Specific Media Literacy Tips Decrease Belief in AI-generated Visual Misinformation

Sean Guo[1], Briony Swire-Thompson[2] & Xiaoqing Hu[*1, 3, 4]

[1]Department of Psychology, The University of Hong Kong, Hong Kong SAR, China

[2] Department of Political Science, Northeastern University, Massachusetts, United States of America

[3]The State Key Laboratory of Brian and Cognitive Sciences, The University of Hong Kong, Hong Kong SAR, China

[4]HKU-Shenzhen Institute of Research and Innovation, Shenzhen, China

*Correspondence: xiaoqinghu@hku.hk

Dept. of Psychology, The University of Hong Kong, Pokfulam, Hong Kong SAR, China.

Abstract

Images generated using artificial intelligence (AI) have become increasingly realistic, sparking discussions and fears about an impending "infodemic" where we can no longer trust what we see on the internet. In this preregistered study, we examine whether providing specific media literacy tips about how to spot AI-generated images can reduce susceptibility to AI-generated visual misinformation (AIVM). Participants were randomly assigned to one of three conditions, reading specific media literacy tips, general media literacy tips, or no media literacy tips (control). The general tips provided tips on how to spot misinformation, while the specific tips provided more detailed tips for how to detect AIVM. Results showed that both media literacy interventions reduced belief compared to control. However, specific tips reduced belief in AIVM more than general tips. Both specific and general tips also reduced belief in real headlines compared to control, with no difference between them. Finally, specific tips increased headline discernment between true and false information more than general tips. In an information environment that sees increasing prevalence of AIVM, it may be worth being specific about how to detect misinformation online rather than only providing general information.

Keywords: media literacy, visual misinformation, AI-generated content, misinformation discernment

Significance statement

As artificial intelligence (AI) becomes increasingly adept at creating realistic images, misinformation using these images also becomes more persuasive. Our study shows that providing media literacy tips about how to detect AI-generated images can reduce belief in fake headlines that use these images. Providing specific tips reduced belief in AI-generated visual misinformation more than the general tips that are commonly used by social media companies to combat misinformation. Thus, providing specific tips about AI-generated images can aid in detecting AI-generated visual misinformation.

Specific Media Literacy Tips Decrease Belief in AI-generated Visual Misinformation

Recent advances in artificial intelligence (AI) technology have generated a great deal of discussion about their benefits and disadvantages to society. With widely available AI image generators such as Stable Diffusion (Stable Diffusion, 2024) and Midjourney (Midjourney, 2024), users can transform a text prompt to a realistic visual representation in seconds. While these technologies could certainly expedite graphic design and inspire artists, they also assist the proliferation of AI-generated visual misinformation (AIVM), harming truthful discourse (Chesney & Citron, 2019; Hameleers & Marquart, 2023; Yang et al., 2023). Although image manipulation tools have existed for decades, AI has lowered the barriers such that people with limited skills can generate convincing fake images. This is evident from the recent increase in AI-generated media on social media (Corsi et al., 2024), and the prevalence of political AIVM leading up to numerous elections (Adam, 2024). How to assist people to identify AIVM has thus become an essential question.

Improving media literacy, defined as "the ability to access, analyze, evaluate and create messages across a variety of contexts" (Livingstone, 2004, p.18), is a potential avenue to reduce belief in AIVM. Previous research has found that media literacy tips can decrease belief in false headlines (Clayton et al., 2020; Lutzke et al., 2019) and improve discernment between true and false news (Fazio et al., 2024; Guess et al., 2020). For example, Guess et al. (2020) found that reading 10 tips on how to spot fake news significantly improved headline accuracy discernment. Similarly, reading guidelines on evaluating news credibility lowered trust in false headlines (Lutzke et al., 2019). Preliminary evidence in unpublished data also suggests that media literacy interventions also outperform other types of misinformation interventions in improving accuracy discernment (Fazio et al., 2024). However, the vast majority of media literacy interventions have been conducted using textual information.

