Review

Meta-perception and misinformation

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Abstract

Research on political misperceptions is flourishing across disciplines. Literature on misinformation susceptibility and political group meta-perceptions have arisen independently, both seeking to understand how inaccurate social beliefs of the first and second order respectively contribute to political polarization. Here we review these literatures and argue for greater integration. We highlight four domains where these two literatures intersect: how inaccurate group meta-perceptions may increase misinformation susceptibility, how misinformation may itself convey inaccurate second-order information, how second-order perceptions of misinformation belief may increase misinformation susceptibility, and how reputational concerns may affect misinformation engagement. Our hope is to illuminate fruitful avenues of future research and inspire scholars of political misperceptions to pursue unified theoretical models of how misperceptions drive negative political outcomes.

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Introduction

Psychological scholars are increasingly focused on the problem of political polarization [1]. Two nascent literatures have emerged from this that share a core theoretical interest in how inaccurate social beliefs drive polarization. The first is work on group meta-perceptions/false polarization, inaccurate second-order beliefs about out-group preferences, and attitudes toward the in-group [2–4], which developed from traditions in social and political psychology studying intergroup conflict, stereotypes/misperception, and dehumanization. The second is work on misinformation susceptibility [5–7], which developed from traditions in cognitive and social psychology studying conspiracy beliefs, news/social media, and cognitive effort.

We argue the literature on group meta-perception and misinformation susceptibility should seek stronger integration. Doing so will progress the field toward a unified theoretical framework for understanding the causes of political misperceptions, across domains and contexts, and how misperceptions drive negative political outcomes. The former is especially important as most scholarship on political misperceptions tends to focus on outcomes and interventions while neglecting their causes and antecedents. Below we provide a roadmap of four fruitful avenues of research where these literatures intersect (see Table 1 for overview). The first explores the effect misinformation may have on negative group meta-perceptions, and the second discusses how inaccurate group meta-perceptions may contribute to misinformation susceptibility. The third focuses on second-order perceptions of misinformation belief, and the fourth considers meta-perceptive concerns related to misinformation engagement. Our goal is to inspire the next generation of scholarship on political misperceptions and interventions designed to reduce them and the negative political outcomes they cause.

Misinformation's effects of group meta-perception

Misinformation research in psychology has endeavored to make generalizable inferences across myriad instances of misinformation [8], yet this has led to a lack of attention to how the specific content of the misinformation affects belief and subsequent appraisals of both in- and out-groups. If misinformation contains second-order information about the beliefs and behaviors of partisans, then belief in that misinformation could negatively affect partisans' group meta-perceptions.

Partisanship strongly impacts how individuals evaluate misinformation itself [9,10], and the sources of (mis)information [11]. But work isolating the *features* of misinformation, and how they impact evaluation and downstream attitudes, is sparse. Misused evidence is seen as less false than full fabrication, and narrative-based information is seen as less false than statistical-

Table 1

Overview of areas of fruitful future research.

Intersection of Misinformation & Meta-perception	Relevant Existing Literature & Phenomena	Example Research Questions
Misinformation's effects of group meta-perception	Misinformation content; leadership and source effects; threat perceptions; perceived norms; prior attitudes	How prevalent is misinformation containing second-order information? Is it mostly about the in–or out-group? Is it more effective than misinformation containing only first-order information?
Group meta-perception's effects on misinformation belief		Do threat perceptions increase misinformation susceptibility? Is misinformation more believable if it confirms negative meta-perceptions? Does false polarization make partisans more likely to believe misinformation?
Second-order perceptions of misinformation belief	Pluralistic ignorance; third-person effect and naive realism; reputation and impression management concerns; conformity	Do partisans overestimate the prevalence of misinformation support in the in- and out-group? Do third-person effects generalize to the in-group? What are people's lay beliefs about how misinformation spreads and why people believe it?
Meta-perceptive concerns around misinformation engagement		Do partisans feel conformity pressures to accept/share misinformation? Do partisans underestimate in-group backlash to misinformation engagement? Could pluralistic ignorance prevent partisans from challenging in-group misinformation?

