

# Media Landscape in Twitter:

A world of new convention and opinion diversity

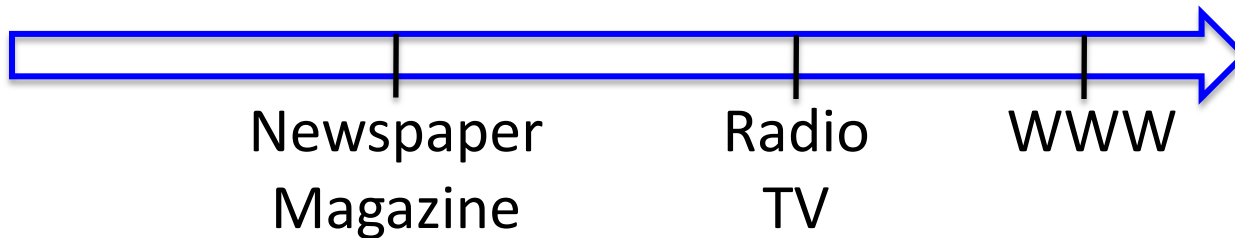


Jisun An

University of Cambridge

with Meeyoung Cha (KAIST), Krishna Gummadi (MPI-SWS), Jon Crowcroft (Univ. of Cambridge)

# Media sources



Media sources always have adopted latest technologies to distribute their content

# Social media changing the way people read news and publishers interact with them

- **Social distribution**

- “News no longer breaks, it tweets” - Solis
- Redefined the role of users as publishers and mediators

- **Social discussion**

- Generating second layer of discussion
- Driving consensus or social norm



Social media makes social distribution and discussion easier

# Research opportunity

- Study patterns of social distribution and discussion
  - Easy to measure and analyze data in a large scale
- Can help verify popular beliefs/theories or address unanswered question
  - Does social interaction help publishers reach more audience?
  - Does social interaction help users receive diverse opinion?

Open the new era of computational journalism

# Our goal

1. Understanding Media Landscape in Twitter
  - a) Media source perspective
  - b) Audience perspective
  
2. Leveraging observations to infer political leaning of media sources
  - a) Characterizing similarity between media sources

# Questions



## MEDIA PERSPECTIVE

1. How do media sources interact with their audience in Twitter?
2. Does social interaction help reach more audience?



## AUDIENCE PERSPECTIVE

1. Does a user follow multiple media sources?
2. Is social interaction exposing users to multiple media sources?
3. Does a user follow diverse media sources?
4. Is social interaction exposing users to diverse media sources?

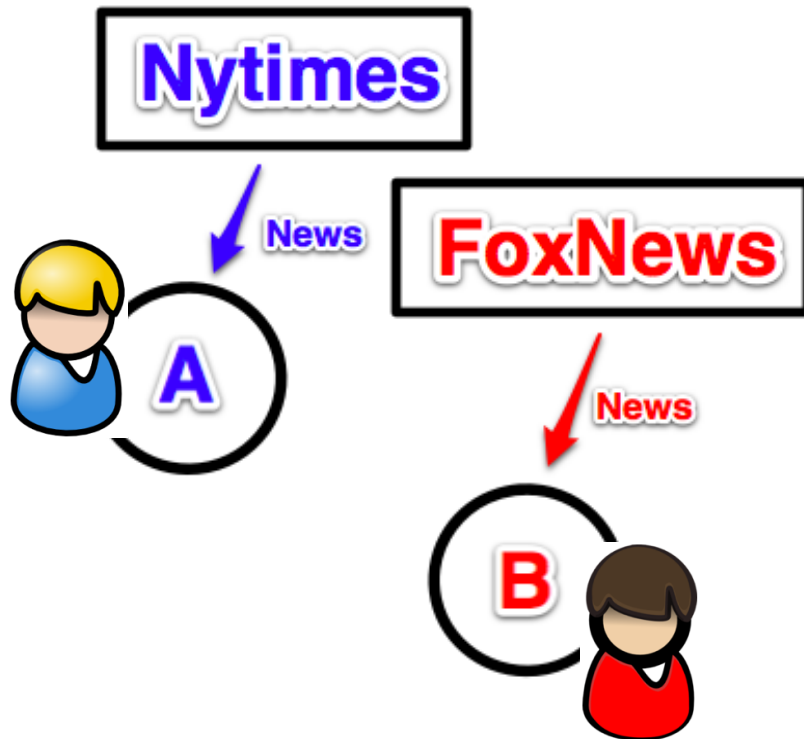
# Methodology

- Data collection
  - Used previously collected dataset of twitter which is near-complete (ICWSM 2009, Cha. et al]
  
