



UvA-DARE (Digital Academic Repository)

Managing misinformation and conflicting information

A framework for understanding misinformation and rumor

Austin, L.; van der Meer, T.G.L.A.; Lee, Y.-I.; Spangler, J.

DOI

[10.4324/9780429330650-12](https://doi.org/10.4324/9780429330650-12)

Publication date

2021

Document Version

Final published version

Published in

Advancing crisis communication effectiveness

License

Article 25fa Dutch Copyright Act (<https://www.openaccess.nl/en/in-the-netherlands/you-share-we-take-care>)

[Link to publication](#)

Citation for published version (APA):

Austin, L., van der Meer, T. G. L. A., Lee, Y.-I., & Spangler, J. (2021). Managing misinformation and conflicting information: A framework for understanding misinformation and rumor. In Y. Jin, B. H. Reber, & G. J. Nowak (Eds.), *Advancing crisis communication effectiveness: Integrating public relations scholarship with practice* (pp. 113-129). (Routledge Research in Public Relations; Vol. 10). Routledge. <https://doi.org/10.4324/9780429330650-12>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

8 Managing Misinformation and Conflicting Information

A Framework for Understanding Misinformation and Rumor

Lucinda Austin, Toni G.L.A. van der Meer, Yen-I Lee, and Jim Spangler

In a polarizing media environment increasingly fraught with misinformation, disinformation, contradicting information, and rumor, it is tougher than ever for brands and agencies to correct the record or make their voices heard. With the proliferation of social media platforms, information is spread more quickly and more widely than ever before. A rumor can become a crisis in a very short period of time, and this misinformation and rumor can be damaging to a company's reputation and to its profits and stock prices (Atkinson, 2019).

While misinformation has been examined more extensively from the perspective of journalism, information technology, and politics (Anderson & Rainie, 2017), there is a lack of understanding regarding how misinformation disseminated via social media affects brand image and organizational reputation and legitimacy, potentially leading to crisis. These social media crises represent the "bleeding edge" of crisis communication research for organizations (Coombs, 2014, p. 1). While research in this arena has been emerging, it has not been sufficient or fully evidence-based.

Misinformation and rumor, as it relates to crisis, has been studied more extensively in the health communication and political communication realms, and a large trend in journalism includes the study of "fake news" (Egelhofer & Lecheler, 2019). Some of the most widely studied topics regarding misinformation in the health realm include vaccination and novel infectious diseases, such as Ebola and Zika, and misinformation has most commonly been studied through frameworks from psychology and network studies (Wang et al., 2019). According to research from the Pew Internet Center (Mitchell et al., 2019), most Americans believe that fake news is spreading confusion, and around half of Americans believe that they have unknowingly shared fake news with others. And the Institute for Public Relations' report on disinformation highlights that two-thirds of Americans think misinformation and disinformation is a major problem—on par with gun violence and terrorism (McCorkindale, 2019).

So why does fake news or misinformation spread so quickly? Marwick (2018) asserts that, at least in the political realm, fake news fits with partisan narratives and helps people to express their political identity and personal values. Fake news also frequently taps into news values such as negativity, sensationalism, and conflict, which makes it more arousing compared to other news and therefore more likely to be read and shared (Lewandowsky et al., 2017). And, while fact-checking websites, such as Snopes, PolitiFact, and others, have gained momentum within journalism circles, these sites have not been able to stem misinformation, but, instead, in some cases, have caused individuals to “double down” on their beliefs in the rumor (Marwick, 2018), perhaps due to lack of trust in sources, organizations, and authorities.

In this chapter, we will define misinformation and rumor, as it has been discussed in academic and scholarly literature and in practice, describe challenges in dealing with misinformation and rumor in practice, and develop future directions for crisis research and practice.

Challenges in Application

Sources estimate that more than 6.6 million tweets sharing fake news were sent in the months before the 2016 US presidential election with much of this coming from bot or semi-automated accounts and often identifiable as part of a coordinated campaign (Hindman & Barash, 2018). And close to half of the accounts discussing COVID-19 and the reopening of the US, even as COVID-19 cases began to grow, were linked to supposed bot accounts according to researchers from Carnegie Mellon (Young, 2020).

Social media organizations are taking a more active role in monitoring misinformation on select topics, which has been shown to be successful in limited applications. An example from the political realm provides some insight. The Real Strategy, an extreme conspiracy site that shared fake news prior to the 2016 US presidential election and was a prominent actor in the debunked Pizzagate child sex trafficking conspiracy theory hoax, was linked to or referenced by over 700,000 tweets in data collected by the Knight Foundation (Hindman & Barash, 2018). Twitter took action against the account and Reddit blacklisted the site—likely due to issues of libel, rumors shared from The Real Strategy were greatly reduced and their website became defunct.

In addition to addressing the social media company policies that can impact the spread of misinformation, companies are starting to hire firms to employ artificial intelligence to search for misinformation related to their organizations (Atkinson, 2019). Finding and addressing this misinformation before it spreads widely can help to limit the impact on reputation and stock prices. With the rapid spread of misinformation and rumor via social media, a company can quickly be in the position of having to defend itself on social media; as social media has given a voice to every individual with access, false information can be easily constructed and spread among small

but active groups of like-minded individuals, which, in turn, can result in misinformation reaching a broader audience. Individuals can publish information of their choosing, instantly acquiring a degree of credibility and more easily reaching a larger audience.

