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The Impact of Social Endorsement Cues and Manipulability Concerns on Perceptions of News Credibility

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Abstract

Social endorsement cues (SEC) offer information about how online users have engaged and evaluated online content. Some view that SEC thus can serve as useful heuristics when users evaluate the credibility of news content on social media. At the same time, SEC can be manipulated by a variety of commercial and political actors on social media. This study examines whether SEC influence individuals' credibility judgments of political news on social media, and how the salience of concerns that SEC can be manipulated by others can undermine the perceived credibility. Using an experiment, we found that SEC had a *negative* influence on news credibility, regardless of whether or not SEC manipulability concerns were primed. An independent effect of SEC manipulability concerns was also found, such that priming thoughts about the manipulability of SEC led participants to rate the news post as *less* credible, regardless of whether that post included SEC. These results suggest a spillover effect whereby concerns over the manipulation of SEC can create doubt about the authenticity of other cues from the news (e.g., source and message), and lead to perceptions that news shared on social media can be manipulated more generally.

Keywords: social endorsement cues, online manipulation, news credibility, social media, political news information

Introduction

Social endorsement cues (SEC), which include metric information about how other users have engaged or evaluated online content, such as the number of likes, shares, or comments on social media,[1] help individuals make judgments about the quality of the content and its credibility.[2]

Yet, growing evidence indicates that SEC can falsely represent user engagement on social media. Individuals or entities on social media can manipulate the number of likes, shares, or comments using software-controlled accounts, known as social bots.[3–5] Because visibility and placement of content on social media are determined by factors that SEC often reflect—for example, popularity of the content, or its relevance to the viewer—SEC have become vulnerable to manipulation by those who want their content shown to a wider range of viewers[6] or for a given opinion to seem like the dominant public opinion.[7,8]

Despite widespread societal concerns over social media manipulation,[9] little is known about how individuals' concerns over the manipulability of SEC affect how they evaluate news shared on social media. This study examines the role SEC play in individuals' credibility judgments of news shared on social media and how the *salience of SEC manipulability concerns* affects viewers' evaluation of the credibility of that news.

Social endorsement cues and news credibility

The Modality-Agency-Interactivity-Navigability model suggests that SEC can trigger the bandwagon heuristic, whereby people assume information is useful, important, or reliable because others have endorsed it.[2] Perceiving positive qualities of the information—for example, high utility, importance, and reliability—can subsequently inform perceptions that the information is credible.[2] Studies have found that SEC positively affect the perceived credibility of online content, such as health and e-commerce information.[10–13]

Yet, with regard to political information, evidence is limited to one type of SEC (i.e., written user comments)[14,15] and more research is needed to test the impact of SEC on message credibility directly—rather than on related properties of news credibility such as news media trust[16] or news selection.[13,15] Based on prior study suggesting that the

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presence[16] and *volume of SEC*[12,13] can increase news credibility, we test the impact of these factors on evaluations of credibility of political news posts on social media.

H1: The presence of SEC will positively affect news credibility such that a news post that displays SEC will be rated as more credible than a news post without SEC.

H2: The volume of SEC will positively affect news credibility such that a news post that displays high-number SEC will be rated as more credible than a news post with low-number SEC.

SEC manipulability concerns and news credibility

In this study, we use the term *SEC manipulability concerns* to refer to individuals' concerns that SEC on social media can be easily manipulated by entities who aim to benefit from that manipulation. Drawing on two theoretical perspectives, warranting theory and the priming effect, we examine two ways in which SEC manipulability concerns impact news credibility.

First, warranting theory[17] hypothesizes that ''the effect of online cues depends on the extent to which the cue in question is capable of being modified by the source to which it pertains (p.5).''[15] An online cue has high ''warranting value'' if it is perceived to be difficult for the source to modify.[18] Because warranting value functionally ''warrants'' the extent to which the cue in question is immune to modification, people rely more on cues with higher warranting value when they evaluate online content. For instance, third-party comments on social media (e.g., comments written by Facebook friends) are found to be more influential in interpersonal judgments than self-generated descriptions (e.g., Facebook profiles written by account owners) because the former is more difficult for account owners to modify.[19]

Conversely, online cues perceived to be easily modifiable by outside entities will have low warranting value and be less influential when individuals evaluate qualities of the content. Prior research found that online comments endorsing a political organization had little impact on people's attitudes toward and trust of the organization when they were led to believe that supporters' comments were selectively deleted by the organization.[20] The perception that third-party endorsement is potentially modified in favor of a given entity has reduced the warranting value of the endorsement and the impact of the endorsement cue on readers' attitudes.

