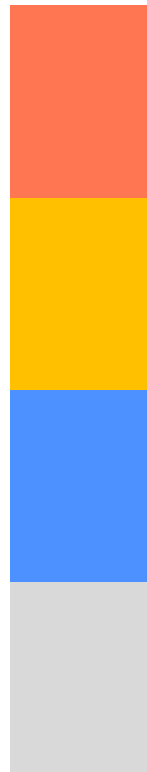# From Articles to Posts: Sentiment and News Frame Changes in the Transition to Instagram

Social Research and Public Policy Capstone Project
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Advisor: Professor Minsu Park
Convener: Professor Stephane Helleringer

BACKGROUND

Social media as a news source, especially for young adults

- ❖ **42%** adults 18-29 (US)   read news on social media
  63% adults 16-24 (UK)

- ❖ TikTok, Instagram news readers ↑

Platform-parting: Republishing a news story across multiple platforms to maximize audience reach

- ❖ News is adapted to fit the requirements of social media
- ❖ Popularity ranking & Content moderation

Shearer, E. (2021, January). More than eight-in-ten Americans get news from digital devices.
Ofcom. (2023, July). News consumption in the UK: 2023. Author. Retrieved 2024- 04-17, from https://www.ofcom.org.uk/__data/assets/pdf_file/0024/264651/news-consumption-2023.pdf
Hanusch, F. (2017). Web analytics and the functional differentiation of journalism cultures: individual, organizational and platform-specific influences on newswork. Information, Communication and Society, 20 (10), 1571–1586

PLATFORM-PARTING OF NEWS

Previous literature

- ❖ Preference for emotional, surprising news stories on social media
- ❖ Facebook: ~½ headlines are rewritten, more question words
- ❖ Facebook, Instagram: ½ of body texts are modified
- ❖ Instagram: posts with personal stories have higher engagement

Extension

- ❖ Large dataset on news organizations with global reach
- ❖ Headline & Content modifications
- ❖ Semantic meaning + Content analysis

Hase, V., Boczek, K., & Scharkow, M. (2023, September). Adapting to Affordances and Audiences? A Cross-Platform, Multi-Modal Analysis of the Platformization of News on Facebook, Instagram, TikTok, and Twitter. *Digital Journalism*, 11 (8), 1499–1520.

Lischka, J. A. (2021, February). Logics in social media news making: How social media editors marry the Facebook logic with journalistic standards. *Journalism*, 22 (2), 430–447

Lamot, K., Kreutz, T., & Opgenhaffen, M. (2022, July). "We Rewrote This Title": How News Headlines Are Remediated on Facebook and How This Affects Engagement. *Social Media+ Society*, 8

Park, K., Kwak, H., An, J., & Chawla, S. (2021, April). How-to Present News on Social Media: A Causal Analysis of Editing News Headlines for Boosting User Engagement.

RESEARCH QUESTIONS

RQ 1.
How do **headlines** of news article change when an online news article is modified into an Instagram post?

RQ 2.
How does the **content** of news articles change when an online news article is modified into an Instagram post?

DATA COLLECTION

6 News Organizations

- Political leaning
- In English
- Publish different topics
- Have an official Instagram account
- Allow access to articles

In order of **highest Instagram followers**

Left:

Center:

Right:

type	url	time	headline	content	first_image_file
article	https://www.nbcnews.com/news/what-rizz-means-o...	2023-12-04T17:33:32.036Z	Oxford's got 'Rizz': Slang named Oxford Univer...	On Monday, Oxford sent the world a message: It...	NaN
post	NaN	2023-12-04 19:01:07	The Oxford University Press word of 2023 is: Rizz	'Rizz' was crowned 2023's "word of the year" b...	2023-12-04_19-01-07_UTC.jpg