based information [12]. Conspiracy articles use more emotional and threat-based information and contain more counter-argumentation than do non-conspiracy articles [13]. Fake news with policy relevance is more attractive to partisans than fake news that denigrates specific outgroup members [14]. Intergroup conflict, relative to cooperation, is one cause of overly negative group meta-perceptions [15,16], suggesting that misinformation invoking a sense of out-group threat could exacerbate false polarization biases. Yet to do so misinformation must be about the out-group specifically, and misinformation literature across disciplines have not sought to systematically understand how specific content related to in-groups and out-groups may affect appraisals of misinformation. Moreover, group meta-perceptions can be highly domain-specific and may arise from distinct mechanisms [17,18], suggesting that their interaction with misinformation content is also domain-specific.

Misinformation often contains specific, false claims about the actions and attitudes of the out-group. For example, conservative Congressional Representatives James Comer and Jim Jordan published an opinion piece on Fox News in October 2020 titled "Democrats want to use mail-in ballots to steal election and deny Trump second term" [19]. This presents false second-order information about Democrats' intent to commit election fraud against Republicans. Believing the out-group holds anti-democratic attitudes and is willing to subvert elections is associated with holding those sentiments oneself [20,21], and the authors of both these papers speculate that misinformation forecasting Democratic attempts to subvert a Trump victory in the 2020 Election contributed to Republicans' inaccurate group meta-perceptions and own anti-democratic attitudes. If this is true, it would be evidence for group meta-perception being the mediating causal factor between election-related misinformation and anti-democratic sentiment. Future work on misinformation should focus more on if and how content impacts downstream attitudes, specifically how that content conveys second-order information about the out-groups' behavior, attitudes, or intent, and serve to increase conflict through negative group meta-perceptions.

Group meta-perception's effects on misinformation belief

While misinformation can induce second-order beliefs, it is also plausible that baseline second-order beliefs about the in- and out-group make one more susceptible to misinformation aligned with those beliefs. As mentioned above, Braley et al. [20] and Pasek et al. [21] speculate that election-related misinformation may

have caused the negative group meta-perceptions about out-group willingness to subvert democracy. However, the reverse could also be true. Partisans may have held such negative second-order beliefs about the out-group (as false polarization predates the Trump era [22,23]) that the "Big Lie" and other forms of anti-democratic misinformation merely confirmed and cemented prior beliefs rather than having inculcated partisans with novel (mis)perceptions. These dynamics could be understood as a norm perception effect: partisans infer (false) conflict norms from highly negative group meta-perceptions they already hold, which in turn makes individuals more susceptible to misinformation suggesting the out-group engaged in the putatively normative behavior [24]. More broadly, this process could function through first-order mechanisms, which have independent effects on intergroup perceptions in addition to second-order beliefs [25]. For example, group meta-perceptions causally drive affective polarization [15,26] and negative first-order beliefs more broadly [27,28], and affective polarization impacts partisan bias effects on misinformation belief, specifically through more attention to in-group information [29].

Intergroup threat perceptions also likely play a mediating role in the relationship between second-order beliefs and misinformation susceptibility. While no empirical work has tackled the links between meta-perceptions, threat, and misinformation, there is evidence suggesting this connection exists. Identity threat can increase political misperceptions [30], and in uncertain informational settings threat perceptions increase, leading to higher acceptance of COVID conspiracy theories [31]. Threatening information (e.g., terrorism) is attended to significantly more than non-threatening information, indicating that threat affects informational preference [32]. Additionally, misinformation is perceived as threatening because people believe out-group members are easily susceptible to it [33]. Thus, if negative group meta-perceptions induce feelings of threat, then they will plausibly increase preferences for belief-consistent information.

