

Title: Supplementary information appendix for “The consequences of misinformation concern on media consumption”

Authors: Elizabeth A. Harris (1), Stephanie L. DeMora (1), Dolores Albarracín (1)

Date: June 25th, 2024

Note: The material contained herein is supplementary to the article named in the title and published in the Harvard Kennedy School (HKS) Misinformation Review.

Appendix: Supplementary information

Table A1. This table includes every news source from each study and whether they were rated as mainstream, liberal-leaning, or conservative-leaning. These ratings were made based on the ratings provided in Albarracín et al. (2021; see page 130; a combination of previous literature categorization, AllSides Media Bias, Fact Check, and Ad Fontes Media Index). We used AllSides media chart when a particular media source does not appear in Albarracín et al. (2021).

Sources	Lean	Studies the source appears in	Lin et al. (2023) quality score (ranging from 0 to 1)
Sources such as Breitbart News, One America News, or The Drudge Report	Conservative	Study 1	0.30, 0.41, 0.46 (avg. 0.39)
Sources such as MSNBC, Bill Maher, or Huffington Post	Liberal	Studies 1, 3	0.59, 0.72 (avg. 0.66)
Sources such as ABC, CBS, or NBC News	Mainstream	Studies 1, 2, 3	0.86, 0.88, 0.84 (avg. 0.86)
New York Times or Washington Post (online or print)	Liberal	Studies 1, 3	0.86, 0.82 (avg. 0.84)
Wall Street Journal (online or print)	Conservative	Studies 1, 3	0.80
CNN	Liberal	Studies 1, 3	0.66
Fox News	Conservative	Study 1	0.53
National Public Radio (NPR) and/or its local affiliates	Liberal	Studies 1, 2, 3	0.93
Sources such as Breitbart News, The Blaze, or The Drudge Report	Conservative	Study 2	0.30, 0.32, 0.46 (avg. 0.36)
Sources such as Daily Beast, Democracy Now, or Occupy Democrats	Liberal	Study 2	0.54, 0.57, 0.18 (avg. 0.43)
Sources such as MSNBC, CNN, or Huffington Post	Liberal	Study 2	0.59, 0.66, 0.72 (avg. 0.66)
New York Times (online or print)	Liberal	Study 2	0.86
New York Post (online or print)	Conservative	Study 2	0.49
Sources such as Fox News, Newsmax, or One America News	Conservative	Study 2	0.53, 0.29, 0.41 (avg. 0.41)
Sources such as Fox News, Breitbart News, One America News, or The Drudge Report	Conservative	Study 3	0.53, 0.30, 0.41, 0.46 (avg. 0.43)
Public TV station from your state or a nearby state	Mainstream	Studies 1, 2	NA
Your local city or county newspaper (online or print)	Mainstream	Studies 1, 2	NA

Table A2. This table includes the demographic breakdown of the samples of each study.

Study	Sample <i>N</i>	Gender		Age		Education	
		Male	Female	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Study 1	1020	507	509	42.8	14.36	3.6	0.95
Study 2	1080	578	496	40.3	13.55	3.6	0.94
Study 3	1247	566	670	2.6	1.07	2.9	0.94

Notes: Study 3 is using the sample from time 1, and age is average age group (1-4). Education has been converted to a numerical variable (Study 1 and 3: 1-5, Study 2: 1-4), with higher numbers indicating a higher level of educational attainment.

Table A3. Study 1 OLS linear regression and hierarchical (mixed) models.

	OLS on concern	Mixed model on media consumption
(Intercept)	-0.95 *** (0.23)	1.56 *** (0.40)
Republican	-0.37 *** (0.10)	-0.97 (0.12)
Female	0.13 (0.10)	-0.20 (0.12)
Age	0.02 *** (0.00)	-0.04 *** (0.00)
Education	0.10 * (0.05)	0.01 (0.06)
Conservative Media Lean		-1.72 *** (0.43)
Liberal Media Lean		-0.84 (0.41)
Republican: Conservative Media Lean		1.80 *** (0.12)
Republican: Liberal Media Lean		-0.20 *** (0.12)
Conservative Media Lean: Female		-0.04 (0.12)
Liberal Media Lean: Female		-0.07 *** (0.12)
Conservative Media Lean: Age		-0.03 *** (0.00)
Liberal Media Lean: Age		-0.02 *** (0.00)
Conservative Media Lean: Education		0.14 * (0.06)
Liberal Media Lean: Education		0.24 *** (0.06)
N	1,016	1,016
R ²	0.04	0.39
N (Participant)		1,016
N (News source)		10

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Standard errors in parentheses.