19,134 article & post pairs

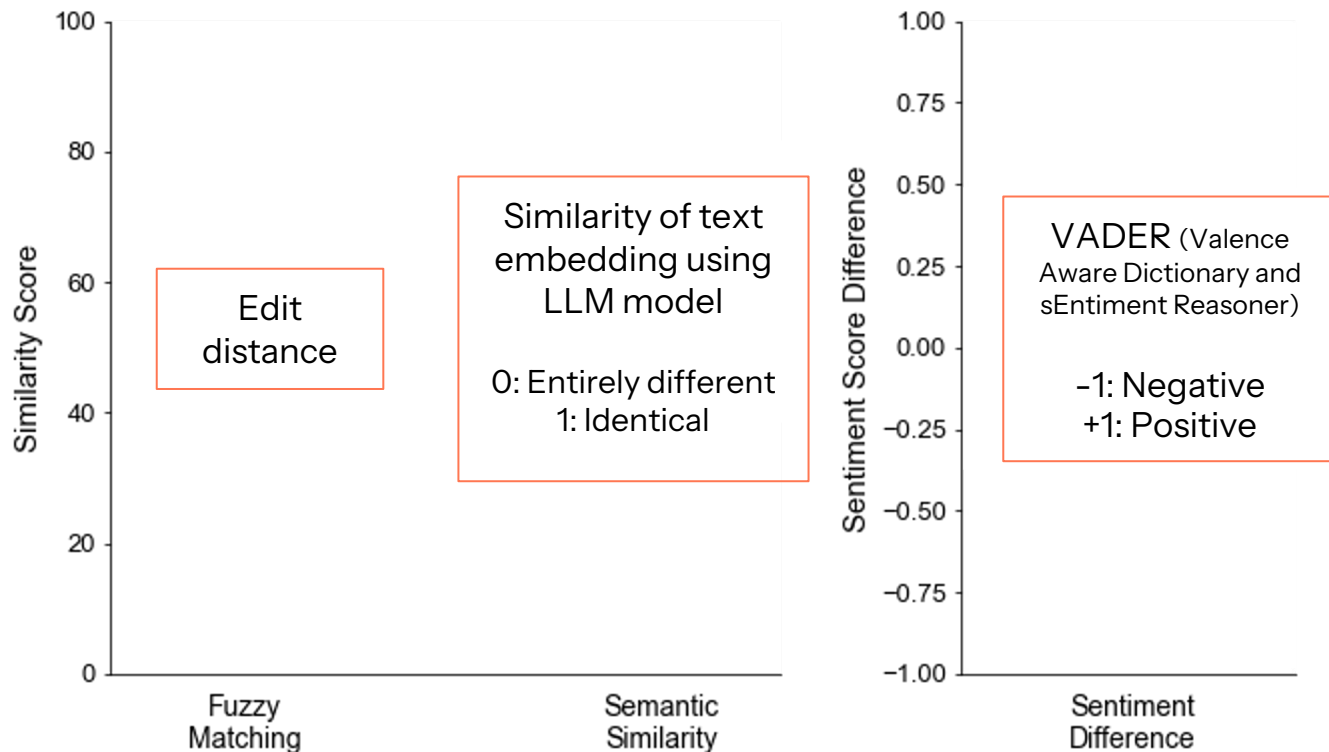| Political leaning	Left		Center		Right	
News outlet	**NBC News**	**New York Times**	**BBC News**	**Reuters**	**Washington Times**	**Fox News**
Number of article & post pairs	4219	4312	4647	462	1787	3707
Earliest date	July 17, 2020	Mar 24, 2020	July 17, 2021	Jan 2, 2023	Jan 18, 2023	July 27, 2021
Latest date	Dec 5, 2023	Dec 31, 2023	Nov 13, 2023	Oct 31, 2023	Dec 5, 2023	Nov 13, 2023

