Impact of Social Media on Social Cohesion

Editors

Stefan Stieglitz and Björn Ross

COGITATIO

Table of Contents

Editorial

The Impact of Social Media on Social Cohesion: A Double-Edged Sword

Stefan Stieglitz [1],* and Björn Ross [2]

[1] Department of Computer Science and Applied Cognitive Science, University of Duisburg-Essen, Germany
[2] Institute for Language, Cognition and Computation, University of Edinburgh, UK

* Corresponding author (stefan.stieglitz@uni-due.de)

Abstract
Social media plays a major role in public communication in many countries. Therefore, it has a large impact on societies and their cohesion. This thematic issue explores the impact social media has on social cohesion on a local or national level. The nine articles in this issue focus on both the potential of social media usage to foster social cohesion and the possible drawbacks of social media which could negatively influence the development and maintenance of social cohesion. In the articles, social cohesion is examined from different perspectives with or without the background of crisis, and on various social media platforms. The picture that emerges is that of social media as, to borrow a phrase used in one of the articles, a double-edged sword.

Keywords
crisis communication; social cohesion; social divide; social media; social movements; polarization; political communication

Issue
This editorial is part of the issue, "Impact of Social Media on Social Cohesion," edited by Stefan Stieglitz (University of Duisburg-Essen) and Björn Ross (University of Edinburgh).

1. Introduction

Social media such as Facebook, Twitter, Reddit, Instagram, and WhatsApp are used by the majority of the population in many countries (Kaplan & Haenlein, 2010; Stieglitz et al., 2018). Social media enables users to create and share content and to participate in social networking (van Dijck & Poell, 2013). Mass media have also entered the digital age and play an active role on social media. Within seconds, any content can be circulated among thousands of people (Mirbabaie et al., 2014; Stieglitz & Dang-Xuan, 2013). Due to the large amount of information and the variety of data sources, it has become increasingly difficult for citizens to decide on the trustworthiness of social media content (Alkawaz et al., 2021; Jung et al., 2020; Ross et al., 2018).

In times of global crises such as the Covid-19 pandemic, climate change, wars, or financial crises, societies are in danger of losing stability and social cohesion (Dayrit & Mendoza, 2020). The rise of fake accounts, mis-

information, social bots, and hidden attempts of manipulation pose additional challenges for democratic societies (Alkawaz et al., 2021; Röchert et al., 2022; Stieglitz et al., 2017). On the other hand, social media can help to foster communication among citizens and reinforce shared feelings of identity, e.g., in Europe (Kaakinen et al., 2020). It can also enable citizens to communicate across borders and strengthen shared ideologies.

In this thematic issue, we are publishing theoretical and empirical articles exploring social cohesion on social media from different perspectives.

2. Promoting Social Cohesion and Connectedness Through Social Media

The use of social media shows great potential in fostering and maintaining social cohesion, at least for some groups or publics. This opportunity is examined from different perspectives in the first two articles in this issue. Robaeyst et al. (2022) examine how communication

practices on Online Neighborhood Networks (ONN) influence the social cohesion of neighborhood communities. Their findings reveal the importance of, among others, information exchange practices for trust, reciprocal support as well as a sense of community while the results also indicated a reversed relation when the ONN was explicitly considered as a tool for information exchange. With their work, the authors enhance the theoretical understanding of ONN in relation to social cohesion.

The thematic issue then shifts to social connectedness promoted by social media usage. In their article, Pit et al. (2022) critically review past research findings suggesting that passive social media use adversely affects individuals' wellbeing, in contrast to active use which has been shown to improve well-being. The authors conducted two experiments to test the ability of active vs. passive Facebook use to restore social connectedness after being ostracized. They confirm that active Facebook use can restore social connectedness compared with using a non-social website; however, they found evidence suggesting that passive social media use does not harm social connectedness and that it can, in certain circumstances, actually improve it, in contrast to claims in the literature which suggest that it is harmful.

3. Social Media Harming Social Cohesion

While these articles make it clear that social media use can have some benefits for social cohesion, the following five articles shed light on its drawbacks, as well as threats to social cohesion that may not be directly caused by social media but that are revealed and, in some cases, perhaps exacerbated by it.

In the first of these articles, Frischlich (2022) focuses on conspiracy-theoretical virtual groups. The assumption is that the consumption of conspiracy theories contributes to the mobilization and radicalization of Covid-19-related protests. Using a mixed-method approach involving qualitative content analysis and hierarchical clustering, the author investigates conspiracy theories in German public Facebook groups during the Covid-19 pandemic. The author shows how these Facebook groups provide opportunity structures for mobilizing non-normative collective action, and in particular how prevalent related psychological variables are in these groups.

Amaral et al. (2022) investigated anti-vaccination movements in the German and Brazilian Twittersphere. For that, the aim was to map and compare the social media communication of anti-vaccination movements that circulate misinformation in Germany and Brazil. In a qualitative analysis of German and Brazilian narratives of the anti-vaccination movements on Twitter, content from social media communication of opinion leaders of these movements was coded. In both countries, the main narratives against vaccination are similar, but the main difference relies on the stronger politicization of vaccines in the Brazilian context.

This qualitative analysis of Covid-19 communication is complemented by Pérez-Curiel et al. (2022) who compared the Covid-19-related communication of politicians and experts in five countries quantitatively. The authors analyze issue and game frames and find widespread differences between politicians and experts; the experts' communication is more fragmented and less purposeful. The role of fact-checking initiatives was examined as well. It was found that they mainly respond to the frames applied by politicians to avoid the spread of misinformation.

Politicization played a crucial role in the article by Bozdağ and Koçer (2022). The study focuses on Turkey since the Turkish society and media landscape are highly polarized politically. The article analyzes the role of polarization for news users and their perception of misinformation on social media. The authors followed a mixed-method approach combining focus groups, media diaries, and interviews. The results demonstrate that individuals develop different strategies to validate information, for example by searching the suspected information on search engines. Participants tended to be critical of their own partisan attitudes in news consumption and evaluation. Still, they mostly trusted media sources that mirrored their political attitudes. The authors propose the term skeptical inertia to describe this self-critical but passive attitude of the users in the context of Turkish news polarization.

Lastly, the risk of promoting racism due to social media was investigated by Matamoros-Fernández et al. (2022) who examine racist aural memetic media on TikTok during Covid-19 as humorous content that harms. Measures to facilitate social cohesion focus on obviously problematic content such as misinformation and hate speech and neglect more mundane practices such as humor. The authors point out how humor on social media can be harmful. Its influence on social inequality by normalizing racial stereotyping was examined with a mixed-method approach. The results, based on an analysis of TikTok content, help correct the trivialization of harmful humor. Their contribution broadens the field beyond existing debates about online extremism, hate speech, and misinformation as the main challenges to social cohesion.

4. Social Media: A Double-Edged Sword

While we can attempt to roughly group the effects of social media on social cohesion into positive and negative ones, such a categorization will always fall short of doing the complex reality justice. This becomes clear in many of the articles in our issue. To borrow a phrase used by Le-Phuong et al. (2022, p. 192) in their contribution, social media is truly a double-edged sword. In their article, they examine Vietnamese female migrants and show that social media can benefit disadvantaged groups by giving them opportunities to engage with the public sphere, yet access to these opportunities is limited,

which reinforces social inequalities. In in-depth interviews, they found reasons that significantly hinder social media participation, related to gender, ethnicity, and social class. Still, the authors conclude that social media remains a crucial platform for communicative purposes for minority groups.

Social inequality is also at the heart of the argument in Bisiada's (2022) article, who argues that the public debate throughout the Covid-19 pandemic, which has largely been held on social media, has exposed fundamental structural inequalities and that class is a major factor in the social polarization witnessed since. This article serves as a reminder that scapegoating and moralizing, also on social media, may contribute to the further fragmentation of society. The author stresses how important is it that we are aware of this to avoid similar mistakes in the climate emergency.

5. Conclusion

This thematic issue gives a broad view of the potentials and risks of social media for the development and maintenance of social cohesion. Social cohesion is examined from different perspectives in nine research articles which illuminate the various way in which social media can help society thrive, hinder social cohesion, or highlight existing social divides. These thought-provoking articles raise important research questions that will stimulate future research to further explore the impact of social media on social cohesion.

Acknowledgments

Conflict of Interests

The author declares no conflict of interests.

References

Alkawaz, M. H., Khan, S. A., & Abdullah, M. I. (2021). Plight of social media users: The problem of fake news on social media. In *11th IEEE Symposium on computer applications & industrial electronics* (pp. 289–293). IEEE. https://doi.org/10.1109/ISCAIE51753.2021.9431841

Amaral, A. R., Jung, A.-K., Braun, L.-M., & Blanco, B. (2022). Narratives of anti-vaccination movements in the German and Brazilian twittersphere: A grounded theory approach. *Media and Communication*, *10*(2), 144–156.

Bisiada, M. (2022). Discourse and social cohesion in and after the Covid-19 pandemic. *Media and Communication*, *10*(2), 204–213.

Bozdağ, Ç., & Koçer, S. (2022). Skeptical inertia in the face of polarization: News consumption and misinformation in Turkey. *Media and Communication*, *10*(2), 169–179.

Dayrit, M. M., & Mendoza, R. U. (2020). Social cohesion vs Covid-19. *International Journal of Health Governance*, *25*(3), 191–203. https://doi.org/10.1108/IJHG-03-2020-0022

Frischlich, L. (2022). "Resistance!": Collective action cues in conspiracy theory-endorsing Facebook groups. *Media and Communication*, *10*(2), 130–143.

Jung, A.-K., Ross, B., & Stieglitz, S. (2020). Caution: Rumors ahead—A case study on the debunking of false information on Twitter. *Big Data & Society*, *7*(2), 1–15. https://doi.org/10.1177/2053951720980127

Kaakinen, M., Sirola, A., Savolainen, I., & Oksanen, A. (2020). Shared identity and shared information in social media: Development and validation of the identity bubble reinforcement scale. *Media Psychology*, *23*(1), 25–51. https://doi.org/10.1080/15213269.2018.1544910

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, *53*(1), 59–68. https://doi.org/10.1016/j.bushor.2009.09.003

Le-Phuong, L., Lams, L., & De Cock, R. (2022). Social media use and migrants' intersectional positioning: A case study of Vietnamese female migrants. *Media and Communication*, *10*(2), 192–203.

Matamoros-Fernández, A., Rodriguez, A., & Wikström, P. (2022). Humor that harms? Examining racist audiovisual memetic media on TikTok during Covid-19. *Media and Communication*, *10*(2), 180–191.

Mirbabaie, M., Ehnis, C., Stieglitz, S., & Bunker, D. (2014). Communication roles in public events: A case study on Twitter communication. In B. Doolin, E. Lamprou, N. Mitev, & L. McLeod (Eds.), *Information systems and global assemblages: (Re)configuring actors, artefacts, organizations* (pp. 207–218). Springer. https://doi.org/10.1007/978-3-662-45708-5_13

Pérez-Curiel, C., Rúas-Araújo, J., & Rivas-de-Roca, R. (2022). When politicians meet experts: Disinformation on Twitter about Covid-19 vaccination. *Media and Communication*, *10*(2), 157–168.

Pit, I. L., Veling, H., & Karremans, J. C. (2022). Does passive Facebook use promote feelings of social connectedness? *Media and Communication*, *10*(2), 119–129.

Robaeyst, B., Baccarne, B., De Meulenaere, J., & Mechant, P. (2022). Online neighborhood networks: The relationship between online communication practices and neighborhood dynamics. *Media and Communication*, *10*(2), 108–118.

Röchert, D., Neubaum, G., Ross, B., & Stieglitz, S. (2022). Caught in a networked collusion? Homogeneity in conspiracy-related discussion networks on YouTube. *Information Systems*, *103*, Article 101866. https://doi.org/10.1016/j.is.2021.101866

Ross, B., Jung, A., Heisel, J., & Stieglitz, S. (2018). Fake

news on social media: The (in)effectiveness of warning messages. In *Proceedings of the International Conference on Information Systems (ICIS)* (pp. 1–17). Association for Information Systems. https://aisel.aisnet.org/icis2018

Stieglitz, S., Brachten, F., Berthelé, D., Schlaus, M., Venetopoulou, C., & Veutgen, D. (2017). Do social bots (still) act different to humans? Comparing metrics of social bots with those of humans. In G. Meiselwitz (Ed.), *SCSM 2017: Social computing and social media—Human behavior* (pp. 379–395). Springer. https://doi.org/10.1007/978-3-319-58559-8_30

Stieglitz, S., & Dang-Xuan, L. (2013). Emotions and information diffusion in social media: Sentiment of microblogs and sharing behavior. *Journal of Management Information Systems*, *29*(4), 217–248. https://doi.org/10.2753/MIS0742-1222290408

Stieglitz, S., Mirbabaie, M., Ross, B., & Neuberger, C. (2018). Social media analytics: Challenges in topic discovery, data collection, and data preparation. *International Journal of Information Management*, *39*(April), 156–168. https://doi.org/10.1016/j.ijinfomgt.2017.12.002

van Dijck, J., & Poell, T. (2013). Understanding social media logic. *Media and Communication*, *1*(1), 2–14. https://doi.org/10.12924/mac2013.01010002

About the Authors

Stefan Stieglitz is a professor and head of the research group Digital Communication and Transformation at the University of Duisburg-Essen, Germany. In his research, he applies methods of social media analytics to investigate user behavior in social media. His work has been published in reputable journals such as the *Journal of Management Information System*, *European Journal of Information Systems*, and *Journal of Information Technology*. He was awarded the AIS Senior Scholars Best IS Publications Award and the Stafford Beer Medal.

Björn Ross is lecturer in Computational Social Science at the University of Edinburgh School of Informatics. In his research, he primarily uses computational methods from natural language processing, agent-based modeling, and social network analysis to study social media and related technologies. He has been awarded the Stafford Beer Medal for his research published in the *European Journal of Information Systems*.

Article

Online Neighborhood Networks: The Relationship Between Online Communication Practices and Neighborhood Dynamics

Ben Robaeyst [1],*, Bastiaan Baccarne [1], Jonas De Meulenaere [2], and Peter Mechant [1]

[1] imec-mict-UGent, Ghent University, Belgium
[2] Hoplr, Belgium

* Corresponding author (ben.robaeyst@ugent.be)

Abstract
This article builds upon communication infrastructure theory and investigates how communication practices on online neighborhood networks (ONNs) relate to the social cohesion of neighborhood communities. Specifically, we study the hyperlocal social media platform Hoplr, which provides ad-free ONNs in which neighbors can communicate with one another. Local governments can subscribe to Hoplr to communicate with their residents and engage them for community and public participation purposes. This study is based on an online survey of Hoplr members (N = 3,055) from 150 randomly selected ONNs. Social cohesion is disentangled as a combination of social support, a sense of community, reciprocal exchange, and social trust. We investigated social cohesion differences at the neighborhood level in relation to self-reported types of ONN communication practices (shared interest, supportive communication, and both tangible and informational support mobilization). The results reveal the limited value of quantified behavioral data to explain differences in neighborhood social cohesion. However, interesting patterns are revealed between different communication practices and neighborhood social cohesion, such as the importance of trivial storytelling and information exchange practices for enhancing trust, reciprocal support, and a sense of community. At the same time, a reversed relation appears when ONNs are considered explicit information exchange platforms. With these insights, we enhance the theoretical understanding of ONNs in relation to neighborhood social cohesion and within a broader repertoire of neighborhood communication infrastructures.

Issue
This article is part of the issue "Impact of Social Media on Social Cohesion," edited by Stefan Stieglitz (University of Duisburg-Essen) and Björn Ross (University of Edinburgh).

1. Introduction

For many people, using social networking sites (SNSs) is part of their everyday practices. For example, in Flanders, the northern part of Belgium, no less than 83% of the population reported using the Facebook app daily (Vandendriessche et al., 2020). SNSs provide platforms in which neighborhood residents connect and support one another, thus functioning as "hyperlocal media" (Barnett & Townend, 2015; De Meulenaere, 2020; Williams et al., 2015). These materialise on SNSs as self-organised online neighborhood networks (ONNs;

Bouko & Calabrese, 2017; Gulyas et al., 2019; Nygren et al., 2018; Rufas & Hine, 2018).

In Flanders, neighborhood residents opportunistically appropriate Facebook, a popular social media platform, to create local groups. Named in the style of "you are from X if you are Y" they appeal to local residents to engage in conversations with one another; share information about their neighborhood, town, or city; and ask for neighborly help.

However, large SNSs, such as Facebook, face challenges arising from privacy concerns, invasive advertising models, data ownership discussions, or issues related to

fake news and filter bubbles. The ensuing loss of credibility and trust in these platforms has created opportunities for alternatives that explicitly focus on improving quality of life and the sustainable development of social capital in a neighborhood. One of these is Hoplr (https://www.hoplr.com), a Belgian SNS designed for neighborhoods and which is actively used in Belgium, the Netherlands, and Luxembourg. Hoplr has many parallels with Facebook groups, in that they both have a central news feed and allow users to identify other users through profiles and their real names. Hoplr, however, differs from Facebook in that users can only be members of their ONN and are unable to develop a personal list of "friends" on the network. Currently, Hoplr has about 550,000 active members in Flanders (ca. 10% of the population).

The literature presents tentative evidence that the abovementioned ONNs can support and stimulate neighborhood attachment and a sense of community (Bouko & Calabrese, 2017). This facilitates the development of local social relations and the exchange of social support (Rufas & Hine, 2018) and helps build social capital (Gregory, 2015). As such, ONNs allow neighborhood residents to develop an affective relationship with a network of neighborhood residents, which, in turn, provides access to neighborly help (De Meulenaere, 2020).

Local social interactions and relations, the networks they form, the communities they underpin, the resources they contain, and the cohesion they bring about are key concepts with respect to neighborhood residents' well-being (Farahani, 2016; Farrell et al., 2004). In addition, they are instrumental with respect to the neighborhood's capacity to deal with collective challenges and issues (Bandura, 2000; Buchan et al., 2002). Communication infrastructure theory (CIT; Kim & Ball-Rokeach, 2006) shows that creating storytelling networks (STNs) in local communities also contributes to the well-being of its residents.

Following this CIT perspective (Kim & Ball-Rokeach, 2006), the current article envisions ONNs as an additional layer upon the social infrastructures present in society. In addition to the physical environment that supports communication storytelling practices between neighborhood inhabitants, ONNs act as digital facilitators to improve communication practices between neighborhood inhabitants. While physical interventions in the public domain facilitate the communication and participation practices of these inhabitants, SNSs offer alternative digital platforms to strengthen these practices. Consequently, this article aims to look into the communication practices that are being facilitated on the Hoplr SNS platform and investigate how these communication practices explain differences in social cohesion at the neighborhood level.

2. Online Neighborhood Networks

Neighborhood residents use popular social media platforms to develop ONNs. Prior studies have found that these ONNs are used to share neighborhood-related information (Bingham-Hall & Law, 2015; Bouko & Calabrese, 2017), notify one another about community events and neighborhood issues (Afzalan & Evans-Cowley, 2015; López et al., 2014), and ask fellow neighbors for help and exchange various forms of neighborly support (López & Farzan, 2015; Rufas & Hine, 2018; Silver & Matthews, 2016).

Content analyses of self-organized ONNs show that exchanges of neighborly help appear to be the dominant use of ONNs, with 47% (De Meulenaere, Baccarne, et al., 2020) to up to 83% (López & Farzan, 2015) of the contents posted on ONNs comprising such requests for help. Accordingly, these ONNs appear to facilitate neighbors in contacting and finding one another, thus extending the local social network from which they can ask and receive support. Generally, social support networks have been found to be a crucial factor in individuals' well-being (McKenzie et al., 2002; Thoits, 2011; Uchino et al., 2012), while well-functioning neighborhood social networks are instrumental in developing neighborhood capacity to face both internal and external challenges (Craig, 2007; Forrest & Kearns, 2001; Sampson, McAdam, et al., 2005).

On a basic level, ONNs can be considered marketplaces for exchanging local information and resources (De Meulenaere, Courtois, et al., 2020). In that capacity, neighborhood residents use ONNs to engage in online neighboring behaviors that are also prosocial, such as the unprompted sharing of information pertaining to the neighborhood and engaging in supportive communication directed at others who are perceived as neighbors (De Meulenaere, Baccarne, et al., 2021a). Engaging in these exchange behaviors brings about neighborly relations that, in turn, can strengthen the neighborhood's social fabric and foster its social resilience (Vogel et al., 2021).

These social interactions and the ensuing relations that develop are more than mere exchange relations, as it has been observed that they also bring about a higher sense of community (De Meulenaere, Courtois, et al., 2020). Interactions on ONNs involve neighborly talk (Bouko & Calabrese, 2017), through which ONN users can engage in interpersonal neighborhood storytelling (Ball-Rokeach et al., 2001). De Meulenaere, Courtois, et al. (2020) argue that this interpersonal storytelling among individual neighborhood residents in a social media context brings about an ambient and affective local social news stream (cf. Papacharissi & Oliveira, 2012) due to social media platform affordances (Boyd, 2011). Active ONN use has been found to be positively related to a higher awareness of neighborhood events and issues and how other neighborhood residents think about these. Such a higher awareness is, in turn, an important mediating factor between active ONN use and experiencing a neighborhood sense of community (De Meulenaere, Baccarne, et al., 2020). As such, ONNs appear as both online neighborhood exchange platforms

and community awareness media that facilitate local social interactions in various forms and are capable of supporting local online communities.

3. Neighborhood Social Cohesion and Communication Infrastructure Theory

This article starts from a CIT perspective, which states that neighborhoods exist out of multilevel communication infrastructures that can also be appointed as STNs. The quality of these STNs is related to the quality of health at the individual and community levels within the neighborhood (Fong et al., 2019; Kim et al., 2011). These are influenced by a qualitative foundation, also called the "communication action context," which facilitates or impedes these STNs by creating a context that is suitable for communication practices (Wilkin et al., 2010), such as safe neighborhood environments, the presence of meeting places, and the quality of such meeting places. Accordingly, we envision these ONNs as an addition to neighborhoods' communication action contexts, which can facilitate and strengthen STNs that serve to establish neighborhood social cohesion. As the aim of this article is to share insights into how ONN communication practices contribute to establishing neighborhood social cohesion, we will describe how we conceptualized social cohesion and ONN communication practices in Section 3.1.

3.1. Neighborhood Social Cohesion

The current literature describes social cohesion as a characteristic of a social entity (e.g., a neighborhood) that is multidimensional and can be assessed on various levels (micro, meso, and macro) within society (Schiefer & van der Noll, 2017). The characteristic of multidimensionality emerges by dividing social cohesion into three major subdimensions: (a) social relations, (b) attachment/belonging to the social entity, and (c) the orientation of its members toward the common good of the social entity. Considering the nature of Hoplr, we conceptualize social cohesion accordingly. First, we focus on the meso level of the neighborhood. Second, we focus on the relational dimension of social cohesion because ONNs are platforms supporting social networks among neighbors, thereby playing into their users' affective relations toward the neighborhood.

Social cohesion is often reduced to the social cohesion and trust dimensions of the collective efficacy construct (Sampson, Raudenbush, et al., 1997). We believe that this measure only partially captures the broad, multidimensional nature of social cohesion, as outlined above. In line with this conceptualization, we thus considered three additional indicators. First, we considered neighborhood social support (De Meulenaere, Baccarne, et al., 2021b; Sherbourne & Stewart, 1991) as indicative of the strength of the relationships found within a neighborhood. Higher perceived social support implies stronger neighborhood relations. Second, and related to the above, we consid-

ered the extent to which neighborhood residents follow existing norms as they help one another and share resources (Sampson & Graif, 2009). Third, when social interactions occur and relations are formed, residents can also develop an affective bond toward the network, mainly in the form of a neighborhood sense of community (Buckner, 1988), which encapsulates the attachment/belonging dimension of social cohesion. Finally, we included neighborhood social trust, which indicates the extent to which residents feel that there is a certain level of trust among neighborhood residents (Hardyns et al., 2018; Sampson, Raudenbush, et al., 1997).

3.2. Online Neighborhood Network Communication Practices

Following CIT, neighborhood social cohesion is positively impacted by communication practices within social networks, thus contributing to the creation of local STNs. We demarcate these communication practices as a construct of self-reported types of ONN communication practices. Specifically, the concepts that were measured were shared interest, supportive communication, and both tangible and informational support mobilization.

These communication practices encompass how users can use the platform to develop and maintain local social relations. Through practices of storytelling, as in sharing neighborhood related information, and online neighboring practices such as support mobilization requests and responding to shared information and such support requests, local relationships can be developed as well as engendering an attachment to the neighborhood (De Meulenaere, Baccarne, et al, 2020, 2021a).

Prior studies have explored and demonstrated how ONN use is positively associated on an individual level to higher neighborhood sense of community (De Meulenaere, Baccarne, et al, 2020), and how it allows exchange of social support (López & Farzan, 2015; Rufas & Hine, 2018) and social trust (De Meulenaere, Courtois, et al., 2020). This article wants to investigate to what extent these communication practices in ONNs on an aggregated ONN level can help to explain neighborhood social cohesion, given the conceptualization of social cohesion above.

Specifically, the study aims to answer the following research questions:

RQ1: To what extent can differences in *perceived neighborhood social support* be explained through differences in ONN communication practices?

RQ2: To what extent can differences in *neighborhood sense of community* be explained through differences in ONN communication practices?

RQ3: To what extent can differences in *reciprocal exchange* be explained through differences in ONN communication practices?

RQ4: To what extent can differences in *social trust* be explained through differences in ONN communication practices?

4. Methodology

4.1. Data Collection

The sampling frame for this study consisted of all Flemish neighborhoods with at least 100 active Hoplr users (as of Spring 2021). This amounted to a total of 597 neighborhoods and 230,198 users. Flanders is the Dutch-speaking part of Belgium. Thus, a one-stage cluster sampling strategy was applied, in which we randomly selected 150 Flemish neighborhoods from 61 different municipalities. All members of the selected neighborhoods (a total of 56,450 users) were invited to participate in an online survey. The data were collected through the Hoplr platform for three weeks (April 9 to May 2, 2021). An invitation to participate was posted in all selected neighborhoods and mailed to all members of the selected neighborhoods. Afterward, two reminder emails were sent to those users who had not yet participated in the survey. A total of 4,357 users completed the survey, resulting in a gross response rate of 7.7%.

After cleaning the data, which only included completed responses for the items of the eight dependent and independent variables, a total of 3,055 valid responses were obtained. To check for potential bias, valid and invalid responses were compared, and no significant differences were found for age, gender, neighborhood, or degree of ONN activity.

As discussed previously, this article conceptualizes neighborhood attributes such as sense of community and social trust as features of a social entity. Hence, we did not analyze variances at the individual level but at the aggregated level (including all of the 150 neighborhoods). Therefore, the dataset was aggregated at the neighborhood level (Table 1).

4.2. Measures

Although we explored the possibilities of studying the logged behavioral data to which we had access, this study relied on self-reported behavior, as this operationalization was best embedded in the existing literature. In particular, the measures discussed below all rely on self-reported survey responses. As neighborhood attributes are conceptualized as aggregated measures in this study, the individual items of each construct are treated as sum scales. Below, we first discuss the dependent variables, namely, the self-reported neighborhood social cohesion measures (Table 2). Next, we discuss the independent variables, which are self-reported communication practices (Table 3).

4.2.1. Dependent Variables: Neighborhood Social Cohesion

The dependent variables were measured using five-point Likert scales at the individual level and subsequently aggregated to the neighborhood level. The first dimension—perceived neighborhood social support—was measured using the tangible support subscale from the medical outcomes study social support scale (Sherbourne & Stewart, 1991), tailored to a neighborhood context. "Neighborhood sense of community" was measured using three items adapted from the psychological sense of community component of Buckner's (1988) neighborhood cohesion index. "Reciprocal exchange" (Sampson & Graif, 2009) was measured using three items, while "social trust" was measured using four items from the social cohesion and trust measure of Sampson, Raudenbush, et al. (1997). All measures proved to be reliable, with Cronbach's alpha values ranging between 0.78 and 0.86 (Table 2 and Supplementary File).

Table 1. Sample description.

Sample Parameter	
Number of neighborhoods	N = 150
Number of valid participants	N = 3,055
Gender	47.5% male
Average ONN membership length (days)	609.6 (SD = 420.1)
Average ONN member count	380.3 (SD = 242.6)

Table 2. Overview of the dependent variables.

Concept	Main Source	No. of Items	Mean	SD	Cronbach's α
Perceived neighborhood social support	Sherbourne and Stewart (1991)	3	3.40	0.36	0.858
Neighborhood sense of community	Buckner (1988)	3	3.49	0.31	0.833
Reciprocal exchange	Sampson and Graif (2009)	3	2.19	0.29	0.782
Social trust	Sampson, Raudenbush, et al. (1997)	4	3.72	0.29	0.861

4.2.2. Independent Variables: Online Neighborhood Network Communication Practices

ONN usage was measured using the expressive and instrumental online neighborhood network uses scale introduced by De Meulenaere, Baccarne, et al. (2021b). This survey-based scale measures two types of expressive and two types of instrumental ONN use based on self-assessed behavior and behavioral intention. The expressive uses include shared interests, which involve sharing information with the online network, and supportive communication, which pertains to an individual reacting in a supportive manner to others' posts. The two types of instrumental uses are informational support mobilization (asking other ONN users for information help) and tangible support mobilization (asking other ONN users for tangible help). All four dimensions were measured using a five-point scale (1 = *totally disagree* to 5 = *totally agree*), and all constructs proved to be reliable (Table 3 and Supplementary File).

4.3. Hypothesized Model

In the long-standing tradition of unraveling differences in neighborhood social cohesion, this article takes a particular look at the role of technology-enabled communication among neighborhood residents. Hence, the identified ONN communication practices are conceptualized as potential determinants that can help us understand differences in neighborhood social cohesion.

In summary, the model expects a significant relationship between each independent and dependent variable (Figure 1). We tested the model using multiple regression for each independent variable (each variable was normally distributed).

5. Results

5.1. Perceived Neighborhood Social Support

The first analysis tries to better understand differences in perceived neighborhood social support through differences in ONN communication practices. In other words, we aim to determine whether a neighborhood's perceived access to (hyper) local social support can be explained by the nature of the neighborhood's ONN appropriation. To study this, multiple regression of the four ONN communication practices on perceived neighborhood social support was performed (Table 4).

The results show that "shared interest," "supportive communication," "tangible support mobilization," and "informational support mobilization" explain 19.3% of the variation in perceived neighborhood social support (Adj. R^2 = 0.193; $F_{(4,145)}$ = 9.935; $p < 0.001$).

The data reveal that there is no significant contribution of shared interest (β = 0.088, p = 0.465), and only very little of supportive communication (β = 0.338, p = 0.021). In other words, ONN information-sharing behavior and the degree of moral support on the ONN do not explain differences regarding potential

Table 3. Overview of the independent variables.

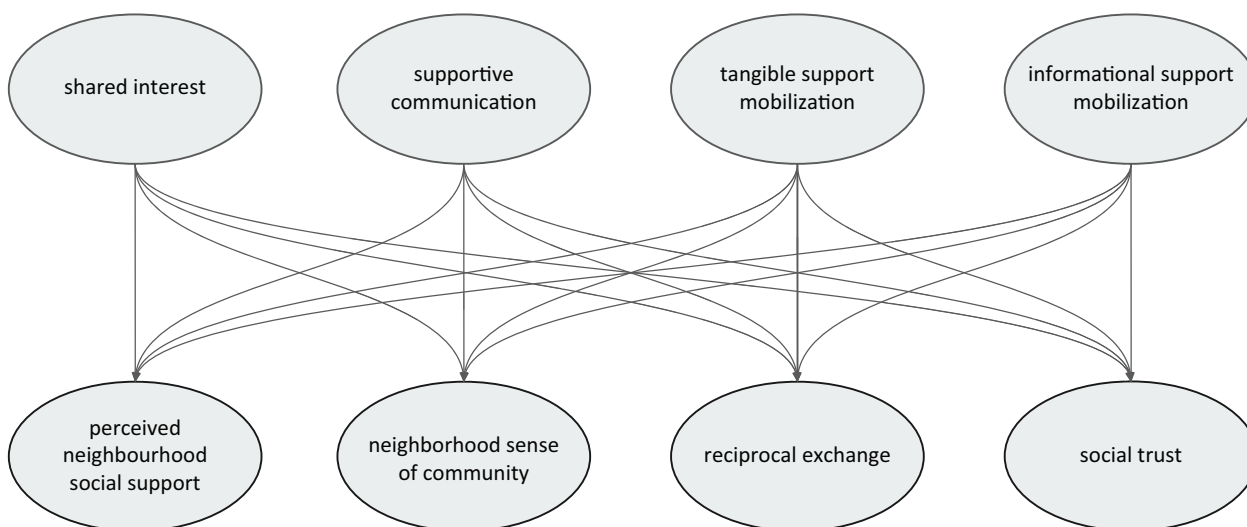| Concept	No. of Items	Mean	SD	Cronbach's α
Shared interests	3	2.63	0.37	0.823
Supportive communication	4	3.20	0.27	0.843
Informational support mobilization	4	3.02	0.32	0.829
Tangible support mobilization	4	2.48	0.34	0.826

Figure 1. The hypothesized model.

Table 4. Determinant table (regression on perceived neighborhood social support).

Independent	β	std. β	p
Intercept	2.432	0	<0.001
Shared interest	0.088	0.091	0.465
Supportive communication	0.338	0.254	0.021
Tangible support mobilization	0.412	0.398	<0.001
Informational support mobilization	−0.451	−0.409	<0.001

inter-neighbor resource mobilization. These differences, however, can be explained through tangible ($\beta = 0.412$, $p < 0.001$) and informational ($\beta = -0.451$, $p < 0.001$) support practices on the ONN, although there is an unexpected negative relationship between the latter.

5.2. Neighborhood Sense of Community

The second neighborhood attribute studied in this article is the degree to which a neighborhood is perceived as a community, and this entails shared identities and interpersonal connections. While this dimension is often studied in relation to other social cohesion determinants, we specifically study these inter-neighborhood differences through the communication practices that take place on the ONN. To study this, we performed a multiple regression of the four ONN communication practices on the neighborhood sense of community (Table 5).

The results show that "shared interest," "supportive communication," "tangible support mobilization," and "informational support mobilization" explain 31% of the variation in the neighborhood sense of community (Adj. $R^2 = 0.310$; $F_{(4,145)} = 17.697$; sig. < 0.0001). This is a rather large proportion of the variance explained.

While 31% of the variation in neighborhood sense of community is explained, only two predictors significantly contribute to this regression model. The data indicate that neighborhood sense of community is not determined by supportive communication practices ($\beta = -0.037$, $p = 0.748$), nor by informational support

($\beta = -0.170$, $p = 0.089$). Furthermore, two communication practices strongly predict differences in neighborhood sense of community: shared interest ($\beta = 0.344$, $p < 0.001$) and tangible support mobilization ($\beta = 0.358$, $p < 0.001$). This implies that high levels of neighborhood sense of community are predicted by high levels of tangible help requests on the ONN and the amount of information shared by residents about their neighborhood.

5.3. Reciprocal Exchange

Next, we analyzed the differences in the perceived exchange of benefits and resources (behavior). Although, again, these differences could be studied in relation to social cohesion attributes, we studied the relationship of such behavior to different ONN communication practices. Similar to the earlier analyses, this was done through a multiple regression analysis of the four ONN communication practices on reciprocal exchange (Table 6).

The results show that "shared interest," "supportive communication," "tangible support mobilization," and "informational support mobilization" explain 13.5% of the variation in reciprocal exchange (Adj. $R^2 = 0.135$; $F_{(4,145)} = 6.832$; sig. < 0.001). Thus, while this model is statistically significant, it only predicts a limited amount of the variation in reciprocal exchange.

As expected from the general model, most independent variables do not contribute significantly to the model. Specifically, supportive communication ($\beta = 0.070$, $p = 0.568$), tangible support mobilization

Table 5. Determinant table (regression on neighborhood sense of community).

Independent	β	std. β	p
Intercept	2.330	0	<0.001
Shared interest	0.344	0.413	<0.001
Supportive communication	−0.037	−0.032	0.748
Tangible support mobilization	0.358	0.400	<0.001
Informational support mobilization	−0.170	−0.178	0.089

Table 6. Determinant table (regression on reciprocal exchange).

Independent	β	std. β	p
Intercept	1.494	0	<0.001
Shared interest	0.358	0.455	<0.001
Supportive communication	0.070	0.065	0.568
Tangible support mobilization	0.022	0.026	0.786
Informational support mobilization	−0.175	−0.194	0.096

(β = 0.022, p = 0.786), and informational support mobilization (β = −0.175, p = 0.096) do not explain differences in reciprocal exchange behavior.

5.4. Social Trust

The final dimension of neighborhood social cohesion is the degree of social trust, which relates to interpersonal closeness and the overall perception of trustworthiness among neighbors. We hypothesized that different communication practices in ONNs relate to different expressions of neighborhood trust. Following the same approach as in the previous analyses, we used a multiple regression analysis of the four ONN communication practices on reciprocal exchange (Table 7).

The results indicate that "shared interest," "supportive communication," "tangible support mobilization," and "informational support mobilization" explain 22.1% of the variation in social trust (Adj. R² = 0.221; F(4,145) = 11.567; sig. < 0.0001). This is a substantial proportion of the variance explained.

However, not every independent variable contributes equally to this understanding. Although one could consider supportive communication practices a bridging process to alleviate interpersonal trust, this is not confirmed in our model (β = −0.040, p = 0.729). Social trust seems to be mainly determined by storytelling prac-

tices (shared interest, β = 0.313, p < 0.01), presumably in a similar way, as such practices shape community identities. Furthermore, interpersonal trust is also explained and expressed through higher levels of tangible support mobilization (β = 0.304, p < 0.001). In other words, when interpersonal trust is high, neighborhood residents are more likely to ask for physical help. To a lesser extent, social trust can be explained through differences in informational support mobilization (β = −0.224, p < 0.05). However, this relationship is negative.

5.5. Integrated Model

Figure 2 shows the relationship between ONN communication practices and neighborhood social cohesion. Integrated model testing, such as SEM or path modeling, would be able to further disentangle the studied relationships. However, the conceptual approach to defining neighborhood social cohesion at the aggregated neighborhood level can be more suitably analyzed by a combination of multiple regression tests. Although this analysis makes an abstraction of the intercorrelations among different dimensions of social cohesion, it reveals a meaningful disentanglement of different ONN communication practices in relation to the four central neighborhood social cohesion indicators, as described above.

Table 7. Determinant table (regression on social trust).

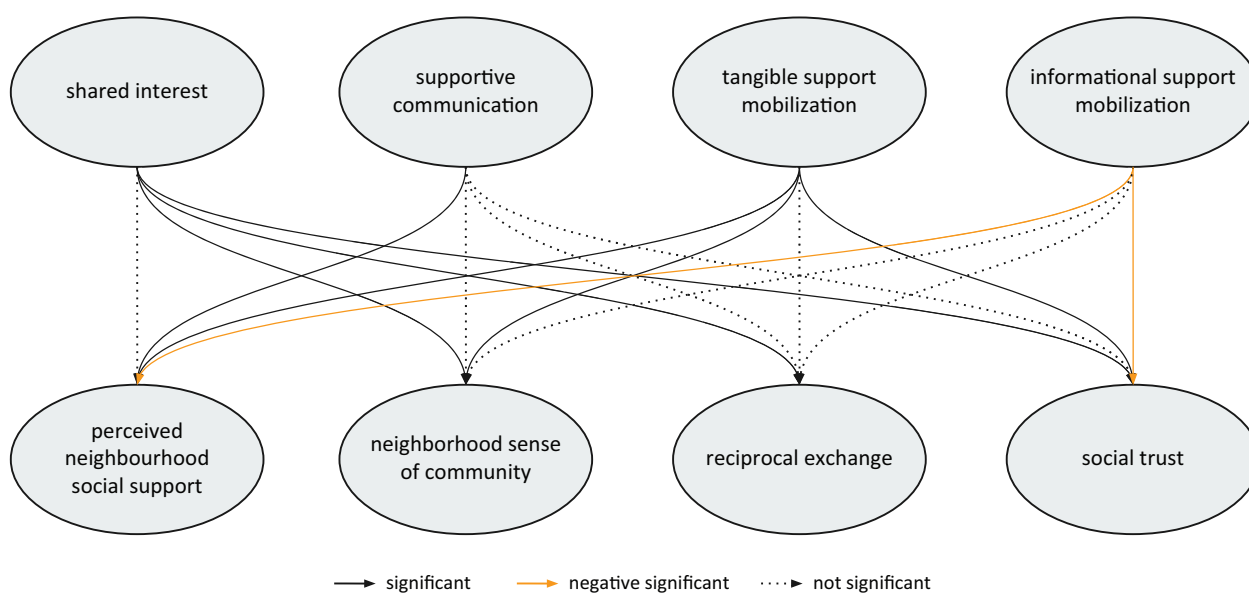| Independent	β	std. β	p
Intercept	2.948	0	<0.001
Shared interest	0.313	0.403	<0.01
Supportive communication	−0.040	−0.037	0.729
Tangible support mobilization	0.304	0.363	<0.001
Informational support mobilization	−0.224	−0.251	0.024

Figure 2. Relationships between ONN communication practices and neighborhood social cohesion.

6. Discussion

The goal of this article was to investigate the contributions of ONN communication practices on the Hoplr platform to neighborhood social cohesion. Following CIT (Kim & Ball-Rokeach, 2006), we hypothesized that these practices contribute to creating and strengthening STNs within the neighborhoods, which are positively related to the health of its members and the social cohesion found within the neighborhood networks.

First, the relationship between communication practices and "perceived social support" was investigated. The data indicate that shared interest has no significant contribution, while supportive communication has very little contribution in explaining the differences in perceived neighborhood social support. However, tangible and informational support practices explain differences in the perception of neighborhood support within the ONNs. Still, we found an unexpected negative relationship. This means that the extent to which neighborhood residents think they can rely on their neighbors when they request help is lower in those ONNs where the intention to ask for informational support is higher. This finding suggests a certain dichotomy between information- and action-based networks. Information-based networks are defined by lower levels of engagement and a larger interpersonal distance, while action-based networks (in which residents help one another physically) are characterized by stronger ties that enable social support processes. This suggests that the strong information-based nature of ONN communication practices might even hinder neighborhood help requests because latent and weak ties define the interactions.

Concerning "neighborhood sense of community," a large proportion of variance can be explained by the practices of shared interest, supportive communication, and tangible and informational support mobilization. However, only two of these predictors help explain neighborhood sense of community: shared interest and tangible support. Accordingly, our analysis confirms two dimensions of neighborhood identity. On the one hand, such identities are constructed through storytelling practices and the exchange of (sometimes trivial) information that helps build a common knowledge base on "what a neighborhood is." On the other hand, identities are constructed through strong interpersonal ties that are created, confirmed, or strengthened through the exchange of valuable resources (e.g., investing time). While both insights are not new, the current study reveals the supporting role of ONN communication practices in this process.

Considering "reciprocal exchange," most communication practices do not contribute significantly to perceived reciprocal exchange. Surprisingly, this reveals the existence of highly different relationships compared to perceived neighborhood social support. While attitude is mainly determined by the extent to which tangible support is asked for on the ONN, actual reciprocal exchange behavior is determined by shared interest.

Again, this only predicted a modest amount of variation. Nevertheless, the storytelling practices that were revealed earlier as core processes in the construction of a strong neighborhood identity also seemed to be important for the actual exchange of resources.

The last subdimension of social cohesion that was tested in the study was "social trust." The results showed that not every independent variable contributed equally to predicting perceived social trust within the neighborhoods. Moreover, social trust seems to be mainly determined by a shared interest among neighborhood inhabitants, presumably in a similar way, as such practices shape community identities. In addition, social trust among neighborhood inhabitants can also be explained by tangible support mobilization. Hence, it is plausible that the more residents perceive an information network (or information-based technology), the more likely this neighborhood will have higher levels of social distrust. However, it can also be assumed that when neighborhood inhabitants perceive the ONN as information-based, they do not automatically link the ONN with offline practices.

In conclusion, this article highlights the importance of trivial storytelling and information exchange practices in enhancing neighborhood social trust, reciprocal support, and sense of community. However, in ONNs where there is a stronger emphasis on information exchange, we see negative associations with the investigated social cohesion indicators. This paradoxical insight suggests a distinction between information- and action-based communities, as well as the effect of ONNs on these communities. On the one hand, action-based communities can be identified indicating a higher level of asking for tangible support between residents on the platform. On the other hand, information-based communities can be identified indicating a higher level of informational exchange, such as asking for help and trivial storytelling on the platform, among neighborhood residents.

6.1. Limitations and Future Research

First, because of practical implications, we were able to measure only four subdimensions of social cohesion. Following the online survey conducted by Hoplr, we were unable to gain more insights into social cohesion in all of its identified assets of subdimensions. Instead, we were able to operationalize social cohesion by focusing on the subdimensions of social relations and attachment to the social entity. However, we did not consider the subdimension of the orientation of its members toward the common good of the social entity. Therefore, we recommend that future studies focus on social cohesion in all of its assets.

Second, this survey was conducted on the Hoplr platform. Despite the fair size of the sample, the participants all had a Hoplr membership. This resulted in a sample that did not cover all of the neighborhood residents but only those who were digitally literate and had an existing Hoplr account. Thus, we recommend that future

research include neighborhood inhabitants who are not present on the Hoplr platform.

Third, ONNs likely attract users who have a higher interest in and attachment to neighborhood life. Future studies could try to explore the extent to which neighborhoods, as a whole, can benefit from the presence and active usage of ONNs within a neighborhood by an engaged subset of these neighborhoods' populations. Do we see an overall increase in the neighborhoods' social cohesion because of the presence and active use of an ONN in the neighborhood overall, thus showing a spillover effect? Or are the benefits only preserved for those who are actively engaged with the platform?

Fourth, this also points to the absence of any neighborhood-related factors as covariates in the assessed relationships. Although neighborhood effects in European studies are typically small if not absent (Musterd & Pinkster, 2009), future studies should explore the extent to which neighborhood characteristics, such as level of urbanization, pre-existing levels of social cohesion, or ethnic diversity, among others, might affect the contributions of ONNs in enhancing social cohesion within the neighborhoods.

Finally, the cross-sectional nature of our data prevents us from tearing apart the direction of the associations we discovered. Thus, longitudinal studies employing a cross-lagged panel model investigating the temporal order between the communicational practices, on the one hand, and social cohesion indicators, on the other hand, can improve our understanding of ONN relationships with a neighborhood's social fabric.

7. Conclusions

This article investigated how communication practices on ONNs relate to the social cohesion of neighborhood communities by conducting an online survey (N = 3,055) in 150 neighborhoods on the hyperlocal social media platform Hoplr. To do this, social cohesion was disentangled as a construct of four subdimensions, namely, social support, sense of community, reciprocal exchange, and social trust. The relations between these subdimensions and self-reported communication practices, namely, shared interest, supportive communication, and both tangible and informational support mobilization, were investigated, with the results revealing interesting patterns between Hoplr communication practices and neighborhood social cohesion. Moreover, we established the importance of trivial storytelling and information exchange practices, both of which contribute to improving social trust, reciprocal support, and a sense of community within a neighborhood.

Acknowledgments

Conflict of Interests

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

References

Afzalan, N., & Evans-Cowley, J. (2015). Planning and social media: Facebook for planning at the neighbourhood scale. *Planning Practice & Research*, *30*(3), 270–285. https://doi.org/10.1080/02697459.2015.1052943

Ball-Rokeach, S. J., Kim, Y. C., & Matei, S. (2001). Storytelling neighborhood: Paths to belonging in diverse urban environments. *Communication Research*, *28*(4), 392–428. https://doi.org/10.1177/009365001028004003

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, *9*(3), 75–78. https://doi.org/10.1111/1467-8721.00064

Barnett, S., & Townend, J. (2015). Plurality, policy and the local: Can hyperlocals fill the gap? *Journalism Practice*, *9*(3), 332–349. https://doi.org/10.1080/17512786.2014.943930

Bingham-Hall, J., & Law, S. (2015). Connected or informed?: Local Twitter networking in a London neighbourhood. *Big Data & Society*, *2*(2), 1–17. https://doi.org/10.1177/2053951715597457

Bouko, C. G., & Calabrese, L. (2017). "T'es un vrai…si…": Quand les seniors aiment leur ville au sein de groupes Facebook ["You are a real…when you…": When senior citizens love their city in Facebook groups]. *Canadian Journal of Communication*, *42*(2), 311–330. https://doi.org/10.22230/cjc2017v42n2a3177

Boyd, D. (2011). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papacharissi (Ed.), *A networked self: Identity, community, and culture on social network sites* (pp. 39–58). Routledge.

Buchan, N. R., Croson, R. T. A., & Dawes, R. M. (2002). Swift neighbors and persistent strangers: A cross-cultural investigation of trust and reciprocity in social exchange. *American Journal of Sociology*, *108*(1), 168–206. https://doi.org/10.1086/344546

Buckner, J. C. (1988). The development of an instrument to measure neighborhood cohesion. *American Journal of Community Psychology*, 16(6), 771–791.

https://doi.org/10.1007/BF00930892

Craig, G. (2007). Community capacity-building: Something old, something new…? *Critical Social Policy*, *27*(3), 335–359. https://doi.org/10.1177/0261018307078846

De Meulenaere, J. (2020). *Online neighborhood networks: A multi-perspective inquiry into emergent community construction* [PhD thesis, Ghent University]. Academic Bibliography. https://biblio.ugent.be/publication/8650736

De Meulenaere, J., Baccarne, B., Courtois, C., & Ponnet, K. (2020). Neighborhood hotspot and community awareness: The double role of social network sites in local communities. *Communications*, *46*(4), 492–515. https://doi.org/10.1515/commun-2019-0135

De Meulenaere, J., Baccarne, B., Courtois, C., & Ponnet, K. (2021a). Disentangling social support mobilization via online neighborhood networks. *Journal of Community Psychology*, *49*(2), 481–498. https://doi.org/10.1002/jcop.22474

De Meulenaere, J., Baccarne, B., Courtois, C., & Ponnet, K. (2021b). The development and psychometric testing of the expressive and instrumental online neighborhood network uses scale (ONNUS). *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *15*(3), Article 8. https://doi.org/10.5817/CP2021-3-8

De Meulenaere, J., Courtois, C., & Ponnet, K. (2020). Bottom-up hyperlocal media in Belgium: Facebook groups as collaborative neighborhood awareness systems. In A. Gulyas & D. Baines (Eds.), *Routledge companion to local news and journalism* (pp. 398–407). Routledge.

Farahani, L. M. (2016). The value of the sense of community and neighbouring. *Housing, Theory & Society*, *33*(3), 357–376. https://doi.org/10.1080/14036096.2016.1155480

Farrell, S. J., Aubry, T., & Coulombe, D. (2004). Neighborhoods and neighbors: Do they contribute to personal well-being? *Journal of Community Psychology*, *32*(1), 9–25. https://doi.org/10.1002/jcop.10082

Fong, P., Cruwys, T., Haslam, C., & Haslam, S. A. (2019). Neighbourhood identification and mental health: How social identification moderates the relationship between socioeconomic disadvantage and health. *Journal of Environmental Psychology*, *61*, 101–114. https://doi.org/10.1016/j.jenvp.2018.12.006

Forrest, R., & Kearns, A. (2001). Social cohesion, social capital and the neighbourhood. *Urban Studies*, *38*(12), 2125–2143. https://doi.org/10.1080/00420980120087081

Gregory, J. (2015). Connecting with the past through social media: The "beautiful buildings and cool places Perth has lost" Facebook group. *International Journal of Heritage Studies*, *21*(1), 22–45. https://doi.org/10.1080/13527258.2014.884015

Gulyas, A., O'Hara, S., & Eilenberg, J. (2019). Experiencing local news online: Audience practices and perceptions. *Journalism Studies*, *20*(13), 1846–1863.

https://doi.org/10.1080/1461670X.2018.1539345

Hardyns, W., Snaphaan, T., Pauwels, L. J. R., Vyncke, V., & Willems, S. (2018). A multilevel analysis of collective efficacy, neighborhood disorder, and individual social capital on avoidance behavior. *Crime & Delinquency*, *65*(7), 994–1021. https://doi.org/10.1177/0011128718788042

Kim, Y.-C., & Ball-Rokeach, S. J. (2006). Civic engagement from a communication infrastructure perspective. *Communication Theory*, *16*(2), 173–197. https://doi.org/10.1111/j.1468-2885.2006.00267.x

Kim, Y. C., Moran, M. B., Wilkin, H. A., & Ball-Rokeach, S. J. (2011). Integrated connection to neighborhood storytelling network, education, and chronic disease knowledge among African Americans and Latinos in Los Angeles. *Journal of Health Communication*, *16*(4), 393–415.

López, C., Butler, B., & Brusilovsky, P. (2014). Does anything ever happen around here? Assessing the online information landscape for local events. *Journal of Urban Technology*, *21*(4), 95–123. https://doi.org/10.1080/10630732.2014.971530

López, C., & Farzan, R. (2015). Lend me sugar, I am your neighbor! A content analysis of online forums for local communities. In G. Avram (Ed.), *C&T '15: Proceedings of the 7th International Conference on Communities and Technologies* (pp. 59–67). https://doi.org/10.1145/2768545.2768558

McKenzie, K., Whitley, R., & Weich, S. (2002). Social capital and mental health. *The British Journal of Psychiatry*, *181*(4), 280–283. https://doi.org/10.1192/bjp.181.4.280

Musterd, S., & Pinkster, F. M. (2009). Unraveling neighborhood effects: Evidence from two European welfare states. In F. Hendriks (Ed.), *City in sight* (pp. 41–60). Amsterdam University Press. https://doi.org/10.1515/9789048511211-004

Nygren, G., Leckner, S., & Tenor, C. (2018). Hyperlocals and legacy media. *Nordicom Review*, *39*(1), 33–49. https://doi.org/10.1515/nor-2017-0419

Papacharissi, Z., & Oliveira, M. F. (2012). Affective news and networked publics: The rhythms of news storytelling on #Egypt. *Journal of Communication*, *62*(2), 266–282. https://doi.org/10.1111/j.1460-2466.2012.01630.x

Rufas, A., & Hine, C. (2018). Everyday connections between online and offline: Imagining others and constructing community through local online initiatives. *New Media & Society*, *20*(10), 3879–3897. https://doi.org/10.1177/1461444818762364

Sampson, R. J., & Graif, C. (2009). Neighborhood social capital as differential social organization: Resident and leadership dimensions. *American Behavioral Scientist*, *52*(11), 1579–1605. https://doi.org/10.1177/0002764209331527

Sampson, R. J., McAdam, D., MacIndoe, H., & Weffer-Elizondo, S. (2005). Civil society reconsidered: The durable nature and community structure of col-

lective civic action. *American Journal of Sociology*, *111*(3), 673–714. https://doi.org/10.1086/497351

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, *277*(5328), 918–924. https://doi.org/10.1126/science.277.5328.918

Schiefer, D., & van der Noll, J. (2017). The essentials of social cohesion: A literature review. *Social Indicators Research*, *132*(2), 579–603. https://doi.org/10.1007/s11205-016-1314-5

Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Science & Medicine*, *32*(6), 705–714. https://doi.org/10.1016/0277-9536(91)90150-B

Silver, A., & Matthews, L. (2016). The use of Facebook for information seeking, decision support, and self-organization following a significant disaster. *Information, Communication & Society*, *20*(11), 1680–1697. https://doi.org/10.1080/1369118X.2016.1253762

Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, *52*(2), 145–161. https://doi.org/10.1177/0022146510395592

Uchino, B. N., Bowen, K., Carlisle, M., & Birmingham, W. (2012). Psychological pathways linking social support to health outcomes: A visit with the "ghosts" of research past, present, and future. *Social Science & Medicine*, *74*(7), 949–957. https://doi.org/10.1016/j.socscimed.2011.11.023

Vandendriessche, K., Steenberghs, E., Matheve, A., Georges, A., & De Marez, L. (2020). *imec.digimeter: Digitale trends in Vlaanderen* [imec.digimeter: Digital trends in Flanders]. imec. https://www.imec.be/sites/default/files/inline-files/DIGIMETER2020.pdf

Vogel, P., Kurtz, C., Grotherr, C., & Böhmann, T. (2021). Fostering social resilience via online neighborhood social networks during the Covid-19 pandemic and beyond: Status quo, design dilemmas and research opportunities. In T. X. Bui (Ed.), Proceedings of the 54th Hawaii International Conference on System Sciences (pp. 3037–3046). HICSS.

Wilkin, H. A., Moran, M. B., Ball-Rokeach, S. J., Gonzalez, C., & Kim, Y. C. (2010). Applications of communication infrastructure theory. *Health Communication*, *25*(6/7), 611–612. https://doi.org/10.1080/10410236.2010.496839

Williams, A., Harte, D., & Turner, J. (2015). The value of UK hyperlocal community news. *Digital Journalism, 3*(5), 680–703. https://doi.org/10.1080/21670811.2014.965932

About the Authors

Ben Robaeyst is a junior researcher at imec-mict-Ghent University, Belgium. His academic interests are situated in urban technological innovation for societal complex problems. His work focuses on the development of new interfaces in the urban environment.

Bastiaan Baccarne is a senior researcher at imec-mict-Ghent University, Belgium. His academic interests converge on the crossroads between digital citizenship, civic technology, and smart cities. His work focuses on the potential and development of new interfaces in the urban environment. This includes research on online civic engagement, digital citizenship, urban commons, innovation ecosystems, and urban social informatics.

Jonas De Meulenaere holds a PhD in communication sciences from Ghent University (2020) and is currently working as chief knowledge officer at Hoplr. Before, his work focused on the role of online neighborhood networks in local community building by conducting research on localized digital media use, community building, and social capital.