Table A4. This table includes the results of the regression analysis of the Study 2 fake news perceived ability manipulation. The effect of the manipulation and political affiliation on perceived ability.

Predictor	<i>B</i>	95% <i>CI</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>
(Intercept)	3.45	[3.30, 3.59]	0.07	1076	46.72	< .001
Democrat	0.18	[-0.02, 0.38]	0.10	1076	1.73	.084
Good feedback	1.85	[1.65, 2.06]	0.11	1076	17.61	< .001
Democrat * Good feedback	-0.08	[-0.37, 0.22]	0.15	1076	-0.52	.61

In Study 2, participants were asked to rate 10 headlines as true or false and were false feedback that either told them they did an excellent job or a poor job. The model predicted self-reported fake news ability with the interaction between participant political affiliation and which feedback they received. We found that the effect was significant for Democratic participants and for Republican participants.

To account for the overdispersion of zeros in the data, we specified a ZINB (zero-inflated negative binomial) regression model to analyze the results in our main text. However, no matter how limited the model, it failed to converge. Therefore, we use the mixed-effects model in Study 2 (see Table 1 in the main text), and used a ZINB model in our replication (Study 3; Table 2), which included more observations and successfully converged.

Table A5. This table includes the results of the second regression analysis of Study 3. The effects of concern, political affiliation, and lean of media sources on media use.

	Column 1	Column 2
(Intercept)	0.81 *** (0.11)	1.30 *** (0.04)
Concern	-0.02 (0.02)	
Republican	-0.41 *** (0.11)	-0.05 ** (0.02)
Time	-0.30 (0.16)	-0.00 (0.02)
Liberal Media Lean	-0.43 *** (0.10)	-0.01 (0.01)
Female	-0.01 (0.03)	0.01 (0.01)
Age	0.24 *** (0.02)	0.03 *** (0.01)
Education	-0.05 ** (0.02)	0.02 ** (0.01)
Time	-0.00 (0.01)	0.00 (0.01)
Concern: Republican	0.06 * (0.02)	
Concern: Conservative Media Lean	-0.07 (0.04)	
Concern: Liberal Media Lean	0.08 *** (0.02)	
Republican: Conservative Media Lean	0.55 ** (0.18)	0.00 (0.02)
Republican: Liberal Media Lean	0.17 (0.14)	0.01 (0.02)

Concern: Republican: Conservative Media Lean	0.03 (0.04)	
Concern: Republican: Liberal Media Lean	-0.11 *** (0.03)	
Media Use		-0.00 (0.00)
Media Use: Republican		0.00 (0.00)
Media Use: Conservative Media Lean		0.00 (0.01)
Media Use: Liberal Media Lean		0.00 (0.00)
Media Use: Republican: Conservative Media Lean		-0.00 (0.01)
Media Use: Republican: Liberal Media Lean		-0.00 (0.01)
N	20,954	20,954

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Standard errors in parentheses.

In Study 3, we had three models. The results of the first model are reported in the main text, but the model reported in the main text includes more variables in the zero-inflated portion than the model in the table above. The model used in the main text also uses a standardized (mean-centered) primary independent variable, but the models in both of the columns here use the unstandardized versions. This is because our comparison model only converged with a minimal number of predictors in this second step, and so, for the sake of comparison, we limit both. Column 1 shows a model with the same time points and ordering of dependent and independent variables as in the main text. These models are limited to only the main predictor (a concern in column 1 and media use in column 2) and individual random effects and media-specific random effects across both models in the table above for proper comparison. For the model in column 2, we changed the time points and ordering of the variables to explore an alternate temporal order. This is to address the possibility that the relation between concern and media use is actually bi-directional (i.e., reciprocal). In this model, that did not appear to be the case. The model predicted misinformation concern at times 3 and 4 as a function of media use at times 1 and 2, media lean at times 1 and 2, and political party at times 1 and 2.