- Focus on 80 media sources
  - English-based media
  - A total of 14M followers and their connections (1.2B links, 350,000 tweets)

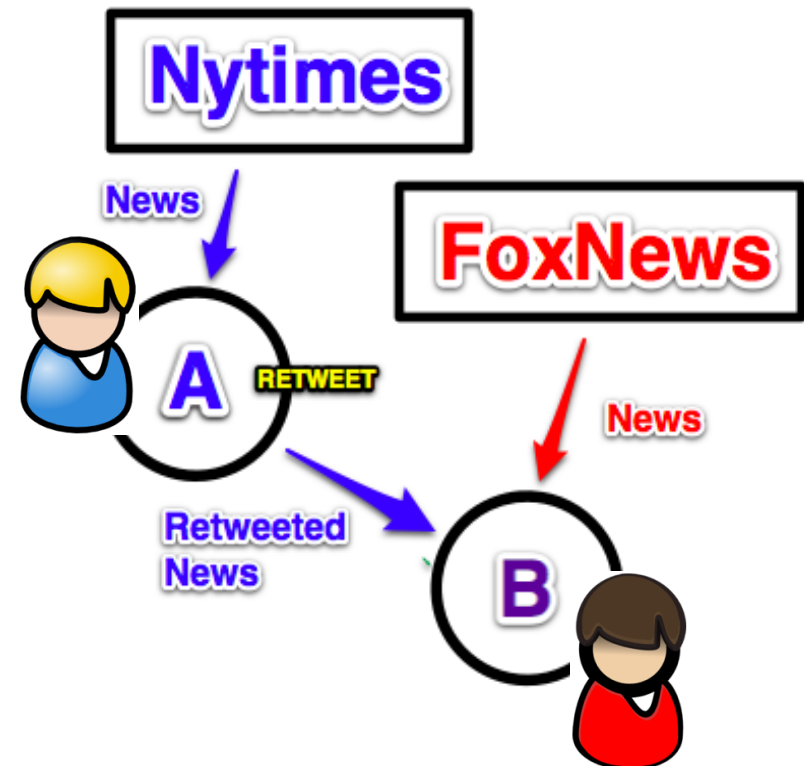
Genre	Example account
News (40 sources)	cnnbrk, nytimes, TerryMoran
Technology (13)	BBCClick, mashable
Sports (7)	NBA, nfl
Music (3)	MTV
Politics (5)	nprpolitics,
Business (2)	davos
Fashion & Gossip (4)	peoplemag

# Media exposure

## Direct Subscription



## Social Interaction







# MEDIA PERSPECTIVE



# AUDIENCE PERSPECTIVE



# MEDIA LANDSCAPE

# Questions



## MEDIA PERSPECTIVE

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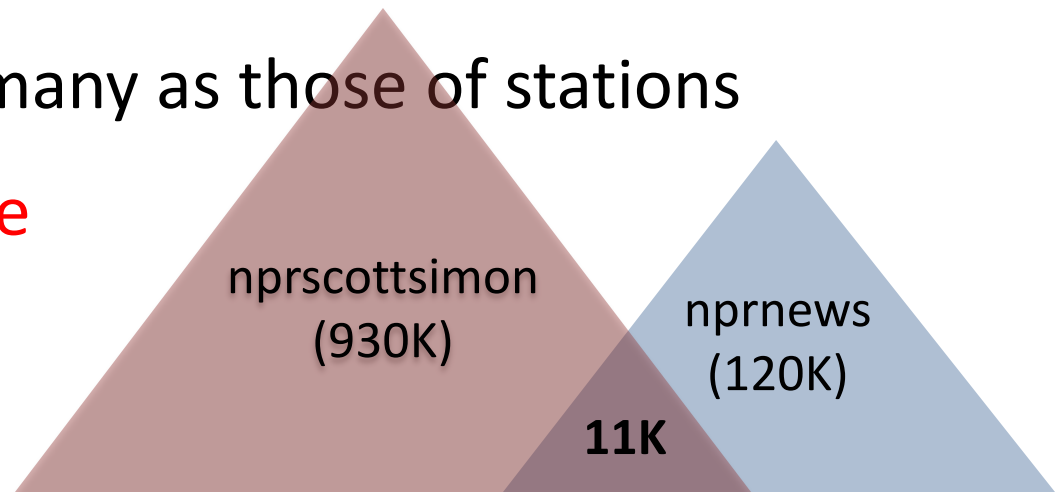