Peter Mechant holds a PhD in communication sciences from Ghent University (2012) and has been working on a variety of research projects related to e-gov (open and linked data), smart cities, social software, and online communities. As senior researcher, he is involved in managing projects and project proposals on an European, national, and regional levels and he helps expand and enhance imec-MICT-UGent's offering towards the scientific research community. Peter currently works as a doctoral assistant at the Department of Communication Studies of Ghent University.

Article

Does Passive Facebook Use Promote Feelings of Social Connectedness?

Ilse L. Pit [1,2,3,]*, Harm Veling [1,4], and Johan C. Karremans [1]

[1] Behavioural Science Institute, Radboud University, The Netherlands
[2] Institute of Human Sciences, University of Oxford, UK
[3] Calleva Research Centre for Evolution and Human Sciences, Magdalen College, UK
[4] Consumption and Healthy Lifestyles, Wageningen University and Research, The Netherlands

* Corresponding author (ilse.pit@anthro.ox.ac.uk)

Abstract
Previous research has shown that passive social media use does not have the same positive effects on well-being as active social media use. However, it is currently unclear whether these effects can be attributed to the benefits of active use, the costs of passive use, or both. The current article investigated the effect of active and passive Facebook use on feelings of social connectedness after being ostracized. In two preregistered experiments, participants were first ostracized on a faux social media platform, followed by a measurement of social connectedness. In Experiment 1 they were then instructed to either use Facebook passively, use Facebook actively, or use a non-social website (Wikipedia), after which social connectedness was measured again. Results indicated that active Facebook use can restore social connectedness after being ostracized as compared to using a non-social website. While passive Facebook use also restored social connectedness, it did not change social connectedness significantly more so than Wikipedia use. In Experiment 2, we replicated Experiment 1, now focusing only on passive Facebook use compared to a non-social website. Results showed again that passive Facebook use did not influence social connectedness more so than the use of Wikipedia. In exploratory analyses, we found that for participants who felt close to other Facebook users, passive Facebook use did increase social connectedness compared to using a non-social website. These experiments suggest that, even though passive social media use does not restore social connectedness in the same way that active social media use does, it also does not harm social connectedness, and it may actually promote social connectedness under certain circumstances.

Keywords
Facebook; ostracism; preregistration; social connectedness; social media; social network site

1. Introduction

The feeling of belonging and social connectedness is often considered a fundamental human need (Baumeister & Leary, 1995; Lee & Robbins, 1995; van Bel et al., 2009). When needs are thwarted, like when we are socially excluded, contact with close others can help restore feelings of social connectedness (Karremans et al., 2011). Just like social interactions and relationships in the offline world, feelings of social connectedness can be lowered

(e.g., Wolf et al., 2015) as well as derived from online contact (e.g., Grieve et al., 2013). Indeed, some previous research findings suggest that more frequent use of social network sites, such as Facebook, tends to be related to higher perceptions of social connectedness (e.g., Knowles et al., 2015; for a review including some negative effects of social media use, see also Ryan et al., 2017).

However, not all social network use is similar. One important distinction that can be made is whether social networks are used actively or passively (Verduyn et al.,

2015). Active Facebook use refers to activities that facilitate direct exchanges with other people on Facebook, like posting content and reacting to others' posts. Passive Facebook use refers to the consumption of content without direct exchanges with others, like merely viewing others' posts. Out of 2.9 billion Facebook users worldwide, only 43% indicate that they actively contribute content to the platform every month (Global Web Index, 2015; Meta, 2021), meaning the remaining majority of Facebook users consume content passively.

Active Facebook use can increase social connectedness by facilitating information sharing with one's social network (Köbler et al., 2010), and by increasing the perception of being part of a large group of people (Gross & Acquisti, 2005). It can therefore be linked to strengthening existing social relationships and building social capital (i.e., increasing the value derived from social connections; Koroleva et al., 2011). In short, active Facebook use allows people to strengthen existing relationships and build new ones.

Theory and empirical findings regarding *passive* Facebook use, however, provide a more mixed view, with both negative and positive outcomes. Passive use has been linked to negative outcomes in that it might lead to increased upward social comparison: Seeing others' seemingly perfect lives portrayed on social media might lead to feelings of envy (Verduyn et al., 2017) and less perceived support by friends (Frison & Eggermont, 2020). At the same time, like active use, passive Facebook use could also increase feelings of social connectedness. Passive Facebook use might provide social reminders in times of low social connectedness, like seeing photos of loved ones or reading letters (Gardner et al., 2005; Knowles et al., 2015). This has been referred to as "social snacking" (Gardner et al., 2005). Reading Facebook friends' posts can predict feeling close to that friend, equally to receiving messages from the same friend (Burke & Kraut, 2014), and feelings of social connection to Facebook friends can be predicted by intimacy in Facebook friends' status updates (Utz, 2015). However, these feelings are more pronounced if participants also "like" the Facebook friend's status update, thus using Facebook more actively. Finally, even just seeing the Facebook logo, as compared to seeing the Flash Player logo, seems to restore feelings of social connectedness after being rejected (Knausenberger et al., 2015). Thus, similar to having one's smartphone close by (Hunter et al., 2018), or feeling intimacy towards Twitter users (Lin et al., 2016), passive Facebook use might be able to increase feelings of social connectedness, by providing "social snacks."

Several studies have looked into the difference between the effect of active and passive Facebook use on feelings of social connectedness. Große Deters and Mehl (2013) found that instructing participants to post more updates on Facebook reduced their loneliness, which explained increased felt connectedness and being in touch with friends. Tobin et al. (2015) found

that making participants use Facebook less actively was related to lower levels of belonging. Furthermore, Burke et al. (2010) found a positive correlation between passive Facebook use and feelings of loneliness (see also Thorisdottir et al., 2019). These studies suggest that active Facebook use can increase social connection, whereas passive Facebook use is related to adverse effects.

On the surface, the above-mentioned studies may seem inconsistent: Some studies suggest that passive Facebook use can promote social connectedness, whereas other studies suggest that passive Facebook use can hurt social connectedness. The body of research looking at differential effects of active and passive Facebook use, however, has only *compared active to passive Facebook use* but has to our knowledge not investigated the effect of passive Facebook use *relative to not using Facebook*. This makes it difficult to draw conclusions: Is active Facebook use indeed associated with positive outcomes, whereas passive use is associated with negative outcomes—as is often claimed (see Verduyn et al., 2017)? Or is it possible that both active and passive Facebook uses increase social connectedness, and that active Facebook use simply does so to a larger extent? The aim of the current research is to gain insight into the effect of passive Facebook use on feelings of social connectedness by comparing it to both active Facebook use and a control condition without Facebook use.

In two experimental studies, we examined the effects of Facebook use on feelings of social connectedness as compared to the use of a non-social website. In these experiments, participants used a faux social network site in which they were being ostracized by the other players, with the intent of lowering their feelings of social connectedness (Williams, 2009; Wolf et al., 2015). The rationale here is that this would minimize pre-existing differences between participants in their feelings of belongingness, and it creates room for the possible effect of Facebook use on social connectedness. After being ostracized, participants used Facebook actively or passively or used a non-social website.

We expected that active Facebook use, passive Facebook use, and the use of a non-social control website would differently influence perceived social connectedness after ostracism (H1). Moreover, we tested the directional hypothesis that active Facebook use would have a more positive influence on feelings of social connectedness compared to the use of a non-social website (H2; große Deters & Mehl, 2013), and compared to passive Facebook use (H3; e.g., Burke et al., 2010). Finally, in line with the finding that cues of social bonds increase feelings of social connectedness (Gardner et al., 2005; Knowles et al., 2015), and in line with research that found indications of a positive effect of passive Facebook use on perceived social connectedness (Burke & Kraut, 2014; Utz, 2015), we expected that passively using Facebook would increase feelings of social connectedness as compared to the use of a non-social website (H4).

2. Experiment 1

2.1. Methods

Our procedure, exclusion criteria, and confirmatory analyses were preregistered on the Open Science Framework (see Supplementary File). Both Experiments 1 and 2 were approved by the Ethics Committee of Social Science at Radboud University (Reference No. ECSW2016–2811-43).

2.1.1. Participants

An a priori power analysis for our mixed linear effects model was done by simulating data with information from past studies on ostracism and Facebook Use (Tobin et al., 2015; Zadro et al., 2004). A thousand samplings from these simulated data per N (ranging from 20 to 300) yielded that a sample of 207 participants would be needed to find a significant interaction effect at $p < 0.05$ with a power of 0.80 (see S3 in the Supplementary File).

A total of 358 participants completed the experiment online, of which 209 participants (58.3%) were left after excluding participants (n_{Active} = 71, $n_{Passive}$ = 69, and $n_{Control}$ = 69; see S3 in the Supplementary File). Participants needed to be able to read and write in English, use a Windows operating system, and have a Facebook account. We recruited participants through both Prolific (www.prolific.co; n = 160) and Radboud University Sona Systems (n = 49), and they were granted respectively £2.10, or course credit, for their participation. The sample consisted of 111 men, 97 women, and 1 other, ranging from 18 to 61 years old (M = 28.1, SD = 9.7), and resided in 29 different countries, with most participants coming from the UK (19.6%; n = 41) and the Netherlands (17.7%; n = 37).

2.1.2. Manipulations and Measures

In order to lower the participants' perceived social connectedness, participants were redirected to an adjusted version of the "ostracism online" paradigm by Wolf et al. (2015). In this validated paradigm, participants create a short profile on a website and are then led to believe they are connected to other people on a webpage. They can then view their own and 11 other faux participants' profiles, with the ability to "like" these profiles. In the exclusion condition of this paradigm, to which all participants were assigned, the webpage was programmed in such a way that participants only received one "like" on their profile, while the other profiles received multiple "likes" over the course of three minutes. In a pilot study, we found evidence that this paradigm successfully lowered participants' perceived social connectedness as compared to the inclusion condition of the same paradigm (see S1 in the Supplementary File).

In order to manipulate Facebook Use, participants were randomly assigned to one of three conditions:

Passive Facebook Use, Active Facebook Use, or the Control. Participants were asked to click on a provided link to either Facebook (https://facebook.com) or the English homepage of Wikipedia, a free online encyclopedia (https://en.wikipedia.org/wiki/Main_Page). Wikipedia was chosen as the Control after a pilot study (see S2 in the Supplementary File). Participants in the Passive Facebook Use Condition were instructed to browse their Facebook news feed and their own and friends' profile pages, but not to "like" or comment on any posts, or respond to any messages. Participants in the Active Facebook Use Condition were also instructed to browse their news feed and their own and friends' profiles and were told to "like" at least three of their friends' posts and leave at least one comment on a friend's post. Participants in the Control Condition were instructed to browse and view different articles on Wikipedia. After five minutes, upon an audio signal, participants returned to the survey.

To measure Perceived Social Connectedness, six items of the revised social connectedness scale (Lee et al., 2001) were listed with a temporal anchor (e.g., "Right now, I feel close to people" and "Right now, I don't feel related to most people"; see S4 in the Supplementary File). Every item was followed by a slider ranging from "strongly disagree" to "strongly agree," coded from 1 to 100. This measure was administered before and after the Facebook Use manipulation. After mirroring the relevant items, average Pre- and Post-Measures of Perceived Social Connectedness were calculated across all items (α_{pre} = 0.89, α_{post} = 0.89).

Furthermore, in order to objectively check that participants used Facebook during the experiment as instructed, they were asked to use a program created by the researchers to take screenshots of their Facebook activity log (see S4 in the Supplementary File). The Facebook activity log is a page within a person's personal Facebook account in which they can view the post, comments, and "likes" they have shared on Facebook with a timestamp. Screenshots were coded by counting "likes," comments, and posts by the participant, as seen in the participants' Facebook activity log during the time of the experiment. This information was used to exclude participants who did not use Facebook as instructed (see S3 in the Supplementary File).

To gain insight into whether participants were aware of the purpose of the study after participating in it, we used a funnel debriefing with four open questions (adjusted from Chartrand & Bargh, 1996; see S4 in the Supplementary File). Participants were also asked whether they interacted with any other person during the study. If they answered yes, they were asked to indicate whether this was in person, through a phone, through instant messaging, and/or otherwise.

2.1.3. Procedure

Participants were recruited to take part in a Qualtrics survey and were informed that we were interested in

how they experienced different websites. The ostracism paradigm, disguised as the website ConnectMe was presented first, followed by the Pre-Measure for Perceived Social Connectedness. In line with the cover story, participants were also asked how much they liked using this website with two filler items. Next, participants were presented with the Facebook Use manipulation, followed by the Post-Measure of Perceived Social Connectedness. Again, two filler items asked participants how much they liked using the website. All participants were then asked to use the screenshot program to take screenshots of their Facebook activity log. This was followed by a page with demographic questions (gender, age, and country of residence), funnel debriefing questions, and the questions about interacting with others during the study. Finally, participants were debriefed about their lack of "likes" on ConnectMe and about the purpose of the study and were given the option to leave remarks for the researchers. In total, the experiment took approximately 25 minutes to complete.

2.2. Results

We tested a linear mixed-effects model on the data with Facebook Use (Active/Passive/Control) and Time (Pre-/Post-Measurement) as independent variables, Perceived Social Connectedness as a dependent variable, and Participant as a random factor. The model included a fixed intercept, fixed effects for the factors Facebook Use, Time, the interaction between Facebook Use and Time, and a per-Participant random adjustment to the intercept. The factors were coded using sum-to-zero contrasts. For the factor Facebook Use the Control was always coded as −1, and the factor Time

the Pre-Measure was always coded as −1. In order to determine p-values, we used Type 3 tests and the parametric bootstrap method with 1,000 simulations using the packages "lme4" (Bates et al., 2014) and "afex" (Singmann et al., 2017) in R (R Core Team, 2016). Note that, as we used parametric bootstrapping, the p-value slightly changes each time the model is run, and our reported p-values are estimates. See Figure 1 for the plotted means and standard errors.

Supporting H1, we found a significant interaction between Facebook Use and Time (beta$_{Active}$ = 1.46(0.90), beta$_{Passive}$ = 0.59(0.90), $\chi^2(2)$ = 5.51, $p \approx 0.050$). Further analyses on subsets of the data revealed that the effect of Active Facebook Use on increases in Social Connectedness over Time differed significantly from the Control (H2), as indicated by a significant interaction between Facebook Use (Active use vs. Control Condition) and Time (beta = 1.76(0.76), $\chi^2(1)$ = 5.35, p = 0.022). Moreover, relevant to H3, the effect of Time did not differ between the Active and Passive Facebook Use Condition as indicated by a non-significant interaction between Facebook Use (Active vs. Passive Use) and Time ($\chi^2(1)$ = 0.32, p = 0.573). We further found that the interaction between Facebook Use (Passive Use vs. Control) and Time, testing whether the increase in Social Connectedness in the Passive Facebook Use Condition differed from the Control (H4), did not reach significance ($\chi^2(1)$ = 2.69, p = 0.094). Finally, the simple main effects of Time were significant for both Active (beta = 4.53(1.03), $\chi^2(1)$ = 17.38, p < 0.001) and Passive Facebook Use (beta = 3.65(1.165), $\chi^2(1)$ = 9.31, p = 0.003), and not for the Control ($\chi^2(1)$ = 0.83, p = 0.397; see S6 in the Supplementary File for exploratory analyses).
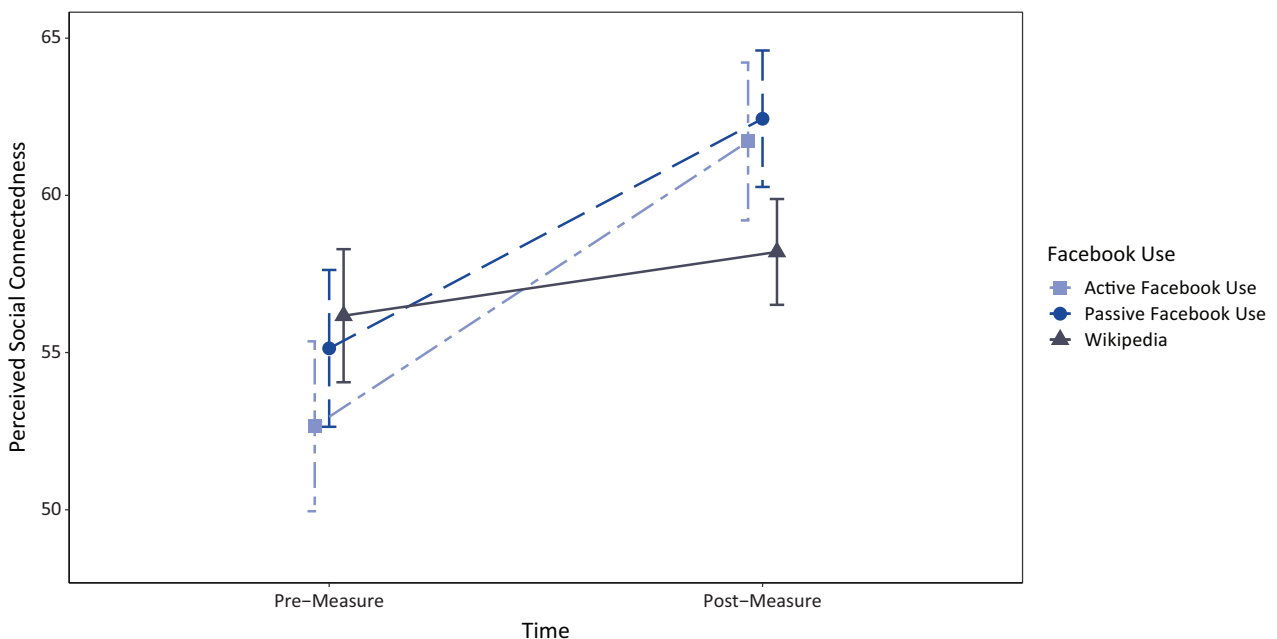

Figure 1. Mean Perceived Social Connectedness per Condition of Facebook Use Over Time for Experiment 1. Note: Standard errors are represented by error bars.

2.3. Discussion

As hypothesized, in Experiment 1 we found that active Facebook use caused a larger increase in perceived social connectedness over time than using a non-social website. We did not find the predicted difference between passive and active Facebook use: The increase in social connectedness was similar in both conditions.

The simple main effect analyses of time showed that participants' social connectedness increased in the passive Facebook use condition, whereas this was not the case for participants using the non-social website; however, we did not find the predicted significant interaction. As the observed pattern was in line with predictions, and the differences were smaller than expected, a larger sample size may be necessary to reliably detect an effect between passive Facebook use and a non-social website.

3. Experiment 2

In Experiment 2, we ran a partial replication of Experiment 1 with higher statistical power, particularly examining the effect of passive Facebook use on perceived social connectedness over time compared to the use of a non-social website. Additionally, we measured variables that might give us insight into the strength and quality of the social cues available to the participants through Facebook. Thus, in Experiment 2 we again test the hypothesis that passive Facebook use has a stronger positive effect on perceived social connectedness than a non-social website (H4). We also hypothesized that the effect of passive Facebook use on social connectedness over time would be positive.

Three possible moderators were explored. First, we measured participants' level of closeness to people encountered on Facebook. It is likely that the effects of passive use on social connectedness are stronger to the extent that one feels closer to others one encounters on Facebook during passive use. Second, we measured the amount of friends participants have on Facebook since people with more friends on Facebook indicate higher levels of perceived social support (Nabi et al., 2013). Finally, we measured the time participants spent on Facebook in a week. Ellison et al. (2007) found that more intense Facebook use is positively related to feelings of social connectedness.

3.1. Methods

3.1.1. Participants

Using a data simulation procedure, we used the means and standard deviations as found in Experiment 1 for the effect of Passive Facebook Use compared to the Control. A thousand samplings from these simulated data per n (ranging from 10 to 1,000) yielded that a sample of 306 participants would be needed to find an effect with $p < 0.05$ and a power of 0.80 (see S7 in the Supplementary File).

Five-hundred-and-twelve participants completed the experiment online, of which 308 participants (60.2%) were left for data analysis after exclusion ($n_{Passive}$ = 153, $n_{Control}$ = 155; see S7 in the Supplementary File). Participants were recruited through Prolific (n = 301) and Radboud University Sona Systems (n = 7) and were granted £2.50 or course credit for their participation. Participants were 150 women, 156 men, and 2 others, ranged from 18 to 77 years old (M = 30.71, SD = 10.92), from 26 different countries, with the most frequently mentioned countries being the UK (49%; n = 151) and the US (22.1%; n = 68).

3.1.2. Manipulations and Measures

Manipulations and measures were mostly the same as in Experiment 1, except that the experiment did not include an Active Facebook Use Condition. Additionally, we measured Closeness to Other Facebook Users with an adjusted version of the Inclusion of Other in the Self Scale (Aron et al., 1992; see S8 in the Supplementary File). This scale consists of seven pairs of circles, which increase in overlap with the increase of the score on the scale. The instructions were: "Out of the following pairs of circles, indicate the pair that best describes your relationship to the people you [just encountered while browsing/usually encounter on] Facebook," for participants in the Passive Facebook Use and Control Conditions respectively. The response to this question was coded as a number ranging from one to seven, with a higher number indicating more Closeness to Other Facebook Users.

To measure Amount of Facebook Friends we presented participants with the open question: "How many total Facebook friends do you have?" Moreover, in order to measure Time Spent on Facebook, we adjusted one item from the Facebook intensity scale by Ellison et al. (2007). This question was: "In the past week, on average, approximately how many minutes per day have you spent on Facebook?" This was presented with six options ranging from "less than 10 minutes" to "more than 3 hours," and scored answers as a value from one to six.

3.1.3. Procedure

The procedure was similar to Experiment 1, with Closeness to Other Facebook Users measured after the Post-Measure of Perceived Social Connectedness, and measures for participants' Amount of Facebook Friends and Time Spent on Facebook added after the demographic questions. In total, participation in the experiment took approximately 30 minutes.

3.2. Results

3.2.1. Confirmatory Analyses

As preregistered, we tested a linear mixed-effects model on the data. Facebook Use (Passive Use/Control) and

Time (Pre-/Post-Measure) acted as the independent variables, with Perceived Social Connectedness as the dependent variable, and Participant as a random factor. The model and factor coding were the same as in Experiment 1. In order to determine p-values, we used Type 3 tests and the parametric bootstrap method with 1,000 simulations. Since we have a one-sided hypothesis, we divided the outputted p-values by two (see S10 in the Supplementary File).

Perceived Social Connectedness increased significantly as a function of Time (beta = 3.36(0.61), $\chi^2(1)$ = 29.21, p < 0.001). Also, a significant main effect of Facebook Use was found (beta = −2.48(0.97), $\chi^2(1)$ = 6.57, p = 0.006). However, unexpectedly, no significant interaction effect between Facebook Use and Time on Perceived Social Connectedness was found ($\chi^2(1)$ = 0.01, p = 0.465). In both the Passive Facebook Use (beta = 3.31(0.92), $\chi^2(1)$ = 12.42, p < 0.001) and Control Condition (beta = 3.41(0.80), $\chi^2(1)$ = 17.44, p < 0.001) there was a significant increase in Social Connectedness from Pre- to Post-Measure. Thus, H4 was not confirmed. See Figure 2 for the plotted means and standard errors.

3.2.2. Exploratory Analyses

To examine whether Closeness to Other Facebook Users, Amount of Facebook Friends, or Time on Facebook moderated any of the effects as tested above, we standardized these variables and included them as predictors in the model as tested in H4 (see S10 in the Supplementary File). All main effects and interactions between dependent variables were entered into the model. The only significant three-way interaction with Facebook Use Over Time was Closeness to Other Facebook Users

(beta = 2.50(0.64), $\chi^2(1)$ = 15.96, p = 0.002). Number of Facebook Friends and Time on Facebook both did not have significant main effects or interaction effects with Time or Facebook Use on Perceived Social Connectedness and were therefore dropped (all p > 0.05).

We finally ran the same model again with only the main and interaction effects of Closeness to Other Facebook Users, Facebook Use, and Time on Perceived Social Connectedness. There was a significant interaction between Facebook Use, Time, and Closeness to Other Facebook Users (beta = 2.39(0.59), $\chi^2(1)$ = 16.36, p < 0.001; see S10 in the Supplementary File for main effects). The interaction is depicted in Figure 3. In the Passive Facebook Use Condition, the observed interaction pattern between Closeness to Other Facebook Users and Time was significant (beta = 4.20(0.85), $\chi^2(1)$ = 23.03, p < 0.001). As can be seen in Figure 3, when Passively using Facebook, there was an increase in Social Connectedness only when Closeness to Other Facebook Users was high. This pattern was not observed when Closeness was low. This interaction between Closeness and Time was not significant in the Control Condition, ($\chi^2(1)$ = 0.53, p = 0.468).

3.3. Discussion

Contrary to the trend observed in Experiment 1, overall, we found no support for our hypothesis that there is a difference between passive Facebook use and a non-social website on restoring social connectedness after being ostracized. Interestingly, however, exploratory analyses revealed that feelings of closeness to other Facebook users moderated the effect of Facebook use on perceived social connectedness over time: Passively using
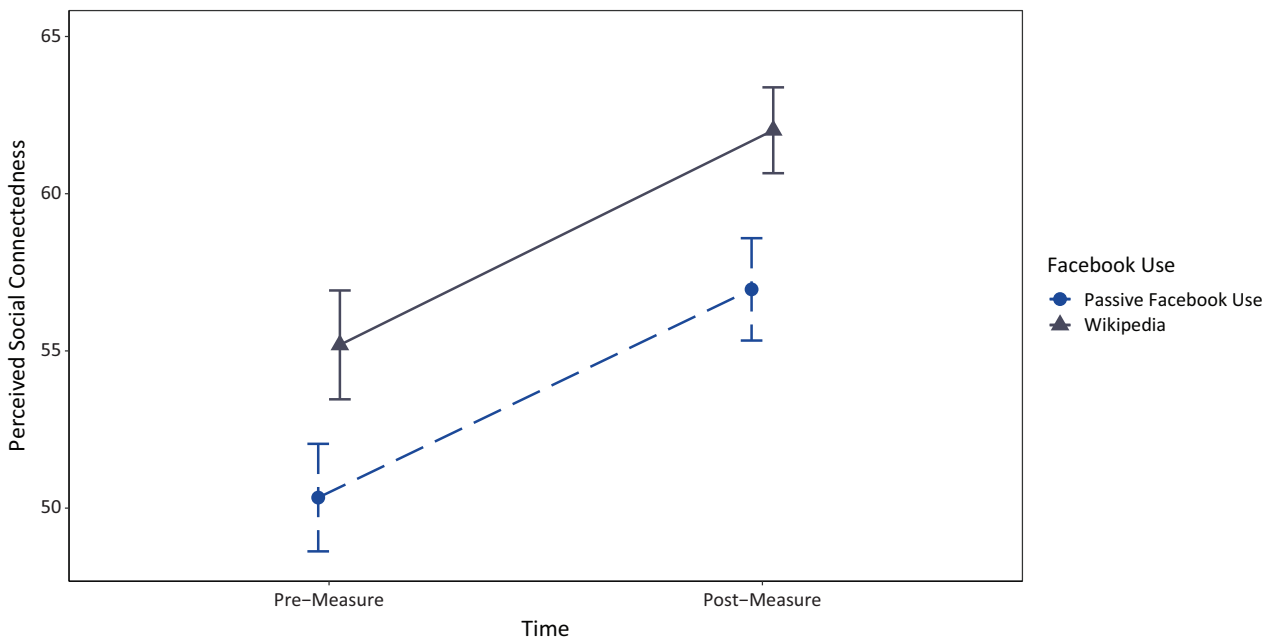

Figure 2. Mean Perceived Social Connectedness per Condition of Facebook Use Over Time for Experiment 2. Note: Standard errors are represented by error bars.
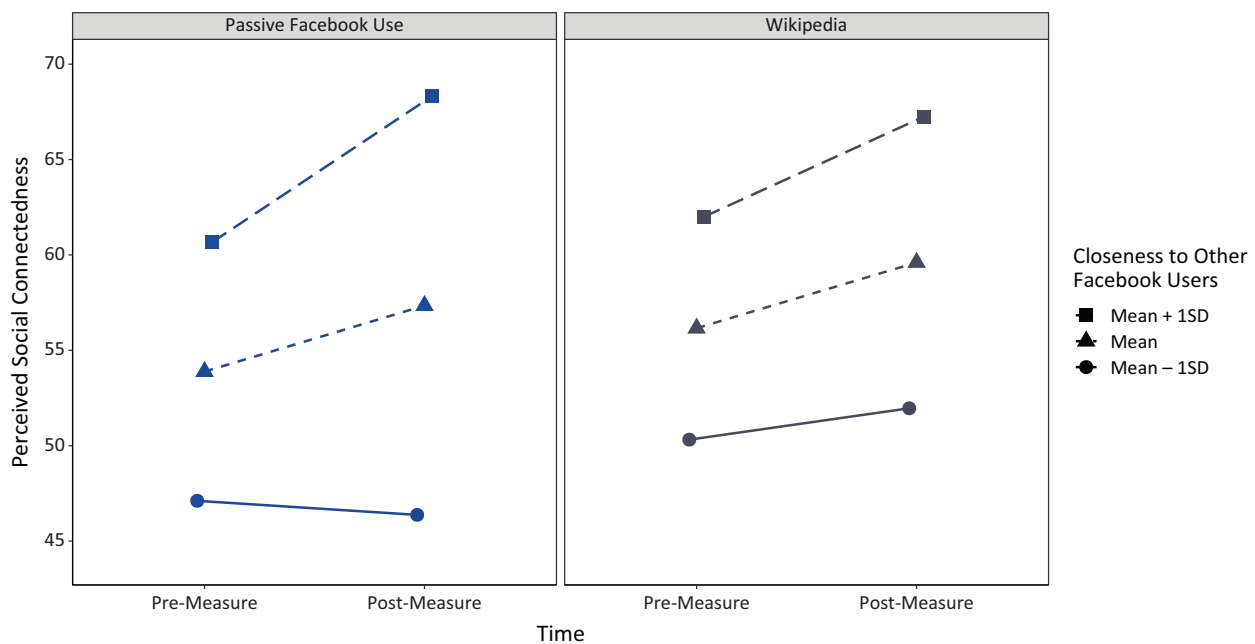
Figure 3. The plotted simple slopes for the three-way interaction effect between Closeness to Other Facebook Users, Facebook Use, and Time on Perceived Social Connectedness. Note: A regression equation was created, and the mean and standard deviation for Closeness to Other Facebook Users were used to predict values of perceived social connectedness at three different levels of Closeness to Other Facebook Users (as recommended by Aiken & West, 1991).

Facebook did positively affect perceived connectedness, but only when the people one encountered on Facebook were close (as compared to non-close) others. This is in line with previous findings that reminders of social bonds can increase perceived social connectedness (Gardner et al., 2005; Knowles et al., 2015).

4. General Discussion

The current research employed two experiments in an ecologically valid online environment to investigate the effect of passive Facebook use on feelings of social connectedness. In Experiment 1, after participants were ostracized, we found a positive effect of active Facebook use on perceived social connectedness, and some indications that passive Facebook use, similarly to active Facebook use, restored perceived social connectedness, whereas using a non-social website did not (although the difference between passive Facebook use and the control did not reach significance). In Experiment 2, we found that participants who used Facebook passively showed an increase in perceived social connectedness after being ostracized; however, this effect was very similar among participants using a non-social website. We did find indication that passive Facebook use may help to reconnect if one feels relatively close to the people one encounters on Facebook.

Experiment 1 showed that active Facebook use can increase feelings of social connectedness, which is in line with previous findings by Frison and Eggermont (2015) and große Deters and Mehl (2013). The present research extends previous findings by indicating that

active Facebook use has a more positive impact on social connectedness than the use of a non-social website. Furthermore, we found this to be the case after feelings of belongingness were thwarted by ostracism, suggesting that active Facebook use can restore feelings of connection in an online environment similar to offline environments (e.g., Knowles et al., 2015; Twenge et al., 2007).

Although passive Facebook use did show significant increases in feelings of social connection after ostracism, these effects were overall not stronger than spending time on Wikipedia, our non-social control condition. Although these findings do not refute the possibility that passive Facebook use can promote a sense of belongingness, it appears easier to find positive effects of active Facebook use than any effects of passive Facebook use. In both experiments, however, we found no evidence that passive Facebook use *undermined* feelings of social connectedness, as some previous findings have suggested (e.g., große Deters & Mehl, 2013; Tobin et al., 2015). Thus, the negative effect of passive Facebook use on feelings of connectedness, as found in previous research, might indeed only exist relative to active Facebook use, and not relative to other "non-social" internet behavior.

Exploratory findings in Experiment 2 showed that using Facebook passively can lead to increased feelings of social connectedness after ostracism for those participants who felt closer to the Facebook friends they encountered. This suggests that passive Facebook use may not only lead to feelings of envy and social comparison processes, as suggested previously (Verduyn

et al., 2015, 2017). Instead, our findings are in line with Koroleva et al. (2011), who found that a high-quality network on a social network site is necessary to gain its social benefits. Additionally, these findings are in line with previous research indicating that cues from close others can protect against the detrimental effects of ostracism (Karremans et al., 2011; Knowles et al., 2015), and that social media can provide these cues (Lin et al., 2016). Unfortunately, the current research cannot provide mechanistic insights here, and more experimental work on when and how passive Facebook use may promote social connectedness is required to create a more nuanced picture of this issue.

4.1. Limitations

Some limitations need to be mentioned. First, in the current research, we only investigated the effect of Facebook use after ostracism. Though we believe this is an important addition to the literature on recovering thwarted belonging needs, this design also comes with caveats. Most obviously, it means we cannot confidently generalize our findings to situations without ostracism. Furthermore, our findings suggest that participants naturally recovered back to their baseline social connectedness within the five minutes of Facebook or Wikipedia use, as seen in the increase in social connectedness over time in almost all conditions of both experiments (the only exception being the control condition in Experiment 1). This is in line with previous research on spontaneous recovery of connectedness (e.g., Zadro et al., 2006), and exemplifies the importance of the control condition to investigate the effect of Facebook use on the increase in social connectedness.

Second, we should critically discuss the design of our conditions. For the control condition, we used the main page of Wikipedia as a starting point. We ran a pilot to ensure that this page was seen as non-social, but still similar to Facebook in many other ways (see S2 in the Supplementary File). However, the main page of Wikipedia features different articles every day, which means that some days the content the participants were exposed to might be more social and positive than on other days. Though both Experiments 1 and 2 were conducted over several days, this could partly explain why in Experiment 1 the participants on average did not increase in social connectedness over time, while in Experiment 2 they did. Furthermore, browsing Wikipedia is not likely a normal behavior for most people. Past research has had similar issues (e.g., browsing neutral photos or comics as control conditions; Knowles et al., 2015), indicating that it is quite difficult to find a control condition for Facebook use that is non-social, entertaining, and natural to use.

Our choice of the passive and active Facebook conditions should also be discussed. We chose to include only the "likes," comments, and browsing features of Facebook in our study, neglecting Facebook func-

tions like direct messaging, creating events and inviting others, shopping, and others. More active ways of using Facebook, including creating posts, might lead to more "likes," which in turn leads to higher self-esteem (Marengo et al., 2021), and might additionally lead to more feelings of social connection. Our condition for passive Facebook use, on the other hand, could not have been more passive but could have been longer. Arguably, spending a short time using Facebook passively could have the positive effects discussed, whereas browsing Facebook for a longer time without engaging with any posts could be more likely to lead to negative effects, like upward social comparison (Verduyn et al., 2017).

Additionally, though Facebook is currently the most used social network site in the world, it is certainly not the only one, and other social network sites like Instagram, Snapchat, and Tiktok are more popular than Facebook among people under 30 years old (Auxier & Anderson, 2021). Although social mechanisms may be similar across these different platforms, it is important that future research looks into what specific features of social network sites, and the behavior they enable, can influence social connectedness.

As a final limitation, we did not take participants' personalities into account. In both experiments, we randomly assigned participants to use Facebook actively or passively (or not at all), which is again not an accurate representation of usual Facebook browsing behavior. By doing so we ignored individuals' preferences for passive or active Facebook use. About 6% of the initial participants had to be excluded due to them using Facebook differently from instructed (see S3 and S7 in the Supplementary File), implying they had Facebook habits different from the instructions. We further had to exclude about 21% of all participants because participants were unwilling or unable to share screenshots of their Facebook pages. The advantage of taking these screenshots was that it allowed us to objectively verify whether and how participants had used Facebook, which increased the validity of our measurement. However, the unfortunate side effect may be that our sample excluded participants with certain personality traits leading them to not being comfortable with sharing their Facebook information. Given research that implies that personality type might be predictive of the type of Facebook use (Pagani et al., 2011), future research might further take these differences into account.

5. Conclusion

The current article sheds light on the alleviating effects of using a social network site after ostracism. Corroborating past research, we found that active Facebook use increases social connectedness after ostracism. Findings on whether passive Facebook use can increase feelings of social connectedness remained somewhat ambiguous. In neither of the experiments did we find clear indications that passive Facebook use can increase feelings of

connectedness after ostracism compared to a non-social control condition. However, our results importantly suggest that passive social media use does not seem to harm people in ways previously reported. In exploratory results, we further found that passively using Facebook may be able to increase feelings of social connectedness as long as the Facebook user feels close to the other users on the platform. Despite limitations, the current article helps understand how social media use can influence feelings of connectedness in an increasingly digital world.

Acknowledgments

Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

A supplementary file (referred to in the text as S1–S10), as well as the preregistrations, data, and analysis scripts for both experiments, can be found on the Open Science Framework through this link: https://doi.org/10.17605/OSF.IO/G77B5

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. SAGE.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, *63*(4), 596–612. https://doi.org/10.1037/0022-3514.63.4.596

Auxier, B., & Anderson, M. (2021). *Social media use in 2021*. Pew Research Center. https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*(1), 1–48. https://doi.org/10.18637/jss.v067.i01

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Burke, M., & Kraut, R. E. (2014). Growing closer on Facebook: changes in tie strength through social network site use. In M. Jones & P. Palanque (Eds.), *CHI '14: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 4187–4196). Association for Computing Machinery. https://doi.org/10.1145/2556288.2557094

Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social well-being. In E. Mynatt (Ed.), *CHI '10: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1909–1912). Association for Computing Machinery. https://doi.org/10.1145/1753326.1753613

Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology*, *71*(3), 464–478. https://doi.org/10.1037/0022-3514.71.3.464

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143–1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x

Frison, E., & Eggermont, S. (2015). The impact of daily stress on adolescents' depressed mood: The role of social support seeking through Facebook. *Computers in Human Behavior*, *44*, 315–325. https://doi.org/10.1016/j.chb.2014.11.070

Frison, E., & Eggermont, S. (2020). Toward an integrated and differential approach to the relationships between loneliness, different types of Facebook use, and adolescents' depressed mood. *Communication Research*, *47*(5), 701–728. https://doi.org/10.1177/0093650215617506

Gardner, W. L., Pickett, C. L., & Knowles, M. L. (2005). Social snacking and shielding: Using social symbols, selves, and surrogates in the service of belonging needs. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 227–241). Psychology Press.

Global Web Index. (2015). *Social media engagement. Summary: Analyzing how internet users interact with social media* (GWI Insight Report Q1). https://web.archive.org/web/20190710133457/http://insight.globalwebindex.net/hs-fs/hub/304927/file-2615393475

Grieve, R., Indian, M., Witteveen, K., Tolan, G. A., & Marrington, J. (2013). Face-to-face or Facebook: Can social connectedness be derived online? *Computers in Human Behavior*, *29*(3), 604–609. https://doi.org/10.1016/j.chb.2012.11.017

Gross, R., & Acquisti, A. (2005). Information revelation and privacy in online social networks. In V. Atluri (Ed.), *WPES '05: Proceedings of the 2005 ACM Workshop on Privacy in the Electronic Society* (pp. 71–80). Asso-

ciation for Computing Machinery. https://doi.org/10.1145/1102199.1102214

große Deters, F., & Mehl, M. R. (2013). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychological and Personality Science*, *4*(5), 579–586. https://doi.org/10.1177/1948550612469233

Hunter, J. F., Hooker, E. D., Rohleder, N., & Pressman, S. D. (2018). The use of smartphones as a digital security blanket: The influence of phone use and availability on psychological and physiological responses to social exclusion. *Psychosomatic Medicine*, *80*(4), 345–352. https://doi.org/10.1097/psy.0000000000000568

Karremans, J. C., Heslenfeld, D. J., van Dillen, L. F., & Van Lange, P. A. (2011). Secure attachment partners attenuate neural responses to social exclusion: An fMRI investigation. *International Journal of Psychophysiology*, *81*(1), 44–50. https://doi.org/10.1016/j.ijpsycho.2011.04.003

Knausenberger, J., Hellmann, J. H., & Echterhoff, G. (2015). When virtual contact is all you need: Subtle reminders of Facebook preempt social-contact restoration after exclusion. *European Journal of Social Psychology*, *45*(3), 279–284. https://doi.org/10.1002/ejsp.%202035

Knowles, M. L., Haycock, N., & Shaikh, I. (2015). Does Facebook magnify or mitigate threats to belonging? *Social Psychology*, *46*(6), 313–324. https://doi.org/10.1027/1864-9335/a000246

Köbler, F., Riedl, C., Vetter, C., Leimeister, J. M., & Krcmar, H. (2010). Social connectedness on Facebook: An explorative study on status message usage. In *Proceedings of 16th Americas Conference on Information Systems 2010* (Vol. 1, pp. 2509–2520). Curran Associates.

Koroleva, K., Krasnova, H., Veltri, N. F., & Günther, O. (2011, December 4–7). *It's all about networking! Empirical investigation of social capital formation on social network sites* [Paper presentation]. 32nd International Conference on Information Systems, Shanghai, People's Republic of China. https://doi.org/10.7892/boris.47120

Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology*, *48*(3), 310–318. https://doi.org/10.1037/0022-0167.48.3.310

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and the social assurance scales. *Journal of Counseling Psychology*, *42*(2), 232–241. https://doi.org/10.1037/0022-0167.42.2.232

Lin, R., Levordashka, A., & Utz, S. (2016). Ambient intimacy on Twitter. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *10*(1), Article 6. https://doi.org/10.5817/CP2016-1-6

Marengo, D., Montag, C., Sindermann, C., Elhai, J. D.,

& Settanni, M. (2021). Examining the links between active Facebook use, received likes, self-esteem and happiness: A study using objective social media data. *Telematics and Informatics*, *58*, Article 101523. https://doi.org/10.1016/j.tele.2020.101523

Meta. (2021, July 28). *Facebook reports second quarter 2021 results* [Press Release]. https://investor.fb.com/investor-news/press-release-details/2021/Facebook-Reports-Second-Quarter-2021-Results/default.aspx

Nabi, R. L., Prestin, A., & So, J. (2013). Facebook friends with (health) benefits? Exploring social network site use and perceptions of social support, stress, and well-being. *Cyberpsychology, Behavior, and Social Networking*, *16*(10), 721–727. https://doi.org/10.1089/cyber.2012.0521

Pagani, M., Hofacker, C. F., & Goldsmith, R. E. (2011). The influence of personality on active and passive use of social networking sites. *Psychology & Marketing*, *28*(5), 441–456. https://doi.org/10.1002/mar.20395

R Core Team. (2016). R: A language and environment for statistical computing [Computer Software]. R Foundation for Statistical Computing. https://www.R-project.org

Ryan, T., Allen, K. A., Gray, D. L., & McInerney, D. M. (2017). How social are social media? A review of online social behaviour and connectedness. *Journal of Relationships Research*, *8*, Article E8. https://doi.org/10.1017/jrr.2017.13

Singmann, H., Bolker, B., Westfall, J., Aust, F., Ben-Shachar, M. S., Højsgaard, S., Fox, J., Lawrence, M. A., Mertens, U., Love, J., Length, R., & Christensen, R. H. B. (2017). afex: Analysis of Factorial Experiments: R package version 0.17-8. [Computer software]. https://cran.r-project.org/package=afex

Thorisdottir, I. E., Sigurvinsdottir, R., Asgeirsdottir, B. B., Allegrante, J. P., & Sigfusdottir, I. D. (2019). Active and passive social media use and symptoms of anxiety and depressed mood among Icelandic adolescents. *Cyberpsychology, Behavior, and Social Networking*, *22*(8), 535–542. https://doi.org/10.1089/cyber.2019.0079

Tobin, S. J., Vanman, E. J., Verreynne, M., & Saeri, A. K. (2015). Threats to belonging on Facebook: Lurking and ostracism. *Social Influence*, *10*(1), 31–42. https://doi.org/10.1080/15534510.2014.893924

Twenge, J. M., Zhang, L., Catanese, K. R., Dolan-Pascoe, B., Lyche, L. F., & Baumeister, R. F. (2007). Replenishing connectedness: Reminders of social activity reduce aggression after social exclusion. *British Journal of Social Psychology*, *46*(1), 205–224. https://doi.org/10.1348/014466605X90793

Utz, S. (2015). The function of self-disclosure on social network sites: Not only intimate, but also positive and entertaining self-disclosures increase the feeling of connection. *Computers in Human Behavior*, *45*, 1–10. https://doi.org/10.1016/j.chb.2014.11.076

van Bel, D. T., Smolders, K. C. H. J., IJsselsteijn, W. A., & de Kort, Y. (2009). Social connectedness: con-

cept and measurement. In V. Callaghan, A. Kameas, A. Reyes, D. Royo, & M. Weber (Eds.), *Intelligent environments 2009* (Vol. 2, pp. 67–74). IOS Press. https://doi.org/10.3233/978-1-60750-034-6-67

Verduyn, P., Lee, D. S., Park, J., Shablack, H., Orvell, A., Bayer, J., Ybarra, O., Jonides, J., & Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General*, *144*(2), 480–488. https://doi.org/10.1037/xge0000057

Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review*, *1*(11), 274–302. https://doi.org/10.1111/sipr.12033

Williams, K. D. (2009). Ostracism: A temporal need-threat model. *Advances in Experimental Social Psychology*, *41*, 275–314. https://doi.org/10.1016/

S0065-*2601*(08)00406-1

Wolf, W., Levordashka, A., Ruff, J. R., Kraaijeveld, S., Lueckmann, J. M., & Williams, K. D. (2015). Ostracism online: A social media ostracism paradigm. *Behavior Research Methods*, *47*, 361–373. https://doi.org/10.3758/s13428-014-0475-x

Zadro, L., Boland, C., & Richardson, R. (2006). How long does it last? The persistence of the effects of ostracism in the socially anxious. *Journal of Experimental Social Psychology*, *42*(5), 692–697. https://doi.org/10.1016/j.jesp.%202005.10.007

Zadro, L., Williams, K. D., & Richardson, R. (2004). How low can you go? Ostracism by a computer is sufficient to lower self-reported levels of belonging, control, self-esteem, and meaningful existence. *Journal of Experimental Social Psychology*, *40*(4), 560–567. https://doi.org/10.1016/j.jesp. 2003.11.006

About the Authors

Ilse L. Pit is a doctoral candidate in Evolutionary Anthropology at the Institute of Human Sciences, Oxford University, and the Calleva Research Centre for Evolution and Human Sciences, Magdalen College. She is currently working on her dissertation on the role of social norms in inter-group perception and behavior. She is further interested in how social processes are affected by the internet.

Harm Veling is a professor at Consumption and Healthy Lifestyles, Wageningen University and Research, in the Netherlands. He studies psychological processes in relation to self-control and behavior change. For instance, he has examined how cognitive training can be used as means to improve self-control and facilitate behavior change. Furthermore, he has studied how social media use influences behavior regulation and well-being.

Johan C. Karremans is a professor at the Behavioural Science Institute, Radboud University, in the Netherlands. He studies the determinants and outcomes of well-functioning close relationships. In this work, he has focused on the role of regulation processes like inhibition and mindfulness. In addition, his research interests include the effects of social inclusion and exclusion.

Article

"Resistance!": Collective Action Cues in Conspiracy Theory-Endorsing Facebook Groups

Lena Frischlich

Department of Communication, University of Münster, Germany; lena.frischlich@uni-muenster.de

Abstract
Conspiracy theories on social media have been suspected of contributing to mobilization and radicalization. Yet, few studies have examined the prevalence of psychological variables that may serve to motivate normative and non-normative collective action in this material. Drawing from the "social identity model of collective action," the current study uses a mixed-methods approach to examine the prevalence of collective action cues in conspiracy theory-endorsing social media spaces. Towards this end, I examined four German Facebook groups (Covid-19-Skeptic, Far-Right, Chemtrail, and Political Affairs) during the first months of the Covid-19 pandemic. The results of qualitative content analysis (*N* = 828 posts), a hierarchical cluster analysis, and the examination of popularity cues showed that: (a) collective action cues were frequent; (b) most posts transmitted alternative views (Cluster 1) or absolutist ideologies (Cluster 2) with few collective action cues— yet, more than one-third of the posts were either mobilizing (Cluster 3) or wrathful (Cluster 4), entailing multiple collective action cues including cues theoretically linked to non-normative action; (c) mobilizing and wrathful posts were more engaging than alternative views and absolutist ideologies; (d) the types of posts and levels of engagement varied between the examined groups such that the Chemtrail and the Far-Right group disseminated more content with a higher mobilizing potential. The Far-Right group was also the most active in responding to its members. The results of this study are novel in that they demonstrate the prevalence of cues that have been linked to non-normative collective action in psychological research within conspiracy theory-endorsing Facebook groups.

Keywords
collective action; conspiracy theories; Facebook; Facebook groups; non-normative collective action; popularity cues; radicalization; virtual groups

1. Introduction

To curb the spread of the novel Covid-19 disease (WHO, 2020), governments worldwide have implemented strict measures, including mask mandates and lockdowns, beginning in spring 2020. Shortly thereafter, protest movements against these measures emerged. In Germany, the context of the current study, these protests were rapidly associated with the self-declared "cross-thinker" (German: Querdenker) movement (Nachtwey et al., 2020; Virchow & Häusler, 2020). The Querdenken movement radicalized rapidly. In August

2020 protesters at a large Covid-19-sceptics demonstration attempted to storm the German parliament, and, in 2021, a young employee was shot to death merely for asking a customer to wear a face mask. Both incidents can be considered extreme cases of non-normative collective action. In this study, I employed the social identity model of collective action (van Zomeren et al., 2008) as a framework to examine the posts in public Facebook groups endorsing conspiracy theories and the digital ways in which members of these groups respond to the posted content. Ultimately, I sought to answer the following research questions:

RQ1: Do posts in conspiracy theory-endorsing Facebook groups include collective action cues?

RQ2: How prevalent are cues related to non-normative collective action in these groups?

RQ3: How do group members respond to different types of posts as judged by aggregated popularity cues?

2. Theoretical Background

2.1. Conspiracy theories

In its most basic form, a conspiracy theory proposes an explanation of events through hidden patterns that purportedly reveal the actions of a malicious group of conspirators who work in secret against the common good (Uscinski, 2017). Such conspiracies do exist and theories about conspiracies are not per se wrong. However, conspiracy theories in a narrower sense are often unwarranted (Keeley, 1999): They typically oppose common knowledge (counter-hegemonical) and are immune to counter-evidence. Baden and Sharon (2021) recently suggested that such unwarranted conspiracy theories assume an unrealistic pervasive potency among the conspirators (e.g., the ability to perfectly control information), rely on a non-falsifiable elusive epistemology through dogmatic reasoning, and espouse a Manichean us-versus-them worldview. Although the stories upon which conspiracy theories are based differ across time and space, Brotherton et al. (2013) identified five generic "story-lines" of conspiracy theories: (a) government malfeasance (e.g., routine criminal conspiracies within governments); (b) extraterrestrial cover-ups; (c) malevolent global conspiracies (e.g., the new world-order); (d) personal well-being (e.g., stories about mind control); and (e) information control (e.g., by the government or the media).

While some conspiracy beliefs are harmless, others can severely threaten well-being (Quandt et al., 2022). For instance, those who believe in conspiracy theories about Covid-19 are less likely to adhere to pandemic control measures (Imhoff & Lamberty, 2020; Pummerer et al., 2021). Conspiracy believers are also more likely to accept violence including political violence (Lamberty & Leiser, 2019, Study 1; Rottweiler & Gill, 2020). Yet, simply reading about a conspiracy theory does not increase one's acceptance of violence (Lamberty & Leiser, 2019, Study 3). Other factors such as high levels of anger (Jolley & Paterson, 2020) must also be present. In this study, I sought to examine the role of collective action cues in this context.

2.2. Collective Action and Media Content

Collective action describes actions taken on behalf of one's ingroup intended to improve the status quo for that ingroup (Wright et al., 1990). The social identity model of collective action (van Zomeren et al., 2008) assumes that individuals engage in collective action due to three distinct motivational factors: (a) their *social identity*—the degree to which they identify with the group; (b) perceptions of *injustice* regarding the conditions of this group; (c) peoples' perceived *efficacy* of their actions. Collective action is more likely when a social identity has been politicized (versus not), when perceived injustice is issue or situation-based (versus structural), and the injustice perception is affective (i.e., stimulates anger). Emotions related to efficacy perceptions, such as pride about prior successes (Tausch & Becker, 2013) or hope for the actions' outcome (Cohen-Chen & van Zomeren, 2018), can also motivate collective action. Collective action can be normative (e.g., signing a petition or protesting in a democracy) or non-normative (e.g., executing violence). Non-normative collective action is motivated by a lack of perceived efficacy (Becker & Tausch, 2015; Tausch et al., 2011). For instance, a sense of hopelessness can breed aggression over time (Demetropoulos Valencia et al., 2021).

Media content entailing collective action cues likely contributes to collective action (Jost et al., 2018). This assumption is highly compatible with framing theory (Entman, 1993). Framing theory postulates that media content can frame the same issue in different ways and thereby determines the salience of different aspects of the issue (e.g., Igartua et al., 2011; Lecheler & de Vreese, 2012). This salience in turn affects cognitions, emotions, and behavior. For instance, political frames reliably shape political attitudes (Amsalem & Zoizner, 2022) and covering themes that typically elicits distinct emotions in the media can provoke that emotion in the audience (Nabi, 1999, 2002).

2.3. Facebook Groups as Opportunity Structures

Albeit most Facebook groups are likely harmless, others are prominent arenas for conspiracy theories (Kim & Kim, 2021) and violent extremism. Amongst others, such groups can serve as echo chambers continually validating conspiracy beliefs (Quattrociocci et al., 2016), thereby potentially provoking an overestimation of the consensus for these worldviews among their members. One survey showed that the longer participants engaged in a neo-Nazi forum, the more they overestimated public consensus for far-right ideologies (Wojcieszak, 2008). Public consensus in turn can greatly influence the propensity to engage in non-normative collective actions (Tausch et al., 2011).

One mechanism by which Facebook groups can validate their users' worldviews is via so-called popularity cues. Facebook users can respond to others' posts by liking, sharing, or commenting on them. Clearly, these responses can be driven by various motivations (e.g., Gerlitz & Helmond, 2013) and can be related to different aspects of online content (Blassnig et al., 2021). However,

likes, shares, and comments do reflect different engagement intensities (e.g., a comment takes more time than a like) and thus express one's level of attention (Staender et al., 2019). Further, users and recommendation algorithms might interpret all likes for one's posts equally, failing to discriminate between an "honest" and a "satirical" like. Consequentially, the mere count of these interactions does to some extent express a distinct level of digital popularity.

Another support mechanism is the expression of consonant emotional responses. Facebook offers different emotion buttons (e.g., love, joy, anger; see also Jost, 2020), the selection of which is slightly more time-consuming than a simple like. Hence, these emojis are considered to be indicative of a purposeful expression of an emotion by the users (Eberl et al., 2017). From a collective action perspective, the expression of anger (as an indicator of shared injustice perceptions) and love (as an indicator of sympathy) is particularly relevant. Consequently, I examined the endorsement of different types of posts in conspiracy theory-endorsing Facebook groups through the lens of likes, shares, comments, and anger and love emojis.

3. Methods and Measurements

The current study employed a qualitative content analysis (Mayring, 2010) of posts published in four conspiracy-believing Facebook groups during roughly the first year of the Covid-19 pandemic (20th of January 2020–21st of January 2021). To ensure that only influential Facebook groups were chosen, I focused on public groups comprising more than 10,000 followers in April 2021. To capture the heterogeneity of conspiracy beliefs I selected groups representing a diverse range of generic "story-lines'' (Brotherton et al., 2013) and more mainstream (e.g., Covid-19 or politics) as well as more fringe topics (e.g., chemtrails, far-right). All groups were identified via keyword searches for different conspiracy theories (e.g., plandemic, great replacement, new world order). Three out of the four groups have since been deleted or became private, reflecting increased efforts to curb the spread of conspiracy theories on major platforms (Knaus, 2020).

The first group, labeled Covid-19-Skeptics, was founded in 2020 and positioned itself as a counter-public to the official pandemic response in Germany (see Table 1). Although the group was not officially affiliated with the Querdenken movement, it regularly advertised these protests on its Facebook page. Drawing on Brotherton et al. (2013), the group mainly conveyed generic conspiracy theories of malfeasant governments, malevolent global conspiracies, and information control. Most conspiracy theories were related to Covid-19. The second group, labeled Far-Right, positioned itself as a proponent of the "great replacement" myth, which postulates that white people would be "strategically replaced" by people of color, a racist speculation. The conspiracy theories promoted in this group generally concerned malfeasant governments and occasionally malevolent global conspiracies. The posts often referenced to far-right narratives and white supremacist ideologies. The third group, labeled Chemtrails, was hosted by a former climate activist and prominent chemtrail ideologue. Besides chemtrails, posts in this group also discussed other conspiracy theories about personal well-being, such as theories about an alleged mind control via a research institute in Alaska (High-Frequency Active Auroral Research Program). The fourth group mostly discussed general politics and thus was labeled as Political Affairs. Conspiracy theories in this group often described malevolent global conspiracies, such as the "new world order" or otherworldly activities by "Satan's daughter." Table 1 provides an overview of the selected groups.