Defining and Situating Rumor in Crisis

The study of rumor is not new, although the focus on “fake news,” misinformation, and disinformation has only more recently entered our collective vernacular. Rumor has been studied from a social psychological perspective in a variety of crisis settings. Rumor, which is said to thrive in times of social upheaval, has historically been defined by three characteristics: has a distinct mode of transmission, provides information about a happening or condition, and satisfies some kind of expressive or gratifying need (Knapp, 1944).

Rumor has been defined as a “collective and collaborative transaction” (Oh et al., 2013, p. 409), in which people offer, evaluate, and interpret information to reach a common understanding of uncertain situations, to mitigate social intention, and to solve collective crisis problems (Bordia, 1996; Bordia & DiFonzo, 2004; Bordia et al., 1999; Oh et al., 2013; Shibutani, 1966). Furthermore, rumor has been distinguished from “gossip” and “urban myth” by DiFonzo and Bordia (2007), who clarified the construct of rumor as: (1) arising from ambiguous or threatening situations, (2) providing sense-making or threat management functions, and (3) containing unverified (but potentially useful information).

To understand how and why rumor is spread, scholars have conceptualized rumor in different ways. For instance, Allport and Postman (1947) proposed rumor as a multiplicative function of “importance” and “informational ambiguity” (p. 33). Later, Anthony (1973) argued the difficulty of quantifiable importance, and thus claimed rumor involved the relationship between anxiety and informational ambiguity—a similar sentiment to Rosnow (1980), who suggested rumor strength is enhanced by anxiety and uncertainty. In this vein, rumor has been conceptualized as “a verbal outlet to release emotional pressure (anxiety or concern) by rationalizing ambiguous information” (Oh et al., 2010, p. 3). These conceptualizations of rumor imply that the degree of emotional tension, such as anxiety, fear, worry, or concern, is key for spreading rumor when people receive the rumor content with a high degree of ambiguity related to the context surrounding the rumor (i.e., the problem or issue at hand that may already be a crisis or have the potential to become one).

Scholars have also examined the social factors that need to be considered in generating and spreading rumors. Shibutani (1966) stated that rumor is a collective transaction and “improvised news generated in the process of discussion by a group of people” (p. 62). Moreover, rumor is information without any factual basis about current issues that are spread by word of mouth (Morin, 1971). Rosnow (1988) claimed that rumor is a public communication

reflecting a private hypothesis about how the world works. These conceptualizations of rumor not only indicate the importance of rumor content on spreading rumor, but also imply the influence of individuals' networks, social pressures, and knowledge on the spread of rumor.

Since crisis situations are often characterized by high information needs contrasted with little available knowledge, rumors commonly prevail during such times. In an attempt to make sense of the emotional and uncertain situation at hand, absence of conclusive information might challenge the public debate on the crisis. Interpretations of frightening ambiguous information might result in statements without factual basis that can form the basis of further communication regarding understanding of the crisis. In this process, rumors might be born in an effort to define the crisis situation, but might only further fuel the complexity of crisis communication and of addressing it. The high demand for information during a crisis can make rumors even more newsworthy and such information might get uncritically accepted as the truth in the absence of other information.

Defining and Situating Misinformation in Crisis

Distinct from the study of rumor, three different types of false information have been defined as: (1) misinformation—false information shared without the intention of harm, (2) disinformation—false information shared with the intention of harm to individuals or organizations, and (3) malinformation—information based on some aspect of reality but shared with the intention of creating harm (Wardle & Derekshan, 2017). For example, malinformation may involve leaking private company information at a time crucial to company support or sharing works from a company spokesperson out of context.

Misinformation often, though, is used as a blanket statement for the presence or belief in “objectively” incorrect or false information (Bode & Vraga, 2015), without considering the original intent of the information (such as in malinformation or disinformation). Scholars further argue that incorrect information is inaccurate, incomplete, vague, or ambiguous information perceived by the recipient in a given moment and in a specific context (Karlova & Lee, 2011; Karlova & Fisher, 2013; Ruokolainen & Widén, 2020). Standing on receivers' perspectives, Ruokolainen and Widén (2020) further proposed two types: perceived misinformation and normative misinformation. Perceived misinformation is defined as “information is understood as information that is perceived as inaccurate, incomplete, vague or ambiguous information by receiver in a context or situation” (p. 3), while normative misinformation “is information in some social contexts generally accepted as inaccurate” (p. 3). This distinction in misinformation definitions is important, as what is “objectively” false may be hard to determine.

Misinformation has also been defined through integrating the message content and sharing outcomes. For instance, Southwell and colleagues (2018) defined misinformation as false information that is “both deliberately

promoted and accidentally shared” (p. 1). van der Meer and Jin (2020) further defined crisis misinformation as false information about a crisis that may initially be assumed valid, but that may later be corrected or retracted and lead to factual misperceptions. Misinformation often leads to incorrect belief about crises and the further sharing of misinformation, and can affect companies’ reputations and ultimately their stock prices and profits (Atkinson, 2019).

Misinformation and rumor are closely related concepts and often used interchangeably to refer to information that lacks truth. Though not always inaccurate, rumors are used in contemporary media environment to spread falsehoods. Overall, there is some conceptual overlap as well as difference between both terms. On the one hand, rumors can be considered a specific form of misinformation as rumors refer to claims of fact that have not been proved true but are considered credible because other people spread them and therewith seem to believe them (Berinsky, 2017). Thus, rumors relate to misinformation as they are considered an acceptance of unsubstantiated information that are not warranted beliefs and acquire their power through widespread transmission (Berinsky, 2017; Fine & Ellis, 2010). On the other hand, as rumors are largely defined as information that is not confirmed, it may also turn out to be true in the end (DiFonzo & Bordia, 2007). As misinformation broadly refers to false claims, rumors differ as their falsity is unknown and may turn out to be accurate even though they were factually unsubstantiated at the time of circulation (Shin et al., 2018).