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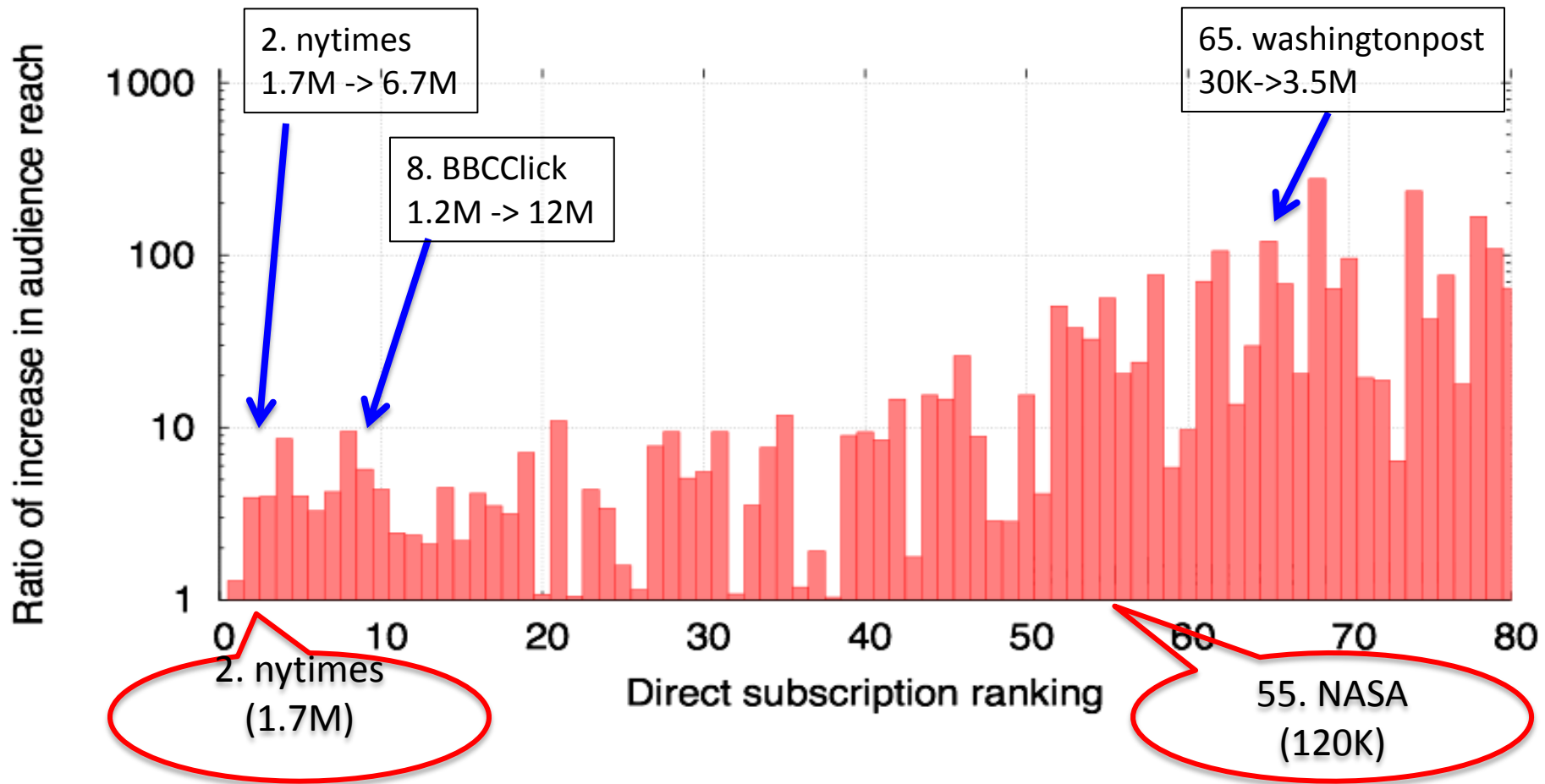
# The new role of journalists

- Journalists are playing a prominent role in social media
- Interact with their audience actively
  - Share news article from the news station
- Size of audience is as many as those of stations
- **Distinct set of audience**
  - Personal update
  - Lead a discussion



