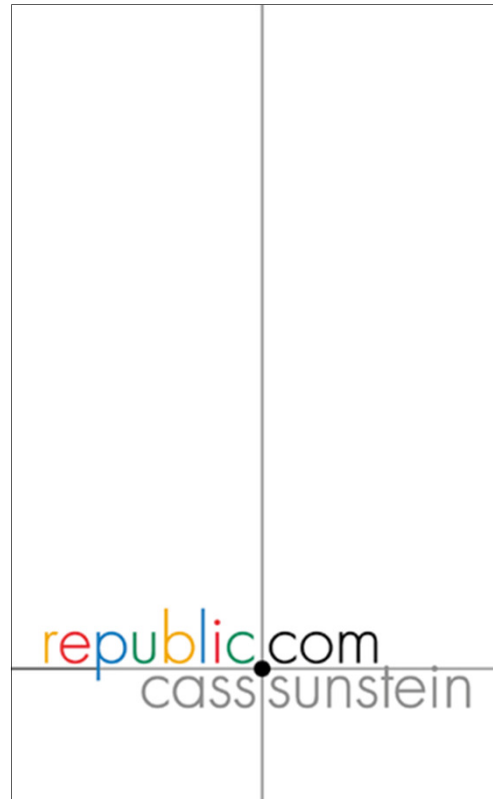
# Political Leaning Classification

Paul Resnick

Professor

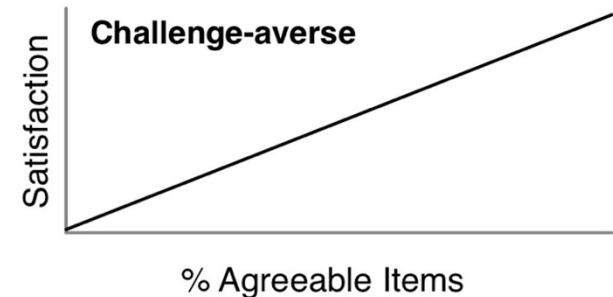
University of Michigan

# Internet as Echo Chamber?

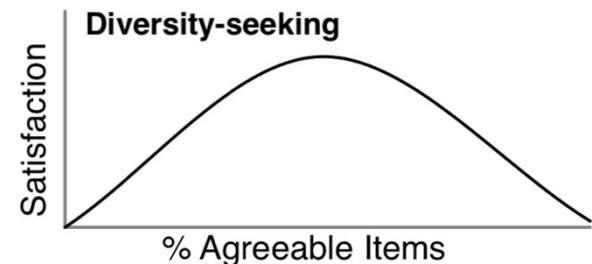


# Competing Hypotheses about Selective Exposure

**CHALLENGE AVERSION.** People prefer material that supports their opinions and avoid challenging information. Predicted by *selective exposure theory*. Sears & Freedman 1967, Zillmann & Bryant 1985, Frey 1986, Donsbach 1991



**DIVERSITY SEEKING.** People prefer information that contains both challenging and supporting opinions.

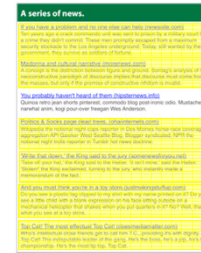
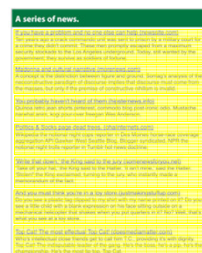


# Research Goals

- Understand
  - Which hypothesis is right?
- Improve
  - Can we nudge people toward balanced exposure?