Second-order perceptions of misinformation belief

Beyond possible causal relationships between general second-order beliefs and misinformation susceptibility, individuals also have second-order beliefs *about* belief in misinformation. In the context of one's in-group, perceptions of in-group belief in misinformation could induce norm effects. Individuals may become more susceptible to misinformation because they believe it's widely endorsed by the in-group. For example, the motive to share news with political allies makes individuals less accurate at identifying fake news, suggesting in-group affiliation motives interfere with the ability to detect fake news [34]. Similarly, believing that misinformation is widely endorsed by the out-group will plausibly lead to negative intergroup attitudes,

along with feelings of threat [33]. Both of these hypothetical processes would be exacerbated by a phenomenon identified in the Communication literature as the Third Person Effect (TPE) [35]. The TPE, akin to Naive Realism in the psychological literature [36], is a bias whereby individuals believe mass media messages, independent of truthfulness, are more impactful to (distant) others than oneself or close others [37,38]. The TPE generalizes to the context of misinformation, as individuals believe out-group members are more susceptible to misinformation [39] and less able to detect it [38] relative to in-group members. This suggests that not only might the TPE increase one's tendency to assume belief in misinformation is prevalent, especially among conservatives who believe mainstream news knowingly shares false information at a high rate [40], have more homogenous social networks [41,42], and to whom most misinformation caters [43], it may make people overconfident in their ability to detect and reject misinformation [44]. However, to our knowledge, there is no research on how aware individuals are of the amount of misinformation they are exposed to, so any possible relationship between the TPE and misinformation prevalence perceptions is speculative.

While the TPE literature provides an understanding that individuals see others as more susceptible, it focuses only on general others, instead of identified groups, and has yet to explore any experimental approaches to mitigating the effects. Chen and Fu [37] found evidence that the TPE increased behavioral intent to engage in corrective action (debunking comments, reporting the misinformation for removal) to online misinformation, but this work does not provide evidence of actual corrective behavior. Overall, future work should examine the second-order beliefs individuals hold about in- and out-group endorsement of misinformation, whether these second-order perceptions are accurate, and how they affect individuals' own susceptibility to misinformation.

Meta-perceptive concerns around misinformation engagement

There are many reasons why individuals may, or may not, engage with and share misinformation that are unrelated to perceptions of veracity. Individuals who choose to circulate (mis)information online primarily do so because of its ideological alignment [45] and dislike of the out-group [46], though Ceylan, Anderson, and Wood [47] suggest simple positive reinforcement (higher engagement on posts) creates habits of sharing (mis) information. Sharing behavior on social media may also have positive reputational benefits from in-group members [48], but does come with the risk of reputation loss if the information is known to be false [49]. Chadwick, Vaccari, and O'Loughlin [50] find that the motive to inform/persuade others via social media posting is independent from the motive to please (or

upset) others, providing further evidence for a reputational mechanism, namely the meta-perceptive belief that sharing something will garner one positive social regard.

Perhaps the most pertinent question related to such reputational concerns surrounding misinformation engagement is whether or not they are accurate. If partisans overestimate positive in-group regard from sharing in-group aligned information (or fail to anticipate pushback from in-group members challenging the misinformation), such inaccurate meta-perceptions might drive misinformation sharing. Yet sharing misinformation can engender perceptions of trustworthiness from the in-group [51], and it's plausible that partisans might accurately anticipate this trustworthiness boost, providing a social incentive to share misinformation. Similarly, individuals might (in)correctly expect reputational harms from challenging misinformation espoused by in-group members, leading to a pluralistic ignorance effect and the spiral of silence [52]. Future work should seek to establish the weight allotted to meta-perceptions when engaging with misinformation, and the extent to which discrete reputational meta-perceptions are accurate or biased.

Conclusion

The integration of the misinformation and group meta-perception literature presents considerable opportunities to expand understanding of the effects political misperceptions have on the political outcomes. Research on both the causes and consequences of political misperceptions is crucial to developing unified theories and scalable interventions. The sections presented here provide a detailed, though non-exclusive, discussion of research avenues that would provide important steps in such theory development. Lastly, we encourage psychological researchers to seek interdisciplinary collaborations, as a sizable portion of research evaluating political misperceptions and misinformation is done by disciplines such as Political Science, Communications, and Media Studies.

