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Abstract

This study examines the temporal dynamics of emotional appeals in Russian campaign messages used in the 2016 election. Communications on two giant social media platforms, Facebook and Twitter, are analyzed to assess emotion in message content and targeting that may have contributed to influencing people. The current study conducts both computational and qualitative investigations of the Internet Research Agency's (IRA) emotion-based strategies across three different dimensions of message propagation: the platforms themselves, partisan identity as targeted by the source, and social identity in politics, using African American identity as a case. We examine (1) the emotional flows along the campaign timeline, (2) emotion-based strategies of the Russian trolls that masked left- and right-leaning identities, and (3) emotion in messages projecting to or about African American identity and representation. Our findings show sentiment strategies that differ between Facebook and Twitter, with strong evidence of negative emotion targeting Black identity.

Research Questions

Emotion (valence and arousal)
in IRA-created media

- Facebook vs. Twitter?
- Patterns over time?
- Right- vs. Left-leaning target audience?
- Interaction with Black racial identity?
- Patterns over time?

Methods

This study applies a **mixed-method design** with both computational and qualitative analytic approaches

- Computational text sentiment analysis → Emotional content
- Identifying right- and left-leaning trolls (Linville and Warren, 2020)
- Identifying African American by computational text mining and using keyword-based filtering

Sample

- 3,425 Facebook IRA ads
- 2,025,211 Tweets

Results

Sentiment Patterns

Table 1. Descriptive statistics of sentiment scores of the IRA messages on Facebook and Twitter

	N	M	Max	Min
Facebook	3,425	0.55	21.00	-21.00
Twitter	2,025,211	-0.30	32.00	-15.00