# Experiment for Understanding

- Show people with known political biases list of links with varying percent of agreeable items
  - Subjective assessment of each list



# Nudging

- Two Chrome Extensions

# CubeThat News Recommender

World Bank picks health expert Kim as president | DAWN.COM - Google Chrome

Inbox (602) - sidharth.chh... Preferences - Extensions x World Bank picks health e... add a empty line in html... Adding blank row to a pag...

dawn.com/2012/04/17/world-bank-picks-health-expert-kim-as-president/

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Dawn.com Business

**World Bank picks health expert Kim as president**

Reuters | 17th April, 2012

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Book

**FROM THE SECTION**

Bangladesh floods leave 100 dead, 250,000 stranded

US pays high Pakistan route admiral

**Cluster 1**

- World Bank picks Korean-American Kim as president  
The Sun Daily · 150 tweets
- Emerging-Market Drift From World Banks Set to Test Incoming Kim  
Bloomberg · 135 tweets
- Dartmouth's president picked to lead World Bank  
Boston Globe · 120 tweets
- WB picks Kim as new president  
Sin Chew Jit Poh · 99 tweets

**Cluster 2**

- WB picks Kim as new president  
Daily China · 150 tweets

**Cluster 3**

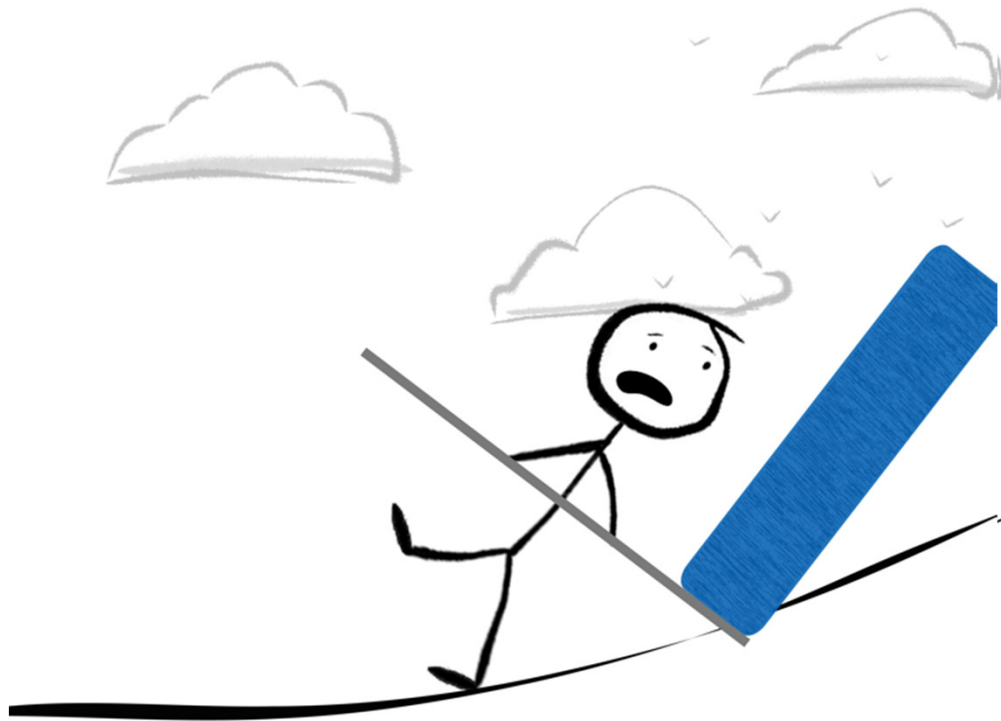
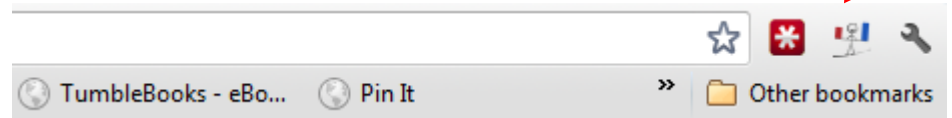
- Jim Yong Kim named new World Bank president  
Myjoyonline.com · 1450 tweets
- World Bank picks Korean-American Kim as president  
ABC CBN News · 1630 tweets
- New Republic: Controversy Over World Bank Pick  
NPR · 150 tweets