One of the prominent features of social media:  
Social media journalists

# Is social interaction helping media publishers reach more audience?



**Yes: Social interaction increases publisher's audience**  
 On average, audience size increases by a factor of 28



## MEDIA PERSPECTIVE



## AUDIENCE PERSPECTIVE



## MEDIA LANDSCAPE

# Questions



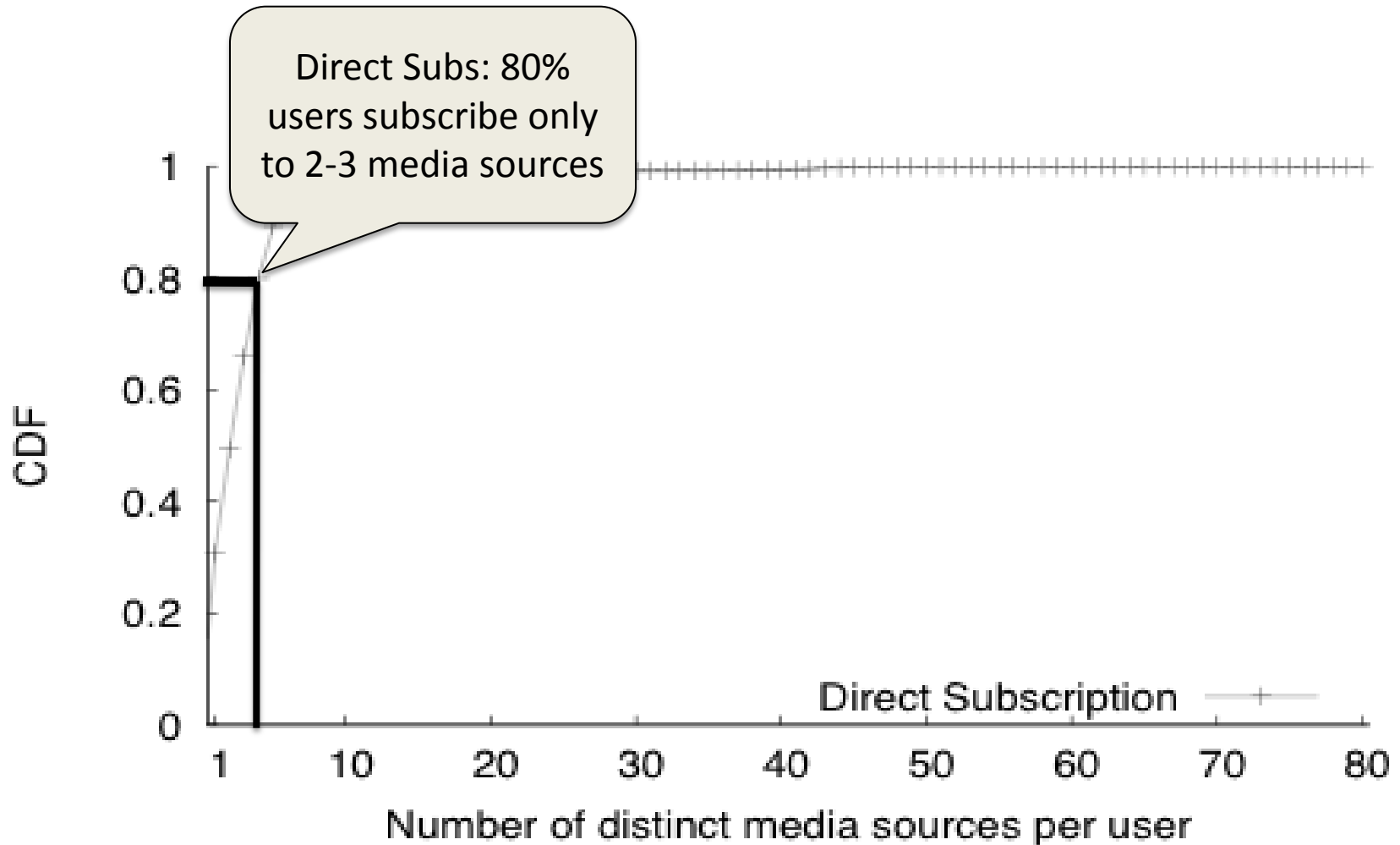
