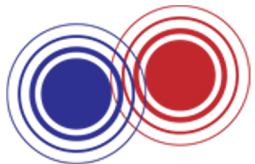


# Locating the Asymmetry in Information Flow between Local and National Media on Transgender Discourses

Alyssa Smith, Sagar Kumar, Yukun Yang, & Pranav Goel



Lazer Lab



CoMM Lab



# What I Hope You Remember



We used transfer entropy, a measure of influence, to quantify how information flows between local and national news collections.

A lot of the time, the influence doesn't go directly from national → local. Instead, one state mediates the diffusion process.

We suggest two interventions to improve the state of trans news coverage based on qualitative case studies.

# What I Hope You Remember



We used transfer entropy, a measure of influence, to quantify how information flows between local and national news collections.

A lot of the time, the influence doesn't go directly from national → local. Instead, one state mediates the diffusion process.

We suggest two interventions to improve the state of trans news coverage based on qualitative case studies.

# What I Hope You Remember



We used transfer entropy, a measure of influence, to quantify how information flows between local and national news collections.

A lot of the time, the influence doesn't go directly from national → local. Instead, one state mediates the diffusion process.

We suggest two interventions to improve the state of trans news coverage based on qualitative case studies.

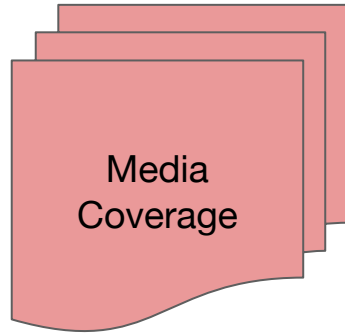


# **Setting the Scene: Trans Life and News Coverage in the U.S.**

# Trans Life & News Coverage in the U.S.



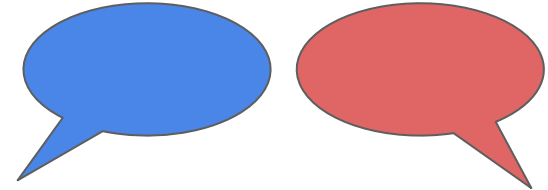
With respect to transgender issues...



influences



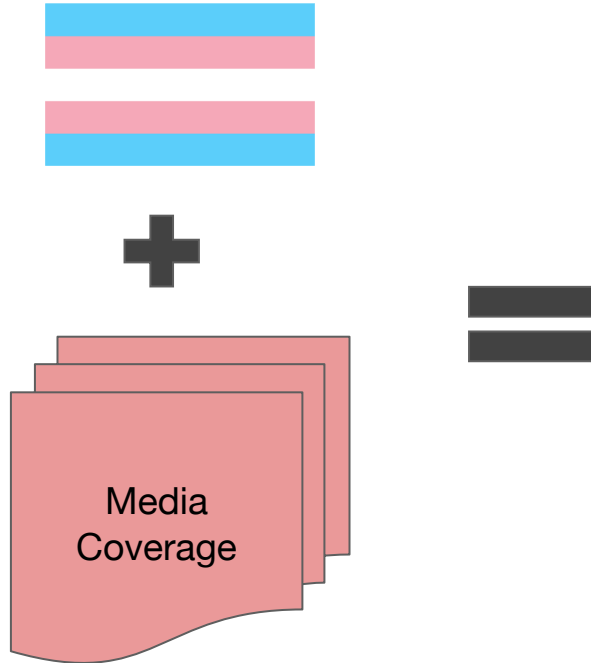
State-level legislation



Public opinion:  
Floating signifiers  
(Ciszek, 2020)

# Trans Life & News Coverage in the U.S.

What we already know:



Origins of anti-trans coverage (Billard 2023, 2024)

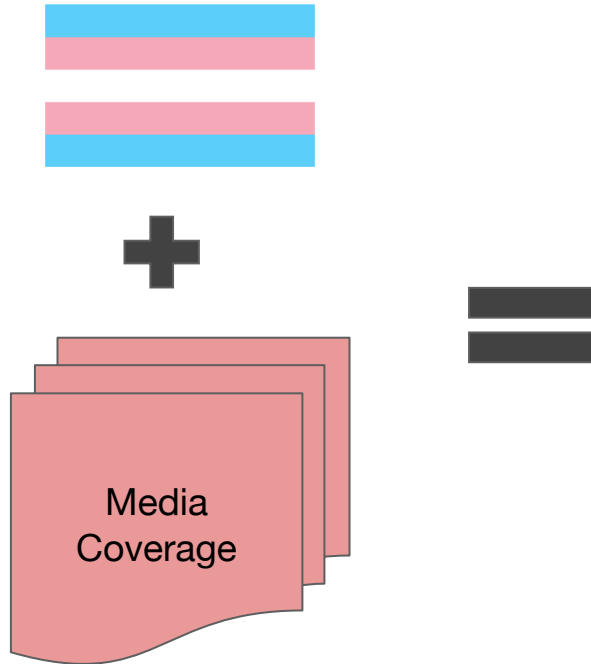
Transformative power of local reporting

Opportunities to push back against hegemonic narratives

Differences in local & national framing

# Trans Life & News Coverage in the U.S.

What we already know:



Origins of anti-trans coverage

Transformative power of local reporting (Michelson & Harrison 2020)

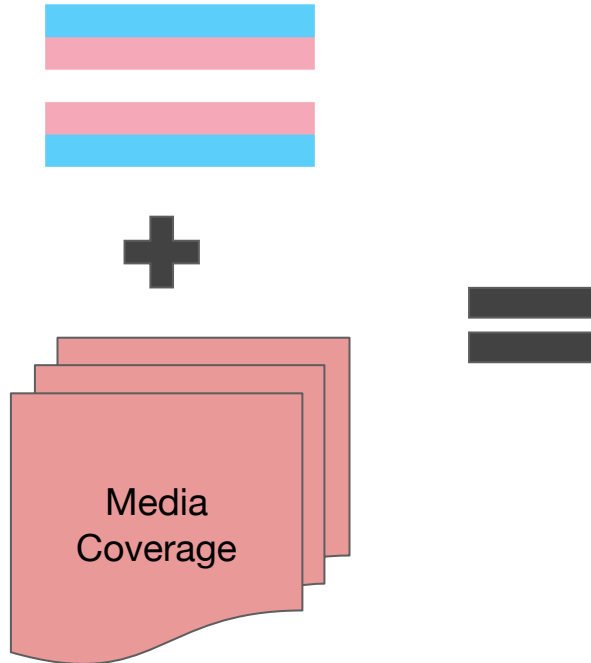
Opportunities to push back against hegemonic narratives

Differences in local & national framing



# Trans Life & News Coverage in the U.S.

What we already know:



Origins of anti-trans coverage

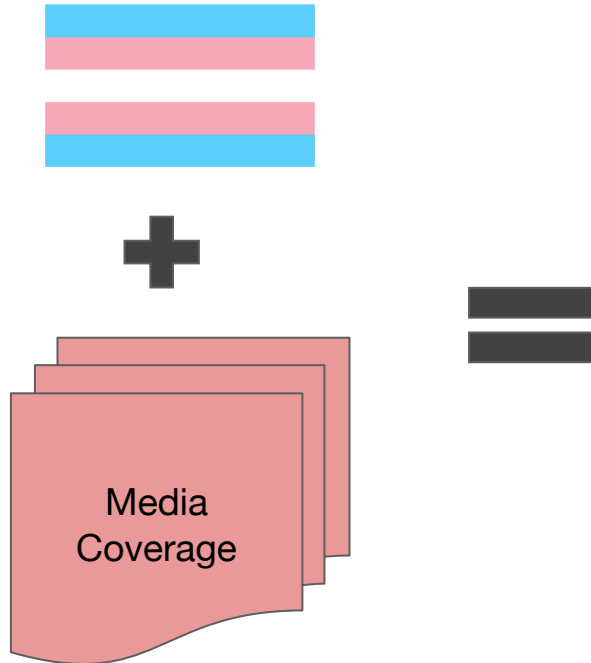
Transformative power of local reporting

Opportunities to push back against hegemonic narratives

Differences in local & national framing

# Trans Life & News Coverage in the U.S.

What we already know:



Origins of anti-trans coverage

Transformative power of local reporting

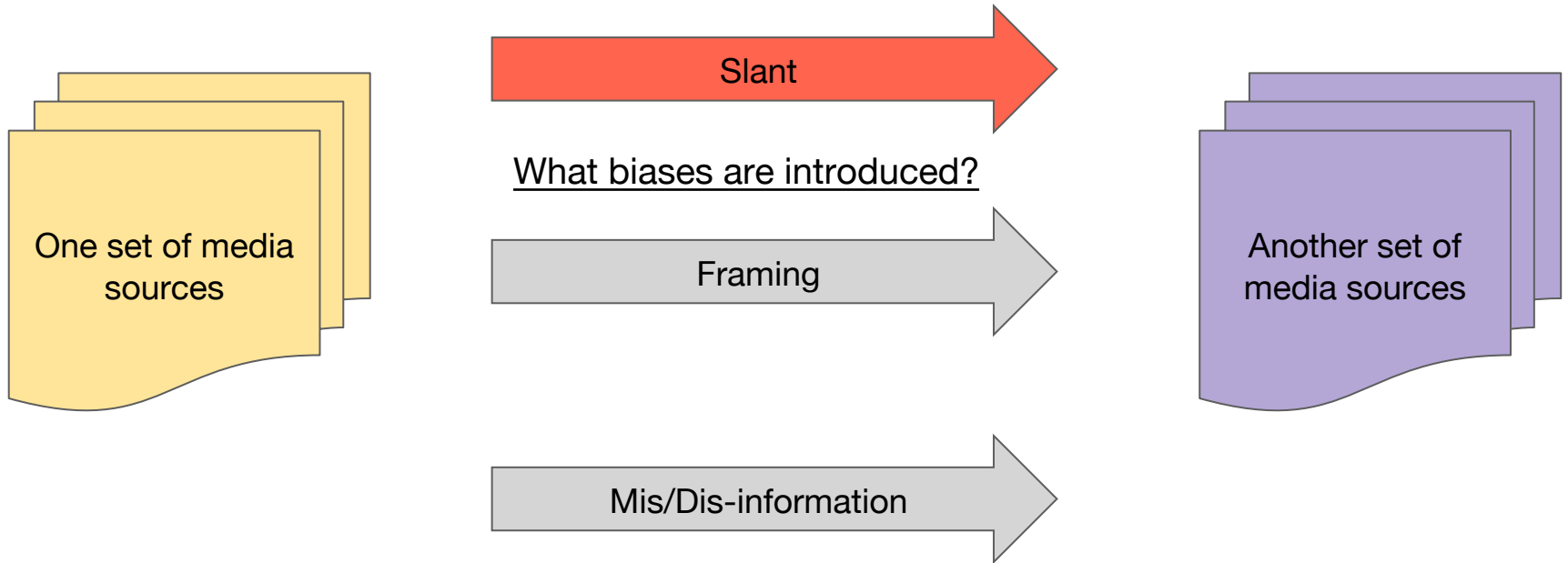
Opportunities to push back against hegemonic narratives

Differences in local & national framing (Oliveira-Araujo 2023)



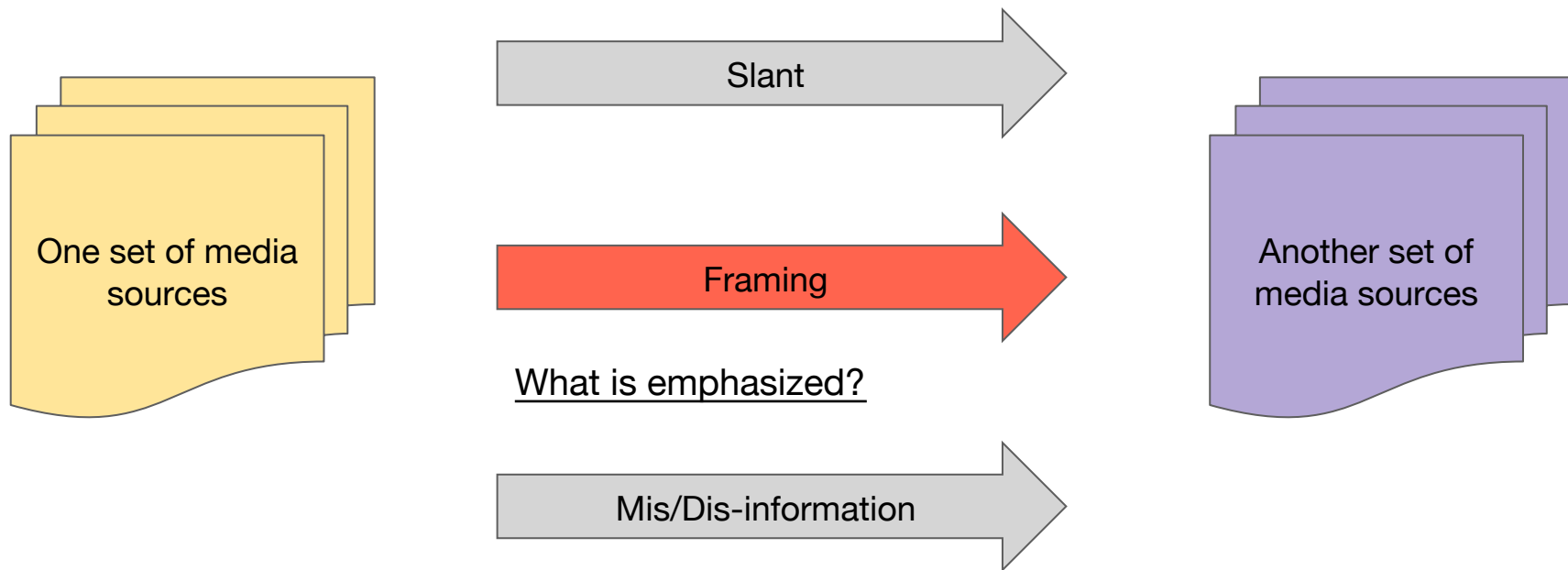
# **Background: Intermedia Agenda-Setting Theory**

# Intermedia Agenda-Setting Theory



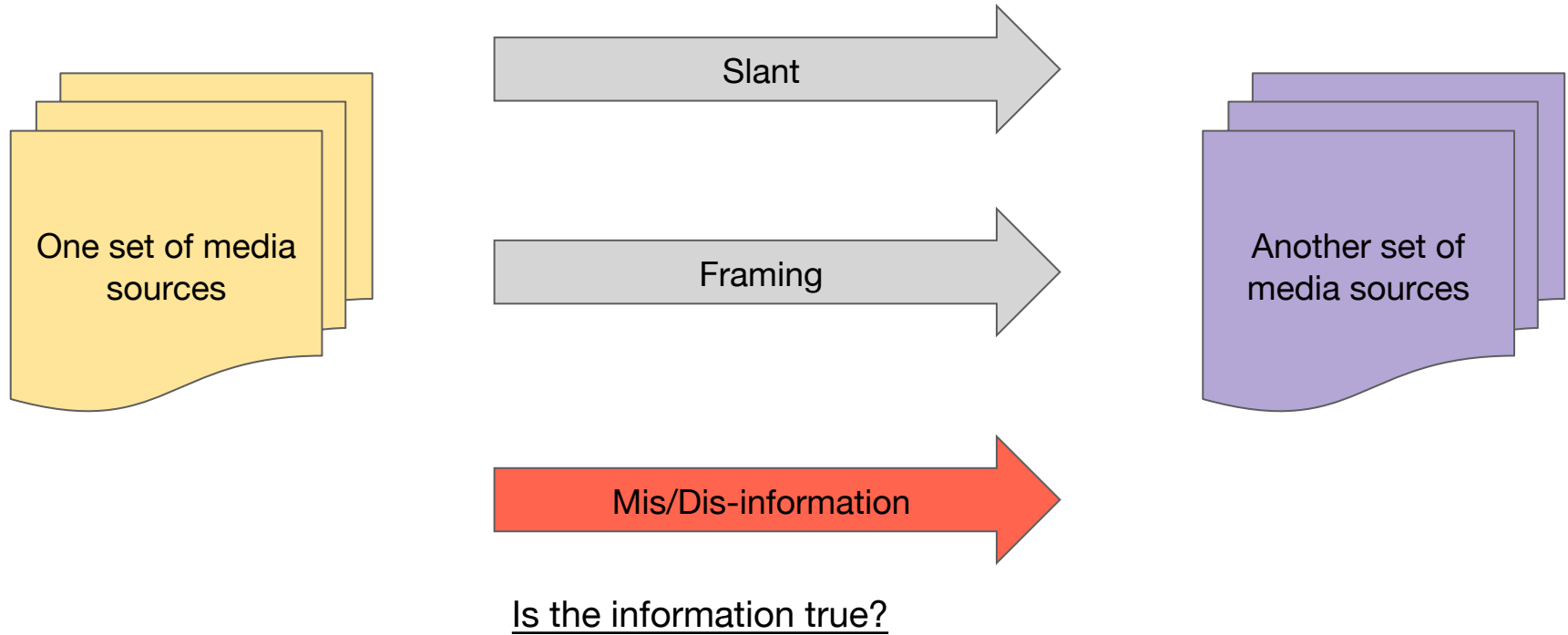
(Widmer, Galletta, and Ash 2023)

# Intermedia Agenda-Setting Theory



(Simon and Xenos 2000)

# Intermedia Agenda-Setting Theory

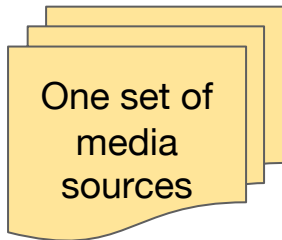


(Guo and Vargo 2020; Tsfati et al. 2020)

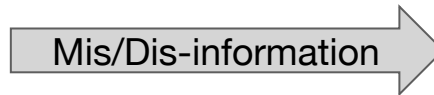
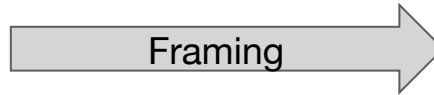
# Intermedia Agenda-Setting Theory



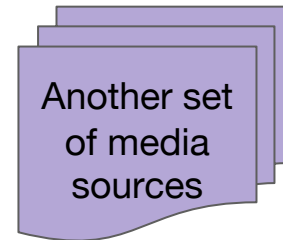
National outlets often set an agenda...