**Cluster 4**

- World Bank names new leader  
Independent Online · 73 tweets
- World Bank picks health expert Jim Yong Kim as president  
GMA News · 247 tweets

New Cluster

# Balancer Feedback





# Pre-requisite

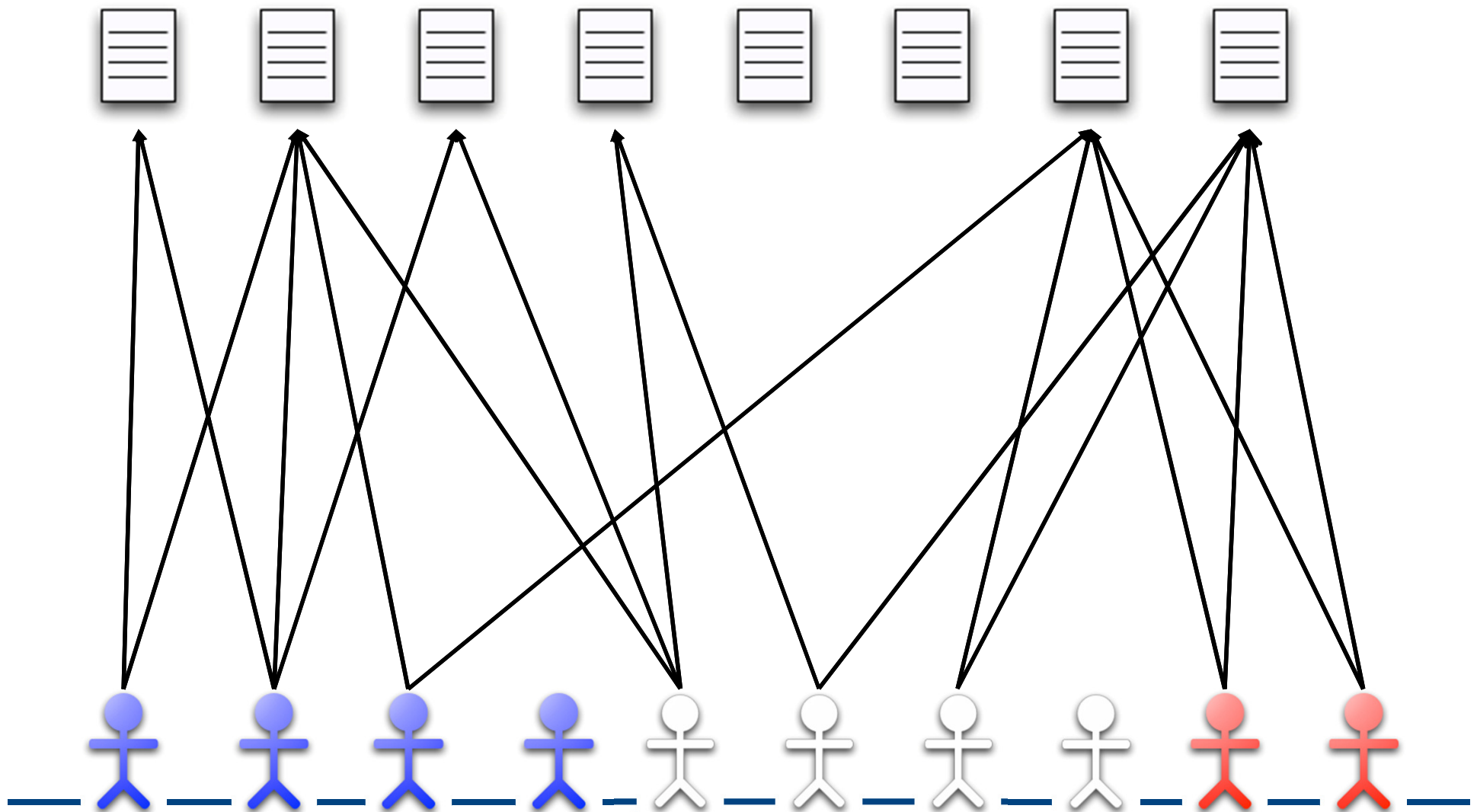
- Classify Items

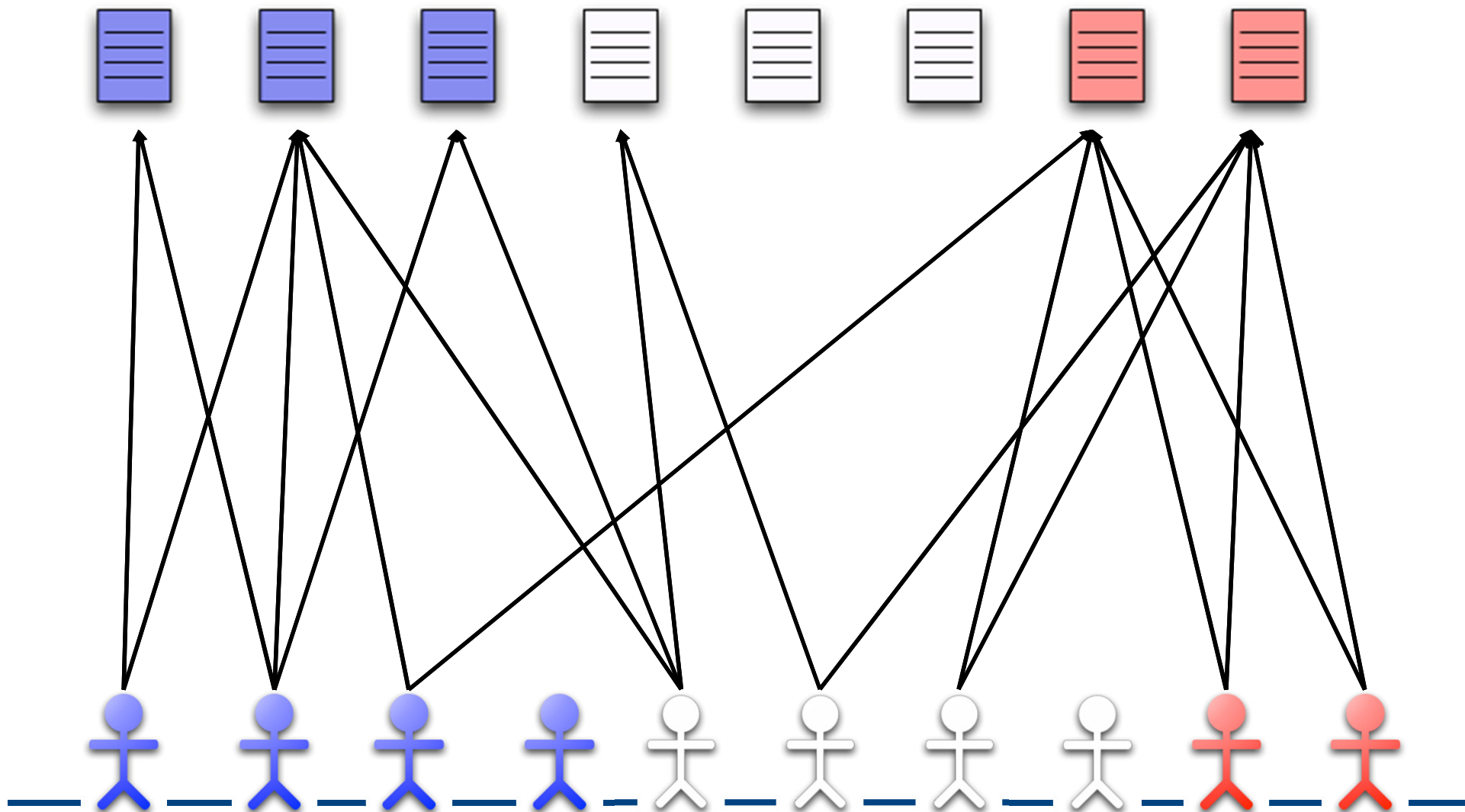
# Approach: Semi-Supervised Learning

- Some items and users labeled (blue or red)
- Learn to label the rest
  - Based on text distances between items
  - Based on relationships
    - user to item votes
    - items from same source
    - items linked to from same blog
    - user to user friend/follower links









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via [Sprint](#) Save Bury



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nerve.com — Avatar-themed weddings in Wulingyuan, a scenic area in Hunan Province, China become popular. 1 day 7 hr ago  
via [meetjoewhite](#) 1 Comment Save Bury

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thatvideosite.com — Not what you would expect to see 1 day 20 hr ago  
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topcultured.com — Elisha Cuthbert is hot, no doubt about it. But how hot? Hot

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blogs.alternet.org/oleoleolson/2010/08/05/massive-ce...

Posted by [oleoleolson](#) at 4:40 am August 5, 2010

546 COMMENTS

## Massive Censorship Of Digg Uncovered



A group of influential conservative members of the behemoth social media site Digg.com have just been caught red-handed in a widespread campaign of censorship, having multiple accounts, upvote padding, and deliberately trying to ban progressives. An undercover investigation has exposed this effort, which has been in action for more than one year.