## MEDIA PERSPECTIVE



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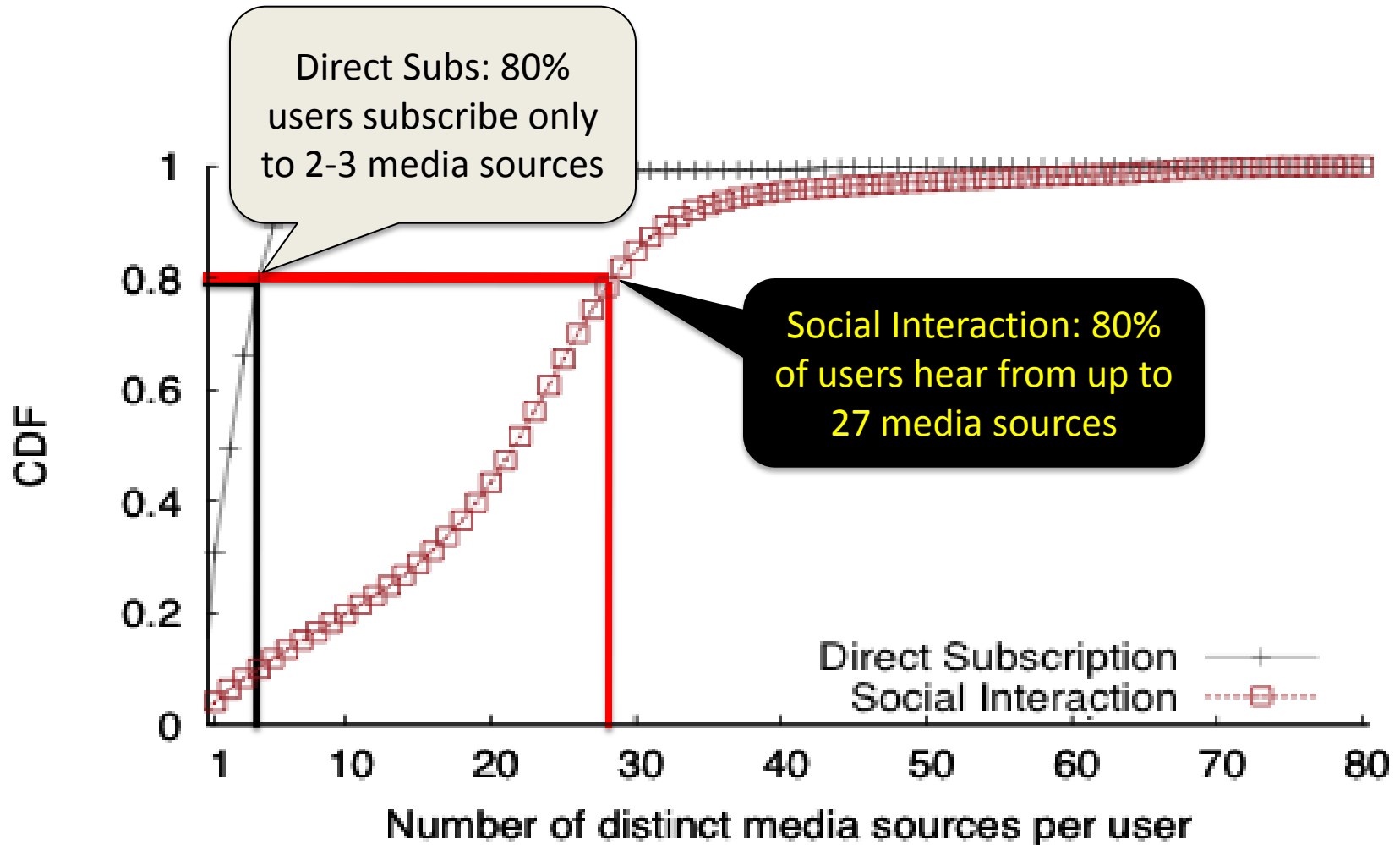
# Does a user follow multiple media sources?



**No: Users only follow limited number of media sources.**



# Is social interaction exposing users to multiple media sources?



Yes: 8 fold increase in number of media sources



# Does a user follow diverse media sources?

Following multiple media sources  
does not necessarily imply  
exposure to **diverse opinions**