Characteristics of Misinformation and Rumor Affecting Spread

Misinformation and rumor that is shared more widely has been shown to share some common features. For example, social media messages that are shared and consumed more widely may share the following characteristics including: a strong narrative, a powerful visual component, repetition, and provoking an emotional response (Wardle & Derekhshan, 2017). Additionally, the polarity of this emotional response and message sentiment affects the speed of message spread, as does the negativity of this emotional response with negative messages spreading more quickly than positive messages (Tsugawa & Ohsaki, 2015). Negative messages also elicit more attention and longer viewing times, particularly when multitasking (Kätsyri et al., 2016). Stories that are coherent (i.e., fits a broader story consistent with human behavior or similar stories) are also more likely to be perceived as credible (Lewandowsky et al., 2012). Messages are perceived as less credible when they appear to have persuasive intent or violate expectancies of receivers (Metzger & Flanagin, 2013).

Related to message characteristics, evaluators of these messages may use the following heuristics, or mental shortcuts, to evaluate the trustworthiness of these messages before deciding whether to share this misinformation.

Messages are increased in perceptions of credibility when they offer self-confirmation (i.e., confirmation of one's existing beliefs), consistency (i.e., consistent with other sources and messages), endorsement (i.e., recommendations from trusted others), and prior reputation (i.e., the reputation of the source is known or the name of the source is at least known) (Metzger & Flanagin, 2013). In addition, debunking misinformation appears to be harder when individuals have thought about their reasons for support of the misinformation or engaged in confirmation bias (Chan et al., 2017).

Sources thought of as mainstream media sources are ranked as more trustworthy than partisan or satirical news sources across the general public, although distrust of mainstream news is higher among conservative audiences in the US (Pennycook & Rand, 2019) and trust of media as a whole is low (Edelman, 2020). Weighing into this, individuals with higher cognitive reflection and greater familiarity of news sources were better able to discern between quality of news source and information (Pennycook & Rand, 2019).

Countering Misinformation and Rumor in Crisis

Challenges in dealing with misinformation and crisis include the correction and countering of misinformation on social media. The study of misinformation has discussed this challenge in terms of the perspectives of the misinformation flow, individual belief and social norms, and trustworthy sources and message content.

Misinformation Flow

First, regarding misinformation flow, scholars have adopted the two-step flow theory to examine how and why individuals spread and stop misinformation (Pang & Ng, 2017; Qin et al., 2015). The opinion climate, the individual's social influence, and costs involved in confirming the information are three factors to impact people's decision-making on spreading or stopping misinformation about crises on social media (Pang & Ng, 2017; Qin et al., 2015). The findings support the two-step flow theory that opinion leaders play a role in stopping the spread of crisis misinformation in public emergencies (Pang & Ng, 2017); however, on social media such as Twitter, crisis misinformation and corrective information may not always flow from opinion leaders (Pang & Ng, 2017). This approach helps researchers understand crisis misinformation flow on social media, but does not consider the influence of emotional tension (e.g., anxiety, fear, worry), media literacy, social factors, and message content on sharing crisis misinformation.

Individual Beliefs and Social Norms

Second, scholars have examined the effect of individual belief and social norms on combating misinformation behavior. For example, a study using the theory of planned behavior (TPB) (i.e., attitude toward combating

misinformation behavior, subjective norms, and perceived behavioral control) as well as the norm activation model (i.e., awareness of adverse consequences, ascribed responsibility, and personal norms) examined the formation of social media users' misinformation combating behavior during crises (Zhao et al., 2016). Zhao and colleagues (2016) further operationalized: (1) **awareness of adverse consequences** as a signifier for perception of harm stemming from the misinformation, (2) **ascribed responsibility** as the perceived responsibility of an entity for any negative consequences resulting from misinformation, and (3) **personal norms** as the sense of individuals' obligation to actively combat misinformation during crisis.

Zhao et al.'s (2016) findings showed that awareness of adverse consequences, ascribed responsibility, and personal norms, as well as attitudes toward the behavior, positively correlated to behavioral intentions to combat misinformation on social media. Perceived behavioral control positively predicted actual behavior of combating misinformation on social media (Zhao et al., 2016). This approach helps researchers understand how individual beliefs and social norms impact people's intentions and actual behaviors in combating misinformation on social media; however, questions remain as to how misinformation content on social media impacts people's beliefs and perceived social norms.

Trustworthy Sources and Message Content

Lastly, the trustworthiness of information sources as well as message content has been shown to matter in terms of misinformation spread and correction. This approach focuses on how the features of content of crisis misinformation and corrective strategies for misinformation impact people's accuracy beliefs and preventive actions.