**ARTICLE TOOLS**

TEXT SIZE: A A A

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**SHARE:**

3559 tweets

retweet

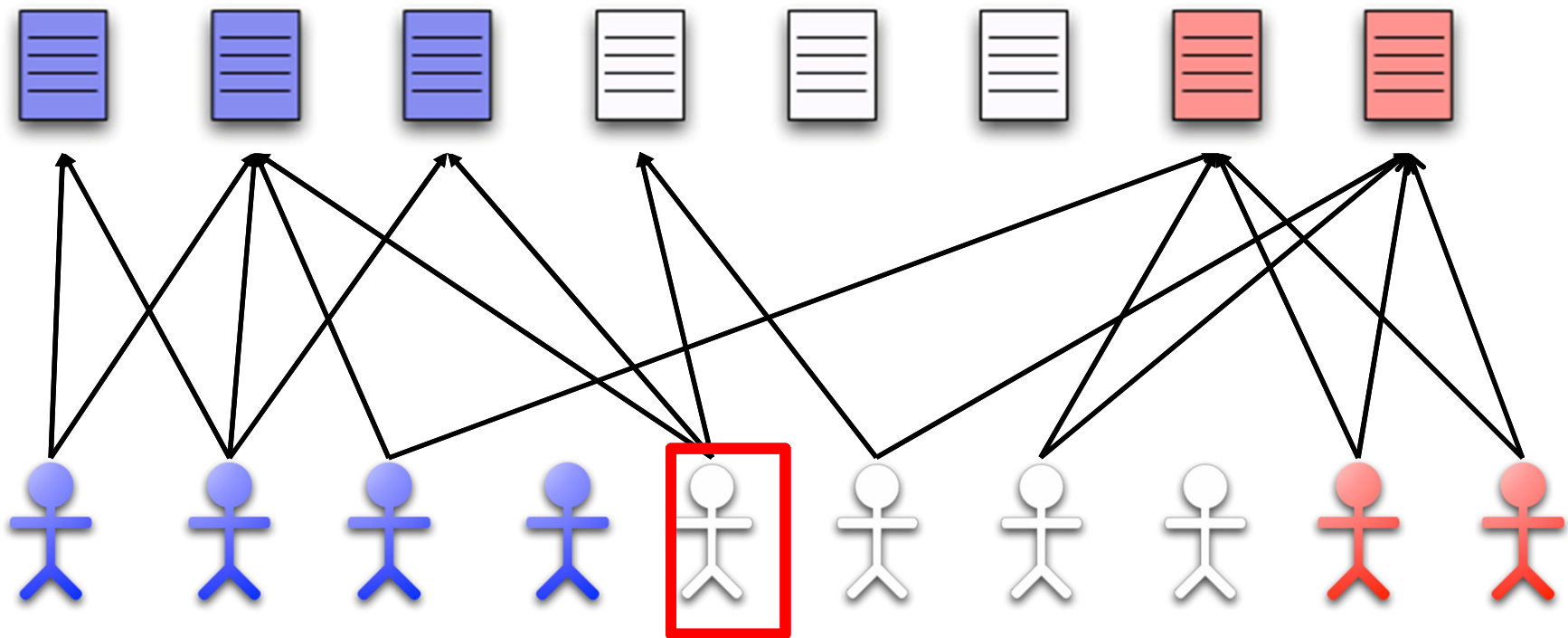
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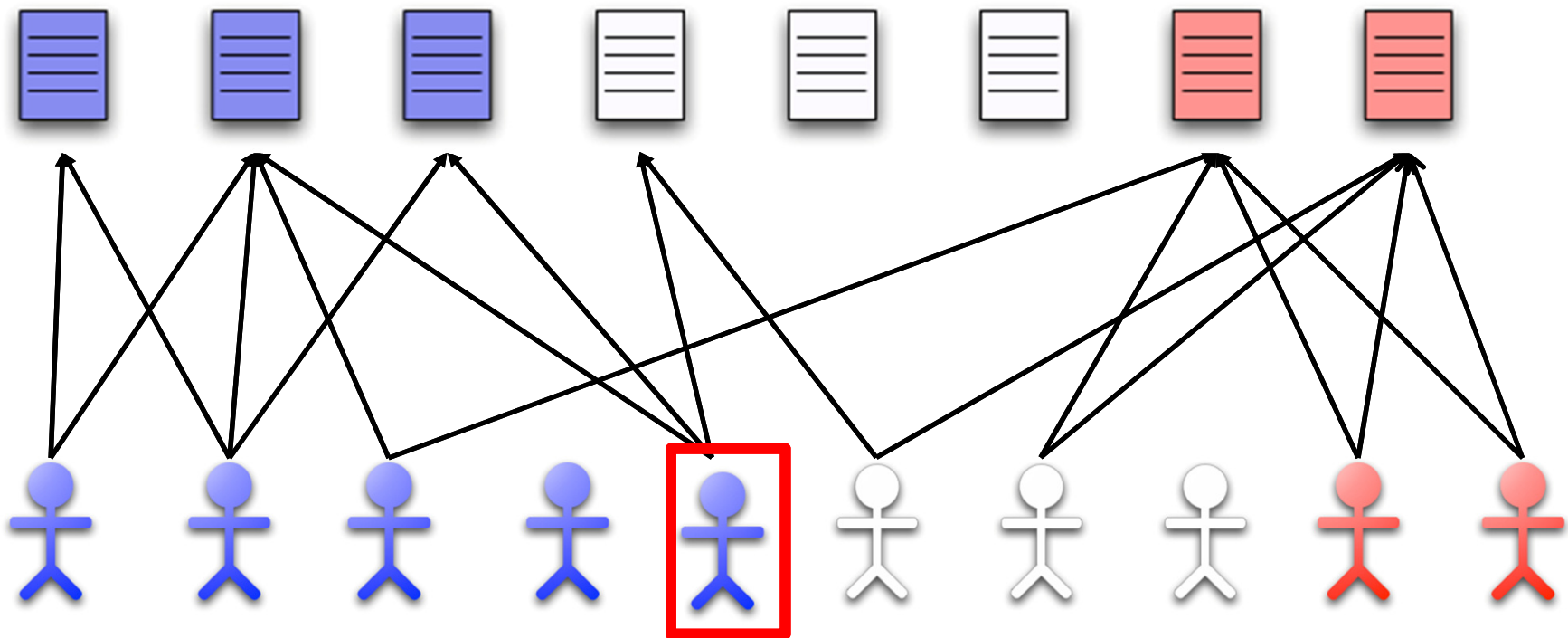