I crawled all posts published in these groups between the 1st of January 2020 and the 21st of January 2021 (i.e, the initial months of the Covid-19 pandemic) using CrowdTangle. CrowdTangle is a public insights tool from Meta that provides access to public posts and aggregated user reactions to these posts on Facebook. This resulted in a total of N = 143,582 posts. For the manual coding, I randomly selected posts using the group name as a quota. Posts that were no longer available at the time of coding were resampled up to three times. This resulted in a final selection of N = 828 posts, equally distributed across groups $\chi^2(3)$ = 1.58, p = .66.

3.1. Procedure

Each post was coded by one of 13 trained undergraduate students as part of a larger teaching project on emotions in social media. Coders were trained in two sessions: First, all coders and myself coded n = 40 posts that were not used to refine the category system nor included in the final coding to familiarize themselves with the

Table 1. Examined Facebook groups.

Group label	Typical Conspiracy Theories	N Members	N Posts	n Sample
Covid-19-Skeptics	Covid-19-related	20,317	32,839	209
Far-Right	Great replacement	12,178	8,336	212
Chemtrails	Chemtrails	24,433	53,672	190
Political Affairs	QAnon, Deep state, Satanism	18,875	48,735	211

Note: Member counts were obtained in April 2020.

material ("pilot phase"). In an extensive coding conference, disagreements between coders were resolved, and the coding instructions were refined. Second, another $n = 40$ Facebook posts were coded to familiarize with the new codebook ("pretest"). Finally, another $n = 40$ Facebook posts were coded to determine intercoder-reliability. The final category system is provided via the Open Science Framework (see Supplementary Material).

3.2. Codebook

A total of $n = 36$ subcategories were directly relevant to the research questions examined here (other categories included questions such as whether the post was a repost which were discussed in class only and are not in focal attention here). The included subcategories reflected ten constructs of interest: Whether the posts (1) referred to Covid-19 or measures taken to control the pandemic; (2) entailed a theory about conspiracies, i.e., assumed secret knowledge or described conspirators (Uscinski, 2017); (3) disseminated propaganda, i.e., an ideology that claimed absolute validity and threatened sanctions depending on adherence to this ideology (Frischlich, 2021; Merten, 2000); (4) endorsed violence.

To depict collective action cues, we coded whether the post (5) referred to social identities by referencing to an ingroup, an outgroup, or both (Harwood et al., 2005). We also coded whether a post entailed distinct emotions relevant to normative collective action, namely (6) anger (Stürmer & Simon, 2009), (7) pride (Tausch & Becker,

2013), (8) hope (Cohen-Chen & van Zomeren, 2018), and (9) hopelessness. For all emotions, we coded for typical themes triggering these emotions (Lazarus, 2001), such as injustice eliciting anger, as well as for direct displays of that emotion (e.g., the expression of anger). A similar approach was employed successfully in the context of self-transcending emotions (Dale et al., 2020). We also (10) coded for whether the posts directly called for collective action (e.g., advertised a demonstration).

To evaluate intercoder reliability, we used Brennan-Prediger's κ (Brennan & Prediger, 1981) calculated via the shinyapp (https://joone.shinyapps.io/icr_web) for the tidycomm package (Unkel, 2020). We selected this coefficient because I expected some of the categories of interest to be seldom (e.g., violence endorsement). If categories are seldom, popular intercoder-reliability coefficients, such as Krippendorf's α (Krippendorff, 2011), can lead to biased results (Quarfoot & Levine, 2016). Brennan-Prediger's κ has been found to be robust to skewed category distributions (Quarfoot & Levine, 2016). As for other reliability coefficients, values of zero indicate *no* and values of one *perfect agreement*.

3.3. Data Aggregation

Table 2 provides an overview of the constructs of interest. I excluded subcategories with $\kappa < .50$ from the analyses. Most of the categories were coded with a satisfying reliability, with κ being between .79 and 1. Yet, five of the categories of interest showed intercoder

Table 2. Category system.

Constructs	Content	Subcategories	Range of κ
Covid-19-related	Is Covid-19 addressed?		.59
Social identity	Do the posts make social identities salient?	In-/outgroup distinction, upgrading of the ingroup, victimization of the ingroup, downgrading of the outgroup	.80–.80
Negative emotions	Do the posts elicit negative emotions?	Anger, hopelessness	.79–.79
Positive emotions	Do the posts elicit positive emotions?	Pride, hope	.79–.79
Call for action	Do the posts call for action?		.80
Conspiracy-theoretical	Do the posts entail elements of a conspiracy theory?	Hidden patterns, conspirators, fictional group, superior knowledge, claims for absolute truth	.59–1
Propaganda	Do the posts entail elements of propagandist communication?	Calls for action, alternativeness, claims to absolute truth, moral discourse, positive sanctions, negative sanctions	.59–.80
Violence endorsement	Do the posts endorse violence?	Dealing with violence, endorsing violence, calling for violence, profanities	.59–.80

Notes: To enhance readability, I sorted the table along overarching constructs; all categories depicted in the "category" column were coded separately to guide the coders attention to different facets of the constructs of interest; the full category system, including reliability indicators is provided via the Open Science Framework (see Supplementary Material, Codebook).

reliabilities of κ = .59, indicating a moderate agreement following Landis and Koch (1977) but failing to match the standards suggested by Krippendorff (2004). The respective categories measured (a) whether the post dealt with the Covid-19, (b) used a moral argumentation, (c) propagated an absolute truth, (d) threatened negative sanctions, or (e) included profanity. I exclude Covid-19-relatedness and profanity. However, morality, absoluteness, and negative sanctions were all elements of the propaganda construct and were as such theoretically meaningful. Krippendorff argued that combining several variables into an index can reduce the effects of intercoder disagreements on the result (Krippendorff, 2004, p. 243) but warned that reliability should be averaged only when the distinct variables are considered to measure the same construct. As this was the case for these three variables, I included them in the formation of aggregated indicators of the constructs of interest.

I calculated the following indices. Posts were coded as entailing a *conspiracy theory* when they included (a) secret knowledge about hidden patterns of events or proclaimed the omniscience of the ingroup, and (b) mentioned conspirators, such as outgroup members, powerful individuals, or fictitious groups, κ_M = .90. A manual validation showed that this was a conservative approach as it did not capture posts that included snippets of distrust (e.g., the claim that "over 80% of PCR tests are negative") nor links to webpages in which a Q for QAnon was embedded in the title (e.g., Qblogspot). However, the approach did capture all generic conspiracy storylines described by Brotherton et al. (2013). Among others, we found conspiracy theories about (a) government malfeasance (e.g., Covid-19 as a "plandemic"), (b) otherworldly activities ("how Satan rules the world"), (c) global conspiracies (such as Bill Gates and microchips), (iv) personal well-being (e.g., vaccination causes autism or changes DNA), and (d) information control (e.g., celebrations about "brave" doctors who speak "the truth" about pandemic control measures). Nearly one-fifth of the posts involved such a conspiracy theory (n = 163, 19.69%).

Drawing from Merten (2000), I coded posts as *propaganda* when they transmitted an absolutist worldview (e.g., proclaimed an absolute truth, a lack of alternatives, or moral obligations) together with either positive or negative sanctions (κ_M = .68). For instance, one post demanded "Stop this mess!!! I will not be oppressed or re-educated! I will not be trained like a dog, and I will not be made a faceless monkey!!!" as a caption on an article presenting masks and hygienic behavior as part of a "dark agenda." Based on this logic, more than one-third of the posts (n = 286, 34.54%) disseminated propaganda.

To depict collective action cues, I captured whether a post referred to either the ingroup or an outgroup, thus potentially increasing the salience of one's *social identity* (κ_M = .80), *called for action* (κ = .80), or entailed themes or expressions of *anger* (κ_M = .90), *hopelessness* (κ = .80), *pride* (κ_M = .79), or *hope* (κ_M = .79). I coded posts as *violence endorsement* when they mentioned and justified

violence or directly called for it (κ_M = .80). Only six posts fulfilled this criterion (.72%). All remaining analyses are based on these aggregated indices.

3.4. Popularity Indicators

I examined user reactions based on aggregated popularity indicators for each post provided by CrowdTangle. For this study, I focused on the following metrics: likes, shares, comments, and angry and love emojis.

4. Results

4.1. Collective Action Cues and the Prevalence of Non-Normative Collective Action Cues

RQ 1 asked for collective action cues. An inspection of the frequencies of codes showed that a substantial share of the posts referred to participants' social identity (n = 231, 27.90%). Calls for action were found in 18.32% of posts (n = 133). Regarding emotions, elicitors of anger were most frequent (n = 351, 42.39%), followed by posts conveying hopelessness (n = 106, 14.36%) and, to a much smaller extent, hope (n = 64, 7.73%) and pride (n = 46, 5.56%). Taken together, cues associated with collective action were frequently found in posts published in conspiracy theory-endorsing Facebook groups. All analysis scripts are provided open access via the Open Science Framework (see Supplementary Material, analysis scripts).

RQ 2 asked about the prevalence of potential elicitors of non-normative collective action. An inspection of the Bonferroni-corrected Pearson correlations (see Table 3) showed that posts that referred to social identities also often involved calls for action and included anger, hopelessness, and, to a lesser extent, pride. Furthermore, social identity references were often found alongside conspiracy theories and propaganda. Consequently, the examined posts often entailed a mixture of cues for psychological aspects that have been associated with non-normative collective action. In the next step, I sought to understand the types of messages within these groups in greater detail.

4.2. Types of Messages Within Conspiracy-Theory Endorsing Facebook Groups

To identify post types that were representative of the overall communication, I ran a hierarchical cluster analysis. Cluster analysis identifies subgroups of cases (or posts) representing the entire sample by grouping cases/posts that are similar to each other in the same cluster and maximizing the difference from posts in the other clusters. All aggregated variables served as cluster-forming variables.

Following Kaufman and Rousseeuw (2009) the selection of the appropriate cluster algorithm must consider the structure of the data, the balance of the examined

Table 3. Zero-order correlations.

		2	3	4	5	6	7	8	9
1	Hope	.23***	−.07	−.06	.08	.13*	−.01	.06	−.02
2	Pride		.01	−.04	.16***	.08	.12*	.12*	.04
3	Anger			.21***	.40***	.18***	.30***	.29***	.10
4	Hopelessness				.24***	.08	.11	.18***	−.04
5	Social identity					.23***	.40***	.37***	.04
6	Call for action						.12	.22***	.11
7	Conspiracy theory							.44***	.07
8	Propaganda								.06
9	Violence endorsement								

Notes: Bonferroni-corrected pairwise comparisons between dummy-coded aggregated variables. * $p < .05$, ** $p < .01$, *** $p < .001$.

characteristics and predefined criteria for a good solution. For this study, the mixed data structure with binary and ordinal variables and the imbalance of present versus absent content-analytical codes implied hierarchical clustering with a Gower dissimilarity matrix as the input. I compared two suitable algorithms: divisive clustering ("Diana"), which starts from one large cluster and then splits into smaller clusters; and agglomerative clustering ("Agnes"), which starts with small clusters and aggregates them into larger ones. I chose the final algorithm based on a visual inspection of the elbow plots, which indicate similarity within the clusters, and silhouette plots, which indicate distinctiveness between clusters (see Figure 1). I further consulted the Dunn index to evaluate the overall cluster quality and pursued a solution with comparable cluster sizes for subsequent analyses. Jointly, all criteria indicated that a four-cluster solution using agglomerative clustering would be desirable, *Dunn* = .89. Thus, I proceeded with this solution.

The largest cluster (Cluster 1, *alternative views*) included 44.4% of all posts. An inspection of the distribution across clusters showed that conspiracy theories and propaganda occurred seldomly in this cluster. However, this does not mean that the posts did not take a counter-hegemonic stance or spread misinformation. A substantial share promoted "counter-experts" such as Dr. Sucharit Bhakdi, a retired infectiologist, who gained prominence for denying the dangers of Covid-19, or anti-vaccine activist Robert Kennedy Jr.. Other posts spread misinformation, such as viruses being an invention of "wickediologists" (instead of a natural phenomenon) or the German Science Foundation (DFG) being an invention by renowned virologist Dr. Christian Drosten (born many years before the foundation of the DFG). Although a substantial share of posts was comparably neutral "coverage," the selection of news stories was partially biased. For instance, reports about crimes ascribed to migrants (vs. to Germans without migration experience) were overrepresented. Posts in this cluster included comparably few cues associated with collective action. Only hope was overrepresented in this cluster.

The second cluster (Cluster 2, *absolutist ideologies*) included 18.2% of all posts (n = 151). Slightly more than one-third of them spread conspiracy theories. Nearly all were propaganda. Most of the conspiracy theories concerned a malfeasant government (e.g., declaring a law as an "empowerment act," or planning "forced vaccination"), but there were also conspiracy theories about a "stolen" election in the US or the "myth of climate crisis." The posts partly referred to facts, such as the European Union's budget, but framed them in a distrustful manner (e.g., as giving preferential treatment to refugees over the native population). Collective action cues were comparably seldom in this cluster.

The third cluster (Cluster 3, *mobilization*) included 18.6% of all posts (n = 154). Nearly one-half of the posts involved conspiracy theories, and more than two-thirds included propaganda. The conspiracy theories in these posts mostly referred to Covid-19 and/or dystopian concerns about total mass surveillance. Some posts also spread vitriol against migrants or propagated the white supremacist "great replacement" myth. Others warned about "eugenics and direction—the masterplan to slavery." The posts in this cluster entailed multiple collective action cues. Nearly all referred to social identities and fomented anger. One-half of the posts also promulgated the sense of hopelessness, and just as many called for direct action (e.g., "fellow citizens: It's enough ….What do you fear?….Defend yourselves! Go to the streets"). Two posts endorsed violence. Posts in this cluster incorporated several cues for hopelessness that might be associated with non-normative collective action.

The fourth cluster, (Cluster 4, *wrath*, n = 155, 18.7%), included fewer posts coded as propaganda than the other clusters. Conspiracy theories were found in roughly one-fifth of these posts. The disseminated conspiracy theories often had an intergroup component, spreading vitriol against religious minorities, e.g., by fueling antisemitic tropes about an alleged "senate Rothschild" or an infiltration through "political Islam." Other posts cultivated white supremacist ideations. Many posts attacked politicians such as former German chancellor Angela
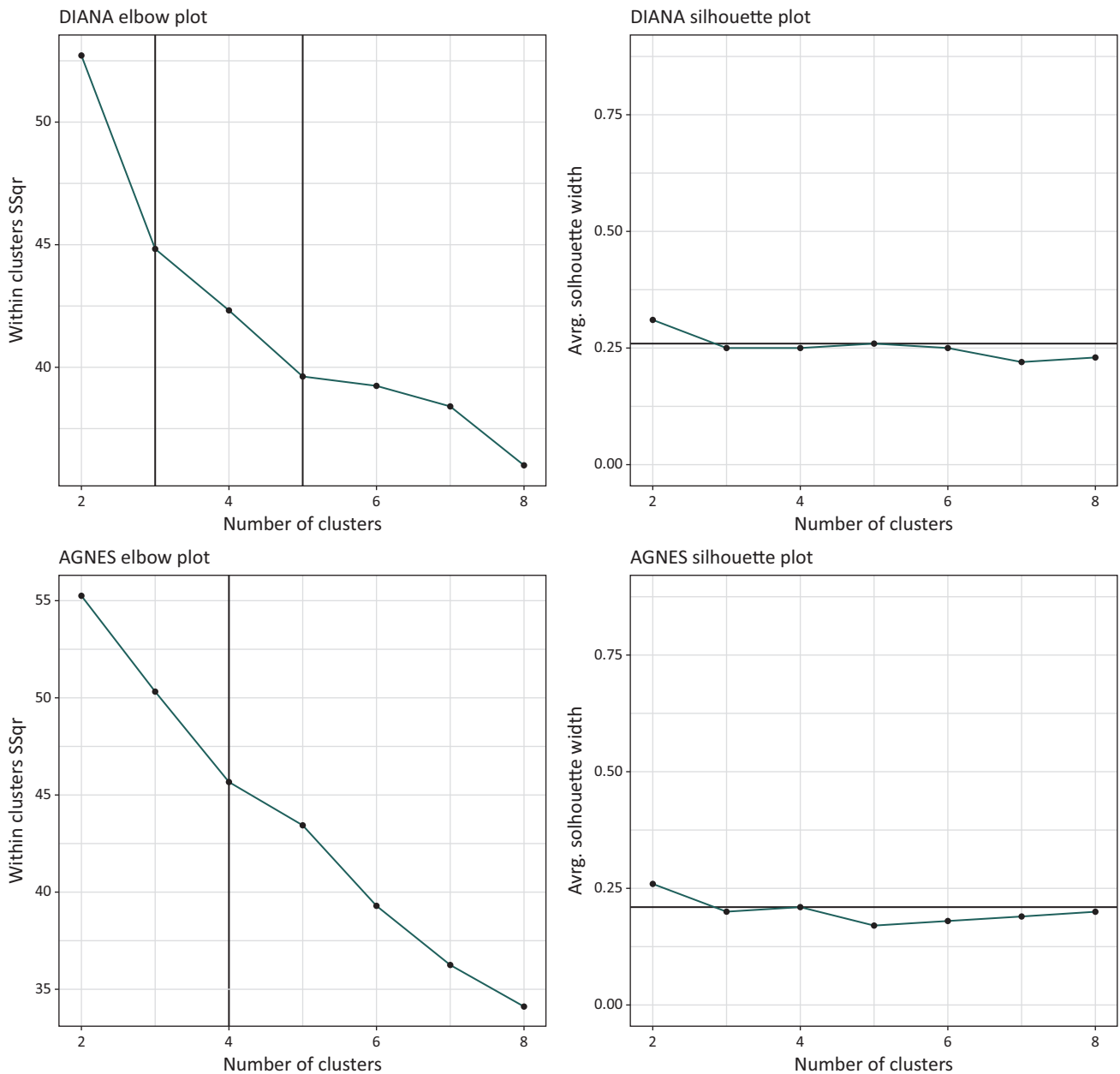
Figure 1. Ellbow and silhouette plots for identifying the optimal cluster solution based on the agglomerative and the divisive cluster algorithm Notes: Horizontal respective vertical lines mark the best cluster solutions; SSqr = Sum of squares; DIANA = divisive clustering algorithm; AGNES = agglomerative clustering algorithm.

Merkel or German politician Andrea Nahles. The tone of these posts was very derogatory, and nine out of 10 posts in this cluster fomented anger. Other emotions were nearly absent. Calls for action were found in one out of five posts in this cluster, and four posts openly endorsed violence. For instance, one post wrote, "As a reminder: WE have it in our hands!!!! We only need to unite for the so-called 'Storming of the Bastille'!!!!" Table 4 summarizes the prevalence of categories per cluster.

A series of χ^2 tests showed that the four clusters were not equally prevalent in all examined Facebook groups, $\chi^2(9) = 70$, $p < .001$. An inspection of the standardized residuals showed that within the Covid-19-Skeptic group, absolutist ideologies were overrepresented (Cluster 2,

$z = 4.88$, $p < .001$), whereas wrath was underrepresented (Cluster 4, $z = -3.98$, $p < .001$). This pattern was reversed in the Far-Right group (wrathful, $z = 3.06$, $p < .01$, absolutist, $z = -4.11$, $p < .001$). Absolutist posts were also infrequent in the Chemtrail group ($z = -2.97$, $p < .01$), whereas mobilization was overrepresented (Cluster 3, $z = 2.63$, $p < .01$). Finally, posts in the Political Affairs group were more likely to transmit alternative views (Cluster 1, $z = 2.26$, $p < .05$) and absolutist ideologies ($z = 2.11$, $p < .05$) but less likely to entail mobilization ($z = -3.98$, $p < .001$). Taken together, content related to (non-)normative collective action was more prevalent in the Far-Right group and the Chemtrail group than in the other two groups.

Table 4. Prevalence of categories per cluster.

Dummy coded	Total		Alternative Views Cluster 1 (n = 368)		Absolutist Ideologies Cluster 2 (n =151)		Mobilization Cluster 3 (n = 154)		Wrath Cluster 4 (n = 155)	
	n	%	n	%	n	%	n	%	n	%
Social identity	231	27.9	16	4.35	41	27.15	130[b]	84.42[b]	44[b]	28.39[b]
Anger	351	42.39	6	1.63	49	32.45	151[b]	98.05[b]	145[b]	93.55[b]
Hopelessness	106	12.8	10	2.72	15	9.93	80[b]	51.95[b]	1[a]	.65[a]
Pride	46	5.56	19	5.16	9	5.96	17[b]	11.04[b]	1[a]	.65[a]
Hope	64	7.73	40[b]	10.87[b]	9	5.96	15[b]	9.74[b]	0[a]	.00[a]
Call for action	133	16.06	19	5.16	24	15.89	56[b]	36.36[b]	34[b]	21.94[b]
Conspiracy theories	163	19.69	1[a]	.27[a]	52[b]	34.44[b]	74[b]	48.05[b]	36[b]	23.23[b]
Propaganda	286	34.54	9	2.45	147[b]	97.35[b]	115[b]	74.68[b]	15	9.68
Violence endorsement	6	.72	0[a]	.00[a]	0[a]	.00[a]	2[b]	1.30[b]	4[b]	2.58[b]

Notes: Based on N = 828 posts; percentages refer to all posts; a = categories that were represented in less than one percent of posts per cluster; b = categories overrepresented by more than one percent in a cluster compared to the share of all posts.

4.3. User Responses

RQ3 asked about which kinds of messages gained popularity in the examined groups. On average, posts received around 12 likes and shares and 10 comments (see Table 5). Angry reactions were more frequent than expressions of love. All distributions were strongly skewed, with most posts receiving no or only a few reactions. A series of Kruskal-Wallis tests showed that the clusters differed significantly regarding the number of likes ($\chi^2(3) = 8$, $p = .04$), comments ($\chi^2(3) = 20$, $p < .001$), shares ($\chi^2(3) = 11$, $p = .01$), and anger ($\chi^2(3) = 28$, $p < .001$; see Figure 2) but not regarding the number of love emojis ($\chi^2(3) = 5$, $p = .20$). As expressions of love were overall infrequent, I focused on the other four indicators in the following. A series of pairwise Wilcoxon tests found no statistically significant differences between the clusters concerning the number of likes once the α level was corrected using the Bonferroni method. Posts transmitting alternative views (Cluster 1) and radical ideologies (Cluster 2) were shared less often than mobilizing or wrathful posts (Clusters 3 and 4). Wrathful posts were also commented on more than posts spreading alternative views. Consistent with the assumption that anger-eliciting posts fueled anger in the audience, mobilizing and wrathful posts received more angry user reactions. All other single comparisons failed to reach statistical significance.

To understand the popularity of different messages in greater detail, I ran ordinal regression analyses via the ordinal package (Christensen, 2019). The popularity indicators that were found to vary between clusters served as a criterion, and the coded characteristics of the posts served as predictors (see Table 6). These analyses showed that post characteristics significantly contributed to the explanation of variance for likes ($\chi^2(9) = 21.1$, $p = .01$), shares ($\chi^2(9) = 27.2$, $p = .001$), comments ($\chi^2(9) = 22.6$, $p = .01$), and anger ($\chi^2(9) = 47.8$, $p < .001$). An inspection of the regression wights (see Table 6) showed that posts with social identity cues or which expressed pride received more likes. Posts with social identity cues or expressing anger were shared more often, whereas posts disseminating propaganda were shared less often. Posts expressing hope were commented on less often. Posts that included social identity cues or expressed anger received more angry emojis,

Table 5. Aggregated user responses.

	M	SD	Md	Min	Max
Likes	12.02	35.64	2	0	475
Shares	12.80	48.90	2	0	1,121
Comments	10.33	23.88	1	0	184
Angry	8.85	27.27	0	0	270
Love	.28	1.27	0	0	20

Note: Aggregated user responses were provided by CrowdTangle and merged with the manually coded data for this analysis.
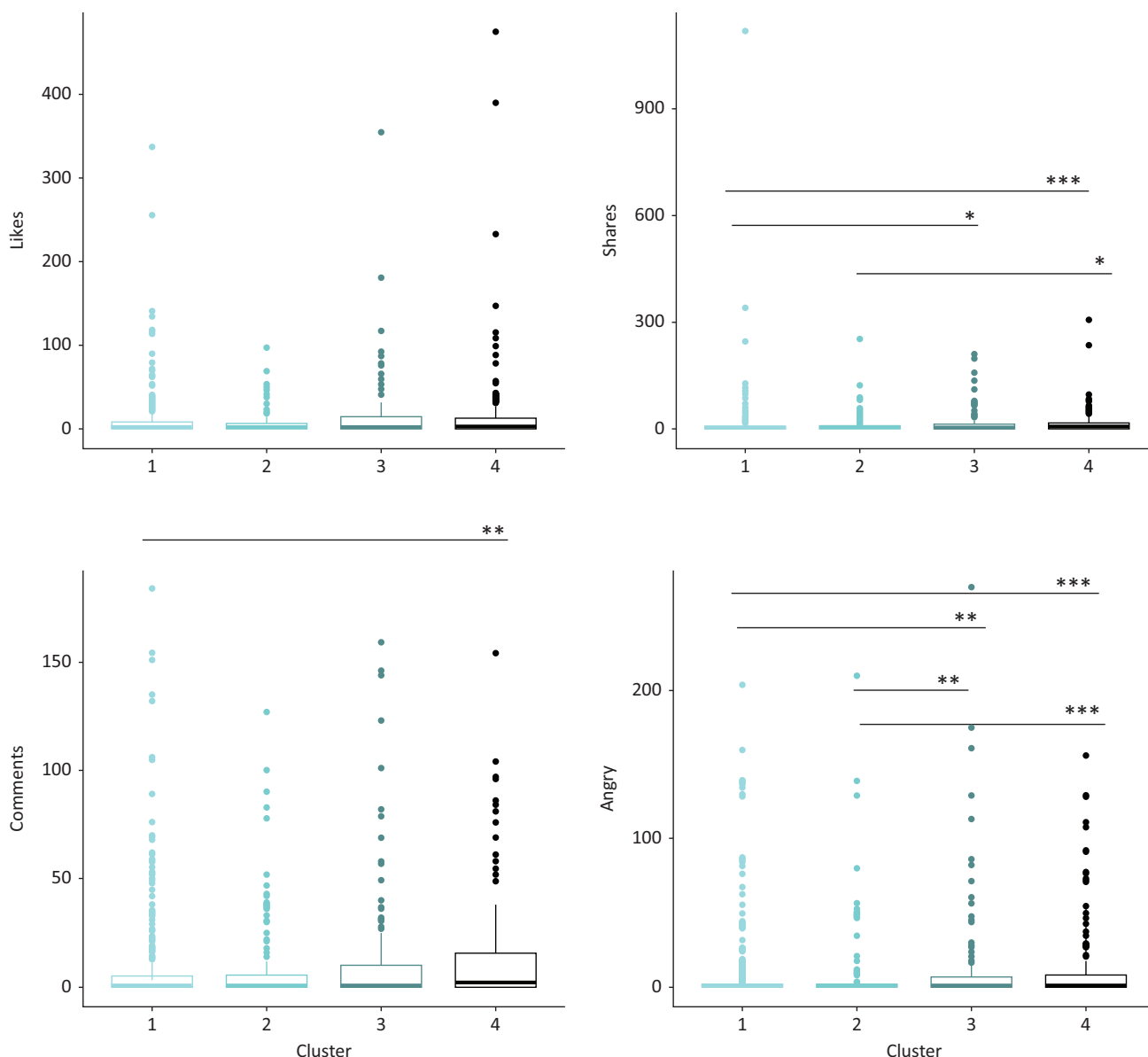
Figure 2. Engagement per cluster. Notes: The boxplots show the median and the interquartile range; the single dots visualize datapoints outside this area; Cluster 1 = alternative views; Cluster 2 = absolutist ideologies; Cluster 3 = mobilization; Cluster 4 = wrath; single comparisons are indicated via horizontal lines; *** $p < .001$, ** $p < .01$, * $p < .05$.

whereas posts that addressed pride and hope or called for action received fewer angry emojis. Consequently, the popularity cues validated references to social identity and anger but did not specifically endorse conspiracy theories or propaganda.

Finally, an examination of differences between the Facebook groups via Kruskal-Wallis tests found statistically significant differences between the groups regarding likes ($\chi^2(3) = 262$, $p < .001$), shares ($\chi^2(3) = 294$, $p < .001$), comments ($\chi^2(3) = 302$, $p < .001$), and anger ($\chi^2(3) = 212$, $p < .001$). These differences were driven by the hyperactive community in the Far-Right group which "outperformed" all other groups in terms of popularity cues (see Table 7).

5. Discussion

The current study examined the extent to which Facebook groups provide new opportunity structures for the mobilization of non-normative collective action in conspiracy theory-endorsing virtual communities. To account for the heterogeneity of conspiracy theories, I compared four groups with different foci and spreading different generic conspiracy-theoretical storylines: A Covid-19-Skeptic group that formed in response to the Covid-19 pandemic, a Far-Right group, an established Chemtrail community, and a Political Affairs group.

Drawing from research on the social identity model of collective action (van Zomeren et al., 2008), I used

Table 6. Regression analyses for popularity indicators.

	Likes				Shares				Comments				Angry emojis			
	b	*SE*	*OR*	*p*	*b*	*SE*	*OR*	*p*	*b*	*SE*	*OR*	*p*	*b*	*SE*	*OR*	*p*
Social identity	.4	.17	1.49	*	.46	.17	1.58	**	.28	.18	1.32		.51	.2	1.66	**
Anger	.19	.15	1.2		.44	.15	1.55	***	.29	.15	1.34		.72	.18	2.05	***
Hopelessness	−.18	.2	.84		−.09	.2	.92		−.24	.21	.79		−.05	.23	.95	
Pride	.86	.28	2.37	***	.33	.28	1.39		.1	.29	1.1		−.99	.46	.37	*
Hope	−.13	.24	.88		−.44	.25	.64		−.79	.28	.45	***	−.93	.4	.4	*
Call for action	−.02	.18	.98		−.18	.18	.84		−.16	.19	.85		−.61	.24	.54	**
Conspiracy theories	−.13	.18	.88		−.27	.18	.77		−.32	.19	.72		−.44	.23	.65	†
Propaganda	−.3	.15	.74	†	−.34	.16	.71	*	−.3	.16	.74		−.34	.19	.71	
Violence endorsement	.16	.64	1.17		−.5	.77	.61		.22	.71	1.25		.11	.9	1.11	

Notes: *OR* = Odds ratio; † *p* = .05, * *p* < .05, ** *p* < .01, *** *p* < .001.

Table 7. Engagement per group.

	Likes			Shares			Comments			Angry		
	Md	*Mad*	Range	*Md*	*Mad*	Range	*Md*	*Mad*	Range	*Md*	*Mad*	Range
Covid-19-Skeptics	1[a]	1.48	53	0[a]	.00	123	0[a]	.00	184	0[a]	0	126
Far-Right	12[b]	13.30	475	17[b]	17.80	1,121	16[b]	20.80	159	6.5[b]	9.64	270
Chemtrails	0[a]	.00	53	0[a]	.00	41	0[c]	.00	82	0[a]	0	91
Political Affairs	2[c]	2.97	115	1[c]	1.48	253	0[a]	.00	132	0[a]	0	76

Note: Values with distinct indices (a, b, c) per column differed significantly from each other in a series of Bonferroni corrected Wilcoxon tests.

manual content analysis to study the prevalence of posts that included social identity cues, calls for action, and elicitors of emotions relevant to collective action. More precisely, I examined the prevalence of *anger*, reflecting perceived injustice and motivating collective action (Stürmer & Simon, 2009), *pride*, and *hope* as indicators of perceived efficacy of collective action (Cohen-Chen & van Zomeren, 2018; Tausch & Becker, 2013), as well as *hopelessness* as an indicator of a lack of such efficacy perceptions and thus a potential elicitor of non-normative collective action (Becker & Tausch, 2015; Demetropoulos Valencia et al., 2021). Furthermore, I examined the dissemination of conspiracy theories, propaganda, and the open endorsement of violence in these communities.

RQ 1 asked whether conspiracy theory-endorsing Facebook groups entail collective action cues. The descriptive analysis showed that the examined posts did entail multiple collective action cues. Particularly, references to social identities via the demarcation of ingroup versus outgroup boundaries were frequent. Conspiracy theories were often interwoven with social identity cues, pronouncing the distinction between the community of

the "enlightened ones" against the "sleeping sheep" that fail to see "behind the curtain." The posts also frequently included elicitors of anger, and a substantial share of them transmitted hopelessness. Direct calls for action were frequent.

RQ 2 asked about the prevalence of non-normative collective action cues. Although the direct endorsement of violence was seldom, psychological research suggests that a mixture of social identity salience, anger, and a lack of perceived efficacy such as that observed within the examined Facebook groups can motivate non-normative collective action (Becker & Tausch, 2015; Tausch et al., 2011; Wright et al., 1990). Although I did not test the motivating effects of these posts directly, the current study contributes to increasing efforts to understand how media content heightens the salience of factors relevant to collective action (see, for instance, Gulliver et al., 2021; Hawkins & Saleem, 2021) and thereby provides a meaningful point of departure for future research on the interplay between the "supply" of online content and (non-normative) collective action on- and offline.

A hierarchical cluster analysis identified four distinct types of posts. The first two had rather low mobilizing potential as judged by the prevalence of collective action cues: Cluster 1, alternative views, entailed posts with few collective action cues, conspiracy theories, or propaganda. The only emotion overrepresented in this cluster was hope. Research on collective action has shown that hope can reflect positive expectations for the period following collective action (Cohen-Chen & van Zomeren, 2018). However, hope can also temper collective action by reducing perceived urgency to act (van Zomeren et al., 2019). Likely, such a tempering effect was also present in the current study as posts in this cluster also seldomly expressed anger, the affective injustice perception that motivates collective action (Stürmer & Simon, 2009). "Alternative views" were typically found in the political affairs group.

Cluster 2, absolutist ideologies, entailed a significant amount of propaganda but only a moderate share of collective action cues. Fewer than one-third of the posts included social identity cues and anger, while only 15.89% called for action directly. The literature on radicalization often distinguishes between radical ideologies and violent extremism as the combination of radical ideologies and the endorsement of violence (Bak et al., 2019; Striegher, 2015). Drawing from this distinction, posts in this cluster transmitted counter-hegemonical and partially radical worldviews, but they did not endorse violent extremism. Plus, from the perspective of the social identity model of collective action, the mobilizing potential of these posts was only moderate. Posts in this cluster were typically found in the Covid-19-Skeptics and the Political Affairs group.

The remaining clusters had a higher mobilizing potential: Cluster 3, mobilization, spread multiple unwarranted conspiracy theories and entailed a high share of propaganda. Most relevant, this content was embedded in manifold collective action cues, including potential elicitors of non-normative collective action—namely hopelessness and violence endorsements (although the latter was very seldom). This cluster was particularly frequent in the Chemtrail group. Finally, Cluster 4, wrath, included posts that also spread conspiracy theories but mostly relied on social identity cues and capitalized on anger while calling for action and sometimes even endorsing violence. Posts in this cluster were typically posted in the Far-Right group. Thus, non-normative collective action cues were more prevalent in the Far-Right and Chemtrail groups compared to the Covid-19-Sceptics and the Political Affairs group. Future research should explore these nuances in greater detail to understand which conspiracy-theory endorsing communities mobilize for what kind of collective action.

RQ 3 asked how other users would respond to different types of posts. I relied on robust statistical tests of the distribution of popularity indicators (i.e., the number of likes, shares, comments, and anger and love emojis) to answer this question. Posts transmitting alternative views and absolutist ideologies were overall less engaging than mobilizing or wrathful posts. Although popularity indicators must be interpreted tentatively as they can express different motivations (Gerlitz & Helmond, 2013), this finding shows that clusters entailing more collective action cues were overall more engaging. Regression analyses showed that cues related to social identity as well as posts involving anger predicted engagement. Notably, liking or sharing such posts might already represent a form of collective action in the digital realm. Although digital participation is sometimes denigrated as "slacktivism," such digital engagement can also constitute one component of a repertoire of political participation (Dennis, 2019). Thus, future research on the interplay between digital engagement and actual collective action is needed. Notably, posts coded as propaganda were shared less often than posts without propaganda. This finding is highly compatible with studies showing that blatant propaganda triggers more cognitive defenses than subtle, covert propaganda (e.g., Taylor et al., 2015). This study shows that this inefficacy of propaganda holds true even within conspiracy theory-endorsing communities. It is noteworthy that members of the Far-Right group were substantially more active in responding to each other's posts than members of other groups. Several authors have outlined the intensive use of digital technologies by the far- or so-called "alt-right" (e.g., Marwick & Lewis, 2017), and the findings in this study contribute to the growing body of evidence that far-right actors embrace conspiracy theories to cultivate their intentions (Miller-Idriss, 2020).

Notwithstanding, this study had several limitations that must be considered. First, I focused only on Facebook and German conspiracy theories-endorsing Facebook groups. Thus, examining the articulation of conspiracy theories on different platforms and across countries is needed to further explore and assess the effects of such content. Second, I focused on a very specific time frame: the first year of an unprecedented global pandemic. Conspiracy theories flourish in times of crisis (van Prooijen & Douglas, 2017) and Germany has witnessed the increased radicalization of the Covid-19-skeptic Querdenken movement during this time. Nevertheless, future research on other time frames and a more detailed analysis of the communication within these groups before critical events occur (e.g., the attempted storming of the German Reichstag in August 2020) would provide deeper insights. Finally, for some of the coded categories, intercoder reliability was below the desirable threshold. Although I formed aggregated indices to enhance the reliability of the measurements, future research should invest additional efforts in detailing the respective categories before employing the codebook.

Nevertheless, the study provided initial insights into the intersection of conspiracy theories and collective action cues in virtual communities, showing how these communities provide new opportunity structures for

the mobilization of non-normative collective action. Furthermore, the results highlight the need for nuance when studying virtual communities and conspiracy theories as not all of the studied groups were equally likely to post content including non-normative collective action cues. As such, the study contributes multiple starting points for future research.

Acknowledgments

Conflict of Interests

Currently, even though researchers can apply for CrowdTangle access, it is typically granted only to selected academics which inevitably creates an imbalance for the scholarly community and crucially limits the possibilities to share raw data. Yet, it is also important to note that access to CrowdTangle is provided free of any limitations relating to the agenda, methodology, or subject matter of research activities. Given the relevance of the examined topic, I consider it ethically justifiable to use this data here. Nevertheless, a greater access to social media data for future research and other researchers is desirable.

Supplementary Material

Supplementary material for this article is available online at: https://osf.io/4tkvc

References

Amsalem, E., & Zoizner, A. (2022). Real, but limited: A meta-analytic assessment of framing effects in the political domain. *British Journal of Political Science*, *52*(1), 221–237. https://doi.org/10.1017/S000 7123420000253

Baden, C., & Sharon, T. (2021). Blinded by the lies? Toward an integrated definition of conspiracy theories. *Communication Theory*, *31*(1), 82–106. https://doi.org/10.1093/ct/qtaa023

Bak, M., Tarp, K. N., & Liang, D. C. S. (2019). *Delineating the attributes and phenomenon of violent extremism* (Geneva Paper No. 24/19). Geneva Center for Security Policy. https://www.gcsp.ch/publications/defining-concept-violent-extremism

Becker, J. C., & Tausch, N. (2015). A dynamic model of engagement in normative and non-normative collective action: Psychological antecedents, consequences, and barriers. *European Review of Social Psychology*, *26*(1), 43–92. https://doi.org/10/gf3gvc

Blassnig, S., Udris, L., Staender, A., & Vogler, D. (2021). Popularity on facebook during election campaigns: An analysis of issues and emotions in parties' online communication. *International Journal of Communication*, *15*, 4399–4419. https://ijoc.org/index.php/ijoc/article/view/17040/3573

Brennan, R. L., & Prediger, D. J. (1981). Coefficient kappa: Some uses, misuses, and alternatives. *Educational and Psychological Measurement*, *41*(3), 687–699. https://doi.org/10.1177/001316448104100307

Brotherton, R., French, C. C., & Pickering, A. D. (2013). Measuring belief in conspiracy theories: The generic conspiracist beliefs scale. *Frontiers in Psychology*, *4*(May), Article 279. https://doi.org/10.3389/fpsyg.2013.00279

Christensen, R. H. B. (2019). Regression models for ordinal data: Package "ordinal" [Computer software]. GitHub. https://github.com/runehaubo/ordinal

Cohen-Chen, S., & van Zomeren, M. (2018). Yes we can? Group efficacy beliefs predict collective action, but only when hope is high. *Journal of Experimental Social Psychology*, *77*, 50–59. https://doi.org/10.1016/j.jesp.2018.03.016

Dale, K. R., Raney, A. A., Ji, Q., Janicke-Bowles, S. H., Baldwin, J., Rowlett, J. T., Wang, C., & Oliver, M. B. (2020). Self-transcendent emotions and social media: Exploring the content and consumers of inspirational Facebook posts. *New Media & Society*, *22*(3), 507–527. https://doi.org/10/gf8pnx

Demetropoulos Valencia, J., Cope, M. R., Ward, C. J., Jones, M. S., & Muirbrook, K. A. (2021). Hopelessness and youth violent behavior: A longitudinal study. *Deviant Behavior*, *42*(9), 1130–1144. https://doi.org/10.1080/01639625.2020.1724372

Dennis, J. (2019). *Beyond slacktivism: Political participation on social media*. Springer. https://doi.org/10.1007/978-3-030-00844-4_3

Eberl, J.-M., Tolochko, P., Greussing, E., Song, H., Lind, F., Heidenreich, T., Bernhard, J., Edie, R., & Boomgaarden, H. (2017). *Emotional reactions on austrian parties' Facebook pages during the 2017 austrian parliamentary election*. Computational Communication Lab. https://compcommlab.univie.ac.at

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, *43*(4), 51–58. https://doi.org/10/b4x5r3

Frischlich, L. (2021). #Dark inspiration: Eudaimonic entertainment in extremist instagram posts. *New Media & Society*, *23*(3), 554–577. https://doi.org/10/gghnhr

Gerlitz, C., & Helmond, A. (2013). The like economy: Social buttons and the data-intensive web. *New Media & Society*, *15*(8), 1348–1365. https://doi.org/10.1177/1461444812472322

Gulliver, R., Fielding, K. S., & Louis, W. R. (2021). Assessing the mobilization potential of environmental advocacy communication. *Journal of Environmental Psychology*, *74*, Article 101563. https://doi.org/10.1016/j.jenvp.2021.101563

Harwood, J., Giles, H., & Palomares, N. A. (2005). Intergroup theory and communication processes. In J. Harwood & H. Giles (Eds.), *Intergroup communication multiple perspectives* (pp. 1–20). Peter Lang.

Hawkins, I., & Saleem, M. (2021). Rise UP!: A content analytic study of how collective action is discussed within White nationalist videos on YouTube. *New Media & Society*. Advance online publication. https://doi.org/10.1177/14614448211040520

Igartua, J. J., Moral-Toranzo, F., & Fernández, I. (2011). Cognitive, attitudinal, and emotional effects of news frame and group cues, on processing news about immigration. *Journal of Media Psychology*, *23*(4), 174–185. https://doi.org/10/gfz44g

Imhoff, R., & Lamberty, P. (2020). A bioweapon or a hoax? The link between distinct conspiracy beliefs about the Coronavirus disease (Covid-19) outbreak and pandemic behavior. *Social Psychological and Personality Science*, *11*(8), 1110–1118. https://doi.org/10/gg4cq5

Jolley, D., & Paterson, J. L. (2020). Pylons ablaze: Examining the role of 5G Covid-19 conspiracy beliefs and support for violence. *British Journal of Social Psychology*, *59*(3), 628–640. https://doi.org/10/gg6bsv

Jost, J. T., Barberá, P., Bonneau, R., Langer, M., Metzger, M., Nagler, J., Sterling, J., & Tucker, J. A. (2018). How social media facilitates political protest: Information, motivation, and social networks. *Political Psychology*, *39*(3), 85–118. https://doi.org/10/gc3m4d

Jost, P. (2020). Populism fuels love and anger: The impact of message features on users' reactions on Facebook. *International Journal of Communication*, *14*, 2081–2102. https://ijoc.org/index.php/ijoc/article/view/13400

Kaufman, L., & Rousseeuw, P. J. (2009). *Finding groups in data: An introduction to cluster analysis*. John Wiley & Sons.

Keeley, B. L. (1999). Of conspiracy theories. *The Journal of Philosophy*, *96*(3), 109–126. https://doi.org/10/c9xqsx

Kim, S., & Kim, J. (2021). *Propagation of the QAnon conspiracy theory on Facebook*. OSF Preprints. https://doi.org/10.31219/osf.io/wku5b

Knaus, C. (2020, August 20). *Facebook's latest purge of QAnon conspiracy theory pages unlikely to affect growing Australian following*. The Guardian. http://www.theguardian.com/us-news/2020/aug/21/facebooks-latest-purge-of-qanon-conspiracy-theory-pages-unlikely-to-affect-growing-australian-following

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. SAGE.

Krippendorff, K. (2011). Agreement and information in the reliability of coding. *Communication Methods and Measures*, *5*(2), 93–112. https://doi.org/10.1080/19312458.2011.568376

Lamberty, P., & Leiser, D. (2019). *"Sometimes you just have to go in": The link between conspiracy beliefs and political action*. PsyArXiv Preprints. https://doi.org/10.31234/osf.io/bdrxc

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, *33*(March), 159–174. https://doi.org/10/dtzfj3

Lazarus, R. S. (2001). Relational meaning and discrete emotions. In K. R. Scherer, A. Schorr, & T. Johnston (Eds.), *Appraisal processes in emotion* (pp. 37–67). Oxford University Press.

Lecheler, S., & de Vreese, C. H. (2012). News framing and public opinion. *Journalism & Mass Communication Quarterly*, *89*(2), 185–204. https://doi.org/10/gf3gng

Marwick, A., & Lewis, R. (2017). *Media manipulation and disinformation online*. Data & Society Research Institute. https://datasociety.net/library/media-manipulation-and-disinfo-online

Mayring, P. (2010). *Qualitative Inhaltsanalyse: Grundlagen und Techniken.* [Qualitative content analysis: Foundations and techniques]. Beltz.

Merten, K. (2000). Struktur und Funktion von Propaganda [Structure and function of propaganda]. *Publizistik*, *45*(2), 143–162. https://doi.org/10/czgfwz

Miller-Idriss, C. (2020). *Hate in the homeland*. Princeton University Press. https://www.degruyter.com/document/doi/10.1515/9780691205892/html

Nabi, R. L. (1999). A cognitive-functional model for the effects of discrete negative emotions on information processing, attitude change, and recall. *Communication Theory*, *9*(3), 292–320. https://doi.org/10/c4ccbm

Nabi, R. L. (2002). Anger, fear, uncertainty, and attitudes: A test of the cognitive-functional model. *Communication Monographs*, *69*(3), 204–216. https://doi.org/10.1080/03637750216541

Nachtwey, O., Schäfer, R., & Frei, N. (2020). *Politische Soziologie der Corona-Proteste* [Political sociology in times of the coronavirus-protests]. SocArXiv Papers. https://doi.org/10.31235/osf.io/zyp3f

Pummerer, L., Böhm, R., Lilleholt, L., Winter, K., Zettler, I., & Sassenberg, K. (2021). Conspiracy theories and their societal effects during the Covid-19 pandemic. *Social Psychological and Personality Science*, *13*(1), 49–59. https://doi.org/10.31234/osf.io/y5grn

Quandt, T., Klapproth, J., & Frischlich, L. (2022). Dark social media participation and well-being. *Current Opinion in Psychology*, *45*, Article 101284. https://doi.org/10.1016/j.copsyc.2021.11.004

Quarfoot, D., & Levine, R. A. (2016). How robust are multirater interrater reliability indices to changes in frequency distribution? *The American Statistician*, *70*(4), 373–384. https://doi.org/10.1080/00031305.

2016.1141708

Quattrociocci, W., Scala, A., & Sunstein, C. R. (2016). *Echo chambers on Facebook* (Paper No. 877). Harvard Law School. http://www.law.harvard.edu/programs/olin_center/papers/pdf/Sunstein_877.pdf

Rottweiler, B., & Gill, P. (2020). Conspiracy beliefs and violent extremist intentions: The contingent effects of self-efficacy, self-control and law-related morality. *Terrorism and Political Violence*. Advance online publication. https://doi.org/10.1080/09546553.2020.1803288

Staender, A., Ernst, N., & Steppat, D. (2019). Was steigert die Facebook-Resonanz? Eine Analyse der Likes, Shares und Comments im Schweizer Wahlkampf 2015 [What increases Facebook resonance? An analysis of likes, shares and comments in the Swiss election campaign 2015]. *SCM Studies in Communication and Media*, *8*(2), 236–271. https://doi.org/10.5771/2192-4007-2019-2-236

Striegher, J.-L. (2015). Violent-extremism: An examination of a definitional dilemma. In *8th Australian security and intelligence conference* (pp. 75–86). SRI Security Research Institute. https://ro.ecu.edu.au/asi/47

Stürmer, S., & Simon, B. (2009). Pathways to collective protest: Calculation, identification, or emotion? A critical analysis of the role of group-based anger in social movement participation. *Journal of Social Issues*, *65*(4), 681–705. https://doi.org/10/d3nfv3

Tausch, N., & Becker, J. C. (2013). Emotional reactions to success and failure of collective action as predictors of future action intentions: A longitudinal investigation in the context of student protests in Germany. *British Journal of Social Psychology*, *52*(3), 525–542. https://doi.org/10.1111/j.2044-8309.2012.02109.x

Tausch, N., Becker, J. C., Spears, R., Christ, O., Saab, R., Singh, P., & Siddiqui, R. N. (2011). Explaining radical group behavior: Developing emotion and efficacy routes to normative and nonnormative collective action. *Journal of Personality and Social Psychology*, *101*(1), 129–148. https://doi.org/10/cdtf2s

Taylor, W. D., Johnson, G., Ault, M. K., Griffith, J. A., Rozzell, B., Connelly, S., Jensen, M. L., Dunbar, N. E., & Ness, A. M. (2015). Ideological group persuasion:

A within-person study of how violence, interactivity, and credibility features influence online persuasion. *Computers in Human Behavior*, *51*, 448–460. https://doi.org/10/f7pfth

Unkel, J. (2020). *Tidycomm: Data modification and analysis for communication research (0.2.1)* [Computer software]. GitHub. https://github.com/joon-e/tidycomm

Uscinski, J. E. (2017). The study of conspiracy theories. *Argumenta*, *3*(2), 1–13. https://doi.org/10/gfxhs7

van Prooijen, J.-W., & Douglas, K. M. (2017). Conspiracy theories as part of history: The role of societal crisis situations. *Memory Studies*, *10*(3), 323–333. https://doi.org/10/gfvb42

van Zomeren, M., Pauls, I. L., & Cohen-Chen, S. (2019). Is hope good for motivating collective action in the context of climate change? Differentiating hope's emotion- and problem-focused coping functions. *Global Environmental Change*, *58*, Article 101915. https://doi.org/10.1016/j.gloenvcha.2019.04.003

van Zomeren, M., Postmes, T., & Spears, R. (2008). Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin*, *134*(4), 504–535. https://doi.org/10/c6hxh7

Virchow, F., & Häusler, A. (2020). *Pandemie-Leugnung und extreme Rechte in Nordrhein-Westfalen* [Pandemic denial and the far-right] (Short report No 2). CoRE NRW. https://www.bicc.de/publications/publicationpage/publication/pandemie-leugnung-und-extreme-rechte-in-nordrhein-westfalen-1019

WHO. (2020, January 21). Novel Coronavirus (2019-nCoV): Situation report 1. WHO. https://apps.who.int/iris/handle/10665/330760

Wojcieszak, M. (2008). False consensus goes online: Impact of ideologically homogeneous groups on false consensus. *Public Opinion Quarterly*, *72*(4), 781–791. https://doi.org/10/dj9vbq

Wright, S. C., Taylor, D. M., & Moghaddam, F. M. (1990). Responding to membership in a disadvantaged group: From acceptance to collective protest. *Journal of Personality and Social Psychology*, *58*(6), 994–1003. https://doi.org/10/br7zjn

About the Author

Lena Frischlich (PhD) is a junior research group leader at the University of Münster, Germany. Her research focuses on online communication and the changing digital landscape. In particular, she studies the staging and effects of online propaganda and related phenomena (e.g., disinformation) as well as strategies for empowering media users against such manipulative attempts using quantitative, qualitative, and computational measures. Besides that, she is also interested in positive media effects more generally.

Article

Narratives of Anti-Vaccination Movements in the German and Brazilian Twittersphere: A Grounded Theory Approach

Adriana da Rosa Amaral [1,*], Anna-Katharina Jung [2], Lea-Marie Braun [2], and Beatriz Blanco [1]

[1] School of Creative Industries, Unisinos University, Brazil
[2] Department of Computer Science and Applied Cognitive Science, University of Duisburg-Essen, Germany

* Corresponding author (adriamaral@unisinos.br)

Abstract

Since February 2020, the world has been facing a global pandemic of the SARS-CoV2 virus. All over the world, people have been urged to take protective measures. It is hoped that the implementation of widespread vaccination campaigns will defeat the pandemic in the long term. While many people are eager to be vaccinated against Covid-19, other voices in the population are highly critical of vaccination and protective measures, circulating much misinformation on social media. The movements opposing pandemic response measures are heterogeneous, including right-wing groups, spiritualists who deny science, citizens with existential fears, and those who equate vaccination with a loss of individual freedom. This study aims to map and compare the social media communication of anti-vaccination movements that defy social cohesion and circulate online misinformation in Germany and Brazil. By following a grounded theory approach suggested by Webb and Mallon (2007), we coded content from social media communication of opinion leaders on Twitter with extended narrative analysis methodology finding different narratives that were mapped within the inhomogeneous anti-vaccination movements. The results show that both countries' main narratives against vaccination are very similar, but the main difference stems from Brazil's stronger politicization of vaccines.

1. Introduction

Since the beginning of 2020, the world has been facing a pandemic of the new SARS-CoV-2 virus. To contain the spread of the virus, political measures were taken that, under normal circumstances, would be classified as authoritarian, such as closing borders and stores or restricting personal freedoms (Muldoon et al., 2021). State leaders were confronted with the difficult task of explaining the measures to the population, contributing to meaning-making, and strengthening social cohesion (Montiel et al., 2021). Besides the traditional media, press conferences, billboard campaigns, and social networks especially were used to inform citizens about government measures (Melki et al., 2022). The pandemic situation has underlined that health is not solely dependent on individual choices and personal lifestyle but that cultural, social, and political factors also have a major influence (Cárdenas et al., 2021).

One of the central measures for sustainable control of the pandemic was vaccination campaigns. From the point of view of epidemiologists and virologists, vaccination was the most effective way to achieve herd immunity and ultimately end the pandemic (Fontanet & Cauchemez, 2020). In Germany, 79% of the German population was willing to get vaccinated in April 2020, which dropped to 62% as of January 2021 (Jensen et al., 2021). In general, many factors influence the willingness

to get vaccinated, such as the fear of unforeseen side effects (Neumann-Böhme & Sabat, 2021). While many citizens are eager to get vaccinated against Covid-19, other voices in the population are very critical of vaccination and protective measures (Johnson et al., 2020). In Germany and the German-speaking countries, these critical voices against the vaccination campaigns and other protection methods came from different political opinion camps and involved people with clearly right-wing ideas, spiritualists who associated themselves with anthroposophical movements, as well as citizens with existential fears who joined each other in the form of the "Querdenker" movement (English: "lateral thinkers"; Frei et al., 2021). Querdenker are followers of a protest movement against the Covid-19 restrictions. Such protest movement combines many sociodemographic groups with a high conspiracy mentality (Bonnevie et al., 2021). Believing in Covid-19-related conspiracy theories is especially problematic in vaccination campaigns since believing in such theories significantly decreases the likelihood that the Covid-19 vaccine will be accepted (Salali & Uysal, 2020).

In contrast to Germany, Brazil suffered even more immensely from the spread and effects of the Covid-19 pandemic and, at times, became one of the epicenters of the pandemic (Ferrante et al., 2021). In the country, critics of the measures and vaccination quickly emerged, frequently supported by leading politicians, most notably President Jair Bolsonaro (Ferrante et al., 2021). Until the Covid-19 pandemic, the country had a historical tradition of successful vaccination campaigns, in which the country's former presidents were always strongly supportive of mass vaccination in their public statements. Nevertheless, the strategy that led Bolsonaro to the Brazilian presidency has a highly neoliberal and individualistic approach, characterized by statements attacking the efficacy of public services and assistance politics, such as the Brazilian Universal Public Healthcare System (Pinheiro-Machado & Scalco, 2020); this outlook directly impacted his approach to mass vaccination public campaigns. However, Bolsonaro's opponents, like the São Paulo State governor João Dória, one of the president's former supporters, focused pandemic combat strategies on the fast adoption of mass vaccination campaigns. This was perceived by Bolsonaro and his followers as a political provocation (Gramacho & Turgeon, 2021), partially motivating their attacks against such measures on social media and the highly politicized mobilization around the subject.

In both countries, protests against the vaccination campaigns gathered momentum on social networks and were both characterized by an inhomogeneous group composition (Recuero & Stumpf, 2021). Understanding the structure of the Brazilian and German anti-vaccination movements will provide crucial insights into how these movements might be countered effectively. Therefore, this qualitative study addresses the following research question to capture these pockets of resistance:

RQ: Which narratives are used by the German and the Brazilian anti-vaccination movements on Twitter, and how far do they differ?