One set of media sources



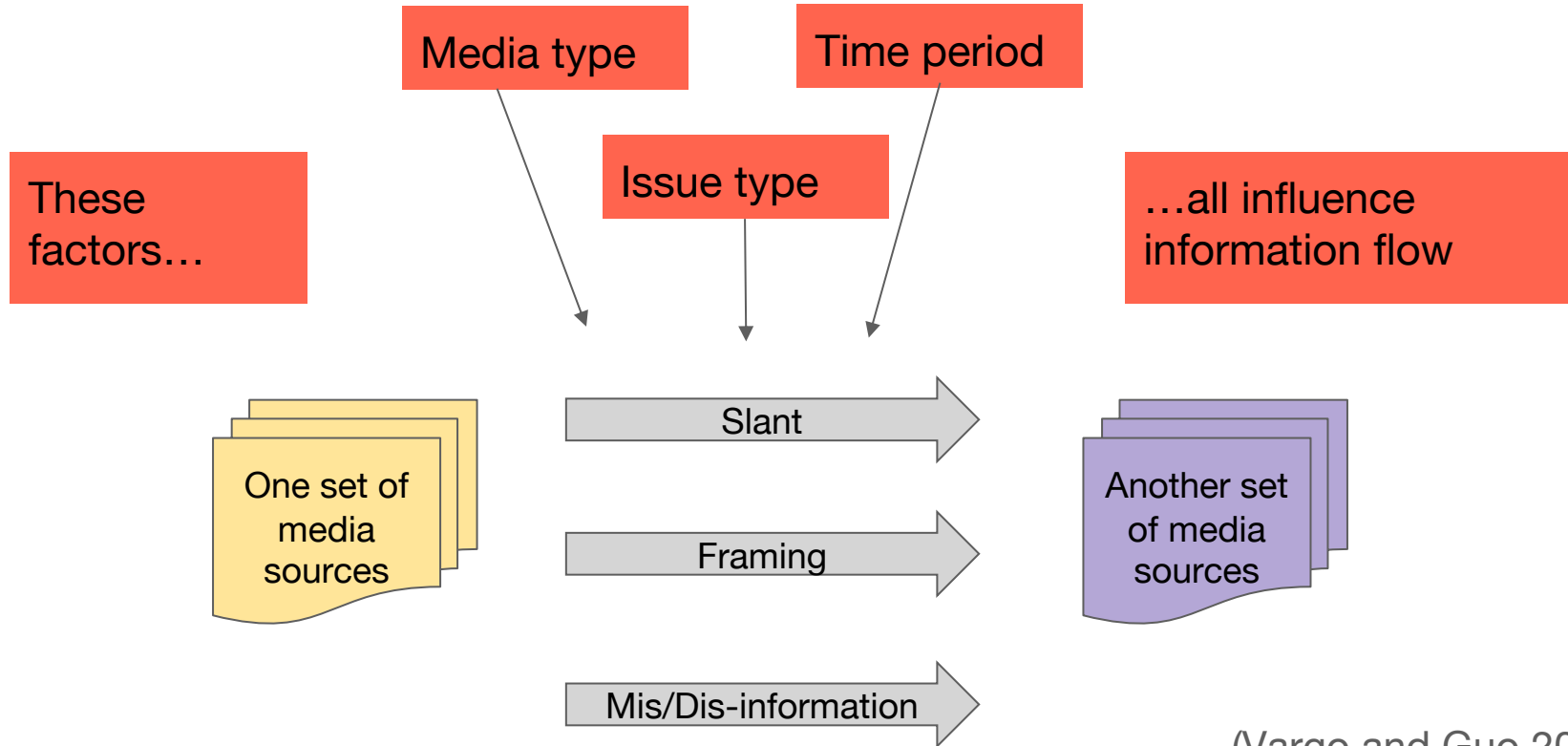
...that local outlets then pick up



Another set of media sources

(Buzzelli and Towery 2021;  
Oliveira-Araujo 2023)

# Intermedia Agenda-Setting Theory



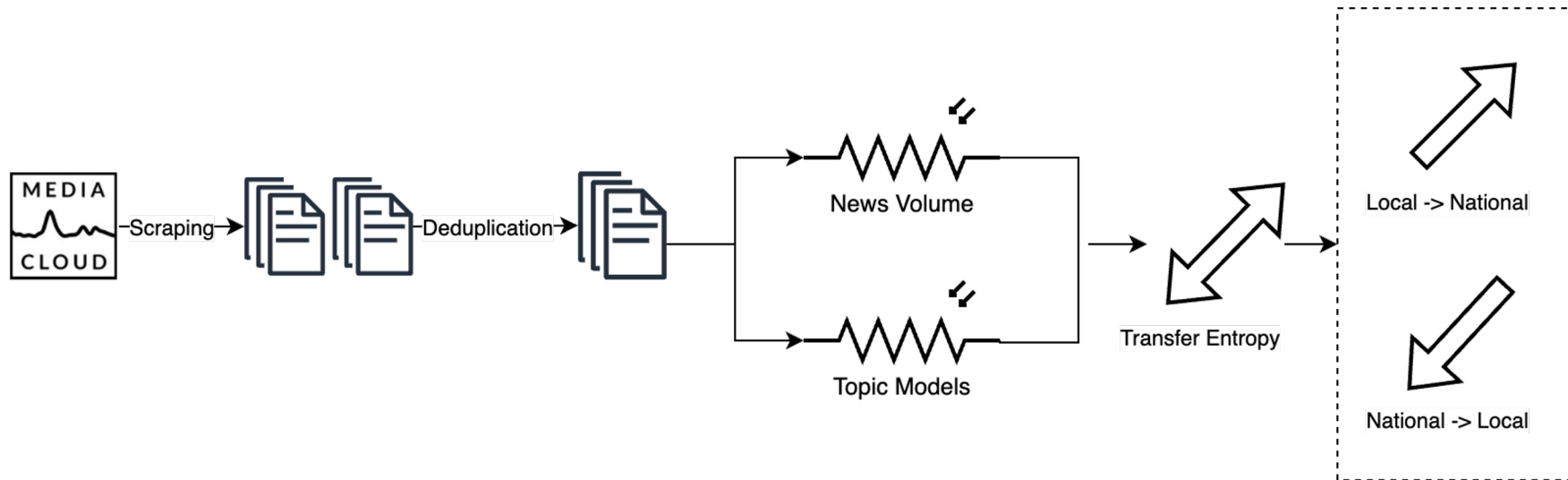
(Vargo and Guo 2017)





# How We Measure What's Going On: Data & Methods

# Data Processing



# Dataset

Level	Collection	# of Articles	# of Unique Outlets
National	<i>New York Times</i>	98	1
	<i>Fox News</i>	1,120	1
State (Dem)	New York	2,125	109
	California	3,171	266
	Illinois	547	61
State (Rep)	Florida	1,090	65
	Texas	1,534	85
	Ohio	525	41