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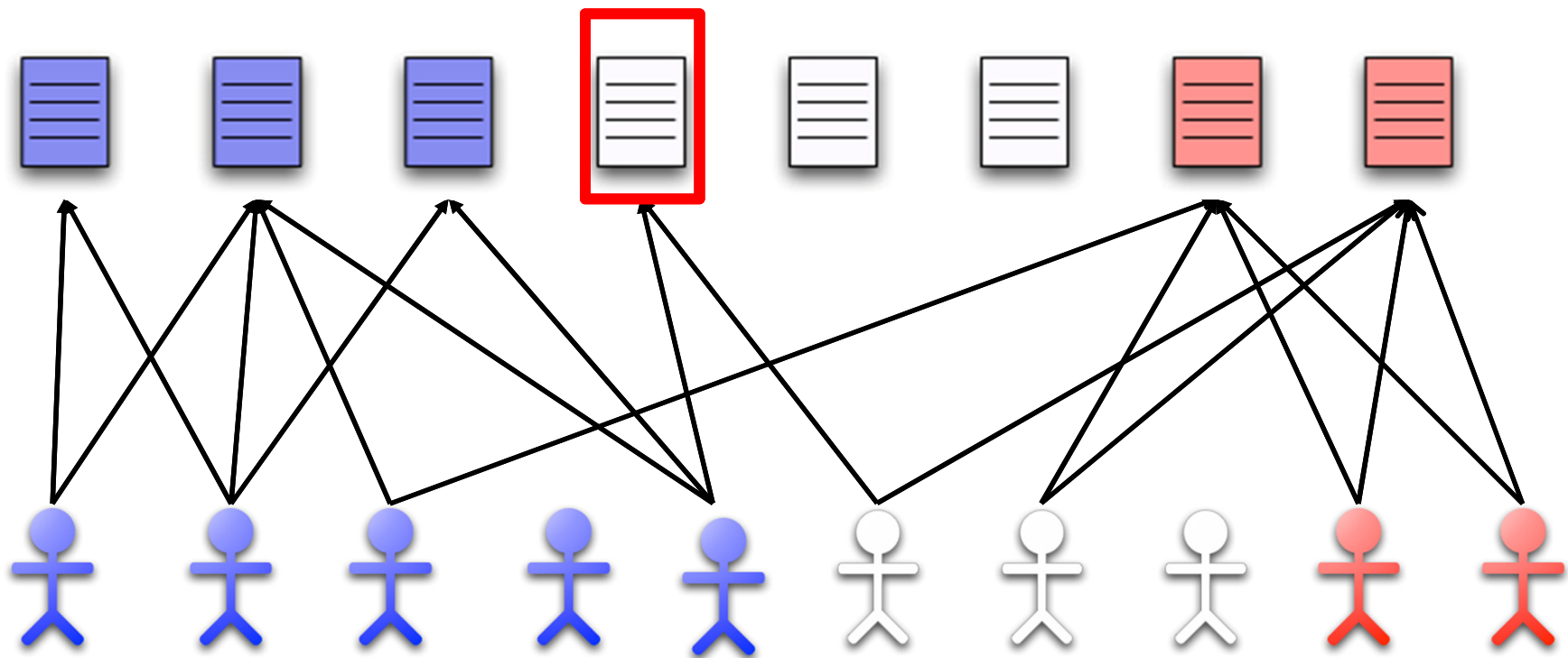
# Expanding Coverage By Propagation