An important aspect to consider when distributing media literacy tips is their specificity. Currently, social media companies such as Facebook may provide media literacy tips, although they remain fairly general. For instance, they provide recommendations such as being skeptical of information or paying attention to how information makes you feel (Facebook Help Center, 2019). It is possible that specific tips regarding AIVM could be more beneficial, as they could educate people about how misinformation appears in that specific modality. Research suggests that reading tips about a specific topic (i.e. misinformation on the war in Ukraine) is more effective at decreasing misinformation belief for that topic compared to general tips, if political ideology and media trust are accounted for (Hameleers & van der Meer, 2023). Furthermore, Nightingale et al. (2022) found that exposure to tips about characteristics of manipulated images improved their detection. However, not all studies find that specific media literacy tips are more effective than general tips. Hwang et al. (2021) provided either specific tips about deepfakes or general tips about disinformation before participants rated the credibility of a deepfake news article. They found that while both types of tips were effective, there was no significant difference between them.

The primary aim of this preregistered study was to examine whether specific tips decrease belief in AIVM more than general tips, and whether both types of tips decrease belief in AIVM more than a control condition. In addition, we aimed to examine how specific and general tips influenced belief in real headlines, given findings that media literacy tips could also decrease belief in true information (Hoes et al., 2024; van der Meer et al., 2023). We also conducted exploratory analyses on discernment and response time when rating headline accuracy. We hypothesized that a) specific tips would decrease belief in AIVM the most when compared to general tips or control, b) both general and specific tips would decrease belief in real headlines compared to control, and c) specific tips would not decrease belief in real headlines as much as general tips, given that specific tips provide a more

targeted intervention that impacts AIVM alone (see Supplement A for all preregistered hypotheses and whether they were supported or rejected).

Method

Sample Size Justification

Previous studies of media literacy interventions found small effects (d = 0.08: Clayton et al., 2020; d = 0.11, 0.20: Guess et al., 2020). We thus aimed to detect a small effect size. Using G*Power 3.1 with f = 0.10, a minimum sample size of 323 per condition was required to achieve 80% power (Erdfelder et al., 2009). We therefore aimed for a total sample of 969 people.

Participants

In the final analyses, we included 1039 participants on Prolific (M_{age} = 41.9, *SD* = 14.0, ranged from 18 to 95 years old, 478 males and 550 females, and 11 who did not report their gender). Among these participants, 343 were in the specific tips condition, 349 were in the general tips condition, and 347 were in the no tips condition. Participants currently resided in the U.S., spoke English as their first language, and had at an approval rating of at least 90% on Prolific. Fifteen participants were excluded because they indicated in an honesty check question that they had not put their best effort into their responses (*n* = 3), submitted the survey multiple times (*n* = 3), or provided identical responses to over 80% of ratings (*n* = 9). This research was approved by the Human Research Ethics Committee of the University of Hong Kong (EA210341). Participants provided consent prior to participation.

Procedure

Participants were randomized into one of three conditions: specific media literacy tips, general media literacy tips, and no tips (i.e., control). In the specific tips condition, participants read a paragraph about AI-generated misinformation, followed by tips on how to

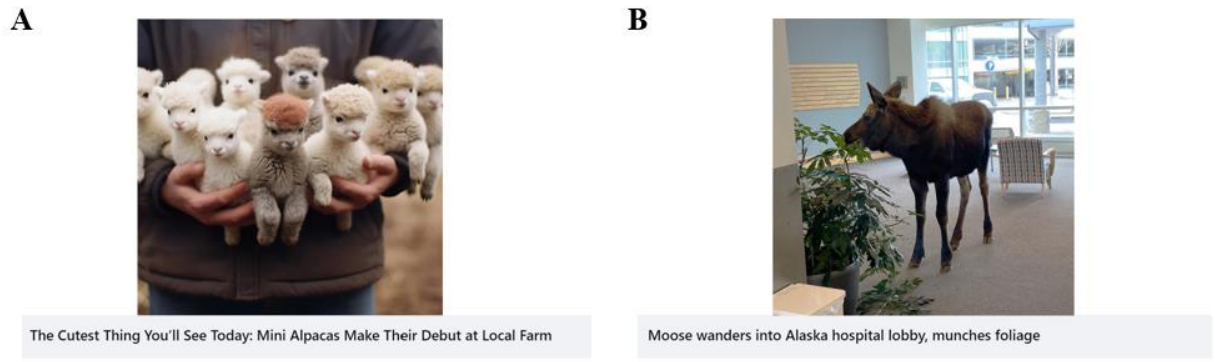
spot AI-generated images. These were specific recommendations regarding how to detect AI-generated images, and contained three tips: identify abnormal details, check for incoherent text, and be suspicious of images with a crisp foreground and blurry background. In the general tips condition, participants read a paragraph about misinformation in general, followed by three tips adapted from Facebook's tips to detect fake news (Facebook Help Center, 2019). These entailed being skeptical of information, paying attention to how information makes you feel, and checking if images are authentic. For both general and specific tips, each tip was accompanied by a relevant image and a short blurb expanding on the tip (see Supplement B for full details). Specific and general tips were of similar length (197 vs. 195 words). Participants in the control condition moved directly to the headline rating task.

