

Dec 12th, 12:00 AM

## Examining the Public Response to Vigilantism: A Multi-dimensional Model of Social Media Discourse

Shalini Kapali Kurumathur

*The University of Texas at San Antonio*, shalinikapali.kurumathur@my.utsa.edu

Paras Bhatt

*University of Texas at San Antonio*, prsbhatt9@gmail.com

Govind Hariharan

*Kennesaw University*, gharihar@kennesaw.edu

Rohit Valecha

*University of Texas at San Antonio*, rvalecha6446@gmail.com

H. Raghav Rao

*The University of Texas at San Antonio*, hr.rao@utsa.edu

Follow this and additional works at: <https://aisel.aisnet.org/icis2022>

---

### Recommended Citation

Kurumathur, Shalini Kapali; Bhatt, Paras; Hariharan, Govind; Valecha, Rohit; and Rao, H. Raghav, "Examining the Public Response to Vigilantism: A Multi-dimensional Model of Social Media Discourse" (2022). *ICIS 2022 Proceedings*. 19.

<https://aisel.aisnet.org/icis2022/social/social/19>

This material is brought to you by the International Conference on Information Systems (ICIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICIS 2022 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# **Examining the Public Response to Vigilantism: Polarization and Emotions in Social Media Discourse**

*Short Paper*

**Shalini Kapali Kurumathur**

University of Texas at San Antonio  
1 UTSA Circle, San Antonio, TX 78249  
shalinikapali.kurumathur@utsa.edu

**Paras Bhatt**

University of Texas at San Antonio  
1 UTSA Circle, San Antonio, TX 78249  
paras.bhatt@utsa.edu

**Rohit Valecha**

University of Texas at San Antonio  
1 UTSA Circle, San Antonio, TX 78249  
rohit.valecha@utsa.edu

**Govind Hariharan**

Kennesaw State University  
1000 Chastain Rd NW, Kennesaw, GA  
gharihar@kennesaw.edu

**H. Raghav Rao**

University of Texas at San Antonio  
1 UTSA Circle, San Antonio, TX 78249  
hr.rao@utsa.edu

## Abstract

*This paper examines the social media discourse of two real-world vigilantism incidents that had invited nation-wide debate: Murder of 'Ahmaud Arbery' (victim), a racially motivated hate crime and the fatal shooting of two men by 'Kyle Rittenhouse' (an aggressor). Both these incidents had invited a lot of debate in social media. However, little is known about the nature of discussions on vigilantism in social media. In this paper, first, through topic modeling, we examine the kind of discussions that were triggered by these incidents. We identify various dimensions of the on-line public conversations. Second, we study if there is polarization in the public discourses. We find that victim-oriented discourse on vigilantism displayed more polarization in a certain dimension and aggressor-oriented discourse on vigilantism displayed more polarization in another dimension. We also found that aggressor-oriented vigilantism discussions had higher negative emotion scores compared to victim-oriented discussion.*

**Keywords:** Social media discourses, vigilantism, polarization

## Introduction

In February 2020, Ahmaud Arbery was fatally shot during a racially motivated vigilantism incident near Burnswick, Georgia. In another vigilantism incident, in August 2020, Kyle Rittenhouse fatally shot two men and wounded another in Kenosha, Wisconsin. While the former was a victim of vigilantism, the latter was an aggressive vigilante. Vigilantism refers to “acts or threats of coercion in violation of the formal boundaries of an established sociopolitical order which, however, are intended by the violators to defend that order from some form of subversion” (Rosenbaum & Sederberg 1974). Both these vigilantism incidents invited nation-wide debate and people resorted to social media to express their views on these incidents.

Social media provides a platform to users to make their voice heard (Tufekci 2013). Social media discourse research on real world incidents have had a societal impact and have been found to influence traditional channels (Valenzuela et al. 2017). For example, such discourse can bring forth attention to gun violence and impact news framing of gun policy (Zhang et al. 2022). Social media discourses have also found to be useful in providing backchannel discourse negotiations concerning such devastating attacks (Eriksson 2016). In particular, the study of emotions in social media discourse can be a useful tool, enabling civil protection and law enforcement agencies to effectively respond during such events (Brynielsson et al. 2014).

