

The presumed influence of digital misinformation: examining US public's support for governmental restrictions versus corrective action in the COVID-19 pandemic

Presumed
influence of
digital
misinformation

Received 31 August 2020
Revised 26 October 2020
Accepted 11 November 2020

Yang Cheng

North Carolina State University, Raleigh, North Carolina, USA, and

Yunjuan Luo

School of Journalism and Communication, South China University of Technology, Guangzhou, China

Abstract

Purpose – Informed by the third-person effects (TPE) theory, this study aims to analyze restrictive versus corrective actions in response to the perceived TPE of misinformation on social media in the USA.

Design/methodology/approach – The authors conducted an online survey among 1,793 adults in the USA in early April. All participants were randomly enrolled in this research through a professional survey company. The structural equation modeling via Amos 20 was adopted for hypothesis testing.

Findings – Results indicated that individuals also perceived that others were more influenced by misinformation about COVID-19 than they were. Further, such a perceptual gap was associated with public support for governmental restrictions and corrective action. Negative affections toward health misinformation directly affected public support for governmental restrictions rather than corrective action. Support for governmental restrictions could further facilitate corrective action.

Originality/value – This study examined the applicability of TPE theory in the context of digital health misinformation during a unique global crisis. It explored the significant role of negative affections in influencing restrictive and corrective actions. Practically, this study offered implications for information and communication educators and practitioners.

Peer review – The peer review history for this article is available at: <https://publons.com/publon/10.1108/OIR-08-2020-0386>

Keywords COVID-19, Health misinformation, Social media, Mass communication, Governmental restrictions, Correction action, Third-person effects (TPE)

Paper type Research paper

Introduction

On March 11, 2020, the World Health Organization (WHO) announced that coronavirus disease (COVID-19) was a pandemic. As of August 31, 2020, more than 25m people in more than 150 countries and territories have suffered from the coronavirus illness, and nearly 850,000 deaths have occurred due to this disease (Dycharme, 2020). During this pandemic, the increasing popularity of social media has made health information about coronavirus spread more rapidly and become widely accessible on the Internet. However, a limitation of these social media platforms is that a flood of misinformation defined as “false, incorrect or erroneous information” (Flynn and Li, 2019, p. 1) has been communicating risk and uncertainty without verifications (Apuke and Omar, 2020). While COVID-19 is disrupting the world, it is also testing the social media environment’s ability to fight misinformation about



Funding: This research is supported by the 2018 Guangzhou Philosophy and Social Sciences Development Program during the 13th Five-Year Plan Period (Grant No. N5180160).

this disaster in the USA (Enberg, 2020). Facebook, for example, has invested millions of dollars and utilized strategies such as debunking inaccurate content and banning misinformation to reduce inaccurate information during this disaster (Frenkel *et al.*, 2020). The current battle against the huge amount of misinformation on COVID-19 is time-consuming and resource overloading. Despite the tremendous efforts conducted by tech companies to combat misinformation, misleading information in this ever-expanding social media landscape has brought serious consequences for society. A recent study from the Pew Research Center indicated that the majority of surveyed social media users in 10 out of 11 countries have encountered misinformation at least occasionally (Silver, 2019). Many American citizens were very concerned about false or incorrect information on mobile devices and their distrust toward media organizations has been escalating during this pandemic (Breslow, 2020; Silver, 2019).

Meanwhile, concerns over misinformation prevail in the field of digital information and communication (e.g. Cheng and Lee, 2019; Liu and Huang, 2020; Pang and Ng, 2017; Walter and Tukachinsky, 2020). Several scholars conducted research to analyze its diffusion process (Allcott *et al.*, 2019), impact on perceptions of vaccines (Bode and Vraga, 2015) and climate change (Dixon *et al.*, 2017), continued influence of misinformation encountering correction (Walter and Tukachinsky, 2020) and its perceived negative impact on self and others in political elections (Jang and Kim, 2018). Cheng and Chen (2020) further studied antecedents and consequences of the presumed influence of misinformation on others in a corporate crisis. However, limited studies so far have focused on misinformation in the context of a global health crisis, especially during the period of a pandemic when negative affections play a powerful role in influencing the behavioral intentions of individuals (Finucane, 2008). How participants might perceive the influence of digital health misinformation on self and others and the impact of the self-other perceptual gap on negative affections remains underexplored. Furthermore, how negative affections might be related to behavioral outcomes such as support for restrictive versus corrective actions is unknown.

To answer the aforementioned questions, we build a theoretical model (see Figure 1) to explore the relationships between cognitive elaboration, negative affections such as fear, scare, worry, and anxiety toward misinformation, presumed misinformation impact on self and others, and the support for restrictive and corrective actions combating misinformation online. Through surveying 1,791 US national participants during the pandemic, this study aimed to accomplish the following three objectives. First, it engaged theoretical discussions of third-person effects (TPE) in the context of health misinformation during the COVID-19 pandemic. The theory of TPE traditionally explains why individuals believe that negative news would have greater effects on others than themselves and what behavioral outcomes such as support for corrective action, media literacy intervention and governmental regulation might occur due to TPE effects (Jang and Kim, 2018; Lo *et al.*, 2016). However, few studies have focused on the role of TPE within a global public health crisis. Second, this study enhanced our understanding of negative affections and their impact on TPE and downstream behavioral outcomes. The established theoretical framework helped to answer whether and how individuals' psychological bias might be related to negative affections, which further triggered their support for literacy intervention and government regulations. Last but not least, this study aimed to offer practical implications on facts sharing and misinformation management to science communicators in a rapidly evolving public health crisis.

Literature review

Digital health misinformation in crises

Recent research has indicated how misinformation or even credible information interpreted in a skewed and inaccurate way could affect public perceptions of scientific information via social media (Smith and Seitz, 2019). According to Bessi *et al.* (2015), misinformation, without

the management of gatekeepers, coupled with individuals' predispositions, could rapidly be spread online and transmit false or misleading information. Media consumers, especially those who have a low level of digital literacy, face difficulties when attempting to differentiate false health messages from real facts (Scheufele and Krause, 2019), and false information continues to remain in public minds for an extended time range even if it has been verified as incorrect (O'Rear and Radvansky, 2020).

In the context of the COVID-19 pandemic, individuals tended to select media content to reinforce their own beliefs, entertained themselves in self-quarantine periods and unintentionally transmitted misinformation, even if official accurate information on COVID-19 has been issued by authorities such as WHO and Centers for Disease Control and Prevention (Apuke and Omar, 2020). The health misinformation, consequently, has persistently brought negative impacts as it permeates the national conversation spread online. This study focuses on the digital health misinformation in crises, which represents false or misleading health messages on COVID-19 passed off as real news on social media to attract public attention.

Third-person effects (TPE)

The theory of TPE proposed that people following their personal psychological biases would perceive media messages to have a greater effect on "others" rather than on "themselves" (Davison, 1983, p. 3). This theory seems straightforward but has attracted the continuous attention of scholars in the past decades, forming into a strong stream of mass media effects research that consisted of two major components (Lo *et al.*, 2016). First, the perceptual component refers to the perceptual gap where individuals would perceive fewer effects of media messages on self than on others (e.g. Paul *et al.*, 2000; Sherrick, 2016). Second, the behavioral consequences caused by the perceptual gap include three main dimensions such as support for restrictions of media (e.g. Gunther, 1995; Rojas *et al.*, 1996; Salwen, 1998), corrective action (e.g. Lim, 2017) and promotional behaviors (e.g. Sun *et al.*, 2008).