01

HEADLINE MODIFICATION

RQ 1.
How do **headlines** of news article change when an online news article is modified into an Instagram post?
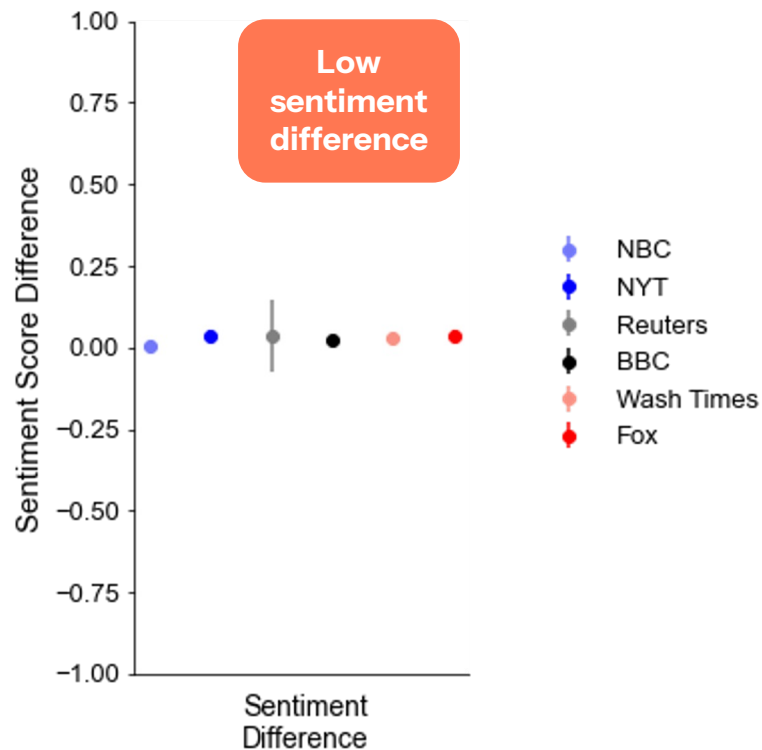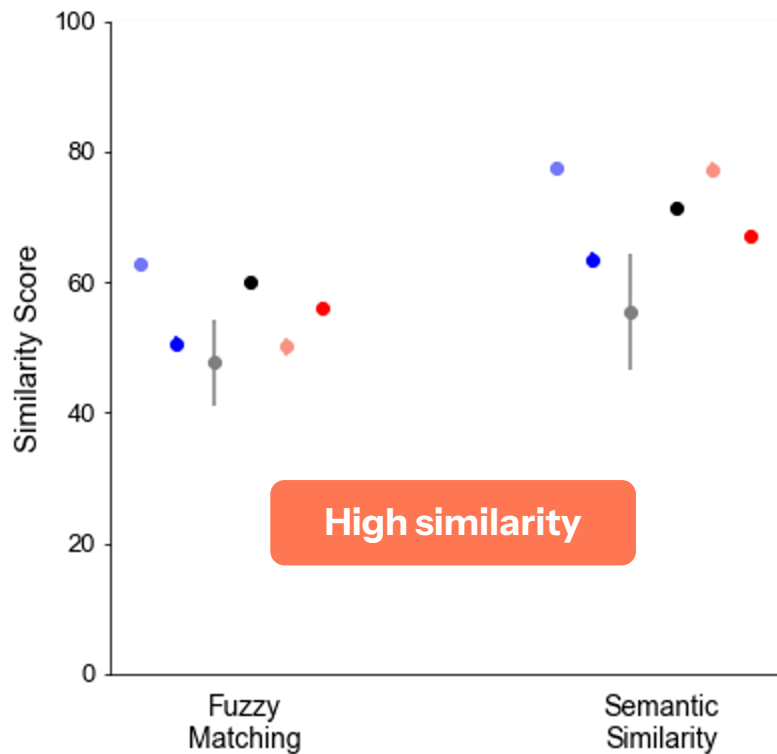
Presence of headlines