In the context of this study, the concern that SEC on social media could have been manipulated may undermine the perceived warranting value of these cues and thus the degree to which individuals rely on them for credibility judgments. This in turn would reduce the impact of SEC on perceived news credibility.

H3: The positive effect of SEC on news credibility will be weaker when SEC manipulability concerns are made salient (vs. not salient).

Second, literature on priming effects highlights individuals' tendencies to adhere to certain accessible attributes as primary criteria for evaluating issues or candidates in question.[21] Relatedly, individuals can judge the general qualities of their information environment, based on particular observations they make within that environment.[22] This hints at the possibility that concerns about the manipulation of SEC on social media can make the idea of manipulative activities on social media more salient and heighten individuals' perceptions that news they read on social media in general could be manipulated. For instance, thinking about entities involved in manipulation of SEC (e.g., fake accounts and automated bots) may lead individuals to overestimate the prevalence of other illegitimate news sources (i.e., fake Web sites) or producers (i.e., news stories written by bots).[6,7]

Simply suspecting bots to be the authors of news content may have a negative impact on news credibility, given that some individuals tend to distrust news written by machines.[23] In such cases, news credibility may be reduced regardless of SEC, as SEC manipulability concerns can prompt doubts about the authenticity of *the source* or *content of news* on social media. Although this priming influence of SEC manipulability concerns is suggested by prior literature, we have insufficient evidence to posit a hypothesis. As such, we ask the following research question:

RQ1: Do SEC manipulability concerns impact the perceived credibility of a news post, regardless of SEC?

Methods

An online experiment was conducted using a 3 (level of SEC: none vs. low-number vs. high-number) × 2 (SEC manipulability concerns: primed vs. nonprimed) × 2 (topic: third political party vs. marijuana use) between-subjects factorial design.[a] This study was approved by the Institutional Review Board of the University of Michigan. A total of 2,304 participants[b] in the United States ($M_{age} = 41.33$, women 59.5 percent) were recruited through an online sample vendor, *Prime Panels*.[c]

Procedure

Participants were randomly assigned to view one of two news articles designed to manipulate *SEC manipulability concerns;* participants were shown either a mock news article intended to prime SEC manipulability concerns (about common SEC manipulation activities on social media) or an unrelated article on sports news as a control. The articles shown in each condition were adapted from published news articles and kept consistent in terms of format, length, and readability.

Participants then were randomly assigned to view a second news article presented in a social media post format. Those assigned to the non-SEC condition were shown a news post that did not include any SEC as part of its layout, whereas participants assigned to either low- or high-number SEC condition were shown a news post that was marked by low- and high-number SEC. News posts in the low-number condition included either (a) a pair of 8 likes and 2 shares or (b) 2 written comments.[d] News posts in the high-number condition included either (a) a pair of 3.8 K likes and 3.2K shares or (b) 12 written comments. After seeing the posts participants completed the questionnaire measuring their perceptions of credibility of the news post.

Stimulus materials

The stimuli news posts adopted the general layout of posts on *Facebook*. News posts consisted of a news article with a source (a fictional news organization), a headline, a short body

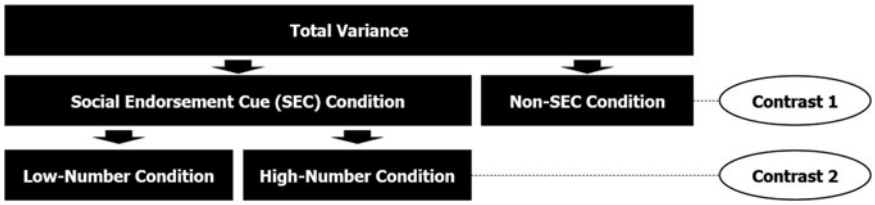

FIG. 1. Overview of contrasts used in the manipulation check test and main analyses.

of text, date posted, and a picture related to the news content. Two topics were used in the news posts: (a) public support for a third political party in the United States, and (b) the decrease in marijuana use among teens in states where marijuana is legal.[e] A pretest ensured that the two stimuli topics did not differ in perceived message credibility, so we collapsed the two topic stimuli in the main analysis.[f] All stimuli used in this study appear in the Supplementary Appendix SA1.