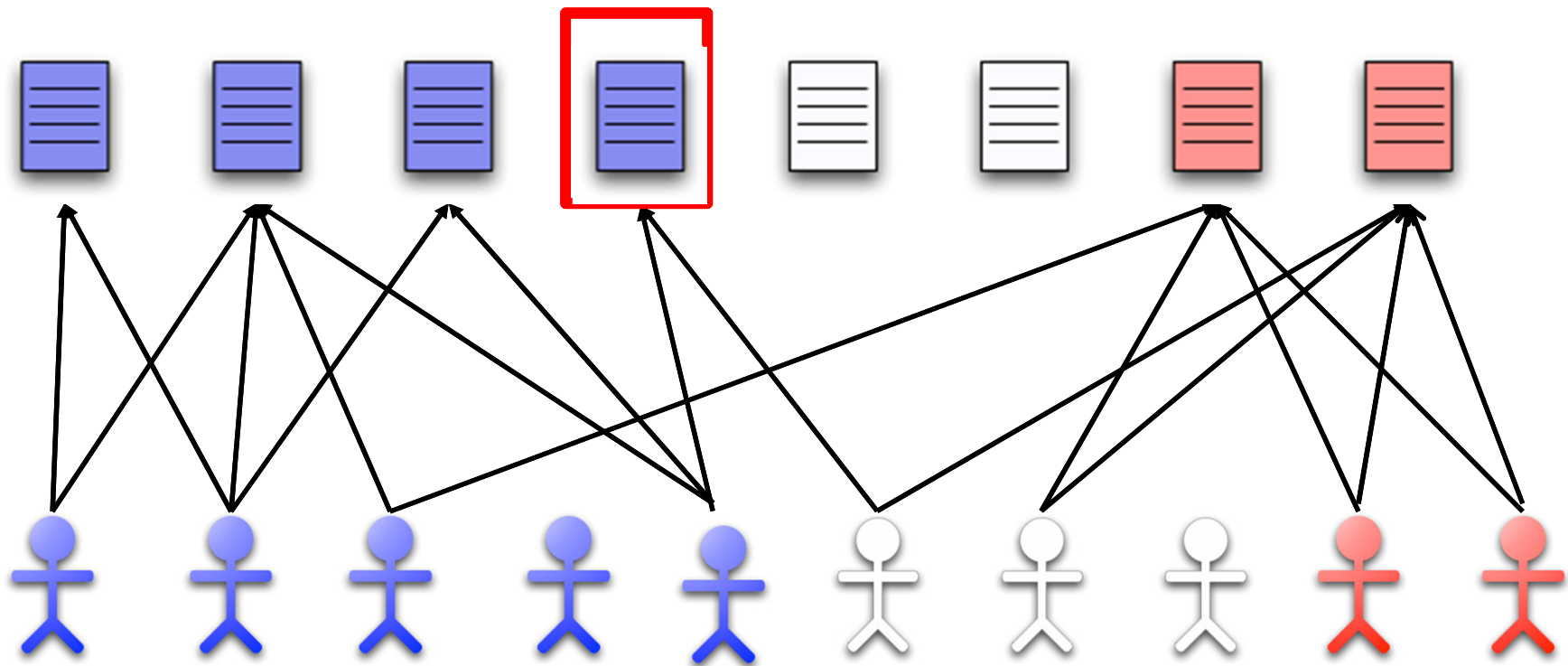
# Expanding Coverage By Propagation



# Expanding Coverage By Propagation



# Expanding Coverage By Propagation



# Graph Propagation Algorithms

- Random Walk with Restart
- Absorbing Random Walk
- Local Consistency Global Consistency

# A CHALLENGE IN EVALUATION

# What is the Ground Truth?

- 1000 articles
  - 3 liberal and 3 conservative raters for each
- Fleiss' Kappa only 0.53
- Interim approach: only items that all 6 raters agreed on (307 items)
- Currently: rethinking ground truth for classification tasks





# Diversity Preferences