- No consistent pattern across all 6 organizations

- Patterns by political leaning
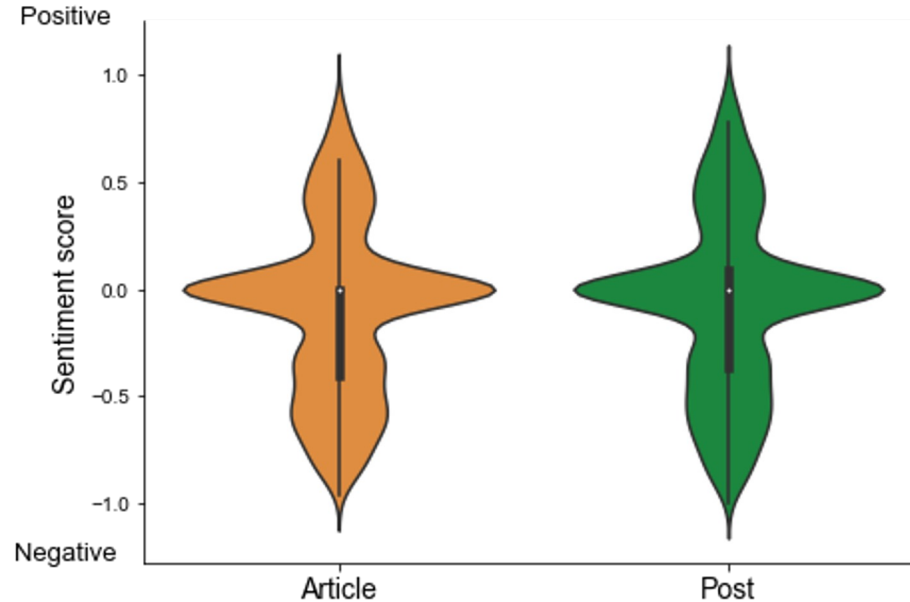 - Most posts by right-wing organizations have headlines

No drastic changes in headlines

Edit distance

Similarity of text embedding using LLM model

0: Entirely different
1: Identical

VADER (Valence Aware Dictionary and sEntiment Reasoner)

-1: Negative
+1: Positive

No drastic changes in headlines

Similar sentiment distribution

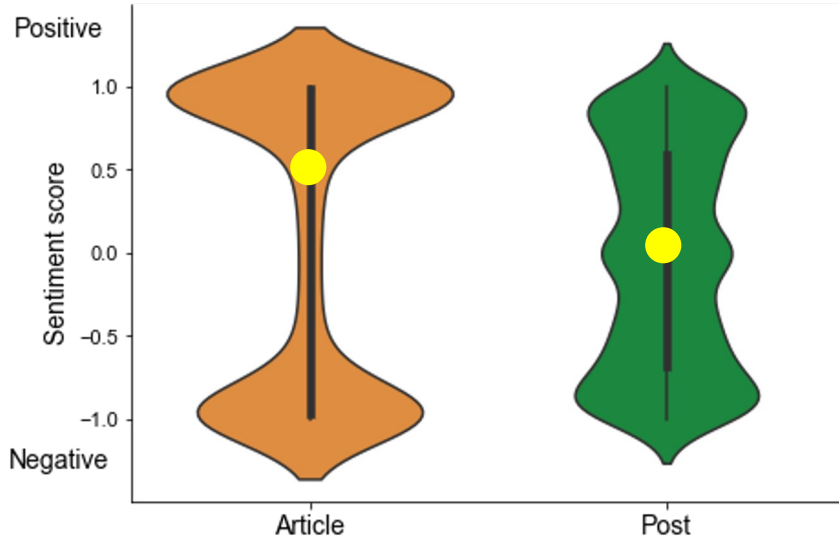* Consistent results when each news organizations were observed separately