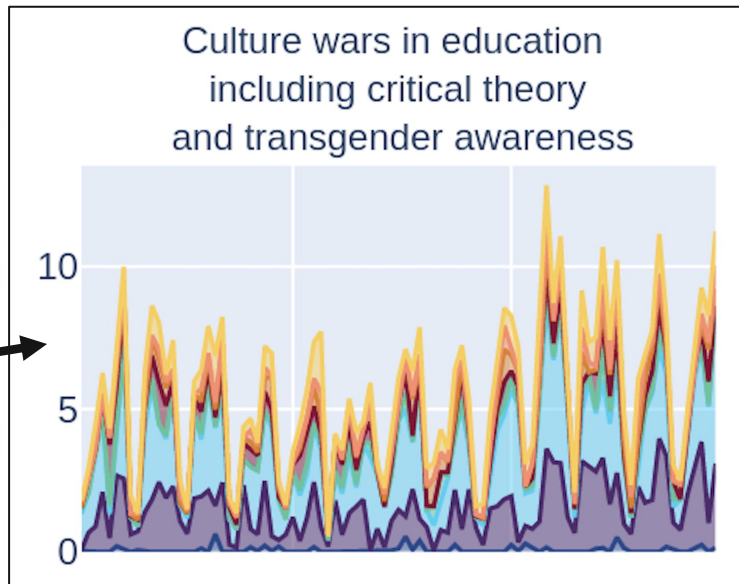
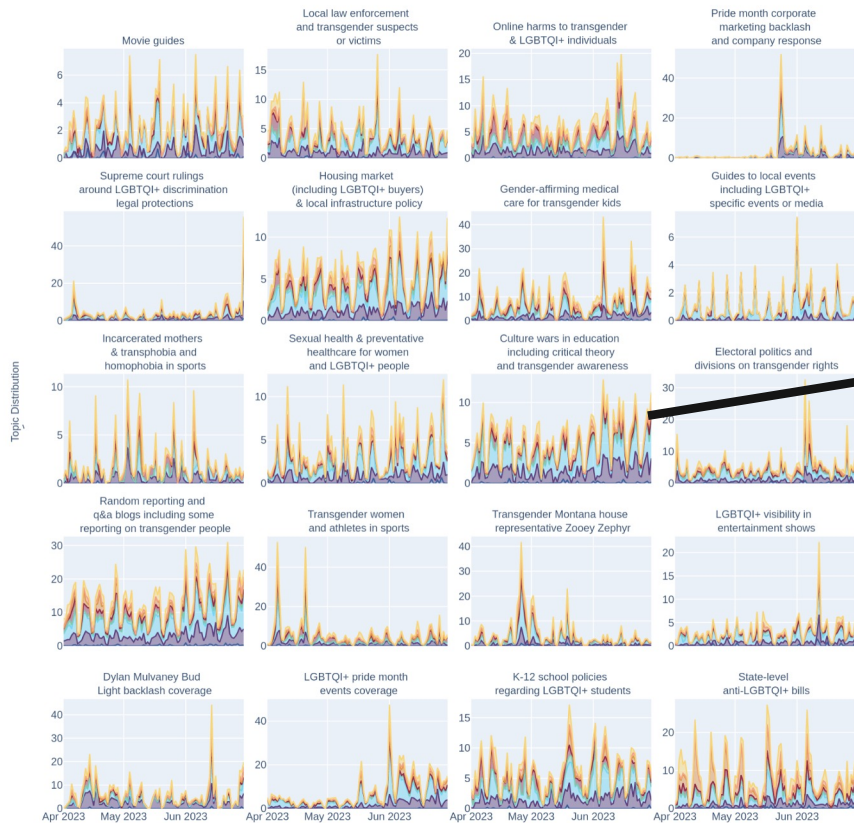
# Methods: Topic Identification



We use topic distributions to generate time series representing the threads of discourse in our dataset.

1. 20-topic MALLET (McCallum, 2002) LDA topic model (trained on article content including headlines)
2. Label each topic using representative words & articles

# Methods: Topic Identification



# Methods: Transfer Entropy

*At a high level:* A measure of how much one thing causes another.



*Zoomed in more:* The amount of information gained by learning the past states of a coupled process,  $Y$ , given that we know the present and past states of a stochastic process,  $X$ .

# Methods: Transfer Entropy

*At a high level:* A measure of how much one thing causes another.



*Zoomed in more:* The amount of information gained by learning the past states of a coupled process,  $Y$ , given that we know the present and past states of a stochastic process,  $X$ .

# Methods: Transfer Entropy

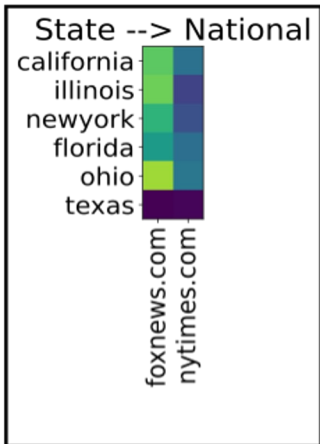
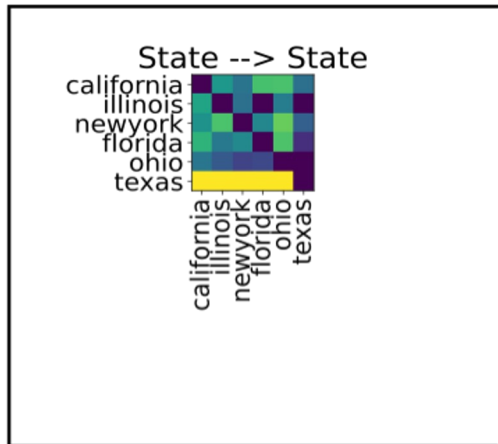
1. One of the best measures we have to proxy “**causality**” or, at the very least, how much one thing “influences” another thing
2. It is *directional* and it is *temporal*
3. If there are any more coarse-grained patterns, the process of calculating it tells us a lot about those for free when we zoom out





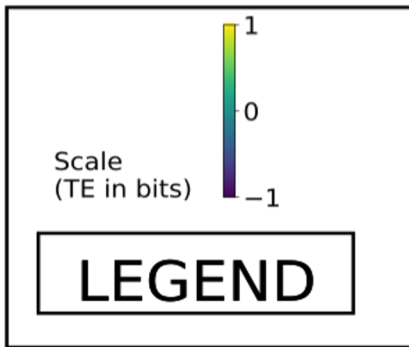
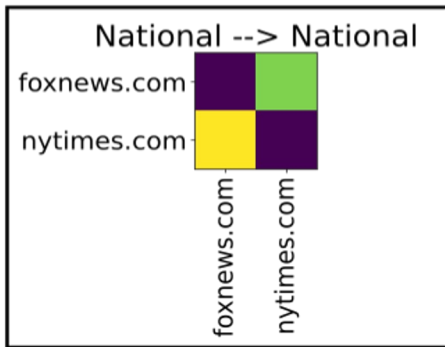
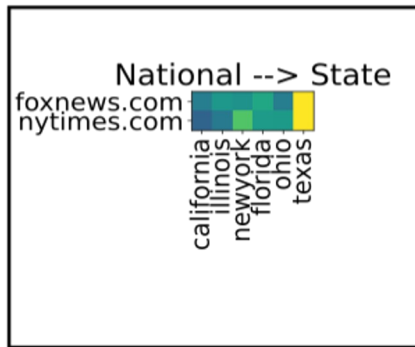
## What *is* Going On: Results

# How Does Information Flow?

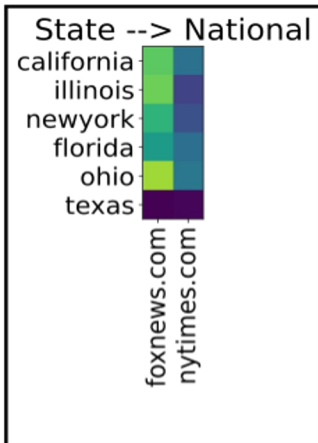
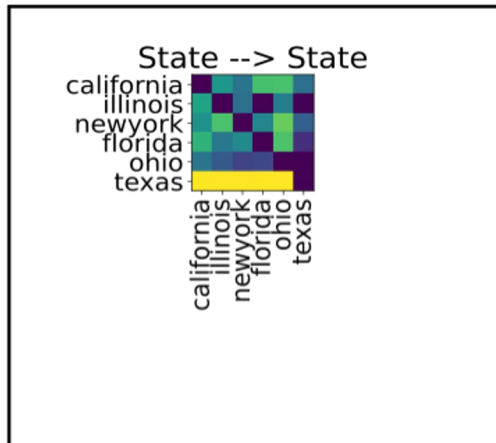


Flow Pattern:  
Two-Step Flow  
Mediated by TX

**Topic 1:**  
“Local law enforcement  
and transgender  
suspects or victims”



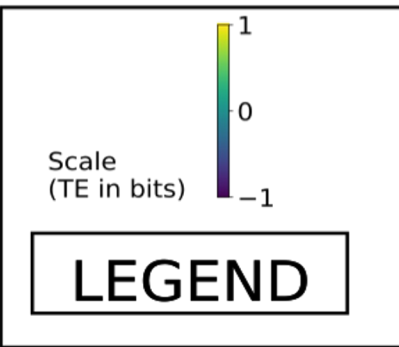
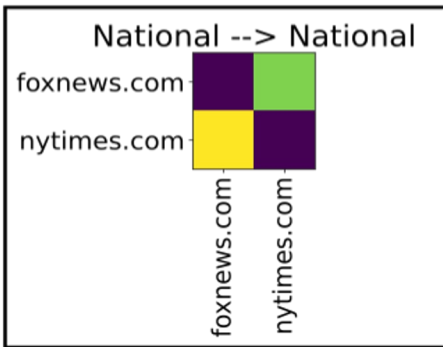
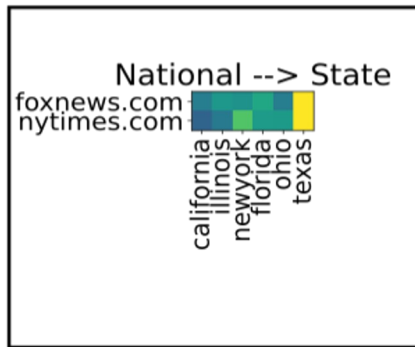
# How Does Information Flow?