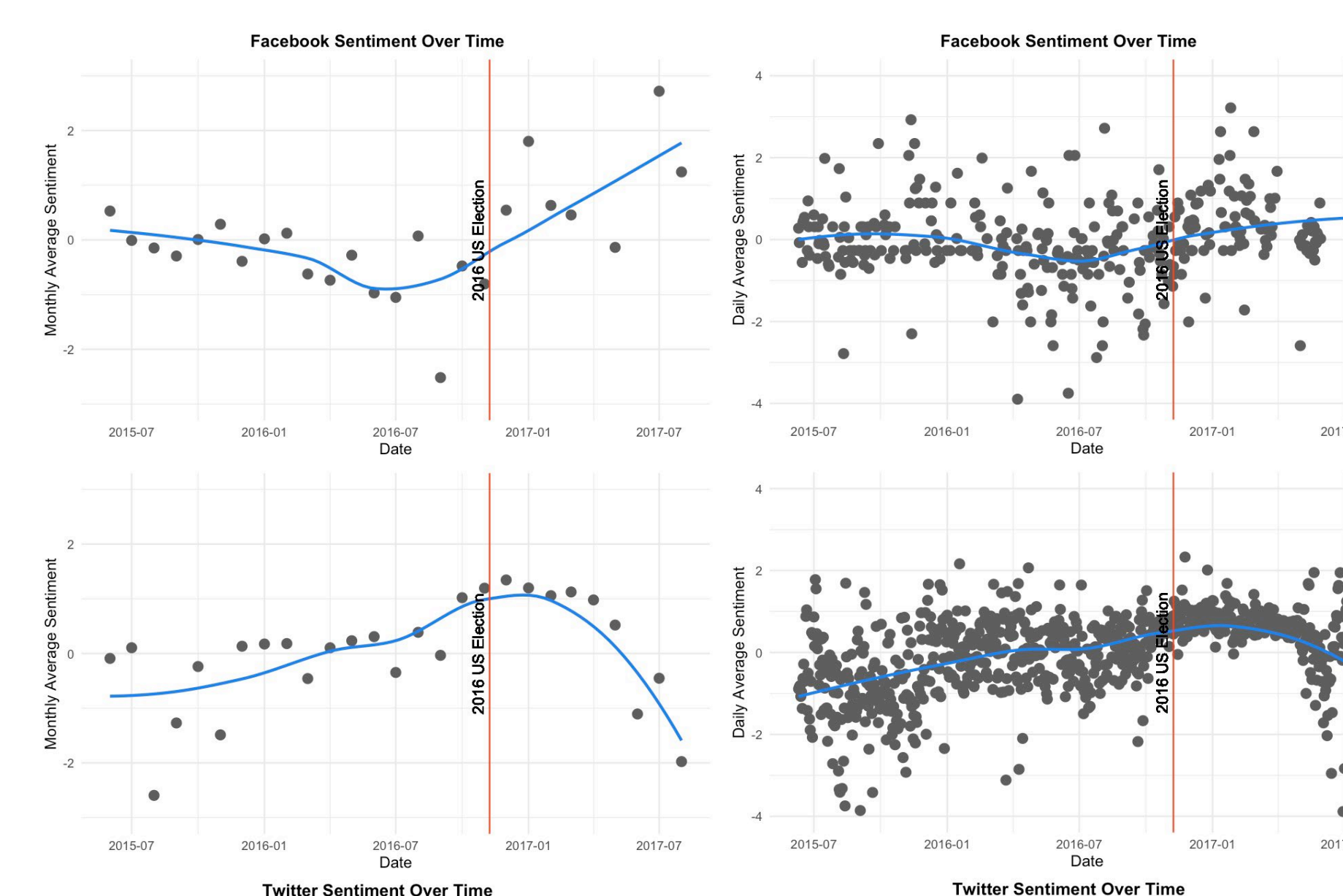


Figure 1. Mean sentiment of the IRA messages over time on Facebook ads and Twitter (Left: monthly mean; Right: daily mean)

Political leaning & Sentiment

Table 2. Descriptive statistics of sentiment scores of the IRA-placed left- and right-troll messages on Facebook ads and Twitter

	N	M	SD	Min	Max
Facebook					
Left	2,100	0.267	2.97	-18	21
Right	663	0.988	2.37	-21	15
Mean Difference = -0.721, t(2759) = -5.725*** (Hedge's g = 0.254)					
Twitter					
Left	383,725	0.024	1.39	-12	11
Right	614,257	-0.284	1.38	-15	32
Mean Difference = 0.312, t(798,920) = 88.299*** (Hedge's g = 0.379)					