To answer this question, opinion leaders of the German and Brazilian anti-vaccination movements were identified by studying the reporting on fact-checking sites about the vaccines and vaccination campaigns in Germany and Brazil in a three-month period after the first approval of the vaccines and the start of the vaccination campaigns (Germany: start in December 2020; Brazil: start in January 2021). After identifying the opinion leaders, their social media profiles were identified, and all related Twitter communication was collected, filtered, and analyzed based on the extended narrative analysis (Webb & Mallon, 2007). We focused our analysis on Twitter due to its centrality in political debates among scientists, journalists, and politicians during the Covid-19 pandemic (Rosenberg et al., 2020; Rufai & Bunce, 2020), as well as the fact that it allows data collection through APIs for scientific purposes (Ahmed et al., 2017).

This article is part of a bigger project with researchers from Germany and Brazil. Thus, it is part of an interdisciplinary research network to understand how collective action frames succeed (or fail) in social media pandemic response. This joint project combines qualitative frame analyses with social media analytics techniques—both quantitative and qualitative—to investigate collective action frames on social media about the Covid-19 vaccination in Brazil. The analysis aims to derive strategies for health organizations to succeed at social mobilization via social media and at overcoming "infodemic" counter-movements.

2. State of the Art

2.1. Social Movement and Narratives

The development of social media and online communities created an arena for social movements (Mirbabaie et al., 2021). By offering benefits such as low individual cost of participation and connectivity between users, social media has transformed individuals' passive state of participation into self-organized participation (Kavada, 2015). Compared to traditional forms such as formal organizations, social movements on social media are mainly based on personal expression of identity (Kavada, 2015).

During a social movement, a collective identity between the movement's participants develops (Mirbabaie et al., 2021). Collective identity facilitates the generation of a social movement and sustains commitment and cohesion between the actors (Fominaya, 2010). Over time, a set of individuals becomes a collective entity due to a process that involves cognitive definitions and is shared through common narratives (Brown, 2006; Fominaya, 2010). Narratives are a core component of constructing meaning in social movements, and they

can determine and give insight into processes of self- and collective identity construction (Barassi & Zamponi, 2020). Narratives of a social movement are endowed with a temporally configurative capacity that allows actors to "integrate past, present and future events" (Polletta, 1998, p. 139).

In the context of the Covid-19 pandemic, new social movements have been formed, and existing social movements revolutionized (Pullan & Dey, 2021). The anti-vaccination movement, which originated in the 18th century, has been given a new lease of life by outbreaks of diseases (Hussain et al., 2018). Due to the international vaccination campaigns for the Covid-19 virus, the anti-vaccination movement gained increasing attention and growth (Pullan & Dey, 2021), especially on social media platforms such as Twitter (Bonnevie et al., 2021).

2.2. Anti-Vaccination Movement on Social Media

Anti-vaccine messages are more widespread and uninhibited on the Internet than in other forms of media (Kata, 2012). Social media creates a platform that allows anti-vaccination activists to effectively spread their messages without verification by the expert medical community (Kata, 2012). Messages that are spread online within the anti-vaccination movement contain narratives such as that the vaccine causes disease, that it is ineffective, that vaccine is part of a medical/pharmaceutical/government conspiracy, or that mainstream medicine is wrong or corrupt (Kata, 2012). Reading such content can have an immense impact on one's decision-making process regarding vaccination and attitude toward vaccination (Betsch et al., 2010). Examining the impact of anti-vaccination content on the Internet, research has shown that visiting an anti-vaccination website for as little as 5–10 minutes leads to an increase in perceiving vaccinations as riskier (Betsch et al., 2010).

These listed findings suggest that anti-vaccination movements on social media can contribute to vaccine refusal by shaping perceptions and reinforcing opposition (van Schalkwyk et al., 2020), especially since social media is one of the main communication channels for anti-vaccinationists (Yuan & Crooks, 2018). As soon as the level of anti-vaccinationist sentiment within a population is higher than herd immunity can tolerate, a disease can rapidly be transmitted (Yuan & Crooks, 2018). This underlines that the basis for achieving herd immunity is social cohesion because unity, solidarity, and collective coordination of vaccination campaigns are essential for its success (Cárdenas et al., 2021). A divided society through the rise of anti-vaccination movements, a general increase in vaccine hesitancy, and the spread of false narratives will delay the successful management of pandemic situations (Ruisch et al., 2021). Strengthening social cohesion online, especially on social media, can directly impact social cohesion in real life and can thus be an important factor in crisis response (Marlowe et al., 2017).

3. Research Design

3.1. Methodology

The derived research question is addressed with a qualitative approach suitable for the context of social media. It aims to openly analyze the anti-vaccination movement to achieve a certain generalizability without condensing the context too much and thereby distorting it (Goguen, 1997) instead of working in a more theory-driven and teleological method. This study, therefore, follows the extended narrative analysis methodology of Webb and Mallon (2007), which combines the strengths of Strauss and Corbin's (1997) grounded theory methodology with Chatman's (1975) narrative analysis to increase the breadth and depth of the analysis. The overall goal is a rich description of the narratives found in the collected data to better understand the movements described (Wiesche et al., 2017).

The grounded theory approach has been used to start from the empirical and then goes back to theory as many times as the object needs. Its applications have not been widely discussed in the context of social media research (Fragoso et al., 2011). In our adaptation to narratives extracted from Twitter, we follow the ideas of Webb and Mallon (2007, p. 378) to investigate and test different approaches. In this sense, the combination of the social media analytic framework (Stieglitz et al., 2018) and extended narrative analysis has shown itself to be a very prolific method to create core categories and give us an initial map to understand and compare anti-vaccination movements.

3.2. Data Collection

While most publications that apply a grounded theory approach use interviews for the analysis, this study takes another approach, using social media data. The starting points of our analysis are December 2020 for the German (Paul-Ehrlich-Institut, 2021) and January 2021 for the Brazilian (Ministério da Saúde, 2021) data set, as those were the months when the first vaccines were approved by their national health organizations. To map the main narratives of the anti-vaccination movements, we applied an account-driven data collection approach by identifying German and Brazilian opinion leaders. The leading fact-checking organizations, which focused on identifying and debunking the Covid-19 pandemic-related mis- and disinformation, have been identified in Germany and Brazil. For Germany, 12 fact-checking websites were identified, such as Correctiv or Mimikama. Ten Brazilian fact-checking websites were found, for example Aos Fatos or Agência Lupa. All articles of the identified fact-checking websites published in the identified three-month periods were analyzed regarding the mentioning of opinion leaders. Figure 1 visualizes the procedure conducted to identify the opinion leaders of the German and Brazilian anti-vaccination movements.
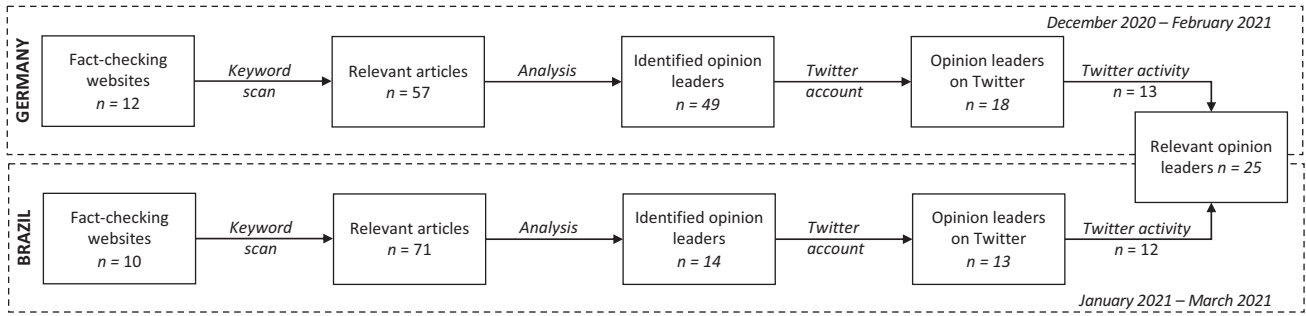
Figure 1. Procedure of identifying opinion leaders of the anti-vaccination movement.

As seen in Figure 1, the articles on the fact-checking websites were scanned and allocated as relevant if keywords such as vaccination or corona were mentioned in the headline or description of the articles. Then, the relevant articles were read by a native-speaking researcher. If the articles pointed out a person who spread anti-vaccination content, the name of such person was collected. In total, 49 German opinion leaders were identified after inspecting 57 articles from the different fact-checking websites and 14 Brazilian opinion leaders out of 71 fact-checking articles. For each anti-vaccination opinion leader, their Twitter profiles were identified. For Germany, 18 out of 49 opinion leaders had a Twitter account; 13 accounts were found for the Brazilian leaders. For each Twitter profile, the tweets were inspected and allocated as relevant or not based on the Twitter activity, leading to 25 (13 German accounts, 12 Brazilian accounts) identified opinion leaders in total regarding anti-vaccination movements (note that Twitter accounts that post such adverse content are regularly flagged and eventually deleted by the platform operators). Each opinion leader had a follower count above the average; therefore, we were able to confirm that they reached a larger number of individuals with their content, and thus we identified them as opinion leaders.

The data for the identified Twitter accounts were then collected by a self-developed crawler based on the social media analytics framework (Stieglitz et al., 2018), which uses the open-source library Twitter. An account-based tracking was conducted, meaning that all Twitter activity around the identified Twitter accounts was collected, including not only that of the opinion leaders but also the reactions (retweets, quotes, replies) to the content produced by other Twitter users.

In total, the collected data contained 30,945 tweets for the Brazilian and German opinion leaders, representing tweets and retweets. For Germany and Brazil, 5,240 and 25,705 tweets were tracked, respectively. The data sets were then filtered for specific keywords to ensure the relevance of the tweets' contents. Figure 2 shows the two filtering steps for both data sets.

As a first step, the data sets were filtered for Covid-19-related keywords (Covid-19, corona, coronavirus, pandemic), leading to a set of 1,390 tweets for the German data and 755 tweets for the Brazilian. Next, the remaining tweets were filtered for vaccination-related
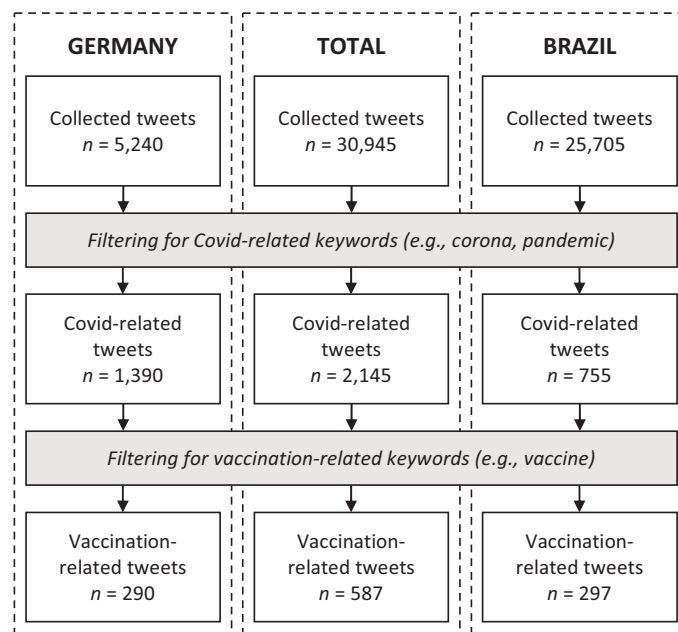

Figure 2. Filtering steps for the German and Brazilian data sets.

keywords—such as vaccine, Astra, BioNTech, Pfizer, immune, and injection—in the German and Portuguese languages. In the end, 290 German and 297 Brazilian tweets were analyzed.

3.3. Data Analysis

To identify the main narratives, the collected tweets have been analyzed according to the extended narrative analysis by Webb and Mallon (2007). Table 1 summarizes the main steps of the data analysis.

Five native-speaking researchers coded the posts; three for the German tweets and two for the Brazilian tweets. The four stages of coding were carried out in the tweets' original language (German or Portuguese), and then the developed main narratives were translated into English. It is important to emphasize that for the grounded theory approach, the main narrative categories emerge from the data and go back for discussion as many times it is needed. Another important fact about this method is that the team of coders analyzing the two different samples (two Germans and two Brazilians) met after the first coding to discuss the categories again and compare them.

4. Findings

4.1. Sample

Thirteen German and 12 Brazilian opinion leaders were found during the scan of the fact-checking websites. Even though the "digital-age social research will involve situations where reasonable, well-meaning people will disagree about ethics" (Salganik, 2019, p. 283), we followed AoIR's Internet Research: Ethical Guidelines 3.0 (Franzke et al., 2019) and Salganik's (2019) four ethical principles: respect for persons, beneficence, justice, respect for law and public interest. Thus, we refrain from mentioning the opinion leaders' names or Twitter handles to ensure their privacy. We, however, provide some back-

ground information on our sample. All opinion leaders have spread misinformation regarding the vaccination against Covid-19 and are part of the anti-vaccination movements. With their Twitter accounts, they aim to "enlighten" their followers on the "truth" about vaccinations. Regarding the German opinion leaders, ten were male, two were female, and two of the 13 accounts were verified by Twitter. Six opinion leaders in Brazil were male and six female, and two were verified by Twitter, both parliamentarians. The German opinion leaders had, on average, on our point of measurement, 24,954,67 followers, ranging from 2,401 to 126,225. In Brazil, 320,630 Twitter users followed, on average, the Brazilian opinion leaders, ranging from 48 to 1,480,759. In the German context, different backgrounds of the opinion leaders could be identified. Three of them were medical doctors in different fields (e.g., Internal medicine), three claimed that they were journalists, two were politicians of a right-wing party, two were professors at a university, one was a priest, and one called themself a "lawyer for Querdenker." In general, most German opinion leaders are placed in the Querdenker movement. In Brazil, we identified two main profiles: three were parliamentarians allied to President Bolsonaro, and nine were medical doctors in varied fields. One was a physician holding an official job position in government (Secretary of Labour and Education in Health Administration in the Ministry of Health). Seven of the physicians worked as consultants for strategies against Covid-19 for Bolsonaro's administration, officially or extra-officially. Regarding these consultants, five of them were investigated by a parliamentary commission (CPI in Portuguese, meaning Parliamentary Investigation Commission) for being members of a "Shadow's Council": A secret extra-official group of medical doctors who advised the Ministry of Health about measures to combat the pandemic, which led to the delay in adopting mass vaccination campaigns in Brazil, and to the equivocal use of scientifically unproven medicines, such as Hydroxychloroquine and Ivermectin, as a public health strategy. Two were banned

Table 1. Steps of the extended narrative analysis.

Stage of Method	Function of Stage	Contribution of Stage
Stage 1: Open Coding	Fractures source narrative into concept	Delays imposition of narrative structure retaining contextual richness for longer
Stage 2: Story Decomposition	Organizes concepts in a story structure through abstraction, categorization & generalization	Dries out the narrative, presenting its basic events and existents, or building blocks
Stage 3: Axial Coding	Examines properties and relationships of concepts to determine causality	Adds depth to the story structure by examining its building blocks in greater detail
Stage 4: Selective Coding	Identifies and develops a core category	Simultaneously adds depth and breadth by collapsing concepts into one meta concept and then developing that meta concept into further detail

Source: Webb and Mallon (2007).

from Twitter for posting fake news about Covid-19, both doctors who acted as government consultants, as mentioned above.

Another important aspect relates to the presence of bots in both our samples. The importance of the use of bots for measuring public opinion in social media has been discussed by Ross et al. (2019, p. 409):

> A relatively small number of bots was sufficient to sway the opinion climate in the direction of the opinion supported by the bots, triggering a spiral of silence process that ultimately led to the bot opinion becoming accepted as the perceived majority opinion.

Even though in the dataset there were bots from the categories described by Stieglitz et al. (2017), in our filtered sample, there were none left for coding.

4.2. German Narratives

For the 290 German tweets, each tweet was coded following the four stages of coding (Table 1). After analyzing all tweets, 395 selective codings were found, meaning that in several cases, a tweet conveyed more than one narrative. Thirteen selective codings could not be allocated to the developed main narratives. The identified codings were then inspected in detail to find overlapping themes and build narratives. In total, 13 narratives were found for the German tweets. Table 2 visualizes the narratives and selective codings which were allocated to the narratives.

The occurrence of the 13 narratives, which are represented by the selected codings of the tweets, differed from each other. Figure 3 demonstrates the distribution and the emergence of the narratives.

When inspecting Figure 3, it can be seen that Distrust in Vaccination is the most common narrative in the German anti-vaccination movement. Overall, this narrative conveys messages such as fear of side effects, fear of the vaccination itself, or high risks associated with the Covid-19 vaccination. The second most represented narrative is Criticism of Vaccination/ Covid-19 Policy. Individuals sharing this narrative resist being vaccinated to express their dissatisfaction. The narrative Scientific Skepticism stands for the overall distrust in the vaccination research. In this regard, anti-vaccinationists believe that the vaccines (e.g., AstraZeneca, BioNTech-Pfizer) have been approved too early. The Compulsory Vaccination narrative criticizes that the government forces individuals to get vaccinated either directly or indirectly. The narrative of Anti-Vaccinationists as Victims/Social Divide reflects the opinion that vaccination advocates are clueless. They see themselves in a victim role and adopt an "us versus them" attitude. Their belief that important information about vaccination is actively censored by both media and government is mirrored in the narrative of Information Censorship. The narrative Vaccination Is Pointless reflects the assumed ineffectiveness of the vaccinations. The Pharmaceutical Industry Profit is a narrative where individuals believe that the pharmaceutical industry prioritizes money through vaccinations over the population's health. The narrative that the Vaccine Has

Table 2. German narratives and example selective codings.

| #	Narrative	Example Selective Coding
1	Distrust in Vaccination	Fear of vaccination, fear of side effects
2	Criticism of Vaccination/Covid-19 Policy	Criticism of vaccine strategy, government failure
3	Scientific Skepticism	Premature approval of vaccines, lack of vaccine research
4	Compulsory Vaccination	Indirect compulsory vaccination, criticism of social pressure
5	Information Censorship	Censorship of important information, vaccination propaganda
6	Anti-Vaccinationists as Victims/Social Divide	Blinding the others, us against them
7	Pharmaceutical Industry Profit	Vaccination as money-making for the pharmaceutical industry
8	Vaccination Is Pointless	Doubts about the effect of vaccination
9	Vaccine Has Been Tampered With	Alteration of DNA by vaccine, poisoning by vaccination
10	Violation of Fundamental Rights	Restricted freedom, deprivation of liberty for the unvaccinated
11	Neutral/Vaccination Advocates	Vaccinate with reason, no clear position
12	Distrust in the Existence of Covid-19	Covid-19 is a big lie, Covid-19 pandemic is staged
13	Fighting the Virus With Physical Strength Alone	Power of love and togetherness, trust in the immune system instead of vaccination
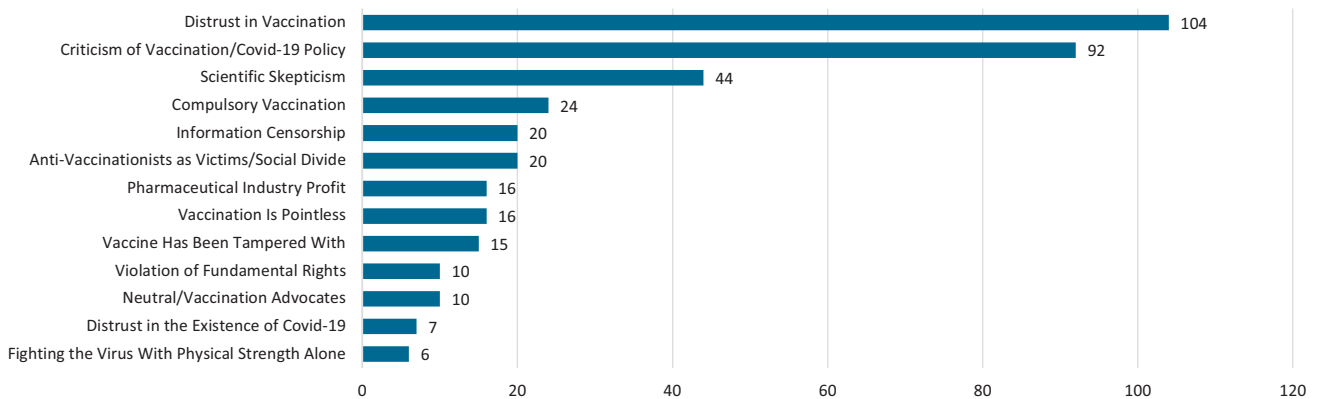
Figure 3. Distribution of German narratives.

Been Tampered With mirrors the fear that the vaccine has been manipulated in different ways, e.g., by a chip inserted into the body during the vaccination process or by some means which allow it to manipulate human DNA. The Violation Of Fundamental Rights narrative goes in the same direction as the Compulsory Vaccination narrative. However, it extends the narrative by positing that the vaccination campaigns violate human rights by restricting people's freedom in general or denying them freedom of expression. One narrative—Distrust in the Existence of Covid-19—mirrors the assumption that Covid-19 does not exist (in the form presented by the media). In this context, it is either believed that Covid-19 was invented, for example, by the government or that

the pandemic is less dangerous than is presented to the public. The final narrative, Fighting The Virus With Physical Strength Alone, states that the vaccination is pointless because the immune system is strong enough to fight the virus.

4.3. Brazilian Narratives

The 297 Brazilian tweets were also analyzed through the same process. After the analysis, 78 selective codings were identified, resulting in the 11 narratives listed in Table 3.

Like the German narratives, the Brazilian narratives are represented to different extents. Figure 4 shows

Table 3. Brazilian narratives and example selective codings.

| #	Narrative	Example Selective Coding
1	Distrust in Vaccination	Fear of vaccination, fear of side effects, high risks of vaccination
2	Violation of Individual Rights	Restricted freedom, deprivation of liberty for the unvaccinated, compulsory vaccination is social control
3	Vaccination Is Pointless	Doubts about the effect of vaccination, vaccination has no effect against variants
4	Scientific Skepticism	Premature approval of vaccines, lack of vaccine research, corruption among researchers
5	Protecting Children and Youth	Vaccines are dangerous to children and young people, vaccination without parents' authorization is illegal
6	Politicizing of Vaccination	Vaccination as a political strategy, weaponizing vaccination against political opponents
7	Alternatives to Vaccination	Treatments with unproven drugs such as Ivermectin and Hydroxychloroquine are more effective than vaccination
8	Anti-Vaccinationists as Victims/Social Divide	Blinding the others, us against them, persecution against unvaccinated
9	Information Censorship	Censorship of important information, vaccination propaganda
10	Fighting the Virus With Physical Strength Alone	Trust in the immune system instead of vaccination, herd immunity is more effective than vaccination
11	Pharmaceutical Industry Profit	Profit through vaccination, vaccination as money-making for the pharmaceutical industry
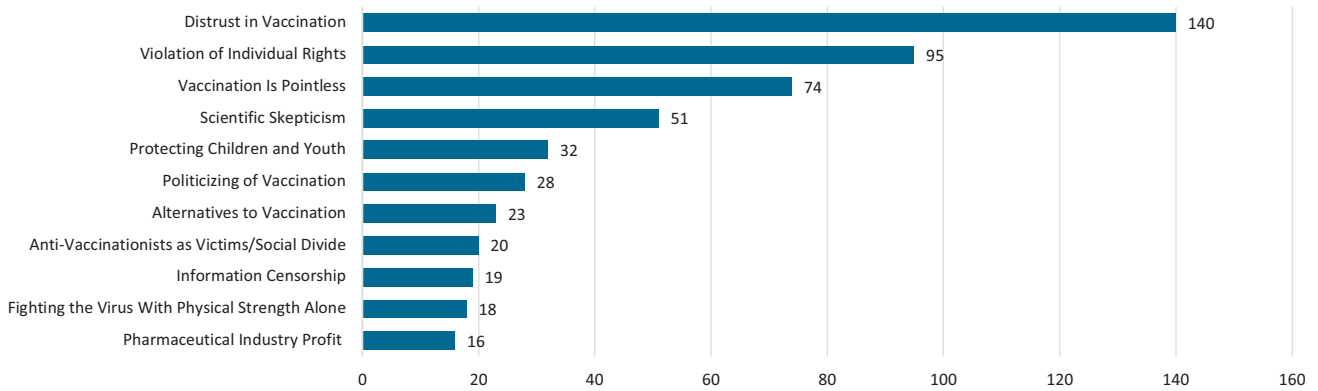
Figure 4. Distribution of Brazilian narratives.

the narratives' distribution and emergence based on the number of selected coding allocated to the respective narrative.

Some of the German and Brazilian narratives overlap, while some narratives only emerge in the German or Brazilian tweets (Figure 4). Four of the narratives only appeared in the Brazilian dataset: Violation of Individual Rights, Protecting Children and Youth, Politicizing of Vaccination, and Alternatives to Vaccination.

The narrative Violation of Individual Rights conveys that the individual and their own desires must take precedence over collective interests. The Politicizing of Vaccination narrative contains messages about political opponents using the Covid-19 vaccination campaign to damage the public image of Bolsonaro since the president shows distrust in vaccination in his public statements. The Alternatives to Vaccination narrative is related to Bolsonaro's public support of adopting scientifically unproven treatments against Covid-19, such as

the prescription of Hydroxychloroquine and Ivermectin. The Protecting Children and Youth narrative expresses a kind of moral panic prevalent in conservative ideologies: the belief that children are in danger because of shady political interests and must be protected at all costs (Edelman, 2004).

As stated before, some narratives only occur in the German anti-vaccination movement (green lines), some emerge only in the Brazilian tweets (yellow lines), and some appear in both movements (combination of green and yellow). Figure 5 represents the occurrence of the German and Brazilian narratives, visualizing those that overlap by showing how strongly the narratives are represented to different degrees.

5. Discussion and Conclusion

This article aimed to better comprehend the anti-vaccination movement in the context of the Covid-19
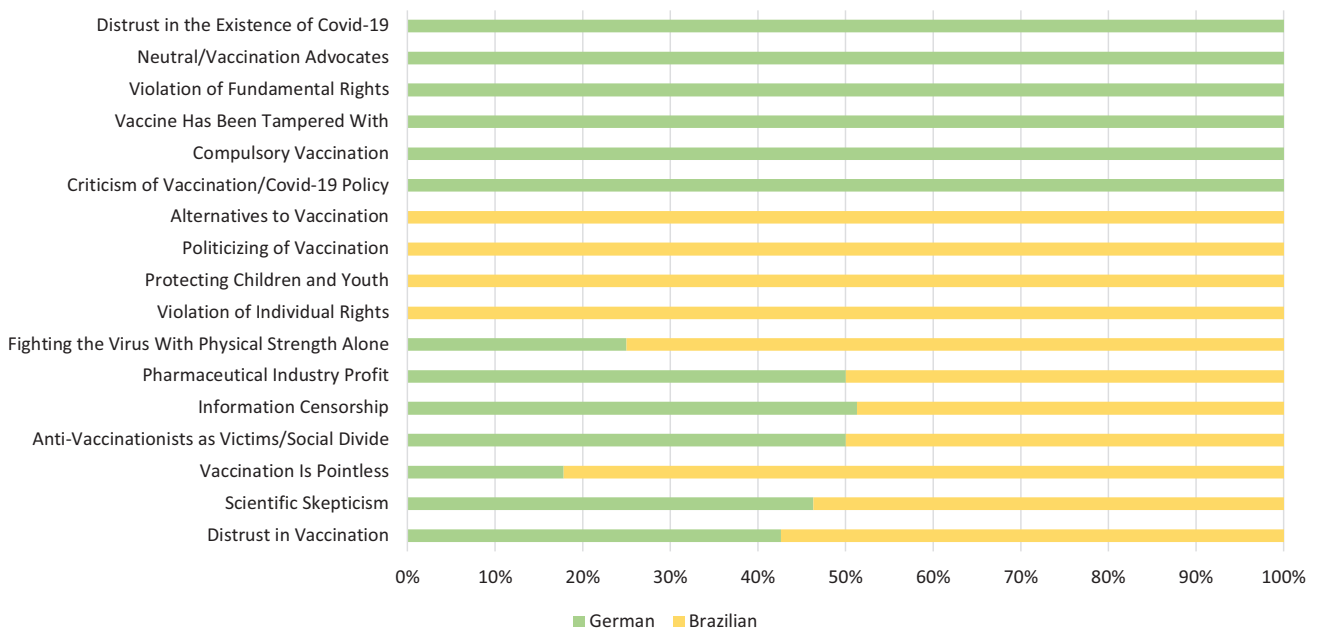

Figure 5. Occurrence of German and Brazilian narratives.

pandemic in Germany and Brazil. The narratives used within the anti-vaccination movements were detected by analyzing German and Brazilian Twitter data from the opinion leaders and their followers of the movement in the respective countries.

Understanding the occurrence and distribution of the narratives regarding anti-vaccination movements, nationally and internationally, helps to understand the anti-vaccination movements in-depth as narratives are a core component of social movements and are a determining factor for collective identity (Barassi & Zamponi, 2020). Thus, in the scope of the article's analysis, the narratives of the Brazilian and German anti-vaccination movements were analyzed. Following analysis of the results, 17 narratives were found, six of which were only found in the German anti-vaccination movement, four only in the Brazilian movement, and seven overlapped between both countries. By far, the most common narrative of the two movements stems from Distrust in Vaccination. Both Brazilian and German anti-vaccinationists feared that the vaccination was unsafe or that the risks and side effects were too severe. They claimed that the vaccines had not been not properly tested, often providing examples, none of them proven, of those who had supposedly died or become seriously ill following vaccination. This narrative is evenly distributed between the two countries. When inspecting the overlapping narratives, it was determined that they convey critique against the vaccination itself but not against the vaccination campaigns or policies. Excluded from this is only the narrative Pharmaceutical Industry Profit, stressing the strength of the skepticism in the pharmaceutical industry level, which is in line with previous findings (Pahus et al., 2020). The core of the remaining overlapping narratives is that individuals do not need vaccination since the body itself is strong enough to fight against the disease. A deep skepticism against vaccination can be seen, mirrored in Scientific Skepticism (van Zoonen, 2012) or the fear that crucial information about vaccination has been censored. This skepticism against vaccination is not new; it did not emerge during the Covid-19-anti-vaccination movements but has been the core of anti-vaccination movements since their inception (Hussain et al., 2018).

When depicting the narratives found within both anti-vaccination movements, one main similarity can be found: skepticism in politics. Due to the different nature of the governments in Germany and Brazil, the narratives convey criticism of the vaccination policy but with various specificities. The idea of Violation of Individual Rights, despite its similarities with the German narratives' Violation of Fundamental Rights and Compulsory Vaccination, has particularities in the Brazilian scenario due to the hyper-individualism that characterizes the masculinist neoliberal ideology adopted by the far-right politicians such as Bolsonaro (Pinheiro-Machado & Scalco, 2020). In this point of view, the individual's desires must be privileged over collective needs in the

name of freedom (Harsin, 2020). In contrast, the critical voices against vaccination in Germany did not come from politicians themselves but from different political opinion camps. They included those with right-wing ideas and citizens with existential fears who had joined forces in the "Querdenker" movement (Frei et al., 2021). Skepticism in politics has also been vocalized in other anti-vaccination movements (Hussain et al., 2018). Narratives such as Criticism of Vaccination/Covid-19 Policy or Politicizing of Vaccination have been part of these movements. However, due to the circumstances of the Covid-19 pandemic, new narratives emerged, such as Distrust in the Existence of Covid-19 and Protecting Children and Youth. The disbelief in the existence of Covid-19 can be explained by the fact that individuals' psychological needs are likely to be frustrated during a pandemic (Douglas, 2021). Since uncertainty is high, individuals fear for their future, and as a result, they start to believe in conspiracy theories to explain why such events happen. The latter narrative expresses a moral panic prevalent in conservative ideologies, the belief that children are in danger and must be protected (Edelman, 2004).

The great overlap of anti-vaccination narratives in Brazil and Germany emphasizes that despite cultural particularities and the diverse foci of the individual members, similarities exist between the movements. It can be assumed that there is a collective identity, which strengthens the cohesion between individual members, as described by Fominaya (2010) and Brown (2006). The findings on the distinctions between the narratives in both countries further reinforce the assumptions of Haslam et al. (2021) and Sibley et al. (2020) that the different political leadership styles of those in political power influence how the population deals with the pandemic. Under the authoritarian leader Bolsonaro, narratives that point to a strong division of political camps play a greater role, while under Merkel, who has campaigned more strongly for a unified society, these narratives have less meaning. The question arises whether the anti-vaccinationists in Brazil have had a more fertile breeding ground regarding the Covid-19 pandemic than Germany, as the willingness to vaccinate has been declining in recent years, in combination with a president who reinforces anti-vaccination narratives (Ruisch et al., 2021). However, an answer to this question is beyond the scope of this study; future investigations should be conducted to answer this question.

The derived narratives may guide scientists, government officials, and (science-)journalists on where to start their information campaigns to counter the spread of misinformation. As Burki (2020) emphasizes, attention should not be given to dogmatic anti-vaccinationists; it may be more fruitful to reach out to the undecided and doubtful, who are more receptive to education and information. However, the information campaigns should bear in mind the most recent findings that effective campaigns need to be formulated to avoid backfire effects and which can strengthen misinformation (Pluviano

et al., 2017). The focus on the most solidly united citizens instead of a minority of non-compliant individuals has been proven to have fewer backfire effects, which again underlines that the focus on social cohesion and unity is essential (Marlowe et al., 2017). Furthermore, de-platforming opinion leaders could be an effective short-term measure to deal with misinformation on social media platforms such as Twitter (Jhaver et al., 2021), although only using this strategy would be insufficient to deal with the problem (Rogers, 2020). Especially in cases such as Brazil, where the opinion leaders have connections with the government and even influence important decisions concerning public health administration, de-platforming needs to be combined with other institutional measures. Although platforms also have a responsibility to control misinformation, they have often hesitated to ban politicians and other public figures even when they engage in spreading fake information, and they do not accept that their algorithmic curation also has a role in spreading it (Bandy & Diakopoulos, 2021).

In terms of limitations, we have only identified the narratives that emerge from the opinion leaders on Twitter, but we are aware that opinion leaders also have their social media presence on other platforms such as YouTube, which can lead to new narratives and discussions. In future work, we intend to analyze the three main camps that have emerged from this codification of anti-vaccination narratives: clear supporters, dogmatic opponents, and undecideds. We can also learn from our findings which narratives need to be debunked and where information and education are lacking to win over the undecided for the pro-vaccination camp.

In this first comparative study of anti-vaccination movements in Germany and Brazil, we have contributed to the understanding of the emergence of narratives from opinion leaders on Twitter about Covid-19 vaccines in both countries. Also, the grounded theory approach combined with social media analytics framework and extended narrative analysis can contribute methodologically to more qualitative studies on social movements and social cohesion.

Acknowledgments

Conflict of Interests

All authors declare no conflict of interest.

References

Ahmed, W., Bath, P. A., & Demartini, G. (2017). Chapter 4: Using Twitter as a data source—An overview of ethical, legal, and methodological challenges. In R. Iphofen & K. Woodfield (Eds.), *Advances in research ethics and integrity* (pp. 79–107). Iphofen. https://doi.org/10.1108/s2398-601820180000002004

Bandy, J., & Diakopoulos, N. (2021). Curating quality? How Twitter's timeline algorithm treats different types of news. *Social Media and Society*, *7*(3). https://doi.org/10.1177/20563051211041648

Barassi, V., & Zamponi, L. (2020). Social media time, identity narratives and the construction of political biographies. *Social Movement Studies*, *19*(5/6), 592–608. https://doi.org/10.1080/14742837.2020.1718489

Betsch, C., Renkewitz, F., Betsch, T., & Ulshöfer, C. (2010). The influence of vaccine-critical websites on perceiving vaccination risks. *Journal of Health Psychology*, *15*(3), 446–455. https://doi.org/10.1177/1359105309353647

Bonnevie, E., Gallegos-Jeffrey, A., Goldbarg, J., Byrd, B., & Smyser, J. (2021). Quantifying the rise of vaccine opposition on Twitter during the Covid-19 pandemic. *Journal of Communication in Healthcare*, *14*(1), 12–19. https://doi.org/10.1080/17538068.2020.1858222

Brown, A. D. (2006). A narrative approach to collective identities. *Journal of Management Studies*, *43*(4), 731–753. https://doi.org/10.1111/j.1467-6486.2006.00609.x

Burki, T. (2020). The online anti-vaccine movement in the age of Covid-19. *The Lancet Digital Health*, *2*(10), e504–e505. https://doi.org/10.1016/S2589-7500(20)30227-2

Cárdenas, D., Orazani, N., Stevens, M., Cruwys, T., Platow, M., Zekulin, M., & Reynolds, K. J. (2021). United we stand, divided we fall: Sociopolitical predictors of physical distancing and hand hygiene during the Covid-19 pandemic. *Political Psychology*, *42*(5), 845–861. https://doi.org/10.1111/pops.12772

Chatman, S. (1975). Towards a theory of narrative. *New Literary History*, *6*(2), 295–318.

Douglas, K. M. (2021). Covid-19 conspiracy theories. *Group Processes and Intergroup Relations*, *24*(2), 270–275. https://doi.org/10.1177/1368430220982068

Edelman, L. (2004). *No future*. Duke University Press.

Ferrante, L., Duczmal, L., Steinmetz, W. A., Almeida, A. C. L., Leão, J., Vassão, R. C., Tupinambás, U., & Fearnside, P. M. (2021). How Brazil's president turned the country into a global epicenter of Covid-19. *Journal of Public Health Policy*, *42*(3), 439–451. https://doi.org/10.1057/s41271-021-00302-0

Fominaya, C. F. (2010). Collective identity in social movements: Central concepts and debates. *Sociology Com-

pass, *4*(6), 393–404. https://doi.org/10.1111/j.1751-9020.2010.00287.x

Fontanet, A., & Cauchemez, S. (2020). Covid-19 herd immunity: Where are we? *Nature Reviews Immunology*, *20*(10), 583–584. https://doi.org/10.1038/s41577-020-00451-5

Fragoso, S., Recuero, R., & Amaral, A. (2011). Métodos de pesquisa para Internet [Research methods for the Internet]. *Impulso*, *22*(54), 111–116. https://www.metodista.br/revistas/revistas-unimep/index.php/impulso/article/download/879/1017

Franzke, A., Bechmann, A., Zimmer, M., & Ess, C. M. (2019). *Internet research: Ethical guidelines 3.0*. Association of Internet Researchers. https://aoir.org/reports/ethics3.pdf

Frei, N., Schäfer, R., & Nachtwey, O. (2021). Die Proteste gegen die Corona-Maßnahmen [The protests against the Corona measures]. *Forschungsjournal Soziale Bewegungen*, *34*(2), 249–258. https://doi.org/10.1515/fjsb-2021-0021

Goguen, J. (1997). Towards a social, ethical theory of information. In G. Bowker, G. Bowker, S. L. Star, L. Gasser, & W. Turner (Eds.), *Social science, technical systems and cooperative work: Beyond the great divide* (pp. 27–56). Routledge.

Gramacho, W. G., & Turgeon, M. (2021). When politics collides with public health: Covid-19 vaccine country of origin and vaccination acceptance in Brazil. *Vaccine*, *39*(19), 2608–2612. https://doi.org/10.1016/j.vaccine.2021.03.080

Harsin, J. (2020). Toxic White masculinity, post-truth politics and the Covid-19 infodemic. *European Journal of Cultural Studies*, *23*(6), 1060–1068. https://doi.org/10.1177/1367549420944934

Haslam, S. A., Steffens, N. K., Reicher, S. D., & Bentley, S. V. (2021). Identity leadership in a crisis: A 5R framework for learning from responses to Covid-19. *Social Issues and Policy Review*, *15*(1), 35–83. https://doi.org/10.1111/sipr.12075

Hussain, A., Ali, S., Ahmed, M., & Hussain, S. (2018). The anti-vaccination movement: A regression in modern medicine. *Cureus*, *10*(7), Article e2919. https://doi.org/10.7759/cureus.2919

Jensen, E. A., Pfleger, A., Herbig, L., Wagoner, B., Lorenz, L., & Watzlawik, M. (2021). What drives belief in vaccination conspiracy theories in Germany? *Frontiers in Communication*, *6*, 1–7. https://doi.org/10.3389/fcomm.2021.678335

Jhaver, S., Boylston, C., Yang, D., & Bruckman, A. M. Y. (2021). Evaluating the effectiveness of deplatforming as a moderation strategy on Twitter. *Proceedings of the ACM on Human-Computer Interaction*, *5*(2), 1–30.

Johnson, N. F., Velásquez, N., Restrepo, N. J., Leahy, R., Gabriel, N., El Oud, S., Zheng, M., Manrique, P., Wuchty, S., & Lupu, Y. (2020). The online competition between pro- and anti-vaccination views. *Nature*, *582*(7811), 230–233. https://doi.org/10.1038/

s41586-020-2281-1

Kata, A. (2012). Anti-vaccine activists, Web 2.0, and the postmodern paradigm: An overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine*, *30*(25), 3778–3789. https://doi.org/10.1016/j.vaccine.2011.11.112

Kavada, A. (2015). Creating the collective: Social media, the Occupy movement and its constitution as a collective actor. *Information Communication and Society*, *18*(8), 872–886. https://doi.org/10.1080/1369118X.2015.1043318

Marlowe, J. M., Bartley, A., & Collins, F. (2017). Digital belongings: The intersections of social cohesion, connectivity and digital media. *Ethnicities*, *17*(1), 85–102. https://doi.org/10.1177/1468796816654174

Melki, J., Tamim, H., Hadid, D., Farhat, S., Makki, M., Ghandour, L., & Hitti, E. (2022). Media exposure and health behavior during pandemics: The mediating effect of perceived knowledge and fear on compliance with Covid-19 prevention measures. *Health Communication*, *37*(5), 586–596. https://doi.org/10.1080/10410236.2020.1858564

Ministério da Saúde. (2021). *Segundo informe técnico: Plano nacional de operacionalização da vacinação contra a Covid-19* [Second technical report: National operationalization plan for vaccination against Covid-19]. https://www.gov.br/saude/pt-br/media/pdf/2021/janeiro/23/segundo-informe-tecnico-22-de-janeiro-de-2021.pdf

Mirbabaie, M., Brünker, F., Wischnewski, M., & Meinert, J. (2021). The development of connective action during social movements on social media. *ACM Transactions on Social Computing*, *4*(1), Article 3. https://doi.org/10.1145/3446981

Montiel, C. J., Uyheng, J., & Dela Paz, E. (2021). The language of pandemic leaderships: Mapping political rhetoric during the Covid-19 outbreak. *Political Psychology*, *42*(5), 747–766.

Muldoon, O. T., Liu, J. H., & McHugh, C. (2021). The political psychology of Covid-19. *Political Psychology*, *42*(5), 715–728. https://doi.org/10.1111/pops.12775

Neumann-Böhme, S., & Sabat, I. (2021). *Now, we have it. Will we use it? New results from ECOS on the willingness to be vaccinated against Covid-19*. Hamburg Center for Health Economics. https://www.hche.uni-hamburg.de/corona/policy-brief-sebastian-lang-januar.pdf

Pahus, L., Suehs, C. M., Halimi, L., Bourdin, A., Chanez, P., Jaffuel, D., Marciano, J., Gamez, A. S., Vachier, I., & Molinari, N. (2020). Patient distrust in pharmaceutical companies: An explanation for women underrepresentation in respiratory clinical trials? *BMC Medical Ethics*, *21*(1), Article 72. https://doi.org/10.1186/s12910-020-00509-y

Paul-Ehrlich-Institut. (2021). *Covid-19 Impfstoffe* [Covid-19 vaccines].

Pinheiro-Machado, R., & Scalco, L. M. (2020). From hope

to hate: The rise of conservative subjectivity in Brazil. *HAU: Journal of Ethnographic Theory*, *10*(1), 21–31.

Pluviano, S., Watt, C., & Della Sala, S. (2017). Misinformation lingers in memory: Failure of three pro-vaccination strategies. *PLOS ONE*, *12*(7), Article e0181640. https://doi.org/10.1371/journal.pone.0181640

Polletta, F. (1998). "It was like a fever…" Narrative and identity in social protest. *Social Problems*, *45*(2), 137–159. https://doi.org/10.2307/3097241

Pullan, S., & Dey, M. (2021). Vaccine hesitancy and anti-vaccination in the time of Covid-19: A Google Trends analysis. *Vaccine*, *39*, 1877–1881.

Recuero, R., & Stumpf, E. (2021). Características do discurso desinformativo no Twitter: Estudo do discurso antivacinas do Covid-19 [Characteristics of disinformative discourse on Twitter: A study of Covid-19's anti-vaccine discourse]. In R. Caiado & V. Leffa (Eds.), *Linguagem: Tecnologia e ensino* [Language: Technology and teaching] (pp. 111–137). Pontes Editores.

Rogers, R. (2020). Deplatforming: Following extreme Internet celebrities to Telegram and alternative social media. *European Journal of Communication*, *35*(3), 213–229.

Rosenberg, H., Syed, S., & Rezaie, S. (2020). The Twitter pandemic: The critical role of Twitter in the dissemination of medical information and misinformation during the Covid-19 pandemic. *Canadian Journal of Emergency Medicine*, *22*(4), 418–421. https://doi.org/10.1017/cem.2020.361

Ross, B., Pilz, L., Cabrera, B., Brachten, F., Neubaum, G., & Stieglitz, S. (2019). Are social bots a real threat? An agent-based model of the spiral of silence to analyze the impact of manipulative actors in social networks. *European Journal of Information Systems*, *28*(4), 394–412. https://doi.org/10.1080/0960085X.2018.1560920

Rufai, S. R., & Bunce, C. (2020). World leaders' usage of Twitter in response to the Covid-19 pandemic: A content analysis. *Journal of Public Health*, *42*(3), 510–516.

Ruisch, B. C., Moore, C., Granados Samayoa, J., Boggs, S., Ladanyi, J., & Fazio, R. (2021). Examining the left-right divide through the lens of a global crisis: Ideological differences and their implications for responses to the Covid-19 pandemic. *Political Psychology*, *42*(5), 795–816. https://doi.org/10.1111/pops.12740

Salali, G. D., & Uysal, M. S. (2020). Covid-19 vaccine hesitancy is associated with beliefs on the origin of the novel coronavirus in the UK and Turkey. *Psychological Medicine*. Advance online publication. https://doi.org/10.1017/S0033291720004067

Salganik, M. J. (2019). *Bit by bit: Social research in the digital age*. Princeton University Press.

Sibley, C. G., Greaves, L. M., Satherley, N., Wilson, M. S., Overall, N. C., Lee, C. H. J., Milojev, P., Bulbulia, J., Osborne, D., Milfont, T. L., Houkamau, C. A., Duck, I. M., Vickers-Jones, R., & Barlow, F. K. (2020). Effects of the Covid-19 pandemic and nationwide lockdown on trust, attitudes toward government, and well-being. *American Psychologist*, *75*(5), 618–630. https://doi.org/10.1037/amp0000662

Stieglitz, S., Brachten, F., Ross, B., & Jung, A. K. (2017). Do social bots dream of electric sheep? A categorization of social media bot accounts. *ACIS 2017 Proceedings*, Article 89. https://aisel.aisnet.org/acis2017/89

Stieglitz, S., Mirbabaie, M., Ross, B., & Neuberger, C. (2018). Social media analytics: Challenges in topic discovery, data collection, and data preparation. *International Journal of Information Management*, *39*(April), 156–168. https://doi.org/10.1016/j.ijinfomgt.2017.12.002

van Schalkwyk, F., Dudek, J., & Costas, R. (2020). Communities of shared interests and cognitive bridges: The case of the anti-vaccination movement on Twitter. *Scientometrics*, *125*(2), 1499–1516. https://doi.org/10.1007/s11192-020-03551-0

van Zoonen, L. (2012). I-Pistemology: Changing truth claims in popular and political culture. *European Journal of Communication*, *27*(1), 56–67. https://doi.org/10.1177/0267323112438808

Webb, B., & Mallon, B. (2007). A method to bridge the gap between breadth and depth in IS narrative analysis. *Journal of the Association for Information Systems*, *8*(7), 368–371. https://doi.org/10.17705/1jais.00134

Wiesche, M., Jurisch, M. C., Yetton, P. W., & Krcmar, H. (2017). Grounded theory methodology in information systems research. *MIS Quarterly: Management Information Systems*, *41*(3), 685–701. https://doi.org/10.25300/MISQ/2017/41.3.02

Yuan, X., & Crooks, A. T. (2018). Examining online vaccination discussion and communities in Twitter. In *Proceedings of the 9th international conference on social media and society* (pp. 197–206). ACM. https://doi.org/10.1145/3217804.3217912

About the Authors

Adriana da Rosa Amaral is a professor and researcher at the School of Creative Industries at the Unisinos University in Brazil. She is a coordinator of the research lab CULTPOP-Pop Culture, Communication and Technologies, and a researcher at CNPq, Brazilian National Council for Scientific and Technological Development. Her studies focus on digital culture and social media in the context of fan studies, subcultures, and popular cultures. She has published articles at the conferences of ICA, AoIR, MISDOOM, and other journals.

Anna-Katharina Jung is a PhD candidate in the research group Digital Communication and Transformation at the Department of Computer Science and Applied Cognitive Science at the University of Duisburg-Essen, Germany. Her studies focus on social media journalism and the ethical implications of recent and emerging communication technologies. She has published papers at the ECIS, ICIS, and ACIS conferences, and in the journal *Big Data and Society*.

Lea-Marie Braun is a PhD candidate in the research group Digital Communication and Transformation at the Department of Computer Science and Applied Cognitive Science at the University of Duisburg-Essen, Germany. She has been co-author of articles published in international conferences on, e.g., information systems (ACIS, ICA, WI). For her research, she is interested in science communication, digital nudging, and digital detox.

Beatriz Blanco is a PhD student at the research lab CULTPOP—Pop Culture, Communication, and Technologies at the Graduate Program in Communication Science at the Unisinos University, Brazil, and coordinator professor at the Multimedia and Digital Games Undergraduate Programs at University Center SENAC São Paulo, Brazil. Her research focuses on social activism and online mobilizations in the gamer culture. She has been co-author of published articles at the conferences DIGRA and ICA.

Article

When Politicians Meet Experts: Disinformation on Twitter About Covid-19 Vaccination

Concha Pérez-Curiel [1], José Rúas-Araújo [2], and Rubén Rivas-de-Roca [1,*]

[1] Department of Journalism II, University of Seville, Spain
[2] Department of Audiovisual Communication and Advertising, University of Vigo, Spain

* Corresponding author (rrivasderoca@us.es)

Abstract
The Covid-19 vaccination has meant a huge challenge for crisis communication. After months of lockdowns, mass vaccination was a silver lining moment, but it was under threat from disinformation boosted by misinformation on social media. This research explores how opinion leaders among political leaders and health experts used Twitter to create and manage messages about the vaccination process. Specifically, we show the issues (issue frame) and strategies (game frame) applied by these actors. This study employs a corpus on the words "Covid-19" and "vaccines" used on Twitter by the heads of government and 10 recognized health experts (two for each country) in the US, the UK, France, Portugal, and Spain. We also analyze the accounts of fact-checking projects on those countries (@PolitiFact, @FullFact, @decodeurs, @JornalPoligrafo, and @maldita). The sample allows the comparison of countries with different political cultures that participated differently in the production of vaccines. The data were captured from the beginning of the vaccination drive (December 14th, 2020) until most of the population above 60 were vaccinated (May 14th, 2021). A manual content analysis was performed on the tweets (n = 2,607). The results illustrate that the politicians mostly disagreed with experts regarding issues and strategies. This finding can foster distrust in the elites and, therefore, threatens the long-term success of a public health campaign. Our study contributes to discussions on the role of networks for social cohesion, arguing that the public conversation on Twitter about the vaccination has revealed high levels of controversy.

1. Introduction

Social cohesion suffers from a crisis that affects the international public sphere since the impact of Covid-19 has increased the dependence on social networks (Strauß et al., 2021) and Google (Lee et al., 2014). After the first stage of public communication marked by ignorance of the virus (Ureta et al., 2021), a second phase arises on Covid-19 vaccines. One of the threats is that the opinion of scientists may be undervalued because it does not rep-

resent the "people" (Waisbord, 2018). Disinformation and polarization are intensifying in a time of weakness of governments (Ali & Gatiti, 2020). On this matter, doubts about vaccines are mixed with public distrust of institutions. The politicization of uncertainty during the pandemic further weakened a democratic system that was already in decline (Wardle & Derakhshan, 2017).

In a global crisis, the partisan discourse between liberal democracies and populist regimes becomes central (Levitsky & Ziblatt, 2018; Mounk, 2018). Additionally,

the Covid-19 vaccination drive has accelerated conflict among countries in a multipolar world. This highlights the need to rethink how international governance can increase cooperation. Indeed, the UN has established a convention against corruption to promote government accountability, integrity, and transparency in vaccine communication.

However, the influence of background facts such as Donald Trump's fraud speech in the US elections (Pérez-Curiel et al., 2021) and the conspiracy theories about vaccines, together with the advance of populism (Bennett & Pfetsch, 2018), have led to an increase in citizen disaffection with politics (European Commission, 2018; Tyson et al., 2021). Some governments even contributed to the proliferation of fallacies and hoaxes at the beginning of the pandemic (López-García, 2020). Extant research approaches the role of social media on this phenomenon. Many individuals now choose to get informed only through their peers on social networks rather than actively seeking news. This type of consumption fostered a lower political interest in and less knowledge about public affairs (Lee & Xenos, 2019), which caused distrust in vaccines prior to Covid-19 (Broniatowski et al., 2018).

At the beginning of the pandemic, more than 100 million tweets about Covid-19 were shared in just one month (Larson, 2020). Many messages on this social network were apocalyptic and produced fear among citizens (Aleixandre-Benavent et al., 2020). In this regard, public authorities faced the challenge of communicating in order to convey confidence and minimize the social and economic effects of the pandemic. This happened while there was a wide variety of strategy frames in political communication (Strömbäck & Kaid, 2008); although, how they are used remains largely understudied by academia (Aalberg et al., 2017). Drawing upon content analysis, our research aims to shed light on the employment of these strategy frames (game frames) compared to the classic issue frames since strategies are able to mobilize political distrust.

The public sphere is not only composed of political leaders but also experts and the fact-checking platforms that have become a journalistic tool. Knowing their communicative actions is relevant as they operate as one of the causes of the fragmentation of the democratic system (Wardle & Derakhshan, 2017). In a global health crisis, trust in public powers is especially required to control the situation, which overlaps with greater democratic transparency (Gutiérrez-Rubí, 2020). Indeed, according to opinion polls (Tyson et al., 2021), the audience demands a coordinated response to health issues. However, social cohesion is fragmented due to the collapse of the old news order and the chaos of contemporary public communication (Casero-Ripollés, 2020). This concept of cohesion is understood as a social commitment that enhances trust in public institutions (Friedkin, 2004).

Bearing this in mind, the following hypothesis is given:

H1: Political leaders and health experts will present mismatches on the use of game frames when tweeting about the Covid-19 pandemic.

We aim to (a) analyze the topics and strategies of opinion leaders on Twitter to inform about the coronavirus vaccination process, (b) to compare the institutional discourse of governments and health experts in different geographical areas, and (c) to check the impact of misinformation through verification tools provided by fact-checking agencies. In short, this exploratory research seeks to clarify the items that make up the public discourses about a controversial topic and whether or not they contribute to social cohesion.

2. Theoretical Framework

The economic, social, and health consequences of Covid-19 have been deep, including in the field of communication (Bertin et al., 2020). Beyond social distance or lockdowns, the vaccines mean the main hope to end the pandemic (Carrasco-Polaino et al., 2021). Nevertheless, there is a postmodern cultural context that questions the legitimacy of science (Hornsey et al., 2018), which is added to political confrontation among countries, immersed in a story that places them as winners of a war against a virus (Chiang & Duann, 2007). World leaders decided to increase the number of press conferences during the pandemic (Rivas-de-Roca et al., 2021). However, the absence of a contingency plan adapted to conflict situations described a communication model that did not respond to the needs of the media or citizens (Xifra, 2020).

Addressing communication in a crisis situation means managing credibility (Túñez, 2012). Vaccines are an opportunity for democracy to explain technical and global health procedures and reinforce transparency and good governance (Westphalen & Libaert, 2008). However, politicians and scientists sometimes seem to show a lack of consensus, which directly impacts citizens. Proof of this could be observed when the data analytics firm Fleishman Hillard (Hightower, 2021) asked the French people to assess their most reliable source of information on the Covid-19 vaccination. The overall confidence index was very low, with respondents ranking their local doctor (50%) first, followed far behind by national scientific experts (13%) and the WHO (12%). Government sources of information were poorly rated, as confidence in their own government obtained just −19%; meanwhile, the EU was also rated badly (−13%).

The aforementioned climate of skepticism indicates the limits of public communication strategies and mistrust in the system (Thelwall et al., 2021). This means that the necessary alliance of the states with the scientific community to reduce the effects of disinformation may have been replaced by a narrative that spurred conspiracy theories (Mounk, 2018). For instance, an article published before the pandemic (Kennedy, 2019) pointed

to a positive correlation between the percentage of people who vote for populist political parties and the number who believe that vaccines were unnecessary or ineffective.