Previous literature has indicated that the TPE were consistent across different contexts such as the pandemic flu (Lee and Park, 2016), social media use (Wei and Golan, 2013) and political campaigns (Wei *et al.*, 2017). Notably, scholars (Lim, 2017; Lovejoy *et al.*, 2010; Perloff, 1999) found that the TPE became pronounced when messages such as advertisements of cosmetic surgery and negative political advertising were perceived as socially undesirable. For example, in the 2016 US presidential election, misinformation, rumors and hoaxes were widely circulated on social media, and this kind of fake news in the form of "false, often sensational, information disseminated under the guise of news reporting" (Associated Press, 2017) was regarded as an undesirable message. People with different political opinions believed that such fake news had greater effects on out-group members than on themselves or in-group members (Jang and Kim, 2018).

Based on findings from previous studies (e.g. Jang and Kim, 2018; Jang *et al.*, 2018), this study helps expand the understanding of the TPE of misinformation in a global health pandemic, assuming that the US adults would presume misinformation about COVID-19 has a greater impact on others rather than on themselves.

H1. Individuals will presume COVID-19 misinformation has a greater effect on others than on themselves.

Cognitive elaboration of misinformation

Cognitive elaboration refers to the extent to which an individual thinks about a message (Cacioppo *et al.*, 1986). A complicated cognitive process occurs when individuals assess the effects of media messages on themselves and others (McLeod *et al.*, 2001). Past research found that elaboration as one major cognitive information-processing variable can negatively

influence the magnitude of the third-person perception (Wei *et al.*, 2010). Through elaborative processing, an individual can acquire a greater amount of information from the news media and relate it to his/her existing knowledge, leading to a greater media impact on themselves and others and reducing the TPE effects as psychological biases (Eveland, 2002; Salwen, 1998). For instance, studies supported that elaboration of media messages in the health-related cases, such as the bird flu outbreaks (Wei *et al.*, 2007) and tainted food product recalls (Wei *et al.*, 2010), was positively related to the perceived effects of such news on self and others, resulting in a smaller self-other perceptual gap.

Amid the COVID-19 pandemic, the enormous amount of misinformation surrounding this disease has been created and widely spread on social media (Enberg, 2020). It seems unavoidable for social media users to encounter misinformation. Those who engage in elaborating such information would take it more seriously and think about its impact on themselves for the sake of self-protection against the virus. By associating the information with their prior knowledge about public health crises, such as the severe acute respiratory syndrome (SARS) outbreak in 2003, they would be more likely to evaluate the risk of potential harm to the health of themselves caused by misleading information (cf. Wei *et al.*, 2010). Such elaborative processing would render the effects of presumed misinformation impact on themselves relative to others, narrowing the self-other perceptual discrepancy. Thus, we propose the following hypothesis.

H2. The cognitive elaboration of COVID-19 misinformation will be negatively related to individuals' TPE.

The role of negative affections

Affections or emotions are generally regarded as "internal, mental states representing evaluative, valenced reactions to events, agents, or objects that vary in intensity" (Nabi, 2019, p. 163). In response to undesirable messages, people experience negative affections (e.g. fear, anxiety, or scare) as a result of cognitive appraisals. The cognitive appraisal theory states that individuals' evaluative judgments of the received information would determine their subsequent affectional responses to it (Lazarus, 1991). If the available information is incongruent to personal goals, then negative affections will be generated (Lazarus, 1991). For instance, when people assess the implications of the incoming crisis information for personal well-being and feel that they have little control over the external threat, negative affections such as fear and anxiety will be elicited (Huddy *et al.*, 2007).

Under such a condition of uncertainty as to the COVID-19 pandemic, more careful processing of misinformation would lead to a higher extent to which individuals conduct a thoughtful evaluation of the truth value of messages, generating an unpleasant and aversive affectional state during the pandemic (cf. Chen and Cheng, 2019; Lewandowsky *et al.*, 2012). Thus, the more individuals engage in elaborating COVID-19 misinformation, the more likely they would experience negative affections toward these misleading messages.

H3. Cognitive elaboration of COVID-19 misinformation will be positively related to individuals' negative affections.

Following the cognitive appraisal theory, previous research also showed that when the public assesses the impact of media messages on themselves and others, their positive or negative affections might occur (e.g. Kim, 2015, 2016; Liu and Huang, 2020). For instance, in Kim's study, regarding the inferred effects of political news, he found that when voters perceive that the reported information might be biased, and they were vulnerable as others, negative emotions such as anxiety might occur. In another study about news reports of election poll results conducted by Kim (2016), data reported that TPE were negatively related to negative affections such as anxiety among the US participants.

Updated research on COVID-19 from [Liu and Huang \(2020\)](#) further supports the evidence that when individuals face uncertain moments with high risks, especially in crises, they tend to compare themselves with others in the same circumstance. If they perceive others to be more vulnerable than themselves, then negative emotions such as anxiety, fear, or scare toward misinformation would be reduced ([Liu and Huang, 2020](#)). Such self-other perceptual discrepancy toward COVID-19 misinformation consequently could preclude negative affections. Therefore, it is reasonable to hypothesize the following:

- H4.* The self-other perceptual gap in estimations of the impact of COVID-19 misinformation will be negatively related to people's negative affections.

Support for governmental restrictions

In past research, support for governmental restrictions is one of the most frequently tested behavioral outcomes of TPE ([Barnidge and Rojas, 2014](#)). The protection motivation theory indicates that when people overestimate the impact of perceived threats on others and would like to adopt coping strategies to handle socially undesirable media messages, they will react in favor of restrictive regulations from the government ([Rosenthal et al., 2015](#)). Such support for restrictions and its positive relationship with TPE have been examined in a large body of studies on Internet pornography ([Lee and Tamborini, 2005](#)), election polls ([Wei et al., 2011](#)), television violence ([Hoffner et al., 1999](#)) and so on. [Cheng and Chen \(2020\)](#) studied the perceived influence of fake news in a business context, and they found that presumed influence on others served as a positive predictor of government regulation of fake news. [Chung and Moon \(2016\)](#) reanalyzed data from 13 previous studies and further confirmed the impact of self-other perceptual gap on the public support for censorship. Following the aforementioned evidence, we thus argue that the more likely people believed that misinformation has a greater undesirable effect on others rather than themselves, the more likely they would support governmental restrictions. Therefore, [H5](#) was proposed.

- H5.* The perceived perceptual gap will be a positive predictor of support for governmental restrictions.

Additionally, previous literature also found that negative affections could arouse behavioral intentions such as governmental restrictions ([Kim, 2015, 2016; Wei et al., 2017](#)). According to the cognitive appraisal theory, the appraisal of messages leads to certain affection states, and the action tendencies of the elicited affection will exert a powerful influence on subsequent behaviors ([Roseman and Smith, 2001](#)). Anxiety, for example, can cause people to overestimate risk, leading to the public avoiding behavior such as the support of preventing or restrictive activities in a threatening circumstance ([Huddy et al., 2007](#)). In a study of news coverage of election poll results, [Kim \(2016\)](#) found that those who experienced negative emotions would be more likely to support the government restrictions on polling news. In line with the findings from previous research, we proposed [H6](#) as follows.

- H6.* Negative affections elicited by misinformation on COVID-19 will be a positive predictor of support for governmental restrictions.

Support for corrective action

Besides supporting restrictive action as a low-cost participation activity ([Kim, 2016](#)), another important consequence of TPE is corrective action, referring to people's reactive behavior to "counter balance expected harmful effects of negative messages" via media literacy intervention, engagement in political activities or sharing of countering information online ([Jang and Kim, 2018, p. 297](#)). According to [Leung and Lo's \(2015\)](#) study, there was a significant relationship between the perceived perceptual gap of antisocial messages and

public support for corrective behaviors such as arousing more public attention to drug abuse messages or acting against online drug-selling behavior. [Lim and Golan \(2011\)](#) also found that the perceived perceptual gap between self and others successfully predicted corrective action operationalized as adopting social media activities to be against political parody videos. In the political context, [Jang and Kim \(2018\)](#) explored public opinions in different political partisanship, and they suggested that corrective action such as media literacy intervention was an important outcome of TPE to tackle the negative influence of fake news in elections. Following past literature about the association between perceived TPE and support for corrective behaviors, we proposed [H7](#).