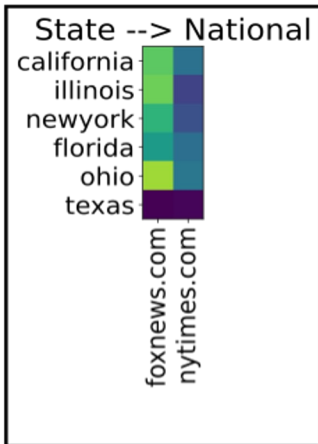
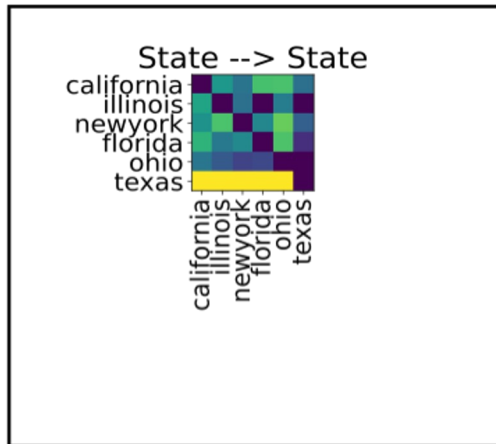
Flow Pattern:  
Two-Step Flow  
Mediated by TX

**Topic 1:**  
“Local law enforcement  
and transgender  
suspects or victims”

Mediation of national  
→ local information  
flow by a single state



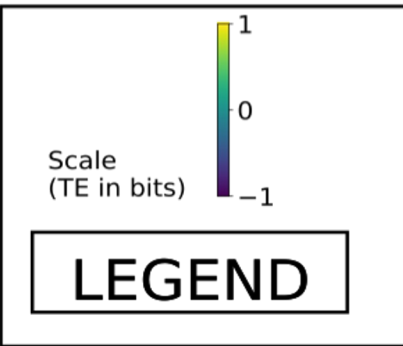
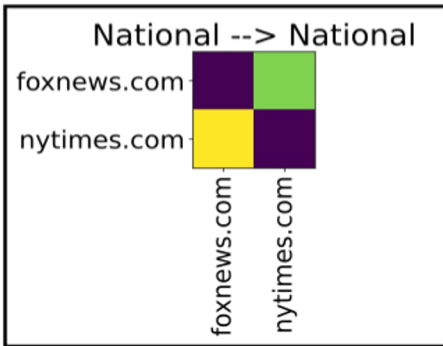
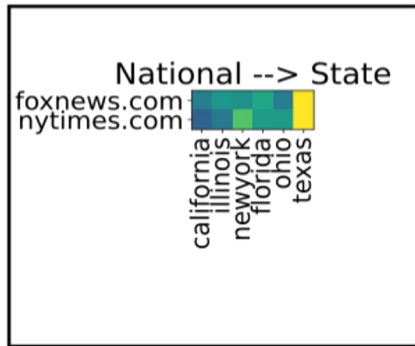
# How Does Information Flow?



Flow Pattern:  
Two-Step Flow  
Mediated by TX

**Topic 1:**  
“Local law enforcement  
and transgender  
suspects or victims”

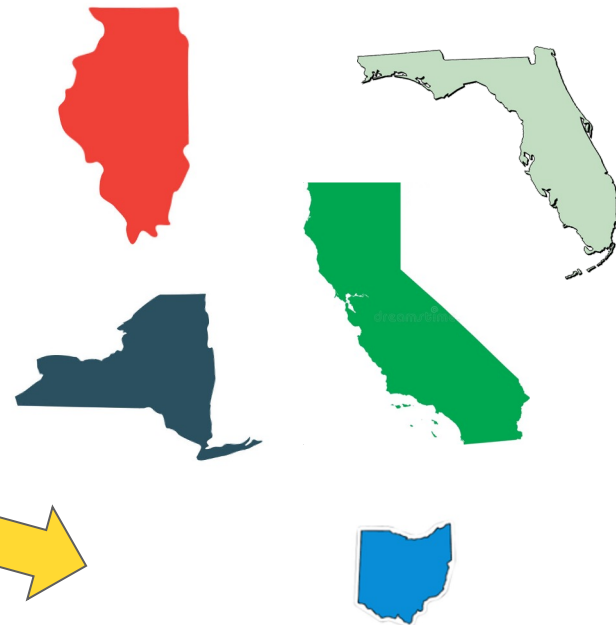
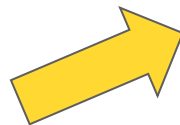
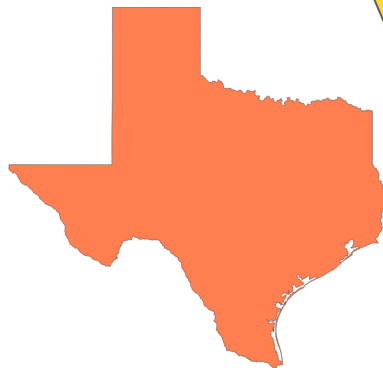
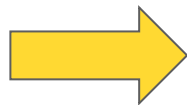
Mediation of national  
→ local information  
flow by a single state



Neither broadcast nor  
virality, but somewhere in  
between (S.Goel et al.,  
2015)

# How Does Information Flow?

We see this pattern a lot:



**National Outlets**

**An Intermediary State**

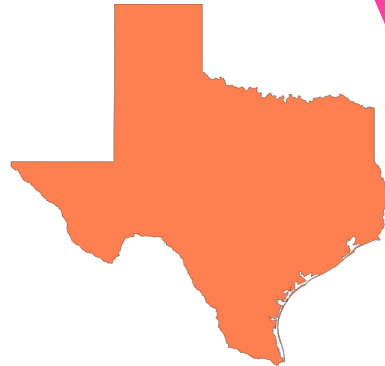
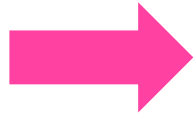
**Other States**

# How Does Information Flow?

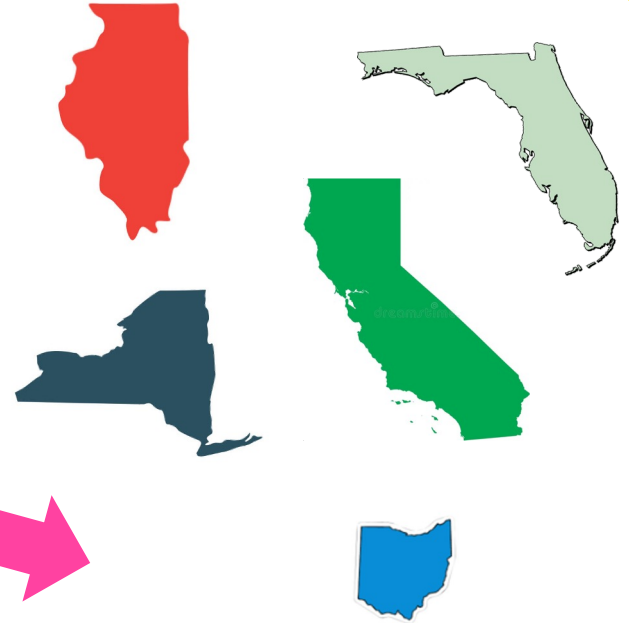
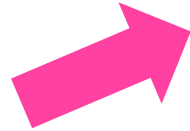
But what exactly is flowing here??