The users who write in social media, express emotions such as outrage or joy. For example, anger or moral outrage may be provoked by an unfair situation (Batson et al. 2007). Joy may be provoked after the accused is arrested or punished. A focus on emotions may help us to understand more about vigilantism (Ferrell 2013). The reasoning is that emotions relate to how vigilantism is viewed by the public (Asif 2022). A social media discourse may be supportive of vigilantism while accompanied by positive (negative) emotions whereas, a user's discussions accompanied by negative (positive) emotions may reflect opposing views about vigilantism. Moreover, these emotions may drive opinions to obtain consensus or polarization (Schweitzer et al. 2020). For example, users may have common opinion on one topic or may have mixed opinions or polarized views on another topic. However, prior social media discourse literature has largely neglected consideration of whether the discussions on vigilantism are polarized. Lastly, it is important to study the aggressor and victim separately because aggression literature suggests that there is power imbalance between an aggressor and victim (Olweus 1994). An aggressor is considered to have higher power compared to a victim. Because of this power imbalance, social media discourse may favor a victim, who has less power than an aggressor. Hence, we seek to answer the following research questions.

1. What topics of public discussions are triggered by activities of vigilantism in social media?
2. How polarized are the topics of discussions in the aggressor-oriented and victim-oriented discourse in the context of vigilantism?
3. How different are the emotions in the aggressor-oriented discourse and victim-oriented discourse in the context of vigilantism?

To examine these research questions, we use a computationally intensive data-driven approach (Berente et al. 2018). We collected data from the Twitter streaming API with developer accounts and used unsupervised

topic Modeling (LDA) to determine the different topics of discussion that addressed these events as they unfolded both in the judicial courts and the courts of public opinion. The tweets for the two vigilantism incidents were collected from the day the trials started till three days after the trial concluded (i.e., three days after the jury announced the verdict). We first examine polarization and then, we identify emotions expressed on social media platforms using NRC Emotion Lexicon (Mohammad et al. 2013). We examine the emotion scores for these topics to examine how different are the emotions in the two discourses.

This paper makes several important contributions. First, this study extends the social media discourse literature by focusing on emotions and polarization regarding vigilantism in social media discussions. While prior social media literature has focused on the role of sentiments (Harb et al. 2020), there is a paucity of studies that explore how different are the emotions in the aggressor-oriented discourse and victim-oriented discourse in social media platforms. The emotions will help to understand about the public opinion (Schweitzer et al. 2020). Second, the study helps to advance the literature on vigilantism and provides propositions through a data-driven approach. It helps to clarify the difference between the aggressor-oriented (Rittenhouse) discourse and victim-oriented (Arbery) discourse in the context of vigilantism. It is important to study both discourses separately because the public responses may vary based on about whom the discourses are written.

## **Research background**

### ***Social media discourse***

The study of social media discourse dates back to the work of social theorists like Habermas (Habermas 1991). Habermas argues that individuals gather to deliberate on issues of public interest in democratic societies to form a discursive public sphere. These public discussions help to understand different social perspectives about how to make decisions (Young 2021) or encourage political action (Tarde 2010). With the advent of social media, people can express their thoughts or defend their cherished values (Freelon et al. 2016; Mercea and Bastos 2016). People have been using social media to discuss pressing issues such as sexual violence (De Benedictis et al. 2019) and corruption (Gao and Stanyer 2014). Some researchers have also asserted that social media enables users to express their emotions through discourses (Georgalou 2021). The users have expressed emotions on different events on social media such as the death of Michael Jackson (Kim et al. 2009) and political election in Germany (Tumasjan et al. 2010).

### ***Vigilantism***

Vigilantism is defined as “acts or threats of coercion in violation of the formal boundaries of an established sociopolitical order which, however, are intended by the violators to defend that order from some form of subversion” (Rosenbaum & Sederberg 1974). The violator or vigilante, often seeks to provide a sense of security to the society through social, crime or regime control. The vigilante may be a private agent unaffiliated with law enforcement or someone with ties to the government. For any act to be ‘vigilantism’, there needs to be some planning or pre-meditation. While some researchers recognize only illegal forms of vigilantism (Haas 2010), vigilantism may have a legal or illegal form. i.e., any legal actions such as citizen arrest or self-defense are recognized as vigilantism (Rosenbaum and Sederberg 1974).