Dependent variable measures

News credibility was the dependent variable and was measured using a scale found to be valid and reliable in prior study.[24] This measure taps three empirically distinct aspects of news credibility: accuracy, authenticity, and believability. Three semantic differential items on six-point scales measured the extent to which participants thought the news post was (a) inaccurate/accurate (b) inauthentic/authentic, and (c) unbelievable/believable and averaged ($\alpha = 0.88$, mean [M] = 3.43, standard deviation [SD] = 1.26).

Results

Manipulation check

A factorial analysis of variance (ANOVA) with SEC level, manipulability concerns, and topic as independent variables indicated a significant main effect for SEC level on the *perception of SEC seen*,[g] $F(2, 2{,}293) = 149.09$, $p < 0.001$, partial eta squared, $\eta_p^2 = 0.12$. t Tests (see Fig. 1 for contrasts used) showed significant differences between the non-SEC and SEC conditions, $t(650.82) = -7.56$; $p < 0.001$ (two-tailed), and the low- and high-number SEC conditions, $t(1{,}774.54) = -15.69$; $p < 0.001$ (two-tailed). Compared with participants in non-SEC conditions ($M = 2.18$, $SD = 1.19$), participants in low- and high-number conditions perceived a greater level of social endorsement of the post ($M = 2.65$, $SD = 1.12$). Participants in the high-number conditions indicated seeing a greater volume of SEC in the post ($M = 3.02$, $SD = 1.16$) than those in the low-number conditions ($M = 2.26$, $SD = 0.93$).

A second ANOVA with SEC manipulability concerns, SEC level, and topic as independent variables and the *perception of manipulability of SEC* as the dependent variable showed a main effect for SEC manipulability concerns, $F(1, 2{,}292) = 28.43$, $p < 0.001$, $\eta_p^2 = 0.01$, indicating that participants in the primed conditions perceived that SEC were more likely to be manipulated ($M = 3.51$, $SD = 0.93$) than those in the nonprimed conditions ($M = 3.26$, $SD = 1.03$).[h] No interactions were found in the earlier ANOVAs. Together, these analyses indicate all manipulations were successful.

Hypotheses tests

H1 predicted that a news post including SEC would be rated as more credible than a news post that does not include SEC. An ANOVA with SEC level, manipulability concerns, and topic as independent factors did not show a significant main effect for SEC level, $F(2, 2{,}292) = 2.30$, $p = 0.10$, $\eta_p^2 = 0.00$ (Table 1). A planned contrast test (contrast 1) showed a significant difference, $t(2{,}301) = 1.97$; $p = 0.049$ (two-tailed), but according to the mean values, this difference was in the opposite direction predicted in H1. The news posts that included SEC were perceived as *less* credible ($M = 3.41$, $SD = 1.27$) than the news posts that did not include SEC ($M = 3.54$, $SD = 1.24$).

H2 predicted that a news post displaying high-number SEC would be rated as more credible than a news post with low-number SEC. Contrast 2 (Fig. 1) showed no significant difference between the two conditions, $t(2{,}301) = -.89$; $p = 0.37$ (two-tailed). H2 thus was not supported.

H3 predicted that the impact of SEC on news credibility would be attenuated when SEC manipulability concerns are primed. The interaction between SEC level and SEC manipulability concerns was not significant, $F(2, 2{,}292) = 0.46$, $p = 0.63$, $\eta_p^2 = 0.00$ (Table 1). H3 was not supported.

TABLE 1. ANALYSIS OF VARIANCE FOR NEWS CREDIBILITY WITH SEC LEVEL, SEC MANIPULABILITY CONCERNS, AND TOPIC AS INDEPENDENT VARIABLES

Variables	*df*	*MS*	F	p	η_p^2
SEC level	2	3.58	2.30	0.10	0.00
SEC manipulability concerns	1	55.19	35.51	0.000***	0.02
Topic	1	50.06	32.21	0.000***	0.01
SEC level × SEC manipulability concerns	2	0.72	0.46	0.63	0.00
SEC level × topic	2	1.09	0.70	0.50	0.00
SEC manipulability concerns × topic	1	0.28	0.18	0.67	0.00
SEC manipulability concerns × SEC level × topic	2	0.36	0.23	0.79	0.00
Error	2,292	1.55			

***$p < 0.001$.
MS, mean square; SEC, social endorsement cues.

Finally, RQ1 asked whether SEC manipulability concerns reduce the perceived credibility of news, independent of SEC. The main effect of manipulability concerns was significant, $F(1, 2{,}292) = 35.51$, $p < 0.001$, $\eta_p^2 = 0.02$, suggesting that participants who were primed with SEC manipulability concerns rated the news posts as less credible ($M = 3.28$, $SD = 1.23$) than those who were not primed ($M = 3.59$, $SD = 1.28$).