Participants then completed the headline rating task. We used 20 real headlines with real images, and 20 false headlines with AI-generated images from Guo et al., (2024) for the task. These covered a wide range of topics including accidents, funny stories, and strange phenomena, but did not include any political or health-related headlines to minimize effects of prior attitudes on belief (see Figure 1 for example headlines). No sources or engagement metrics were provided to participants. Participants viewed each headline in a randomized order and rated their belief in the headline on a scale from 0 (definitely false) to 10 (definitely true). Two attention checks were given randomly during this task to ensure attentiveness.

After the headline rating task, participants who read specific tips completed a recollection task to examine the relationship between specific tip recollection and belief in AIVM. They answered one question about each of the three specific tips (Supplement B.2). Finally, all participants answered an honesty check question, were asked about their demographics, and were debriefed as to which headlines were real and false.

Figure 1

Example headlines



Note. A false headline with AIVM (A) and a real headline with a real image (B)

Results

Participants did not differ significantly in age (p = .784), education (p = .455), or gender (p = .332) across conditions. For the following analyses we excluded participants if they failed both attention checks during the headline rating task (n = 27), as pre-registered. We indicate where findings differ between this attentive participant subgroup and the complete sample. Our goal was to measure differences between specific and general tips conditions with regards to AIVM belief, real headline belief, discernment, and belief rating response time[1].

Belief in AIVM

In order to examine belief in AIVM, we first conducted a one-way Welch's ANOVA with belief in AIVM as the outcome measure and found significant differences between conditions ($F(2, 667) = 23.3$, $p < .001$, $\eta_p^2 = 0.06$). Games-Howell post hoc tests revealed that the control condition (M = 4.34, SE = 0.08) had higher belief in AIVM compared to

[1] As preregistered, ratings of image surprise, realism and evidence strength from a previous study (Guo et al., 2024) were correlated with average belief in a headline across all conditions. Results are presented in Supplement D.