02

CONTENT MODIFICATION

How do **content** of news article change when an online news article is modified into an Instagram post?
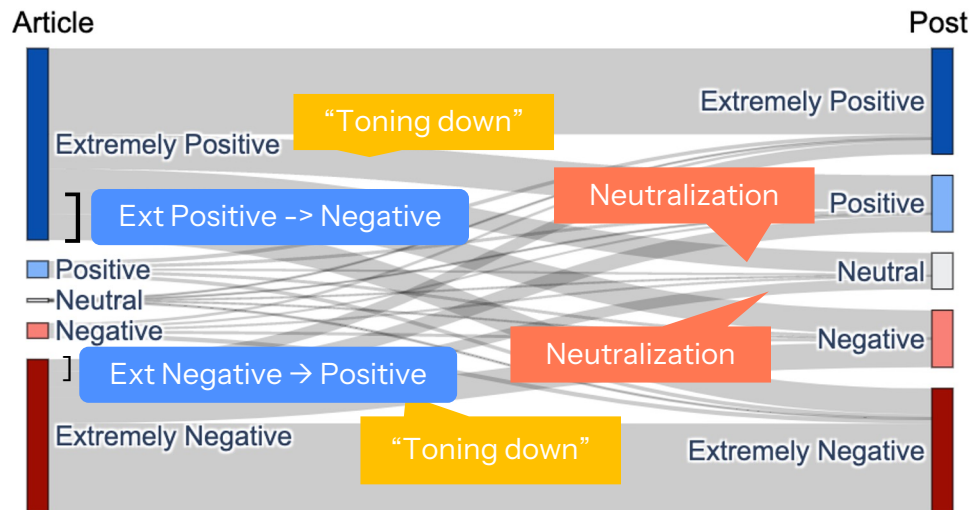
Content sentiment distribution

Mean: 0.10   Mean: –0.03

* Consistent results when each news organizations were observed separately

- Article: Bimodal distribution
  - Very positive OR Very negative

- Posts: Uniform distribution

Sentiment neutralization

Extremely Positive: (0.525. 1]
Positive: (0.05, 0.525]
Neutral: (-0.05, 0.05]
Negative: (-0.525, 0.05]
Extremely Negative: [-1. 0.525]

- "**Toning down**" of sentiment
- "**Neutralization**" of sentiment

- More retention of negative sentiment

Unlike the common perception that social media is polarizing, I find that **social media content has less intense emotions** than news articles.

03

NEWS FRAMING

News Frames : **Aspects of reality** that are the most **salient** in a text

- News articles have **core information + frames** to convey, interpret information

HUMAN INTEREST

"**Human face**" to an issue Emphasize how individuals are affected

RESPONSIBILITY

Attribute **responsibility** of what happened to an individual/group/ government

ECONOMIC CONSEQUENCES

Economic, financial consequences of an event

CONFLICT

Disagreement between individuals, groups, governments

MORALITY

Indirect references to **moral** responsibility, **religious** tenets

Automated Detection of Frames

3-5 *Yes/No* questions to test each frame (total 20 questions)

1. Does the story provide a human example or "human face" on the issue?

2. Does the story refer to winners and losers?

(Semetko & Valkenburg, 2000)
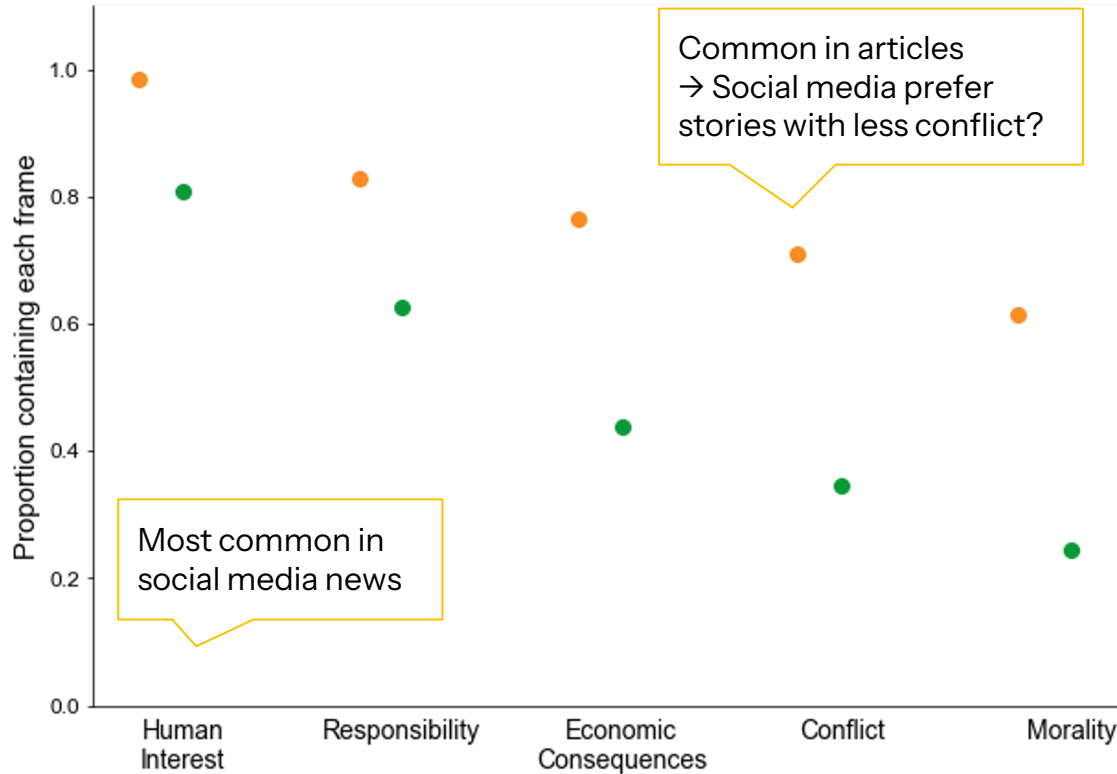
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OpenAI
ChatGPT
gpt-3.5-turbo