H7. The perceived TPE will be a positive predictor of support for corrective action.

In addition, affections might motivate individuals to take adaptive behaviors ([Lazarus, 1991](#); [Nabi, 2019](#)). Message-induced negative affections were found to be positively associated with support for corrective action. For instance, [Bilandzic et al. \(2020\)](#) proposed the affectional effects of science narratives (EESN) model, which addressed the mechanisms of each type of affections in science narratives and the desired behavioral outcomes such as the public support for science communication. [Kim's \(2015\)](#) study further addressed the positive relationship between negative affections on corrective action such as political participation intention. [Wei et al. \(2017\)](#) found that negative affections elicited by US news on China led to support for the Chinese government's global public relations campaigns aiming at correcting unfavorable news coverage of China. To examine the relationship between negative affections and support for corrective action in the case of the COVID-19 pandemic, the following hypothesis was proposed.

H8. Negative affections elicited by COVID-19 misinformation will be a positive predictor of support for corrective action.

Previous literature also supports a positive linkage between restrictive and corrective actions (e.g. [Golan and Lim, 2016](#); [Lim, 2017](#)). For instance, people who support censorship or regulation would be more likely to engage in political participation ([Rojas et al., 1996](#)). [Lim](#) further found that restrictive action was a positive predictor of corrective action ([Lim, 2017](#)). We thus propose [H9](#) to examine the association between governmental restrictions and corrective action when individuals face health misinformation during the pandemic.

H9. The public support for governmental restrictions will positively predict their support for corrective action toward COVID-19 misinformation.

Method

Procedures for data collection

After receiving the approval from the Institute of Review Board (IRB) in a southeastern university, we collected data through a professional survey company in April 2020 and an anonymous link was sent to 1,995 panel participants through the Qualtrics platform. At the beginning of the survey questionnaire, we provided participants with an example and a definition of misinformation, which referred to inaccurate information that is deliberately fabricated and published to deceive or mislead others ([Lexico.com, 2020](#)). Then, questions about misinformation during the COVID-19 pandemic were presented in the questionnaire together with attention check questions for quality control of an online survey ([Cheng et al., 2019](#)). A final sample size of 1,793 [1] was achieved for data analysis of the present study.

Sample characteristics

As shown in [Table 1](#), our 1,793 participants contained 43.2% male ($n = 775$) and 56.8% female ($n = 1,018$). In total, 437 (24.4%) participants were 65+ years old, followed by

Sample characteristics	Valid <i>n</i> sample	Valid % sample
Gender	1,793	100.0
Male	775	43.2
Female	1,018	56.8
Age	1,793	100.0
18–24	187	10.4
25–34	353	19.7
35–44	307	17.1
45–54	188	10.5
55–64	321	17.9
65+	437	24.4
Race/ethnicity	1,793	100.0
Black/African American (non-Hispanic)	162	9.0
Asian American/Pacific Islander	86	4.8
Caucasian/White (non-Hispanic)	1,385	77.2
Latino/Hispanic Native	111	6.2
American/American Indian	16	0.9
Other	33	1.9
Annual household income	1,793	100.0
\$20,000 or under	381	21.3
\$20,001 or 40,000	380	21.2
\$40,001–\$60,000	309	17.2
\$60,001–\$80,000	257	14.3
\$80,001–\$100,000	156	8.7
\$100,001 and higher	310	17.3
Highest level of education	1,793	100
Less than high school degree	38	2.1
High school graduate (high school diploma or equivalent including GED)	333	18.6
Some college but no degree	390	21.8
Associate degree in college (two years)	222	12.3
Bachelor's degree in college (four years)	505	28.2
Master's degree	257	14.3
Doctoral degree	48	2.7
Political partisanship	1,793	100
Democrat	711	39.7
Republican	603	33.6
Independent	436	24.3
Others	43	2.4

Table 1.
Participant profile for
the study (*n* = 1,793)

353 (19.7%) 25–34 years old, 321 (17.9%) 55–64 years old, 307 (17.1%) 35–44 years old, 188 (10.5%) 45–54 years old, and 187 (10.4%) 18–24 years old. Regarding ethnicity, 77.2% of all participants identified themselves as Caucasian/White (*n* = 1,385), and 9% of them reported as Black or African American (*n* = 162), with 6.2% as Latino/Hispanic (*n* = 111), 4.8% as Asian (*n* = 86), 1.9% as other races (*n* = 33) and 0.9% as Native American/American Indian (*n* = 16). In terms of education, 28.2% participants have bachelor's degree (four-year college degree), 21.8% some college or no degree, 18.6% had high school diploma or general educational development (GED), 14.3% master degree, 12.3% associate or technical degree (two-year college degree), 2.7% doctoral degree and 2.1% less than high school diploma. A total of 761 participants (42.5%) had an annual household income of \$40,000 or under, followed by \$100,001 and higher (*n* = 310; 17.3%), \$40,001–\$60,000 (*n* = 309; 17.2%), \$60,001–\$80,000 (*n* = 257; 14.3%) and \$80,001–\$100,000 (*n* = 156; 8.7%). Regarding political partisanship, 711 (39.7%) respondents identified themselves as democrats, 603 as republicans (33.6%), 436 as independents (24.3%) and 43 as others (2.4%).

Measures and data analysis

All items in our survey used a five-point Likert-type scale, ranging from “strongly disagree” = “1” to “strongly agree” = “5”; “not at all” = “1” to “a great deal” = “5.”

Cognitive elaboration of misinformation. Based on the scale from [Wei et al. \(2010\)](#), we applied three questions to examine the cognitive elaboration of misinformation among the public ($\alpha = 0.85$). Items included, “I have thought about the possible consequences caused by misinformation during the COVID-19 pandemic,” “I often think about the issue of misinformation during the COVID-19 pandemic” and “I often recall the misinformation and reflect on some related issues during the COVID-19 pandemic.”

Perceived misinformation effects on themselves (PME1) and others (PME3). Following previous literature ([Cheng and Chen, 2020](#)), this study adopted six items to measure public’s perceived misinformation effects on themselves (PME1) and others (PME3). Data from the principal components factor analysis supported that PME1 and PME3 formed as two factors, accounting for 89.40% of the total variance. The three “self” items were averaged to generate the first factor – PME1 (eigenvalue = 1.82, 45.47% of the variance, $\alpha = 0.90$). Sample items were “I believe that misinformation misleads my understanding of COVID-19” and “I believe that misinformation misleads my preventive actions against COVID-19.”

The second factor contained three “others” questions (eigenvalue = 1.76; 43.92% of the variance, $\alpha = 0.86$) to measure the PME3 such as “I believe that misinformation misleads other people’s understanding of COVID-19” and “I believe that misinformation misleads other people’s preventive actions against COVID-19.” We then measured the TPE by subtracting the perceived effect of health misinformation on oneself (PME1) from the perceived effect on others (PME3).

Negative affections. To measure the levels of affectional responses toward COVID-19 misinformation, we consulted past studies on health and risk communication (i.e. [Finucane, 2008](#); [Liu and Huang, 2020](#)) and tested the question stem, “When you encounter misinformation about COVID-19, to what extent do you feel fearful/worried/anxious/scared?” We then ran the exploratory factor analysis (EFA) to test whether the aforementioned four questions on the four emotions were grouped in a single factor. Results supported this single-factor solution well, explaining 89.25% of the total variance (eigenvalue = 3.58). The four items were then averaged to create a composite index of negative affections elicited by COVID-19 misinformation ($\alpha = 0.96$).