When it comes to employing social media, the spectacularizing game frames feature the messages of politicians (Larsson & Ihlen, 2015). The strategic game frame refers to a way of treating information focused on strategies and character frames, which goes beyond the news coverage and affects the whole political system (Esser & Strömbäck, 2012). This links to the fact that campaigning styles are now more professionalized, putting the focus on politicians. These frames predispose the audience to pay attention and remember strategic rather than substantive information (Cappella & Jamieson, 1997). Consequently, power struggles replace concrete proposals, undermining political engagement and activating political cynicism (Shehata, 2014).

The literature on political communication has widely studied the role of Twitter. This social network adapts very well to the current immediacy of politics because of its ability to set the agenda and capture the interest of the public (Bracciale & Martella, 2017), as well as its immediacy in the mass-dissemination of messages (Alonso-Muñoz & Casero-Ripollés, 2020). Twitter has multiple possibilities, such as exchanging information on political issues or learning about the users' debate on vaccines (Milani et al., 2020). However, the use of this platform has been reduced to a low level of genuine interaction and a high level of propaganda messages (Pérez-Curiel & Molpeceres, 2020). Therefore, the public campaign to defeat the virus turns Twitter into a risky space for citizens.

The lack of scientific evidence (Cuesta-Cambra et al., 2019), the influence of political leaders through game frames, or the information overload (Wardle, 2017) could have marked the homogeneity of the institutional discourse facing the pandemic. In this turbulent context, transparency or the credibility of the sources have been reinforced as values for journalism. The development of basic journalistic skills among users is needed for them to be able to differentiate the truth from the lie (Journell, 2017). As part of this process, the rise of fact-checking agencies is noteworthy (Rúas-Araújo et al., 2020) since they try to raise the public knowledge of citizens (Palau-Sampio, 2018). Perhaps a crisis situation is an opportunity to enhance the democratic roots of public communication by prioritizing those efforts, such as the work of fact-checking initiatives that can resist destabilization strategies.

In both journalism and political communication, strategies emerge that contribute to division rather than cohesion in social networks; as such, there is a need to foster debate on how to ensure stability, ethics, and media literacy (Casero-Ripollés, 2020). The concept of social cohesion has to do with the feeling of belonging to a society and the cohesiveness of that society (Friedkin, 2004). Besides that, Sartori's (1987) classic doctrine of democracy states that this system is based on the identification between the rulers and the ruled, arguing that social cohesion is entailed in democracy to function effectively. Because of Covid-19, health and science are placed on the political agenda. However, the sensitivity of these issues in a crisis communication scenario is likely to promote disinformation (Thelwall et al., 2021), which endangers trust in democratic societies.

3. Methodology

This study aims to further our understanding of the disinformation on Twitter about Covid-19 vaccination. To meet these objectives, we applied the social media analysis method (Brand & Gómez, 2006). First, data from this study were obtained through Twitonomy, a web-based tool that gets visual analytics on accounts' activity. The tool provided us with an Excel document for each of the analyzed profiles, collecting all the tweets posted. Then, we use a quantitative content analysis on the thematic agenda (issue frame) and the strategic communication (game frame) since these mechanisms are key in the current public communication (Aalberg et al., 2017). In addition to that, the discourse of political leaders on Twitter is captured to observe the presence of propaganda mechanisms (van Dijk, 2015).

Our research design analyzes the Twitter accounts of heads of governments as political leaders and fact-checking projects, as well as the profiles of health experts who assumed an important role during the Covid-19 pandemic. We compare countries from different media and political cultures, studying the US and four European countries (UK, France, Spain, and Portugal). This sample allows us to analyze the North-American case, where former president Trump denied the pandemic, in relation to long-standing democracies in Europe, such as the UK and France. The sample also includes countries from Southern Europe (Spain and Portugal), whose democratic history is more recent. These different backgrounds could describe possible divergences in the level of public trust. Furthermore, the nations covered have also participated differently in the worldwide vaccine production program.

Health experts were chosen due to their influence on the network and number of followers, but their work also has to be connected with the Covid-19 pandemic. The word "virus" is always present on their Twitter bios. Although there are many other experts, we selected a sample of the most relevant in terms of dealing with the pandemic information on Twitter. Regarding the criteria for selecting the fact-checking services, we rely on their importance in their national contexts. They all have over 20 k followers, being the most popular fact-checking accounts in each country.

The complete list of accounts is as follows, most of which have Twitter's blue tick (the Spanish experts being the only exception, although they are recognized in their country):

- US: Joe Biden (https://twitter.com/potus; president), PolitiFact (https://twitter.com/politifact; fact-checking service), Faheem Younus (https://twitter.com/FaheemYounus; expert), and Marc Lipsitch (https://twitter.com/mlipsitch; expert).
- UK: Boris Johnson (https://twitter.com/borisjohnson; prime-minister [PM]), Full Fact (https://twitter.com/FullFact; fact-checking service), Neil Stone (https://twitter.com/DrNeilStone; expert), and Christina Pagel (https://twitter.com/chrischirp; expert).
- France: Emmanuel Macron (https://twitter.com/EmmanuelMacron; president), Les Décodeurs (https://twitter.com/decodeurs; fact-checking service), Guillaume Rozier (https://twitter.com/GuillaumeRozier; expert), and Gérald Kierzek (https://twitter.com/gkierzek; expert).
- Spain: Pedro Sánchez (https://twitter.com/sanchezcastejon; PM), Maldita.es (https://twitter.com/maldita; fact-checking service), Pepe Martínez Olmos (https://twitter.com/PmOlmos; expert), and Ester Lázaro (https://twitter.com/EsterLzaro1; expert).
- Portugal: António Costa (https://twitter.com/antoniocostapm; PM), Polígrafo (https://twitter.com/JornalPoligrafo; fact-checking service), Otavio Ranzani (https://twitter.com/otavio_ranzani; expert), and Atila Iamarino (https://twitter.com/oatila; expert).

The sample is composed of all the tweets on the words "Covid-19" and "vaccines" ("Covid-19 AND vaccines") published by the accounts selected. This specialized search on specific words allows us to retrieve an overview of the digital conversation (Cuesta-Cambra et al., 2019). Own tweets and responses are included in this research, but retweets are excluded because they replicate content, making it less useful to find out the strategic agenda of each account (Larsson & Ihlen, 2015). The corpus was captured for a period of five months from the beginning of the vaccination drive (December 14th, 2020) until most of the population above 60 were vaccinated (May 14th, 2021). From 4,302 tweets, 2,607 units of analysis were content-analyzed for this research. Some tweets of the whole corpus present general information about the pandemic; thus, we employ the criteria of only including messages that truly refer to the coronavirus and the vaccination campaign. The data were processed with IBM SPSS Statistics, version 28.

The codification was carried out manually by three members of the research team. To assess the intercoder reliability, a pretest was conducted on 5% of the sample (130 units), reaching remarkable levels ($\alpha = 0.83$) according to Krippendorff's alpha values (Neuendorf, 2002). Two previous rounds of coding training were applied on variables that scored below, adding new instructions to the codebook to achieve better reliability. This sort of manual analysis is aligned with prior scholarship that has

systematically identified the ways of political disinformation on social media (Cano-Orón et al., 2021).

We developed an analysis template (Table 1) with dichotomous and exclusive categories to study the thematic and strategic items used in public communication. The variables derived from previous research about political agenda (Alonso-Muñoz & Casero-Ripollés, 2020; Pérez-Curiel et al., 2021). A content analysis method was used following the adaptation to social networks such as Twitter defined by Crespo (2014). This means covering complex themes posted on short messages. As previously noted, this article draws upon the issue/game frame theory, as the current communication is marked by conflictive approaches that oppose the classic topics (Cartwright et al., 2019).

In this sense, 12 variables were created within the issue frame main category, coming from an observance of the most frequent topics during the range of dates. The four variables regarding the game frame are the traditional ones stated by the literature (Aalberg et al., 2017). These categories want to comprise all the units of analysis (Table 1). For the whole sample (n = 2,607), the number of tweets using an issue frame was 2,394, while the game frame reached 213. Two examples of how tweets correspond to the two main groups are offered (Figure 1).

Our data are presented in an aggregated manner, although the number of tweets by country was not proportional. There was more information about Covid-19 vaccination in the US (721 tweets) than in the rest of the countries: the UK (530), France (451), Spain (279), and Portugal (626). One of the reasons is the high presence of the US fact-checking initiative PolitiFact on Twitter since it was the only profile producing over 250 tweets in the five-month period. In addition to that, Portugal is over-represented in the number of tweets, taking into account its small population and its number of Twitter users compared to other countries. The reason is the wider activity of the experts' accounts analyzed: Otavio Ranzani (https://twitter.com/otavio_ranzani) posts 9.79 tweets per day, while Atila Iamarino (https://twitter.com/oatila) publishes 11.85 tweets per day. It should be noted that those people act as experts for the Lusophone world, making up Brazil and Portugal, which may explain that finding. By contrast, as an example, Pepe Martínez Olmos (https://twitter.com/PmOlmos), in Spain, publishes only 1.95 tweets per day, which is similar to the rest of the experts that were considered: Faheem Younus (US), Marc Lipsitch (US), Neil Stone (UK), Christina Pagel (UK), Guillaume Rozier (FR), Gérald Kierzek (FR), and Ester Lázaro (ES).

Some content published on the whole sample was general or acted as repetitions of previous posts. Hence, the selection of 2,607 units of analysis as the principal corpus tries to refine the interest of the data captured. Regarding the discursive analysis of leaders, a range of categories on political language is applied, using a classification of fallacies and propaganda mechanisms: appeal to authority, appeal to emotion, fallacy against the man,

COGITATIO

Table 1. Categories used for the quantitative study of the agenda on Twitter.

	Items	Description
Issue frame	Conspiracy theories	Possible conspiratorial explanations for health problems, as those mentioning 5G
	Denial of hoaxes	Verifying hoaxes specially related to the pandemic
	Data of Covid-19 cases	Number of Covid-19 cases and its evolution
	Health public recommendations	Dealing with Covid-19 and other diseases from a health approach
	Vaccination data	Figures of Covid-19 vaccinations
	Benefits of vaccination	Positive impact of being vaccinated
	Vaccination campaigns	Promotion of the vaccination public health campaign, focusing on dates and technical information
	Restrictive measures	Government measures imposed against Covid-19
	Elections and electoral program	Future, current, or past elections, including electoral polls
	Social policy	Connecting the vaccination process to social issues such as education, youth, or nursing homes
	Economy	Economic issues such as unemployment or industry
	Foreign affairs	International affairs such as trade or relations between countries
Game frame	Horse race and governing frame	Opposing positions, post-electoral pacts, or government strategies
	Politicians as individuals' frames	Aspects of the personal lives of leaders
	Political strategy frame	Political events, such as debates or meetings with citizens
	News management frame	Media content, such as interviews or the existence of discrepancies with journalistic work
Other	Unclassifiable tweets in the previous categories	

appeal to force, appeal to ignorance, attributions, tendentious claims, emphasis, stereotypes, false analogy, speaking through other sources, opinions as facts, selecting information, and use of labels.

A descriptive analysis of frequencies by categories about vaccines is mixed up with statistical tests to check whether the differences found are statistically significant. This approach has been useful for other studies on anti-vaccine controversies (Carrasco-Polaino et al., 2021; Rivas-de-Roca et al., 2021). Specifically, we operate through bilateral tests for the proportion of columns based on the Bonferroni correction, illustrating the divergences among the analyzed actors. The specific test carried out is a *z* test for the pairwise comparison of column proportions, where the null hypothesis is that the two columns under consideration are equal.

4. Results

4.1. Topics and Strategies for a Public Health Campaign

The use of topics (issue frames) and strategies (game frames) is different between political leaders and health experts, as is seen in Tables 2 and 3. First, Table 2 provides detailed information about the agenda on Twitter of the heads of government during the Covid-19 vaccination program. They all frequently referred to their own national vaccination campaigns, even statistically significant for Biden and Macron. However, some divergences emerge for the rest of the issues. Findings show that the vaccination data was a relevant topic for Johnson (35.1%), Biden (14.7%), and Macron (11.8%), but not for Sánchez or Costa (0.8%): The Spanish and Portuguese

Boris Johnson ✔
@BorisJohnson
🏴 United Kingdom government official

One third of adults in the UK have now had their second dose of the COVID vaccine, a testament to the extraordinary efforts of NHS staff and volunteers.

Thank you to everyone who has made this happen. Get your jab when called.

President Biden ✔
@POTUS
🏴 United States government official

Yesterday I traveled to Texas to visit an emergency operations center, food bank, and vaccination site. Each stop represented our nation at its best—people coming together to help their fellow Americans. It's a reminder that there's nothing we can't do when we do it together.

Figure 1. Examples of issue frame (vaccination data) and game frame (political strategy frame).

Table 2. Issues and strategies in the tweets of the heads of government (%).

		Joe Biden (US)	Boris Johnson (UK)	Emmanuel Macron (FR)	Pedro Sánchez (ES)	António Costa (PT)
		a	b	c	d	e
Issue frame	Conspiracy theories	—	—	—	—	—
	Denial of hoaxes	—	—	2	—	1.6
	Data of Covid-19 cases	1.7	—	7.8	—	4.8
	Health public recommendations	8.6	1.1	—	2.9	—
	Vaccination data	14.7 *, e	35.1 *, a, c, e	11.8 *, e	—	0.8
	Benefits of vaccination	3.4	3	—	—	7.2
	Vaccination campaigns	40.5 *, b	19.1	49 *, b, d, e	25	26.4
	Restrictive measures	—	1.1	—	—	9.6 *, b
	Elections and electoral program	—	—	—	5.9	—
	Social policy	19 *, b, c, d	4.3	5.9	4.4	6.4
	Economy	3.4	11.7 *, a, e	—	5.9	2.4
	Foreign affairs	5.2	7.4	21.6 *, a	26.5 *, a, b	35.2 *, a, b
Game frame	Horse race and governing frame	2.6	14 *, a, c, e	2	20.6 *, a, c, e	1.6
	Politicians as individuals' frames	—	3.2	—	—	2.4
	Political strategy frame	0.9	—	—	8.8	—
	News management frame	—	—	—	—	—
Other		—	—	—	—	1.6

Note: Data with a significance level of 0.05 (*), based on two-tailed tests for the column proportion (Bonferroni correction); the letters after a number refer to specific columns, whose data are significant compared to the mentioned number; every letter ([a, b, c, d, e]) represents a single column.

leaders paid little attention to figures of Covid-19 vaccinations, such as doses administered.

Results also show a preference for foreign affairs as an issue for Costa (35.2%), Sánchez (26.5%), and Macron (21.6%), which was not found in their international counterparts. This may overlap with the fact that France, Spain, and Portugal belong to the EU; hence these leaders demanded a European response to the health crisis. In this sense, the coronavirus pandemic was considered by the tweets collected in Continental Europe as a global problem that needed a transnational solution in the EU framework. By contrast, Biden (5.2%) and Johnson (7.4%) did not consider the pandemic in such an international sphere.

Regarding the strategic communication (game frame), this sort of approach was only common in the tweets of Johnson and Sánchez. British and Spanish leaders mostly used the horse race and governing frame (14% and 20.6%). This strategy is typical of electoral contests, mentioning the opposition or post-electoral pacts. It is a striking finding, as there had been no call for elections at that time, except for two regional elections in Catalonia and Madrid (Spain). Accordingly, Sánchez sometimes employed the political strategy frame, although his percentage (8.8%) was not statistically significant.

As is shown in Table 3, health experts do not always focus on the same issues and strategies as political leaders. For instance, the experts considered in the US mostly talked about vaccination data (39.1%), while Biden preferred the vaccination campaigns over the rest of the categories. There was an opposite trend in the UK: experts referred to the campaigns (54%), and Johnson as PM tended to refer to the data. Hence, there were differences between the politicians and the specific scientists by country.

On this matter, the experts in France show a strong interest in the data of Covid-19 cases (26.2%), significantly different from the US and Spain. In Spain and Portugal, agendas were focused on the vaccination campaigns (32.9% and 22.6%), although we found interesting figures for data regarding Covid-19 cases (13.6%) and vaccination data (12.6%) in the Portuguese context not seen before. In fact, this proportion of vaccination data is significant compared to the British one. It must be highlighted that the Portuguese experts selected also manage information about Brazil, which explains some differences. Regarding Spain, its scientific practices on Twitter seem a bit more strategic, using all the game frames defined. This finding was in line with the practices of Sánchez, who devoted great priority to the horse race and governing frames.

Moreover, the agenda of the experts was fragmented, dealing with many more topics and strategies than the leaders. They address a broader range of content in their communication on Twitter, as indicated by the level of the "others" parameter in the data coming from Portugal (7.1%) and France (6.9%). Nevertheless, the plurality of categories applied does not mean proper strategic communication, not reaching the percentages of Johnson and Sánchez in terms of game frames.

Table 3. Issues and strategies in the tweets of the health experts by country (%).

		US	UK	France	Spain	Portugal
		a	b	c	d	e
Issue frame	Conspiracy theories	2.6	2.6	1.1	0.6	—
	Denial of hoaxes	2.6	—	7.3	4.4	9.8
	Data of Covid-19 cases	2.6	19.8 *, a	26.2 *, a, d	10.4	13.6
	Health public recommendations	4	3.9	9.4	3.2	6.9
	Vaccination data	39.1 *, b, c, d, e	3.9	20.8 *, b, d, e	10.1	12.6 *, b
	Benefits of vaccination	13 *, c, e	6.6	4.4	16 *, b, c, e	1.4
	Vaccination campaigns	13.5	54 *, a, c, d, e	14.9	32.9 *, a, c	22.6
	Restrictive measures	2.1	7.9 *, c, e	1.1	1.9	0.6
	Elections and electoral program	1.3	—	—	—	—
	Social policy	3.4	—	5.5	5.9	12.4
	Economy	2.6	—	0.9	3.3	1.2
	Foreign affairs	4.1	—	—	3.2	4.9
Game frame	Horse race and governing frame	1.4	1.3	0.2	1.3	5
	Politicians as individuals' frames	2.9	—	0.2	2.5	—
	Political strategy frame	1.8	—	—	0.6	—
	News management frame	1.8	—	1.1	3.1	1.9
Other		1.2	—	6.9	0.6	7.1

Note: Data with a significance level of 0.05 (*), based on two-tailed tests for the column proportion (Bonferroni correction); the letters after a number refer to specific columns, whose data are significant compared to the mentioned number; every letter (a, b, c, d, e) represents a single column.

4.2. The Role of Fact-Checking Platforms Against Propaganda on Twitter

Political leaders usually resort to propaganda mechanisms on social networks to spread their messages (Lee & Xenos, 2019). Table 4 presents information about the discourse of the heads of government during the Covid-19 vaccination program since the aforementioned issues and strategies are applied in a rhetorical way that fact-checking projects must tackle. Most leaders used appeals to emotion and emphasis as tools, but there were exceptions to this trend.

For Biden, the appeals to emotion (30.2%) and authority (23.3%) were key, and to a lesser extent, emphasis (19%). The US president built an image of authority that tried to convey feelings in his tweets. This emotional pattern was not present in Johnson, who used emphasis (28.7%) and speaking through other sources (24.5%) as his main propaganda mechanisms. In the same vein, these two approaches were also common in Costa, but in combination with appeals to authority and emotion. Our results show that the propagandistic approach of the Portuguese PM was fragmented, mixing many different discursive mechanisms, but his level of appeals to authority was significantly different.

As to France, Macron expressed a process of selecting information in 37.3% as the main difference in his tweets, followed by emphasis (23.5%) and appeal to emotion (19.6%). Sánchez also used the selecting information (41.2%) and the appeal to emotion (23.5%), whereas the mechanism of emphasis came up less often

than the rest of the leaders. Besides that, opinions as facts were featured in 19.1% of his tweets, meaning that the Spanish politician was the only one applying it to a significant degree.

When propaganda escalates, the role of fact-checking initiatives becomes especially significant. Table 5 offers evidence on the type of coverage of national fact-checking projects during the period covered in this study. From an issue/game perspective, the data illustrates a preference for thematic content, with the denial of hoaxes being important in Portugal (95.1%), the UK (80%), and the US (49.6%). This finding can be considered logical, given that the objective of these projects is to verify information.

One particularly relevant aspect in the US case (PolitiFact) is how much more common vaccination data (21.9%) was among health experts' tweets (39.1%) than Biden's (14.7%). Comparing the findings in Spain (Maldita.es), the great use of vaccination campaigns (19.6%) was detected in both the heads of government and the national experts. By contrast, the level of public health recommendations (18.6%) observed in France was not previously found in Macron.

Regarding foreign affairs, this topic was only frequent (16.3%) in the French fact-checking platform (Les Décodeurs), although three of the five leaders studied (Costa, Sánchez, and Macron) mentioned it a lot. It seems that this international issue was not important for verification at the time of the Covid-19 vaccination drive. The thematic agenda of all the fact-checking projects is oriented toward the denial of hoaxes and health issues.

Lastly, at this point, our research provides two interrelated insights. First, most of the tweets come from fact-checking applied issue frames rather than game frames, underscoring the role of themes for these projects. The only exception is the remarkable presence of game frames in Spain (Maldita.es), which could be grounded on the strategic communication of the Spanish PM. Second, the agenda of the fact-checking platforms was sparsely fragmented; that is, it addressed only few topics and strategies. This finding is aligned with the data of

Table 4. Propaganda mechanisms on Twitter by leader (%).

	Joe Biden (US)	Boris Johnson (UK)	Emmanuel Macron (FR	Pedro Sánchez (ES)	António Costa (PT)
	a	b	c	d	e
Appeal to authority	23.3 *, b, c, d	8.5	3.9	4.4	24 *, b, c, d
Appeal to emotion	30.2 *, b	4.3	19.6 *, b	23.5 *, b	16.8
Fallacy against the man	—	—	—	—	—
Appeal to force	5.2	4.3	—	—	8
Appeal to ignorance	0.9	1.1	11.8 *, a, b	—	—
Attributions	5.2	10.6 *, d	-	1.5	8.8 *, d
Tendentious claims	—	—	—	—	2.4
Emphasis	19 *, d	28.7 *, d	23.5 *, d	2.9	20 *, d
Stereotypes	—	—	—	—	0.8
False analogy	—	5.3	—	—	2.4
Speaking through other sources	3.4	24.5 *, a, d	—	7.4	10.4
Opinions as facts	2.6	2.1	3.9	19.1 *, a, b, c, e	2.4
Selecting information	7.8	10.6	37.3 *, a, b, e	41.2 *, a, b, e	4
Use of labels	—	—	—	—	—
Not present	2.6	—	—	—	—

Note: Data with a significance level of 0.05 (*), based on two-tailed tests for the column proportion (Bonferroni correction); the letters after a number refer to specific columns, whose data are significant compared to the mentioned number; every letter ([a, b, c, d, e]) represents a single column.

Table 5. Issues and strategies in the tweets of the fact-checking projects (%).

		PolitiFact (US)	Full Fact (UK)	Les Décodeurs (FR)	Maldita.es (ES)	Polígrafo (PT)
		a	b	c	d	e
Issue frame	Conspiracy theories	2.6	—	9.3	1.8	—
	Denial of hoaxes	49.6 *, c, d	80 *, a, c, d	16.3	28.6	95.1 *, a, c, d
	Data of Covid-19 cases	—	4.7	8.1	5.4	—
	Health public recommendations	—	—	18.6	10.7	—
	Vaccination data	21.9 *, b	5.9	9.3	—	—
	Benefits of vaccination	2.2	1.2	3.5	14.3 *, a, b	—
	Vaccination campaigns	12.2 *, c	—	2.3	19.6 *, c, e	3.7
	Restrictive measures	1.1	—	3.5	—	—
	Elections and electoral program	—	—	—	—	—
	Social policy	8.1	2.4	7	3.6	—
	Economy	0.4	—	1.2	—	—
	Foreign affairs	1.9	—	16.3 *, a, d	1.8	—
Game frame	Horse race and governing frame	—	5.8	3.5	14.2	1.2
	Politicians as individuals' frames	—	—	1.2	—	—
	Political strategy frame	—	—	—	—	—
	News management frame	—	1.2	—	14.3 *, b	—
Other		0.7	2.4	—	—	1.9

Note: Data with a significance level of 0.05 (*), based on two-tailed tests for the column proportion (Bonferroni correction); the letters after a number refer to specific columns, whose data are significant compared to the mentioned number; every letter ([a, b, c, d, e]) represents a single column.

heads of government but differs from the thematic plurality of health experts.

5. Conclusions and Discussion

With the initial goal of exploring how political leaders and health experts managed Twitter regarding the Covid-19 vaccination process, this article extensively describes the flow of information among some of the main public actors. Our study contributes to the literature on social cohesion, providing three conclusions that follow the objectives defined. First, this research offers insightful evidence on the mismatch between topics and strategies (game frames) between political leaders and health experts. Thus, H1 was supported. The agenda of the scientists is much more fragmented, probably because politicians communicate with a purpose, omitting some topics. However, the importance of vaccination campaigns is shared by heads of government and experts.

Our second contribution lies in the different priorities by country. Foreign affairs are a recurring issue frame in the leaders of Portugal, Spain, and France. Beyond that, strategic communication is only frequent in Sánchez (Spain) and Johnson (UK). These findings are not related to the pandemic and reveal a disruptive practice that may affect the trust in the vaccination. Third, our study furthers our understanding of the work of fact-checking platforms and the propaganda mechanisms used by politicians. These verification services' Twitter messages are focused on thematic issues over strategy. The findings also underline that they have a compact agenda in line with heads of government, showing that those actors are the principal object for fact-checking. Indeed, our results indicate a clearly propagandistic communication in the political leaders, based on the tools of emphasis and appeal to emotion.

More generally, the data reveal a connection between the heads of government and the fact-checking projects, being the tweets of the latter a kind of response to the leaders. Both actors presented an adaptation to national spheres. However, health experts' messages differed minimally among countries; thus, their interests are the same in the international field, showing less dependence on the political context. Taking these insights together, we argue that the prominence of fallacious political language in the leaders is a worrying aspect that could damage the social cohesion in a crisis. The fact-checking initiatives work to avoid the spread of disinformation, responding to the few issue and game frames applied by politicians, whereas the health experts move on a different level characterized by a fragmented agenda.

This study contributes to the wider scholarly debate on the impact of social media on democracy and social cohesion. Prior scholarship points out the negative effects of these networks on vaccine confidence (Bertin et al., 2020), fueled by a long-term populist movement (Bennett & Pfetsch, 2018). Twitter is a noteworthy space in which these debates on health issues occur (Milani et al., 2020), as evidenced by this article. In our research design, leaders, experts, and fact-checking services use Twitter to disseminate messages on Covid-19. However, the discrepancy found between political leaders and health experts may damage society's cohesiveness, upon which trust in public institutions is based (Friedkin, 2004).

In this regard, the literature underlines the negative effects of strategic communication, predisposing the audience to political cynicism (Cappella & Jamieson, 1997; Shehata, 2014). Our findings align with prior scholarship that identified some frequency of game frames in modern political communication (Esser & Strömbäck, 2012), but we suggest that this is not applicable for other actors of the public sphere, such as experts. Considering the harmful effects of strategic communication, it seems reasonable that some public opinion polls (Hightower, 2021) reveal greater levels of trust in experts than government sources.

Finally, the results regarding the fact-checking services also have practical and theoretical implications. These organizations are part of the public sphere (Rúas-Araújo et al., 2020) and have the challenge of dealing with a huge presence of propaganda mechanisms employed by the political leaders on social networks, as illustrated by our study. The fact-checking projects report more on thematic frames than strategic ones, but the thematic issues are devoted to the same topics as chosen by political leaders. Therefore, this study shows that the agenda of fact-checking accounts is determined more by leaders than experts. We could argue that fact-checking is doing a good job by monitoring those in power. However, the inferences of this observation refer to a political-centered agenda that is far from the people's interest, once again endangering the required separation between politicians and the public (Sartori, 1987).

Our article's principal limitation concerns the sampling method. It generates unequal sample sizes, so the results should be considered as interesting cases in a highly relevant time frame. We seek to assess the scope of political messages in the fact-checking accounts and their subsequent influence on the social audience. In this sense, another limitation is the selection of only two experts per country, making it difficult to generalize the results for an entire nation. This might have biased findings, but we assume that the experts' cases are relevant in their contexts. We supplied data that would be useful in relation to a much bigger number of accounts.

As previously stated, addressing communication in a crisis situation means managing credibility. For example, vaccines were an opportunity for democracy to ameliorate transparency and good governance, but the literature highlights the lack of political knowledge acquisition through social media (de Zúñiga & Diehl, 2019). This could happen on Twitter during the Covid-19 vaccination because of the disagreement among public actors in terms of issues and strategies. In short, our empirical

findings reveal a huge presence of propaganda in the leaders' communication and divergence between those politicians and health experts, threatening a hypothetical social cohesion. In this regard, the framing theory still looks valid for social media (Cartwright et al., 2019), explaining the purposes of communication and its possible effects. Future research may consider expanding the present work to bigger samples and performing an in-depth observation of those elements involved in social cohesion during the Covid-19 vaccination drive.

Acknowledgments

Conflict of Interests

The authors declare no conflict of interests.

References

Aalberg, T., de Vreese, C. H., & Strömbäck, J. (2017). Strategy and game framing. In C. H. de Vreese, F. Esser, & D. N. Hopmann (Eds.), *Comparing Political Journalism* (pp. 33–49). Routledge. https://doi.org/10.4324/9781315622286

Aleixandre-Benavent, R., Castelló-Cogollos, L., & Valderrama-Zurián, J. C. (2020). Información y comunicación durante los primeros meses de Covid-19: Infodemia, desinformación y papel de los profesionales de la información [Information and communication during the early months of Covid-19: Infodemics, misinformation, and the role of information professionals]. *Profesional de la Información*, *29*(4), Article e290408. https://doi.org/10.3145/epi.2020.jul.08

Ali, M. Y., & Gatiti, P. (2020). The Covid-19 (coronavirus) pandemic: Reflections on the roles of librarians and information professionals. *Health Information & Libraries Journal*, *37*(2), 158–162. https://doi.org/10.1111/hir.12307

Alonso-Muñoz, L., & Casero-Ripollés, A. (2020). Populism against Europe in social media: The Eurosceptic discourse on Twitter in Spain, Italy, France, and United Kingdom during the campaign of the 2019 European Parliament election. *Frontiers in Communication*, *5*(54). https://doi.org/10.3389/fcomm.2020.00054

Bennett, W. L., & Pfetsch, B. (2018). Rethinking political communication in a time of disrupted public spheres. *Journal of Communication*, *68*(2), 243–253. https://doi.org/10.1093/joc/jqx017

Bertin, P., Nera, K., & Delouvée, S. (2020). Conspiracy beliefs, rejection of vaccination, and support for hydroxychloroquine: A conceptual replication-extension in the Covid-19 pandemic context. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.565128

Bracciale, R., & Martella, A. (2017). Define the populist political communication style: The case of Italian political leaders on Twitter. *Information, Communication and Society*, *20*(9), 1310–1329. https://doi.org/10.1080/1369118X.2017.1328522

Brand, E., & Gómez, H. (2006). Análisis de redes sociales como metodología de investigación. Elementos básicos y aplicación [Analysis of social networks as a research methodology. Basic elements and application]. *La Sociología en sus Escenarios*, *13*, 1–28. http://bibliotecadigital.udea.edu.co/handle/10495/2542

Broniatowski, D. A., Jamison, A. M., Qi, S., AlKulaib, L., Chen, T., Benton, A., Quinn, S. C., & Dredze, M. (2018). Weaponized health communication: Twitter bots and Russian trolls amplify the vaccine debate. *American Journal of Public Health*, *108*(10), 1378–1384. https://doi.org/10.2105/AJPH.2018.304567

Cano-Orón, L., Calvo, D., López García, G., & Baviera, T. (2021). Disinformation in Facebook ads in the 2019 Spanish General Election campaigns. *Media and Communication*, *9*(1), 217–228. https://doi.org/10.17645/mac.v9i1.3335

Cappella, J. N., & Jamieson, K. J. (1997). *Spiral of cynicism: The press and the public good*. Oxford University Press.

Carrasco-Polaino, R., Martín-Cárdaba, M.-A., & Villar-Cirujano, E. (2021). Participación ciudadana en Twitter: Polémicas anti-vacunas en tiempos de Covid-19 [Citizen participation in Twitter: Anti-vaccine controversies in times of Covid-19]. *Comunicar*, *69*, 21–31. https://doi.org/10.3916/C69-2021-02

Cartwright, E., Stepanova, A., & Xue, L. (2019). Impulse balance and framing effects in threshold public good games. *Journal of Public Economic Theory*, *21*(5), 903–922. https://doi.org/10.1111/jpet.12359

Casero-Ripollés, A. (2020). Impact of Covid-19 on the media system. Communicative and democratic consequences of news consumption during the outbreak. *El profesional de la información*, *29*(2), e290223. https://doi.org/10.3145/epi.2020.mar.23

Chiang, W. Y., & Duann, R. F. (2007). Conceptual metaphors for SARS: "War" between whom? *Discourse & Society*, *18*(5), 579–602. https://doi.org/10.1177/0957926507079631

Crespo, M. F. (2014). Metodología para el análisis de las redes sociales [Methodology for the analysis of social media]. In R. Cotarelo & J. A. Olmeda (Eds.),

La democracia del siglo XXI: Política, medios de comunicación, internet y redes sociales [21st century democracy: Politics, media, internet and social networks] (pp. 383–408). Centro de Estudios Políticos y Constitucionales.

Cuesta-Cambra, U., Martínez-Martínez, L., & Niño-González, J.-I. (2019). An analysis of pro-vaccine and anti-vaccine information on social networks and the internet: Visual and emotional patterns. *El Profesional de la Información*, *28*(2), Article e280217. https://doi.org/10.3145/epi.2019.mar.17

de Zúñiga, H. G., & Diehl, T. (2019). News finds me perception and democracy: Effects on political knowledge, political interest, and voting. *New Media & Society*, *21*(6), 1253–1271. https://doi.org/10.1177/1461444818817548

Esser, F., & Strömbäck, J. (2012). Comparing election campaign communication. In F. Esser & T. Hanitzsch (Eds.), *The handbook of comparative communication research* (pp. 289–307). Routledge.

European Commission. (2018). *Tackling online disinformation: A European approach*. https://eur-lex.europa.eu/legal-content/EN/TXT/%20PDF/?uri=CELEX:52018DC0236&from=en

Friedkin, N. E. (2004). Social cohesion. *Annual Review of Sociology*, *30*(1), 409–425. https://doi.org/10.1146/annurev.soc.30.012703.110625

Gutiérrez-Rubí, A. (2020). *Comunicación política en tiempos de coronavirus* [Political communication in times of coronavirus]. Cátedra Ideograma-UPF.

Hightower, H. (2021). *Vaccine information: Many Europeans trust local doctors over national governments*. Fleishman Hillard. https://fleishmanhillard.eu/2021/03/vaccine-information-europeans-trust-doctors-over-governments

Hornsey, M., Harris, E., & Fielding, K. (2018). The psychological roots of anti-vaccination attitudes: A 24-nation investigation. *Health Psychology*, *37*(4), 307–315. https://doi.org/10.1037/hea0000586

Journell, W. (2017). Fake news, alternative facts, and Trump: Teaching social studies in a post-truth era. *Social Studies Journal*, *37*(1), 8–21. https://www.uncg.edu/~awjourne/Journell2017ssj.pdf

Kennedy, J. (2019). Populist politics and vaccine hesitancy in Western Europe: An analysis of national-level data. *European Journal of Public Health*, *29*(3), 512–516. https://doi.org/10.1093/eurpub/ckz004

Larson, H. J. (2020). Blocking information on Covid-19 can fuel the spread of misinformation. *Nature*, *580*(7803), 306. https://doi.org/10.1038/d41586-020-00920-w

Larsson, A. O., & Ihlen, Ø. (2015). Birds of a feather flock together? Party leaders on Twitter during the 2013 Norwegian elections. *European Journal of Communication*, *30*(6), 666–681. https://doi.org/10.1177/0267323115595525

Lee, K., Hoti, K., Hughes, J. D., & Emmerton, L. (2014). Dr Google and the consumer: A qualitative study exploring the navigational needs and online health information-seeking behaviors of consumers with chronic health conditions. *Journal of Medical Internet Research*, *16*(12), Article e262. https://doi.org/10.2196/jmir.3706

Lee, S., & Xenos, M. (2019). Social distraction? Social media use and political knowledge in two US Presidential elections. *Computers in Human Behavior*, *90*, 18–25. https://doi.org/10.1016/j.chb.2018.08.006

Levitsky, S., & Ziblatt, D. (2018). *How democracies die*. Broadway Books.

López-García, G. (2020). Discipline and punish: The role of the military, police and civil guards in communicating the Covid-19 crisis in Spain. *El Profesional de la Información*, *29*(3), Article e290311. https://doi.org/10.3145/epi.2020.may.11

Milani, E., Weitkamp, E., & Webb, P. (2020). The visual vaccine debate on Twitter: A social network analysis. *Media and Communication*, *8*, 364–375. https://doi.org/10.17645/mac.v8i2.2847

Mounk, Y. (2018). *The people vs. democracy: Why our freedom is in danger and how to save it*. Harvard University Press.

Neuendorf, K. (2002). *The content analysis guidebook*. SAGE.

Palau-Sampio, D. (2018). Fact-checking and scrutiny of power: Supervision of public discourses in new media platforms from Latin America. *Communication & Society*, *31*(3), 347–365. https://doi.org/10.15581/003.31.3.347-363

Pérez-Curiel, C., & Molpeceres, A. M. V. (2020). Impact of political discourse on the dissemination of hoaxes about Covid-19. Influence of misinformation in public and media. *Revista Latina de Comunicación Social*, *78*, 65–97. https://www.doi.org/10.4185/RLCS-2020-1469

Pérez-Curiel, C., Rivas-de-Roca, R., & García-Gordillo, M. (2021). Impact of Trump's digital rhetoric on the US Elections: A view from worldwide far-right populism. *Social Sciences*, *10*(5), Article 152. https://doi.org/10.3390/socsci10050152

Rivas-de-Roca, R., García-Gordillo, M., & Rojas-Torrijos, J. L. (2021). Communication strategies on Twitter and institutional websites in the Covid-19 second wave: Analysis of the governments of Germany, Spain, Portugal, and the United Kingdom. *Revista Latina de Comunicación Social*, *79*, 49–73. https://www.doi.org/10.4185/RLCS-2021-1517

Rúas-Araújo, J., Pérez-Curiel, C., & López-López, P. C. (2020). New challenges and threats for journalism in the post-truth era: Fact-checking and the fake news combat. In C. Toural-Bran, A. Vizoso, S. Pérez-Seijo, M. Rodríguez-Castro, & M. C. Negreira-Rey (Eds.), *Information visualization in the era of innovative journalism* (pp. 154–160). Routledge.

Sartori, G. (1987). *The theory of democracy revisited*. Chatham House.

Shehata, A. (2014). Game frames, issue frames, and

mobilization: Disentangling the effects of frame exposure and motivated news attention on political cynicism and engagement. *International Journal of Public Opinion Research*, *26*(2), 157–177. https://doi.org/10.1093/ijpor/edt034

Strauß, N., Huber, B., & de Zúñiga, H. G. (2021). Structural influences on the news finds me perception: Why people believe they don't have to actively seek news anymore. *Social Media + Society*, *7*(2), 1–21. https://doi.org/10.1177/20563051211024966

Strömbäck, J., & Kaid, L. L. (2008). *The handbook of election news coverage around the world*. Routledge.

Thelwall, M., Kousha, K., & Thelwall, S. (2021). Covid-19 vaccine hesitancy on English-language Twitter. *Profesional de la Información*, *30*(2), Article e300212. https://doi.org/10.3145/epi.2021.mar.12

Túñez, M. (2012). *La gestión de comunicación en las organizaciones* [Communication management in organizations]. Comunicación Social.

Tyson, A., Funk, C., Kennedy, B., & Johnson, C. (2021). *Majority in U.S. says public health benefits of Covid-19 restrictions worth the costs, even as large shares also see downsides*. Pew Research Center. https://www.pewresearch.org/science/2021/09/15/majority-in-u-s-says-public-health-benefits-of-covid-19-restrictions-worth-the-costs-even-as-large-shares-also-see-downsides

Ureta, A. L., Fernández, S. P., & Morales i Gras, J. (2021).

Disinformation, vaccines and Covid-19. Analysis of the infodemia and the digital conversation in Twitter. *Revista Latina de Comunicación Social*, *79*, 1–18. https://www.doi.org/10.4185/RLCS-2021-1504

van Dijk, T. A. (2015). Critical discourse studies: A sociocognitive approach. In R. Wodak & M. Meyer (Eds.), *Methods of critical discourse studies* (3rd ed., pp. 63–74). SAGE.

Waisbord, S. (2018). Truth is what happens to news: On journalism, fake news, and post-truth. *Journalism Studies*, *19*(13), 1866–1878. https://doi.org/10.1080/1461670X.2018.1492881

Wardle, C. (2017). *Fake news. It's complicated*. First Draft. https://firstdraftnews.org/fake-news-complicated

Wardle, C., & Derakhshan, H. (2017). *Information disorder: Toward an interdisciplinary framework for research and policy making*. European Council. https://edoc.coe.int/en/media/7495-informatin-disorder-toward an interdisciplinary-framework-for-research-and—policy-making.html

Westphalen, M.-H., & Libaert, T. (2008). *La communication externe de l'entreprise* [External communication of the company]. Dunod.

Xifra, J. (2020). Corporate communication, public relations and reputational risk management in the days of Covid-19. *El Profesional de la Información*, *29*(2), Article e290220. https://doi.org/10.3145/epi.2020.mar.20

About the Authors

Concha Pérez-Curiel is an associate professor of journalism and coordinator of the Master of Institutional and Political Communication at the University of Seville (Spain). She is a member of the Communication & Social Sciences research group (SEJ-619) and has been a visiting scholar at the University of the Arts (UK), Università Sacro Cuore de Milan (Italy), and University of Porto (Portugal). Her main lines of research focus on journalism quality, political communication, disinformation, and the effects on the digital public sphere.

José Rúas-Araújo is an associate professor of political communication at the Faculty of Social Sciences and Communication and director of the Department of Audiovisual Communication and Advertising at the University of Vigo (Galicia, Spain). He is also the principal researcher of the project Fight Against Disinformation and Value Criteria in Electoral Debates on Television and Digital Media: Verification Platform and Blockchain (PDC2021-121720-I00; DEBATrue) of the Ministry of Science and Innovation (Government of Spain).

Rubén Rivas-de-Roca is a lecturer at the University of Seville. He holds a PhD in communication with an international mention (Universities of Cádiz, Huelva, Málaga, and Seville) and is a member of the Communication & Social Sciences research group (SEJ-619). He has been a visiting scholar at Leipzig University (Germany), Cardiff University (UK), and University of Beira Interior (Portugal). His research focuses on journalistic quality, local media, and political communication, especially concerning the European Union and the concept of public spheres.

Article

Skeptical Inertia in the Face of Polarization: News Consumption and Misinformation in Turkey

Çiğdem Bozdağ [1,2,]* and Suncem Koçer [3]

[1] Research Centre for Media and Journalism Studies, University of Groningen, The Netherlands
[2] Department of Intercultural Education, University of Bremen, Germany
[3] Department of Public Relations and Information, Kadir Has University, Turkey

* Corresponding author (c.bozdag@rug.nl)

Abstract
Focusing on Turkey, this article analyzes the role of polarization on news users' perception of misinformation and mistrust in the news on social media. Turkey is one of the countries where citizens complain most about misinformation on the internet. The citizens' trust in news institutions is also in continuous decline. Furthermore, both Turkish society and its media landscape are politically highly polarized. Focusing on Turkey's highly polarized environment, the article aims to analyze how political polarization influences the users' trust in the news and their perceptions about misinformation on social media. The study is based on multi-method research, including focus groups, media diaries, and interviews with people of different ages and socioeconomic backgrounds. The article firstly demonstrates different strategies that the users develop to validate information, including searching for any suspicious information on search engines, looking at the comments below the post, and looking at other news media, especially television. Secondly, we will discuss how more affective mechanisms of news assessment come into prominence while evaluating political news. Although our participants are self-aware and critical about their partisan attitudes in news consumption and evaluation, they also reveal media sources to which they feel politically closer. We propose the concept of "skeptical inertia" to refer to this self-critical yet passive position of the users in the face of the polarized news environment in Turkey.

1. Introduction

The literature notably documents the multilevel relationship between polarization, online news consumption, misinformation, and declining trust in the news (Fletcher & Park, 2017; Levy, 2021; Ribeiro et al., 2017; Serrano-Puche, 2021; Strömbäck et al., 2020). In the contexts where social and political polarization prevails, and populism is the dominant style of political rhetoric, media users access the news increasingly via online sources, such as social media, search engines, and other internet platforms. In turn, online news consumption feeds into polarization saturated by the intensive spread of misinformation and conspiracy theories erected on the separation between them and us. The literature dominantly revolves around such cases as the USA, Russia, and Brazil (for instance, Baum & Groeling, 2008; Machado et al., 2018; Urman, 2019). However, further studies that explore the contextual elements influencing the multilevel interrelationships between polarization, online news consumption, and misinformation are in order.

Turkey is among the top countries where citizens complain about misinformation on the internet.

Longitudinal studies show that citizens' trust in news media declines every year (e.g., Aydın et al., 2021). Furthermore, Turkish society is politically highly polarized, and this polarization strongly influences the mediascape of the country. The majority of the news outlets and programs demonstrate partisan tendencies of different degrees in their news reporting. Focusing on Turkey's highly polarized environment, the article aims to answer the following research questions: How do social media users assess the accuracy of the content with which they engage in social media? How does political polarization influence the users' trust in the news and their perceptions about misinformation on social media? What actions do social media users take in the face of information they mistrust? In what ways do they seek to establish trust?

The study is based on multi-method research, including focus groups, media diaries, and interviews with people of different ages and socioeconomic backgrounds. The article firstly demonstrates the strategies that the users develop to validate information, including searching for suspicious information on search engines, looking at the number of followers of accounts that share information or the comments below the post, and looking at other news media, especially television. Secondly, we discuss the influences of polarization on news consumption, trust, and the perception of misinformation. Our analysis shows that although news literacy skills are useful for validating information about less polarized topics online, belonging, partisanship, and mistrust also play a crucial role in shaping the perception of misinformation on social media in polarized contexts. In contexts of severe polarization such as Turkey, news users are highly skeptical of political news which refers to partisan politics, President Erdoğan, his family, and the country's historical fault lines, such as ethnic and sectarian identities. However, news users simultaneously settle into a position of passivity when it comes to evaluating the accuracy of questionable content by relying on a perspective that is similar to their own existing worldview and political leanings. We refer to such a position of passivity despite doubt in the face of political news "skeptical inertia."

This study's contribution to the field of online news use, trust, and misinformation is threefold. Firstly, our findings demonstrate that, especially in the contexts of severe polarization, news consumption goes beyond the rational processes of an informed citizenry and news literacy and is rather closely linked to the affective domain. Our findings align with the emergent literature on news consumption as affect-bound practice (Papacharissi, 2015; Serrano-Puche, 2021), with our study providing evidence from an understudied context. Secondly, our findings illustrate that trust is not always simply the opposite of mistrust but is, in fact, a distinct construct on its own (cf. Rice & Taylor, 2020). Unbinding the trust vs. mistrust dichotomy opens up a space for context-bound, operational definitions of trust and mistrust. Our participants often deploy intuitive and affec-

tive tactics for establishing trust in the news they consume. These tactics are profoundly shaped by the Turkish context marked by the political divisions between "us" and "them." Finally, our study shows that high levels of self-awareness about the polarized social environment and constant self-reflection on one's news consumption do not directly entail literate news consumption but might cause people to give up seeking alternative news sources for verification. Such a state of inertia (stemming from active self-reflection and skepticism) differs from the conventional understandings of filter bubbles based on availability bias and selective exposure, which assume that news users are in a passive position, to begin with (cf. Spohr, 2017). On the other hand, our findings show that users end up in a position of inertia by which they endorse news narratives that align with their political views after a laborious verification process.

2. Theoretical Framework

2.1. Misinformation and News

Research on misinformation and false news has developed immensely since the rise of social and mobile media in 2008 (Ha et al., 2019). Such scholarly interest has grown in parallel with the increasing relevancy of discussions around fake news over the last decade, especially since the controversial American election and the UK Brexit referendum of 2016 (Ha et al., 2019). Many scholars have paid close attention to this issue, looking in-depth at misinformation, and particularly to false news as a category of misinformation (Bennett & Livingston, 2020; Spohr, 2017; Waisbord, 2018; Wardle & Derakhshan, 2017).

The interdisciplinary academic work focuses primarily on the internet and social media as the principal arenas in which misinformation and false news are shared. Without a doubt, social media has entailed deep structural transformations in the actualization of the public sphere, which has facilitated the spread of false information (Turcilo & Obrenovic, 2020; van Dijck & Poell, 2015). However, the problem of false news is limited neither to the internet space nor to the social media era. Instances of serious misinformation expose the degeneration of legacy news media that has occurred against the backdrop of neoliberal capitalism, in which basic journalistic principles, such as accuracy, independence, and objectivity, have gradually been eroded at the hands of media moguls and corporations (Baybars-Hawks & Akser, 2012; Hallin, 2008). Such erosion stems from the demand for high-speed, tabloidized internet news, highlighted by the platform architectures and the contingent business models of internet media. The outcome is the inexpugnable global problem of misinformation and false news that drag down public trust in media and democratic institutions (van Zoonen, 2012).

The interdisciplinary academic work on misinformation relies mostly on quantitative methods. Ha et al.

(2019) scrutinize 142 articles dealing with misinformation and false news published between 2008 and 2017 to map out the analysis trends and disciplinary tendencies in misinformation studies. According to their findings, most articles (43.45%) rely on quantitative research techniques. One-third of the pieces analyzed are theoretical papers without concrete data, and 7.59% derive from mixed methods. Ha et al. (2019, p. 300) note that "only 5.17% of the articles used a qualitative approach." In their review of the news-sharing literature, Kümpel et al. (2015) examined 461 articles published between 2004 and 2014 and noted three foci in this corpus. Among the 461 articles the research team studied, only 4% relied on qualitative methodologies. In much of this USA-based literature, scholars tend to discount factors such as the political and historical context (Kümpel et al., 2015). This finding also reveals the scarcity of qualitative and mixed-method designs in news sharing research (Kümpel et al., 2015).

The problem of false news and misinformation is of global concern. Nevertheless, the agents of misinformation who produce, circulate, and consume false news are situated people in specific cultural, historical, and political settings. Thus, scholars of misinformation must open their minds towards diverse national media systems, different cultural settings, and the social functions of news use (cf. Kümpel et al., 2015) to develop robust mechanisms for the fight against false online information. Especially in settings where media worlds are unstable, the news media is under political pressure, and the social media is by default a platform of propaganda, news use is simply a politicized practice. Turkey is a case in point, with increasingly authoritarian tendencies encompassing online and conventional media worlds (cf. Kaygusuz, 2018; Somer, 2016). The literature notes that the ruling AKP (Justice and Development Party) has utilized media as "the main instruments of authoritarianism" (Somer, 2016, p. 495) to manipulate public opinion in Turkey since the 2000s. The news users' diminishing trust in media results from this media environment. Longitudinal research studies show that the media ranks bottom of the list of trustworthy institutions in Turkey (Aydın et al., 2021). The Reuters Institute's 2018 *Digital News Report* indicates that Turkey ranks among the top countries for mistrust in the news media (Yanatma, 2018). The prevalent authoritarian tendencies and the subsequent mistrust in the media have made Turkish news users susceptible to misinformation spread via social media and conventional media, especially during crises such as elections and the pandemic.

2.2. Polarization, News Consumption, and Trust in the News

In simplest terms, polarization is the increasing distance between competing political orientations (Kearney, 2019). Whereas most countries are marked by some level of polarization, in the case of a highly polarized context, we can speak of "severe polarization," which refers to a process whereby the usual diversity in a society increasingly aligns along a single dimension. People increasingly perceive and describe politics and society in terms of "us" versus "them" (McCoy et al., 2018). Polarization also has an affective dimension. Especially in the case of severe polarization, the political distance between the political groups is increasingly based on social identities and not on ideological differences (Iyengar et al., 2012; McCoy et al., 2018).

Studies note the relationship between trust, news, and polarization and draw varying conclusions about the nature of this relationship (Suiter & Fletcher, 2020). There is a growing body of literature on how media consumption generally and social media use more specifically influence polarization and vice versa (Barberá, 2015; Beaufort, 2018; Bozdag, 2020; Himelboim et al., 2013; Kearney, 2019; Sunstein, 2002). Such research focuses on the effects of filter bubbles on political opinions, the role of algorithms on cross-cutting exposure on social media, and the influence of polarization on network diversity. Based on a large field experiment that randomly offered participants subscriptions to conservative or liberal news outlets on Facebook, Levy (2021) affirms that social media algorithms increase polarization by limiting exposure to counter-attitudinal news. Based on datasets collected from Twitter in the context of the USA, Ribeiro et al. (2017) investigate how polarization creates distinct narratives on misinformation and reveal that even the debate around fake news on Twitter is highly polarized. This finding indicates that the role of the context influences the semantics of misinformation, potentially shifting from one given setting to the other. Indeed, the various studies in the field provide inconsistent results concerning the polarizing role of social media. As Lee (2016) argues, polarization is not a straightforward and unified process and must be considered in specific contexts. Certain contexts strengthen the polarizing potential of social media; others might mitigate it. Though limited, the comparative and longitudinal studies of trust in the news (Fletcher & Park, 2017) shed light on the contextual elements that influence the complexity of the relationship between news trust and polarization. A further focus on specific sociopolitical and cultural contexts would illuminate the multilayered relationship between polarization, the shifting nature of news use, and mistrust in the news.

Turkey has been among the most severely polarized countries in recent years (McCoy et al., 2018) and presents a fascinating case for studying how polarization influences news consumption. The divisions in the population in Turkey emerge along historical fault lines in the country: ethnic (Kurds and Turks), sectarian (Alevis and Sunnis), and ideological (AKP supporters and AKP opponents; Çelik et al., 2017). In recent years, the ruling AKP party's polarizing discourses have strengthened these societal divisions and led to even greater polarization among its supporters and opponents (McCoy et al.,

2018). This political polarization also increases the social distance between the supporters of different political parties (Erdoğan, 2016; Erdoğan & Uyan-Semerci, 2018). Strong parallelism between media and political parties and severe polarization marks the Turkish mass media landscape (Çarkoğlu et al., 2014; Panayırcı et al., 2016). The news outlets' framing strategies in Turkey align with their affiliated political actors (Panayırcı et al., 2016). People often prefer media outlets that align with their political preferences (Erdoğan & Uyan-Semerci, 2018). Polarization also determines the nature of public discourse in social media. For example, only 25% of the users indicate that they would discuss critical issues on social media (Erdoğan & Uyan-Semerci, 2018). In this highly polarized environment, how do social media users assess the accuracy of the content on social media? How does political polarization influence the users' trust in the news and their perceptions about misinformation on social media? What actions do social media users take when faced with news they mistrust? Based on the combination of qualitative data collection techniques, our findings reveal complex interrelationships between news consumption and news trust from the users' perspective against a backdrop of severe political polarization.

3. Research Methods

This study relies on qualitative methodology with multiple research techniques, including focus groups, solicited media diaries, and semi-structured interviews with the diary subjects. The methodological toolkit sought to expose the multilayered influence of social and political contexts on how individuals evaluate the accuracy of news and information they get on social media. We collected the data during the two weeks leading up to the local elections held in Turkey on March 31st, 2019. The pre-election period was especially fruitful for answering research questions because there was heightened tension between the incumbent AKP party's supporters and those of the opposition coalition (secularist/social democrat CHP, the center-right İYİ Party, and the pro-Kurdish HDP).

In cooperation with a professional research company based in Istanbul, we recruited 48 participants representing four major socioeconomic status groups determined by the Turkish Consumer Research Foundation (TÜAD). Our study included samples of A (upper), B (upper middle), C1 (middle), and C2 (lower middle) socioeconomic status groups. The participants, all of whom were self-reported social media users who engage with the news on the internet daily, were between 17 and 65 years old. We conducted six focus groups with eight participants over two consecutive days. In all focus groups, an equal number of men and women were present. Sessions took place in the observation rooms of the research company. We moderated the sessions, which lasted between one and a half to two hours, and all sessions were video and sound recorded. The conversa-

tions focused on news and social media in general, news access, information assessment and sharing strategies, and the participant's reasons for verifying and sharing news. We selected five out of the eight participants at the end of each session based on our immediate assessment of each individual's articulations about news use during the focus group sessions. To obtain a diverse data set, we selected individuals from different occupational backgrounds, ideological leanings, and political orientations. These 30 participants continued the study by filling out media diaries over one week.

In this study, media diaries functioned not only to generate self-reported notes about news use but especially to deepen an ongoing conversation with the research participants. We conducted semi-structured interviews with each participant based on the 30 participants' week-long diary notes about their news consumption. Between 20 to 45 minutes each, the interviews were conducted to clarify the diary entries and generate further dialogue concerning participants' news use. Moreover, the diaries opened up a critical space for the participants to reflect on their engagement with the news. While we obtained in-depth, self-reported data on the users' practices and perceptions of news, trust, and misinformation, the findings of this study only provide windows on these issues in the context of Turkey and are not generalizable.

The transcribed interviews, focus group data, and the media diaries were analyzed employing qualitative content analysis facilitated by the software package Atlas.ti's structuring, coding, and patterning of the material. For the analysis, we developed a thematic coding scheme based on this study's conceptual model and the surveyed literature. The themes included the users' reflection on the context, platforms, topics, and verification practices.