Corrective information—information that directly addresses and corrects the rumor or misinformation—has been recommended as a strategy; however, corrective information as a standalone strategy has received mixed support. For example, a study examining Zika and Yellow Fever misinformation found that corrective information targeting Zika misperceptions not only failed to change inaccurate beliefs, also decreased accurate beliefs that individuals held prior (Carey et al., 2020). While corrective information was slightly more successful for a disease that was less novel and more well-known—Yellow Fever—it still did not increase support for policies or enhance preventive behaviors. Dispute messages to misinformation—or corrective information—have also been shown to possibly strengthen original (and sometimes incorrect) beliefs about environmental issues and simultaneously decrease trust in media (Yang & Overton, 2020). Additionally, exposure to corrective information may cause individuals to lash out at sources sharing the misinformation and at social media platforms as news sources—causing negative effects toward the source, but not lowering agreement with the misinformation (Jang et al., 2019). In addition to debunking (corrective) information, research has also examined pre-bunking information—media

literacy training received *in advance of* misinformation—and found this to be more successful than corrective information after the misinformation has spread (Hameleers, 2020).

Other research suggests that the type of corrective information, along with the source, and engaged emotions matter when it comes to addressing misinformation. van der Meer and Jin (2020) argued that the type of source and corrective strategy for misinformation result in different outcomes for perceived severity of public health crises, accuracy of beliefs, and taking preventive actions. van der Meer and Jin (2020) further examined how discrete emotions impact people’s decision-making for preventive actions taking, providing evidence that factual elaboration and sources of government agency and news media significantly improved belief accuracy and intention to take protective actions in an infectious disease outbreak scenario (van der Meer, 2020). Results showed that negative emotions (e.g., fear and anxiety) mediated the relationship between corrective misinformation through factual elaboration and individuals’ intention to take preventive actions (van der Meer & Jin, 2020). On the other hand, the positive emotion of hope mediated the relationship between corrective information from government agencies or news media and perceptions of health crisis severity (van der Meer & Jin, 2020).

van der Meer and Jin’s (2020) approach can help researchers and practitioners to understand how the strategy of correcting misinformation and including credible sources can impact people’s beliefs and intentions to take preventive actions in academic and practical ways. Future academic- and practice-based research about misinformation needs to examine different types of corrective strategies with different types of misinformation, such as incomplete, vague, or ambiguous misinformation about crises.

Recommendations for Organizations in Dealing with Misinformation and Rumor

A large question remaining is how businesses and corporations can address misinformation and rumor. Insights from psychology research, health, and political science studies can also be applied here. For organizations and businesses, planning and process can help to address the longer-term issue of rumor and misinformation. A few steps are recommended below, including: building trust, relationships, and reputation in advance; media monitoring, social listening, and assessing issues; planning and communication strategies; and legal action and policy considerations.

Build Trust, Relationships, and Reputation

A big part of the preparation for dealing with misinformation and rumor comes not in thinking about how to deal with the actual false information, but rather the “before work” of building a solid relationship with stakeholders and consumers and engendering trust. As illustrated above, trust is a major theme

regarding the spread of misinformation and rumor. As societal inequities expand, trust is low in government, business, non-governmental organization (NGOs), and media (Edelman, 2020). Emotions play a role as fear eclipses hope, but collaboration with other sectors shows potential for increasing trust (Edelman, 2020). For example, businesses that show their focus on ethics and competence can demonstrate how they operate for the good of society by focusing on social issues and working to make broader societal change.

Additionally, reputational history, in particular crisis history, can help to build reputation and trust. Acting ethically in past crises is one way to help build a strong crisis history and demonstrate the character and value of an organization (Coombs, 2007). Connection to concern and commitment to stakeholders, commitment to correcting mistakes, and the organization's core values can help organizations move to renewal after past crises (Ulmer & Sellnow, 2002).

Monitor and Assess

Social listening is a good first step to monitor the conversation surrounding an organization or company, whether in-house or externally sourced (Ferraro, 2019). Having an active and robust social media presence in normal times—and not just times of crisis—is a great start at engaging in dialogue with stakeholders and audiences and listening to how people are talking about an organization. Additionally, monitoring social media, news, and web traffic for company, product, topic, service, and issue mentions and conversation can help organizations to monitor issues and paracrises before they become a full crisis (Coombs & Holladay, 2012). Coombs and Holladay (2012) define paracrises as crisis risks that look like crises, often because they occur online and over social media and receive significant discussion; however, paracrises do not typically warrant a full crisis response from an organization and do not pose significant risk to the organization's reputation or operations. A paracrisis is a crisis risk, however, and should be monitored for potential threat.

Part of this monitoring may include blocking or reporting bad actors on social media platforms, including suspected troll or bot accounts or unknown entities seeking to sow disinformation. For example, after Broadcom announced an acquisition of CA Technologies in 2018, a fake memorandum circulated saying that the Defense Department would review the acquisition (Horowitz, 2018). When the memo was announced as forgery, stock shares fell, and at a time when investors were more attentively weighing investing in the merger (Ferraro, 2019). Proactively reporting bad actors on social media can help to limit the spread and sharing of some misinformation, although not eradicating it entirely.

Prepare and Communicate

Based on knowledge from issues monitoring, organizations can benefit from preparing for response to likely misinformation and rumor, including

thinking about how they would respond to a variety of different types of misinformation and rumor they are likely to encounter (Ferraro, 2019). In terms of messaging characteristics, organizations should think about the end goal of communication beyond debunking the rumor alone, including a focus on organizational identity and values, if appropriate.

As shown above, corrective information alone is not always enough to debunk a rumor or misinformation; however, directly addressing a minor rumor may be enough to stop the spread. For example, false ads were created for Starbucks in 2017 in an attempt to lure undocumented Americans to Starbucks on a set day, claiming to offer a promotion for “Dreamer Day” (see Yakowicz, 2017). Starbucks responded directly to accounts sharing this information, asking them to stop spreading misinformation (see Starbucks, 2017).