**Focus on political news**

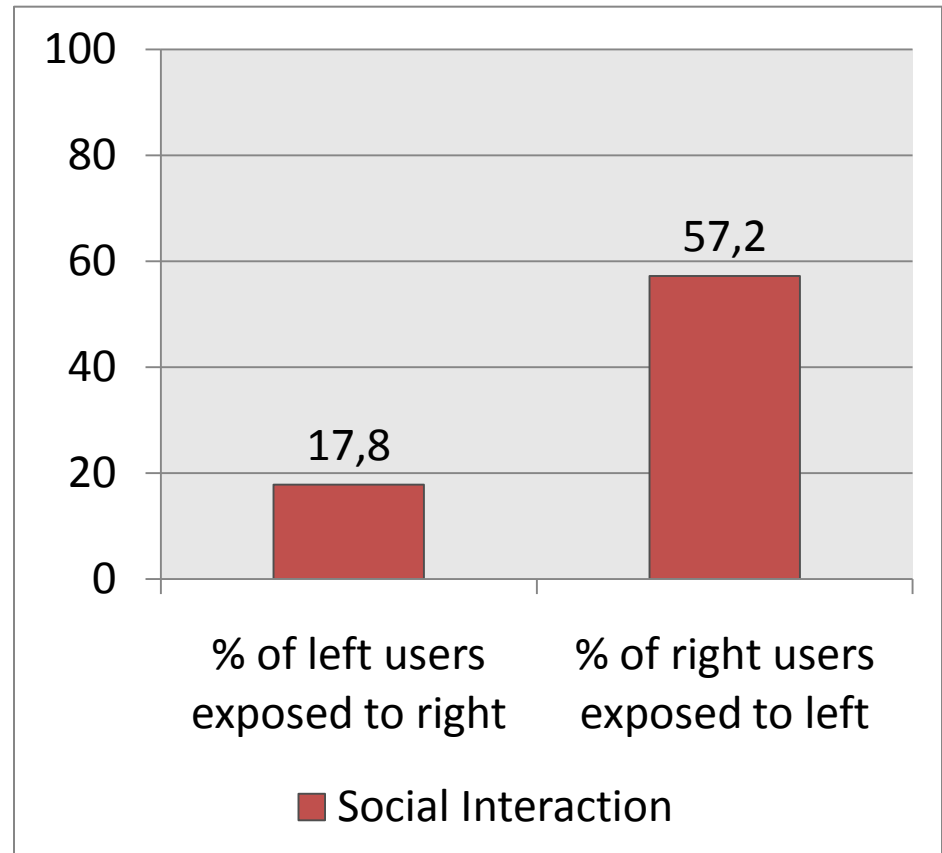
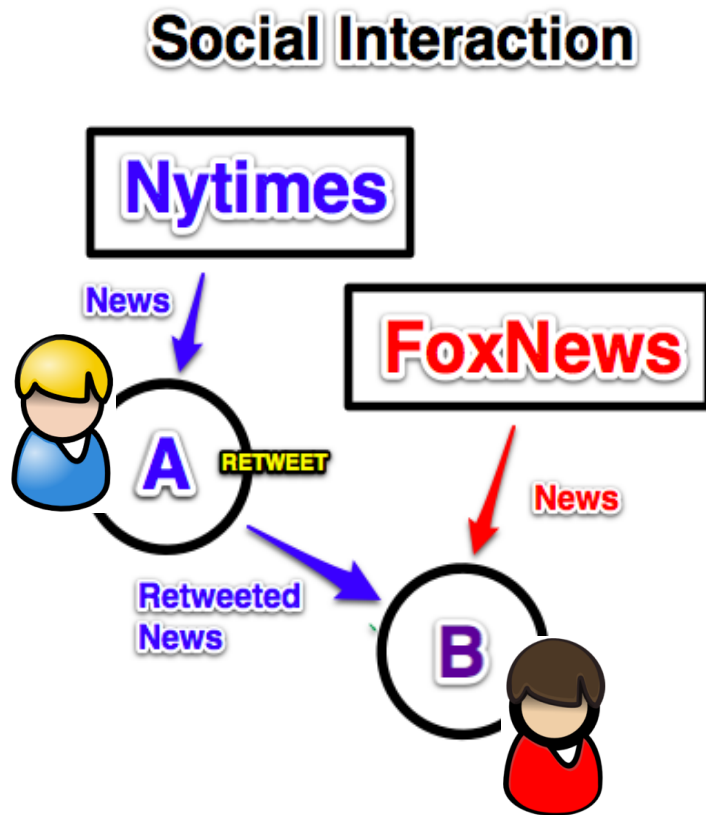
# Does user follow diverse media sources?

- Manually tagging political leanings of media source
  - Left-right.org
  - ADA (Americans for Democratic Action) score



- No: Out of 10M users, 7M users only follow one side of media sources
  - Left-leaning (62.1%), center (37%), right-leaning (0.9%)

# Is social interaction exposing users to diverse media sources?



Yes: Users are exposed to diverse opinions through social interaction

# Answers



## MEDIA PERSPECTIVE

1. Journalists are playing a prominent role in social media
2. Social interaction increases publishers' exposure on avg. by 28X



## AUDIENCE PERSPECTIVE

1. Users only follow limited number of media sources.
2. But they are exposed to 8x more media sources via social interaction
3. Most users only follow political media with a certain bias
4. Social interaction exposes users to sources with a different bias