The vigilantism incidents may lead concerned social media users to react emotionally (Ferrell 2013). In fact, an examination of the social media discourse shows that a substantial number of emotions surfaced in response to the trial of ‘Arbery’ and ‘Rittenhouse’. Prior literature has shown that social media users may put themselves in the position of the victim of vigilantism and may tweet to bring justice to the crime (Neubaum et al. 2018). A user may even tweet words such as “furious”, “inflamed” or “enraged” to express anger towards an aggressor.

### ***Polarization***

Polarization has been studied in both political and non-political issues. It is found that there is greater polarization on political issues than non-political issues (Barberá et al. 2015). Researchers also suggest that

the polarization in social media is due to echo chambers, where a person only encounters information or opinions that reflect and reinforce their own (Del Vicario et al. 2016). A substantial amount of research in polarization has also identified the role of emotions. For instance, the literature suggests that there is growing social discourse on migration, showing high concentrations of strongly positive and strongly negative sentiments (Rowe et al. 2021). While the polarization literature has examined the role of sentiments in various contexts including mass shootings (Demszky et al. 2019), to date polarization literature has given scant attention to the context of vigilantism. In this paper, we help to advance the literature on polarization in the context of vigilantism.

## Data collection and analysis

We analyzed tweets collected from the Twitter streaming API with our developer accounts and used topic modeling to determine the different topics of discussion that addressed these events as they unfolded both in the judicial courts and the courts of public opinion. The data was collected using a set of keywords and hashtags such as seen in Table 1. The tweets for the two cases were collected from the day the trial started to three days after the trial concluded i.e., three days after the jury announced the verdict. We collected a total of 64,158 tweets that described ‘Arbery’ and 53,479 tweets that described ‘Rittenhouse’.

Arbery (Victim-oriented) hashtags	Rittenhouse (Aggressor-oriented) hashtags
‘#AhmaudArbery’, ‘#JusticeForAhmaud’, ‘#JusticeForAhmaudArbery’, ‘#AhmaudArberyTrial’, ‘#blm’, ‘#WhitePrivilege’, ‘#WhiteSupremacy’, ‘#BlackLivesMatter’	#kylerittenhouse’, ‘#NotGuilty’, ‘#RittenhouseTrial’, ‘#RittenhouseVerdict’, ‘#KyleRittenhouseIsInnocent’, ‘#Kenosha’, ‘#JudgeSchroeder’, ‘#JusticeDenied’, ‘#SelfDefense’

**Table 1. Hashtags used for data collection**

After collecting the data and preprocessing, we categorized the data based on tweets that discussed ‘Arbery’ and ‘Rittenhouse’. We extracted trending topics to explore the distribution of public response to vigilantism. In this study, we applied the Latent Dirichlet Allocation (LDA) topic modeling technique to examine the discussions regarding ‘Arbery’ and ‘Rittenhouse’ tweets (Blei 2012) using Python Gensim package. Gensim package allows us to remove stopwords and use lemmatization (consider the root words, i.e., consider run instead of running or runs). We also preprocessed the text data to filter the URL links and user mentions before passing it to the Gensim package. To choose the ideal number of topics, we measured the U<sub>mass</sub> coherence score of the LDA model, starting with an assumption that there were two topics and continued this process until we reached ten topics with 60 iterations. For the tweets of ‘Arbery’, the coherence score was highest for two topics and then started declining. For tweets of ‘Rittenhouse’ the coherence score for the LDA was highest for a model with three topics and then started declining.

The key topics in the case of ‘Arbery’ are: structural racism and healing. The structural racism topic discussed racism in America surrounding the vigilantism incident. Structural racism states that “inequalities are rooted in the system-wide operation of the society that excludes a substantial number of members from particular groups from participation in major social institutions” (Henry et al. 2010). The next topic, healing indicates that the users have reached a place of balance and acceptance, which highlights restoration (Motimele and Ramugondo 2014). The topic revealed that the social media users were relieved that justice was served with the verdict on vigilantism.