**National Outlets**

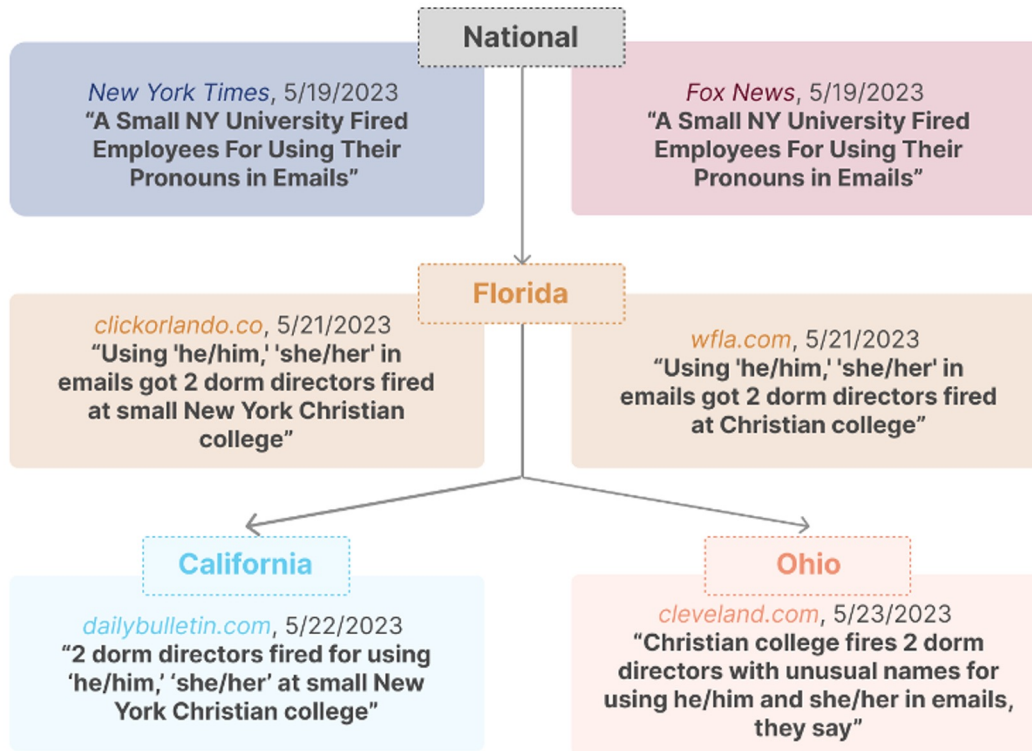


**An Intermediary State**



**Other States**

# Two-Step Flow: K-12 school policies regarding LGBTQI+ students

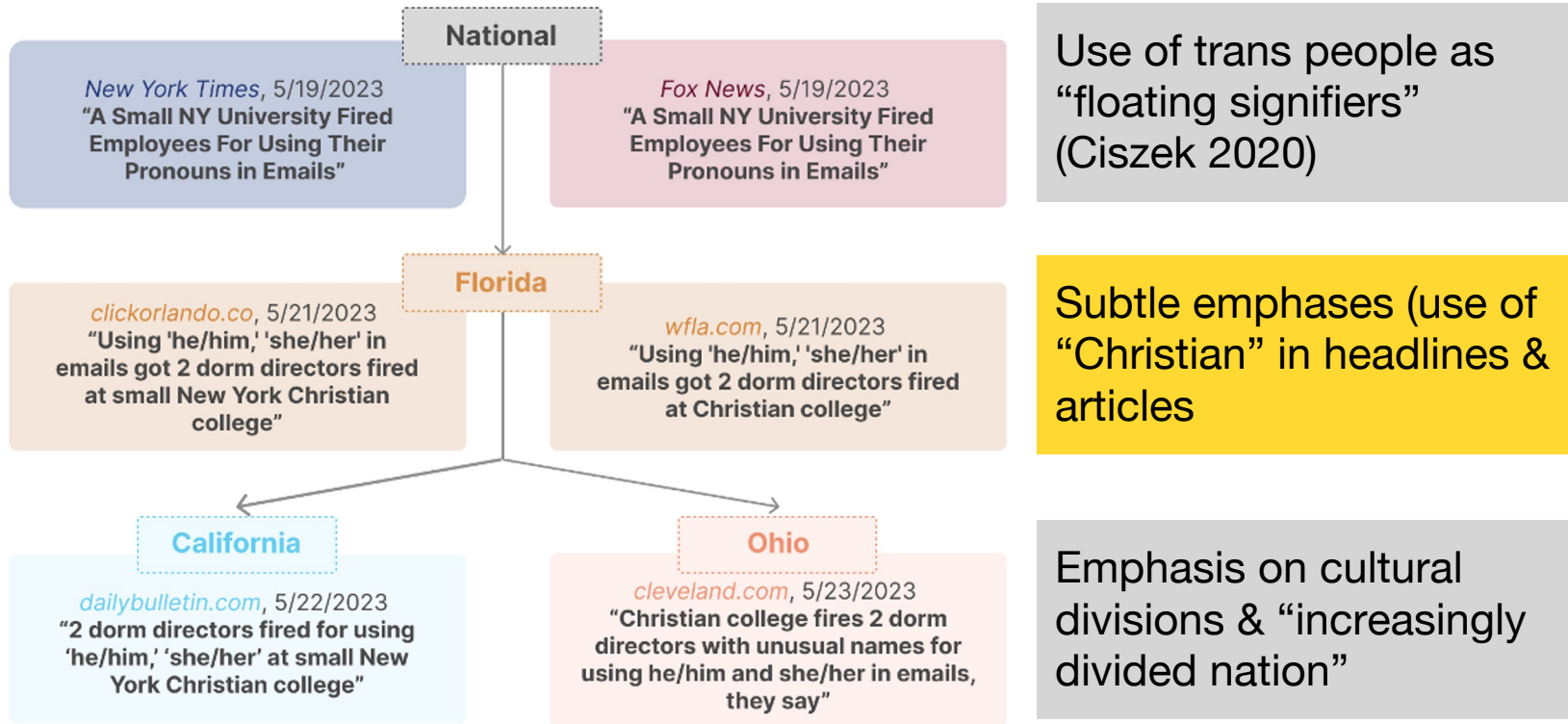


Use of trans people as "floating signifiers" (Ciszek 2020)

Subtle emphases (use of "Christian" in headlines & articles)

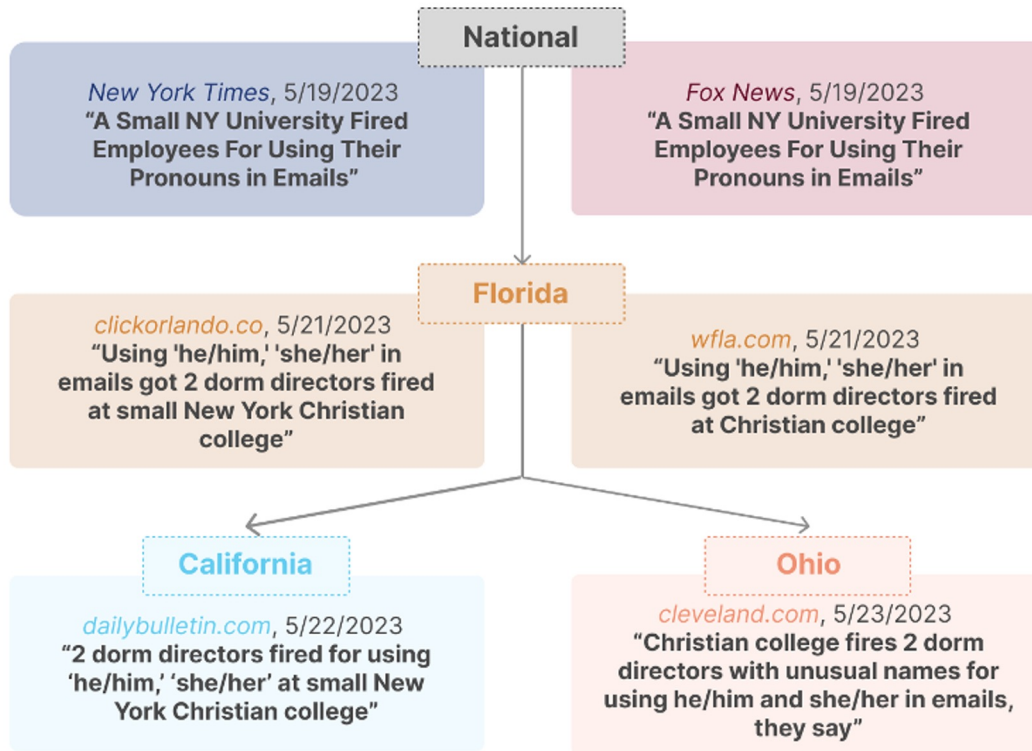
Emphasis on cultural divisions & "increasingly divided nation"

# Two-Step Flow: K-12 school policies regarding LGBTQI+ students





# Two-Step Flow: K-12 school policies regarding LGBTQI+ students

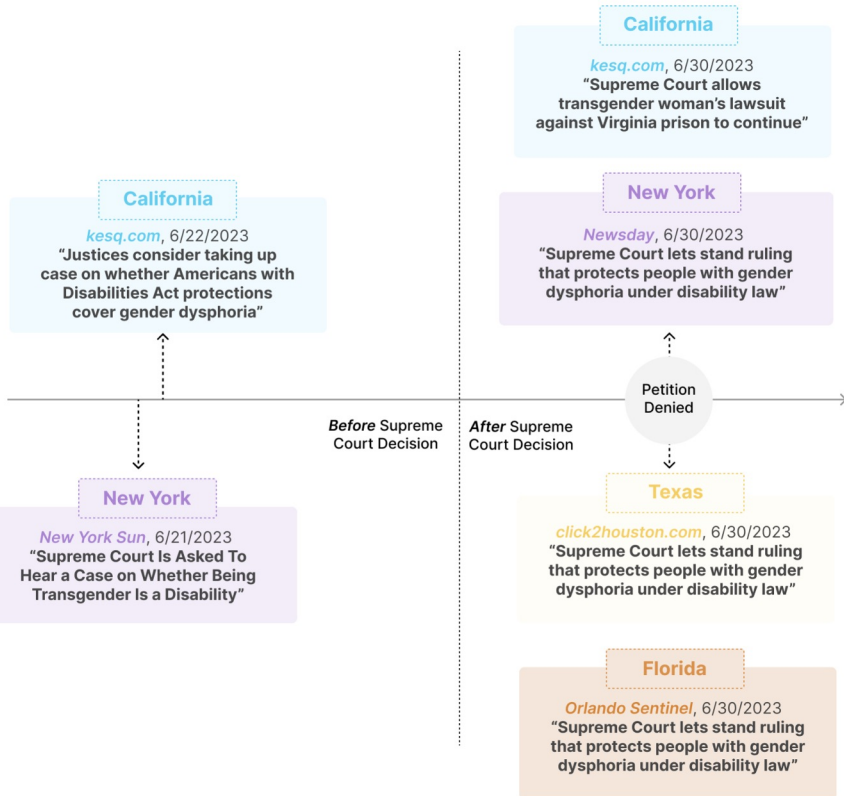


Use of trans people as "floating signifiers" (Ciszek 2020)