4. Findings

News literacy is often presented as the solution for misinformation online with the assumption that "news literate" users can easily assess and validate misinformation online. Although there are competing definitions of news literacy, Malik et al. (2013, pp. 8–9) argue that any definition of the term should include (a) "an understanding of the role news plays in society," (b) the motivation to seek out the news, (c) "the ability to find/identify/recognize news," (d) "the ability to critically evaluate news," and (e) "the ability to create news." Our participants recognize the importance of news in society and are motivated to seek out news of different sorts. Although almost none of the participants actively create news, most develop strategies to find, identify, recognize, and critically evaluate it. However, especially as they seek news and evaluate political content, they are less accuracy-oriented and more inclined to choose and believe sources closer to their political standpoints. Whereas the users adopt more rational strategies at the cognitive level to assess the accuracy of news on less

politicized topics, the evaluation of political news as the users describe it has a more affective dimension.

In this section, we first describe what makes our participants doubt the accuracy of news on social media and then discuss the strategies they adopt to verify any such news source. We draw attention to one important distinction that the participants make concerning "political news," as they refer to it. When a particular news item is related to politics, the participants are less interested in the accuracy of the news and more goal-oriented in their news consumption. They believe in "what feels closer to them" (Ayse, female, 26, banker).

4.1. Doubting the Accuracy of News Online

In the focus groups, several of our research participants demonstrated a keen awareness of the problem of false news on social media. This observation parallels the Reuters Institute's *Digital News Report*, which places Turkey among the top countries where citizens complain about false news (Yanatma, 2018). Our participants, however, noted diverse reasons for doubting the accuracy of online content. These included inconsistent visuals accompanying the text or the number of followers for the root account. Ziya, a 21-year-old college student, for instance, stated that the headline of a news story would flag the news' accuracy level:

> The headline makes it obvious. Some news sites or [social media] accounts make headlines just to get clicks and get attention. When you click on them, you see stuff irrelevant to the headline. When a headline is sensational like "Shock! Shock! Shock!" [Şok, şok, şok], it is most likely false news.

Sensational titles are received with suspicion by the participants, as Ziya indicates above, and are interpreted as signs of false news. This is especially the case if there is a mismatch between the title and the content. The type of visuals accompanying news stories raised suspicion for a number of our research participants. Even though the presence of photographs often flagged articles as potentially accurate for the majority of the focus group participants, some (especially the younger social media users) questioned the images' authenticity and whether the photographs were directly related to the news narrative. Ziya explained this as follows: "When news by a journalist comes with a high-resolution photograph taken with a journalist's professional camera, you get that it is not fake. [But] when the photo is taken with a 3-megapixel camera like a toaster, it's not credible."

The low resolution of a visual element in the news is seen as a sign of lack of journalistic professionalism by the participant above and is interpreted as a sign of false news. Another element noted for causing doubt was the number of followers for accounts sharing a piece of news. Although the presence of large numbers of followers for the account sharing questionable content

soothed the immediate doubt for most of our participants, the younger participants, in particular, were more likely to be suspicious of social media personas with large numbers of followers than older social media users. For instance, Beste, a 20-year-old college student from the high socioeconomic status group, noted that she did not trust social media personas with many followers by claiming that these might simply have bought followers for their accounts.

Regardless of the demographic characteristics such as age, socioeconomic status, and educational background, our research participants stated that they often doubted the accuracy of the information in social media if it was a piece of political news. Based on the participants' assertions, we define "political news" as news stories identifiably related to party politics, President Erdoğan and his family, and the historical fault lines of identity politics in Turkey such as Islamism, secularism, and the Kurdish identity movement (Koçer & Bozdağ, 2020). Social media in Turkey has increasingly become the domain of political news due to political polarization and the state clamping down on traditional news media and the related official (and unofficial) censorship that journalism has faced for the last two decades. Rising polarization has also deepened users' mistrust in the news, especially when it comes to political news. This mistrust has risen regardless of one's ideological orientation or political tendencies. In the focus groups, we frequently heard statements such as "we tend not to believe in anything anymore" (female, 34, housewife) and "I don't believe in news. I just believe in my own view" (male, 35, accountant). The relationship between polarization and the lack of trust in news has been well documented in a number of settings (for instance, Levy, 2021; Ribeiro et al., 2017), including Turkey. Kırdemir (2020) documents that Turkish social media users tend to trust and access news from resources according to their political leanings. Reuters Institute's *Digital News Report* demonstrates that while 38% of the news users in Turkey trust the media, 40% do not (Yanatma, 2018). The closeness of these values is an indicator of polarization and its effect on media trust.

On the other hand, our findings indicate that mistrust in political news goes beyond partisan sources. The narratives of the focus groups participants delineated their mistrust as the lack of trust in the news genre overall. For instance, Tuba (female, 26, unemployed) noted that she voted for the AKP but did not trust A Haber and ATV, the party's unofficial media mouthpieces. Nilhan's (female, 45, store manager) assertion illustrates the loss of trust in the news genre and the position of skeptical inertia distinctly:

> In the past, we used to watch the news...and we didn't use to feel the necessity to question everything....But now we immediately start questioning, trying to read what is behind a given news story....There is no truth or lies. What is correct for

you might be incorrect for me and vice versa. I believe this now….In the end, I stick with it with whomever I trust. If she said this or that, I say ok that is true.

Nilhan is skeptical of the news overall, no matter what the source is, but she remains inert by endorsing the version of truth coming from whomever she already trusts at the end.

4.2. Strategies for Dealing With Misinformation

When asked about what they do when they doubt the accuracy of any news on social media, our participants mentioned various strategies they employ in different situations. These strategies include checking the sources (primarily links), searching for more information on search engines, comparing different sources (news websites), checking presumably reliable sources, looking at established news outlets, looking at social media comments, and asking trusted people to check their accounts.

"Searching for information on Google" was the most common response by the focus group participants, asked about what they do in the face of suspicious content. Searching Google means comparing different sources for many users:

> For example, recently, it [referring to the timeline] shows a political leader on Facebook. He is supposed to be a mason. He is supposed not to be Kurdish, but Armenian, like that….You cannot know who is looking into this. I don't find it convincing, of course….In that case, if I am curious, then I try to find that person or a book, or I search on Google. I check if it is on any news channels, if it is true, and so on. Or I consult someone who knows it well. (Tahsin, male, 34, medical sales representative)

Like Tahsin, users sometimes actively engage with certain news or information online by searching for more sources on search engines. One essential reference here is to the established news channels. Many participants trust established news channels and programs (CNN Turk, TRT News, or NTV) as a point of reference to verify the information.

Several users claim that news channels cannot disseminate false news because of the internal institutional filtering mechanisms and due especially to the Radio and Television Supreme Council (RTÜK), the regulatory body with sanctioning power for television broadcasts in Turkey. Asking trusted people or checking their social media accounts is another strategy mentioned by the user above and adopted by other participants. These trusted people can be those from the immediate social networks of the news users, or they can be prominent individuals such as journalists, politicians, or influencers that the person trusts. The social media accounts of these trusted people can generally also be sources of news and information, as Yildiz explains:

> For example, a news anchor that I follow more on Instagram, you follow their accounts, and there are some explanations below the visuals there. But I also sometimes use the applications of the newspapers. I follow the news from there. But like I said, sometimes I might also go there [to the newspapers] after seeing something on Instagram. And sometimes, something I see on Instagram is enough, but of course, nobody can write long news there. (female, 31, purchasing expert)

Some users go beyond searching for information on search engines and use more advanced tools such as image search engines. It is rather the tech-savvy and younger users who adopted these more advanced strategies of verification of information. In line with existing research that points out age differences concerning assessment and sharing of misinformation (e.g., Osmundsen et al., 2021), our findings suggest that younger people adopt more advanced strategies for verifying information online. One example is Ziya (male, 21, college student), who uses visual search engines when he suspects the accuracy of news by checking the images' authenticity. Another example is by Fatma (female, 36, director in a dental hospital), for whom the visual elements are significant flags of accuracy in news evaluation. Fatma notes that even assessing the authenticity of the images can be tricky. She explains her skepticism by emphasizing general distrust in the news genre:

> Because we do not believe in anyone, no matter whether or not it is someone we follow, like, or agree with, we still need to compare or look at the other side because we cannot believe in anything, we cannot believe in anything we hear or see. Yes, there can be tricks in the videos, but something that I read and see is more reliable for me; therefore, I prefer the internet.

One last strategy that the participants mentioned was checking the comments below a particular social media post to see if there are any conflicting views, as Engin (male, 20, student) states below:

> Engin: When I open the news, I look at the comments below it right away. Is there anyone who says the opposite? Is it fake news? You can see it there right away.
>
> Interviewer: How can you see it there?
>
> Engin: If a news article is fake, let's say, then a comment that claims the opposite gets a lot of likes. If it gets a lot of likes, you see it in front of you [in your timeline].

Engin checks the comments to verify the accuracy of news in a particular social media post. He argues that the
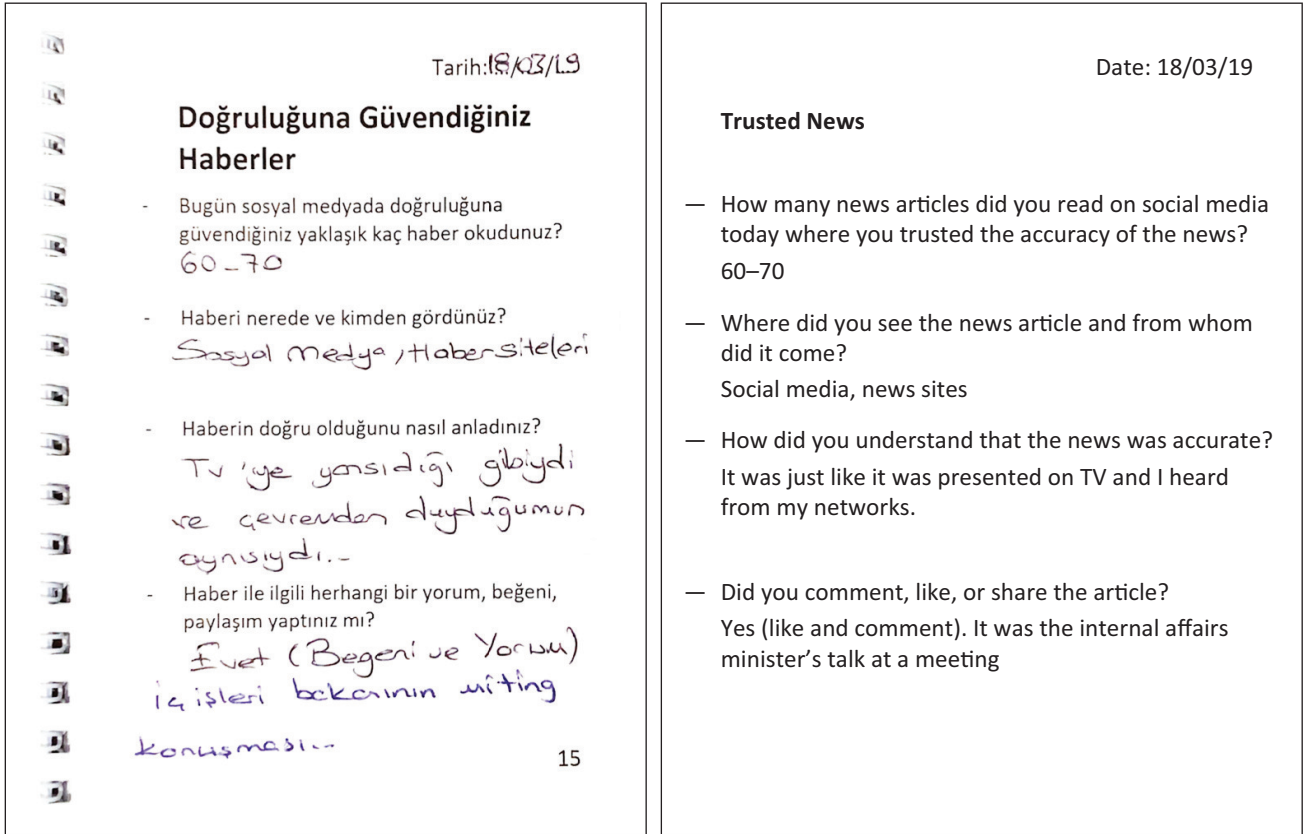
Figure 1. Orhan's (male, 37, salesperson) notes in his media diary (left) and respective English translation (right).

opposite claim will get many likes and become visible in the timeline if there is a disputable point in the original post. Similarly, Orhan (male, 37, salesperson) notes in his media diary that he verifies the news by reading the comments underneath (Figure 1).

The quote and the diary entry above show that the participants develop an intuitive understanding of the functioning of social media platforms and their algorithms. Comments and the number of likes, followers, and retweets are used iteratively to verify social media information.

4.3. Skepticism and Inertia in News Consumption

Although the participants adopted rational strategies to verify information online as discussed in the previous section, some of them were generally mistrustful of news and news sources, like Fatma, who was quoted above saying, "we do not believe in anyone." This skepticism goes hand in hand with a decrease in trust in institutions besides the media. Beyza (female, 34, housewife), for example, explains that she does not even trust institutions like The Forensic Institute anymore because they have also provided falsified evidence before as she explains:

It was when they arrested the military officers. They had tried to obfuscate the evidence. It leaves an

impression that deeply damages even that institution. Could they do this in a hospital, or did they go to a private hospital? Now we check everything.

Several participants with different political positions raised the issue of mistrust in institutions. However, the opponents of the government, who believe that the government manipulates these institutions, declared mistrust more often. The level of mistrust in news sources seems to increase in line with the political content of the news. For example, Samet (male, 38, teller) says that "about news, especially concerning politics, nothing is reliable." The emphasis here lies on the news related to politics for many participants, and this mistrust in political news is shared both by government supporters and government opponents. However, in the face of the highly politicized and polarized mainstream media environment, they differ from each other concerning the sources they trust or doubt. Participants especially doubt the accuracy of political news that "do not match with their opinions" (Caglar, male, 34, accountant assistant) or that do not "fit their mentality" (Ayse). Whereas government opponents often mention the TV channels Fox TV and Halk TV as trusted sources of news, government supporters tend to trust CNN Türk, NTV, and A Haber, outlets owned by companies that are politically and economically linked to the government and the public broadcasting channel TRT. Despite the skepticism that the users

note about political news, they also show inertia when it comes to taking action and prefer to believe what they want to believe, as Fatma explains below:

> In any particular news that we watch or read, we believe in what we want to believe in the last instance….It is related to what you want to see, your opinions, what you imagine, settled or want to believe, I think. Because the news is partial, very different, very biased. Because of that, we all continue believing whom we support, what we think, what we want to believe because you can say so many things about the same news. Before, we used to watch the news, and let's say I said this is mandarin. I would not question it; I would just go on. But now when someone says mandarin, (we ask) is it a real mandarin? They said mandarin, but why did they say it? We start seeing the opposite views. We try to scrutinize it. As a result, there is no such thing as truth or lie. All in all, something that is true for you might be wrong for me. I am now convinced of this. Finally, as I said, I eventually put an end to it with the person I trust. So, if Fulya [another focus group participant] said this, then it is ok, and we leave it there.

Fatma's statement exemplifies several other participants who also demonstrated an increasing mistrust in news institutions and the news genre. Fatma concludes that there is no such thing as the truth, but the truth is relative depending on what one believes in. Similarly, Hasan (male, 32, salesman) refers to Fox TV and says that "their fallacies are true for them, and the truth is false for them," pointing out the relativity of truth in his eyes. Many users like Fatma and Hasan refer to "us and them" as they speak of different versions of the truth, demonstrating how people's perception of truth and misinformation links to their identification with certain social and political groups. The feeling of uncertainty and relativity of truth and the highly biased nature of news outlets in Turkey steers people to confide in the people and news sources to which they feel close. As with Fatma, Ayse says after listening to different people about a particular topic and reading different sources, she believes "in the news that feels right, that feels like a plausible scenario for (her) mentality." Orhan also indicates that he checks sources "that he feels close to yandaş [presumably pro-government media outlets]. If it fits you, if it feels plausible, then you accept it." Feeling hopeless about being able to assess what is true and what is not and being skeptical about the political bias of news outlets in Turkey, the users find comfort in believing the sources that they (politically) support and trust.

5. Conclusion

Studies show that Turkey is among the top countries where citizens frequently complain about false news (Aydın et al., 2021; Yanatma, 2018). Furthermore, Turkey is one of the most severely polarized countries where we can observe increasing mechanisms of affective polarization as the citizens become socially more and more distant from other political views (Erdoğan & Uyan-Semerci, 2018). Focusing on the case of Turkey, we studied how polarization influences the perception of news and misinformation. Our study shows that rational strategies to assess the accuracy of information online such as checking a variety of sources, relying on established news media, and searching for more information, are adopted by news users in particular situations. Users also develop an intuitive understanding of how social media platforms and their algorithms function. They further develop strategies for assessing the accuracy of information (such as checking the number of likes or popular comments) accordingly. However, these strategies, which can be seen as signs of news literacy and operate at the cognitive level, are laid aside for "political news," as the participants refer to it. As one of the participants put it: "About politics, nothing is reliable" (Samet).

Our study confirms the findings of the other studies cited above on news consumption in Turkey, showing a general lack of trust in the news media, especially concerning political news (cf. Aydın et al., 2021; Yanatma, 2018). This mistrust in the news media goes hand in hand with the declining trust in institutions (van Zoonen, 2012). In the case of Turkey, the decline in trust in institutions parallels acute clientelism and severe polarization (Erdoğan & Uyan-Semerci, 2018). In both the focus groups and the semi-structured interviews, many participants in our study demonstrated a keen awareness and self-reflection about how the polarized and politicized media environment brings the accuracy of news into question. Despite the nature of the media environment and the users' constant suspicion of the news genre, news users choose to use sources that align with their political positions. We refer to this state of being simultaneously suspicious and indifferent as "skeptical inertia." A sense of helplessness contributes to this inertia as people face an information overload within the polarized media environment in Turkey.

In line with recent studies on news consumption, which undermine the ideal of the informed citizen who acts rationally in choosing and evaluating news, our study shows that news consumption is not only a rational process but is also closely linked to the affective domain (Papacharissi, 2015; Serrano-Puche, 2021). Users adopt intuitive and affective tactics rooted in tacit knowledge to evaluate the trustworthiness of news (Swart & Broersma, 2021). Our findings show that the affective assessment of news based on users' social and political identities is strengthened by severe polarization and the fact that society and institutions are increasingly perceived through the lenses of "us" and "them." Interestingly, our study participants demonstrated a high level of self-awareness about this polarized social environment in Turkey, and they were self-reflective and critical about their positions within this environment.

The participants were also very much aware of their partisan choices indicating that they believe in the news sources they feel closer to and want to believe in the end. However, many did not actively take steps to change their perception of the news, choosing instead to confide in partisan sources. However, this self-critical position can also be interpreted as an implicit desire for change in this polarized environment. If and how such a change can occur remains an open question for future research.

Acknowledgments

Conflict of Interests

The authors declare no conflict of interests.

References

Aydın, M., Atıf, R., Aydin, M., Çelikpala, M., Yeldan, E., Güvenç, M., Zaim, O. Z., Hawks, B. B., Sokullu, E. C., Şenyuva, Ö., & Yılmaz, O. (2021). *Türkiye Eğilimleri 2020* [Trends in Turkey 2020]. Kadir Has University. https://www.khas.edu.tr/sites/khas.edu.tr/files/inline-files/TEA2020_Tur_WEBRAPOR_1.pdf

Barberá, P. (2015, September 28–30). *How social media reduces mass political polarization. Evidence from Germany, Spain, and the US* [Paper presentation]. 2015 APSA Conference, Canberra, Australia.

Baum, M. A., & Groeling, T. (2008). New media and the polarization of American political discourse. *Political Communication*, *25*(4), 345–365. https://doi.org/10.1080/105846

Baybars-Hawks, B., & Akser, M. (2012). Media and democracy in Turkey: Toward a model of neoliberal media autocracy. *Middle East Journal of Culture and Communication*, *5*(3), 302–321.

Beaufort, M. (2018). Digital media, political polarization and challenges to democracy. *Information, Communication & Society*, *21*(7), 915–920.

Bennett, W. L., & Livingston, S. (Eds.). (2020). *The disinformation age: Politics, technology, and disruptive communication in the United States*. Cambridge University Press.

Bozdag, Ç. (2020). Managing diverse online networks in the context of polarization: Understanding how we grow apart on and through social media. *Social Media + Society*, *6*(4). https://doi.org/10.1177/2056305120975713

Çarkoğlu, A., Baruh, L., & Yıldırım, K. (2014). Press-party parallelism and polarization of news media during an election campaign: The case of the 2011 Turkish elections. *The International Journal of Press/Politics*, *19*(3), 295–317.

Çelik, A. B., Bilali, R., & Iqbal, Y. (2017). Patterns of "other-

ing" in Turkey: A study of ethnic, ideological, and sectarian polarisation. *South European Society and Politics*, *22*(2), 217–238.

Erdoğan, E. (2016). *Turkey: Divided we stand.* The German Marshall Fund of the United States. http://www.gmfus.org/publications/turkey-divided-we-stand

Erdoğan, E., & Uyan-Semerci, P. (2018). *Dimensions of polarization in Turkey: Summary of key findings*. Istanbul Bilgi University Center for Migration Research. https://goc.bilgi.edu.tr/media/uploads/2018/02/06/dimensions-of-polarizationshortfindings_DNzdZml.pdf

Fletcher, R., & Park, S. (2017). The impact of trust in the news media on online news consumption and participation. *Digital Journalism*, *5*(10), 1281–1299. https://doi.org/10.1080/21670811.2017.1279979

Ha, L., Perez, L. A., & Ray, R. (2019). Mapping recent development in scholarship on fake news and misinformation, 2008 to 2017: Disciplinary contribution, topics, and impact. *American Behavioral Scientist*, *65*(2), 290–315.

Hallin, D. C. (2008). Neoliberalism, social movements and change in media systems in the late twentieth century. In D. Hesmondhalgh & J. Toynbee (Eds.), *The media and social theory* (pp. 43–58). Routledge.

Himelboim, I., McCreery, S., & Smith, M. (2013). Birds of a feather tweet together: Integrating network and content analyses to examine cross-ideology exposure on Twitter. *Journal of Computer-Mediated Communication*, *18*(2), 154–174.

Iyengar, S., Sood, G., & Lelkes, Y. (2012). Affect, not ideology social identity perspective on polarization. *Public Opinion Quarterly*, *76*(3), 405–431.

Kaygusuz, Ö. (2018). Authoritarian Neoliberalism and regime security in Turkey: Moving to an "exceptional state" under AKP. *South European Society and Politics*, *23(*2), 281–302. https://doi.org/10.1080/13608746.2018.1480332

Kearney, M. W. (2019). Analyzing change in network polarization. *New Media and Society*, *21*(6), 1380–1402.

Kırdemir, B. (2020). Turkey's digital news landscape: Polarization, social media, and emerging trends (Cyber Governance and Digital Democracy 2020/03/EN). EDAM. https://edam.org.tr/en/https-edam-org-tr-wp-content-uploads-2020-06-turkeys-digital-news-landscape-baris-kirdemir-with-discussion-paper-pdf

Koçer, S., & Bozdağ, Ç. (2020). News-sharing repertoires on social media in the context of networked authoritarianism: The case of Turkey. *International Journal of Communication*, *14*, 5292–5310.

Kümpel, A. S., Karnowski, V., & Keyling, T. (2015). News sharing in social media: A review of current research on news sharing users, content, and networks. *Social Media + Society*, *1*(2). https://doi.org/10.1177/2056305115610141

Lee, F. L. (2016). Impact of social media on opinion polar-

ization in varying times. *Communication and the Public*, *1*(1), 56–71.

Levy, R. (2021). Social media, news consumption, and polarization: Evidence from a field experiment. *American Economic Review*, *111*(3), 831–870. https://doi.org/10.1257/AER.20191777

Machado, C., Kira, B., Hirsch, G., Marchal, N., Howard, P. N., Graphika, T. L., & Barash, V. (2018). *News and political information consumption in Brazil: Mapping the First Round of the 2018 Brazilian presidential election on Twitter.* Oxford Internet Institute. https://demtech.oii.ox.ac.uk/wp-content/uploads/sites/93/2018/10/machado_et_al.pdf

Malik, M., Cortesi, S., & Gasser, U. (2013). *The challenges of defining "news literacy"* (Report No. 2013–20). The Berkman Center for Internet & Society. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2342313

McCoy, J., Rahman, T., & Somer, M. (2018). Polarization and the global crisis of democracy: Common patterns, dynamics, and pernicious consequences for democratic polities. *American Behavioral Scientist*, *62*(1), 16–42.

Osmundsen, M., Bor, A., Vahlstrup, P. B., Bechmann, A., & Petersen, M. B. (2021). Partisan polarization is the primary psychological motivation behind political fake news sharing on Twitter. *American Political Science Review*, *115*(3), 999–1015.

Panayırcı, U. C., İşeri, E., & Şekercioğlu, E. (2016). Political agency of news outlets in a polarized media system: Framing the corruption probe in Turkey. *European Journal of Communication*, *31*(5), 551–567.

Papacharissi, Z. (2015). Toward new journalism(s) affective news, hybridity, and liminal spaces. *Journalism Studies*, *16*(1), 27–40.

Ribeiro, M. H., Calais, P. H., Almeida, V. A. F., & Meira, W. (2017). *Everything I disagree with is #FakeNews": Correlating political polarization and spread of misinformation*. arXiv. https://doi.org/10.48550/arXiv.1706.05924

Rice, C., & Taylor, M. (2020). "What they say peters down": How non-profit leaders assess the trustworthiness of government—Elite discourse and distrust in post-conflict Northern Ireland. *Public Relations Inquiry*, *9*(3), 237–256. https://doi.org/10.1177/2046147X20920808

Serrano-Puche, J. (2021). Digital disinformation and emotions: Exploring the social risks of affective polarization. *International Review of Sociology*, *31*(2), 231–245.

Somer, M. (2016). Understanding Turkey's democratic breakdown: Old vs. new and indigenous vs. global

authoritarianism. *Southeast European and Black Sea Studies*, *16*(4), 481–503. https://doi.org/10.1080/14683857.2016.1246548

Spohr, D. (2017). Fake news and ideological polarization: Filter bubbles and selective exposure on social media. *Business Information Review*, *34*(3), 150–160.

Strömbäck, J., Tsfati, Y., Boomgaarden, H., Damstra, A., Lindgren, E., Vliegenthart, R., & Lindholm, T. (2020). News media trust and its impact on media use: Toward a framework for future research. *Annals of the International Communication Association*, *44*(2), 139–156.

Suiter, J., & Fletcher, R. (2020). Polarization and partisanship: Key drivers of distrust in media old and new? *European Journal of Communication*, *35*(5), 484–501. https://doi.org/10.1177/0267323120903685

Sunstein, C. (2002). *Republic.com*. Princeton University Press.

Swart, J., & Broersma, M. (2021). The trust gap: Young people's tactics for assessing the reliability of political news. *The International Journal of Press/Politics*, *27*(2), 396–416. https://doi.org/10.1177/19401612211006696

Turcilo, L., & Obrenovic, M. (2020). *Misinformation, disinformation, malinformation: Causes, trends, and their influence on democracy*. Heinrich-Böll-Stiftung. https://www.boell.de/en/2020/08/25/misinformation-disinformation-malinformation

Urman, A. (2019). News consumption of Russian Vkontakte users: Polarization and news avoidance. *International Journal of Communication*, *13*, 5158–5182. https://doi.org/10.7892/BORIS.142408

van Dijck, J., & Poell, T. (2015). Social media and the transformation of public space. *Social Media + Society*, *1*(2), 2–14.

van Zoonen, L. (2012). I-Pistemology: Changing truth claims in popular and political culture. *European Journal of Communication*, *27*(1), 56–67.

Waisbord, S. (2018). Truth is what happens to news: On journalism, fake news, and post-truth. *Journalism Studies*, *19*(13), 1866–1878.

Wardle, C., & Derakhshan, H. (2017). *Information disorder: Toward an interdisciplinary framework for research and policy making*. Council of Europe. https://rm.coe.int/information-disorder-toward-an-interdisciplinary-framework-for-researc/168076277c

Yanatma, S. (2018). *Digital news report 2018: Turkey supplementary report.* Reuters Institute for the Study of Journalism. https://reutersinstitute.politics.ox.ac.uk/our-research/digital-news-report-2018-turkey-supplementary-report

About the Authors

Çiğdem Bozdağ (PhD) is an assistant professor at the Research Centre for Media and Journalism Studies at the University of Groningen. Bozdağ is also a Marie Sklodowska Curie Fellow in the Faculty of Education at the University of Bremen, with her project INCLUDED (2019–2023). Her research interests include digital media use, media and migration, inter- and transcultural communication, digital media literacy, and media education.

Suncem Koçer (PhD) is a media anthropologist working as an associate professor of communication at Kadir Has University in Istanbul. She completed her double doctorate degree in the Department of Anthropology and the Department of Communication and Culture at Indiana University in 2012. Her research focuses on media and politics, misinformation, news media, and digital cultures.

Article

Humor That Harms? Examining Racist Audio-Visual Memetic Media on TikTok During Covid-19

Ariadna Matamoros-Fernández [1,2,*], Aleesha Rodriguez [1,2], and Patrik Wikström [1,2]

[1] Digital Media Research Centre, Queensland University of Technology, Australia
[2] School of Communication, Queensland University of Technology, Australia

* Corresponding author (ariadna.matamorosfernandez@qut.edu.au)

Abstract

During times of crisis such as the Covid-19 pandemic, digital platforms are under public scrutiny to guarantee users' online safety and wellbeing. Following inconsistencies in how platforms moderate online content and behavior, governments around the world are putting pressure on them to curb the spread of illegal and lawful harmful content and behavior (e.g., UK's Draft Online Safety Bill). These efforts, though, mainly focus on overt abuse and false information, which misses more mundane social media practices such as racial stereotyping that are equally popular and can be inadvertently harmful. Building on Stoever's (2016) work on the "sonic color line," this article problematizes sound, specifically, as a key element in racializing memetic practices on the popular short-video platform TikTok. We examine how humorous audio-visual memes about Covid-19 on TikTok contribute to social inequality by normalizing racial stereotyping, as facilitated through TikTok's "Use This Sound" feature. We found that users' appropriations of sounds and visuals on TikTok, in combination with the platform's lack of clear and transparent moderation processes for humorous content, reinforce and (re)produce systems of advantage based on race. Our article contributes to remediating the consistent downplaying of humor that negatively stereotypes historically marginalized communities. It also advances work on race and racism on social media by foregrounding the sonification of race as means for racism's evolving persistence, which represents a threat to social cohesion.

Keywords

Blackface; humor; memes; online harms; racism; social media; "sonic color line"; stereotypes; TikTok; yellowface

Issue

This article is part of the issue "Impact of Social Media on Social Cohesion" edited by Stefan Stieglitz (University of Duisburg-Essen) and Björn Ross (University of Edinburgh).

1. Introduction

Humor, the act of making "a mockery of seriousness" (Lockyer & Pickering, 2005, p. 4), is central to social life. It is a critical tool people use as a relief mechanism to deal with everyday life and to speak truth to power, but it can also be used to silence and discriminate (Davies & Ilott, 2018). Online, humor is a core element of internet culture that is rewarded by digital platforms' attention economy (Shifman, 2014), and people mobilize it both to organize against and to reinscribe systems of oppression (Brown, 2019). Social media platforms have historically taken an optimistic approach to humor (Phillips, 2019), and it is

not until recently that some platforms are addressing humor that harms, beyond the harms thus far recognized within platforms' existing community guidelines (e.g., defamatory or violence-inciting speech). For example, in 2020, Facebook (now known as Meta) included Blackface parodies and other common racist stereotypes in its "hate speech" policies (Meta, n.d.). These changes are partly due because society's norms around what is acceptable in public discourse are evolving (Bell, 2021) and are often the result of the continuous work of activist groups that push platforms to improve their content moderation processes. In addition, media and governments are increasingly putting pressure on tech companies to

minimize the harms carried out through their platforms, including addressing "legal but harmful" content such as self-harm content, misinformation, and abuse in a consistent and transparent way (Department for Digital, Culture, Media & Sport, 2021).

But identifying and dealing with harmful forms of communication that are coded as humor in social media is a big challenge; all made worse by the fact that content moderation on social media becomes an almost impossible task without paying attention to historically entrenched power relations (Bartolo, 2021; Siapera & Viejo-Otero, 2021) and context (Gillespie, 2018). That is, platforms' policies tend to treat all identities as equal without distinguishing between groups that have been historically marginalized from groups that have not. This means, for example, that in some platforms "white face" parodies are treated equally as Blackface parodies (Siebert, 2016). But this approach dismisses the history of violence and racism linked to Blackface (Lott, 1992), which cannot be found in "white face" performances. Additionally, while human reviewers can provide context when evaluating problematic or borderline content in geographically diverse locales, automated content moderation tools are especially inadequate to understand humor's ambivalence and differentiate humor that speaks truth to power, from humor that crosses the line into harm (Dias Oliva et al., 2020).

Although much attention has been given to the spread of misinformation and coordinated inauthentic behavior on social media, perhaps a more challenging problem is how to deal with racism disguised as humor, as well as speech and conduct from users who are not necessarily trying to spread hateful ideologies but are simply participating online in ways that can potentially harm others (Roberts, 2016). This includes people's everyday engagements in humorous expressions such as young people on TikTok engaging in viral parody challenges, especially via the platform's "Use This Sound" feature, which allows users to appropriate and remix the audio from other videos. Drawing on the work of scholars that have theorized racial stereotyping online (Nakamura, 2002, 2008), and more specifically how racism emerges on social media as a result of user practices and digital platforms' norms, design, and governance processes (Matamoros-Fernández, 2017; Siapera, 2019), this article examines how user engagements with racist aural memetic media on TikTok via the "Use This Sound" feature, in combination with visual elements, perpetuates racist systems. Specifically, by drawing on Stoever's (2016) work on the "sonic color line," we add to work on racism on social media by foregrounding the role of sound as "a critical modality through which subjects (re)produce, apprehend, and resist imposed racial identities and structures of racist violence" (p. 4). We understand racism as a historical "process that is routinely created and reinforced through everyday practices" (Essed, 1991, p. 2).

TikTok is a popular short-video platform that is unique in understanding the entanglement between visuals, sound, race, and technology because of its characteristic design that prioritizes sound as the build-in technical feature for memetic engagement (Kaye et al., 2021). TikTok has 800 million monthly active users worldwide and is rapidly developing into a primary vector for harmful practices (e.g., Weimann & Masri, 2020). Despite its immense importance, academic work on this social media platform, owned by Chinese company ByteDance, is still emerging (Abidin, in press; Kaye et al., 2022). We selected Covid-19 as a case study to examine racist audio-visual memetic media on TikTok because the pandemic has been "racialized" (Mallapragada, 2021) and multiple and continued lockdowns around the world moved people's social interactions fully online. During Covid-19, "yellow peril" narratives of Asians as "infectious" emerged on social and mainstream media and "played a crucial role in the cultural production of Asians as a racial contagion" (Mallapragada, 2021, p. 279). "Yellow peril" is a trope that dehumanizes people from Asian countries as a threat to Western countries and their way of life and evokes imagery of "Asians as savages, merciless, immoral, subhuman, and a threat to…whites in general" (Ono & Pham, 2009, p. 38). TikTok experienced a surge in users during the pandemic who latched onto the platform for jocular intimacy and connection (Molla, 2021). We examined whether and how "yellow peril" narratives and other racist stereotyping of people of Asian descent in particular, and other racialized communities in general, emerged on this popular platform during the early days of the Covid-19 pandemic.

2. Humor That Harms

Critical humor scholars have warned about the negative effects of humor that dehumanizes historically marginalized groups and individuals (Lockyer & Pickering, 2005; Pérez, 2017). Crucially, too, theoretical frameworks arising from the knowledge generated by historically marginalized groups (e.g., Black feminist thought, critical race theory, feminist theory) have also addressed humor's potential to silence and discriminate (Ahmed, 2017; Collins, 2008; hooks, 2004). Humor and comedy often depend on finding the edges of convention and norms and, like other kinds of qualities of cultural products, the funniness itself is subjective. However, humor holds the potential not only to offend tastes but to cause actual harm (Ford et al., 2014; Thomae & Viki, 2013), yet this understanding is not universally accepted (Bell, 2021). When jokes tap into, for example, the "angry Black woman" negative stereotype (Ashley, 2014), they are commonly assessed using the common standard of "offensiveness," where the focus is on "a subjective reaction to an experience that can vary greatly among persons'' (Bell, 2021, p. 166). Bell argues, though, that when history and power relations are factored into the assessment of humor, one can recognize the harm in jokes because they represent "a tangible, objectively verifiable setback to a person's interests" (Bell, 2021, p. 166). Harm

is objectively verifiable "with access to the relevant situational information," such as considering racist and sexist humor as part of systemically unequal societies where some groups have historically been and continue to be disadvantaged (Bell, 2021, pp. 166–172).

An example of humor that harms are parodies linked to histories of violence and discrimination. Parody is a specific type of humor that is "forced to reference that which it mocks" (Davies & Ilott, 2018, p. 12). Within cultural industries, the practice of parodying disadvantaged groups by people occupying more privileged social positions has a long history as a form of entertainment. Nineteenth century's Blackface minstrelsy, a theatrical tradition in which white actors painted their faces black and dressed in costumes to act as Black caricatures (Lott, 1992), is a well-known example. Similarly, Yellowface has a long history in intercultural theater practices in Europe and North America wherein non-Asian (specifically, white) actors portrayed Asian characters in highly negative stereotypical ways (Lee, 2019). Yellowface sees non-Asian people embody "Asianness" by mimicking stereotyped phenotypical features and sounds, which flattens specific characteristics of different Asian ethnicities and perpetuates the harmful notion that all Asians are the same (Ono & Pham, 2009). These stereotypes, as Ewen and Ewen (2011, pp. 423–424) note, serve the "requirements of media formulas that sought to avoid the burdens of complex character developments in favor of trouble-free indicators of good and evil." In the process, these stereotypes are "routinely separated from their moorings in history, becoming floating signifiers that can easily be applied to serve any given objective" (pp. 423–424).

Harmful parodies such as Blackface and Yellowface still have currency today albeit they are increasingly subjected to public scrutiny and condemnation (Bakare, 2020). Through the lens of critical humor studies, the positions of power that the people involved in these parodies occupy in the world provide an additional tool to assess when humor harms (Davis & Ilott, 2018; Pérez, 2017). For example, taking a hypothetical case of a white male YouTuber performing the "angry Black woman" stereotype, he engages in this form of humor from a position of race and gender privilege. Yet a Black woman appropriating the same parody could be considered a media tactic to counter misogyny and racist hate (Sundén & Paasonen, 2020) and hence is unlikely to be harmful. Entertainment industries, especially in the United States, are starting to face the urgent problem of racial stereotyping in popular culture. But on social media, racist humor flows overwhelmingly unregulated (Matamoros-Fernández, 2017; Roberts, 2016).

Although in this article we focus on how humor targeted at historically marginalized communities, especially through aural memetic media on TikTok, can be harmful and deserves attention, we also acknowledge that humor is a key tool for speaking back to power and counter racist hate, and as such, needs to be pro-

tected by social media platforms. For example, social media platforms facilitate the propagation of feminist and anti-racist jokes and help historically marginalized communities to connect with a larger network through laughter (e.g., Brock, 2020; Rentschler & Thrift, 2015). The importance of social media platforms for community building means it is important to protect jokes that aim at patriarchal and racist structures, even if these interventions play with tactics like shaming, linguistic appropriation of sexist and racist slurs, and humiliation that might offend (rather than harm) privileged audiences (e.g., Sundén & Paasonen, 2020).

3. TikTok and the "Sonic Color Line"

Since the early beginnings of the Internet, visual media has had a central role in racial stereotyping practices online (Nakamura, 2008; see also Milner, 2016; Shifman, 2014). The links between sound and race on social media, though, have been less studied. We build on Stoever's (2016, p. 5) work on the role of sound in enabling "racism's evolving persistence" to examine how users' appropriations of sounds and visuals on TikTok, in combination with the platforms' lack of intervention in minimizing the visibility and spread of aural racist memes, reinscribe racist systems.

Stoever (2016, p. 7) shows how sound functions to produce "racialized identity formations." Drawing on Du Bois' (1903) concept of the "color line," which explains the differential power relations between white people and racialized Others in the United States, Stoever (2016, p. 11) proposes the "sonic color line" to define "a socially constructed boundary that racially codes sonic phenomena such as vocal timbre, accents, and musical tones." She explains how people, especially white Americans, perceive certain voices and sounds as being "funny and weird and sexual" (p. 8). She notes: "Through multiple simultaneous processes of dominant representation…particular sounds are identified, exaggerated, and 'matched' to racialized bodies" (Stoever, 2016, p. 11). Through these processes, she adds, "racial ideologies are (re)produced through the representational structures of discourse, aural imagery, and performance" (p. 11). While whiteness represents itself as "inaudible," immigrants and people of color are sonically stereotyped as "loud," "unruly," "improper," and "noisy" (p. 12). Stoever's work is interesting not only because she foregrounds sound in her analysis of racial formation, but also because she stresses that people's listening practices "are shaped by the totality of their experiences, historical context, and physicality, as well as intersecting subject positions and particular interactions of power" (p. 15).

On TikTok, sound is what triggers users' creative engagements and harmful parodies such as Blackface and Yellowface become more complex than non-Black people painting their faces with black paint, and non-Asian people mimicking "hallmarks" of Yellowface

like "squinted eyes and buckteeth" (Meyer, 2016, para. 5). For example, the appropriation of Black sounds and voices on TikTok has been defined as "Digital Blackvoice" (Connor, 2020), and popular audio meme templates (Abidin & Kaye, 2021; Kaye et al., 2021) on the platform use these sounds. In fact, digital Blackvoice is part of what has been called as "digital Blackface" (Green, 2006; Jackson, 2019) or "digitalizing minstrelsy" (Roberts, 2016): the practice of appropriating Black bodies, sounds, and culture by non-Black people online for humorous and playful purposes. White teenagers on TikTok, in their lip syncs videos, commonly use audio from people of color that include, for example, the N-word (e.g., in a hip-hop song from an African-American artist). Through these mimicries, these teenagers engage with the racist slur without saying the word themselves. Other permutations of aural digital Blackface on TikTok are the use of audios featuring African-American vernacular English by non-African-American users "for the clout," or as a way to increase social followers, such as the use of the viral audios "This is for Rachel" (2019) and "Girl, don't do it" (2020). The humorous use of these audios by privileged English speakers trades on intersectional identity markers such as Blackness, class, and gender, and become examples of "mock language" (Hill, 2008), "aural stereotyping" (Stoever, 2016, p. 20), or "linguistic profiling" (Baugh, 2003), which we will unpack in the discussion of our findings. For Jackson (2019, p. 98), "certain dialects, vocal ranges, and vernacular are deemed noisy, improper, or hyperemotional by association with blackness," and they become productive online memes to express a cool, relaxed and humorous identity online.

Similarly, "digital Yellowface" has been discussed in terms of Hollywood using CGI to make white actors have more Asian features (Kates, 2017) and an "anime-inspired" Snapchat filter from 2016 (Meyer, 2016). In these cases, and in broader practices of "cybertyping" of Asians online, "the Orient is brought into the discourse, but only as a token or type" (Nakamura, 2002, p. 39). As we show in our finding sections, digital Yellowface on TikTok emerges when non-Asian people use Asian accents in English, voices, and sounds as a form of reducing people of Asian descent as mere stereotypes. It also emerges when TikTokers use the 'Use this Sound' feature to appropriate "Asian sounds" as irrational or overly emotional and mobilize them to overtly discriminate, or just "for the clout." Digital Yellowface on TikTok, though, often takes place in combination with visuals that also reproduce racial stereotyping. Indeed, the "fun" nature of TikTok aural memes largely emerges from the overlap of voice and body, from the multimodal nature of these memes.

TikTok features like "Use This Sound" make it easy to appropriate sounds and not attribute them (Kaye et al., 2021). Similarly, the features "Duet" and "Video-reply" to comments, facilitate unreflective memetic engagements that can be harmful. It is precisely these

in-built features that make digital Blackface and digital Yellowface so easily legitimized and shared further on the platform. In terms of policies, TikTok does not provide a detailed explanation of when humor can harm. The platform prohibits "threats or degrading statements intended to mock…an individual" under its harassment and bullying policy (TikTok, n.d.). "Satirical content" is mentioned without definition as a category of content that TikTok "may" apply exceptions to in the introductory statement to its community guidelines. "Parody" is mentioned as a possible exception to TikTok's policies around intellectual property violations and an exception to its policy against impersonation provided that the user makes clear that the account is a parody account. TikTok's design and the platform's lack of recognition in its policies that certain forms of humor can harm creates the conditions for harmful parodies such as digital Blackface and Yellowface, to spread unchecked.

4. Case Study and Methods

4.1. Case Study: The Racialization of Covid-19

The Covid-19 pandemic exacerbated anti-Asian sentiment worldwide (Gover et al., 2020; Tan et al., 2021). As the new coronavirus SARS-CoV-2 was reported to originate from a "wet market" in Wuhan, China (Wang et al., 2020), the pandemic triggered specifically a raised level of Sinophobia, which is a fear or dislike of Chinese people and their culture that traces back to the rise of European imperialism in the eighteenth century (Zhang, 2008). Since the racial label "Asian" encompasses a variety of different national groups, not only Chinese people experienced abuse, but anyone who was perceived as "Asian" was a target (Tan et al., 2021). In fact, people of Asian descent in settler states report common assumptions of "sameness" and "foreignness" in their informal social interactions with non-Asians (Kibria, 2000), and the pandemic was no exception. In the context of Covid-19, anti-Asian sentiment centered on blaming people of Asian descent—regardless of their ethnicity, nationality, or personal history—as the cause of the pandemic (Gover et al., 2020). While some of the racist aural memetic media we examined on TikTok specifically used "China" as a proxy to dehumanize Chinese people, most of the mimicking of physical features, accents, and gibberish speech we encountered on TikTok videos contributed to the flattening of specific Asian ethnicities into the umbrella concept of "Asian."

This anti-Asian sentiment worldwide, which led to real-world violence (e.g., Gover et al., 2020), needs to be foregrounded when evaluating the impacts of the covert and allegedly humorous practices on TikTok during the Covid-19 pandemic. We argue that racist aural memetic media on TikTok during Covid-19 contributed to larger dehumanizing discourses that were having real and nefarious consequences. As Gelber and McNamara (2016, pp. 500–501) warn, "subtle" and "routine" forms

of abuse have "cumulative" harmful effects for individuals belonging to groups experiencing historical and continued structural oppression. Attaching an illness to a historically marginalized group, therefore, has immediate and longer-term negative social effects in multicultural and multiracial societies (Keil & Ali, 2006).

4.2. Data Collection and Analysis

We employed a mixed-methods approach to investigate racist aural memetic media on TikTok. We built a bespoke data scraping tool in Python to collect TikTok videos (N = 6,544) and associated metadata. TikTok is well-known for its recommender system (the "for you" page) that personalizes each user's video feed based on their engagement and interaction with the videos the user is exposed to. For this study, it was necessary to avoid this personalization, which required us to develop a scraper that used the browser-based version of TikTok and which never was logged in to the platform. This means that the video feed used for data collection was primarily shaped by our web browser's language settings and the location that could be inferred from the IP address of the computer where the scraper was running. To collect TikTok videos that employed the hashtag #coronavirus, we pointed the scraper at https://www.tiktok.com/tag/coronavirus and collected data between January to June 2020. Note that millions of videos with the coronavirus hashtag were posted during this period and that our dataset is far from complete. The sample can however be considered a random selection of videos using this hashtag that were likely to be played to TikTok users based in Australia. To make this larger dataset manageable and more focused, we created a smaller dataset that contained videos with co-occurring hashtags relevant to this study. We selected hashtags referring to the umbrella concept of "Asian" (#asian), as well as tags denoting humorous engagements (e.g., #funny and #comedy, and the popular memes that emerged during Covid-19 on TikTok such as #itscoronatime). We also included videos tagged with keywords related to China (#china) and keywords that could potentially be used as proxies to denote Chinese people (e.g., #chinacoronavirus, #wuhan). Last, we also included videos tagged with #Australia to potentially collect examples of racist stereotyping in this country, which has a long history of anti-Asian racism (Hage, 2014). This reduced the dataset to 1,286 unique videos once duplicates were removed (97 videos contained two or more of these co-occurring hashtags).

We also removed videos in a language other than English (LOTE), videos that had been made private by the user who originally posted it, and videos that were made unavailable since the time of data collection. Removing these videos (LOTE n = 305; made private n = 90; unavailable n = 252), left us with 639 videos that were relevant to code for containing racist tropes. We then performed a thematic analysis of the videos collected. Throughout

this analysis, we were particularly attentive to identifying videos containing harmful parodies such as Blackface and Yellowface, as well as other racial stereotyping such as "yellow peril" memes. This process allowed us to isolate 93 videos (14% of the videos coded) that displayed racist stereotyping. After coding these videos, we identified TikTok trends that were emblematic of racist stereotyping during Covid-19 on the platform, which we were able to include in the in-depth case study analysis.

In the findings section below we have chosen to describe significant patterns observed within the collected data and we use examples of individual videos with their engagement metrics to exemplify the trends. However, we do not provide hyperlinks matching the examples chosen to explain these general trends. This decision was made to protect the privacy of the TikTok users who participated in racist aural memes, most of which we believe are unaware of the harms of their practices. While we, as the researchers, do not condone the racist practices discussed in this article, it would be unethical to name these everyday users without their consent. For our analysis of the data, as white academics without lived experience with racism on social media, we draw on critical literature that has examined instances of racist stereotyping that are similar to what we observed on TikTok (e.g., Ono & Pham, 2009). Our analysis is also informed by the testimonies and analyses of racialized minorities collected on news articles, in which they define what they consider racist on TikTok, such as digital Blackface (e.g., Parham, 2020).

5. Anti-Asian Memes on TikTok During Covid

Within our sample of TikTok videos posted during the start of the Covid-19 pandemic, we observed different instances of humorous racist stereotyping, which we group into two main salient practices: "yellow peril" memes and harmful parodies that displayed Yellowface and Blackface. In describing the findings below, we have, to the best of our abilities, identified the specific practice of racism present in the video. For example, a video singling out "China" within the joke is identified as Sinophobic. However, it must be noted that our chosen method limits us to mere observers of the videos, and as such, in some instances where people were mimicking stereotypical physical and sonic features associated with "Asianness" according to white frames, we could not truly know which specific group was the target of the parody.

5.1. "Yellow Peril" Memes

We identified tropes of "yellow peril" through memetic trends about people or objects being, by extension of their connection to China or Asian countries, contaminated with coronavirus. Three main memetic trends were salient in our sample: (a) skits showing people of Asian descent and targeting them as being the cause of coronavirus spreading; (b) skits where the video subject

reacts in horror or disgust when they receive packages or goods from China, where again the implied meaning was that by proxy to China, the objects were contaminated with coronavirus; and (c) skits that attribute the outbreak of coronavirus to Chinese people eating bats. We argue that these memetic trends illustrate the convergence of historical racist scapegoating of Chinese people and people of Asian descent in rich countries like America and Australia and contemporary social media cultures and practices.

The first trend we observed in the data involves skits about hearing or seeing a Chinese or Asian person sneeze, cough, or merely be present, to which TikTok users react as people of Asian descent must have or are spreading coronavirus. We found generic humorous video skits such as one where a person is dancing while the on-screen text reads: "When youre [sic] at your favorite chinese [sic] food place and you hear a cough from the kitchen" and the camera zooms in on this person's concerned face (19 k likes). In addition, we found hyper-local Australian skits such as one where a man uses a green screen effect to set the scene that he's on a train in Sydney passing through the suburb of Strathfield, which has a large Chinese population (Australian Bureau of Statistics, 2016). He then whispers "fuck" as he acts out people on the train starting to cough—suggesting that people of the suburb of Strathfield have coronavirus (16.3 k likes).

We also observed the reappropriation of the "Run" trend (Know Your Meme, 2021), which originated in 2015 in the now-defunct short-video platform Vine. On TikTok, over 2.5 million videos have used the song *Run* by AWOLNATION to create videos that set a scene under this suspenseful music (e.g., sneaking up behind someone) until the line "run" come up, in which case, the subjects of the video run. In our collected data, users reappropriated this trend to produce racist memetic transformations in respect to setting up scenes wherein people are seen running away from people of Asian descent due to a perceived association with coronavirus. In particular, we saw a variation of the same meme template which uses a portion of a YouTube video about how people of different nations sneeze. Through this TikTok aural meme ("Run," 2020), after the person from China sneezes, the audio starts and the clip cuts to chaotic scenes of people scrambling to run away either in a public area (47 k likes) or a crowded school corridor (52 k likes).

We see the theme of contagion extended upon in the second trend which involves skits about receiving packages or realizing you have goods from China and reacting in fear or disgust due to a sense of coronavirus contamination. For example, we found multiple Sinophobic videos where the first scene is of someone excitedly opening their front door to see a package had arrived, only to become concerned once they see that the package is from China. We then see different video endings to make the joke: Videos that show people putting on rubber gloves to disinfect the package or goods (18 k likes),

videos where the person furiously washes their hands (10 k likes), one where the person gets a kitchen utensil to carry the package to their sink and sets the package on fire (34 k likes), and one where the person throws the package off a balcony (12 k likes).

The third trend that we identified evoking tropes of "yellow peril" centered on condemnation of Chinese people's eating habits and, particularly, the alleged habit of eating bats, a long-running racist trope consisting of using food "as vectors of aggression in racializing the ethnic other" (Yiu, 2018, p. 3). Bats, and particularly the notion of eating bats, has become a proxy to China and by extension people of Asian descent due to early reports or the origin of coronavirus in Wuhan's wet market (Wang et al., 2020). While the origin of Covid-19 is still under investigation at the time of writing, bats have been associated with the coronavirus outbreak (WHO, 2020). In the collected data we saw videos where users linked bat eating to coronavirus, for example, a video of a woman with an Australian accent filming a bat flying over the afternoon sky, as her voice is heard saying, as to condemn the practice and suggest a link to coronavirus: "A message to Australians…don't fucking eat them" (40 k likes).

While most of the above-described memetic media are examples of people unreflectively reproducing the "yellow peril" racist trope, we also observed standalone videos that were outright racist. Within our sample we observed skits that reproduced the racist name of coronavirus "Kung Flu"—a racial slur made highly public through its use by former President of the United States Donald J. Trump, which also became a meme online used to perpetuate historical media stereotypes of Asians (DeCook & Yoon, 2021). For example, we found a video of a person asking Apple's voice-assistant Siri: "What are [sic] you think [sic] about?" Siri replies: "What dumbass called it the coronavirus…and not Kung Flu?" (73 k likes). In another one, a young man sets up the joke with on-screen text that reads: "Different name for coronavirus." The video then cuts to a different scene of him dancing with the various names: "coronavirus," "covid19," "Kung flu," and "boomer remover" (425 k likes).

5.2. Harmful Audio-Visual Parodies

The use of Yellowface was salient in our data. We found videos in which white subjects were acting as Asian characters for the audience by exaggerating racial features that have been designated "Oriental," such as "'slanted' eyes, overbite, and mustard-yellow skin color" (Lee, 1999/2011, p. 2). For example, in one video a white man creates a three-part comedy skit using the audio "Big Bank" by American rapper YG, featuring American rapper and songwriter Cardi B (18.6 k likes). The first scene shows the man representing coronavirus as being dormant for decades by relaxing on a couch in a raincoat (whereby the raincoat is the signifier of coronavirus in this skit) and the on-screen text reads: "coronavirus: Chillin…for almost 60 years." In the second scene, this

white man is seen bowing with his hands in a prayer position—a form of Yellowface that intends to signify to the viewer that he is embodying "Asianness"—and then he pretends to eat a "bat" in form of a black sock, while the on-screen text reads: "Chinese people eating bats in 2020." The third and last scene cuts to a clip of him jumping out from behind a door in the raincoat again as the lyrics of the song go "uh oh! Back again" to represent that coronavirus stopped being dormant because of "Chinese" people eating bats. In this case, the Yellowface parody intersects with the "yellow peril" racist trope discussed above.

We also encountered various videos in which the sound was the key element used by TikTokers to embody "Asianness" and other racialized identities. Within the data, we found several instances of English speakers, most of them white, appropriating audios that parodied Spanish and Asian accents in English, and African-American vernacular English. For example, we found several videos that engaged with the viral aural meme "It's Corona Time" (2020). In this audio, a Spanish speaker—coded more specifically as a speaker from Mexico—is heard repeatedly saying "it's corona time" in English with a Spanish accent. Of note, Corona is a popular beer from Mexico. On its own, non-Spanish speakers engaging with this aural meme on TikTok could be considered what Hill calls "mock Spanish," which she defines as "a set of tactics that speakers of American English use to appropriate symbolic resources from Spanish" and which she theorizes as a form of covert racist discourse (Hill, 2008, p. 128). Examples of mock Spanish, according to Hill, are instances where non-Spanish speakers parody the Spanish accent in English or use Spanish words and sentences such as *hasta la vista* ("until we meet again") or *no problemo* ("no problem") to "create…a desirable colloquial persona that is informal and easy-going, with an all-important sense of humor and a hint" (Hill, 2008, p. 128). At the same time, Hill argues, mock Spanish "assigns Spanish and its speakers to a zone of foreignness and disorder, richly fleshed out with denigrating stereotypes" (Hill, 2008, p. 129), which is "invisible (or at least deniable) for Whites" (Hill, 2008, p. 155). For Hill, new forms of mock Spanish emerge from popular culture, and we argue that the "It's Corona Time" aural meme is an example of it. Mock Spanish is similar to Stoever's (2016) and Jackson's (2019) explanations of how white people learn that certain voices and accents, especially African-American vernacular English, sound "funny" and "cool," as we will describe in cases where white TikTokers used aural digital Blackface memes in videos about Covid-19.