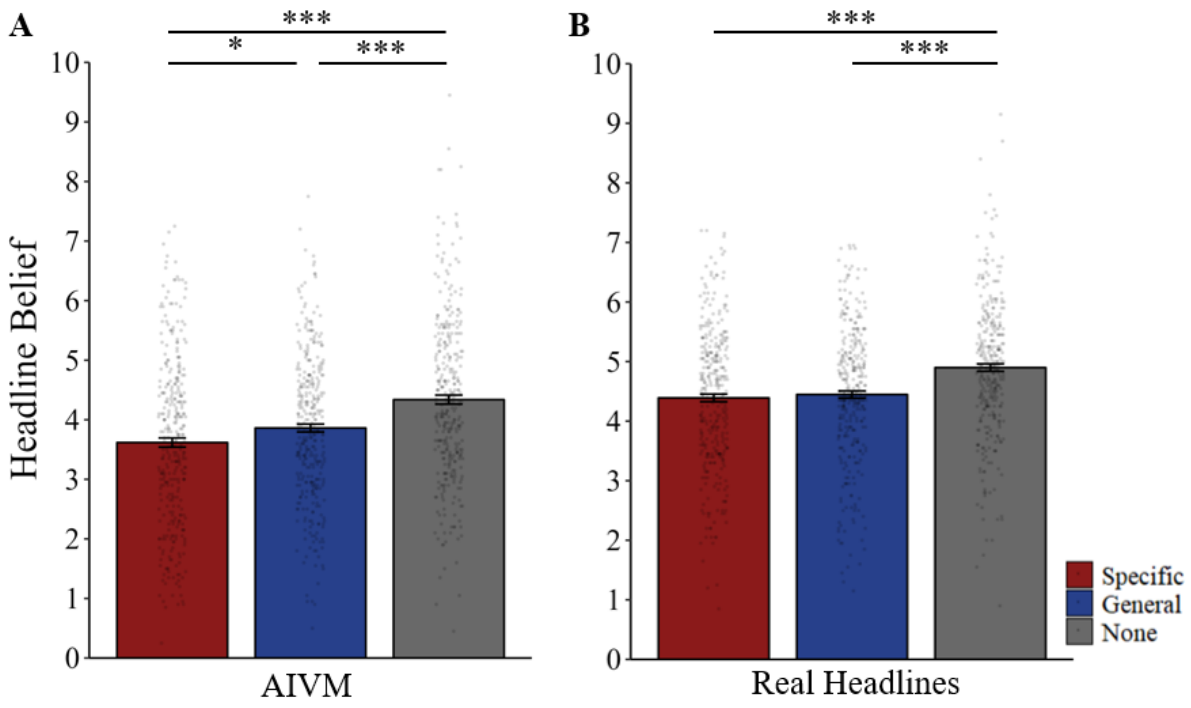
participants exposed to general tips (M = 3.86, SE = 0.07), $t(656) = 4.75$, $p < .001$, $d = 0.37$, and specific tips (M = 3.62, SE = 0.08), $t(665) = 6.69$, $p < .001$, $d = 0.52$. Importantly, participants exposed to specific tips had lower belief in AIVM than those exposed to general tips, $t(660) = 2.42$, $p = .041$, $d = 0.18$, as can be seen in Figure 2A. These results show that although both interventions reduce belief in AIVM compared to control, specific tips are more effective than general tips. When participants who did not pass the attention check are included in the analysis, differences between the general and specific tips conditions were no longer significant (see Supplement C.1). It is possible that attention during headline ratings may be necessary for specific tips to be more beneficial than general tips in detecting AIVM.

Belief in real headlines

Next, we examined belief in real headlines. A one-way Welch's ANOVA with belief in real headlines as the outcome measure showed significant differences between interventions ($F(2, 671) = 19.8$, $p < .001$, $\eta_p^2 = 0.06$). Games-Howell post hoc tests revealed that the control condition (M = 4.90, SE = 0.06) had higher belief in real headlines compared to participants who read the general tips (M = 4.45, SE = 0.06), $t(671) = 5.22$, $p < .001$, $d = 0.40$, and specific tips (M = 4.39, SE = 0.06), $t(665) = 5.68$, $p < .001$, $d = 0.44$. However, participants who read the specific and general tips did not significantly differ, $t(675) = 0.64$, $p = .796$, $d = 0.05$, as can be seen in Figure 2B. A follow-up Bayesian analysis showed moderate evidence favoring the null hypothesis ($BF_{01} = 9.54$).

Figure 2

Belief in AIVM and real headlines in specific tips, general tips and control conditions



Note. Belief in (A) AIVM & (B) Real headlines in specific, general and no tips conditions after excluding attention check failures. Error bars indicate standard error.

Discernment

Next, we conducted pre-registered exploratory discernment analyses. Discernment (d') was calculated as z(proportion of hits) – z(proportion of false alarms), with hits and false alarms defined as ratings of six to ten for real headlines and AIVM respectively. A one way Welch's ANOVA showed significant differences between conditions ($F(2, 669) = 6.39$, $p = .002$, $\eta_p^2 = 0.02$). Games-Howell post hoc tests revealed that discernment in the control condition ($M = 0.25$, $SE = 0.03$) did not differ from those in the general tips condition ($M = 0.29$, $SE = 0.03$), $t(663) = 0.85$, $p = .672$, $d = 0.07$. Importantly, participants in the specific tip condition had higher discernment ($M = 0.40$, $SE = 0.03$) than those in the control condition, $t(664) = 3.41$, $p = .002$, $d = 0.27$, and had higher discernment than the general tips condition,

198 $t(663) = 2.75$, $p = .017$, $d = 0.21$. These results suggest that providing specific tips could
199 boost discernment between real headlines and AIVM more than general tips.