Subtle emphases (use of "Christian" in headlines & articles)

Emphasis on cultural divisions & "increasingly divided nation"

# Partisan Block Flow: Supreme Court rulings around LGBTQI+ discrimination legal protections

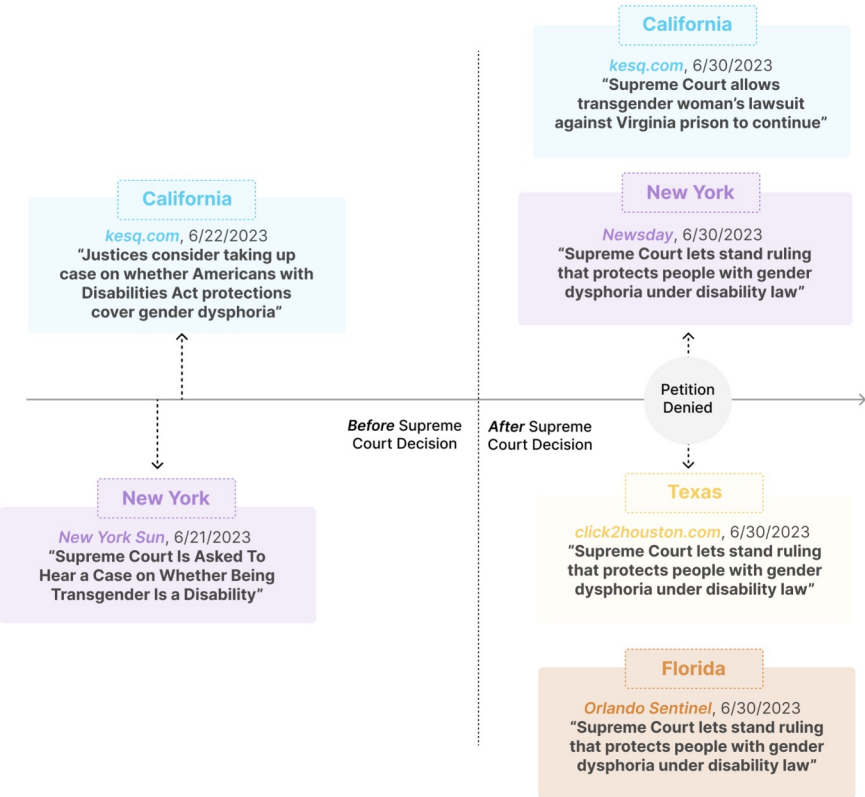


Coverage tends to foreground the upcoming election and conservative dissents

Framing is episodic - the harms Kesha Williams experienced are not contextualized

Carceral violence against trans people is not discussed as a systemic problem

# Partisan Block Flow: Supreme Court rulings around LGBTQI+ discrimination legal protections

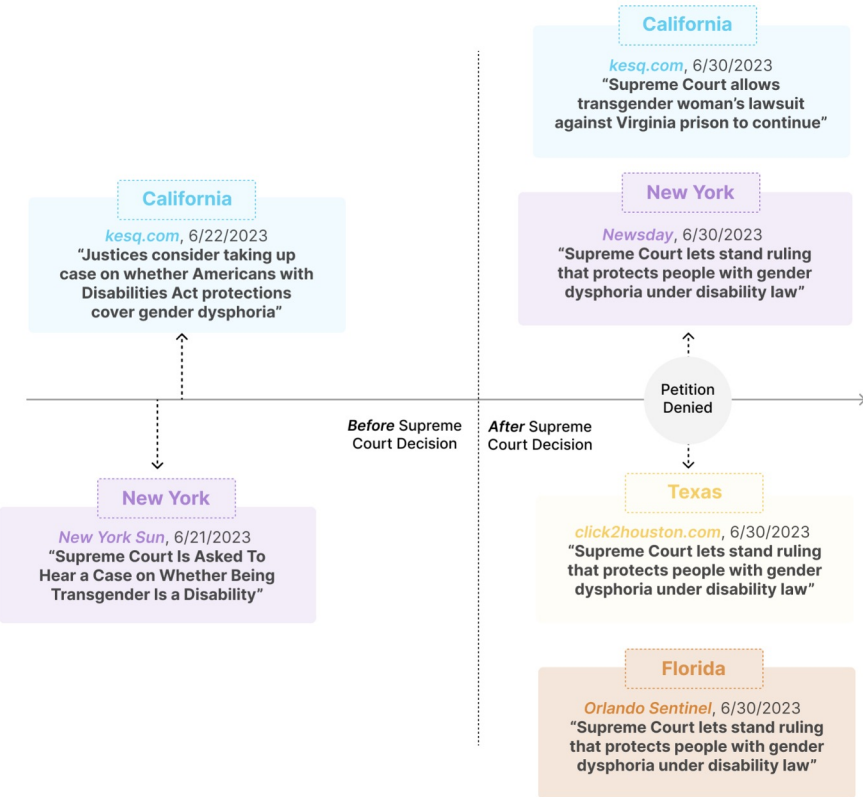


Coverage tends to foreground the upcoming election and conservative dissents

Framing is episodic - the harms Kesha Williams experienced are not contextualized

Carceral violence against trans people is not discussed as a systemic problem

# Partisan Block Flow: Supreme Court rulings around LGBTQI+ discrimination legal protections



Coverage tends to foreground the upcoming election and conservative dissents

Framing is episodic - the harms Kesha Williams experienced are not contextualized

Carceral violence against trans people is not discussed as a systemic problem



## **What's Next? Discussion & Future Work**

# Intervening in the News Ecosystem



- **Intervention 1:** An evidence-based style guide for reporting on trans issues
  - Raise awareness of the effects subtle emphases have
  - Encourage discussion of the broader context

# Intervening in the News Ecosystem

- **Intervention 1:** An evidence-based style guide for reporting on trans issues
  - Raise awareness of the effects subtle emphases have
  - Encourage discussion of the broader context
- **Intervention 2:** National trans news syndicate centering reporting by trans reporters
  - Make it easier for local outlets to initiate and sustain coverage of relevant events
  - Leverage potential for transformative discussions

# Future Work



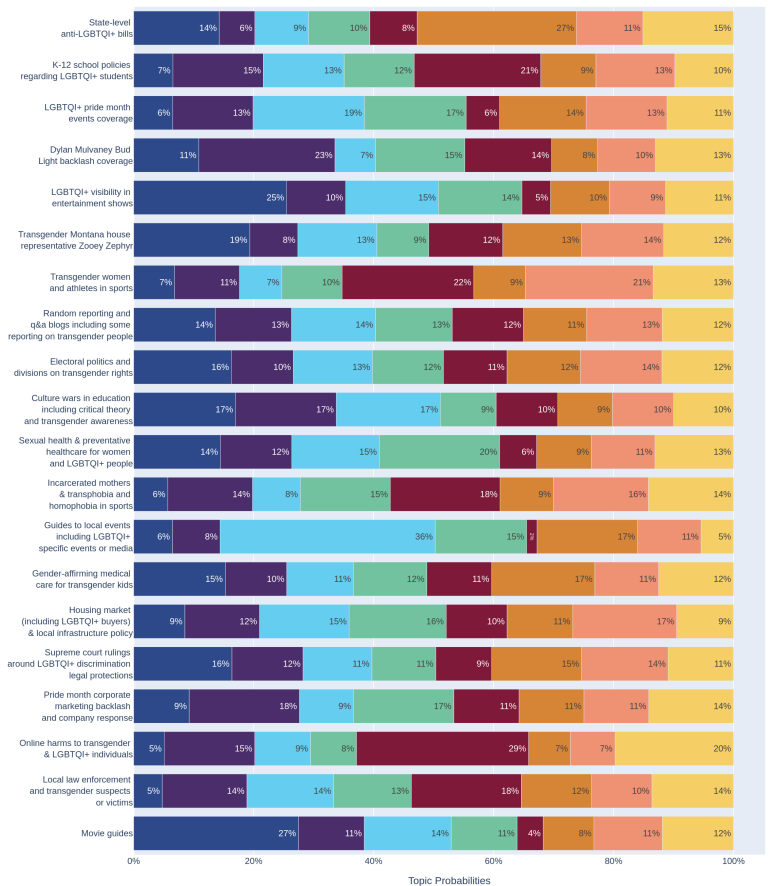
- Contrast agenda-setting dynamics in transgender news with results for other topics
- Produce a high-quality annotated dataset with a human-generated taxonomy of labels (see DELUGE by Bragg et al., 2013) **(this is in progress!)**
- Explore interactions between online news and social media pertaining to transgender issues