In polarizing issues, messages can seek to reduce the aspects of correcting information that threaten one’s worldview or find ways to simultaneously affirm worldview, as this is often why a rumor or piece of misinformation is more widely spread or acted upon (Lewandowsky et al., 2012). This requires communicators to evaluate and try to understand the worldview of those sharing misinformation and why this misinformation speaks to a gratifying need for them. Additionally, messaging should be simple and clear—and easier to remember than the misinformation, if possible, but that also fills any gaps in explanations that may be left behind by the alternate story (Lewandowsky et al., 2012); repetition of this simple, clear counter communication is also key, as misinformation has a way of sticking around and repetition will help to solidify the counter communication.

Practitioners also caution against overreacting to rumor and misinformation, as sometimes recognizing rumor in a big way may suggest validation of the rumor and draw more attention to it (Crawford, 1999). Starbucks’ response above shows a direct and simple way to address misinformation and rumor that is not yet widespread.

Additionally, addressing the misinformation on the platform where it happens is important, as the Starbucks example also illustrates. A press release on a company’s news site may not be read by users sharing information on a social media platform; however, a press release linked to a social media post—or better yet an actual social media post—may be.

Legal Action and Policy Considerations

A more drastic and final measure for dealing with misinformation is litigation or policy actions. Where legal issues are at play, such as in cases of defamation, libel, deceptive trade practices, or violation of intellectual property law, organizations may have a case for litigation (Golston, 2019). Litigation can be a lengthy and expensive process, and companies and organizations will need to think carefully about whether to venture here—or if they can, as misinformation and rumor may be protected by free speech laws, if it does not fit into the categories above (Ferraro, 2019).

Policy considerations may be another avenue for organizations, particularly for issues with longstanding rumor problems, as these policy changes can take time to advocate for. The policies of social media companies that allow misinformation and rumor to be shared represent one arena of policy consideration. As an example from the health realm, social media organizations have been more proactively monitoring vaccine misinformation. In academic research, Guidry et al. (2015) found that sites like Pinterest were sharing anti-vaccine information and conspiracy theories, and that most posts on the platform were related to negative mentions of vaccines. User searches for vaccine images mostly returned anti-vaccine messages and images. A profile of this research highlighted that these anti-vaccine posts were “going under the radar” on Pinterest (van Hilten, 2016). Likewise, reports surfaced indicating that Facebook and YouTube were helping the anti-vaxxer movement to “go viral” (Moon, 2019) and California Representative Adam Schiff condemned large social media companies for helping perpetuate this movement.

In response to these calls, Pinterest took an unprecedented step. While other social media giants were considering removing anti-vaccine posts from their platforms, Pinterest made a bold action that went one step further. In response, Pinterest first banned all vaccine content from its platform but later shifted to allow content from public health organizations, including governmental organizations; users who searched for vaccine information on Pinterest would receive official information from public health organizations only (Rutschman, 2019). Facebook took steps to remove anti-vaccine advertising and changed the ranking and recommendation of anti-vaccine information, although this information was not banned (Rutschman, 2019). YouTube, similarly, did not allow advertising on channels with anti-vaccine content and changed the filtering so anti-vaccine information was not presented in top search results, as it previously had been (Rutschman, 2019).

Recommendations for Further Research

Recommendations are made below for future scholarly and practice-based research on the spread of misinformation and rumor, as well as correcting and combating misinformation.

Future Research on the Spread of Misinformation

Building from the scholarship and practical examples shared in this chapter, a framework for characterizing and typologizing misinformation is suggested. To more comprehensively examine sharing of misinformation and rumor, future research is recommended to collect data on: (1) sources of misinformation by platform type (i.e., news, social media platform, blog, forum, etc.), format (e.g., video, photo, link, etc.), location, and influence of those sources (i.e., number of followers, influence score), (2) topics of

misinformation (e.g., common misinformation shared for each crisis case), (3) features of misinformation content (e.g., emotional appeals, false legitimacy, worldview alignment, Joyce, 2016; and self-confirmation/ consistency, endorsement, prior reputation, Metzger & Flanagin, 2013), and (4) types of information disorder (e.g., misinformation, disinformation, malinformation; Wardle & Derekhshan, 2017). Attempts should be made to identify bots or fake accounts to assess their influence.

The misinformation characteristics above should be considered in combination with outcomes, including metrics to capture processing and sharing of misinformation (e.g., impressions, likes, and shares), in addition to analysis of the conversation trends on social media. Results from this examination can be used to examine relationships between sources, topics, characteristics, and types of misinformation to identify influential factors in the development and spread of misinformation.

Future Research on Correcting and Combating Misinformation

While Coombs (2014) has suggested denial is the recommended strategy for misinformation crises, future research is recommended to examine specific response strategies based on the characterization of the misinformation, as defined above. Survey and experimental research is recommended to examine how trust in source, relational and reputational history, characteristics of the corrective information (e.g., clarity and simplicity, worldview alignment), repetition, individual beliefs, social norms, and information flow all work together to aid in effectively combating misinformation and offering corrective information.