What makes the "It's Corona Time" aural meme especially insidious during the coronavirus pandemic is that, as in other forms of mock Spanish, it "constructs a light, jocular, humorous stance" (Hill, 2008, p. 142), in this case, towards people of Asian descent. We found instances of the "It's Corona Time" aural meme being used in "yellow peril" audio-visual memes where people

of Asian descent were being filmed without their knowledge in an airport, at the doctor's office, and at a university. The "joke" within all of these videos centers on the idea that being in proximity to Chinese and Asian people means that coronavirus is present. In these videos, mock Spanish (Hill, 2008) parodies and "yellow peril" intersected in the same memes. It would be a stretch to accuse the TikTok users that engaged with the "It's Corona Time" aural meme as intending racist denigration. However, the appropriation of non-English accents by English speakers to make a "joke" about Others—in this case people of Asian descent—taps into a "larger system of white racism and its discourses" (Hill, 2008, p. 157).

Another form of aural harmful parody that we observed is what we characterize as aural digital Yellowface. Aural digital Yellowface sees TikTok users utilizing the in-built creative tools and features of the platform to parody Asian accents in English and "Asian sounding words" within the context of coronavirus. For example, we found three videos by the same Asian creator whose content centers on over-exaggerating his "Asianness" by employing a stereotyped Asian talk (e.g., loud tonal dialogue that emphasizes broken English). Arguably, these videos are examples of "implicit yellowface" which "are subtle racist practices such as the use of denigrating humor to portray Asian characters" (Wong, 2020 p. 11; see also Ono & Pham, 2009). What is of note for this research is how other TikTok users—specifically non-Asian users—appropriated this Asian creator's voice by utilizing TikTok's "Use This Sound" feature. Following the digital traces of this Asian creator's audio, by clicking into this feature, we find a significant number of videos of people, often white teenagers and children, appropriating and lip-syncing to this sound in their video creations. Additionally, in some of these videos, we see the white subjects over-dramatizing their face to further embody the caricature that this "Asian sounding" expression represents. Aural digital Yellowface—combined with visual elements of Yellowface—could also be considered an example of "mock Asian," which Chun (2004, p. 263), building on Hill's (1998) work, describes as a "discourse that indexes a stereotypical Asian identity."

In our data, we also saw multiple videos engaging with "digital Blackvoice" (Connor, 2020) for humorous purposes. In one video, a white creator is shown lip-syncing to the popular aural meme of a Black woman's voice saying, "Can I live? Can I fucking live?" (2019). In this video, the white creator uses digital Blackvoice to make their "joke," which was set up using on-screen text that reads: "2020 is going to be my year. January 2020: WWIII, Coronavirus, and Kobe dies" (4 k likes). Similarly, in another video, we see a different white creator using the voice of American rapper Saweetie saying "something fun, something for the summertime," (2021) which is a popular internet reaction GIF. In this audio meme, the white creator refers to the 2019–2020 Australian bushfires by lip-syncing to this digital Blackvoice as the on-screen text reads: "The coronavirus debuting

in Australia while its [sic] been burning for 4 months" (5 k likes). Once again, we find that while the on-screen text appears to be communicating the crux of the joke, the digital Blackvoice is used in such a way that it, in fact, becomes the target of the joke—even if unintended by the creator.

We also observed within the data layers of humorous content that crossover digital Blackface and Sinophobia. For example, during the start of the pandemic, there was a viral meme of Cardi B talking about the pandemic in terms of receiving packages from China and singing out: "Guess what bitch? Haha, coronavirus!" (Cardi B, 2020). This clip of Cardi B became the *Coronavirus Remix* aural meme (Know Your Meme, 2020), wherein people lip-sync and dramatically respond to Cardi B's voice or splice the original video of Cardi B to make their joke about coronavirus. An example is a video that starts with a clip of a baby bat licking a hand and then the video cuts to the remix aural meme of Cardi B (368 k likes). Similarly, we found instances of digital Blackface intersecting with Sinophobia through videos that used footage of actor Idris Elba coughing while eating spicy wings on the popular YouTube series *Hot Ones* (Hot Ones, 2019). These videos employed the footage of Elba to express an overly emotional reaction and used on-screen text such as "mosquitoes when they bite a chinese [sic] n***" (22.5 k likes) and "when your [sic] out eating in china [sic] and you see the server start coughing" (173 k likes). The use of digital blackface in anti-Asian racist memes is a novel practice we observed on TikTok whose cultural significance could be explored in further research.

6. Conclusion

In this article, we have drawn on Stoever's (2016, p. 27) work to examine TikTok as a "technology of the sonic color line" that, like other technological developments, develops and circulates "new acoustic sonic protocols of racialized sounding and listening." By examining different audio-visual memetic media that spread on TikTok during the early days of Covid-19, we have demonstrated how racial and ethnic groups are subjected to racist stereotyping through visual and sonic means on this platform. TikTok, due to its "Use This Sound" feature, facilitates "aural stereotyping" (Stoever, 2016, p. 20) or "linguistic profiling" (Baugh, 2003) like any other social media. As a result, sound on TikTok is a crucial element in enabling the perpetuation of racism on the platform. Our study also builds on the work of scholars that argue that racism online emerges in unique ways that deserve attention (Nakamura, 2002, 2008), especially since racism on social media is co-produced by user engagement and platforms' infrastructure, business practices, and governance (Matamoros-Fernández, 2017; Siapera, 2019).

We also have shown the importance of studying the audio components of memetic culture on social media and presented TikTok as a unique platform to explore the "sonic color line" (Stoever, 2016). Sounds, like images and written text, can reproduce racist systems (Hill, 2008; Stoever, 2016). The racializing impacts of sounds on social media deserve further scholarly attention. Our study adds to the literature that has explored how the racialization of Covid-19 played out online (Abidin & Zeng, 2020; Li & Chen, 2021), and shows how users on TikTok often engage in aural digital Blackface (see also Connor, 2020) and, during the early stages of the Covid-19 pandemic, also engaged in aural digital Yellowface. Aural memes (Kaye et al., 2021) on TikTok such as the viral "It's Corona Time" (2020) are contemporary examples of what Hill (2008) has documented as "mock Spanish," a covert racist discourse that works to sustain a racial hierarchy in which whiteness is on top. By including some examples from Australian users in our analysis, we have also shown how global trends are appropriated in local contexts and demonstrated the importance of situating racializing practices on social media in specific national contexts with specific histories of race and racism.

Humor that punches down on historically marginalized groups causes psychological harm to those who are joked about and has a negative impact on these groups including a silencing effect, the denial of equal social status, and even violence (Ford et al., 2014; Thomae & Viki, 2013). Humorous expression linked to histories of violence and discrimination is particularly damaging since it contributes to broader social harms by reinscribing structural injustice in unequal societies where overt forms of abuse are less tolerated socially and by the law (Bell, 2021). In addition, the positionality of those involved in humor—both that of the jokester and the target of the joke—is important to assess when humor harms (Davis & Ilott, 2018; Pérez, 2017). As the history of Blackface and Yellowface tell us, an important element of the racist nature of these parodies was that white actors were the ones impersonating "Blackness" and "Asianness" in ways that reduced racial minorities to mere stereotypes. On TikTok, media celebrities, artists, and performers are not the only ones engaging with these harmful parodies; everyday people also engage in novel permutations of Yellowface and Blackface. It is precisely this everyday-ness of racist stereotyping, which is facilitated through TikTok's technical features and its lack of governance of humor that harms, which allows racial ideologies to be (re)produced. It is also because listening is a "historical and material practice, one both lived and artistically imagined" (Stoever, 2016, p. 14), that sonic stereotyping on TikTok spreads unchecked among users that have never been subjects of racialization. By engaging in audio-visual memetic media that reduced people of Asian descent as mere caricatures or portrayed them as a danger to others, TikTok users—mostly white people—willingly and unwillingly contributed to broader media racist discourses that dehumanized Chinese and Asian people during the pandemic (Mallapragada, 2021; Tan et al., 2021). These dehumanizing practices on TikTok,

in combination with entrenched historical racist animosity against people of Asian descent in countries such as the United States and Australia, created a breeding ground for physical attacks that took place against this racial minority during Covid-19. We are not claiming a direct causal link between racist stereotyping on TikTok and real-world violence. Rather, we argue that the harmful nature of humorous expression on social media needs to be determined in relation to power, history, and factoring broader systemic inequality as a background condition.

Acknowledgments

Conflict of Interests

The authors declare no conflict of interests.

References

Abidin, C. (in press). *TikTok and youth cultures*. Emerald Publishing.

Abidin, C., & Kaye, D. B. V. (2021). Audio memes, earworms, and templatability: The "aural turn" of memes on TikTok. In C. Arkenbout, J. Wilson, & D. de Zeeuw (Eds.), Critical meme reader: Global mutations of the viral image (pp. 58–68). Institute of Network Cultures.

Abidin, C., & Zeng, J. (2020). Feeling Asian together: Coping with #COVIDRacism on subtle Asian traits. *Social Media + Society*, *6*(3), 1–5. https://doi.org/10.1177/2056305120948223

Ahmed, S. (2017). *Living a feminist life*. Duke University Press.

Ashley, W. (2014). The angry Black woman: The impact of pejorative stereotypes on psychotherapy with Black women. *Social Work in Public Health*, *29*(1), 27–34. https://doi.org/10.1080/19371918.2011.619449

Australian Bureau of Statistics. (2016). *2016 census quickstats: Strathfield*. https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA17100

Bakare, L. (2020, June 10). Netflix pulls The Mighty Boosh and The League of Gentlemen over Blackface. *The Guardian*. https://www.theguardian.com/tv-and-radio/2020/jun/10/netflix-pulls-the-mighty-boosh-and-the-league-of-gentlemen-over-blackface

Bartolo, L. (2021). "Eyes wide open to the context of content": Reimagining the hate speech policies of social media platforms through a substantive equality lens. *Renewal: A Journal of Social Democracy*, *29*(2), 39–51.

Baugh, J. (2003). Linguistic profiling. In J. P. Hutchison, S. Makoni, G. Smitherman, A. F. Ball, & A. K. Spears (Eds.), *Black linguistics: Language, society, and politics in Africa and the Americas* (Vol. 36, pp. 155–168). Routledge.

Bell, M. C. (2021). John Stuart Mill's harm principle and free speech: Expanding the notion of harm. *Utilitas*, *33*(2), 162–179. https://doi.org/10.1017/S0953820820000229

Brock, A. J. (2020). *Distributed Blackness: African American cybercultures*. New York University Press.

Brown, A. *(2019). Pleasure activism: The politics of feeling good*. AK Press.

Can I live? Can I fucking live?. (2019). [Aural Meme]. TikTok. https://www.tiktok.com/music/original-sound-7060196790137752366

Cardi B. [@iamcardib]. (2020, March 11). *Ya keep playing I'm deadass FUCKIN SCARED. I'm stocking up on food* [Post]. Instagram. https://www.instagram.com/p/B9kvv79AAUw/?hl=en

Chun, E. W. (2004). Ideologies of legitimate mockery: Margaret Cho's revoicings of mock Asian. *Pragmatics*, *14*(2/3), 263–289. https://doi.org/10.1075/prag.14.2-3.10chu

Collins, P. H. (2008). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment* (1 ed.). Routledge.

Connor, M. (2020, September 29). "Girl, don't do it": Digital Blackvoice on TikTok. *MediaCommons*. http://mediacommons.org/imr/content/girl-dont-do-it-digital-blackvoice-tiktok

Davies, H., & Ilott, S. (Eds.). (2018). *Comedy and the politics of representation: Mocking the weak*. Palgrave Macmillan.

DeCook, J. R., & Yoon, M. H. (2021). Kung flu and roof Koreans: Asian/Americans as the hated other and proxies of hating in the white imaginary. *Journal of Hate Studies*, *17*(1), 119–132. https://doi.org/10.33972/jhs.199

Department for Digital, Culture, Media & Sport. (2021). *Regulation: Draft online safety bill* https://www.gov.uk/government/publications/draft-online-safety-bill

Dias Oliva, T., Antonialli, D. M., & Gomes, A. (2020). Fighting hate speech, silencing drag queens? Artificial intelligence in content moderation and risks to LGBTQ voices online. *Sexuality & Culture*, *25*(2), 700–732. https://doi.org/10.1007/s12119-020-09790-w

Du Bois, W. E. B. (1903). *The souls of Black folk*. Penguin.

Essed, P. (1991). *Understanding everyday racism: An interdisciplinary theory*. SAGE.

Ewen, S., & Ewen, E. (2011). *Typecasting: On the arts and sciences of human inequality*. Seven Stories Press.

Ford, T. E., Woodzicka, J. A., Triplett, S. R., Kochersberger, A. O., & Holden, C. J. (2014). Not all groups are equal: Differential vulnerability of social groups to the prejudice-releasing effects of disparagement humor. *Group Processes & Intergroup*

Relations, *17*(2), 178–199. https://doi.org/10.1177/1368430213502558

Gelber, K., & McNamara, L. J. (2016). Anti-vilification laws and public racism in Australia: Mapping the gaps between the harms occasioned and the remedies provided. *UNSW Law Journal*, *39*(2). https://doi.org/10.3316/agispt.20170120

Gillespie, T. (2018). *Custodians of the internet: Platforms, content moderation, and the hidden decisions that shape social media* (1st ed.). Yale University Press.

Girl, don't do it. (2020). [Aural Meme]. TikTok. https://www.tiktok.com/music/original-sound-6776283960856169222

Gover, A. R., Harper, S. B., & Langton, L. (2020). Anti-Asian hate crime during the Covid-19 pandemic: Exploring the reproduction of inequality. *American Journal of Criminal Justice*, *45*(4), 647–667. https://doi.org/10.1007/s12103-020-09545-1

Green, J. L. (2006). *Digital Blackface: The repackaging of the Black masculine image* [Unpublished Master's thesis]. Miami University. https://etd.ohiolink.edu/apexprod/rws_etd/send_file/send?accession=miami1154371043&disposition=inline

Hage, G. (2014). Continuity and change in Australian racism. *Journal of Intercultural Studies*, *35*(3), 232–237. https://doi.org/10.1080/07256868.2014.899948

Hill, J. H. (2008). *The everyday language of white racism*. Wiley-Blackwell.

Hill, J. H. (1998). Language, race, and white public space. *American Anthropologist*, *100*(3), 680–689. https://doi.org/10.1525/aa.1998.100.3.680

hooks, b. (2004). *We real cool: Black men and masculinity*. Psychology Press.

Hot Ones. (2019, August 1). *Idris Elba wants to fight while eating spicy wings* [Video]. YouTube. https://www.youtube.com/watch?t=1165&v=tYRS0aXaBC8&feature=youtu.be

It's corona time. (2020). [Aural Meme]. TikTok. https://www.tiktok.com/music/It%27s-Corona-Time-6806826527284529153

Jackson, L. M. (2019). *White Negroes: When cornrows were in vogue… and other thoughts on cultural appropriation*. Beacon Press.

Kates, D. (2017). *Yellow tokens: From racist depictions to token minorities* [Unpublished Bachelor thesis]. Columbia College Chicago. https://digitalcommons.colum.edu/cgi/viewcontent.cgi?article=1017&context=cultural_studies

Kaye, D. B. V., Rodriguez, A., Langton, K., & Wikström, P. (2021). You made this? I made this: Practices of authorship and (mis)attribution on TikTok. *International Journal of Communication*, *15*, 3195–3215. https://doi.org/1932–8036/20210005

Kaye, D. B. V., Zeng, J., & Wikström, P. (2022). *TikTok: Creativity and culture in short video*. Polity.

Keil, R., & Ali, H. (2006). Multiculturalism, racism and infectious disease in the global city: The experience of the 2003 SARS outbreak in Toronto. *Topia: Canadian Journal of Cultural Studies*, *16*, 23–49. https://doi.org/10.3138/topia.16.23

Kibria, N. (2000). Race, ethnic options, and ethnic binds: Identity negotiations of second-generation Chinese and Korean Americans. *Sociological Perspectives*, *43*(1), 77–95. https://doi.org/10.2307/1389783

Know Your Meme. (2020). *Coronavirus remix*. https://knowyourmeme.com/memes/coronavirus-remix

Know Your Meme. (2021). *Run*. https://knowyourmeme.com/memes/run

Lee, J. (2019). *Yellowface performance: Historical and contemporary contexts*. Oxford Research Encyclopedia of Literature. https://doi.org/10.1093/acrefore/9780190201098.013.834

Lee, R. G. (2011). *Orientals: Asian Americans in popular culture*. Temple University Press. (Original work published 1999)

Li, H., & Chen, X. (2021). From "Oh, you're Chinese…" to "No bats, thx!": Racialized experiences of Australian-based Chinese queer women in the mobile dating context. *Social Media + Society*, *7*(3), 1–11. https://doi.org/10.1177/20563051211035352

Lockyer, S., & Pickering, M. (2005). *Beyond a joke: The limits of humour*. Palgrave Macmillan.

Lott, E. (1992). Love and theft: The racial unconscious of Blackface minstrelsy. *Representations*, *39*, 23–50. https://doi.org/10.2307/2928593

Mallapragada, M. (2021). Asian Americans as racial contagion. *Cultural Studies*, *35*(2/3), 279–290. https://doi.org/10.1080/09502386.2021.1905678

Matamoros-Fernández, A. (2017). Platformed racism: The mediation and circulation of an Australian race-based controversy on Twitter, Facebook and YouTube. *Information, Communication & Society*, *20*(6), 930–946. https://doi.org/10.1080/1369118X.2017.1293130

Meta. (n.d.). Hate speech. https://transparency.fb.com/en-gb/policies/community-standards/hate-speech

Meyer, R. (2016, August 13). The repeated racism of snapchat. *The Atlantic*. https://www.theatlantic.com/technology/archive/2016/08/snapchat-makes-another-racist-misstep/495701

Milner, R. M. (2016). *The world made meme*. MIT Press.

Molla, R. (2021, March 1). Posting less, posting more, and tired of it all: How the pandemic has changed social media. *Vox*. https://www.vox.com/recode/22295131/social-media-use-pandemic-covid-19-instagram-tiktok

Nakamura, L. (2002). *Cybertypes: Race, ethnicity, and identity on the Internet*. Routledge.

Nakamura, L. (2008). *Digitizing race: Visual cultures of the internet* (Vol. 23). University of Minnesota Press.

Ono, K. A., & Pham, V. N. (2009). *Asian Americans and the media*. Polity.

Parham, J. (2020). *TikTok and the evolution of digital Blackface*. Wired. https://www.wired.com/story/tiktok-evolution-digital-blackface

Pérez, R. (2017). Racism without Hatred? Racist humor and the myth of "colorblindness." *Sociological Perspectives*, *60*(5), 956–974. https://doi.org/10.1177/0731121417719699

Phillips, W. (2019). It wasn't just the trolls: Early internet culture, "fun," and the fires of exclusionary laughter. *Social Media + Society*, *5*(3). https://doi.org/10.1177/2056305119849493

Rentschler, C. A., & Thrift, S. C. (2015). Doing feminism in the network: Networked laughter and the "binders full of women" meme. *Feminist Theory*, *16*(3), 329–359. https://doi.org/10.1177/1464700115604136

Roberts, S. T. (2016). Commercial content moderation: Digital laborers' dirty work. In S. U. Noble & B. M. Tynes (Eds.), *The intersectional internet: Race, sex, class, and culture online* (pp. 147–159). Peter Lang.

Run. (2020). [Aural Meme]. TikTok. https://www.tiktok.com/music/Run-6456677255732497165

Shifman, L. (2014). *Memes in digital culture*. MIT Press.

Siapera, E. (2019). Organised and ambient digital racism: Multidirectional flows in the Irish digital sphere. *Open Library of Humanities*, *5*(1). https://doi.org/10.16995/olh.405

Siapera, E., & Viejo-Otero, P. (2021). Governing hate: Facebook and digital racism. *Television & New Media*, *22*(2), 112–130. https://doi.org/10.1177/1527476420982232

Siebert, V. (2016, November 22). Twitter user has her account suspended over viral "whiteface" video. *Daily Mail Online*. http://www.dailymail.co.uk/~/article-3961664/index.html

Something fun, something for the summertime. (2021). [Aural Meme]. TikTok. https://www.tiktok.com/music/original-sound-6997132325825874694

Stoever, J. L. (2016). *The sonic color line: Race and the cultural politics of listening*. New York University Press.

Sundén, J., & Paasonen, S. (2020). *Who's laughing now? Feminist tactics in social media*. MIT Press.

Tan, X., Lee, R., & Ruppanner, L. (2021). Profiling racial prejudice during Covid-19: Who exhibits anti-Asian sentiment in Australia and the United States? *Australian Journal of Social Issues*, *56*, 464–484. https://doi.org/10.1002/ajs4.176

This is for Rachel. (2019). [Aural Meme]. TikTok. https://www.tiktok.com/music/this-is-for-rachel-act-up-by-trron-on-soundcloud-6770727654644550405

Thomae, M., & Viki, G. T. (2013). Why did the woman cross the road? The effect of sexist humor on men's rape proclivity. *Journal of Social, Evolutionary, and Cultural Psychology*, *7*(3). https://doi.org/10.1037/h0099198

TikTok. (n.d.). *Community guidelines*. https://www.tiktok.com/community-guidelines?lang=en#29

Wang, C., Horby, P. W., Hayden, F. G., & Gao, G. F. (2020). A novel coronavirus outbreak of global health concern. *Lancet*, *395*(10223), 470–473. https://doi.org/10.1016/S0140-6736(20)30185-9

Weimann, G., & Masri, N. (2020). Research note: Spreading hate on TikTok. *Studies in Conflict & Terrorism*. Advance online publication. https://doi.org/10.1080/1057610X.2020.1780027

WHO. (2020). *Origin of SARS-CoV-2*. WHO. https://apps.who.int/iris/bitstream/handle/10665/332197/WHO-2019-nCoV-FAQ-Virus_origin-2020.1-eng.pdf

Wong, T. S. T. (2020). Crazy, rich, when Asian: Yellowface ambivalence and mockery in crazy rich Asians. *Journal of International and Intercultural Communication*, *15*(1), 1–18. https://doi.org/10.1080/17513057.2020.1857426

Yiu, M. T. (2018). *"Are we what we eat?" Negotiating identities through cuisine and consumption: A thing theory approach to Alison Wong's* As The Earth Turns Silver [Unpublished Master's thesis]. Stockholm University.

Zhang, C. (2008). From Sinophilia to Sinophobia: China, history, and recognition. *Colloquia Germanica*, *41*(3), 97–110.

About the Authors

Ariadna Matamoros-Fernández is a senior lecturer in digital media in the School of Communication at the Queensland University of Technology, chief investigator at the Digital Media Research Centre, and associate investigator at the national ARC Centre of Excellence for Automated Decision-Making and Society. Her research explores social media cultures and platform governance.

Aleesha Rodriguez is a research fellow at the ARC Centre of Excellence for the Digital Child, researching public imaginaries of future digital media technologies. Aleesha completed their PhD at the Digital Media Research Centre, Queensland University of Technology, and their broader research agenda explores how people and technology, mutually and dynamically, shape each other.

Patrik Wikström is a professor of communication and media studies at QUT and the director of QUT's Digital Media Research Centre. His research is focused on how digital technologies shape music economies and cultures and the role of sound in digital culture.

Article

Social Media Use and Migrants' Intersectional Positioning: A Case Study of Vietnamese Female Migrants

Linh Le-Phuong [1,*], Lutgard Lams [2], and Rozane De Cock [1]

[1] Institute for Media Studies, KU Leuven, Belgium
[2] Faculty of Arts, KU Leuven – Brussels, Belgium

* Corresponding author (le.plinh6@gmail.com)

Abstract

Social media can benefit migrant communities in various ways since the sense of belonging and social inclusion have increasingly been facilitated by online participatory activity over the last decade. However, participating in social media requires not only physical thresholds such as access to internet-connected devices but also intangible assets such as linguistic skills, education, and time. As these resources are not equally available to all members of society, social media adoption differs depending on the users' positioning. Within the intersectional framework, we explore how social circumstances influence the social media use of female migrants from Vietnam. Research on migrants' social media use rarely focuses on migrants' multilayers of identities and intersectionality, nor does it zoom in on different (in)voluntary migration routes within Asia (in contrast to South–North migration). Our case study focuses on two groups of Vietnamese female migrants: those who had migrated to China but returned to Vietnam; and those who married Taiwanese men and still live in Taiwan. Seventeen female migrants were interviewed about their migratory experience and social media use. Our empirical data reveal that the social media use patterns of the Vietnamese female migrants are impacted by their intersectional identities of being female, (returned) migrants of a specific social class, ethnicity, education level, and age group. Their use is steered by different motivations and often limited by social positioning but only seldom are social media used as a channel to raise public awareness or to express migration-related issues.

1. Introduction

Social media can bring both advantages and disadvantages for users from diverse backgrounds all around the globe. In particular, when it concerns migrants, communication technology can provide them with new opportunities to simultaneously engage in the public spheres of the sending and the receiving countries, enforcing their sense of belonging in both places (Marlowe et al., 2017). However, varying access levels to technological devices and social media create different realities for different social groups. Lack of access means

being less informed, and subsequently, having less social power (Jakubowicz, 2007; van Dijk, 1995). Social media's powerful reach is a double-edged sword that can enhance social cohesion and inclusion of different groups. However, it can also deepen and reinforce social inequalities, "creating an uneven landscape of access which can be influenced by economic status, literacy and education levels, language barriers and age" (Kennan et al., 2011, as cited in Marlowe et al., 2017, p. 88). However, when migrants are studied, they are often classified in rigid legal categorisations, and the wider context such as class, gender, ethnicity, and marital status

is ignored in understanding their movement (Erdal & Oeppen, 2018).

Similarly, scholarship on migrants' social media use rarely focuses on the migrants' multilayers of identities and migratory experiences that shape and inform such use. Media scholars have identified how social media use can contribute to the lives of female migrants (An et al., 2020; Wu & Phung, 2017), but as yet, studies have not focussed on how differences, such as social and economic position, gender, age, ethnicity, digital literacy, amongst migrants influence their use. How does the migrants' position in the host society foster or dissuade their social media participation? Is their migratory motivation a factor of influence? And do the migrant's gender and the gendered roles in their residing location impact their use? In sum, how do multiple identities such as gender, class, race, ethnicity, and others affect the outcome of their social media participation? Vietnamese female migrants (VFMs) to East Asia present an interesting case study because of their diverse migration routes, the multifaceted dimensions of their migratory experience, and the (intra-Asia) hierarchical power relations between the host society and themselves. Anchoring in the concept of intersectionality (Crenshaw, 1991; Yuval-Davis, 2011), we unpack and compare the complex identities of the VFMs, who migrated to either China or Taiwan, and analyse how their positionalities influence their social media participation and the social inclusion in their residing location. In doing so, this article contributes to the intersection of media, migration, and gender research in an understudied geographical region (Piper & Lee, 2016). We argue that social media can weaken social cohesion to a certain extent because the VFMs' varied social positionings and physical locations can limit their social media participation. At the same time, social ties in real life and the women's own agency can also counter some barriers created by social media's ecology. Obviously, the use of smartphones and social media can also facilitate migration during the journey and after the arrival at the host country to keep in touch with the home nation (Eriksen, 2020).

In our study, 17 in-depth interviews conducted with VFMs give voice to their narratives and provide insight into their choices regarding social media use. The collected data further the understanding of different migrant groups' social media adoption, i.e., the VFMs to East Asia. Additionally, the article answers Huang's (2020, p. 78) call to extend scholarship beyond the "linear and one-way migration from less developed to more developed countries" and explore female migration in the South–South pattern, which has developed significantly lately (Cheng, 2021; Grillot, 2011).

2. Female Migration from Vietnam to China and Taiwan

The VFMs in this study migrated to China and Taiwan for various voluntary and involuntary reasons, yet their experience cannot be described as just one or another but should be understood on the spectrum of voluntariness and involuntariness. Forced and voluntary migration exists as a continuum of experience, where the "voluntariness'' fluctuates, and the labelling is problematic because it cannot capture the concept comprehensively (Erdal & Oeppen, 2018). The continuum of migratory experience of the VFMs to China is illustrated through their journey: They voluntarily wish to migrate for better employment opportunities—but not for marriage purposes. Understanding this wish of many women from rural areas, especially the young and naïve, human traffickers deceive them by promising a good "clean" job in China (not involving prostitution) and later sell them to brothels or Chinese families looking for wives for their sons. The VFMs' voluntary position becomes involuntary once they find out that they will remain in China and be forced to marry or engage in sex work.

On the other hand, the VFMs to Taiwan in this study sought to migrate primarily for marriage, which for many was the result of mutual love, but for some, the legitimate ticket to improved employment prospects and economic stability. Even though these were "voluntary'' decisions, many migrated to Taiwan because they had no better choice at home. Arguably, their social circumstances compelled them to marry transnationally, so some level of "involuntariness" is embedded in their "voluntariness.'' Thus, these two groups possess different levels of agency at different points in their migration and (re-)settlement process, continually moving on the spectrum between the passive and active, voluntary and involuntary extremes. In this study, the VFMs who went to China returned to Vietnam and underwent a different (re-)integration process than those who migrated to Taiwan. As Vijeyarasa (2010) pointed out, this reintegration process is largely influenced by the Vietnamese gender norms and hegemonic discourse about female emigration, resulting in the re-stigmatisation of returnees. Both groups are VFMs, but their migration motivations differ and conflate at several points. By recognising and analysing these different kinds of subjectivities, we can avoid "attributing fixed identity groupings to the dynamic processes of positionality and location on the one hand and the contested and shifting political construction of categorical boundaries on the other" (Yuval-Davis, 2006, p. 200). This study includes both routes to demonstrate, on the one hand, that the VFMs' projects of belonging are situated and multi-layered (Yuval-Davis, 2011) and, on the other hand, that intersectionality (Crenshaw, 1991) can influence each individual's social media use, according to the VFM's positioning in their specific context. As an analytical framework, intersectionality offers a comprehensive understanding of a person's identity through the combination of social, political, and cultural identities and how such amalgamation results in discrimination or privilege in a person's life. The next sections briefly describes the migration trends and contextualise the VFMs' multiple identities and the oppression dynamics that some face.

2.1. Vietnamese Female Migration to China

China ended its one-child policy in 2016 because of the social consequences it caused, namely abandonment of baby girls, gender-selective abortion, a skewed sex ratio, a growing number of bachelors, and an ageing population (Foundation Scelles, 2019; Lhomme et al., 2021). With a surplus of approximately 31.64 million men (Lhomme et al., 2021), female trafficking from South-East Asia (SEA) and Vietnam to China has become prevalent in recent decades (Foundation Scelles, 2019, p. 456; Stöckl et al., 2017). However, there is limited data because of its irregular patterns and unregistered movement. Vietnam reported 9,142 trafficked persons from 2006 to 2015 (Van Nguyen et al., 2020), and between 2008 and 2016, 8,366 trafficked persons have since returned to Vietnam (International Organization for Migration, 2016), although the real number could be much higher. An estimated 80% of trafficked cases are to China (Blue Dragon, 2021), and there are immeasurable undocumented Vietnamese marriage migrants (Su, 2013). The Chinese Xinhua News Agency indicates that there are over 100,000 VFMs married to Chinese men (Wei, 2020). Although we acknowledge that female migration to China is not always related to involuntary trafficking and can involve loving relationships, the first group of participants in this study consists of VFMs who returned to Vietnam after a forceful, unhappy migratory experience in China.

2.2. Vietnamese Female Migration to Taiwan

The success of Taiwanese family planning has brought the fertility rate down to one of the lowest birth rates in the world, about 1.2 births per woman (Worldometer, 2020). Due to the societal progress that made Taiwanese women remain single longer to strive for careers in the cities, Taiwanese men from rural areas have difficulty finding a life partner (Bélanger & Wang, 2012; Wang, 2010). Hence, Taiwan has attracted VFMs as marriage migrants through commercial matchmaking since the early 90s. "Globalisation and unequal economic development between countries are the major forces driving these international marriages" (Wu & Phung, 2017, p. 380). However, in the last decade, education and economic exchange between Vietnam and Taiwan has diversified the backgrounds of the VFMs who emigrate to Taiwan. Nowadays, Vietnamese women and Taiwanese men can meet organically in professional and educational settings, resulting in marriages of choice. The total number of VFMs in Taiwan, as of January 2021, is 155,942 (Ministry of Interior, 2021), and they remain the largest group of marriage migrants from SEA in Taiwan (Cheng, 2021). The second group of participants in this article includes VFMs who have married Taiwanese men and currently reside on the island.

2.3. Intersectionality of Vietnamese Female Migrants

Marriage migration from Vietnam to China and Taiwan is highly gendered (Bélanger & Wang, 2012; Blue Dragon, 2021; Cheng, 2021; Grillot, 2011); this female migration flow is crucially affected by gender structures, cultural systems, and national power relations between the countries: Certain Taiwanese men wish to marry women from a poorer country to feel "superior" (Bélanger & Wang, 2012) and similarly, numerous Chinese men seek wives who are submissive, docile, and obedient to maintain the gendered dynamics (Lhomme et al., 2021). Confucian tenets are deeply rooted in Vietnam (Vijeyarasa, 2010); these tenets are also highly appreciated in China and Taiwan. These two destinations also attract female migrants from Vietnam because of so-called marital hypergamy (Bélanger & Wang, 2012). Since Chinese/Taiwanese men in rural areas and with few financial resources struggle to find a local spouse who is interested in marrying "up," they resort to looking for partners from countries with lower economic power, where the "bride price" is deemed cheaper (Bélanger & Wang, 2012; Lhomme et al., 2021).

VFMs' intersectional identities, particularly gender, class, origin, and ethnicity, construct the power structure and inequalities that determine and impact their migratory experience and their social media participation, as will be shown further. Firstly, VFM's migratory experience is gendered because of the female deficit in China and Taiwan. The VFMs were able to migrate because of their female biological ability to perform reproductive labour and the necessary social reproduction to maintain and regenerate society, e.g., childrearing, housework, and sustaining familial and kinship ties (Constable, 2009; Piper & Lee, 2016). Secondly, intermeshed with the gender aspect, the age of the VFMs is also an important attribute since their movement was to boost population growth in the destinations. Hence, they often migrate and are only welcomed while being of childbearing age. Thirdly, their social background, which ultimately ties to class division, guides their migration motivation. Many VFMs come from less developed areas without employment prospects. Hence, migration to a wealthier country means opportunities for economic improvement. Migrating involves using resources that are not equally available to all, so in the cultural context of Vietnam, where migration for women is often related to marriage, transnational marriage migration poses a logical pathway for VFMs to go abroad. However, as "people are not scattered randomly along the different axes of power of different social divisions" but "tend to concentrate in a specific location of another one" (Yuval-Davis, 2006, p. 200), the areas where the VFMs come from are often located in rural and mountainous terrains of Vietnam where a large number of ethnic minorities are concentrated. Here, different axes of power emerge between the two groups: For VFMs migrating to China, ethnicity presents a dimension in their social difference,

as over 60% of trafficked women in Vietnam are from ethnic groups (Blue Dragon, 2021), while these groups account for only 15% of the Vietnamese population; for VFMs migrating to Taiwan, most belong to the Kinh ethnicity (85% of the population) and often originate from southern Vietnam. The local kinship tradition of valuing both maternal and paternal sides as a social expectation acts as a driver and duty for them to migrate in search of better living conditions not only for themselves but also their family members (Tang et al., 2011). These two groups of VFMs each hold distinctive social particularities, yet both undergo forms of oppression because of gender subordination, racial hierarchy, and class division, situated within particular social norms and local belief systems. Other studies have shown that power works to suppress female migrant groups through manifestations in policies (Bonjour & de Hart, 2013; Cheng, 2021), social and legal stigmas (Huang, 2020; Vijeyarasa, 2010), and female body commodification (Bélanger & Wang, 2012; Wang, 2010). The significance of intersectionality lies precisely in criticising how power works through multiple layers and affects collectivities and communities differently (Yuval-Davis, 2011).

3. Social Media Use and Social Cohesion

Social media as a form of communication plays an important role in connecting and maintaining transnational linkages in personal, familial, and professional relationships. A variety of social media platforms have burgeoned to cater to their respective customer bases and have become critical communicative technologies for individuals to feel connected and like they belong, especially amongst "migrant communities whose lives are often characterised by multi-scalar relations and attachments across multiple forms of identity" (Marlowe et al., 2017, p. 87). For people from migrant backgrounds, a sense of belonging can be forged through localised social interactions, which are increasingly online nowadays, and can enhance the social cohesion of the society to which they migrate. As the media stands guard to social power (van Dijk, 1995), with the major shift to digital communication, access to social media becomes fundamental in being heard and included in the wider society. Constructing and maintaining social cohesion becomes inherently synchronous with social media usage.

Although social media and digital communications present an exciting new reality of connectivity for migrant communities, the question of access and subsequent inclusion into the (online) society has been raised by previous research (Jakubowicz, 2007; Marlowe et al., 2017; van Dijck, 2013). Firstly, scholarship has pointed out that online communities are often based around a shared ethnicity or particular social group (An et al., 2020; Willem & Tortajada, 2021; Wu & Phung, 2017), so it is unclear whether social media can facilitate interactions beyond limited circles and create linkages that are socially cohesive within a new community. Secondly,

uneven access to digital technologies and social media resources can enhance the "digital divide" (Dekker & Engbersen, 2014) and amplify the existing social divisions within society (Marlowe et al., 2017). Various attributes such as gender, ethnicity, linguistic skills, class, and media/digital literacy can act as direct or indirect barriers to, or enhancers of, the online space for many (Dekker & Engbersen, 2014; Le & Nicolaisen, 2021; Marlowe et al., 2017). Thirdly, the sense of belonging generated by social media for migrants is to be understood in terms of their situated positions. All these critical questions need to be taken into account when examining the nexus of social media use and migrant communities: Several factors and overlapping identities determine the use habits of the social groups under discussion.

In the context of VFMs in Taiwan, where the quality of life is deemed better than in Vietnam and access to the internet and digital devices is extensive, it is linguistic skills that tend to present a barrier to participation in the public sphere. Apart from womanly duties of bearing and rearing children, VFMs and marriage migrants from SEA also have to spend extra time studying Mandarin in evening classes, if their husband and in-laws allow (Hsia, 2015). This might give the impression that VFMs who have returned to Vietnam from China would have an easier time reintegrating without the language barrier, but they face a different kind of dilemma. Social stigma equates the migration of women with prostitution (Vijeyarasa, 2010), making it difficult for them to return to their place of origin. Some VFMs are denied membership of the local community because they are believed to have "prostituted themselves" in China (Ng et al., 2021). Furthermore, as social media adoption and meaningful use are deeply class-based in Vietnam, most citizens present in this online space are younger, educated urbanites (Le & Nicolaisen, 2021), in contrast to many VFMs who come from rural areas with less education. Thus, understanding the VFMs' adoption of social media requires one to appreciate their gendered, racialised, and classed social relations of their specific positions.

4. Method

We conducted qualitative in-depth interviews to gain insights into the VFMs' social media use and the factors that influence their frequency of use. Seventeen Vietnamese women agreed to participate: 12 VFMs residing in Taiwan and 5 in Vietnam. The discrepancy between the two groups is due to the difficulty of accessing the VFMs to China, as their migratory experience had been traumatic and the NGO that cooperated with the study could only provide a limited number of contacts, those they deemed stable enough to be interviewed. We acknowledge that the choice of this particular NGO, one which assists returnees, may have influenced the profile of the participants for this study; however, this was the most appropriate way to conduct the research since the NGO acted as an extra screening layer to

minimise distress for participants. Empirical data for this group is extremely limited and difficult to gain access to (see also Stöckl et al., 2017), hence the limited sample size. However, the data is rich: The women from both groups have diverse backgrounds and were different in age, socio-economic situation, employment status, and education level (Tables 1 and 2).

All interviews were conducted by Linh Le-Phuong, who is a native speaker of Vietnamese. The phone and face-to-face interviews lasted between one and a half to six hours, where five VFMs in Taiwan invited the interviewer to stay longer at their restaurant/home to allow the interview to be held while the interviewee was working. The participants' daily activities were observed, and toward the end of the interviews, once trust was built, the answers became more extensive. Before interviewing the participants, the interviewer also "added" them as "friends" on their respective social media platform to develop a positive relationship necessary for trust-building (DiCicco-Bloom & Crabtree, 2006).

The VFMs to China were recruited through an NGO in Vietnam that worked with survivors of trafficking. The VFMs to Taiwan were recruited through the existing social network of Linh Le-Phuong: Once a key gatekeeper participant was identified, the rest of the sample was selected using snowball sampling. Five cities in Taiwan (Kaohsiung, Taichung, Taipei, Tainan, and Taoyuan—

cities with a relatively high number of marriage migrants) and one city in Vietnam (Hanoi) were selected for the interviews between October 2019 and February 2020. The Ethics Committee of KU Leuven University approved the study's ethical protocol on 4 October 2019 (Dossier No. G-2019 09 1749).

The interviews were semi-structured with generic and specific questions. Before asking about the VFM's experience with social media, the author asked about their background and migration journeys. The next part concentrated on the current situations and VFM's future aspirations. These two parts acted as a "warm-up" section before the questions about their social media use. Finally, the participants were asked to describe any issues they might have had when participating in social media and if such platform(s) could be the space for them to voice collectively as a community of (returned) female migrants. Because the women's own narratives were essential, we examined their understanding of the topic and the reasoning behind their actions. A compensation of VND 500,000 (20 euros) was offered in appreciation of each participant's time and effort. This was not revealed before the interviews to avoid it being the sole motivation for participation which may have resulted in biased answers.

The method deployed takes both characteristics of thematic analysis (Fugard & Potts, 2019) and grounded

Table 1. Basic socio-economic information of the VFMs to Taiwan (n = 12).

Age	25–40	4	
	Over 40	8	
Ethnicity	Kinh (majority of Vietnamese)	12	
Employment Status	Support husband's family business	1	Only one without an outside job; six support husbands' businesses while working
	White-collar job	7	
	Blue-collar job	4	
Education	Did not finish high school	2	
	High school	4	
	Bachelor degree	5	
	Master's degree	1	

Table 2. Basic socio-economic information of the VFMs to China (n = 5).

Age	25–30	4	
	Over 30	1	
Ethnicity	Kinh	3	
	Other	2	
Employment Status	Self-employed	3	Combined with pregnancy and childcare
	White-collar job	1	
	Blue-collar job	1	
Education	Did not finish secondary school	1	
	High school	3	
	Bachelor degree	1	

theory approach (Glaser & Strauss, 2017). As an inductive method, grounded theory prevents preconceptions and allows room for new information and insight, while thematic analysis can "provide a rich and detailed, yet complex account of data" (Braun & Clarke, 2006, p. 78). While the data collection and transcriptions were going on, thematic analysis was applied to locate the general themes within the answers. Following Braun and Clarke's (2006) six phases of thematic analysis (familiarisation with data during the transcribing, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the report), over 500 pages of transcriptions were coded line by line and categorised into a set of themes and sub-themes. After three rounds of coding informed by the theoretical concepts of intersectionality (Crenshaw, 1991; Yuval-Davis, 2011) and social cohesion (Jakubowicz, 2007), the most relevant themes were generated and analysed.

5. Findings

Our findings show that all the VFMs use different social media platforms with a range of frequencies and diverse goals. The selected platforms are specific to their locations, i.e., VFMs in Vietnam use a local version of Facebook called Zalo while VFMs in Taiwan use LINE, a popular Taiwanese social networking app. Both groups use Facebook and other platforms, such as Instagram, WeChat, Viber, and YouTube, which tend to be less popular among these participants. To protect the participants' privacy, we use pseudonyms throughout this article, and all quotes have been translated from Vietnamese to English by Linh Le-Phuong. Table 3 details the social context of the interviewees referred to in this article.

Our analysis reveals two emerging patterns relating to social media use amongst the VFMs that are influenced by their intersectional identities of being female, (returned) migrants of a specific social class, ethnicity, education level, and age group. The VFMs all use social media for different purposes but seldom as a channel to

express opinions and sentiments about perceived injustices or opportunities to a wider public.

5.1. Minimum and Reduced Use of Social Media and Reasons Behind Limited Use

Using social media requires various resources which are not equally available to all the VFMs, and many factors can reduce their ability to use social media in a meaningful way, i.e., for voicing migration-related issues they may encounter in their daily lives and/or being included in the larger communities at their place of residence. One resource that seems to be particularly scarce for the VFMs of both groups is time. All of the participants in the study are employed, one way or another, to different degrees: Many VFMs in Taiwan also provide support for their husband's family businesses while sustaining their own jobs, and those in Vietnam combine freelance work with childcare and maternity leave.

Anh-Lan is a mother of two who works on an ad-hoc basis as a Vietnamese language teacher and an interpreter in a Taiwanese court, but she also helps at her husband's restaurant in a bustling central district of Taipei. Contact with Anh-Lan prior to the interview was rushed and patchy due to her busy schedule. During the interview, Anh-Lan had no problems sharing her perspectives about her social media use, which, as she described it, was limited to the minimum:

> I don't have anything updated on my Facebook. I have it mainly to keep my friends' contacts and be reminded of their birthdays [laugh]. It's useful that way, like a phonebook with notes....Very rarely I would post something, but just for people to know that I am still using this Facebook.

Anh-Lan adds that she is the primary caretaker of the two sons, and without explicitly mentioning gendered responsibility as a wife and mother, she explains her position as follows:

Table 3. Social background of participants referred to in this article.

	Age	Children	Working for Husband's Business	Employed	Location
VFMs to China					
Le-Tham	32	1	No	Full-time	Small city
Kieu-Ly	26	1	No	Freelance	Small city
Khuy-Cai	29	1	No	Ad-hoc basis	Rural area
VFMs to Taiwan					
Hai-Ly	42	2	No	Full-time	Taipei City
Anh-Lan	36	2	Yes	Ad-hoc basis	Taipei City
Hai-Van	36	3	Yes	No	Taichung City
Tran-Mac	45	2	Yes	Full-time	Taichung City
Tao-Loan	42	2	No	Full-time	Taoyuan City
Hang-Nga	30	0	No	Freelance	Taipei City

I can never take a full-time job because I need to care for the boys. Do you know how many rides to school and extra activities per week there are? And all the cooking and housework, and the shop. The kids don't see me so much in a day, so I prefer not to be on my phone when they are around. So, tell me, where do I find the time to be online?

Unlike Anh-Lan, who works outside of home sometimes, Hai-Van only works for her husband's logistics business at home. She is the primary carer for three children and her parents-in-law, who live close by. Hai-Van's husband prefers that she work at home so she can easily manage domestic tasks. Both Lan-Anh and Hai-Van met their husbands organically, married and migrated of their own free will, yet the expectation to perform reproductive labour as a woman (Constable, 2009; Piper & Lee, 2016) remains in their cases. As well as time constraints, Hai-Van also feels her language skills and origin make her less able to fully participate on social media. She explains and compares her position when speaking and writing Chinese:

> When a white person from the US or the UK makes a grammar mistake and speaks with an accent, people here say "Oh, that's cute." When we [VFMs] make the same mistake, the locals show a cynical attitude and say that "It's incorrect, it's funny."

Amplifying the discourse about VFMs in Taiwan, Hai-Van's story reveals a clear social hierarchy in this society where whites are considered "superior others" (Lan, 2011) and marriage migrants, especially the ones from the "third world," are inferior (Bélanger & Wang, 2012). Hai-Van mainly uses social media for news updates from friends and family back in Vietnam. According to her, there is little need to be updated about her Taiwanese circles because her closed domestic situation does not foster many external relationships. Her usage reflects the domestic nature of her everyday life.

Another participant, Hai-Ly, whose marriage was a "love marriage" in her words, works as a reporter for the Vietnamese community in a large radio station in Taipei. Hai-Ly's job allows her to be flexible with childcare, as long as she has the recordings ready for airtime. She is a well-known figure in the Vietnamese community in Taiwan. As affluent as Hai-Ly might be, she still thinks that her linguistic skills are looked down upon by locals:

> Our accent and "mouth position" are different from the Taiwanese. I have been here more than 20 years, and they still point it out when I speak. So, I am more confident using social media in Vietnamese. I still post in Chinese though, just not as often.

The language barrier, associated with origin and nation, does recede for some VFMs who have returned to Vietnam. However, for others, the problem of time, inter-

twined with social class, is more prominent. After almost two years in China, Le-Tham escaped to Vietnam from the brothel into which she had been sold. Due to the social stigma that associates VFMs with women who have taken up prostitution by choice, she first went to the shelter in Hanoi to distance herself from "vulgar comments by neighbours" and later moved to work in a factory a few hours from home:

> I work a 12-hour shift every day. After coming home, I can only have a shower and sleep. I have no time to surf Face[book]….At the textile factory, we have only Sunday off, when there are a lot of orders, and then we continue working without a day off. Twelve hours a day for the whole month or more….They already allocated the work for the factory staff; I can't take a day off. I have to work.

Le-Tham's extended working hours is the reality lived by thousands of garment factory workers in Vietnam who supply the global fast fashion chain. With such a schedule, she has no time to consume media products of any kind. As she works in a different town, she prefers spending her free time video calling her teenage daughter who lives in her natal village, where she cannot stay because of the "malicious rumours." Le-Tham's poor background was the reason that compelled her to migrate for better employment: "I was young and naïve, suffering from bereavement of my late husband who had passed away just 10 days before my journey," so she was deceived, drugged, and sold to a brothel. She speaks of the "lost years" in China where she could not generate any income for herself or her family and is now determined to work harder to make up for her daughter's lack of material means. The "time" factor often came up in the accounts of many participants. A participant, Y-Loan invited the interviewer to her food shop in Taoyuan for the interview after lunchtime, or "peak hours" as she described it. Despite this, during the interview, she was continuously having to prepare the food for the dinner shift and was cleaning the shop while answering. Similarly, during a video call interview, Khuy-Cai, a Tay ethnic who was made to wed a Chinese man against her will but managed to run away, did all the following: She fed her two-year-old daughter, put her to sleep, collected and chopped wood, and brought the wood to the house:

> If I don't do this when she sleeps, I have no other time….My husband works far away; I am a mum and a dad at the same time. If I don't work one day, we don't eat the next day. So, I prioritise time for work, childcare, and if any time is left, maybe some time on Face[book].

The minimum or reduced media usage is not necessarily limited to the lack of financial resources, as shown in the cases of VFMs to Taiwan, whose economic situations are fairly comfortable. Their gendered responsibilities

(limiting their time) and racial hierarchy situated in the intra-Asian power relations (as visible, for example, through differences in linguistic skills at speaking standard Mandarin) may all hinder their social media use. Nonetheless, financial means which links to social class and time availability of the VFMs to China presents a prominent obstacle for them to participate online. For them, time is "the money that buys my daughter's milk" (Khuy-Cai); hence, it should not be wasted on social platforms.

5.2. Moderate to Frequent Use of Social Media and Economic Reasons Behind It

Our findings suggest that social media platforms are used more frequently by the interviewees if it is for entrepreneurial purposes. However, this type of usage requires more than just basic digital knowledge. For instance, if a certain platform is used to sell goods, a basic understanding of algorithms and keyword search is crucial to maintain and boost sales. Attaining such knowledge requires time, money, and effort, or in some cases, financial resources if it implies hiring others. As a founder of an organisation in Taiwan supporting marriage migrants in finding jobs, dealing with domestic violence, and learning Chinese, Tran-Mac is a well-respected figure in the community:

> I use Facebook to post information for the foreign marriage migrant community. But to be honest, my assistant helps me a lot with the "fan page" of the organisation. I barely do any hands-on things with the Facebook page; I'm often preoccupied with other matters that keep the organisation growing, like giving talks or interviews like this.

Having a Facebook fan page for her organisation, Tran-Mac also uses her personal accounts (Facebook, LINE) to highlight immigration regulations and share information with the community. She earns her salary from the organisation and the Taiwanese governmental funding, which endorses immigrant spouses. An Hoa-ethnic from Vietnam, Tran-Mac already spoke Chinese before entering Taiwan, bolstering her participation in the public sphere. However, this was not without difficulty at first. Because of Tran-Mac's Chinese proficiency, police routinely asked her to be an informal interpreter for VFMs who could not speak the language. Yet her abusive ex-husband did not let her use a telephone and forbade her to work since he feared that she would run away, a common stereotype about VFMs (Tang et al., 2011). Receiving countless beatings and seeing other VFMs in the same position, Tran-Mac started her organisation and later a political party for female foreign migrants after her divorce. The fact that Tran-Mac was prevented from accessing a phone and social media can thus be traced back to her position as a woman whose physical stature meant that her ex-husband could overpower her. He felt such entitlement to control her physically because, in Tran-Mac's words, "he bought me for $4,000." Sharing a similar situation with Tran-Mac, Tao-Loan was forbidden to watch TV by her late-husband in fear that she would learn Chinese and run away: "I was so young and small. Less than 40 kilograms, can you believe it? Now I am an elephant [laugh]. He couldn't beat me now."

Tao-Loan now has her own duck noodles shop and uses Facebook to promote her business after her late husband died in a car accident while intoxicated. Tao-Loan describes the many hurdles to access Facebook:

> Without language, you are really confounded. OK, I had a phone, but no internet. To get data, you need to have a contract, which requires your ID, which he kept away from me. Also, you need money to buy the contract, where do I find the money? The two daughters were my full-time job: many problems, no solution.

Tao-Loan married and migrated to lift her birth family out of poverty. She still regretted not being able to send money back home during her first few years in Taiwan. "Filial piety," a tenet of Confucianism, requiring children to take good care of their parents, compelled Tao-Loan to migrate. Therefore, she was more concerned about remittance than setting up an internet contract to get on social media.

Having had a traumatic experience in China, Kieu-Ly considers herself lucky because a police officer decided to engage in a relationship with her despite his knowledge of her past. This is significant because of the overwhelming legal discourse regarding returnees as "socially evil" people who get involved in sex work (Vijeyarasa, 2010). Kieu-Ly states that she enjoys makeup and hairdo. In her words, "beauty makes your husband love you," and she tries to stay beautiful "for him," to keep him around. The financial support he provided was critical, allowing her to take the time to learn about e-commerce and start her business on social media:

> Zalo and Facebook are the main channels that I use to promote my products and also where the orders come in. It took me some time to build the business and learn the tricks of the trade when running advertisements on these platforms. I was dependent on my husband when the business started, but now I am confident I can make enough money for all the household bills.

Kieu-Ly's strategic navigation to make the best out of her situation as a young woman allows her to stand on her own feet. During the video call interview, she breastfed her young daughter and answered queries from customers online. Yet, when it concerns using social media for both activist reasons and employment

opportunities, the most frequent user is Hang-Nga. She has a YouTube channel with a significant number of subscribers (240,000, as of October 2021), and she also works as a freelance MC for various Taiwanese shows. On her YouTube channel, Hang-Nga makes videos about her daily life in Taiwan and interviews other VFMs about their lifestyles. Inspired by her mother's migration to Taiwan, she started a YouTube channel to introduce a different outlook of VFMs to the Taiwanese public; she attracted so much attention that it became possible to monetise the content. Hang-Nga's content also became popular among the Vietnamese audience and is subtitled in both languages. However, her circumstances are different from other VFMs: Hang-Nga came to Taiwan to study at university through the support of her mother as a domestic worker in Taipei. This sets her apart from other participants who did not finish high school or had to learn Chinese on top of their wifely duties as a spouse. Hang-Nga's younger age and freer schedule allow her to familiarise herself with the latest social media trends to produce engaging content. Additionally, Hang-Nga's husband is a cameraman, thus her videos often come with nice effects and correct lighting. Hang-Nga's advantages are education- and class-based compared to other VFMs, which influences her frequent engagement with social media: "I accredit my success to my mother's migration and hard work, without which I would still remain a countryside girl in the rural village where we come from."

Hang-Nga's case portrays a clear contrasting picture of how social context can enhance one's social media use, from one generation to the next. If her mother had not become a labour migrant, Hang-Nga would not have been able to reach a social class that gave her the privilege of time, language skills, higher education, flexible yet stable employment, and subsequently the frequent engagement on social media to bridge the VFMs with the Taiwanese society.

6. Discussion and Conclusion

Returning to van Dijck's (2013) work, "a culture of connectivity" is becoming more dominant and social media is essential to engage socially both online and offline. With its entry threshold lowering all the time, social media is deemed to have the potential to build social cohesion through the inclusion of individuals and intergroups within society (Jakubowicz, 2007; Marlowe et al., 2017). However, the cases in this study reveal that the social media use of VFMs is situated and enhanced or constrained by their various dimensions of difference. As demonstrated, for some of the VFMs interviewed, their identities can limit social media participation to some extent because of the expectation that they perform gendered responsibilities (Constable, 2009; Piper & Lee, 2016), which reduces time to be online. When they work and appear to be independent, many VFMs choose to work in a way that gives them flexibility so they can be readily available to fulfil duties associated with

their female identity. This finding supports the work of Villares-Varela (2018), in which she found that migrant women become entrepreneurs to advance their spouses' careers while "conforming to class-based norms of femininity" (Villares-Varela, 2018, p. 109). Additionally, being physically smaller and easily overpowered also reduces their access to resources that enable them to be on social media. Moreover, racial origin puts them in an inferior position (Lan, 2011; Tang et al., 2011) and subdues their sense of self when they face ridicule because of their perceived accent, which leads to them using digital platforms less often. When linguistic skills are not the issue, in most cases, social class restricts VFMs' available time to be online due to the intensive working schedule that is needed to support a family. This result reflects those of Bonjour and Chauvin (2018), who contended that class can greatly influence (post-)migrants' everyday practices through its intersection with different aspects such as ethnicity and race. In the same way that the VFMs' migratory experience is gendered, racialised, class-, and age-based, their adoption of social media also reflects these social imprints. That is not to say these co-constituted categories can limit the VFMs to participate online and cohere with the communities where they reside without their agency. In multiple instances, we show that some of the migrant women interviewed actually use their positioning to negotiate their social media use that benefits not only themselves but also the VFMs' community and their families. Tran-Mac's use of the Taiwanese government's funding to sustain her organisation and hire an assistant to boost their visibility is a strategy that makes the most out of her circumstances. This finding particularly echoes the results from Cheng's (2021) article on how Vietnamese immigrant activists navigate and utilise the available funding for the endorsement of SEA cultures to support and empower their community. As migrants or even children of migrants and ex-migrants, some VFMs find ways to construct their identities online in their own definitions and are even able to benefit financially from these online engagements. As social media platforms develop and extend their influence from online to offline space, the VFMs, as users, "'negotiate' whether and how to appropriate them in their quotidian habits" (van Dijck, 2013, p. 6).