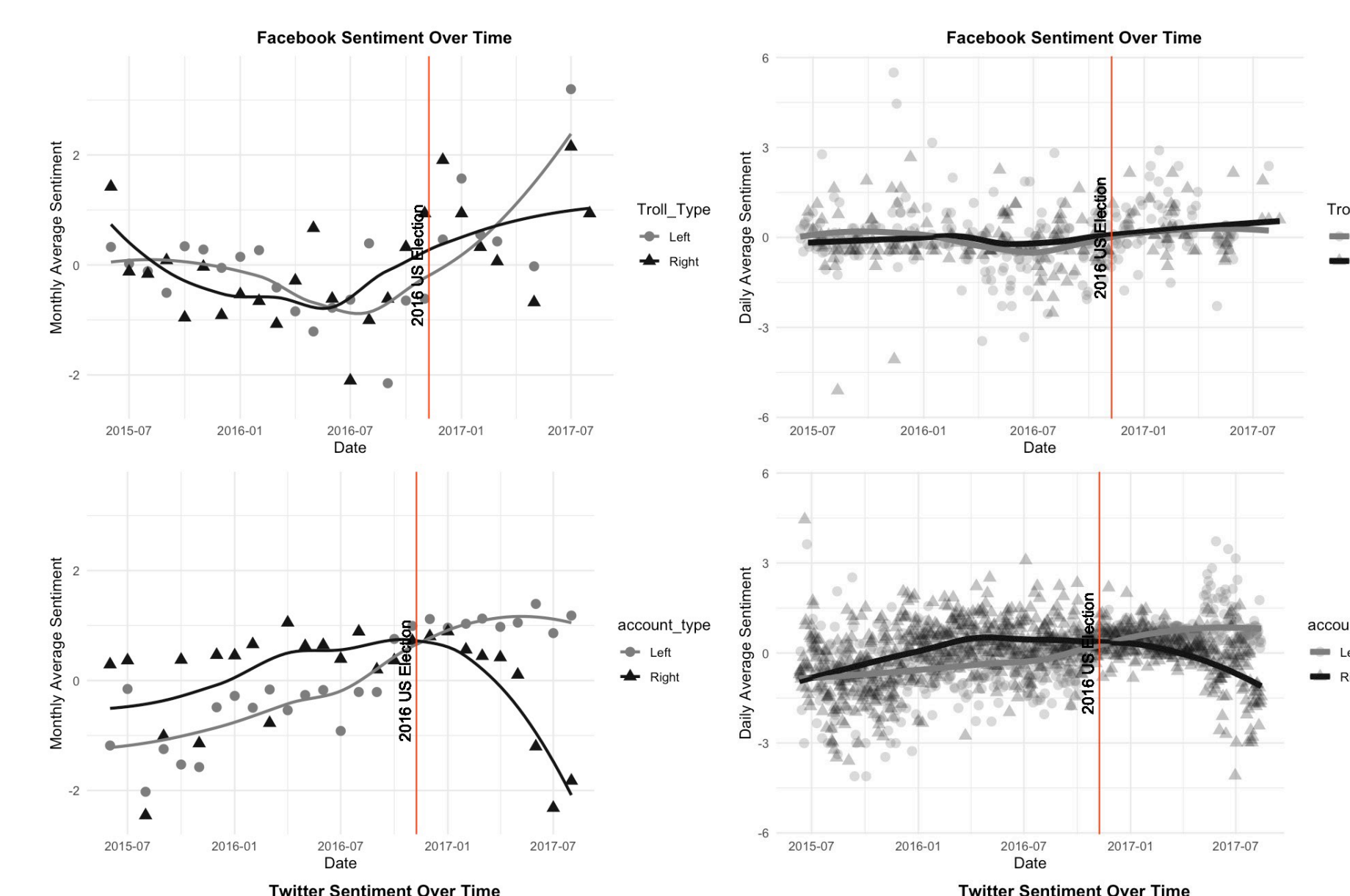


Figure 2. Sentiment means by time for left- and right-troll messages on Facebook and Twitter (Left: monthly mean; Right: daily mean)

Projected racial identity

Table 3. Descriptive statistics of sentiment scores of messages representing African Americans by left and right trolls on Facebook and Twitter

	N	M	SD	Min	Max
Facebook					
Referencing African American Identities	Left	807	-0.234	3.44	-18
	Right	14	-1.79	5.71	-21
Twitter					
Referencing African American Identities	Left	21,475	-0.602	1.63	-9
	Right	7,005	-0.754	1.62	-10

Results (cont.)