Author contributions

Both authors contributed equally to the generation and writing of this manuscript.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

References

Papers of particular interest, published within the period of review, have been highlighted as:

* of special interest
** of outstanding interest

1. Finkel EJ, Bail CA, Cikara M, Ditto PH, Iyengar S, Klar S, Mason L, McGrath MC, Nyhan B, Rand DG, Skitka LJ, Tucker JA, Van Bavel JJ, Wang CS, Druckman JN: **Political sectarianism in America**. *Science* 2020, **370**:533−536, https://doi.org/10.1126/science.abe1715.

2. Fernbach PM, Van Boven L: **False polarization: cognitive mechanisms and potential solutions**. *Curr Opn Psychol* 2022, **43**:1−6, https://doi.org/10.1016/j.copsyc.2021.06.005.

3. Lees J, Cikara M: **Understanding and combating misperceived polarization**. *Philosophical Transactions Royal Soc B* 2021, **376**, 20200143, https://doi.org/10.1098/rstb.2020.0143.

4. Moore-Berg SL, Hameiri B, Bruneau E: **The prime psychological suspects of toxic political polarization**. *Curr Opn Psychol* 2020, **34**:199−204, https://doi.org/10.1016/j.cobeha.2020.05.001.

5. Jost JT, van der Linden S, Panagopoulos C, Hardin CD: **Ideological asymmetries in conformity, desire for shared reality, and the spread of misinformation**. *Curr Opn Psychol* 2018, **23**: 77−83, https://doi.org/10.1016/j.copsyc.2018.01.003.

6. Lewandowsky S, van der Linden S: **Countering misinformation and fake news through inoculation and prebunking**. *Eur Rev Soc Psychol* 2021:1−38, https://doi.org/10.1080/10463283.2021.1876983.

7. Pennycook G, Rand D: **The psychology of fake news**. *Trends Cognit Sci* 2021:15, https://doi.org/10.1016/j.tics.2021.02.007.

8. Pennycook G, Binnendyk J, Newton C, Rand DG: **A practical
* guide to doing behavioral research on fake news and misinformation**. *Collabra: Psychology* 2021, **7**:25293, https://doi.org/10.1525/collabra.25293.
This paper provides a practical guide for experiments evaluating misinformation, focusing on proper selection of materials, necessary techniques to remain impartial, and remaining consistently up to date with the information being used.

9. Clayton K, Davis J, Hinckley K, Horiuchi Y: **Partisan motivated reasoning and misinformation in the media: is news from ideologically uncongenial sources more suspicious?** *Jpn J Polit Sci* 2019, **20**:129−142, https://doi.org/10.1017/S1468109919000082.

10. Gawronski B, Ng NL, Luke DM: **Truth sensitivity and partisan
** bias in responses to misinformation**. *J Exp Psychol Gen* 2023, **152**:2205−2236, https://doi.org/10.1037/xge0001381.
Using Signal Detection theory to evaluate the effects of both partisanship and analytical thinking on misinformation susceptibility, the authors find that while both explanations significantly predict misinformation susceptibility, partisan bias is a stronger predictor.

11. Traberg CS, van der Linden S: **Birds of a feather are persuaded together: perceived source credibility mediates the effect of political bias on misinformation susceptibility**. *Pers Indiv Differ* 2022, **185**:111269, https://doi.org/10.1016/j.paid.2021.111269.

12. Zhao X, Tsang SJ: *How people process different types of health
** misinformation: roles of content falsity and evidence type*. Health Communication; 2023:1−13, https://doi.org/10.1080/10410236.2023.2184452.
This paper explores the impact of both narrative- and statistical-based information on the impact of health misinformation belief. The authors find that narrative-based information was viewed as being less false and less likely to be verified.

13. Meuer M, Oeberst A, Imhoff R: **How do conspiratorial explanations differ from non-conspiratorial explanations? A content analysis of real-world online articles**. *Eur J Soc Psychol* 2023, **53**:288−306, https://doi.org/10.1002/ejsp.2903.