Anchored in Yuval-Davis's (2011) and Crenshaw's (1991) studies on intersectionality, this article argues that different identities, such as gender, race, ethnicity, social class, and age, can both enhance and weaken an individual's position within society and influence the relative use of social media. Some participants (three in this article), while bound by certain social, cultural, and historical contexts, were able to overcome the digital divide to use social media to their best interests and also that of those around them. In analysing the participants' adoption of social media, we recognise that additional intersections can affect the VFMs' life, migration, and social media use outcomes, such as relationship status, digital

literacy, and religion. Nevertheless, we focus on the dimensions of difference that are most pertinent to the article's argument to reduce analytical complexity while simultaneously attaining interesting insights. We encourage researchers to include these extra dimensions in future research on VFMs and migrants in general to provide a richer understanding of their social media use.

Acknowledgments

Conflict of Interests

The authors declare no conflict of interests.

References

An, S., Lim, S. S., & Lee, H. (2020). Marriage migrants' use of social media. *Asian Journal of Communication*, *30*(2), 83–99. https://doi.org/10.1080/01292986.2020.1725073

Bélanger, D., & Wang, H.-Z. (2012). Transnationalism from below: Evidence from Vietnam-Taiwan cross-border marriages. *Asian and Pacific Migration Journal*, *21*(3), 291–316. https://doi.org/10.1177/011719681202100302

Blue Dragon. (2021). *Human trafficking & traffickers in Vietnam*.

Bonjour, S., & Chauvin, S. (2018). Social class, migration policy and migrant strategies: An introduction. *International Migration*, *56*(4), 5–18. https://doi.org/10.1111/imig.12469

Bonjour, S., & de Hart, B. (2013). A proper wife, a proper marriage: Constructions of "us" and "them" in Dutch family migration policy. *European Journal of Women's Studies*, *20*(1), 61–76. https://doi.org/10.1177/1350506812456459

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Cheng, I. (2021). Motherhood, empowerment and contestation: The act of citizenship of Vietnamese immigrant activists in the realm of the new southbound policy. *Citizenship Studies*, *25*(7), 975–992. https://doi.org/10.1080/13621025.2021.1968688

Constable, N. (2009). The commodification of intimacy: Marriage, sex, and reproductive labor. *Annual Review of Anthropology*, *38*, 49–64. https://doi.org/10.1146/annurev.anthro.37.081407.085133

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 1241–1299. https://doi.org/10.2307/1229039

Dekker, R., & Engbersen, G. (2014). How social media

transform migrant networks and facilitate migration. *Global Networks*, *14*(4), 401–418. https://doi.org/10.1111/glob.12040

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, *40*(4), 314–321. https://doi.org/10.1111/j.1365-2929.2006.02418.x

Erdal, M. B., & Oeppen, C. (2018). Forced to leave? The discursive and analytical significance of describing migration as forced and voluntary. *Journal of Ethnic and Migration Studies*, *44*(6), 981–998. https://doi.org/10.1080/1369183X.2017.1384149

Eriksen, T. H. (2020). Filling the apps: The smartphone, time and the refugee. In C. M. Jacobsen, M.-A. Karlsen, & S. Khosravi (Eds.), *Waiting and the temporalities of irregular migration* (pp. 58–72). Routledge.

Foundation Scelles. (2019). *Sexual exploitation: New challenges, new answers* (Report No. 5).

Fugard, A., & Potts, H. W. W. (2019). Thematic analysis. In P. Atkinson, S. Delamont, A. Cernat, J. W. Sakshaug, & R. A. Williams (Eds.), *SAGE research methods foundations*. SAGE.

Glaser, B. G., & Strauss, A. L. (2017). *The discovery of grounded theory: Stategies for qualitative research*. Routledge.

Grillot, C. (2011). Between bitterness and sweetness, when bodies say it all: Chinese perspectives on Vietnamese women in a border space. *Journal of Vietnamese Studies*, *7*(1), 106–148.

Hsia, H.-C. (2015). Action research with marginalised immigrants' coming to voice: Twenty years of social movement support in Taiwan and still going. In H. Bradbury (Ed.), *The SAGE handbook of action research* (3rd ed., pp. 315–324). SAGE.

Huang, P. (2020). The making of a modern self: Vietnamese women experiencing transnational mobility at the China-Vietnam border. *Social Inclusion*, *8*(2), 77–85. https://doi.org/10.17645/si.v8i2.2652

International Organization for Migration. (2016). Vietnam migration data & reports. https://vietnam.iom.int/sites/g/files/tmzbdl1396/files/documents/Trafficking.pdf

Jakubowicz, A. (2007). The media and social cohesion. In J. Jupp, J. Niewenhuysen, & E. Dawson (Eds.), *Social cohesion in Australia* (pp. 158–169). Cambridge University Press. https://doi.org/10.1017/CBO9780511481574.015

Lan, P.-C. (2011). White privilege, language capital and cultural ghettoisation: Western high-skilled migrants in Taiwan. *Journal of Ethnic and Migration Studies*, *37*(10), 1669–1693. https://doi.org/10.1080/1369183X.2011.613337

Le, M., & Nicolaisen, F. (2021). Conflicted citizenship in Vietnam: Between grassroots mobilization and state repression. In J. Gillen, L. C. Kelley, & L. H. Phan (Eds.), *Vietnam at the vanguard: New perspectives across time, space, and community* (pp. 33–51). Springer.

Lhomme, L., Zhong, S., & Du, B. (2021). Demi bride traf-

ficking: A unique trend of human trafficking from South-East Asia to China. *Journal of International Women's Studies*, *22*(3), 28–39.

Marlowe, J. M., Bartley, A., & Collins, F. (2017). Digital belongings: The intersections of social cohesion, connectivity and digital media. *Ethnicities*, *17*(1), 85–102. https://doi.org/10.1177/1468796816654174

Ministry of Interior. (2021). *Monthly bulletin of interior statistics*. https://ws.moi.gov.tw/001/Upload/400/relfile/0/4413/79c158fd-d51f-4061-b24b-fbcdb0fb92d9/month/month_en.html

Ng, D., Rivai, I., & Chi, M. (2021, January 25). Raped, beaten and sold in China: Vietnam's kidnapped young brides. *CNA*. https://www.channelnewsasia.com/news/cnainsider/vietnam-kidnapped-brides-trafficking-china-wives-11777162

Piper, N., & Lee, S. (2016). Marriage migration, migrant precarity, and social reproduction in Asia: An overview. *Critical Asian Studies*, *48*(4), 473–493. https://doi.org/10.1080/14672715.2016.1226598

Stöckl, H., Kiss, L., Koehler, J., Dong, D. T., & Zimmerman, C. (2017). Trafficking of Vietnamese women and girls for marriage in China. *Global Health Research and Policy*, *2*(1), Article 28. https://doi.org/10.1186/s41256-017-0049-4

Su, L. (2013). *Cross-border marriage migration of Vietnamese women to China* [Master's thesis, Kansas State University]. CORE. https://core.ac.uk/reader/10653534

Tang, W. A., Bélanger, D., & Wang, H.-Z. (2011). Politics of negotiation between Vietnamese wives and Taiwanese husbands. In T. W. Ngo & H. Wang (Eds.), *Politics of difference in Taiwan* (pp. 134–151). Routledge. https://doi.org/10.4324/9780203816561

van Dijck, J. (2013). *The culture of connectivity: A critical history of social media*. Oxford University Press.

van Dijk, T. A. (1995). Power and the news media. In T. A. van Dijk (Ed.), *Political communication in action* (pp. 9–36). Hampton Press.

Van Nguyen, D., Nguyen, H. C., Le, T. Q., & Do, T. D. (2020). Human trafficking in Vietnam: The issues and responses of the Vietnamese government. *International Journal of Innovation, Creativity and Change*, *13*(7), 135–152.

Vijeyarasa, R. (2010). The state, the family and language of "social evils": Re-stigmatising victims of trafficking in Vietnam. *Culture, Health and Sexuality*, *12*(Suppl. 1), 89–102. https://doi.org/10.1080/13691050903359257

Villares-Varela, M. (2018). Negotiating class, femininity and career: Latin American migrant women entrepreneurs in Spain. *International Migration*, *56*(4), 109–124. https://doi.org/10.1111/imig.12361

Wang, Y.-H. (2010). From "farming daughters" to "virgin brides": Representation of Vietnamese immigrant wives in Taiwan. *Gender, Technology and Development*, *14*(2), 217–239. https://doi.org/10.1177/097185241001400205

Wei, L. (2020, January 18). Commentary: Vietnamese brides increasingly the choice for China's bachelors. *Channel News Asia*. https://www.channelnewsasia.com/news/commentary/vietnamese-brides-for-single-men-in-china-marriage-brokers-12271868

Willem, C., & Tortajada, I. (2021). Gender, voice and online space: Expressions of feminism on social media in Spain. *Media and Communication*, *9*(2), 62–71. https://doi.org/10.17645/mac.v9i2.3851

Worldometer. (2020). Taiwan demographics 2020 (population, age, sex, trends). https://www.worldometers.info/demographics/taiwan-demographics

Wu, C. H.-J., & Phung, T.-B. (2017). The antecedents of intention to use Facebook: The case of female foreign spouses' community in Taiwan. *International Journal of Web Based Communities*, *13*(3), 379–399. https://doi.org/10.1504/IJWBC.2017.086593

Yuval-Davis, N. (2006). Intersectionality and feminist politics. *European Journal of Women's Studies*, *13*(3), 193–209. https://doi.org/10.1177/1350506806065752

Yuval-Davis, N. (2011). *The politics of belonging: Intersectional contestations*. SAGE.

About the Authors

Linh Le-Phuong is a PhD candidate at the Institute for Media Studies at KU Leuven University in Belgium. She studies the media representation of female migrants, its impact on society, and the protagonists themselves. Her regional focuses are Vietnam and East Asia. Her research interests include media systems, intersectional feminism, journalism practices, and social in/exclusion.

Lutgard Lams teaches media discourse analysis and intercultural communication at the Faculty of Arts of the KU Leuven, Brussels campus. Her research interests include the pragmatics of language and ideology in the media, official and media discourses in and about China/Taiwan, identity politics and nation-building in the Chinese region, and media framing of the self/other (related to regional or global issues such as migration, climate change, or international conflict).

Rozane De Cock is an associate professor in communication sciences and journalism studies at the Institute for Media Studies at KU Leuven (Belgium). Since 2013, Rozane has been director of the Brussels Center for Journalism Studies (BCJS, KU Leuven, Brussels campus). In her research, she studies news production, news reception, and news effects, including media representation of refugees and minorities. In another research track, she focuses on the convergence of gaming and gambling.

Article

Discourse and Social Cohesion in and After the Covid-19 Pandemic

Mario Bisiada

Department of Translation and Language Sciences, Pompeu Fabra University, Spain; mario.bisiada@upf.edu

Abstract
This conceptual article argues that class is a major factor in the social division and polarisation after the Covid-19 pandemic. Current discourse and communication analyses of phenomena such as compliance with measures and vaccine hesitancy seek explanations mainly in opposing ideological stances, ignoring existing structural inequalities and class relations and their effects on people's decisions. I approach social cohesion in the Covid-19 pandemic through the theories of epidemic psychology, which sees language as fundamental in social conflicts during pandemics, and progressive neoliberalism, which critiques a post-industrial social class whose assumed moral superiority and talking down to working-class people is argued to be an explanation of many current social conflicts. I argue that these theories construct a valuable theoretical framework for explaining and analysing the social division and polarisation that has resulted from the pandemic. Reducing non-compliance with mitigating measures and vaccine hesitancy to an ideological issue implies that it can be countered by combatting misinformation and anti-vaccination thinking and shutting down particular discourses, which grossly simplifies the problem. The impact that class relations and inequality have on political and health issues, coupled with the characteristics of progressive neoliberalism, may partially explain the rise of populist and nativist movements. I conclude that if social cohesion is to be maintained through the ongoing climate emergency, understanding the impacts of progressive neoliberalism and the role of contempt in exclusionary discursive practices is of utmost importance.

1. Introduction

The digital world we inhabit today has afforded many people considerable refuge from this "first truly global" pandemic (Keating, 2020). It has enabled lockdowns on an unprecedented scale and the social experiment of a public debate largely conducted digitally, through social media and newspaper websites, in a context of "post-normal science" (Waltner-Toews et al., 2020). Two years later, many European societies are strongly polarised and divided (Modgil et al., 2021; Neumann et al., 2021; Stjernswärd & Glasdam, 2021) and European integration has suffered a setback through movement restrictions (Devi, 2020) and "minimal support given to member states forcing each to take a unique approach,"

so that "national approaches dominated with some lesson learning only and few attempts to institute a global response to the pandemic" (Lilleker et al., 2021, p. 339). Paralleling the threats to the individual body with threats to the body politic, the prevalence of national approaches may reinforce nativist ideas and strong-border thinking and undermine the European community and integration (Bieber, 2020).

In this conceptual article, I argue that the Covid-19 pandemic is an inflection point for communication and discourse theorists and that, consequently, a theoretical framework appropriate to the disrupting ramifications of the crisis is needed if empirical studies are to truly understand this complex phenomenon. My article seeks to contribute to this through the lens of social cohesion,

focusing on the existing social division that has been exacerbated as a result of the Covid-19 pandemic. In this endeavour, I will mainly refer to and draw on examples from Germany and Spain, though I think that some discourses and arguments apply generally to European society. A theoretical framework to understand and study the social division resulting from the Covid-19 pandemic regardless of the country looked at should attribute a central role to language and discourse, according to the epidemic psychology model, as I argue in Section 2. In Section 3, I trace polarisation to what Foucault (1997) called "the discourse of perpetual warfare," identifying discourse as a site of struggle over discursive domination. I understand this polarisation to be part of what Fraser (2017) identifies as class struggle in progressive neoliberalism (Section 4). I conclude by arguing that class struggle is a neglected aspect of current rifts in social cohesion, both in and after Covid-19 (Section 5).

2. Discourse, Epidemic Psychology, and Social Cohesion

From the outset of the pandemic, opinions have been manifold, and the scientific community that was called upon for scientific views has reacted fast. Researchers across disciplines have rushed to study the pandemic and its consequences (Fassin, 2021), and research on various discursive and communicative phenomena that occurred from the start of the pandemic has been no exception. However, immediate endeavours to study a phenomenon that is still unravelling tend to be unreliable (Gadarian et al., 2021) and prone to being overly influenced by personal stance, while lacking the critical distance needed to provide a holistic view of the phenomenon (Simandan et al., in press). While I follow the view that neither discourse nor language, in general, can be studied as an objective matter (Davis, 1990, p. 16; Gee, 2011, p. 9; Todorov, 1984, pp. 15–16), recognising one's personal position in conducting research is far from a common practice (Baker, 2012). Discourse researchers shape discourse as they describe and observe it and thus are themselves part of the analysis. Thus, as "most Critical Discourse Analysis practitioners can be seen to adopt a broadly liberal or humanitarian philosophy and thus tend to target more conservative Discourses which…are perceived to be more dominant" (Hart, 2014, p. 5), there tends to be a certain bias against particular discourse actors that are considered generally legitimate targets of critique.

For instance, the idea that the Covid-19 virus may have originated in a laboratory initially received little credence, largely because it was supported by notorious conservative discourse actors such as Donald Trump, even though "when Avril Haines, President Biden's director of national intelligence, said the same thing, she too was largely ignored" (Wade, 2021). Scientists rushed to "strongly condemn conspiracy theories suggesting that Covid-19 does not have a natural origin" (Calisher, et al., 2020). When recent enquiries showed it to be a plausible

explanation (Engber, 2021; Jäger, 2022; Wade, 2021), the damage to the credibility of science through expressions such as "scientists…overwhelmingly conclude" (Calisher et al., 2020, p. e42) and liberal values of the debate was invariably greater than it would have been if the lab leak discourse had been entertained with reservations rather than strongly condemned. Though the scientific community is right in identifying the infodemic aspect of Covid-19 as problematic, in its righteous attempt to contravene this it must be careful not to throw overboard scepticism, the benefit of the doubt, and the plurality of argument, which are the hallmarks of scientific enquiry and whose weakening will ultimately serve the very forces of intolerance and monologism it tries to counter.

Thus, rapid-response discourse studies of Covid-19 phenomena concentrated on "populist" and "right-wing" actors (Bar-On & Molas, 2021; Bobba & Hubé, 2021) and have certainly produced interesting findings. However, in a majorly disruptive event such as the Covid-19 event, political lines and partisanship are also likely to be stirred up while everyone is struggling to position themselves towards the new phenomenon. In addition, discourse studies are often conducted through a somewhat simplistic Marxist model where ideology is seen as a "negative process whereby individuals were duped into using conceptual systems which were not in their own interests" (Mills, 2004, p. 26), which over time leads to a static view of power relations and predefined originators of particular ideologies. A more nuanced view of discourse sees it as a site of struggle (Mills, 2004) and adopts a critical applied linguistic approach involving a constant scepticism of power relations and questioning of normative assumptions (Pennycook, 2021). For Covid-19 and its aftermath, approaches that base themselves on existing political categorisations and that do not conduct a thorough analysis of the significantly disrupted socio-political context might only confirm previously assumed biases and reify existing class conflict while potentially missing out on capturing the rare insights into deep social structures that disruptive events such as this pandemic lay bare.

My central argument is that one of these deep social structures that have been laid bare by the pandemic and that so far has been largely ignored is social inequality. I believe that the Covid-19 pandemic has transcended and temporarily destabilised existing party and ideological lines. Some evidence confirms this for the US (Gadarian et al., 2021, p. 128; Renström & Bäck, 2021, p. 869), a highly polarised society. It has also been a personal experience by me and many others that we agreed with people we used to disagree with and vice versa. While mitigation measures have differed across countries, most people would probably agree that talking about the pandemic to family and friends at some point became difficult and was best avoided. As this has been the first global crisis which we experienced primarily through social media (Lilleker et al., 2021, p. 339),

communication on these media necessarily plays a central role in the social division we observe.

Social media use has increased significantly during the pandemic (Aiello et al., 2021; Nguyen et al., 2020). Social media provides the environment of commentary that maintains alive discourses that would normally disappear (Foucault, 1981, pp. 56–57). The continuous presence of those discourses may create the impression that particular ideas are commonly held or even accepted knowledge, which may distort and polarise views of society. Research has shown that "people are more likely to be affected by inaccurate information if they see more and more recent messages reporting facts, irrespective of whether they are true" (Tucker et al., 2018, p. 40), a situation that likely prevailed in this pandemic where we all started from zero knowledge and were thus subject to daily reporting and commentary. As the pandemic deeply affected most people, emotions influence public judgement (Bogliacino et al., 2021) and behaviour on social media: "Anger makes people less likely to distrust inaccurate information that supports their views, and more likely to distribute it; anxiety can have the opposite effect, prompting individuals to pursue accuracy rather than directional goals" (Tucker et al., 2018, p. 40). Focussing on the role of language and communication in this phenomenon is important to understand "the self-regulating processes that allow some social groups to maintain high levels of social cohesion under adverse and changing circumstances" (Friedkin, 2004, p. 422). As the climate emergency continues and future pandemics are certain to occur, maintaining social cohesion is a major challenge for our societies.

I understand social cohesion to refer to "the relationship between the individual and his or her community," but also "between groups in the wider society" (Coleman, 2015, p. 9) and where language plays a key role, either to strengthen social harmony or "as an element in marginalisation, discrimination and social tension" (Coleman, 2015, p. 4). Similarly, Strong's (1990) epidemic psychology model of early reactions to new fatal diseases, developed to analyse the "striking problems that large, fatal epidemics seem to present to social order; on the waves of fear, panic, stigma, moralising and calls to action that seem to characterise the immediate reaction" (Strong, 1990, p. 256) sees language as a key factor in this process. Human societies are complex and elaborately organised, but still always subject to fundamental change, "simultaneously massively ordered and extraordinarily fragile" (Strong, 1990, p. 256). If theories of social cohesion should take into account "the effects on network structures of interpersonal disagreements and the loss or addition of members" (Friedkin, 2004, p. 422), then a thorough analysis of the social divisions after this disruptive and largely digitally mediated pandemic is necessary (Bisiada, 2021). My account here is biased by the countries I lived in through the pandemic—Germany and Spain—so my observations have to be understood to be based on those countries' approaches, which diverged significantly over the course of the pandemic. While restrictions and measures have differed across countries, the discourse on vaccination has been led globally. Having established the notions of discourse, epidemic psychology, and social cohesion in this section, the following section discusses an example of discourse on Twitter as a site of struggle.

3. The Discourse of Perpetual Warfare

The discourse of perpetual warfare is "a permanent social relationship, the ineradicable basis of all relations and institutions of power" (Foucault, 1997, p. 49) and represents a "binary structure" running through society. Foucault (1997, p. 51) argues that there are no "neutral subjects" and that we are all "inevitably someone's adversary." This means that the rifts in social cohesion we observe these days can be explained by the very possibility provided by social media to be in constant discourse with others, to perceive a much greater part of the historic-political discourse of our times, and to take part in it. In this environment, "views polarise alongside the increasing certainty with which they are expressed, as if we are in a trench war where giving an inch risks losing a mile" (Davey Smith et al., 2020).

A case in point: On 15 March 2021, a range of governments worldwide announced a temporary suspension of the AstraZeneca vaccine after "a striking accumulation of a special form of very rare cerebral vein thrombosis (sinus vein thrombosis) in connection with a deficiency of blood platelets (thrombocytopenia) and bleeding in temporal proximity to vaccinations with the Covid-19 vaccine AstraZeneca" (Paul-Ehrlich-Institut, 2021) was observed by the Paul Ehrlich Institute. This news was received with widespread anger on social media.

Two interpretations were possible, which were directly opposed to each other: The first was that the decision is congruent with the zero-risk strategy evidenced by months of lockdowns due to an unknown mutation to the virus, and this strategy now led to a zero-risk approach on the vaccines and the (equally unknown) thrombosis it may cause. This approach did not invoke scientific argument because it had long accepted that the recent responses were not data-driven. The other interpretation saw the decision within a framework of full risk acceptance: It mentioned recent relaxations of measures as dangerous and responding to a neoliberal economic perspective in which opening business trumped protecting people's lives and saw the decision as unscientific and risk-avoidant (or rather, responsibility-avoidant). This approach cited the lack of evidence of a link between the vaccine and thrombosis, but thus opened itself to questions as to why the lack of evidence for other measures had not been taken into account.

The fact that in a range of posts on the issue the #VaccinesWork hashtag was used shows that these users' concern was not so much about the potential

health implications of this particular move but about the defence against a potential discursive gain for an envisaged anti-vaccination movement: The idea was that the complications should be played down to not give "ammunition" to the other side. This was argued explicitly in an article in the *Irish Times*, summarised by its author on Twitter thus: "Suspension of #AstraZeneca #vaccine may be well-intentioned, but it is not supported by evidence. And ultimately, it undermines confidence & bolsters anti-vaccine propaganda—precautionary principle it is not" (Grimes, 2021).

The AstraZeneca issue is a good example of interpretative polarisation (Kligler-Vilenchik et al., 2020) as commentators lose sight of regular procedures and a communal effort to overcome a health crisis and just think in terms of factions. The physicist Sabine Hossenfelder summed this up quite well:

> Yeah, I know there are loads of vaccine enthusiasts on Twitter and trust me if I could get one, I'd take it immediately. But keep in mind: shit happens. Sooner or later a charge is going to be contaminated with something, somewhere. For this reason, I think, as much as I hate the delay, that governments in Europe who have temporarily suspended vaccinations with #AstraZeneca to investigate what's happening are doing the right thing. (Hossenfelder, 2021)

The struggle for epistemological and discursive authority around Covid-19 is one of the complex topics produced by this pandemic, but it may also be symptomatic of the way many public debates go off course as they proceed. Such phenomena should be the subject of inquiry if we aim to understand the power relations that obtain in late modern neoliberal societies and the dynamics that lead to increasing polarisation, even on issues that seem to have no polarising potential at first. An important factor in this polarisation that Foucault (1997, p. 51) described as a binary structure that runs through society can be sought in inequality, more specifically, in post-industrial class relations, which are the focus of the next section.

4. Progressive Neoliberalism

I follow Fraser's (2017) critique of what she calls progressive neoliberalism, a combination of "progressive recognition" (that is, a spoken orientation towards diversity, multiculturalism, and women's rights) and "regressive distribution" (that is, the politics of deregulation of the banking system, de-industrialisation, and the elimination of social protection; see also Fraser & Jaeggi, 2018). This movement defeated the approach of right-wing politics that relied on the same regressive distribution but coupled with reactionary recognition (ethnonationalism, anti-immigration, etc). In the wake of this victory, she argues, progressive neoliberalism destroyed the lives of the traditional left voters and thus alienated them, even as its defendants still maintained an ethos of recogni-

tion that was "superficially egalitarian and emancipatory, interpreting its ideals in a limited way compatible with neoliberalism" (Fraser & Jaeggi, 2018, p. 203). Progressive neoliberalism thus diversified social hierarchy instead of abolishing it, all the time maintaining class constraints. A similar argument has been made recently for the German context by Wagenknecht (2021).

The victories of Trumpism and Brexit are often explained by vague reference to a resurge in populism, to the omnipotence of Russian hackers' meddling, or techno-deterministically to the polarising mechanisms inherent to social media. The critique of progressive neoliberalism seems more adequate to explain our current situation, as it emphasises the importance that recognition of class relations still has, focusing on:

> The very real self-assertion of a social stratum, whose ascension is based at once in the shift to postindustrial, cognitive, globalising capitalism and in its own self-understanding as culturally and morally superior to the parochial working-class communities whom those shifts have left behind. (Fraser & Jaeggi, 2018, p. 205)

Similarly, for Wagenknecht (2021, p. 15), the "most important causes of dissolving cohesion and increasing hostility" lie in the fact that "people from different backgrounds have less and less to say to each other" because well-off urban graduates only meet the less advantaged in real life when they provide them with cleaning services, deliver their parcels, or serve them in restaurants.

While this rift existed before Covid-19, the pandemic disruption put it on clear display. A range of studies recognises that class conflict is at the heart of the social tension caused by the pandemic (Goudeau et al., 2021; Horton, 2020; Khazan, 2020; Lohmeyer & Taylor, 2021) and that this conflict may well increase long term dismay at supposed elites (Russell & Patterson, 2022). The dividing line seems to run between people (usually middle class) whose social situation allows them to stay at home and easily adapt to lockdown life and who want to save everyone from Covid-19 by any means necessary, and those who fear the long-term consequences of digital surveillance and states of emergency (Lehmann, 2022; Simandan et al., in press) and/or whose social situation makes it hard for them to quarantine themselves or even seek medical care (Gordon, 2020; Horton, 2020; Khazan, 2020). On Twitter, this division is reflected at a more extreme level, and each side seems to view the other with contempt, either at the conformist acceptance of unparalleled restrictions or at the egotistical rejection of scientifically supported measures. Whether social media such as Twitter accurately represent social dynamics or not is a contested issue (see Garcia et al., 2021), but the mere impression that they do reflect generalised contempt in society may have problematic consequences. At worst, according to the famous dictum by Camus (1956, p. 180), "Every form of contempt, if

it intervenes in politics, prepares the way for, or establishes, fascism.''

I see contempt as a key factor in explaining the division caused by the Covid-19 pandemic, as it is tied to progressive professionals' "confidence that they represent the advance guard of humanity's progression to moral cosmopolitanism and cognitive enlightenment" (Fraser & Jaeggi, 2018, p. 208). This confidence has generated the "Bourdieusian strategy of 'distinction,' imbuing progressive neoliberalism with a superior 'tone,' which has devolved all too easily into moralising, fingerpointing, and talking down to rural and working-class people, with the insinuation that they were culturally stupid" (Fraser & Jaeggi, 2018, p. 208). This explains the ressentiment felt by many towards the supposedly progressive, liberal, leftist cause, as "the insult of status hierarchy compounded the injury of class domination" (Fraser & Jaeggi, 2018, p. 208) while many representatives of left-wing parties "poured scorn on the values, way of life, grievances and anger of their own voters" (Wagenknecht, 2021). This conflict around contempt is always brewing on questions of climate change, surged in some European countries, especially Germany, on the government's concept of *Willkommenskultur* ("welcome culture") and further escalated the social divide with the beginning of government measures and restrictions to control the Covid-19 pandemic.

A general framing of conflict was established by the authorities from the beginning of the crisis, addressing citizens as "soldiers" to rally them together to "fight" the "invisible enemy" (Lilleker et al., 2021, p. 341). This followed the classical trajectory of a framing that is initiated by the holders of power, amplified by media and communication, and that translates into a discourse in the population. Due to the constitutive power of language in epidemic psychology, "no social order can last long when basic assumptions about interaction are disrupted," when mutual fear is generalised, which gives pandemics the potential to create "a medical version of the Hobbesian nightmare: the war of all against all" (Strong, 1990, p. 258). While the use of war metaphors does not automatically and generally trigger sympathy for authoritarian and bellicose stances (Musolff, 2022), research has found that the metaphorical framing effect of the aggressive conflict metaphors on Covid-19 appeared to influence some individuals towards preferring approaches from that domain, specifically by "trigger[ing] sets of salient conceptual entailments via the activation of the relevant frame" and "affect language users' emotive states" (Panzeri et al., 2021). War metaphors can certainly have benefits, from a public health point of view, as in Bill Gates's (2020) statement that "this is like a world war, except in this case, we're all on the same side. Everyone can work together to learn about the disease and develop tools to fight it." From the discourse point of view that language constitutes society, however, war metaphors frame a situation as an aggressive attack by other bodies from out-

side our own body, an attack that may be personified by other humans. Authorities that nurture social antagonism by placing blame and that primarily engage in disciplinary interventions arguably counteract the idea that everyone can be involved in the response to the virus and may instead project passive rule-conformity or even imply the need to denounce potential enemies on the inside.

The war metaphors waned as quickly as they surged (Wicke & Bolognesi, 2021), but the neologisms ("covidiots," "maskholes," "covid deniers") and hashtags ("#StayTheFuckHome," "#Plandemic") of contempt for both perceived "sides" (Reyes, 2011, p. 785) in this conflict remained (for an analysis of terms from the German discourse, see Vogel, 2020, p. 23). Across European countries, politicians blamed the necessity of ever new measures on the "relaxation" of individuals, especially vulnerable groups such as youths (de Maya, 2020; Kosok, 2020; Tullis, 2020) or migrants, who in some cases were even considered to personify the virus (Hartman et al., 2021; Jetten et al., 2020; see also Adida et al., 2020). This scapegoat framing was again picked up by the press in what can be considered a "moral panic discourse" (Cohen, 1972/2002) and conveniently distracted from political failures. In an analysis of the UK, Ramsay (2020) argues that "the mostly pro-regime press has been hard at work, ensuring that the powerful aren't the subject of people's wrath, but that our so-called 'covidiot' neighbours are blamed instead."

An us-group of "moral entrepreneurs" is thus juxtaposed to a them-group of "scapegoats" (McEnery, 2006, p. 6) depicted negatively using nominal/referential and argumentative strategies (Wodak, 2001). The moral entrepreneurs campaign against the object of offence (socialisation, agglomeration, or other "irresponsible" behaviour), while the scapegoats propagate it. Following Foucault's (1980, p. 90) argument that power should be analysed "primarily in terms of struggle, conflict and war," analysts interested in critiques of power should pay close attention to situations where conflict is sown through language. Once started, the dynamics of a discursively created social other are self-perpetuating: "When persons are viewed as distinctly different, negative labelling can be accomplished smoothly because there is little harm in attributing all manner of bad characteristics to 'them'" (Kosloff et al., 2010, p. 384). Simply reminding subjects of the groups they belong to might enhance their likelihood of accepting false information about out-group members, even if the identity of such an out-group has not been made explicit (Tucker et al., 2018, p. 42).

To counteract such socially corrosive tendencies and political blundering would have been the press's task. Communication and media structures are fundamental for the proper functioning of society: In Breslow's (1997, p. 240) summary of Habermas's thought on this issue, he argues that for a public to function in "a rational-critical manner," it must be able to assess the government's

action, hence the importance of the media as "the watchdogs of government on behalf of the people" (Breslow, 1997, p. 240). In the Covid-19 pandemic, some newspapers seem to have inverted this role: Regional newspapers such as the German Tagesspiegel or the Catalonian ARA could be observed to dedicate themselves to announcing restrictions and denouncing those who flouted them (see also Brost & Pörksen, 2020, for a general critique of German newspapers in the pandemic), thus creating the false impression that many people did not stick to the rules (Reicher, 2021). German national news channels have been accused of avoiding critical interrogation of government actors and largely engaging in crisis maintenance (Gräf & Hennig, 2020). A comparative study argues that the German media was among the few that took a "uniformly supportive stance during the pre-lockdown phase, only criticising where governments vacillated or where measures were not implemented appropriately" (Lilleker et al., 2021, p. 338).

Few voices questioned whether it is correct that not following some government measures is generally discussed in terms of ideological choices, expressions of science denialism, or anti-vaccination stance. Communication and discourse studies that appeared immediately focussed mainly on "anti-vaxxers" rather than on the discursive absence of disadvantaged voices, reifying the generalisation that all the unvaccinated are a homogeneous camp of ideologically driven opponents to vaccines. Social inquiries, however, show that major reasons for vaccine hesitancy can be found in structural disadvantages based on race and class (Jetten et al., 2020; Pabst, 2021; Tufekci, 2021). This underlines the importance of campaigning for better ways of reaching disadvantaged and poor people, those that generally do not seek medical care or are wary of dealing with any government body due to past experiences. Moralised discourses on vaccination that imply that vaccine hesitancy is generally due to ideological opposition to vaccination, and thus can be solved simply by combatting misinformation, is symptomatic of generally ignored inequality, forms of discrimination and injustice that "are structural and deeply imbricated with class (and gender) domination'' (Fraser & Jaeggi, 2018, p. 208). Understanding them in abstraction from such power relations, as mere "ideology," implies that they can be overcome by simply "doling out moral blame" (Fraser & Jaeggi, 2018, p. 208), by excluding or combatting certain "wrong" ideologies. In the course of that, those not recognised by this supposedly left-liberal project of emancipation become alienated and may seek recognition in alternative approaches such as populism and nativism.

Research in communication and discourse studies has gone a great length in pointing out the importance of language in shaping society. The cognitivist paradigm has tirelessly pointed to the conceptual level as the site where meaning and human activity originate. While this has brought with it great advancements in the interplay of discourse and society, it also led to an overestimation of the transformative potential of language, while simultaneously pushing aside the very real influence of class constraints on social behaviour. Fraser critiques that much of the current opposition to injustices such as racism, sexism, homophobia, or Islamophobia addresses them through the shallow and inadequate progressive neoliberal mode of moralising condescension, "grossly exaggerating the extent to which the trouble is inside people's heads and missing the depth of the structural-institutional forces that undergird them" (Fraser, 2017, p. 62). As I have argued in this section, the Covid-19 pandemic has exposed structural inequality, which must not be ignored by analyses if we are to make sense of the divided societies we encounter as a result. Explanations, both academic and non-academic, must not be sought exclusively in ideologically misguided individual minds, but also in old and new class relations of (discursive) power obtained in society.

5. Conclusion

The Covid-19 crisis is in many ways an inflection point. The social division we are perceiving, at least when it comes to our capacity for rational debate, is critical. In this article, I have argued that the Covid-19 pandemic has showcased a binary line running through society, which can be sought in the ramifications of progressive neoliberalism, a concept that has so far reached little attention in society and academia. I hope it has provided a useful perspective to understanding some phenomena of the Covid-19 pandemic. As regards academic study, how can a class perspective be included in the study of discourse and communication? One way of doing this may be to reflect on the use of social media and on their use as corpora, which is increasingly a major basis for research. Do the discourses taking place on social media reflect and represent society, that is, could they also be found when studying discourses "out there"? Leetaru (2016) argues that, in the increasing popularity to study society through social media, we are "ignoring the critical questions of how well social media actually reflects societal trends." McGregor (2019, p. 1083) finds that social media expands notions of public opinion and gives "marginalised voices easier access to elites," but also presents "a more fractured sense of the public that is not comprehensive or representative." For Öhman and Watson (2021, p. 18), "the objection that social media data do not represent society does not make sense, because society increasingly takes place within social media." Answering this question will be the task of future communication, discourse, and social media research.

Many progressive liberals have been in favour of authoritarian political responses. The irreconcilability of supposed leftist thinking with authoritarian politics was apparently solved by the claim that a strict lockdown policy would be against neoliberalism because it enables a

quick reopening, while the "soft" lockdowns that actually happen protect the economy and only restrict private life. This approach, however, forgets that left-liberals themselves argue from the dominating class position: As beneficiaries of digitalisation, many of the Internet-ready, new upper-middle-class life has largely been unaffected by the measures, and many do not see their existence threatened, but have rather welcomed new opportunities as much of public life stumbles into newly digitalised areas. Members of this class have little notion of the lives of low wage workers, bar, and hotel owners, or culture producers whose very existence has already been precarious and is now threatened by the forced closure of their businesses. If those who dare to complain are met with morally self-righteous contempt on social media, more and more moderate people from that class may turn to populist and nativist actors who promise to take them seriously, which explains the rise of Trumpism, Brexit, and the recent surge in "freedom" movements around Covid-19 across countries. The winners of the digital shift envision their approach to be one of compassion, but the failure to understand the very real class divide coupled with a general lack of long-term protective measures against a climate disaster could lead to even greater social conflict in the climate emergency.

Understanding these processes, I believe, is necessary if societies are to stay cohesive in a world where every crisis seems to generate the potential for more polarisation of opinion. Increasing attention is given to issues of misinformation—in some aspects rightly so—but I have argued that not every social issue can be explained by (a simplistic concept of) ideology, and consequently not every problem can be solved if "truth" and "facts" prevailed. Late modern society is still based on structural inequalities, and these have likely been incremented by the Covid-19 pandemic, which has put the spotlight on a range of professions that are invaluable to society yet are not normally recognised as such. An awareness of the divisive potential of progressive neoliberalism, as I have tried to demonstrate in this article, is crucial to address humanity's major challenge—the climate emergency—together.

Acknowledgments

Conflict of Interests

The author declares no conflict of interests.

References

Adida, C. L., Dionne, K. Y., & Platas, M. R. (2020). Ebola, elections, and immigration: How politicising an epidemic can shape public attitudes. *Politics, Groups and Identities*, *8*(3), 488–514. https://doi.org/10.1080/21565503.2018.1484376

Aiello, L. M., Quercia, D., Zhou, K., Constantinides, M., Šćepanović, S., & Joglekar, S. (2021). How epidemic psychology works on social media: Evolution of responses to the Covid-19 pandemic. *Humanities and Social Sciences Communications*, *8*, Article 179. https://doi.org/10.1057/s41599-021-00861-3

Baker, P. (2012). Acceptable bias? Using corpus linguistics methods with critical discourse analysis. *Critical Discourse Studies*, *9*(3), 247–256. http://doi.org/10.1080/17405904.2012.688297

Bar-On, T., & Molas, B. (2021). *Responses to the Covid-19 pandemic by the radical right: Scapegoating, conspiracy theories and new narratives*. ibidem.

Bieber, F. (2020). Global nationalism in times of the Covid-19 pandemic. *Nationalities Papers*, *50*(1), 13–25. https://doi.org/10.1017/nps.2020.35

Bisiada, M. (2021). Discursive structures and power relations in Covid-19 knowledge production. *Humanities & Social Sciences Communications*, *8*, Article 248. https://doi.org/10.1057/s41599-021-00935-2

Bobba, G., & Hubé, N. (2021). *Populism and the politicisation of the Covid-19 crisis in Europe*. Palgrave Macmillan.

Bogliacino, F., Codagnone, C., Montealegre, F., Folkvord, F., Gómez, C., Charris, R., Liva, G., Lupiáñez-Villanueva, F., & Veltri, G. A. (2021). Negative shocks predict change in cognitive function and preferences: Assessing the negative affect and stress hypothesis. *Scientific Reports*, *11*, Article 3546. https://doi.org/10.1038/s41598-021-83089-0

Breslow, H. (1997). Civil society, political economy, and the internet. In S. G. Jones (Ed.), *Virtual culture: Identity and communication in cybersociety* (pp. 236–257). SAGE.

Brost, M., & Pörksen, B. (2020, April 13). Angesteckt: Warum der Journalismus in der Corona-Krise besonders gebraucht wird—Und vor welchem Problem er steht [Infected: Why journalism is especially needed in the corona crisis—And which problem it faces]. *Die ZEIT*. https://www.zeit.de/2020/16/coronavirus-berichterstattung-journalismus-information

Calisher, C., Carroll, D., Colwell, R., Corley, R. B., Daszak, P., Drosten, C., Enjuanes, L., Farrar, J., Field, H., Golding, J., Gorbalenya, A., Haagmans, B., Hughes, J. M., Karesh, W. B., Keusch, G. T., Lam, S. K., Lubroth, J., Mackenzie, J. S., Madoff, L., & Mazet, J. (2020). Statement in support of the scientists, public health professionals, and medical professionals of China combatting Covid-19. *The Lancet*, *395*(10226), e42–e43. https://doi.org/10.1016/s0140-6736(20)30418-9-6736(20)30418-9

Camus, A. (1956). *The rebel: An essay on man in revolt*. Vintage Books.

Cohen, S. (2002). *Folk devils and moral panics: The creation of mods and rockers* (3rd ed.). Routledge. (Original work published 1972)

Coleman, H. (Ed.). (2015). *Language and social cohesion in the developing world*. British Council; Deutsche Gesellschaft für internationale Zusammenarbeit.

Davey Smith, G., Blastland, M., & Munafò, M. (2020). Covid-19's known unknowns. *British Medical Journal*, *2020*(371), Article m3979. https://doi.org/10.1136/bmj.m3979

Davis, H. G. (1990). Introduction. In H. G. Davis (Ed.), *Redefining linguistics* (pp. 1–17). Routledge.

de Maya, S. (2020, July 18). "Relax, don't do it." *Treball*. http://revistatreball.cat/relax-dont-do-it

Devi, S. (2020). Travel restrictions hampering Covid-19 response. *The Lancet*, *395*(10233), 1331–1332. https://doi.org/10.1016/S0140-6736(20)30967-3

Engber, D. (2021, November 24). The lab-leak theory meets its perfect match. *The Atlantic*. https://www.theatlantic.com/ideas/archive/2021/11/lab-leak-covid-origin-coincidence-wet-market/620794

Fassin, Y. (2021). Research on Covid-19: A disruptive phenomenon for bibliometrics. *Scientometrics*, *126*, 5305–5319. https://doi.org/10.1007/s11192-021-03989-w

Foucault, M. (1980). Truth and power. In C. Gordon (Ed.), *Power/knowledge: Selected interviews and other writings 1972–1977* (pp. 107–133). The Harvester Press.

Foucault, M. (1981). The order of discourse. In R. Young (Ed.), *Untying the text: A post-structuralist reader* (pp. 48–78). Routledge.

Foucault, M. (1997). *"Society must be defended": Lectures at the Collège de France, 1975–76*. Picador.

Fraser, N. (2017). From progressive neoliberalism to Trump—And beyond. *American Affairs*, *1*(4), 46–64.

Fraser, N., & Jaeggi, R. (2018). *Capitalism: A conversation in critical theory*. Polity.

Friedkin, N. E. (2004). Social cohesion. *Annual Review of Sociology*, *30*(1), 409–425. https://doi.org/10.1146/annurev.soc.30.012703.110625

Gadarian, S. K., Goodman, S. W., & Pepinsky, T. (2021). Partisan endorsement experiments do not affect mass opinion on Covid-19. *Journal of Elections, Public Opinion and Parties*, *31*(Suppl. 1), 122–131. https://doi.org/10.1080/17457289.2021.1924727

Garcia, D., Pellert, M., Lasser, J., & Metzler, H. (2021). *Social media emotion macroscopes reflect emotional experiences in society at large*. ArXiv. https://arxiv.org/abs/2107.13236

Gates, B. (2020, April 23). The first modern pandemic. *Gates Notes*. https://www.gatesnotes.com/health/pandemic-innovation

Gee, J. P. (2011). *An introduction to discourse analysis: Theory and method* (3rd ed.). Routledge.

Gordon, C. (2020, March 27). Corona: The inequality virus. *Jacobin*. https://jacobinmag.com/2020/03/coronavirus-inequality-covid-19-work-education-health-disparities-poverty

Goudeau, S., Sanrey, C., Stanczak, A., Manstead, A., & Darnon, C. (2021). Why lockdown and distance learning during the Covid-19 pandemic are likely to increase the social class achievement gap. *Nature Human Behaviour*, *5*, 1273–1281. https://doi.org/10.1038/s41562-021-01212-7

Gräf, D., & Hennig, M. (2020, September). Die Verengung der Welt: Zur medialen Konstruktion Deutschlands unter Covid-19 anhand der Formate *ARD Extra—Die Coronalage* und *ZDF Spezial* [The narrowing of the world: On the medial construction of Germany under Covid-19 through the formats *ARD Extra—The corona situation* and *ZDF Spezial*]. *DFG Graduiertenkolleg*, *2020*(#COV-19), 13–20. https://www.phil.uni-passau.de/fileadmin/dokumente/fakultaeten/phil/lehrstuehle/sieber/Publikationen/Magazin__Cov-19__September_2020_.pdf

Grimes, D. R. [@drg1985]. (2021, March 16). *Suspension of #AstraZeneca #vaccine may be well-intentioned, but it is not supported by evidence* [Tweet]. Twitter. https://twitter.com/drg1985/status/1371748010435166209

Hart, C. (2014). *Discourse, grammar and ideology: Functional and cognitive perspectives*. Bloomsbury.

Hartman, T. K., Stocks, T. V. A., McKay, R., Gibson-Miller, J., Levita, L., Martinez, A. P., Mason, L., McBride, O., Murphy, J., Shevlin, M., Bennett, K. M., Hyland, P., Karatzias, T., Vallières, F., & Bentall, R. P. (2021). The authoritarian dynamic during the Covid-19 pandemic: Effects on nationalism and anti-immigrant sentiment. *Social Psychological and Personality Science*, *12*(7), 1274–1285. https://doi.org/10.1177/1948550620978023

Horton, R. (2020). Offline: Covid-19 is not a pandemic. *The Lancet*, *396*(10255), Article P874. https://doi.org/10.1016/S0140-6736(20)32000-6

Hossenfelder, S. [@skdh]. (2021, March 16). *Yeah, I know there are loads of vaccine enthusiasts on twitter* [Tweet]. Twitter. https://twitter.com/skdh/status/1371705016050925568

Jäger, M. (2022, February 20). Woher kam die Furin-Spaltstelle? [Where did the Furin cleavage site come from?]. *Der Freitag*. https://www.freitag.de/autoren/michael-jaeger/sars-cov-2-woher-kam-die-furin-spaltstelle

Jetten, J., Reicher, S. D., Haslam, S. A., & Cruwys, T. (2020). *Together apart: The psychology of Covid-19*. SAGE.

Keating, J. (2020, May 5). Covid-19 is the first truly global event. *Slate*. https://slate.com/news-and-politics/2020/05/covid-19-global-event-pandemic.html

Khazan, O. (2020, April 15). How the coronavirus could create a new working class. *The Atlantic*. https://www.theatlantic.com/health/archive/2020/04/coronavirus-class-war-just-beginning/609919

Kligler-Vilenchik, N., Baden, C., & Yarchi, M. (2020). Interpretative polarisation across platforms: How political disagreement develops over time on Facebook, Twitter, and WhatsApp. *Social Media + Society*, *6*(3). https://doi.org/10.1177/2056305120944393

Kosloff, S., Greenbern, J., Schmader, T., Dechesne, T., & Weise, D. (2010). Smearing the opposition: Implicit and explicit stigmatisation of the 2008 US presidential candidates and the current US president. *Journal of Experimental Psychology: General*, *139*(3), 383–398. https://doi.org/10.1037/a0018809

Kosok, J.-J. (2020, October 16). Wenn das mal nichts mit dem System zu tun hat [When it has nothing to do with the system for once]. *Der Freitag*. https://www.freitag.de/autoren/jan-jasper-kosok/wenn-das-mal-nichts-mit-dem-system-zu-tun-hat

Leetaru, K. (2016). *Does social media actually reflect reality?* Forbes. https://www.forbes.com/sites/kalevleetaru/2016/02/16/does-social-media-actually-reflect-reality

Lehmann, J. F. (2022, January 9). Aus dem pandemischen Jetzt [From the pandemic now]. *Der Freitag*. https://www.freitag.de/autoren/der-freitag/aus-dem-pandemischen-jetzt

Lilleker, D., Coman, I., Gregor, M., & Novelli, E. (2021). Political communication and Covid-19: Governance and rhetoric in global comparative perspective. In D. Lilleker, I. Coman, M. Gregor, & E. Novelli (Eds.), *Political communication and Covid-19* (pp. 333–350). Routledge.

Lohmeyer, B. A., & Taylor, N. (2021). War, heroes and sacrifice: Masking neoliberal violence during the Covid-19 pandemic. *Critical Sociology*, *47*(4/5), 625–639. https://doi.org/10.1177/0896920520975824

McEnery, T. (2006). *Swearing in English: Bad language, purity and power from 1586 to the present*. Routledge.

McGregor, S. C. (2019). Social media as public opinion: How journalists use social media to represent public opinion. *Journalism*, *20*(8), 1070–1086. https://doi.org/10.1177/1464884919845458

Mills, S. (2004). *Discourse* (2nd ed.). Routledge.

Modgil, S., Singh, R. K., Gupta, S., & Dennehy, D. (2021). A confirmation bias view on social media induced polarisation during Covid-19. *Information Systems Frontiers*. Advance online publication. https://doi.org/10.1007/s10796-021-10222-9

Musolff, A. (2022). "War against Covid-19": Is the pandemic management as war metaphor helpful or hurtful? In A. Musolff, R. Breeze, K. Kondo, & S. Vilar-Lluch (Eds.), *Pandemic and crisis discourse: Communicating Covid-19 and public health strategy* (pp. 307–320). Bloomsbury. https://doi.org/10.5040/9781350232730.ch-017

Neumann, T., Kelm, O., & Dohle, M. (2021). Polarisation and silencing others during the Covid-19 pandemic in Germany: An experimental study using algorithmically curated online environments. *Javnost—The Public*, *28*(3), 323–339. https://doi.org/10.1080/13183222.2021.1969621

Nguyen, M. H., Gruber, J., Fuchs, J., Marler, W., Hunsaker, A., & Hargittai, E. (2020). Changes in digital communication during the Covid-19 global pandemic: Implications for digital inequality and future research. *Social Media + Society*, *6*(3). https://doi.org/10.1177/2056305120948255

Öhman, C., & Watson, D. (2021). Are the dead taking over Instagram? A follow-up to Öhman & Watson (2019). In C. Cowls & J. Morley (Eds), *The 2020 yearbook of the digital ethics lab* (pp. 5–22). Springer.

Pabst, Y. (2021, November 24). Wer sind denn nun die Ungeimpften? [So, who are the unvaccinated?]. *Der Freitag*. https://www.freitag.de/autoren/der-freitag/geruechte-ueber-ungeimpfte-und-warum-der-staat-die-falschen-prioritaeten-setzt

Panzeri, F., Paola, S. D., & Domaneschi, F. (2021). Does the Covid-19 war metaphor influence reasoning? *PLOS ONE*, *16*(4), Article e0250651. https://doi.org/10.1371/journal.pone.0250651

Paul-Ehrlich-Institut. (2021). *The Paul-Ehrlich-Institut informs: Temporary suspension of vaccination with Covid-19 vaccine AstraZeneca*. Paul-Ehrlich-Institut.

Pennycook, A. (2021). *Critical applied linguistics: A critical reintroduction* (2nd ed.). Routledge.

Ramsay, A. (2020, March 28). Stop blaming ordinary people for the UK's pandemic failures. *openDemocracy*. https://www.opendemocracy.net/en/opendemocracyuk/stop-blaming-ordinary-people-for-the-uks-pandemic-failures

Reicher, S. (2021, January 15). Most of us are sticking to the lockdown rules, so why do we blame one another? *The Guardian*. https://www.theguardian.com/commentisfree/2021/jan/15/lockdown-rules-blaming-covidiots-compliance

Renström, E. A., & Bäck, H. (2021). Emotions during the Covid-19 pandemic: Fear, anxiety, and anger as mediators between threats and policy support and political actions. *Journal of Applied Social Psychology*, *51*(8), 861–877. https://doi.org/10.1111/jasp.12806

Reyes, A. (2011). Strategies of legitimisation in political discourse: From words to actions. *Discourse & Society*, *22*(6), 781–807. https://doi.org/10.1177/0957926511419927

Russell, J. H., & Patterson, D. (2022, February 17). The mask debacle: How partisan warfare over mandates became a central feature of the pandemic. *Tablet*. https://www.tabletmag.com/sections/science/articles/the-mask-debacle

Simandan, D., Rinner, C., & Capurri, V. (in press). Confronting the rise of authoritarianism during the Covid-19 pandemic should be a priority for critical geographers and social scientists. *ACME: An International Journal for Critical Geographies*.

Stjernswärd, S., & Glasdam, S. (2021). Solidarity and polarisation regarding Covid-19 and related

risks—A thematic analysis of comments from an international survey. *Social Sciences & Humanities Open*, *4*(1), Article 100211. https://doi.org/10.1016/j.ssaho.2021.100211

Strong, P. (1990). Epidemic psychology: A model. *Sociology of Health & Illness*, *12*(3), 249–259. https://doi.org/10.1111/1467-9566.ep11347150

Todorov, T. (1984). *Mikhail Bakhtin: The dialogical principle*. The University of Minnesota Press.

Tucker, J. A., Guess, A., Barberá, P., Vaccari, C., Siegel, A., Sanovich, S., Stukal, D., & Nyhan, B. (2018). *Social media, political polarisation, and political disinformation: A review of the scientific literature*. SSRN. http://dx.doi.org/10.2139/ssrn.3144139

Tufekci, Z. (2021, October 15). The unvaccinated may not be who you think. *The New York Times*. https://www.nytimes.com/2021/10/15/opinion/covid-vaccines-unvaccinated.html

Tullis, P. (2020, June 5). Dutch cooperation made an "intelligent lockdown" a success. *Bloomberg*. https://www.bloomberg.com/news/features/2020-06-05/netherlands-coronavirus-lockdown-dutch-followed-the-rules

Vogel, F. (2020). "Wenn Virologen alle paar Tage ihre Meinung ändern, müssen wir in der Politik dagegenhalten"—Thesen zur politischen Sprache und (strategischen) Kommunikation im Pandemie-Krisendiskurs ["If virologists change their opinion every other day, we in politics must steer against that"—Theses on political language and (strategic) communication in the pandemic crisis discourse]. *Sprachreport*, *36*(3), 20–29. https://doi.org/10.14618/sr-3-2020-vog

Wade, N. (2021, May 5). The origin of Covid: Did people or nature open Pandora's box at Wuhan? *Bulletin of the Atomic Scientists.* https://thebulletin.org/2021/05/the-origin-of-covid-did-people-or-nature-open-pandoras-box-at-wuhan/amp

Wagenknecht, S. (2021). *Die Selbstgerechten: Mein Gegenprogramm für Gemeinsinn und Zusammenhalt* [The self-righteous: My counterprogram for solidarity and social cohesion]. Campus.

Waltner-Toews, D., Biggeri, A., Marchi, B. D., Funtowicz, S., Giampietro, M., O'Connor, M., Ravetz, J. R., Saltelli, A., & van der Sluijs, J. P. (2020). *Postnormal pandemics: Why Covid-19 requires a new approach to science*. STEPS Centre. https://steps-centre.org/blog/postnormal-pandemics-why-covid-19-requires-a-new-approach-to-science

Wicke, P., & Bolognesi, M. M. (2021). Covid-19 discourse on Twitter: How the topics, sentiments, subjectivity, and figurative frames changed over time. *Frontiers in Communication*, *6*, Article 651997. https://doi.org/10.3389/fcomm.2021.651997

Wodak, R. (2001). The discourse-historical approach. In R. Wodak & M. Meyer (Eds.), *Methods of critical discourse analysis* (pp. 63–95). SAGE.

About the Author

Mario Bisiada is associate professor in translation and applied language studies at Pompeu Fabra University, Barcelona. His recent research focuses on cross-linguistic discourse studies of metaphors and hashtags. He has published on the emergence and use of the "homework" metaphor and on different framings of the #MeToo hashtag in German, English, and Spanish newspapers discourse. He is principal investigator of the Frames and Narratives of Migration and of Translation in Europe project, which investigates cross-linguistically existent discourse patterns on migration.

COGITATIO