200 **Response Time**

201 To observe how specific and general tips affected belief rating response time, we
202 conducted pre-registered exploratory analysis on response time. A 3 (intervention: specific,
203 general, control) x 2 (headline: real, AIVM) mixed ANOVA showed a significant main effect
204 of intervention, $F(2, 1009) = 12.3$, $p < .001$, $\eta_p^2 = 0.02$. Post-hoc tests revealed that the
205 general tips condition ($M = 11.6$s, $SE = 0.37$s) did not differ from the control condition ($M =$
206 12.5s, $SE = 0.38$s), $t(1009) = 1.54$, $p_{tukey} = .272$. In contrast, participants who read specific
207 tips ($M = 14.2$s, $SE = 0.38$s) spent longer evaluating headlines compared to those who read
208 general tips ($t(1009) = 4.87$, $p_{tukey} < .001$) and those in the control condition ($t(1009) = 3.29$,
209 $p_{tukey} = .003$). In sum, results show that participants in the specific tips condition spent the
210 most time rating headlines compared to general tips and control conditions.

211 **Discussion**

212 In the current study, we examined the effects of a media literacy intervention on belief
213 in AI-generated visual misinformation. We provided participants with either specific media
214 literacy tips on how to identify AIVM, general media literacy tips on how to identify false
215 information, or no media literacy tips (a control). We measured belief in AIVM, real
216 headlines, discernment between the two, and response times during these ratings. Supporting
217 our hypotheses, we found that both types of tips decreased belief in AIVM compared to
218 control, and specific tips decreased belief in AIVM more than general tips. We additionally
219 found that providing specific tips could boost discernment between real headlines and AIVM

more than general tips, and specific tips encouraged people to spend more time evaluating headlines, potentially allowing them the opportunity to engage further with the images.

It is important to note that the differences between specific and general tips for belief in AIVM did not hold when participants who had failed attention checks were included in analyses. This potentially suggests that attention is necessary to reveal the benefits of the specific media literacy tips when detecting AIVM. Our findings are in line with Hameleers & van der Meer (2023) who found that reading tips about a specific topic was more effective at decreasing misinformation belief compared to general tips. However, our findings contradict Hwang et al. (2021), who found that specific and general tips were equivalent for reducing deepfake credibility. Deepfakes primarily alter human faces from existing videos (Sharma & Kaur, 2022) and thus differ from AIVM, potentially rendering specific tips less effective. Indeed, studies have shown that reading about characteristics of deepfakes does not improve their detection (Bray et al., 2023; Somoray & Miller, 2023).

A common side effect of media literacy interventions is that belief in real information is reduced because of increased skepticism (Hoes et al., 2024; van der Meer et al., 2023). We found that both types of tips indeed decreased belief in real headlines compared to control, with Bayesian analyses providing moderate evidence that there was no difference between the two. Although it is unfortunate that the media literacy tips lead to lower belief in real information, at least the specific tips did not increase distrust in facts compared to general literacy tips (see Schiff et al., 2023 for an alternate view). Furthermore, reading specific tips improved discernment compared to the control condition while reading general tips did not. Whereas previous studies found that general tips improved discernment (Fazio et al., 2024; Guess et al., 2020), these studies primarily investigated textual misinformation. Discerning between realistic AIVM and real headlines may thus require more specific tips.

Finally, we found that participants who received specific tips took longer to provide belief ratings than participants in the general tips and control conditions. Accepting the veracity of visual evidence may be intuitive (Messaris & Abraham, 2001; Sundar, 2008; Sundar et al., 2021), and people are quick to accept incorrect intuitions but slower to reject them (Travers et al., 2016). It is possible that the specific tips may have prompted participants to slow down and evaluate images carefully, resulting in them challenging their intuitions about visual evidence (Qian et al., 2023; Scherer & Pennycook, 2020). To our knowledge, this is the only study to examine how response times change after a media literacy intervention, and integrating this measure into future studies may contribute to understanding this mechanism more thoroughly.

This study has several limitations. Specific tips about AIVM may quickly become obsolete due to the ever-changing landscape of AI, which may pose challenges to implementing real-world media literacy interventions. For example, some AI image generators can already generate coherent text within images. To address this, tips may need to be frequently updated. Specific tips may also only improve detection of AIVM with the characteristics mentioned in the tips (i.e. abnormal details, incoherent text, blurry backgrounds) but not for AIVM with other characteristics. We note that 50% of the AIVM in our study had at least one of the features mentioned in the specific tips. Thus, whether these specific tips can generalize to AIVM with other characteristics should be further investigated.