Support for governmental restrictions. Based on the scale from [Cheng and Chen \(2020\)](#), we measured the support for governmental restrictions ($\alpha = 0.86$) using three items, including “Under governmental regulations or rules, accounts who post misinformation on social media should be removed,” “Under governmental regulations or rules, misinformation should be blocked or censored” and “I would support legislation to prohibit the spread of misinformation on social media.”

Support for corrective action. Three items were modified from [Jang and Kim \(2018\)](#) to measure the public support for corrective actions on media literacy interventions ($\alpha = 0.90$). Questions such as “It is important that social media users be taught how to analyze media messages,” “It is important that social media users be taught how to recognize false or misleading information in media” and “It is important for social media users to understand how to evaluate media critically” were asked.

Results

Descriptive statistics

Since we employed a five-point Likert-type scale for measurements, the following ranges of values for each variable were used: low (1.00–1.99), moderately low (2.00–2.99), neutral (3), moderately high (3.01–3.99) and high (4.00–5.00). Data indicated that respondents reported high

levels of presumed media influence on others ($M_{\text{pme3}} = 4.10$, $SD = 0.92$), support for governmental restrictions ($M_{\text{governmental restrictions}} = 4.18$, $SD = 0.97$) and corrective action ($M_{\text{corrective action}} = 4.22$, $SD = 0.86$). Participants also had moderately high levels of elaboration of health misinformation ($M_{\text{elaboration}} = 3.37$, $SD = 1.12$) and presumed media influence on themselves ($M_{\text{pme1}} = 3.46$, $SD = 1.33$). In addition, participants reported a moderately low level of negative affections toward health misinformation ($M_{\text{negative affections}} = 2.73$, $SD = 1.34$). Correlations between all investigated and control variables were presented in Table 2 and coefficients ranged from -0.75 to 0.52 .

Control variables. Based on previous literature (e.g. Jang and Kim, 2018; Wei et al., 2017), this study also measured demographic variables (e.g. gender, age, and political partisanship) and misinformation exposure (i.e. we asked participants how much COVID-19 misinformation they have encountered from media platforms such as Twitter, Facebook, Instagram, newspapers, etc.) and controlled these variables when running the structural equation model.

Results of hypothesis testing

As hypothesized in H1, individuals will perceive that the misinformation on COVID-19 has a greater effect on others than on themselves. Data from a paired t -test ran in SPSS 20 supported this proposition, $t(1,792) = 21.06$, $p < 0.001$. Participants reported that perceived misinformation effects on others were significantly larger than on themselves during the COVID-19 pandemic in the USA.

Furthermore, we conducted the structural equation modeling (SEM) via Amos 20 to test H2–H9. Based on a two-step process (Cheung and Chan, 2005), we first constructed a confirmatory factor analysis (CFA). Following Hu and Bentler (1999)'s criteria: Root Mean Square Error of Approximation (RMSEA) ≤ 0.06 and SRMR ≤ 0.10 or Comparative Fit Index (CFI) ≥ 0.96 and Standardized Root Mean Square Residual (SRMR) ≤ 0.10 , our CFA model achieved satisfactory data–model fit ($\chi^2 = 310.673$, $df = 75$, $\chi^2/df = 4.14$, SRMR = 0.03, RMSEA = 0.042 [90% CI = 0.037–0.047], CFI = 0.99, TLI = 0.98, $n = 1,793$). Factor loadings of each item in the measurement model ranged from 0.72 to 0.95. The values of composite reliability (CR) (ranging from 0.86 to 0.96) and the average variance extracted (AVE) (ranging from 0.67 to 0.84) of all items were calculated as well, indicating all measurements were valid and reliable (see Table 3).

Then in step 2, we built a hypothesized structural model, which demonstrated an excellent fit with existing data: $\chi^2 = 281.022$, $df = 77$, $\chi^2/df = 3.65$, SRMR = 0.02, RMSEA = 0.038 [90% CI = 0.034–0.043, CFI = 0.99, TLI = 0.99; $n = 1,793$. H2 predicted that participants' elaboration of misinformation would be negatively related to the perceptual gap between themselves and others (TPE). Data from Figure 2 indicated that cognitive elaboration of COVID-19 misinformation negatively affected the TPE [$\beta = -0.19$, $p < 0.001$, H2 supported] and positively influenced people's negative affections toward misinformation [$\beta = 0.36$, $p < 0.001$, H3 supported]. A negative association between TPE and negative affections was observed as well [$\beta = -0.22$, $p < 0.001$, H4 supported]. Second, consistent with the prediction in H5 and H6, we found that the TPE [$\beta = 0.22$, $p < 0.001$, H5 supported] and negative affections [$\beta = 0.68$, $p < 0.001$, H6 supported] had positive and direct effects on public support for governmental restrictions. Third, results also demonstrated a positive relationship between TPE and corrective action [$\beta = 0.17$, $p < 0.001$, H7 supported]. Unexpectedly, we did not find a direct impact of negative affections on corrective action [$\beta = -0.03$, $p > 0.05$, H8 is not supported]. Finally, governmental restrictions strongly predicted corrective action [$\beta = 0.53$, $p < 0.001$, H9 supported].

Indirect effects. Mediation tests with a bias-corrected bootstrapping procedure ($N = 5,000$ samples) were further conducted in Amos 20 to examine indirect effects between variables.

Table 2.
Descriptive statistics
(correlations)
($n = 1,793$)

	1	2	3	4	5	6	7	8	9	10	11
1. Cognitive elaboration	1										
2. Negative affections	0.36***	1									
3. TPE	-0.11***	-0.26***	1								
4. PME1	0.34***	0.38***	-0.75***	1							
5. PME3	0.33***	0.17***	0.33***	0.38***	1						
6. Governmental Restrictions	0.24***	0.19***	0.07***	0.28***	0.42***	1					
7. Corrective action	0.34***	0.11***	0.13***	0.23***	0.52***	0.14***	1				
8. Age	-0.18***	-0.14***	0.14***	-0.09***	0.06**	0.14***	0.11***	1			
9. Gender	-0.11***	-0.02***	0.07**	-0.06*	0.02	0.01	0.07**	0.08***	1		
10. Political partisanship	-0.13***	-0.09***	0.03***	-0.10***	-0.09***	-0.08***	-0.12***	-0.03	0.07**	1	
11. Misinformation exposure	0.39***	0.20***	-0.12***	0.24***	0.19***	0.08***	0.16***	-0.18***	-0.11***	-0.09***	1

Note(s): */ **/ ***Correlation is significant at $p < 0.05/p < 0.01/p < 0.001$ (two-tailed)

Presumed
influence of
digital
misinformation

Factor	Measurement item	Factor loadings ^a	AVE CR
Cognitive elaboration of misinformation	I have thought about the possible consequences caused by misinformation during the COVID-19 pandemic	0.72	AVE = 0.67 CR = 0.86
	I often think about the issue of misinformation during the COVID-19 pandemic	0.90	
	I often recall the misinformation and reflect on some related issues during the COVID-19 pandemic	0.82	
Third-person effects of misinformation	I believe that misinformation misleads others' (self) understanding of COVID-19	0.83	AVE = 0.74 CR = 0.90
	I believe that misinformation misleads others' (my) preventive actions against COVID-19	0.88	
	I believe other people (I am) are very concerned about the spread of COVID-19 misinformation on social media	0.87	
Negative affections	When you encounter misinformation about COVID-19, to what extent do you feel_____?	0.89	AVE = 0.84 CR = 0.96
	Fearful		
	Worried	0.95	
	Anxious	0.91	
Governmental restrictions	Under governmental regulations or rules, accounts who post misinformation on social media should be removed	0.78	AVE = 0.68 CR = 0.86
	Under governmental regulations or rules, misinformation should be blocked or censored	0.88	
	I would support legislation to prohibit the spread of misinformation on social media	0.81	
	I would support legislation to prohibit the spread of misinformation on social media	0.81	
Corrective action	It is important that social media users be taught how to analyze media messages	0.87	AVE = 0.75 CR = 0.90
	It is important that social media users be taught how to recognize false or misleading information in media	0.87	
	It is important for social media users to understand how to evaluate media critically	0.86	