The key topics in the case of ‘Rittenhouse’ are: narrative, institutional racism and media defamation. Narrative refers to any analysis or subjective understanding of social media users regarding vigilantism. It reveals the users’ views about the problem, cause and solutions regarding vigilante/vigilantism (Lin and Chung 2020). The topic revealed that social media users had their opinion about the vigilante. The next topic, institutional racism refers to unequal impacts and outcomes based on race produced by key societal institutions (Henry et al. 2010). The last topic, media defamation refers to the defamatory statements by media with knowledge of falsity (Bloom 1985).

We map these topics to the different dimensions of social media discourses on vigilantism. The dimensions are extracted from the topic modeling approach and prior literature on vigilantism (Bateson 2021; Moncada 2017). Upon analyzing the victim-oriented discourse, we found that the first topic in the case of ‘Arbery’, structural racism can be mapped to the dimension of social organization because the structural racism topic revealed the social-ties of the vigilante such as race, which the user thinks may influence vigilantism. The next topic, healing is mapped to jurisprudence dimension because the topic revealed the healing is due to the verdict. Whereas, on analyzing the aggressor-oriented discourse in the case of ‘Rittenhouse’, the narrative topic discussed more about ‘Rittenhouse’. Hence, we mapped it to individual-level. An individual-level captures the social media discourses about target’s motivation, character, behavior, and mechanisms such as shooting. The second topic of institutional racism revealed the ineffectiveness of the state. Hence, we mapped it to the state dimension. The last topic, media defamation discussed about the defamatory statements used by the media. Hence, we map it to the media dimension. Thus, we find five dimensions of social media discourses on vigilantism: social organization, jurisprudence, individual-level, state and media, which is revealed in Table 2.

Topic	Keywords	Sample tweets	Theme	Mapped dimensions
Arbery (Victim)-Topic1	Black, white, racist	these murderers essentially lynched a man because he was black. Three white supremacists kill young black Ahmaud Arbery for jogging in the neighborhood	Structural racism	Social organization
Arbery (Victim)-Topic2	Thank, justice, verdict, right, guilty	At last justice has been served in USA. All three men accused of killing Arbery have been jailed the jury found them guilty. Thank you to this jury for doing the right thing.	Healing	Jurisprudence
Rittenhouse (Aggressor)-Topic1	Shoot, people, like, murder	the kid showed up to a protest with a rifle and suited up for urban warfare. He had no business being in that state he deliberately went there to kill.	Narrative	Individual-level
Rittenhouse (Aggressor)-Topic2	black, support, defense, racist	if Kyle Rittenhouse were black, we know he would’ve been locked up. No black person would ever be acquitted for self-defense. Our system is racist.	Institutional racism	State
Rittenhouse (Aggressor)-Topic3	Gun, video, media, live	Kyle Rittenhouse needs to sue the crap out of every media personality who went on the air and told bald faced lies about him and the circumstances surrounding his actions.	Media defamation	Media

**Table 2. Topic summary with mapped dimensions of two vigilantism incidents**

As a post-hoc analysis to check for co-occurrence of words, we also conducted bi-term topic modeling. In bi-term topic modeling, word co-occurrences within a set of documents (e.g., tweets) are generated by a mixture of probability distributions of unobserved topics. It is most suitable to extract topics from short texts such as tweets (Yan et al. 2013). We ran a series of models with k-topic (k = 2,4,6,8....30) with 500 iterations. Based on assessment of coherence (Griffiths and Steyvers 2004), 10 and 16 topics were finalized for ‘Arbery’ and ‘Rittenhouse’ respectively. However, five topics in the case of ‘Rittenhouse’ lacked interpretability and hence, we had to drop them. We finally ended up with 10 and 11 topics for ‘Arbery’ and ‘Rittenhouse’ respectively. The topic labels tweets that mentioned ‘Arbery’ are: Defense attorney Laura Hogue’s comments, healing, structural racism, courtroom proceedings, hate crime, asymmetrical power relations, Attorney Gough’s comments, repertoires of vigilantism, seek justice for victim and evidence of the case. The topic labels of tweets that mentioned ‘Rittenhouse’ are: incident location, asymmetrical power relation, media defamation, second amendment, victim of vigilantism, gun-control laws, fourteenth amendment, media interview, structural racism, narrative, criminal justice system.