14. McPhetres J, Rand DG, Pennycook G: **Character deprecation in fake news: is it in supply or demand?** *Group Process Intergr Relat* 2021, **24**, https://doi.org/10.1177/1368430220965709.

15. Lees J, Cikara M: **Inaccurate group meta-perceptions drive negative out-group attributions in competitive contexts**. *Nat Human Behav* 2020, **4**:279–286, https://doi.org/10.1038/s41562-019-0766-4.

16. Moore-Berg SL, Ankori-Karlinsky L-O, Hameiri B, Bruneau E: **Exaggerated meta-perceptions predict intergroup hostility between American political partisans**. *Proc Natl Acad Sci USA* 2020, **117**:14864–14872, https://doi.org/10.1073/pnas.2001263117.

17. Lees J: **Political violence and inaccurate metaperceptions**. *Proc Natl Acad Sci USA* 2022, **119**, e2204045119, https://doi.org/10.1073/pnas.2204045119.

18. Voelkel JG, Chu J, Stagnaro MN, Mernyk JS, Redekopp C,
** Pink SL, Druckman JN, Rand DG, Willer R: **Interventions reducing affective polarization do not necessarily improve anti-democratic attitudes**. *Nat Human Behav* 2023, **7**, https://doi.org/10.1038/s41562-022-01466-9.
The authors test and replicate three known interventions for reducing affective polarization, and they find that they do not improve anti-democratic attitudes. This work provides evidence that affective polarization and anti-democratic attitudes may not be as psychologically linked as often assumed.

19. Comer J: *Reps. Comer & Jordan: Democrats want to use mail-in ballots to steal election and deny Trump second term*. Fox News; 2020. https://www.foxnews.com/opinion/mail-in-ballots-james-comer-jim-jordan. Accessed 23 August 2023.

20. Braley A, Lenz GS, Adjodah D, Rahnama H, Pentland A: **Why
** voters who value democracy participate in democratic backsliding**. *Nat Human Behav* 2023, **7**, https://doi.org/10.1038/s41562-023-01594-w.
The authors find that inaccurate group meta-perceptions contribute to the erosion of democratic norms. They find that partisans overestimate the other side's willingness to subvert democracy, that this misperception is correlated with one's own support for subverting democratic norms, and that correcting this misperception strengthens support for democratic norms.

21. Pasek MH, Ankori-Karlinsky L-O, Levy-Vene A, Moore-Berg SL: **Misperceptions about out-partisans' democratic values may erode democracy**. *Sci Rep* 2022, **12**:16284, https://doi.org/10.1038/s41598-022-19616-4.

22. Chambers JR, Baron RS, Inman ML: **Misperceptions in intergroup conflict**. *Psychol Sci* 2006, **17**:38–45, https://doi.org/10.1111/j.1467-9280.2005.01662.x.

23. Waytz A, Young LL, Ginges J: **Motive attribution asymmetry for love vs. hate drives intractable conflict**. *Proc Natl Acad Sci USA* 2014, **111**:15687–15692, https://doi.org/10.1073/pnas.1414146111.

24. Clayton K, Davis NT, Nyhan B, Porter E, Ryan TJ, Wood TJ: **Elite rhetoric can undermine democratic norms**. *Proc Natl Acad Sci USA* 2021, **118**, e2024125118, https://doi.org/10.1073/pnas.2024125118.

25. Livingstone AG, Fernández Rodríguez L, Rothers A: **"They just don't understand us": the role of felt understanding in intergroup relations**. *J Pers Soc Psychol* 2019, https://doi.org/10.1037/pspi0000221.