Yes/No answers to 20 questions

Human validation of output (Agreement 81.3%)

If there is a *Yes* to at least 1 of the questions for each frame, then the frame is deemed to be present in the text
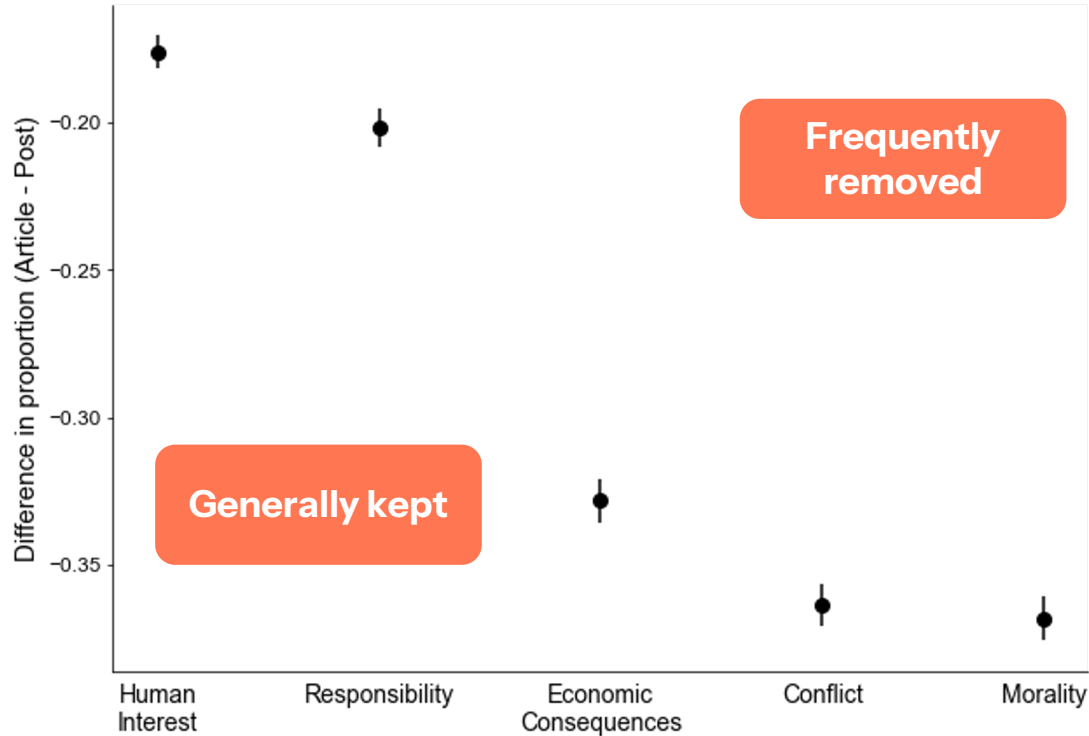
% of Articles & Posts with Each Frame