To further assess the polarization in the discourse of ‘Arbery’ and ‘Rittenhouse’, we capture their polarization measure scores. Various studies have attempted to study polarization from different

perspectives, such as measuring a spread, dispersion and regionalization (Bramson et al. 2017). In this study, we have focused on determining spread measure of polarization so that they can be used to identify how polarized are the topics of discussions in the context of vigilantism. Spread measures how far apart are the extreme opinions within a topic. It is the absolute difference of opinions between a tweet with the lowest sentiment and a tweet with the highest sentiment value. Such a measure provides how divergent are the public opinions across various topics of vigilantism. In the case of ‘Arbery’ and ‘Rittenhouse’, the spread measure is higher, indicating there are extreme viewpoints. The spread measure of polarization in discussion for ‘Arbery’ (0.211) is higher compared to ‘Rittenhouse’ (0.187). In the case of ‘Arbery’, the social organization dimension has significantly higher polarization compared to jurisprudence dimension. In the case of ‘Rittenhouse’, the individual-level topic discussion had higher polarization compared to media dimension. Thus, the polarization propositions on vigilantism are:

Proposition1a. In victim-oriented vigilantism discourse there is high polarization compared to an aggressor- oriented discourse.

Proposition1b. The victim-oriented discourse on vigilantism displays more polarization in the social organization dimension compared to jurisprudence dimension.

Proposition1c. The aggressor-oriented discourse on vigilantism displays more polarization in the individual-level dimension compared to media dimension.

Discourse	Dimension	Spread	N	Mean difference
Victim-oriented	Social organization	0.216	31396	0.009*
Victim-oriented	Jurisprudence	0.207	32762	
Aggressor-oriented	Individual-level	0.195	42830	0.006
Aggressor-oriented	State	0.189	1108	0.042*
Aggressor-oriented	Individual-level	0.195	42830	
Aggressor-oriented	Media	0.153	9541	0.036*
Aggressor-oriented	State	0.189	1108	
Aggressor-oriented	Media	0.153	9541	

\*p-value < 0.05, N – Number of tweets

**Table3. Polarization summary of two discourses**

An event such as vigilantism evokes emotions. Vigilantism incidents of killing ‘Arbery’ or ‘Rittenhouse’ shooting violates norms of public. This violation evokes strong emotions in public. To extract emotions in the tweets, we used sentiment lexicons. It is a dictionary-based approach, which finds opinion seed words, and then searches the dictionary for their synonyms. We used the NRC Emotion Lexicon (Mohammad et al. 2013), which classifies words in a binary yes/no for different classes of Plutchik’s wheel of emotion: anger, fear, joy, and sadness, trust, disgust, anticipation, and surprise (Robert 1980). Anger, fear, sadness and disgust were considered as negative emotions. Joy, trust, anticipation and surprise were considered as positive emotions. We find the overall positive and negative emotion score for each mapped dimension for ‘Arbery’ and ‘Rittenhouse’. The overall emotion score is calculated by finding mean of emotion score from NRC. The negative emotion score of ‘Rittenhouse’ (0.102) is higher compared to ‘Arbery’ (0.093). This score will also help us to examine which dimension will have higher likelihood of positive (negative) emotion compared to other dimensions. In the case of victim-oriented discourse, we find that social organization dimension has significantly higher negative emotion score compared to jurisprudence dimension and the jurisprudence dimension has significantly higher positive emotion score compared to social organization dimension. In the case of aggressor-oriented discourse, the state dimension has a higher negative emotion score compared to media and state dimension. Thus, the propositions on emotion are:

Proposition2a. In aggressor-oriented vigilantism discourse there is higher likelihood of negative emotion compared to victim-oriented discourse.

Proposition2b. State related topic discussion will have higher likelihood of negative emotion score compared to media and individual-level dimension in an aggressor-oriented vigilantism discourse.

Proposition2c. Jurisprudence related topic discussion will have higher positive emotion score compared to social organization dimension in victim-oriented vigilantism discourse.