## MEDIA PERSPECTIVE

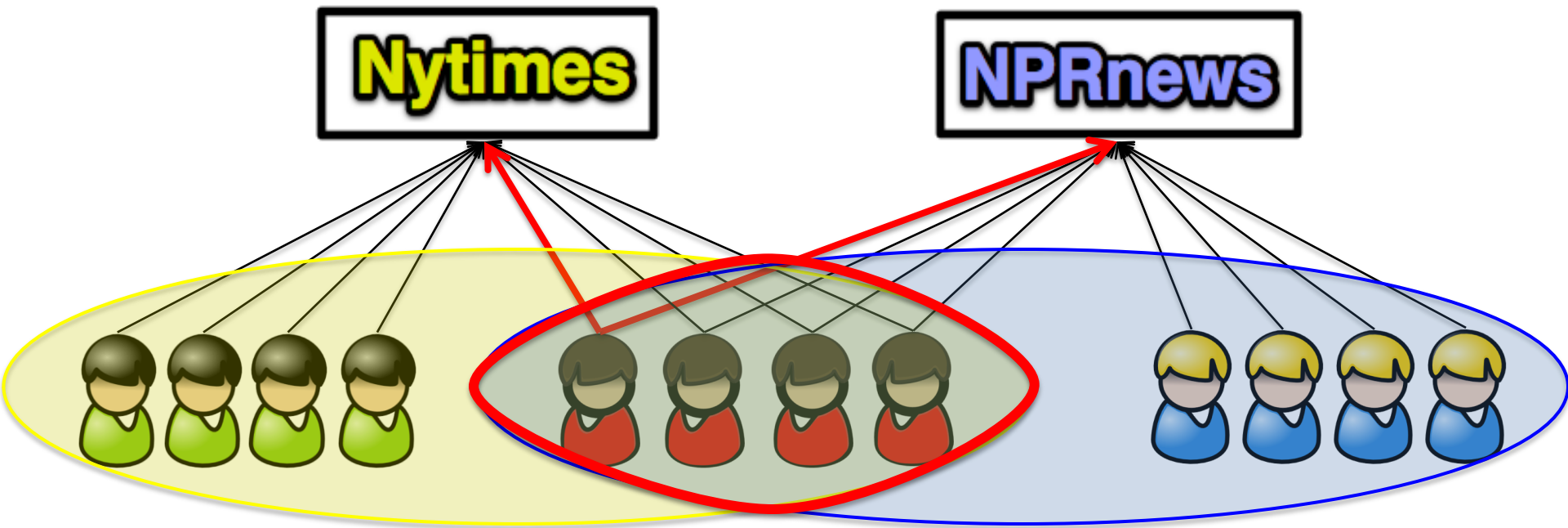


## AUDIENCE PERSPECTIVE



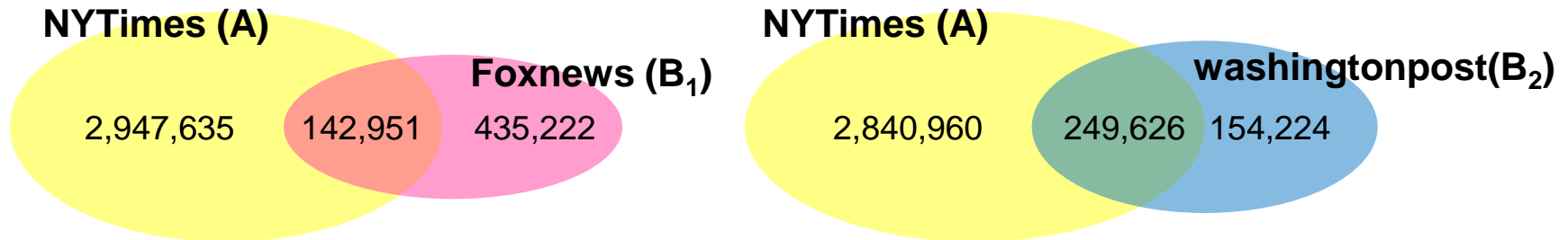
## MEDIA LANDSCAPE

# Estimating closeness



How “close” or “similar” two media sources are

# Closeness measure



Which one is closer to nytimes, Foxnews or washingtonpost?