To conclude, AIVM is fast becoming a problematic issue, particularly given the increasing prevalence of AI-generated media online and rapid development of AI technology. Our study shows that readers exposed to specific media literacy tips decreased their belief in AIVM, could better differentiate between AIVM and real headlines, and spent more time evaluating headlines compared to readers who were given general media literacy tips.

Deploying specific tips on social media platforms could assist people in detecting AIVM, and future research should focus on validating these findings and their long-term effectiveness.

Declarations

Authors' contributions

All authors contributed to conceptualization. SG collected the data, conducted data curation and analysis, created the visuals, and wrote the first draft of the manuscript. XH and BST were responsible for supervision. All authors edited the manuscript.

Funding

The research was supported by the Ministry of Science and Technology of China STI2030-Major Projects (No. 2022ZD0214100), National Natural Science Foundation of China (No. 32171056), General Research Fund (No. 17614922) of Hong Kong Research Grants Council to X. H.

Availability of data and materials

The dataset generated during the current study is available at https://osf.io/r6z7q.

Ethics approval and consent to participate

This research was approved by the Human Research Ethics Committee of the University of Hong Kong (EA210341). Participants provided written consents prior to participation.

Consent for publication

Not applicable.

Competing interests

None.

Open Practices Statement

Data and materials are available at https://osf.io/r6z7q. This experiment was preregistered at https://osf.io/53ta9.

References

Adam, D. (2024). Misinformation might sway elections — but not in the way that you think. *Nature*, *630*(8018), 807–809. https://doi.org/10.1038/d41586-024-01696-z

Bray, S. D., Johnson, S. D., & Kleinberg, B. (2023). Testing human ability to detect "deepfake" images of human faces. *Journal of Cybersecurity*, *9*(1). https://doi.org/10.1093/cybsec/tyad011

Chesney, B., & Citron, D. (2019). Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security. *California Law Review*, *107*(6), 1753–1820. https://doi.org/10.2307/26891938

Clayton, K., Blair, S., Busam, J. A., Forstner, S., Glance, J., Green, G., Kawata, A., Kovvuri, A., Martin, J., Morgan, E., Sandhu, M., Sang, R., Scholz-Bright, R., Welch, A. T., Wolff, A. G., Zhou, A., & Nyhan, B. (2020). Real Solutions for Fake News? Measuring the Effectiveness of General Warnings and Fact-Check Tags in Reducing Belief in False Stories on Social Media. *Political Behavior*, *42*(4), 1073–1095. https://doi.org/10.1007/s11109-019-09533-0

Corsi, G., Marino, B., & Wong, W. (2024). The spread of synthetic media on X. *Harvard Kennedy School Misinformation Review*, *5*(3). https://doi.org/10.37016/mr-2020-140

Erdfelder, E., Faul, F., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Facebook Help Center. (2019). *Tips to Spot False News*. Facebook. https://www.facebook.com/help/188118808357379

Fazio, L. K., Rand, D. G., Lewandowsky, S., Susmann, M., Berinsky, A., Guess, A., Kendeou, P., Lyons, B., Miller, J., Newman, E., Pennycook, G., Swire-Thompson, B., & Building a Better Toolkit Team. (2024). Combating misinformation: A megastudy of

nine interventions designed to reduce the sharing of and belief in false and misleading headlines. *PsyrXiv*. https://doi.org/https://doi.org/10.31234/osf.io/uyjha

Guess, A. M., Lerner, M., Lyons, B., Montgomery, J. M., Nyhan, B., Reifler, J., & Sircar, N. (2020). A digital media literacy intervention increases discernment between mainstream and false news in the United States and India. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(27), 15536–15545. https://doi.org/10.1073/pnas.1920498117

Guggenmos, M. (2021). Measuring metacognitive performance: type 1 performance dependence and test-retest reliability. *Neuroscience of Consciousness*, *7*(1), 1–14. https://doi.org/10.1093/nc/niab040

Guo, S., Zhong, Y., & Hu, X. (2024). Properties of AI-generated images that influence misinformation belief and correction efficacy. *OSF Preprints*. https://doi.org/10.31219/osf.io/2p64a

Hameleers, M., & Marquart, F. (2023). It's Nothing but a Deepfake! The Effects of Misinformation and Deepfake Labels Delegitimizing an Authentic Political Speech. *International Journal of Communication*, *17*, 6291–6311. http://ijoc.org.