Key Takeaways

Promising research suggests that sharing of misinformation on some social media platforms, such as Facebook, has gone down from its peak due to measures the platforms have taken to limit the spread of misinformation and rumor (Allcott et al., 2019). However, the sharing of misinformation on Twitter has been shown to be still on the rise (Allcott et al., 2019); clearly more work is needed to be done here in this arena. And as, at this writing, the US enters an election year (i.e., 2020) with COVID-19 still in outbreak, social media companies are grappling with how to deal with the spread of misinformation; rumor and misinformation that interferes with a fair and informed election is where some social media companies are choosing to draw the line (Barrett, 2020), although social media companies have long said they do not wish to police information shared and be the arbiters of truth.

This chapter offers some promising ways forward in terms of scholarly and practitioner research and guidelines for organizations and businesses to think about when addressing and correcting misinformation, and long

before, as they plan and prepare for the possibility of rumor and misinformation. As research and literature suggest, there is no easy fix for correcting misinformation, and periods of social tension, uncertainty, and ambiguity will likely only further the potential for rumor. Better understanding why misinformation is likely to spread, and how to make corrective information more likely to also spread and be effective, is one step forward to addressing a large issue for scholarship and practice.

References

- Allcott, H., Gentzkow, M., & Yu, C. (2019). Trends in the diffusion of misinformation on social media. *Research & Politics*, 6(2). <https://doi.org/10.1177/2053168019848554>
- Allport, G. W., & Postman, L. (1947). *The psychology of rumor*. Russell & Russell.
- Anderson, J., & Rainie, L. (2017, Oct.). The future of truth and misinformation online. *Pew Research Center*. <http://www.pewinternet.org/2017/10/19/the-future-of-truth-and-misinformation-online>
- Anthony, S. (1973). Anxiety and rumor. *The Journal of Social Psychology*, 89(1), 91–98. <https://doi.org/10.1080/00224545.1973.9922572>
- Atkinson, C. (2019, April 25). Fake news can cause “irreversible damage” to companies—and sink their stock price. *NBC Business News*. <https://www.nbcnews.com/business/business-news/fake-news-can-cause-irreversible-damage-companies-sink-their-stock-n995436>
- Barrett, B. (2020, May 28). COVID-19 shows how hard it will be for Facebook and Twitter to crack down on voting misinformation. *Slate Magazine*. <https://slate.com/technology/2020/05/twitter-facebook-trump-election-misinformation-coronavirus.html>
- Berinsky, A. J. (2017). Rumors and health care reform: Experiments in political misinformation. *British Journal of Political Science*, 47(2), 241–262. <https://doi.org/10.1017/S0007123415000186>
- Bode, L., & Vraga, E. K. (2015). In related news, that was wrong: The correction of misinformation through related stories functionality in social media. *Journal of Communication*, 65(4), 619–638. <https://doi.org/10.1111/jcom.12166>
- Bordia, P. (1996). *Rumor interaction patterns on computer-mediated communication networks*. Unpublished PhD dissertation, Temple University.
- Bordia, P., & DiFonzo, N. (2004). Problem solving in social interactions on the internet: Rumor as social cognition. *Social Psychology Quarterly*, 67(1), 33–49. <https://doi.org/10.1177/019027250406700105>
- Bordia, P., DiFonzo, N., & Chang, A. (1999). Rumor as group problem solving: Development patterns in informal computer-mediated groups. *Small Group Research*, 30(1), 8–28. <https://doi.org/10.1177/104649649903000102>
- Carey, J. M., Chi, V., Flynn, D. J., Nyhan, B., & Zeitzoff, T. (2020). The effects of corrective information about disease epidemics and outbreaks: Evidence from Zika and Yellow Fever in Brazil. *Science Advances*, 6(5), eaaw7449. <https://doi.org/10.1126/sciadv.aaw7449>
- Chan, M. S., Jones, C. R., Jamieson, K. H., & Albarracín, D. (2017). Debunking: A meta-analysis of the psychological efficacy of messages countering mis-information. *Psychological Science*, 11, 1531–1546. <https://doi.org/10.1177/0956797617714579>