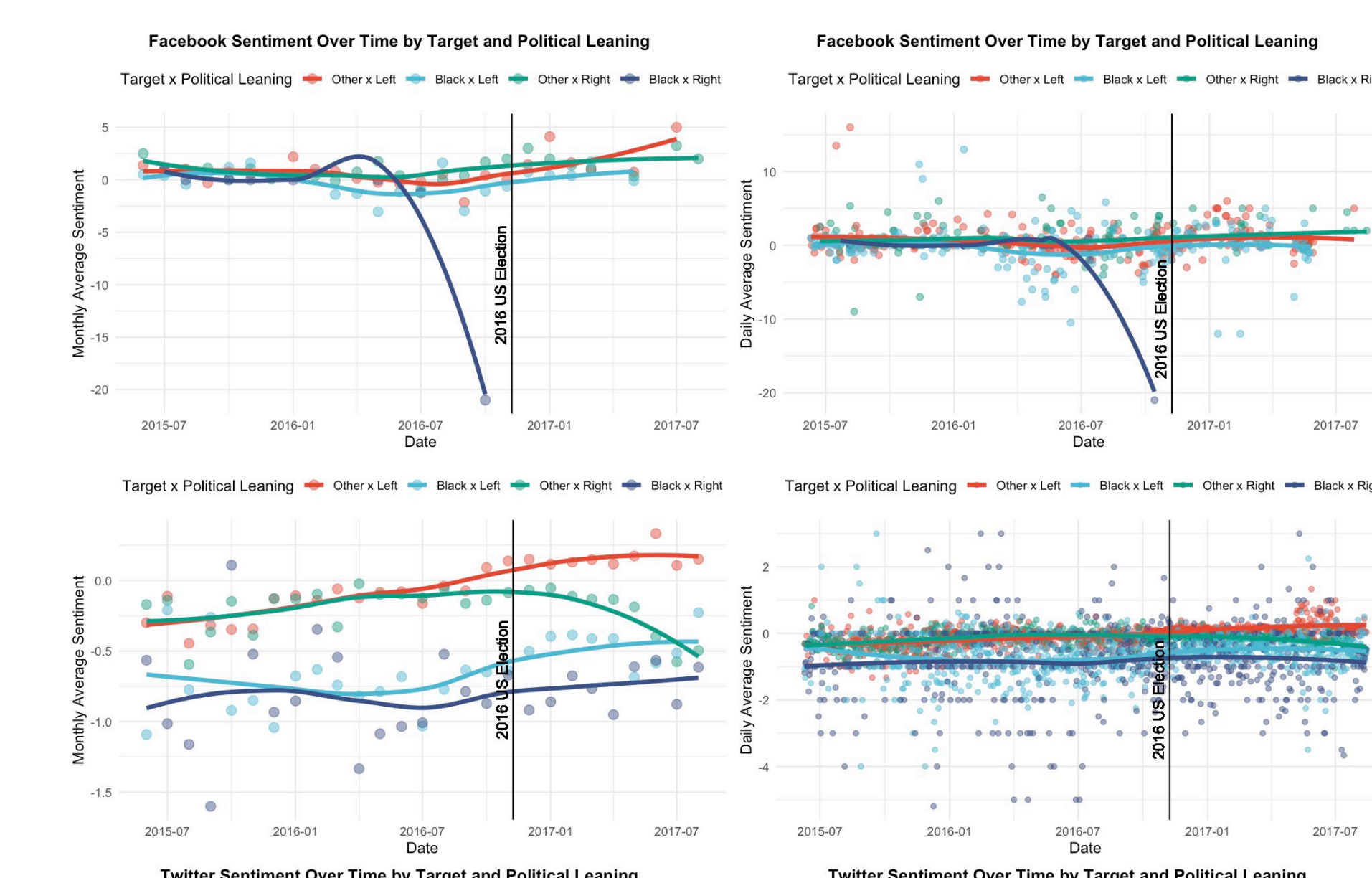


Figure 3. Mean sentiment of messages representing African Americans by left and right trolls on Facebook and Twitter (Left: monthly mean; Right: daily mean)

- Black identity invoked mostly by left-leaning trolls in both FB and Twitter
- Negative sentiments in general, exacerbated in right-leaning trolls in both platforms
- Substantially negative emotion in messages representing the Black population than others throughout the whole period investigated

Discussion & Conclusion

- More positive sentiment in FB messages may have encouraged voting and more satisfaction with the political process and with one's reference group compared to the contentious and generally negative sentiment on Twitter
- More negative appeals by left trolls may illustrate dynamics that discourage left-leaning users from engaging normative political institutions (i.e., negative campaigning's demobilizing effects) (Haselmayer, 2019)
- Partial evidence that racial identities may have been used for IRA's emotional strategy. As the US continues to discuss regulating social media platform, this ability to target must be scrutinized lest democratic rights be imperiled.
- Positive swing in message emotion during the 5-month period before the election (sentiment intensified) → Can be an evidence of a **"divide-and-conquer" strategy**: messaging may have attempted to destabilize and break up the larger public sphere and then later strengthen intra-group identities as the election date got closer (Iyengar et al., 2019)
- The study demonstrates platform-level differences in emotions within the political use of social media → **Multi-platform assessment efforts** should continue
- Results suggest counteracting disinformation requires special attention to certain populations → Policymakers should pay attention to the role of social media operations in dividing public groups and polarizing public opinion

Acknowledgements & References

This study has been published in **New Media & Society**, one of top peer-reviewed journals in the communication field, in 2021.

Linville, D. L., & Warren, P. L. (2020). Troll factories: Manufacturing specialized disinformation on Twitter. *Political Communication*, 37(4), 447–467. <https://doi.org/10.1080/10584609.2020.1718257>
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Iyengar S, Leikes Y, Levendusky M, et al. (2019). The origins and consequences of affective polarization in the United States. *Annual Review of Political Science*, 22, 129–146.