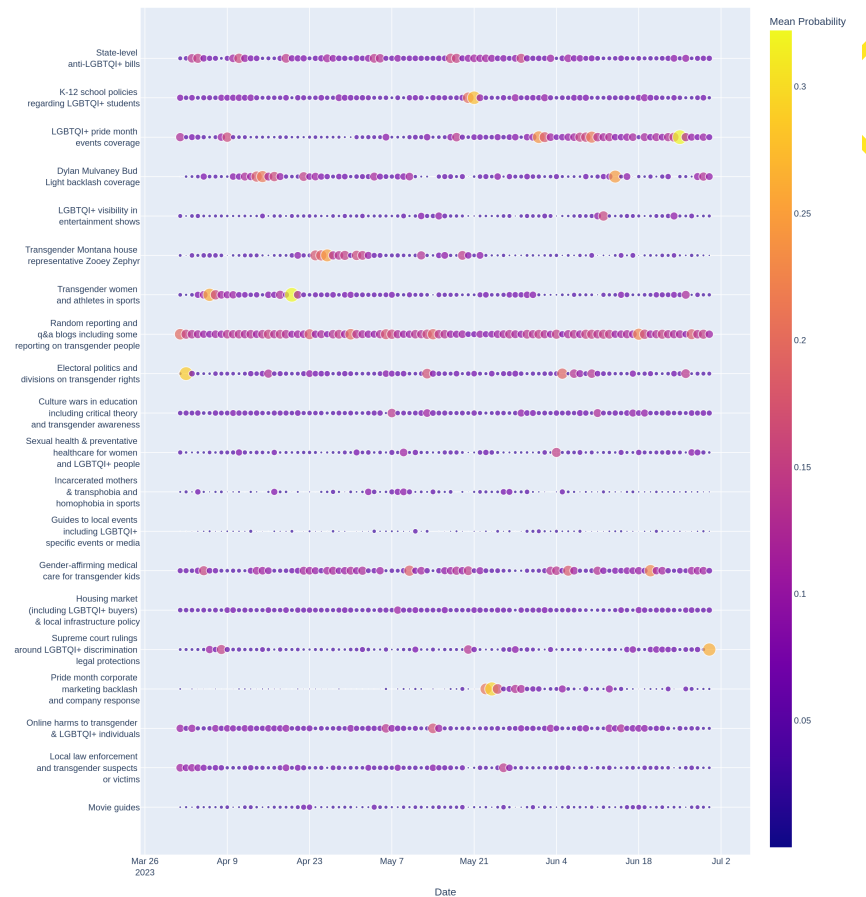


**Thank you!**

topic\_label



topic



## Works Cited:

- Billard, Thomas J. 2023. "'Gender-Critical' Discourse as Disinformation: Unpacking TERF Strategies of Political Communication." *Women's Studies in Communication* 46 (2): 235–43. <https://doi.org/10.1080/07491409.2023.2193545>.
- . 2024. "The Politics of Transgender Health Misinformation." *Political Communication* 41 (2): 344–52. <https://doi.org/10.1080/10584609.2024.2303148>.
- Borge-Holthoefer, Javier, Nicola Perra, Bruno Gonçalves, Sandra González-Bailón, Alex Arenas, Yamir Moreno, and Alessandro Vespignani. 2016. "The Dynamics of Information-Driven Coordination Phenomena: A Transfer Entropy Analysis." *Science Advances* 2 (4): e1501158. <https://doi.org/10.1126/sciadv.1501158>.
- Buzzelli, Nicholas R., and Nathan A. Towery. 2021. "Interscholastic Inclusion: Local and National News Framing of High School Transgender Athletes." *Newspaper Research Journal* 42 (4): 469–86. <https://doi.org/10.1177/07395329211048210>.
- Ciszek, Erica. 2020. "Articulating Transgender Subjectivity: How Discursive Formations Perpetuate Regimes of Power."
- Guo, Lei, and Chris Vargo. 2020. "'Fake News' and Emerging Online Media Ecosystem: An Integrated Intermedia Agenda-Setting Analysis of the 2016 U.S. Presidential Election." *Communication Research* 47 (2): 178–200. <https://doi.org/10.1177/0093650218777177>.
- McCallum, Andrew Kachites. 2002. "Mallet: MACHine Learning for Language Toolkit." Mallet. 2002. <https://mimno.github.io/Mallet/>.
- Michelson, Melissa R., and Brian F. Harrison. 2020. *Transforming Prejudice: Identity, Fear, and Transgender Rights*. Oxford University Press.
- Olveira-Araujo, Rubén. 2023. "Who Drives News Coverage of Trans Issues? Intermedia Agenda Setting Dynamics in Spanish Digital Press." *Journalism*, December, 14648849231222701. <https://doi.org/10.1177/14648849231222701>.
- Simon, Adam, and Michael Xenos. 2000. "Media Framing and Effective Public Deliberation." *Political Communication* 17 (4): 363–76. <https://doi.org/10.1080/10584600050178979>.
- Tsfati, Yariv, H. G. Boomgaarden, J. Strömbäck, R. Vliegenthart, A. Damstra, and E. Lindgren. 2020. "Causes and Consequences of Mainstream Media Dissemination of Fake News: Literature Review and Synthesis." *Annals of the International Communication Association* 44 (2): 157–73. <https://doi.org/10.1080/23808985.2020.1759443>.
- Vargo, Chris J, Lei Guo, and Michelle A Amazeen. 2018. "The Agenda-Setting Power of Fake News: A Big Data Analysis of the Online Media Landscape from 2014 to 2016." *New Media & Society* 20 (5): 2028–49. <https://doi.org/10.1177/1461444817712086>.
- Widmer, Philine, Sergio Galletta, and Elliott Ash. 2023. "Media Slant Is Contagious." SSRN Scholarly Paper. Rochester, NY. <https://doi.org/10.2139/ssrn.3712218>.

Topic	Top Words	Proposed Label
0	film, new, book, series, documentary, world, story, life, movie, theaters	Movie guides
1	said, police, shooting, brown, school, year, transgender, nashville, three, security	Local law enforcement and transgender suspects or victims
2	twitter, news, fox, media, said, transgender, social, speech, video, musk	Online harms to transgender & LGBTQI+ individuals
3	target, pride, lgbtq, said, company, month, stores, backlash, companies, year	Pride month corporate marketing backlash and company response
4	court, law, rights, case, supreme, judge, said, lawsuit, federal, legal	Supreme court rulings around LGBTQI+ discrimination legal protections
5	new, state, city, million, year, public, california, york, program, housing	Housing market (including LGBTQI+ buyers) & local infrastructure policy
6	gender, care, transgender, affirming, medical, children, health, said, state, minors	Gender-affirming medical care for transgender kids
7	www, https, org, com, june, art, center, may, music, free	Guides to local events including LGBTQI+ specific events or media
8	said, women, year, old, time, race, new, world, university, team	Incarcerated mothers & transphobia and homophobia in sports
9	health, people, hate, said, percent, mental, anti, crimes, women, report	Sexual health & preventative healthcare for women and LGBTQI+ people

10	people, right, anti, american, new, political, black, rights, one, left	Culture wars in education including critical theory and transgender awareness
11	trump, president, biden, desantis, said, republican, former, campaign, house, republicans	Electoral politics and divisions on transgender rights
12	people, like, said, one, know, think, trans, going, time, want	Random reporting and q&a blogs including some reporting on transgender people
13	women, transgender, sports, athletes, trans, said, girls, would, female, gender	Transgender women and athletes in sports
14	abortion, said, house, state, zephyr, bill, montana, lawmakers, republicans, republican	Transgender Montana house representative Zoey Zephyr
15	drag, show, also, music, year, first, new, one, LGBTQI+, best	LGBTQI+ visibility in entertainment shows
16	light, bud, mulvaney, beer, busch, anheuser, said, company, sales, dylan	Dylan Mulvaney Bud Light backlash coverage
17	lgbtq, pride, community, said, people, gay, city, transgender, rights, mont	LGBTQI+ pride month events coverage
18	school, students, said, parents, board, schools, student, district, gender, education	K-12 school policies regarding LGBTQI+ students
19	bill, state, florida, law, texas, lgbtq, would, desantis, said, bills	State-level anti-LGBTQI+ bills