Discourse	Dimension	Negative ES	MD	Positive ES	MD
Victim-oriented	Social organization	0.135	0.033*	0.081	-0.023*
Victim-oriented	Jurisprudence	0.101		0.105	
Aggressor-oriented	Individual-level	0.107	-0.012*	0.087	0.018*
Aggressor-oriented	State	0.119		0.069	
Aggressor-oriented	Individual-level	0.107	0.028*	0.087	0.013*
Aggressor-oriented	Media	0.079		0.074	
Aggressor-oriented	State	0.119	0.040*	0.069	-0.005
Aggressor-oriented	Media	0.079		0.074	

\*p-value<0.05, MD – Mean Difference, ES – Emotion score

**Table4. Emotion summary of two discourses**

## Discussion

Through this work we uncovered novel perspectives of vigilantism that are shared and discussed widely on social media platforms. We found that the topic themes for victim-oriented discourses are structural racism and healing. The topic themes for aggressor-oriented discourses are narrative, institutional racism and media defamation. We also found that there are five dimensions of social media discourse on vigilantism are social organization, jurisprudence, individual-level, state and media dimensions.

In the study on polarization regarding vigilantism, we found that victim-oriented discourses are more polarized than aggressor-oriented discourses. This may be because the public are divided in their opinion if the killing is because of race of the victim. It is found in the dimension of social organization, which displayed more polarization in the victim-oriented discourses. This finding is well grounded in the prior research that public is polarized about race (Hout and Maggio 2021). We found that aggressor-oriented discourses on vigilantism displayed more polarization in the dimension of individual-level compared to media. This may be because opinions of the public are divided about usage of weapons. This is grounded in the prior research that there is polarization on pro-gun and anti-gun sentiments of shooting (Wang et al. 2016).

In the study of emotions, we found that aggressor-oriented vigilantism discussion had higher negative emotion compared to victim-oriented discussion. This may be because anger has surfaced in public due to vigilante violence (Asif 2022). Because the aggressor is involved in vigilante action, negative emotions may have surfaced in the public in aggressor-oriented discourse. We also found that the state dimension had a higher negative emotion score compared to other dimensions in aggressor-related discourses. The ineffectiveness of state because of vigilantism may have surfaced (Rosenbaum and Sederberg 1974). Lastly, we found that jurisprudence related topic discussion had higher positive emotion score. The reasoning may be that the public may be happy with the verdict that the guilty are punished.

## Conclusion

In summary, the purpose of the study is to examine the polarization and emotion of victim-oriented and aggressor-oriented discourses. We found that the victim-oriented discourses are more polarized than the aggressor-oriented discourses. The polarization on victim-oriented discourses is more on social organization dimension. The polarization on aggressor-oriented discourses is more on an individual-level dimension. We also found that aggressor-oriented vigilantism discussion had higher negative emotion compared to victim-oriented discussion. The negative emotion score is higher in state related dimension for aggressor-oriented discourses compared to other (media and individual-level) dimensions. In victim-oriented discourses, the positive emotion score is higher in jurisprudence dimension compared to social-organization dimension

While we believe the study makes important contributions, it has some potential limitations. First, we have identified key aspects only using Twitter. We encourage future studies to use data from multiple social media platforms. Second, we only chose vigilantism incidents in America and did not consider the incidents outside America. Lastly, we are unsure of the identity of the user who is writing the social media discourse. The gender, race or other identities may influence the social media discourse.



## Acknowledgements

The authors would like to thank the reviewer team whose feedback greatly improved the paper. This research has been funded in part by NSF under grant #2020252. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