Note(s): ^aAll factor loadings are significant at the level of $p < 0.001$

Table 3.
Constructs and
measurement model

Results demonstrated that indirect effects between cognitive elaboration and governmental restrictions [$\beta = 0.23, p < 0.001$ (BC 95% CI: 0.18 to 0.28)] and between cognitive elaboration and corrective action [$\beta = 0.08, p < 0.001$ (BC 95% CI: 0.04 to 0.12)] were significant. Government restrictions was a full mediator for the relationship between negative affections and corrective action [$\beta = 0.36, p < 0.001$ (BC 95% CI: 0.27 to 0.47)].

Discussion and conclusion

Informed by the TPE theory, this study analyzed restrictive versus corrective actions in response to the perceived impact of misinformation during the COVID-19 pandemic via an online survey with 1,793 US adults. Results indicated that people's cognitive elaboration toward digital health misinformation significantly predicted negative affections (i.e. fear, worry, scare, and anxiety) and TPE. Individuals also perceived that others were more influenced by misinformation about COVID-19 than they were. Further, such a perceptual gap toward misinformation was associated with support for governmental restrictions and corrective action. Finally, negative affections were directly related to more willingness to

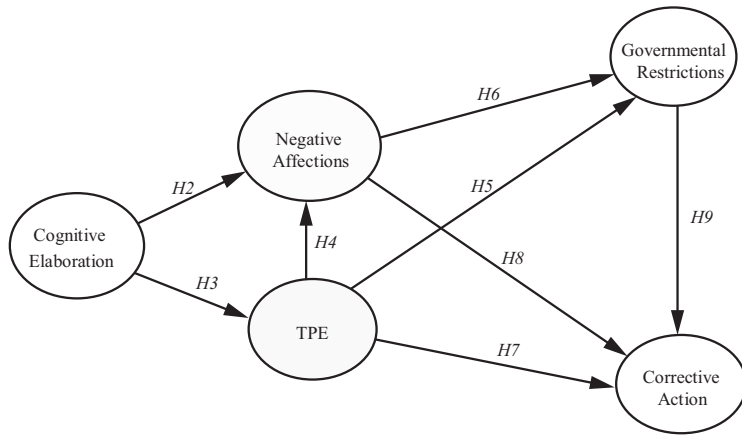
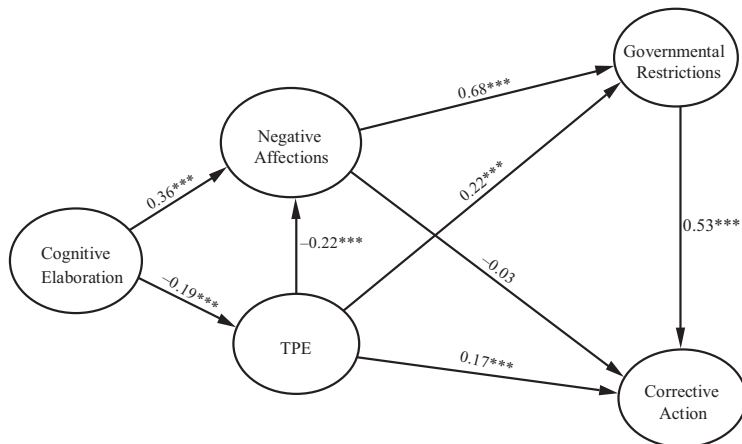


Figure 1.
The conceptual model

Note(s): TPE = Third-person effects



Note(s): TPE = Third-person effects; Demographic factors such as gender, age, and political partisanship, and misinformation exposure were regarded as control variables in this model; Model fit indices: $\chi^2 = 281.022$, $df = 77$, $\chi^2/df = 3.65$, SRMR = 0.02, RMSEA = 0.038 [90% CI = 0.034-0.043, CFI = 0.99, TLI = 0.99; $n = 1,793$; *** $p < 0.001$

Figure 2.
The structural equation model

support governmental regulation rather than corrective actions. Support for governmental restrictions could further facilitate public support for corrective action. Theoretical and practical implications are discussed further.

First, this study examined the applicability of TPE theory in the context of digital health misinformation during a unique global pandemic. As updated scientific research suggested, the COVID-19 pandemic creates a special situation for the rapid diffusion of misinformation when people were staying at home and engaging in social media activities to cope with crisis uncertainties (Ball and Maxmen, 2020). The misinformation on COVID-19 deserves a rapid exploration to curb its diffusion. This pioneering study thus responds to the urgent needs, and its results showed that the TPE exist in such a pandemic situation. In other words, the US

adults believed that misinformation on COVID-19 has a greater impact on others rather than on themselves. According to the self-enhancement theory (Gunther and Mundy, 1993; Zhang, 2010), people intended to protect their own images and perceive themselves less easily to be affected by negative media messages, thus leading to the biased perceptions of self-other discrepancy toward misinformation in crises. Furthermore, the results of the proposed theoretical model presented both antecedents (i.e. cognitive elaboration) of outcomes (i.e. restrictive and corrective actions) of the TPE in the COVID-19 pandemic. It showed that people's such intriguing psychological bias, on the one hand, could be reduced through the cognitive thinking of media messages; on the other hand, it successfully motivated people to support actions correcting or restricting misinformation.

Second, this research enriched previous research by exploring potential predecessors of negative affections in the context of the COVID-19 pandemic. Results demonstrated that the more likely people elaborated on the digital misinformation, the more likely they would infer the personal impact of misinformation and feel more concerned about themselves in a pandemic full of uncertainties, experiencing negative affections such as fear, worry, and anxiety. In contrast, the self-other perceptual gap would significantly preclude the occurrence of negative affections in crises. A further explanation comes from the social comparison theory (Park and Salmon, 2005), which proposes that people tend to compare themselves with others, and if they feel that they themselves were more vulnerable to be influenced by misinformation in crises, they would feel more likely out of control toward potential threats, developing negative emotions. Such a tendency to make a downward comparison and the reduced negative affections were observed in Liu and Huang's (2020) study in China as well.

Furthermore, this study enriched the current mass communication literature (e.g. Kim, 2015, 2016) by discovering relationships between negative affections on restrictive and corrective actions. According to Nahi (2019), negative emotions such as fear, disgust, and hatred could easily facilitate information seeking or avoiding behaviors in times of crisis. Scholars have also discussed how negative affections might influence behavioral intentions, such as support for governmental campaigns (Wei *et al.*, 2017), restrictions on polling news or participation intention in political campaigns (Kim, 2016). In contrast, corrective action, such as the media literacy intervention, deserves attention as it distinguished from restrictive behavior and required individuals to adopt actions to defeat undesirable effects of media content. This study thus supported and enriched previous research, indicating that misleading health messages on social media framed with negative affections were also more likely to arouse public support for restrictive behavior while failing to directly influence the corrective action (Dunlop *et al.*, 2008). A possible explanation is that people are reluctant to support self-corrected behavior when negative affections take effects; instead, they might easily support governmental regulations of misinformation on social media (Cheng and Chen, 2020). This study also indicated that cultivating public support for restrictive actions could further facilitate their enrollment into participative activities toward combating digital misinformation in the future.