Discussion

Our results did not provide evidence that the presence or magnitude of SEC positively influence participants' perceptions of news credibility. Instead, we found evidence that the presence of SEC *decreased* the perceived credibility of the news post. This contradicts our predictions and findings from previous studies. Although more research is clearly needed to unpack this novel finding, there are some potential explanations worth considering.

First, most of the studies that found a positive relationship between SEC and credibility were conducted in the contexts of health and commercial information.[25] It may be that social endorsements play a more complex role in the evaluation of news and political information in the social media environment. Given the polarizing nature of political issues and the possibility that these issues can encourage motivated processing,[26] political identity might have played an important role in evaluating the credibility of news. It may be that the specific context examined in this study—news stories with a topic and source that are not highly polarizing—was in part responsible for this contradictory finding.

Relatedly, it is important to note that the results in this study cannot be considered entirely apart from sociodemographic characteristics of users, considering that users' social backgrounds may influence social media use and psychological processes involved with their activities on social media (e.g., news consumption).[27] Future research should, therefore, investigate how individual differences and social factors influence the psychological mechanisms examined in this study.

Another possible explanation for the negative effect of SEC on news credibility is that the presence of these cues might have led to more effortful scrutiny of the news messages, which provided more opportunities for credibility to be questioned. Previous research suggests that information signaling a high degree of engagement from third-party users is more likely to draw attention and trigger effortful thinking among its readers.[28] Because Americans are generally inattentive to political information on social media,[29] they may have little reason to question the credibility of a news message unless social endorsement from other users prompts them to take a more careful look.

Relatedly, the methodology used in our study may help explain the unexpected finding. The numerical SEC used in our study consisted of several different cues that could have elicited different reactions from our participants. For instance, the number of comments could have signaled the intensity of discussion the news story had spawned; therefore, a news post that appeared to receive many comments might have been perceived as controversial. In addition, the affective response used in our study (''Haha'') could have signaled that the news story contained humorous elements. In both cases, the high number of cues may have drawn more attention and led to more effortful scrutiny of the news messages, which may have negatively impacted the perceived credibility. Overall, future study addressing these possibilities, including the methodological limitations of this study, is needed to unpack the negative influence of SEC on credibility.

We examined two mechanisms through which SEC manipulability concerns reduce news credibility. Although our hypothesized warranting principle was not supported (H3), we did find evidence of a priming effect (RQ1). Participants who were primed to be concerned about SEC manipulability rated news posts as less credible than those who were not, and this effect occurred regardless of the presence of SEC. This suggests that the decrease in news credibility was due to the perception that something about the news post *other than* SEC could have been manipulated rather than due to SEC manipulability concerns diminishing the warranting value of SEC.

One key consequence of priming is that individuals rely on the primed (salient) attribute for judging the broader nature or quality of an unknown object. Consistent with this, our findings suggest that concerns about the manipulability of SEC could have increased the salience of manipulative activities on social media, triggering a heuristic that properties of the news post other than SEC—for example, source or content of the news—could have been manipulated.

The priming effect found in our study sheds light on a potential unintended side effect of news literacy campaigns and other intervention efforts regarding misinformation; promoting awareness of social bots, fake accounts, and the ways in which these entities are used to manipulate SEC on social media may lead people to think that news shared on social media can be manipulated more generally and thereby distrust such information. Although it is important for social media companies and related institutions to raise the awareness of online (social media) manipulation and encourage users to discerningly evaluate the trustworthiness of news on social media, it is also important that such interventional messages are carefully devised so they do not cultivate general distrust in news on social media.

Our study has limitations, including the lack of generalizability of our experimental setting. Our study examines a particular online context, Facebook. It is possible our experiment activated participants' existing attitudes about Facebook and their perceptions of content shared on that platform, which could have influenced their evaluations of the news posts. Future studies should adopt the context of other social media platforms to extend our findings.

Relatedly, given that users' awareness of algorithms can impact their behaviors on Facebook (e.g., liking others' posts),[30] participants' knowledge of how SEC are being used to increase algorithmic visibility on social media may have influenced how they processed SEC and reacted to manipulability concerns.[31] Our findings offer a solid foundation for exploring how perceptions of social media algorithms moderate the impact of SEC and manipulability concerns on news credibility.