26. Ruggeri K, Većkalov B, Bojanić L, Andersen TL, Ashcroft-
** Jones N, Ayacaxli N, Barea-Arroyo P, Berge ML, Bjørndal LD, Bursalõoğlu A, Bühler V, Čadek M, Çetinçelik M, Clay G, Cortijos-Bernabeu A, Damnjanović K, Dugue TM, Esberg M, Esteban-Serna C, Felder EN, Friedemann M, Frontera-Villanueva DI, Gale P, Garcia-Garzon E, Geiger SJ, George L, Girardello A, Gracheva A, Gracheva A, Guillory M, Hecht M, Herte K, Hubená B, Ingalls W, Jakob L, Janssens M, Jarke H, Kácha O, Kalinova KN, Karakasheva R, Khorrami PR, Lep Ž, Lins S, Lofthus IS, Mamede S, Mareva S, Mascarenhas MF, McGill L, Morales-Izquierdo S, Moltrecht B, Mueller TS, Musetti M, Nelsson J, Otto T, Paul AF, Pavlović I, Petrović MB, Popović D, Prinz GM, Razum J, Sakelariev I, Samuels V, Sanguino I, Say N, Schuck J, Soysal I, Todsen AL, Tünte MR, Vdovic M, Vintr J, Vovko M, Vranka MA, Wagner L, Wilkins L, Willems M, Wisdom E, Yosifova A, Zeng S, Ahmed MA, Dwarkanath T, Cikara M, Lees J, Folke T: **The general fault in our fault lines**. *Nat Human Behav* 2021, **5**:1369–1380, https://doi.org/10.1038/s41562-021-01092-x.

27. Druckman JN, Kang S, Chu J, Stagnaro MN, Voelkel JG,
** Mernyk JS, Pink SL, Redekopp C, Rand DG, Willer R: **Correcting misperceptions of out-partisans decreases American legislators' support for undemocratic practices**. *Proc Natl Acad Sci USA* 2023, **120**, e2301836120, https://doi.org/10.1073/pnas.2301836120.
The authors show that elected officials hold inaccurate group meta-perceptions about partisan animosity, support for political violence, and undemocratic practices. They also find that correcting these misperceptions reduces elected officials' support for undemocratic practices.

28. Mernyk JS, Pink SL, Druckman JN, Willer R: **Correcting inaccurate metaperceptions reduces Americans' support for partisan violence**. *Proc Natl Acad Sci USA* 2022, **119**, e2116851119, https://doi.org/10.1073/pnas.2116851119.

29. Jenke L: *Affective polarization and misinformation belief*. Polit Behav; 2023, https://doi.org/10.1007/s11109-022-09851-w.

30. Nyhan B, Reifler J: **The roles of information deficits and identity threat in the prevalence of misperceptions**. *J Elections, Public Opin Parties* 2019, **29**:222–244, https://doi.org/10.1080/17457289.2018.1465061.

31. Heiss R, Gell S, Röthlingshöfer E, Zoller C: **How threat perceptions relate to learning and conspiracy beliefs about COVID-19: evidence from a panel study**. *Pers Indiv Differ* 2021, **175**:110672, https://doi.org/10.1016/j.paid.2021.110672.

32. Merolla JL, Zechmeister EJ: **Threat and information acquisition: evidence from an eight country study**. *J Exp Polit Sci* 2018, **5**:167–181, https://doi.org/10.1017/XPS.2018.4.

33. Altay S, Acerbi A: *People believe misinformation is a threat
** because they assume others are gullible*. New Media & Society; 2023, 146144482311533, https://doi.org/10.1177/14614448231153379.
This paper identifies that a large predictor of both the perceived threat and danger of extant misinformation is a belief that distant, outgroup, others are more susceptible and likely to be influenced by misinformation.

34. Rathje S, Roozenbeek J, Van Bavel JJ, van der Linden S: **Ac-
** curacy and social motivations shape judgements of (mis)information**. *Nat Human Behav* 2023, **7**:892–903, https://doi.org/10.1038/s41562-023-01540-w.
The authors used monetary and non-monetary incentive-based interventions to mitigate misinformation susceptibility. Results showed that both interventions successfully increased accuracy ratings of true news, indicating strong motivational components to misinformation accuracy judgments.