Practically, this study offered implications for communication educators and practitioners. On the one hand, this study demonstrated that the elaboration of misinformation could positively influence the publics' negative affections toward misinformation during the COVID-19 pandemic and indirectly affected the public support for restrictive and corrective actions. Communication educators thus might apply explicit misinformation as their teaching materials, ask students to elaborate misinformation in-depth, pinpoint flaws, and make corrections (Bedford, 2010) to increase the learning efficiency. When educating the public about digital media literacy, we should also notice that individuals contain the psychological bias toward media messages. People tended to believe that others were more vulnerable than themselves when recognizing and evaluating misinformation in crises, thus hindered the self-motivated learning process, and science

communicators should notice public's optimism bias toward social undesirable media messages online.

Additionally, the results of this study supported the important role of negative affections in influencing informative health communication effectiveness. The research demonstrated that content containing misinformation was likely to evoke public fear, worry, and disgust. These are more easily transmitted on social media than neutral content (Cotter, 2008). Scientific communicators could consider utilizing this feature of misinformation to spread facts online as scientific concepts are abstract and not easy to be understood by the general public. Thus, messages framed with affections with simplified content might reach a high level of communication efficiency among the public.

Limitation and directions for future research

Some limitations of this study must be stated here. First, this study only discussed negative affections such as fear, worry, scare, and anxiety. Other categories of affections, such as anger, pride, hope, and happiness, might take effects and influence public's behavioral intentions as well (Kim and Neiderdeppe, 2013). Future research agenda could include positive affections into discussions and specifically examine each type of affections and their different outcomes. Second, this study was based on data from survey research, and correlations and regressions might not be sufficient to confirm causal relationships. Future scholarship requires more experimental or longitudinal studies to examine the causality of TPE. Third, the group of Latino/Hispanic Natives were underrepresented in our final data set, and scholars might focus on the role of negative affections and TPE on Hispanic Americans' restrictive and corrective actions in a future study. Last but not least, the presumed media influence on others or the interaction of presumed effects on self and others might take a stronger influence on support for restrictive actions than the third-person perceptual gap (Baek *et al.*, 2019). Consequently, scholars might explore the influence of presumed influence (IPI) model in the context of health misinformation.

Note

1. According to Kline (2015), the sample size/parameters ratio in the SEM should be larger than 20. In this study, we have collected 1,995 panel respondents and after removing 202 incomplete/disqualified answers, we finally achieved 1,793 participants.

References

- Allcott, H., Gentzkow, M. and Yu, C. (2019), "Trends in the diffusion of misinformation on social media", *Research and Politics*, Vol. 6 No. 2, doi: [10.3386/w25500](https://doi.org/10.3386/w25500).
- Apuke, O.D. and Omar, B. (2020), "Fake news and COVID-19: modelling the predictors of fake news sharing among social media users", *Telematics and Informatics*, Available online 30 July 2020, p. 101475, doi: [10.1016/j.tele.2020.101475](https://doi.org/10.1016/j.tele.2020.101475).
- Associated Press (2017), "Fake news' is collins dictionary's word of the year 2017", available at: <https://www.foxnews.com/world/fake-news-is-collins-dictionarys-word-of-the-year-2017>.
- Baek, Y.M., Kang, H. and Kim, S. (2019), "Fake news should be regulated because it influences both 'others' and 'me': how and why the influence of presumed influence model should be extended", *Mass Communication and Society*, Vol. 22 No. 3, pp. 301-323, doi: [10.1080/15205436.2018.1562076](https://doi.org/10.1080/15205436.2018.1562076).
- Ball, P. and Maxmen, A. (2020), "The epic battle against coronavirus misinformation and conspiracy theories", *Nature*, Vol. 581, pp. 371-374, doi: [10.1038/d41586-020-01452-z](https://doi.org/10.1038/d41586-020-01452-z).
- Barnidge, M. and Rojas, H. (2014), "Hostile media perceptions, presumed media influence, and political talk: expanding the corrective action hypothesis", *International Journal of Public Opinion Research*, Vol. 26 No. 2, pp. 135-156.

- Bedford, D. (2010), "Agnostology as a teaching tool: learning climate science by studying misinformation", *Journal of Geography*, Vol. 109, pp. 159-165.
- Bessi, A., Coletto, M., Davidescu, G.A., Scala, A., Caldarelli, G. and Quattrociocchi, W. (2015), "Science vs conspiracy: collective narratives in the age of misinformation", *PloS One*, Vol. 10 No. 2, e0118093, doi: [10.1371/journal.pone.0118093](https://doi.org/10.1371/journal.pone.0118093).
- Bilandzic, H., Kinnebrock, S. and Klingler, M. (2020), "The emotional effects of science narratives: a theoretical framework", *Media and Communication*, Vol. 8 No. 1, pp. 151-163, doi: [10.17645/mac.v8i1.2602](https://doi.org/10.17645/mac.v8i1.2602).
- Bode, L. and Vraga, E.K. (2015), "In related news, that was wrong: the correction of misinformation through related stories functionality in social media", *Journal of Communication*, Vol. 65, pp. 619-638, doi: [10.1111/jcom.12166](https://doi.org/10.1111/jcom.12166).
- Breslow, J. (2020), "Why misinformation and distrust is making COVID-19 more dangerous for black America", available at: <https://www.witf.org/2020/04/10/why-misinformation-and-distrust-is-making-covid-19-more-dangerous-for-black-america/>.
- Cacioppo, J.T., Petty, R.E., Kao, C.F. and Rodriguez, R. (1986), "Central and peripheral routes to persuasion: an individual difference perspective", *Journal of Personality and Social Psychology*, Vol. 51 No. 5, pp. 1032-1043, doi: [10.1037/0022-3514.51.5.1032](https://doi.org/10.1037/0022-3514.51.5.1032).
- Chen, Z.F. and Cheng, Y. (2019), "Consumer response to fake news about brands on social media: the effects of self-efficacy, media trust, and persuasion knowledge on company trust", *The Journal of Product and Brand Management*, Vol. 29 No. 2, pp. 188-198, doi: [10.1108/JPBM-12-2018-2145](https://doi.org/10.1108/JPBM-12-2018-2145).
- Cheng, Y. and Chen, Z.F. (2020), "The influence of perceived fake news influence: examining public support for corporate corrective response, media literacy intervention, and governmental regulation", *Mass Communication and Society*, Vol. 23 No. 5, doi: [10.1080/15205436.2020.1750656](https://doi.org/10.1080/15205436.2020.1750656).
- Cheng, Y. and Lee, C.J. (2019), "Online crisis communication in a post-truth Chinese society: evidence from interdisciplinary literature", *Public Relations Review*, Vol. 45 No. 4, doi: [10.1016/j.pubrev.2019.101826](https://doi.org/10.1016/j.pubrev.2019.101826).
- Cheng, Y., Chen, Y.R., Hung-Baesecke, R. and Jin, Y. (2019), "When CSR meets mobile SNA users in mainland China: an examination of gratifications sought, CSR motives, and relational outcomes in natural disasters", *International Journal of Communication*, Vol. 13, pp. 319-341, available at: <https://ijoc.org/index.php/ijoc/article/view/10169>.
- Cheung, M.W.L. and Chan, W. (2005), "Meta-analytic structural equation modeling: a two-stage approach", *Psychological Methods*, Vol. 10, pp. 40-64, doi: [10.1037/1082-989X.10.1.40](https://doi.org/10.1037/1082-989X.10.1.40).
- Chung, S. and Moon, S.-I. (2016), "Is the third-person effect real? A critical examination of rationales, testing methods, and previous findings of the third-person effect on censorship attitudes", *Human Communication Research*, Vol. 42, pp. 312-337, doi: [10.1111/hcre.12078](https://doi.org/10.1111/hcre.12078).
- Cotter, E.M. (2008), "Influence of emotional content and perceived relevance on spread of urban legends: a pilot study", *Psychological Reports*, Vol. 102, pp. 623-629.
- Davison, W.P. (1983), "The third-person effect in communication", *Public Opinion Quarterly*, Vol. 47 No. 1, pp. 1-15.
- Dixon, G., Hmielowski, J. and Ma, Y. (2017), "Improving climate change acceptance among US conservatives through value-based message targeting", *Science Communication*, Vol. 39, pp. 520-534, doi: [10.1177/1075547017715473](https://doi.org/10.1177/1075547017715473).
- Dunlop, S., Wakefield, M. and Kashima, Y. (2008), "Can you feel it? Negative emotion, risk, and narrative in health communication", *Media Psychology*, Vol. 11, pp. 52-75, doi: [10.1080/15213260701853112](https://doi.org/10.1080/15213260701853112).
- Dycharme, J. (2020), "World health organization declares COVID-19 a 'pandemic.' Here's what that means", available at: <https://time.com/5791661/who-coronavirus-pandemic-declaration/>.
- Enberg, J. (2020), *How COVID-19 is Testing Social Media's Ability to Fight Misinformation*, available at: <https://www.emarketer.com/content/how-covid-19-is-testing-social-medias-ability-to-fight-misinformation>.