## References

- Asif, M. 2022. "Police Legitimacy and Approval of Vigilante Violence: The Significance of Anger," *Theoretical Criminology*, SAGE Publications Ltd. (<https://doi.org/10.1177/13624806221101369>).
- Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., and Bonneau, R. 2015. "Tweeting from Left to Right: Is Online Political Communication More than an Echo Chamber," *Psychological Science* (26:10), Sage Publications Sage CA: Los Angeles, CA, pp. 1531–1542.
- Bateson, R. 2021. "The Politics of Vigilantism," *Comparative Political Studies* (54:6), SAGE Publications Sage CA: Los Angeles, CA, pp. 923–955.
- Batson, C. D., Kennedy, C. L., Nord, L., Stocks, E., Fleming, D. A., Marzette, C. M., Lishner, D. A., Hayes, R. E., Kolchinsky, L. M., and Zerger, T. 2007. "Anger at Unfairness: Is It Moral Outrage?," *European Journal of Social Psychology* (37:6), Wiley Online Library, pp. 1272–1285.
- Berente, N., Seidel, S., and Safadi, H. 2018. "Research Commentary—Data-Driven Computationally Intensive Theory Development," *Information Systems Research*, INFORMS.
- Blei, D. M. 2012. "Probabilistic Topic Models," *Communications of the ACM* (55:4), ACM New York, NY, USA, pp. 77–84.
- Bloom, L. H. 1985. "Proof of Fault in Media Defamation Litigation," *VANDERBILT LAW REVIEW* (38), p. 149.
- Bramson, A., Grim, P., Singer, D. J., Berger, W. J., Sack, G., Fisher, S., Flocken, C., and Holman, B. 2017. "Understanding Polarization: Meanings, Measures, and Model Evaluation," *Philosophy of Science* (84:1), Cambridge University Press, pp. 115–159.
- Brynielsson, J., Johansson, F., Jonsson, C., and Westling, A. 2014. "Emotion Classification of Social Media Posts for Estimating People's Reactions to Communicated Alert Messages during Crises," *Security Informatics* (3:1), Springer, pp. 1–11.
- De Benedictis, S., Orgad, S., and Rottenberg, C. 2019. "# MeToo, Popular Feminism and the News: A Content Analysis of UK Newspaper Coverage," *European Journal of Cultural Studies* (22:5–6), SAGE Publications Sage UK: London, England, pp. 718–738.
- Del Vicario, M., Vivaldo, G., Bessi, A., Zollo, F., Scala, A., Caldarelli, G., and Quattrociocchi, W. 2016. "Echo Chambers: Emotional Contagion and Group Polarization on Facebook," *Scientific Reports* (6:1), Nature Publishing Group, pp. 1–12.
- Demszky, D., Garg, N., Voigt, R., Zou, J., Gentzkow, M., Shapiro, J., and Jurafsky, D. 2019. "Analyzing Polarization in Social Media: Method and Application to Tweets on 21 Mass Shootings," *ArXiv Preprint ArXiv:1904.01596*.
- Eriksson, M. 2016. "Managing Collective Trauma on Social Media: The Role of Twitter after the 2011 Norway Attacks," *Media, Culture & Society* (38:3), Sage Publications Sage UK: London, England, pp. 365–380.
- Ferrell, J. 2013. "Cultural Criminology and the Politics of Meaning," *Critical Criminology* (21:3), Springer, pp. 257–271.
- Freelon, D., McIlwain, C. D., and Clark, M. 2016. "Beyond the Hashtags: # Ferguson, # Blacklivesmatter, and the Online Struggle for Offline Justice," *Center for Media & Social Impact, American University, Forthcoming*.
- Gao, L., and Stanyer, J. 2014. "Hunting Corrupt Officials Online: The Human Flesh Search Engine and the Search for Justice in China," *Information, Communication & Society* (17:7), Taylor & Francis, pp. 814–829.
- Georgalou, M. 2021. "Emotions and Migration in Social Media Discourse: A New Greek Migrant Case Study," *Emotion, Space and Society* (38), Elsevier, p. 100745.
- Griffiths, T. L., and Steyvers, M. 2004. "Finding Scientific Topics," *Proceedings of the National Academy of Sciences* (101:suppl\_1), National Acad Sciences, pp. 5228–5235.
- Haas, N. E. 2010. *Public Support for Vigilantism*, Leiden University.