**Washingtonpost is closer to nytimes than Foxnews**

- Closeness: probability that a random follower of  $B_i$  also follows  $A$

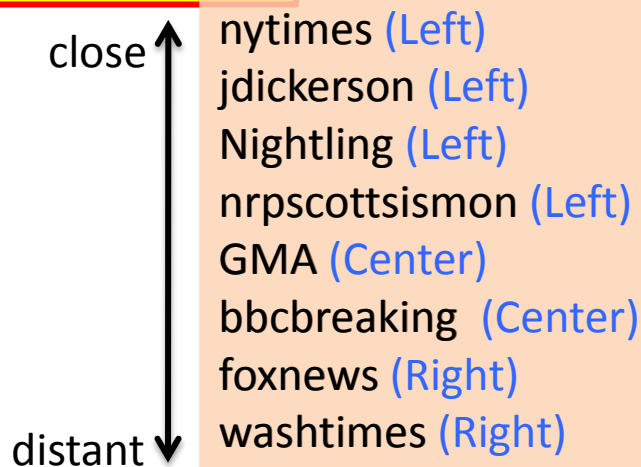
$$\text{closeness}(A|B_i) = \frac{|A \cap B_i|}{|B_i|}$$

**Closeness( NYTimes, Foxnews) = 143K/578K = 0.25**  
**Closeness( NYTimes, washingtonpost) = 250K/404K = 0.62**

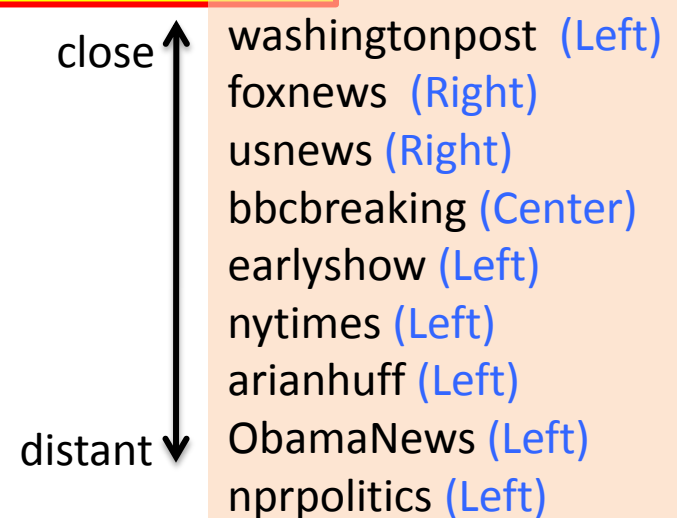
# Closeness of political media sources

- Picked political media sources
- Ranked other political media sources based on closeness value

## nprpolitics (Left)



## washtimes (Right)



- Comparison with ADA score
  - Matching probability of 77.5%

We can automatically infer the political leaning of media sources



# Closeness of media sources

Target media source	Closest media source
nprpolitics	nytimes
kingsthings	peoplemag
ObamaNews	andersoncooper
MTV	usweekly
NASA	wired
NBA	NFL
joinred	annCurry
om	timoreilly
davidgregory	jdickerson

If Larry King wants to advertise himself, people magazine is the one

# Our application for exploring media landscape

## political media map

Please enter media sources to map out (up to 5)

Media sources to be mapped out:

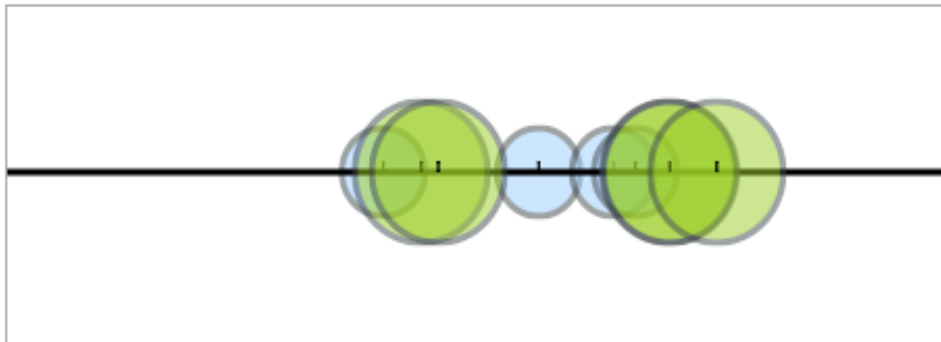
nprpolitics	TIME	WSJ
TEDchris	chicagotribune	

explorer!

### MAP!

Landmarks:

foxnews(39.7), GMA(56.1), todayshow(64), nprnews(66.3)



nprpolitics(43.7), WSJ(45.5), TEDchris(69.8), chicagotribune(70.0), TIME(74.9),

guardiannews  
pitchforkmedia  
Nightline  
TechCrunch  
kingstings  
CBSNews  
om  
smithmag  
bbcworld  
guardiannews  
wired  
foxnews  
washingtonpost  
abcnews  
jdickerson  
nprnews  
chicagotribune  
karaswisher

[bit.ly/mediaexplorer](http://bit.ly/mediaexplorer)

For more information please visit  
<http://twitter-app.mpi-sws.org/media-explorer/>

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