-
- Eveland, W. (2002), "News information processing as mediator of the relationship between motivations and political knowledge", *Journalism and Mass Communication Quarterly*, Vol. 79, pp. 26-40.
- Finucane, M.L. (2008), "Emotion, affect, and risk communication with older adults: challenges and opportunities", *Journal of Risk Research*, Vol. 11 No. 8, pp. 983-997.
- Flynn, T. and Li, T. (2019), "Top 10 ways to combat misinformation", available at: <https://instituteforpr.org/10-ways-to-combat-misinformation/>.
- Frenkel, S., Alba, D. and Zhong, R. (2020), "Surge of virus misinformation stumps Facebook and Twitter", *The New York Times*, available at: <https://www.nytimes.com/2020/03/08/technology/coronavirus-misinformation-social-media.html>.
- Golan, G.J. and Lim, J.S. (2016), "Third-person effect of ISIS's recruitment propaganda: online political self-efficacy and social media activism", *International Journal of Communication*, Vol. 10, pp. 4681-4701.
- Gunther, A.C. (1995), "Overrating the X-rating: the third-person perception and support for censorship of pornography", *Journal of Communication*, Vol. 45, pp. 27-38, doi: [10.1111/j.1460-2466.1995.tb00712.x](https://doi.org/10.1111/j.1460-2466.1995.tb00712.x).
- Gunther, A.C. and Mundy, P. (1993), "Biased optimism and the third-person effect", *Journalism Quarterly*, Vol. 70, pp. 58-67.
- Hoffner, C., Buchanan, M., Anderson, J.D., Hubbs, L.A., Kamigaki, S.K., Kowalczyk, L. and Silberg, K.J. (1999), "Support for censorship of television violence the role of the third-person effect and news exposure", *Communication Research*, Vol. 26 No. 6, pp. 726-742.
- Hu, L. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling*, Vol. 6, pp. 1-5Neu5.
- Huddy, L., Feldman, S. and Cassese, E. (2007), "On the distinct political effects of anxiety and anger", in Neuman, W.R., Marcus, G.E., Crigler, A.N. and MacKuen, M. (Eds), *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, University of Chicago Press, Chicago, IL, pp. 202-230.
- Jang, S. and Kim, J.K. (2018), "Third person effects of fake news: fake news regulation and media literacy interventions", *Computers in Human Behavior*, Vol. 80, pp. 295-302, doi: [10.1016/j.chb.2017.11.034](https://doi.org/10.1016/j.chb.2017.11.034).
- Jang, M., Geng, T., Queenie, H.Y., Xia, R., Huang, C.T., Kim, H. and Tang, J. (2018), "A computational approach for examining the roots and spreading patterns of fake news: evolution tree analysis", *Computers in Human Behavior*, Vol. 84, pp. 103-113.
- Kim, H. (2015), "Perception and emotion: the indirect effect of reported election poll results on political participation intention and support for restrictions", *Mass Communication and Society*, Vol. 18 No. 3, pp. 303-324.
- Kim, H. (2016), "The role of emotions and culture in the third-person effect process of news coverage of election poll results", *Communication Research*, Vol. 43, pp. 109-130, doi: [10.1177/0093650214558252](https://doi.org/10.1177/0093650214558252).
- Kim, H.K. and Neiderdeppe, J. (2013), "The role of emotional response during an H1N1 influenza pandemic on a college campus", *Journal of Public Relations Research*, Vol. 25 No. 1, pp. 30-50, doi: [10.1080/1062726X.2013.739100](https://doi.org/10.1080/1062726X.2013.739100).
- Kline, R.B. (2015), *Principles and Practice of Structural Equation Modeling*, Guilford Publications, New York, NY.
- Lazarus, R.S. (1991), *Emotion and Adaptation*, Oxford University Press, New York, NY.
- Lee, H. and Park, S.A. (2016), "Third-person effect and pandemic flu: the role of severity, self-efficacy method mentions, and message source", *Journal of Health Communication*, Vol. 21 No. 12, pp. 1244-1250, doi: [10.1080/10810730.2016.1245801](https://doi.org/10.1080/10810730.2016.1245801).
- Lee, B. and Tamborini, R. (2005), "Third-person effect and internet pornography: the influence of collectivism and internet self-efficacy", *Journal of Communication*, Vol. 55 No. 2, pp. 292-310, doi: [10.1111/j.1460-2466.2005.tb02673.x](https://doi.org/10.1111/j.1460-2466.2005.tb02673.x).