35. Davison WP: **The third-person effect in communication**. *Publ Opin Q* 1983, **47**:1–15.

36. Robinson RJ, Keltner D, Ward A, Ross L: **Actual versus assumed differences in construal: "Naive realism" in intergroup perception and conflict**. *J Pers Soc Psychol* 1995, **68**:404–417, https://doi.org/10.1037/0022-3514.68.3.404.

37. Chen L, Fu L: **Let's fight the infodemic: the third-person effect process of misinformation during public health emergencies**. *INTR* 2022, **32**:1357–1377, https://doi.org/10.1108/INTR-03-2021-0194.

38. Corbu N, Oprea D-A, Negrea-Busuioc E, Radu L: **'They can't fool me, but they can fool the others!' Third person effect and fake news detection**. *Eur J Commun* 2020, **35**:165–180, https://doi.org/10.1177/0267323120903686.

39. Ştefăniţă O, Corbu N, Buturoiu R: **Fake news and the third-person effect: they are more influenced than me and you**. *J Media Res* 2018, **11**.

40. Fischer S: *92% of Republicans think media intentionally reports fake news, Axios*. 2018. https://www.axios.com/2018/06/26/trump-effect-92-percent-republicans-media-fake-news. Accessed 19 October 2023.

41. Blanchar JC, Norris CJ: **Political homophily, bifurcated social reality, and perceived legitimacy of the 2020 US presidential election results: a four-wave longitudinal study**. *Anal Soc Issues Public Policy* 2021, https://doi.org/10.1111/asap.12276. asap.12276.

42. Boutyline A, Willer R: **The social structure of political echo chambers: variation in ideological homophily in online networks**. *Polit Psychol* 2017, **38**:551−569, https://doi.org/10.1111/pops.12337.

43. Garrett RK, Bond RM: **Conservatives' susceptibility to political misperceptions**. *Sci Adv* 2021, **7**, https://doi.org/10.1126/sciadv.abf1234. eabf1234.

44. Lyons BA: **Why we should rethink the third-person effect: disentangling bias and earned confidence using behavioral data**. *J Commun* 2022, **72**:565−577, https://doi.org/10.1093/joc/jqac021.

45. Bowyer B, Kahne J: **Motivated circulation: how misinformation and ideological alignment influence the circulation of political content**. *Int J Commun* 2019, **19**:5791−5815.

46. Osmundsen M, Bor A, Vahlstrup PB, Bechmann A, Petersen MB: **Partisan polarization is the primary psychological motivation behind political fake news sharing on Twitter**. *Am Polit Sci Rev* 2021, **115**:999−1015, https://doi.org/10.1017/S0003055421000290.

47. Ceylan G, Anderson IA, Wood W: **Sharing of misinformation is habitual, not just lazy or biased**. *Proc Natl Acad Sci USA* 2023, **120**, e2216614120, https://doi.org/10.1073/pnas.2216614120.

48. Jordan JJ: **A pull versus push framework for reputation**. *Trends Cognit Sci* 2023, **27**:852−866, https://doi.org/10.1016/j.tics.2023.06.005.

49. Duffy A, Tandoc E, Ling R: **Too good to be true, too good not to share: the social utility of fake news, Information**. *Communication & Society* 2020, **23**:1965−1979, https://doi.org/10.1080/1369118X.2019.1623904.

50. Chadwick A, Vaccari C, O'Loughlin B: **Do tabloids poison the well of social media? Explaining democratically dysfunctional news sharing**. *New Media & Society* 2018, **20**:4255−4274, https://doi.org/10.1177/1461444818769689.

51. Galak J, Critcher CR: **Who sees which political falsehoods as more acceptable and why: a new look at in-group loyalty and trustworthiness**. *J Pers Soc Psychol* 2023, **124**:593−619, https://doi.org/10.1037/pspi0000264.

52. Geiger N, Swim JK: **Climate of silence: pluralistic ignorance as a barrier to climate change discussion**. *J Environ Psychol* 2016, **47**:79−90, https://doi.org/10.1016/j.jenvp.2016.05.002.