Hameleers, M., & van der Meer, T. (2023). Striking the balance between fake and real: under what conditions can media literacy messages that warn about misinformation maintain trust in accurate information? *Behaviour and Information Technology*. https://doi.org/10.1080/0144929X.2023.2267700

Hoes, E., Aitken, B., Zhang, J., Gackowski, T., & Wojcieszak, M. (2024). Prominent misinformation interventions reduce misperceptions but increase scepticism. *Nature Human Behaviour*. https://doi.org/10.1038/s41562-024-01884-x

Livingstone, S. (2004). The changing nature and uses of media literacy. *Intermedia*, *32*(3), 18–20. http://www.lse.ac.uk/collections/media@lse/whoswho/Sonia.Livingstone.htm

Lutzke, L., Drummond, C., Slovic, P., & Árvai, J. (2019). Priming critical thinking: Simple interventions limit the influence of fake news about climate change on Facebook. *Global Environmental Change*, *58*(August), 101964. https://doi.org/10.1016/j.gloenvcha.2019.101964

Messaris, P., & Abraham, L. (2001). The Role of Images in Framing News Stories. In *Framing Public Life: Perspectives on Media and Our Understanding of the Social World* (pp. 215–226). Routledge.

Midjourney (2024). Available from https://www.midjourney.com/home

Nightingale, S. J., Wade, K. A., & Watson, D. G. (2022). Investigating Age-Related Differences in Ability to Distinguish Between Original and Manipulated Images. *Psychology and Aging*, *37*(3), 326–337. https://doi.org/10.1037/pag0000682

Qian, S., Shen, C., & Zhang, J. (2023). Fighting cheapfakes: Using a digital media literacy intervention to motivate reverse search of out-of-context visual misinformation. *Journal of Computer-Mediated Communication*, *28*(1). https://doi.org/10.1093/jcmc/zmac024

Scherer, L. D., & Pennycook, G. (2020). Who Is Susceptible to Online Health Misinformation? *American Journal of Public Health*, *110*(S3), S276–S277. https://doi.org/10.2105/AJPH.2020.305908

Schiff, K. J., Schiff, D. S., & Bueno, N. S. (2023). *The Liar's Dividend: Can Politicians Claim Misinformation to Evade Accountability?* https://bit.ly/3qN8PDj.

Sharma, M., & Kaur, M. (2022). *A Review of Deepfake Technology: An Emerging AI Threat* (pp. 605–619). https://doi.org/10.1007/978-981-16-5301-8_44

Somoray, K., & Miller, D. J. (2023). Providing detection strategies to improve human detection of deepfakes: An experimental study. *Computers in Human Behavior*, *149*. https://doi.org/10.1016/j.chb.2023.107917

Sundar, S. S. (2008). The MAIN Model: A Heuristic Approach to Understanding Technology Effects on Credibility. *Digital Media, Youth, and Credibility*, 73–100. https://doi.org/10.1162/dmal.9780262562324.073

Sundar, S. S., Molina, M. D., & Cho, E. (2021). Seeing Is Believing: Is Video Modality More Powerful in Spreading Fake News via Online Messaging Apps? *Journal of Computer-Mediated Communication*, *26*(6), 301–319. https://doi.org/10.1093/jcmc/zmab010

Stable Diffusion (2024). Available from https://stability.ai/

Travers, E., Rolison, J. J., & Feeney, A. (2016). The time course of conflict on the Cognitive Reflection Test. *Cognition*, *150*, 109–118. https://doi.org/10.1016/j.cognition.2016.01.015

van der Meer, T. G. L. A., Hameleers, M., & Ohme, J. (2023). Can Fighting Misinformation Have a Negative Spillover Effect? How Warnings for the Threat of Misinformation Can Decrease General News Credibility. *Journalism Studies*, *24*(6), 803–823. https://doi.org/10.1080/1461670X.2023.2187652

Yang, Y., Davis, T., & Hindman, M. (2023). Visual Misinformation on Facebook. *Journal of Communication*, *63*(4), 316–328.