-
- Leung, W.C. and Lo, V.-H. (2015), "Perceived harm of online drug-encouraging messages: third-person effect and adolescents' support for rectifying measures", *Youth and Society*, Vol. 47, pp. 850-872, doi: [10.1177/0044118x14565622](https://doi.org/10.1177/0044118x14565622).
- Lewandowsky, S., Ecker, U.K.H., Seifert, C.M., Schwarz, N. and Cook, J. (2012), "Misinformation and its correction: continued influence and successful debiasing", *Psychological Science in the Public Interest*, Vol. 13 No. 3, pp. 106-131, doi: [10.1177/1529100612451018](https://doi.org/10.1177/1529100612451018).
- Lexico.com (2020), "Definition of misinformation in English", available at: <https://www.lexico.com/en/definition/misinformation>.
- Lim, J.S. (2017), "The third-person effect of online advertising of cosmetic surgery: a path model for predicting restrictive versus corrective actions", *Journalism and Mass Communication Quarterly*, Vol. 94 No. 4, doi: [10.1177/1077699016687722](https://doi.org/10.1177/1077699016687722).
- Lim, J.S. and Golan, G.J. (2011), "Social media activism in response to the influence of political parody videos on YouTube", *Communication Research*, Vol. 38 No. 5, pp. 710-727, doi: [10.1177/0093650211405649](https://doi.org/10.1177/0093650211405649).
- Liu, L.-P. and Huang, L. (2020), "Digital disinformation about COVID-19 and the third-person effect: examining the channel differences and negative emotional outcomes", *Cyberpsychology, Behavior, and Social Networking*, Vol. 23 No. 11, doi: [10.1089/cyber.2020.0363](https://doi.org/10.1089/cyber.2020.0363).
- Lo, V.H., Wei, R., Zhang, X. and Guo, L. (2016), "Theoretical and methodological patterns of third-person effect research: a comparative thematic analysis of Asia and the world", *Asian Journal of Communication*, Vol. 26 No. 6, pp. 583-604, doi: [10.1080/01292986.2016.1218902](https://doi.org/10.1080/01292986.2016.1218902).
- Lovejoy, J., Cheng, H. and Riffe, D. (2010), "Voters' attention, perceived effects, and voting preferences: negative political advertising in the 2006 Ohio governor's election", *Mass Communication and Society*, Vol. 13 No. 5, pp. 487-511.
- McLeod, D.M., Detenber, B.H. and Eveland, W.P. (2001), "Behind the third-person effects: differentiating perceptual processes for self and other", *Journal of Communication*, Vol. 51, pp. 678-695.
- Nabi, R.L. (2019), "Media and emotion", in Oliver, M.B., Raney, A.A. and Bryant, J. (Eds), *Media Effects: Advances in Theory and Research*, 4th ed., Routledge, New York, NY, pp. 163-178.
- O'Rear, A.E. and Radvansky, G.A. (2020), "Failure to accept retractions: a contribution to the continued influence effect", *Memory and Cognition*, Vol. 48 No. 1, pp. 127-144, doi: [10.3758/s13421-019-00967-9](https://doi.org/10.3758/s13421-019-00967-9).
- Pang, N. and Ng, J. (2017), "Misinformation in a riot: a two-step flow view", *Online Information Review*, Vol. 41 No. 4, pp. 438-453, doi: [10.1108/OIR-09-2015-0297](https://doi.org/10.1108/OIR-09-2015-0297).
- Park, H.S. and Salmon, C.T. (2005), "A test of the third-person effect in public relations: application of social comparison theory", *Journalism and Mass Communication Quarterly*, Vol. 82, pp. 25-43, doi: [10.1177/107769900508200103](https://doi.org/10.1177/107769900508200103).
- Paul, B., Salwen, M.B. and Dupagne, M. (2000), "The third-person effect: a meta-analysis of the perceptual hypotheses", *Mass Communication and Society*, Vol. 3, pp. 57-85.
- Perloff, R.M. (1999), "The third-person effect: a critical review and synthesis", *Media Psychology*, Vol. 1 No. 4, pp. 353-378, doi: [10.1207/s1532785xmep0104_4](https://doi.org/10.1207/s1532785xmep0104_4).
- Rojas, H., Shah, D.V. and Faber, R.F. (1996), "For the good of others: censorship and the third-person effect", *International Journal of Public Opinion Research*, Vol. 8 No. 2, pp. 163-186, doi: [10.1093/ijpor/8.2.163](https://doi.org/10.1093/ijpor/8.2.163).
- Roseman, I.J. and Smith, C.A. (2001), "Appraisal theory: overview, assumptions varieties, controversies", in Scherer, K.R., Schorr, A. and Johnstone, T. (Eds), *Appraisal Processes in Emotion*, Oxford University Press, Oxford, pp. 3-19.
- Rosenthal, S., Detenber, B.H. and Rojas, H. (2015), "Efficacy beliefs in third-person effects", *Communication Research*, Vol. 45 No. 4, doi: [10.1177/0093650215570657](https://doi.org/10.1177/0093650215570657).

-
- Salwen, M.B. (1998), "Perceptions of media influence and support for censorship: the third-person effect in the 1996 presidential election", *Communication Research*, Vol. 25 No. 3, pp. 259-285.
- Scheufele, D.A. and Krause, N.M. (2019), "Science audiences, misinformation, and fake news", *Proceedings of the National Academy of Sciences*, Vol. 116, pp. 7662-7669, doi: [10.1073/pnas.1805871115](https://doi.org/10.1073/pnas.1805871115).
- Sherrick, B. (2016), "The effects of media effects: third-person effects, the influence of presumed media influence, and evaluations of media companies", *Journalism and Mass Communication Quarterly*, Vol. 93 No. 4, pp. 906-922.
- Silver, L. (2019), "Misinformation and fears about its impact are pervasive in 11 emerging economies", available at: <https://www.pewresearch.org/fact-tank/2019/05/13/misinformation-and-fears-about-its-impact-are-pervasive-in-11-emerging-economies/>.
- Smith, C.N. and Seitz, H.H. (2019), "Correcting misinformation about neuroscience via social media", *Science Communication*, Vol. 41 No. 6, pp. 790-819, doi: [10.1177/1075547019890073](https://doi.org/10.1177/1075547019890073).
- Sun, Y., Shen, L. and Pan, Z. (2008), "On the behavioral component of the third-person effect", *Communication Research*, Vol. 35 No. 2, pp. 257-278.
- Walter, N. and Tukachinsky, R. (2020), "A meta-analytic examination of the continued influence of misinformation in the face of correction: how powerful is it, why does it happen, and how to stop it?", *Communication Research*, Vol. 47 No. 2, pp. 155-177, doi: [10.1177/0093650219854600](https://doi.org/10.1177/0093650219854600).
- Wei, R. and Golan, G. (2013), "Political advertising on social media in the 2012 presidential election: exploring the perceptual and behavioral components of the third-person effect", *Electronic News*, Vol. 7, pp. 223-242, doi: [10.1177/1931243113506903](https://doi.org/10.1177/1931243113506903).
- Wei, R., Lo, V.-H. and Lu, H.Y. (2007), "Reconsidering the relationship between the third-person perception and optimistic bias", *Communication Research*, Vol. 34, pp. 665-684, doi: [10.1177/0093650207307903](https://doi.org/10.1177/0093650207307903).
- Wei, R., Lo, V.H. and Lu, H.Y. (2010), "The third-person effect of tainted food product recall news: examining the role of credibility, attention, and elaboration for college students in Taiwan", *Journalism and Mass Communication Quarterly*, Vol. 87 Nos 3-4, pp. 598-614.
- Wei, R., Chia, S.C. and Lo, V.H. (2011), "Third-person effect and hostile media perception influences on voter attitudes toward polls in the 2008 US presidential election", *International Journal of Public Opinion Research*, Vol. 23 No. 2, pp. 169-190.
- Wei, R., Lo, V.-H. and Golan, G. (2017), "Examining the relationship between presumed influence of U.S. news about China and the support for Chinese government's global public relations campaigns", *International Journal of Communication*, Vol. 11, pp. 2964-2981.
- Zhang, J. (2010), "Self-enhancement on a self-categorization leash: evidence for a dual-process model of first- and third-person perceptions", *Human Communication Research*, Vol. 36, pp. 190-215.

About the authors

Yang Cheng (Ph.D., MBA) is the assistant professor at North Carolina State University, Raleigh, USA. She has demonstrated a long-term commitment to research involving global public relations management, social media and artificial intelligence, and crisis communication. She has published more than 50 journal articles and book chapters. Some of her publications have appeared in top journals such as the *New Media and Society*, *Mass Communication and Society*, *Public Relations Review*, *Telematics and Informatics* and *Journal of Applied Communication Research*. She has also received many awards and honors from global institutions such as the Institute of Public Relations and PRIME research and has acted as the principal investigator in many grants including the Arthur Page Johnson Legacy Scholar Grant and National Science Foundation.

Yunjuan Luo is a professor in the School of Journalism and Communication at South China University of Technology. She received her doctorate in mass communication from Indiana University Bloomington in 2011. Her research interests include new media uses and effects, public opinion research, international communication, health communication, communication theory and methodology. Her work has appeared in some leading refereed journals such as *Journalism and Mass Communication*

Quarterly, Health Communication and *International Journal of Communication*. She has received several competitive fellowships, awards and grants including two top research paper awards at the annual AEJMC conferences. Yunjuan Luo is the corresponding author and can be contacted at: yunjuan.luo@yahoo.com

Presumed
influence of
digital
misinformation

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com