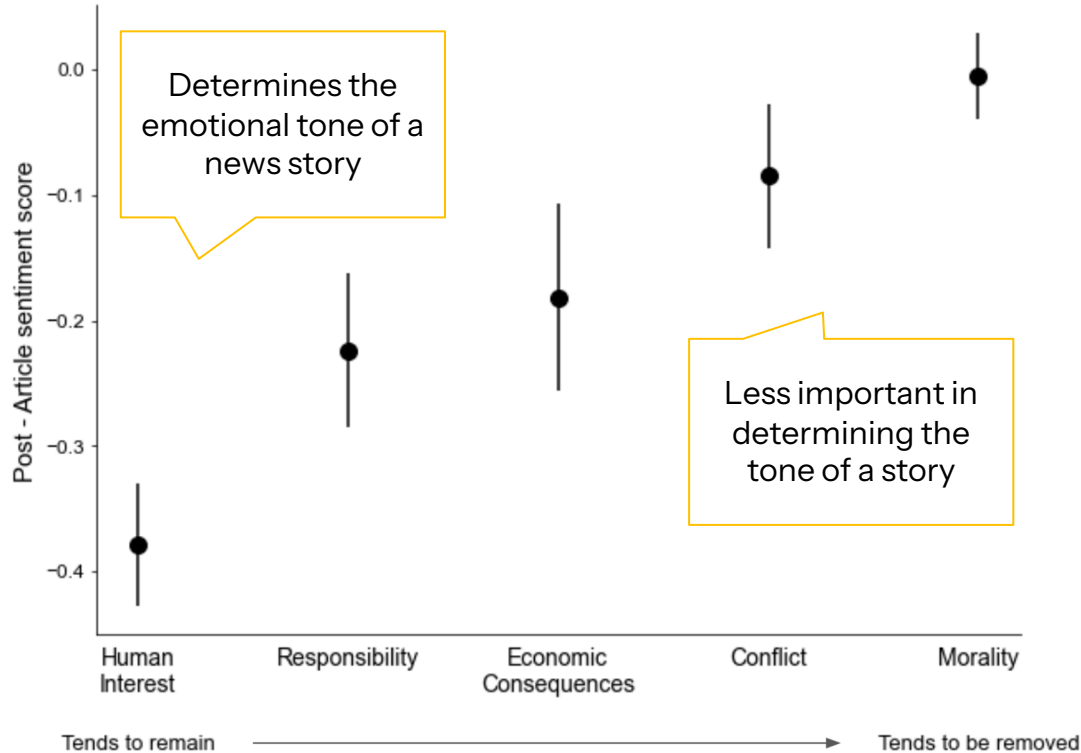Frames disappear when an article is shortened to a post

This shortening is not summarization, but a **selection of information**, at the expense of others

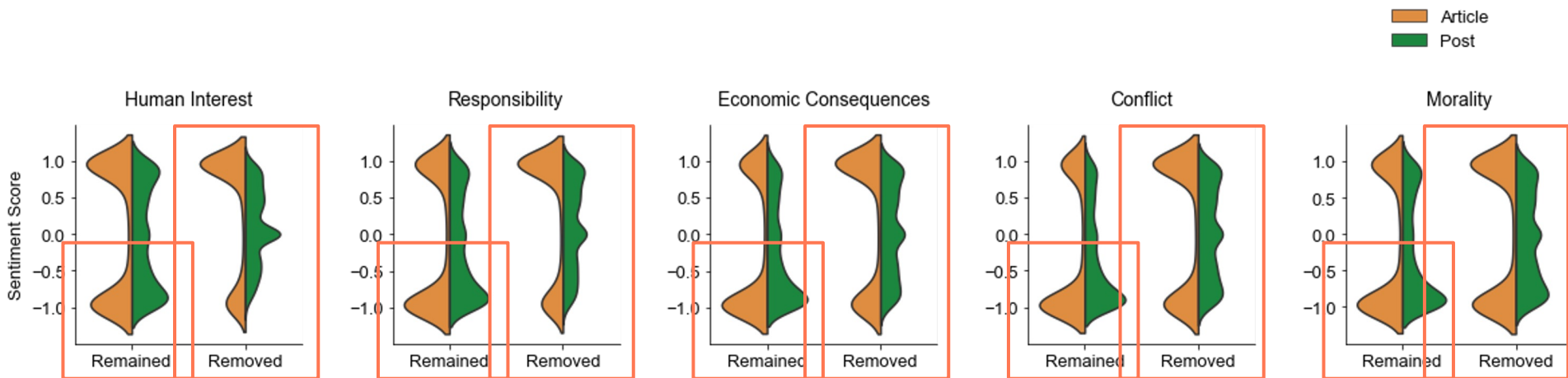* Consistent results when each news organizations were observed separately