- Habermas, J. 1991. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, MIT press.
- Harb, J. G., Ebeling, R., and Becker, K. 2020. "A Framework to Analyze the Emotional Reactions to Mass Violent Events on Twitter and Influential Factors," *Information Processing & Management* (57:6), Elsevier, p. 102372.
- Henry, F., Rees, T., and Tator, C. 2010. *The Colour of Democracy: Racism in Canadian Society*, (4th ed.), Toronto: Nelson Education.
- Hout, M., and Maggio, C. 2021. "Immigration, Race & Political Polarization," *Daedalus* (150:2), MIT Press One Rogers Street, Cambridge, MA 02142-1209, USA journals-info ..., pp. 40–55.
- Kim, E., Gilbert, S., Edwards, M. J., and Graeff, E. 2009. "Detecting Sadness in 140 Characters: Sentiment Analysis and Mourning Michael Jackson on Twitter," *Web Ecology* (3), pp. 1–15.
- Lin, Y.-R., and Chung, W.-T. 2020. "The Dynamics of Twitter Users' Gun Narratives across Major Mass Shooting Events," *Humanities and Social Sciences Communications* (7:1), Springer Science and Business Media LLC. (<https://doi.org/10.1057/s41599-020-00533-8>).
- Olweus, D. 1994. "Bullying at School: Basic Facts and Effects of a School Based Intervention Program," *Journal of Child Psychology and Psychiatry* (35:7), Blackwell Publishing Ltd Oxford, UK, pp. 1171–1190.
- Mercea, D., and Bastos, M. T. 2016. "Being a Serial Transnational Activist," *Journal of Computer-Mediated Communication* (21:2), Oxford University Press Oxford, UK, pp. 140–155.
- Mohammad, S. M., Kiritchenko, S., and Zhu, X. 2013. NRC-Canada: Building the State-of-the-Art in Sentiment Analysis of Tweets, arXiv. (<http://arxiv.org/abs/1308.6242>).
- Moncada, E. 2017. "Varieties of Vigilantism: Conceptual Discord, Meaning and Strategies," *Global Crime* (18:4), Routledge, pp. 403–423. (<https://doi.org/10.1080/17440572.2017.1374183>).
- Motimele, M. R., and Ramugondo, E. L. 2014. "Violence and Healing: Exploring the Power of Collective Occupations," *International Journal of Criminology and Sociology* (3), pp. 388–401.
- Neubaum, G., Rösner, L., Ganster, T., Hambach, K., and Krämer, N. C. 2018. "United in the Name of Justice: How Conformity Processes in Social Media May Influence Online Vigilantism," *Psychology of Popular Media Culture* (7:2), US: Educational Publishing Foundation, pp. 185–199.
- Robert, P. 1980. *Emotion: Theory, Research, and Experience*. Vol. 1: Theories of Emotion, Academic Press: Cambridge, MA, USA.
- Rosenbaum, H. J., and Sederberg, P. C. 1974. "Vigilantism: An Analysis of Establishment Violence," *Comparative Politics* (6:4), *Comparative Politics*, Ph.D. Programs in Political Science, City University of New York, pp. 541–570.
- Rowe, F., Mahony, M., Graells-Garrido, E., Rango, M., and Sievers, N. 2021. "Using Twitter to Track Immigration Sentiment during Early Stages of the COVID-19 Pandemic," *Data & Policy* (3), Cambridge University Press.
- Schweitzer, F., Krivachy, T., and Garcia, D. 2020. "An Agent-Based Model of Opinion Polarization Driven by Emotions," *Complexity* (2020), Hindawi.
- Tarde, G. 2010. *Gabriel Tarde On Communication and Social Influence: Selected Papers*, University of Chicago Press.
- Tufekci, Z. 2013. "'Not This One': Social Movements, the Attention Economy, and Microcelebrity Networked Activism," *American Behavioral Scientist* (57:7), SAGE Publications Inc, pp. 848–870.
- Tumasjan, A., Sprenger, T., Sandner, P., and Welpe, I. 2010. "Predicting Elections with Twitter: What 140 Characters Reveal about Political Sentiment," *Proceedings of the International AAAI Conference on Web and Social Media* (4:1), pp. 178–185.
- Valenzuela, S., Piña, M., and Ramírez, J. 2017. "Behavioral Effects of Framing on Social Media Users: How Conflict, Economic, Human Interest, and Morality Frames Drive News Sharing," *Journal of Communication* (67:5), Oxford University Press, pp. 803–826.
- Wang, N., Varghese, B., and Donnelly, P. D. 2016. A Machine Learning Analysis of Twitter Sentiment to the Sandy Hook Shootings, presented at the 2016 IEEE 12th International Conference on e-Science (e-Science), IEEE, pp. 303–312.
- Yan, X., Guo, J., Lan, Y., and Cheng, X. 2013. A Biterm Topic Model for Short Texts, presented at the Proceedings of the 22nd international conference on World Wide Web, pp. 1445–1456.
- Zhang, Y., Shah, D., Pevehouse, J., and Valenzuela, S. 2022. "Reactive and Asymmetric Communication Flows: Social Media Discourse and Partisan News Framing in the Wake of Mass Shootings," *The International Journal of Press/Politics*, SAGE Publications Sage CA: Los Angeles, CA, p. 19401612211072790.