- Coombs, T. (2014). State of crisis communication: Evidence and the bleeding edge. *Research Journal of the Institute for Public Relations*, 1(1). <https://instituteforpr.org/wp-content/uploads/CoombsFinalWES.pdf>
- Coombs, W. T. (2007). Protecting organization reputations during a crisis: The development and application of situational crisis communication theory. *Corporate Reputation Review*, 10(3), 163–176. <https://doi.org/10.1057/palgrave.crr.1550049>
- Coombs, W. T., & Holladay, J. S. (2012). The paracrisis: The challenges created by publicly managing crisis prevention. *Public Relations Review*, 38(3), 408–415. <https://doi.org/10.1016/j.pubrev.2012.04.004>
- Crawford, A. P. (1999). When those nasty rumors start breeding on the Web, you've got to move fast. *Public Relations Quarterly*, 44(4), 43–45. <https://search.proquest.com/docview/222449127?pq-origsite=gscholar>
- DiFonzo, N., & Bordia, P. (2007). *Rumor psychology: Social and organizational approaches*. American Psychological Association.
- DiFonzo, N., & Bordia, P. (2007). Rumor, gossip and urban legends. *Diogenes*, 54(1), 19–35. <https://doi.org/10.1177/0392192107073433>
- Edelman. (2020, January 19). *2020 Edelman trust barometer*. <https://www.edelman.com/trustbarometer>
- Egelhofer, J. L., & Lecheler, S. (2019). Fake news as a two-dimensional phenomenon: A framework and research agenda. *Annals of the International Communication Association*, 43(2), 97–116. <https://doi.org/10.1080/23808985.2019.1602782>
- Ferraro, M. F. (2019, June 10). Perspectives: Disinformation is harming businesses. Here are 6 ways to fight it. *CNN Business*. <https://www.cnn.com/2019/06/10/perspectives/disinformation-business/index.html>
- Fine, G. A., & Ellis, B. (2010). *The global grapevine: Why rumors of terrorism, immigration, and trade matter*. Oxford University Press.
- Golston, P. (2019, January 17). Target of disinformation. *Brunswick Review: The Crisis Issue*. <https://www.brunswickgroup.com/crisis-cyber-fake-news-i9290/>
- Guidry, J. P. D., Carlyle, K., Messner, M., & Jin, Y. (2015). On pins and needles: How vaccines are portrayed on Pinterest. *Vaccine*, 33(39), 5051–5056. <https://doi.org/10.1016/j.vaccine.2015.08.064>
- Hameleers, M. (2020). Separating truth from lies: Comparing the effects of news media literacy interventions and fact-checkers in response to political misinformation in the US and Netherlands. *Information, Communication & Society*, 1–17. <https://doi.org/10.1080/1369118X.2020.1764603>
- Hindman, M., & Barash, V. (2018). *Disinformation, “fake news” and influence campaigns on Twitter*. Knight Foundation. <https://knightfoundation.org/reports/disinformation-fake-news-and-influence-campaigns-on-twitter/>
- Horowitz, H. (2018, October 10). Broadcom: Letter calling for review of its CA technologies merger is fake. *CNN*. <https://www.cnn.com/2018/10/10/tech/broadcom-ca-technologies-cfius/index.html>
- Jang, J.-W., Lee, E.-J., & Shin, S. Y. (2019). What debunking of misinformation does and doesn't. *Cyberpsychology, Behavior and Social Networking*, 22(6), 423–427. <https://doi.org/10.1089/cyber.2018.0608>
- Joyce, E. (2016, August). The prevalence of fake news and how misinformation spreads. *Brandwatch*. <https://www.brandwatch.com/blog/react-the-prevalence-of-fake-news-and-why-we-are-more-misinformed-than-ever>
- Karlova, N., & Fisher, K. (2013). A social diffusion model of misinformation and disinformation for understanding human information behaviour. *Information Research*, 18(1), paper 573. <http://InformationR.net/ir/18-1/paper573.html>

- Karlova, N., & Lee, J. (2011). Notes from the underground city of disinformation: A conceptual investigation. *Proceedings of the Association for Information Science and Technology*, 48(1), 1–9. <https://doi.org/10.1002/meet.2011.14504801133>
- Kätsyri, J., Kinnunen, T., Kusumoto, K., Oittinen, P., & Ravaja, N. (2016). Negativity bias in media multitasking: The effects of negative social media messages on attention to television news broadcasts. *PLOS ONE*, 11(5), e0153712. <https://doi.org/10.1371/journal.pone.0153712>
- Knapp, R. H. (1944). A psychology of rumor. *The Public Opinion Quarterly*, 8(1), 22–37. <https://doi.org/10.1086/265665>
- Lewandowsky, S., Ecker, U. K. H., & Cook, J. (2017). Beyond misinformation: Understanding and coping with the “post-truth” era. *Journal of Applied Research in Memory and Cognition*, 6(4), 353–369. <https://doi.org/10.1016/j.jarmac.2017.07.008>
- Lewandowsky, S., Ecker, U. K. H., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, 13(3), 106–131. <https://doi.org/10.1177/1529100612451018>
- Marwick, A. (2018). Why do people share fake news? A sociotechnical model of media effects. *Georgetown Law Technology Review*, 2(2), 474–511. <https://georgetownlawtechreview.org/why-do-people-share-fake-news-a-sociotechnical-model-of-media-effects/GLTR-07-2018/>
- McCorkindale, T. (2019). *IPR disinformation in society report: How Americans perceive deliberately misleading news or information*. Institute for Public Relations. https://instituteforpr.org/wp-content/uploads/Disinformation_Study_IPR-6-18-1014.pdf
- Metzger, M., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal of Pragmatics*, 59, 210–220. <https://doi.org/10.1016/j.pragma.2013.07.012>
- Mitchell, A., Gottfried, J., Stocking, G., Walker, M., & Fedeli, S. (2019, June 5). Many Americans say made-up news is a critical problem that needs to be fixed. *Pew Research Center's Journalism Project*. <https://www.journalism.org/2019/06/05/many-americans-say-made-up-news-is-a-critical-problem-that-needs-to-be-fixed/>
- Moon, E. (2019, February 19). How Facebook helped the anti-vaxxer movement go viral. *Pacific Standard*. <https://psmag.com/news/how-facebook-helped-the-anti-vaxxer-movement-go-viral>
- Morin, E. (1971). *Rumor in Orleans*. Pantheon Books.
- Oh, O., Agrawal, M., & Rao, H. R. (2013). Community intelligence and social media services: A rumor theoretic analysis of tweets during social crises. *MIS Quarterly*, 37(2), 407–426. <https://doi.org/10.25300/MISQ/2013/37.2.05>
- Oh, O., Kwon, K. H., & Rao, H. R. (2010). An exploration of social media in extreme events: Rumor theory and Twitter during the Haiti Earthquake 2010. *ICIS 2010 Proceedings—Thirty First International Conference on Information Systems*, 231, 7332–7336. https://aisel.aisnet.org/icis2010_submissions/231/
- Pang, N., & Ng, J. (2017). Misinformation in a riot: A two-step flow view. *Online Information Review*, 41(4), 438–453. <https://doi.org/10.1108/OIR-09-2015-0297>
- Pennycook, G., & Rand, D. G. (2019). Fighting misinformation on social media using crowdsourced judgments of news source quality. *Proceedings of the National Academy of Sciences of the United States of America*, 116(7), 2521–2526. <https://doi.org/10.1073/pnas.1806781116>
- Qin, Z., Cai, J., & Wangchen, H. Z. (2015). How rumors spread and stop over social media: A multi-layered communication model and empirical analysis.