Conclusion

Widely shared concern over information credibility and the manipulation of online information presents the need to

develop effective measures to promote news literacy and savvy navigation of complex information environments. Contrary to growing concerns about over-reliance on social endorsement cues (SEC) and their negative impact on information consumption,[32] our findings suggest that people do not necessarily adopt SEC at face value in judging the trustworthiness of political news content.

What is alarming is that concerns over SEC manipulation can cultivate more general distrust in news shared on social media. Greater caution, therefore, may be needed when strategizing digital literacy interventions, as individuals' distrust in online information environment can disrupt citizens' active engagement with news and lead to political ignorance and apathy in the longer term.

Notes

a. This study also included the type of SEC as an independent factor. Text-based SEC (i.e., written comments) and numerical SEC (i.e., number of likes and shares) were manipulated within the low- and high-number SEC conditions. However, there was no significant difference between the two types of SEC in news credibility or interactions with any other factors and they were thus combined into a single factor.

b. *A priori* power analysis revealed that a sample of at least 101 participants would be needed in each group to detect a medium effect size of at least $f = 0.06$. As SEC type (text-based and numerical SEC) was originally included within SEC level, a total of five groups were manipulated for SEC level. Thus, the $n = 2{,}304$ obtained was sufficient to ensure sufficient statistical power (0.8) to detect relationships at the $p < 0.05$ level among all three factors (SEC level, SEC manipulability concerns, and topic) and minimize the likelihood of a Type I error.

c. The online panel sample was comparable with the composition of Facebook users in the United States (Pew, 2018), in terms of age (Pew = 48, sample = 41 years) and median education level (Pew = some college, no degree—includes some community college, sample = some college or associate's degree) for those >18 years. Our sample had a higher percentage of females (Pew = 49.1 percent, W1 = 59.8 percent).

d. The two types of SEC did not result in a difference in perceived news credibility.

e. These topics were selected because they were considered to be less polarizing in the context of American politics according to a Gallup poll.

f. Third political party: $M = 4.72$, $SD = 1.68$; marijuana use: $M = 4.62$, $SD = 1.78$, seven-point scale, $F(1, 225) = 0.702$, $p = 0.40$, $\eta_p^2 = 0.00$, $n = 226$).

g. To assess whether our manipulation of SEC level was successful, participants were asked to indicate, on a five-point scale ranging from ''not at all'' to ''a great deal,'' the extent to which the post they viewed had been either (1) ''liked'' or shared, or (2) commented on by others ($\alpha = 0.76$, $M = 2.55$, $SD = 1.15$).

h. The manipulation of manipulability concerns was assessed by two items that asked, on a five-point scale ranging from ''not at all likely'' to ''extremely likely,'' how likely it is that the numbers of likes, shares, and comments on social media posts are generally (1) easy to manipulate, and (2) created by fake accounts ($r = 0.57$, $M = 3.39$, $SD = 0.99$).

Authors' Contributions

All authors contributed to the design of the study. S.S.L. has conceived and designed the analysis, collected the data, performed the analysis, and written the article. F.L. and L.H. have written the original draft, reviewed, and edited the article. D.S.L. has contributed to producing experiment materials, written the original draft, reviewed, and edited the article. B.E.W. has reviewed and edited the article. N.K. has supervised the research and reviewed the article.

Author Disclosure Statement

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Supplementary Material

Supplementary Appendix SA1

References

1. Haim M, Kümpel AS, Brosius H-B. Popularity cues in online media: a review of conceptualizations, operationalizations, and general effects. Studies in Communication and Media 2019; 7:186–207.
2. Sundar SS. (2008) The MAIN model: a heuristic approach to understanding technology effects on credibility. In Metzger MJ, and Flanagin AJ, eds. *Digital media, youth, and credibility*. Cambridge, MA: The MIT Press, pp. 73–100.
3. Robinson M. (2021) Best places to buy Instagram likes in 2021. How sociable. https://howsociable.com/buy-instagram-likes/ (accessed Feb. 19, 2021).
4. Barnes NG. Social commerce emerges as big brands position themselves to turn ''follows,'' ''likes'' and ''pins'' into sales. American Journal of Management 2014; 14:11–18.
5. Paquet-Clouston M, Bilodeau O, Décary-Hétu D. (2017) Can we trust social media data? Social network manipulation by an IoT botnet. In *Proceedings of the 8th International Conference on Social Media & Society*. ACM, pp. 1–9.
6. Shao C, Ciampaglia G, Varol O, et al. The spread of low-credibility content by social bots. Nature Communications 2018; 9:1–9.
7. Ferrara E, Varol O, Davis C, et al. The rise of social bots. Communications of the ACM 2016; 59:96–104.
8. Varol O, Ferrara E, Davis CA, et al. (2017). Online human-bot interactions: detection, estimation, and characterization. In *Eleventh International AAAI Conference on Web and Social Media*, pp. 1–10.
9. Pew Research Center. (2018) Social media bots draw public's attention and concern. https://www.journalism.org/2018/10/15/social-media-bots-draw-publics-attention-and-concern/ (accessed Feb. 19, 2021).