Impact of Each Frame on Sentiment Change

# Sentiment changes when each frame is removed

Frame Changes & Sentiment

- Sentiment neutralization happens more strongly **when a frame is removed**

- When frames remain (i.e. what is written does not change), positive sentiments are toned down while **negative sentiments stay**

Sentiment when frames *remain*

- Extremely positive articles become toned down/ neutral

- Extremely negative articles mostly stay extremely negative

Conflict
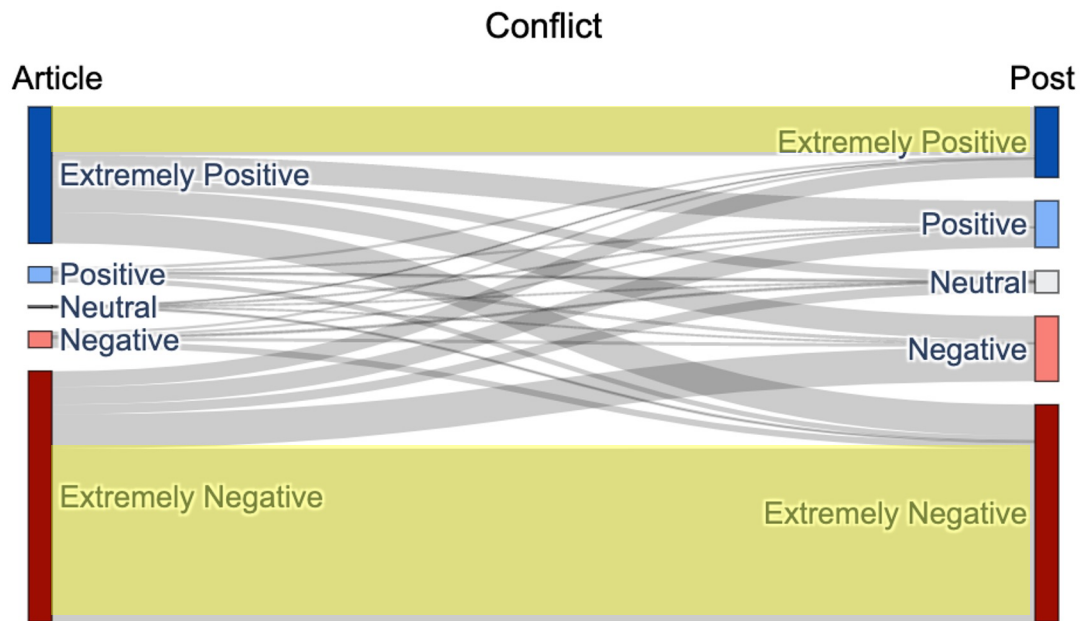
Article — Post

ONLINE NEWS ARTICLE → INSTAGRAM NEWS POST

Headlines	Content
No drastic change in headlines	Sentiment **neutralized, toned down** Addition of negative sentiments **News frames** change Human interest, responsibility frames are kept Conflict, morality frames are removed When frames do not change, positive sentiments are neutralized, while **negative sentiments remain**

Instagram news readers are presented with a different kind of news

❖ Sentiment neutralization
❖ Different set of information in a news story

❖ Further research:
  ➢ What about **reposts, shares** of news posts?
  ➢ Social media **native news content**?
  ➢ **Effect on readers's perception** of news