- Communications of the Association for Information Systems*, 36(20), 369–391. <https://doi.org/10.17705/1CAIS.03620>
- Rosnow, R. L. (1980). Psychology of rumor reconsidered. *Psychological Bulletin*, 87(3), 578–591. <https://doi.org/10.1037/0033-2909.87.3.578>
- Rosnow, R. L. (1988). Rumor as communication: A contextualist approach. *Journal of Communication*, 38(1), 12–28. <https://doi.org/10.1111/j.1460-2466.1988.tb02033.x>
- Ruokolainen, H., & Widén, G. (2020). Conceptualising misinformation in the context of asylum seekers. *Information Processing & Management*, 57(3). Advance on-line publication. <https://doi.org/10.1016/j.ipm.2019.102127>
- Rutschman, A. S. (2019, September 18). Malicious bots and trolls spread vaccine misinformation—now social media companies are fighting back. *The Conversation*. <http://theconversation.com/malicious-bots-and-trolls-spread-vaccine-misinformation-now-social-media-companies-are-fighting-back-123430>
- Shibutani, T. (1966). *Improvised news: A sociological study of rumor*. Bobbs-Merrill Company.
- Shin, J., Jian, L., Driscoll, K., & Bar, F. (2018). The diffusion of misinformation on social media: Temporal pattern, message, and source. *Computers in Human Behavior*, 83, 278–287. <https://doi.org/10.1016/j.chb.2018.02.008>
- Southwell, B. G., Thorson, E. A., & Sheble, L. (2018). Misinformation among mass audiences as a focus for inquiry. In B. G. Southwell, E. A. Thorson, & L. Sheble (Eds.), *Misinformation and mass audiences* (pp. 1–14). University of Texas Press.
- Starbucks Coffee [@Starbucks]. (2017, August 4). *This is completely false. Starbucks is not sponsoring any such event. Please do not spread misinformation.* [Tweet]. Twitter. <https://twitter.com/Starbucks/status/893597346436571136>
- Tsugawa, S., & Ohsaki, H. (2015). Negative messages spread rapidly and widely on social media. *Proceedings of the 2015 ACM on Conference on Online Social Networks*, 151–160. <https://doi.org/10.1145/2817946.2817962>
- Ulmer, R. R., & Sellnow, T. L. (2002). Crisis management and the discourse of renewal: Understanding the potential for positive outcomes of crisis. *Public Relations Review*, 28(4), 361–365. [https://doi.org/10.1016/S0363-8111\(02\)00165-0](https://doi.org/10.1016/S0363-8111(02)00165-0)
- van der Meer, T. G., & Jin, Y. (2020). Seeking formula for misinformation treatment in public health crises: The effects of corrective information type and source. *Health Communication*, 35(5), 560–575. <https://doi.org/10.1080/10410236.2019.1573295>
- van Hilten, L. G. (2016). Anti-vaccine posts are going “under the radar” on Pinterest. *Elsevier Connect*. <https://www.elsevier.com/connect/anti-vaccine-posts-are-going-under-the-radar-on-pinterest>
- Wang, Y., McKee, M., Torbica, A., & Stuckler, D. (2019). Systematic literature review on the spread of health-related misinformation on social media. *Social Science & Medicine (1982)*, 240, 112552. <https://doi.org/10.1016/j.socscimed.2019.112552>
- Wardle, C., & Derekshan, H. (2017, September). Information disorder: Toward an interdisciplinary framework for research and policy making, *Council of Europe Report*, F-67075 Strasbourg Cedex. <https://rm.coe.int/information-disorder-toward-an-interdisciplinary-framework-for-research/168076277c>
- Yakowicz, W. (2017, August 8). Fake Starbucks ad tries to lure the undocumented with discounted coffee. *Inc.Com*. <https://www.inc.com/will-yakowicz/fake-starbucks-dreamer-day-4chan-meme.html>
- Yang, F., & Overton, H. (2020, May 28). *Understanding corporate misinformation and the spread of environmental issues on social media*. Arthur W. Page Center for Integrity

- in Public Communication. <https://www.bellisario.psu.edu/page-center/article/understanding-corporate-misinformation-and-the-spread-of-environmental-issues>
- Young, V. A. (2020, May). *Nearly half of the Twitter accounts discussing 'reopening America' may be bots: CMU researchers say sophisticated, orchestrated bot campaigns aim to sow divide*. Carnegie Mellon University. <https://www.scs.cmu.edu/news/nearly-half-twitter-accounts-discussing-%E2%80%99reopening-america%E2%80%99-may-be-bots>
- Zhao, L., Yin, J., & Song, Y. (2016). An exploration of rumor combating behavior on social media in the context of social crises. *Computers in Human Behavior*, 58, 25–36. <https://doi.org/10.1016/j.chb.2015.11.054>