10. Borah P, Xiao X. The importance of likes: the interplay of message framing, source, and social endorsement on credibility perceptions of health information on Facebook. Journal of Health Communication 2018; 23:399–411.
11. Flanagin AJ, Metzger MJ, Pure R, et al. Mitigating risk in ecommerce transactions: perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention. Electronic Commerce Research 2014; 14:1–23.
12. Kim J. Rumor has it: the effects of virality metrics on rumor believability and transmission on Twitter. New Media & Society 2018; 20:4807–4825.
13. Xu Q. Social recommendation, source credibility, and recency: effects of news cues in a social bookmarking website. Journalism & Mass Communication Quarterly 2013; 90:757–775.
14. Waddell TF. What does the crowd think? How online comments and popularity metrics affect news credibility and issue importance. New Media & Society 2018; 20: 3068–3083.
15. Waddell TF. The authentic (and angry) audience. Digital Journalism 2018. DOI: 10.1080/21670811.2018.1490656.
16. Turcotte J, York C, Irving J, et al. News recommendations from social media opinion leaders: effects on media trust and information seeking. Journal of Computer-Mediated Communication 2015; 20:520–535.
17. Walther JB, Parks MR. (2002) Cues filtered out, cues filtered in: computer-mediated communication and relationships. In Knapp ML, Daly JA, eds. *Handbook of interpersonal communication*. 3rd ed. . Thousand Oaks, CA: Sage, pp. 529–563.
18. DeAndrea DC. Advancing warranting theory. Communication Theory 2014; 24:186–204.
19. Walther JB, Van Der Heide B, Hamel L, et al. Self-generated versus other-generated statements and impressions in computer-mediated communication: a test of warranting theory using Facebook. Communication Research 2009; 36:229–253.
20. Vendemia MA, Bond RM, DeAndrea DC. The strategic presentation of user comments affects how political messages are evaluated on social media sties: evidence for robust effects across party lines. Computers in Human Behavior 2019; 91:279–289.
21. Iyengar S, Kinder DR. (1987). *News that matters: agenda-setting and priming in a television age*. Chicago, IL: University of Chicago Press.
22. Van Duyn E, Collier J. Priming and fake news: the effects of elite discourse on evaluations of news media. Mass Communication and Society 2019; 22:29–48.
23. Waddell TF. A robot wrote this? How perceived machine authorship affects news credibility. Digital Journalism 2018; 6:236–255.
24. Appleman A, Sundar SS. Measuring message credibility: construction and validation of an exclusive scale. Journalism & Mass Communication Quarterly 2016; 93:59–79.
25. Metzger MJ, Flanagin AJ. Credibility and trust of information in online environments: the use of cognitive heuristics. Journal of Pragmatics 2013; 59:210–220.
26. Iyengar S, Hahn KS. Red media, blue media: evidence of ideological selectivity in media use. Journal of Communication 2009; 59:19–39.
27. Park YJ. Explicating net diversity in trend assessment. Communication Research 2018; 45:783–809.
28. Lee EJ, Shin SY. Mediated misinformation: questions answered, more questions to ask. American Behavioral Scientist 2019; 65. DOI: 10.1177/0002764219869403.
29. Bode L, Vraga EK, Troller-Renfree S. Skipping politics: measuring avoidance of political content in social media. Research & Politics 2017; 4:1–7.
30. Ellison NB, Triệu P, Schoenebeck S, et al. (2020). Why we don't click: interrogating the relationship between viewing and clicking in social media contexts by exploring the ''Non-Click.'' Journal of Computer-Mediated Communication 2020; 25:402–426.
31. Park YJ, Chung JE, Shin DH. The structuration of digital ecosystem, privacy, and big data intelligence. American Behavioral Scientist 2018; 62:1319–1337.
32. Herrman J. (2019) What if Instagram got rid of likes? The New York Times. https://www.nytimes.com/2019/05/31/style/are-likes-and-followers-the-problem-with-social-media.html (accessed Feb. 19, 2021).

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