Table A6. This table includes the results of the primary analysis of Study 3 with the addition of media quality as part of the interaction term. The effects of concern, political affiliation, lean of media sources on media use, and media quality.

	Misinformation concern on media consumption
(Intercept)	0.12 (0.12)
Concern	-0.20 *** (0.05)
Republican	0.35 *** (0.07)
Liberal Media Lean	0.53 *** (0.04)

Media Quality	2.88 *** (0.18)
Time	0.03 (0.02)
Female	-0.07 (0.04)
Age	0.19 *** (0.02)
Education	-0.57 *** (0.07)
Concern: Republican	0.17 ** (0.06)
Concern: Liberal Media Lean	0.27 *** (0.04)
Republican: Liberal Media Lean	-0.90 *** (0.07)
Concern: Media Quality	1.10 *** (0.19)
Republican: Media Quality	-4.27 *** (0.23)
Liberal Media Lean: Media Quality	-2.78 *** (0.22)
Concern: Republican: Liberal Media Lean	-0.25 *** (0.06)
Concern: Republican: Media Quality	-1.28 *** (0.23)
Concern: Liberal Media Lean: Media Quality	-0.97 *** (0.24)
Republican: Liberal Media Lean: Media Quality	4.79 *** (0.35)
Concern: Republican: Liberal Media Lean: Media Quality	1.15 *** (0.34)
N	12,636

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Breaking down this relation by high (one standard deviation above the mean) and low (one standard deviation below the mean) quality media, we found the negative association for Democrats' conservative media consumption remains negative and statistically significant given low-quality conservative media ($B = -0.380$, 95% CI [-0.467, -0.294], $p < .0001$), and while still negative, the relation is not statistically significant given high-quality conservative media ($B = -0.025$, 95% CI [-0.153, 0.102], $p = .697$). Like in the main model, misinformation concern was not associated with media use among Republicans when media quality was average (misaligned: $B = -0.003$, 95% CI [-0.070, 0.064], $p = .926$; aligned: $B = -0.029$, 95% CI [-0.101, 0.043], $p = .432$). Similarly, the relation between misinformation concern and media consumption did not change in direction or statistical significance at any level of media quality. These results are shown in Table A7 below.

Table A7. Estimated marginal coefficients in Study 3 by media source and quality among Democrats and Republicans separately.

Party	Media Source	B	SE	Lower	Upper	Media Quality	p-value
Democrat	Conservative	-0.03	0.07	-0.15	0.10	1 SD Above	.70
Democrat	Conservative	-0.20	0.05	-0.30	-0.11	Mean	.00
Democrat	Conservative	-0.38	0.04	-0.47	-0.29	1 SD Below	.00
Democrat	Liberal	0.09	0.04	0.02	0.16	1 SD Above	.01
Democrat	Liberal	0.07	0.03	0.01	0.13	Mean	.03
Democrat	Liberal	0.05	0.05	-0.04	0.13	1 SD Below	.29
Republican	Conservative	-0.06	0.05	-0.16	0.05	1 SD Above	.29
Republican	Conservative	-0.03	0.04	-0.10	0.04	Mean	.43
Republican	Conservative	0.00	0.03	-0.05	0.05	1 SD Below	.99
Republican	Liberal	-0.00	0.04	-0.07	0.07	1 SD Above	.94
Republican	Liberal	-0.00	0.03	-0.07	0.06	Mean	.93
Republican	Liberal	-0.00	0.06	-0.12	0.11	1 SD Below	.95

Turning back to Study 2, the relation between concern about misinformation and media consumption for Democrats who consume aligned media is positive and statistically significant for average and high-quality media, the same as in Study 3. However, they also consume more high-average and high-quality misaligned media, which is very different from Study 3. The relation between concern about misinformation and media consumption for Republicans who consume aligned media is positive and statistically significant but only for low-quality media. Again, this is different from Study 3. These results are shown in Table 8 below. They also consume more high-average and high-quality misaligned media. Results for these quality of media sources are not consistent across the studies.

Table A8. Estimated marginal coefficients in Study 2 by media source and quality among Democrats and Republicans separately.

Party	Media Source	B	SE	Lower	Upper	Media Quality	p-value
Democrat	Conservative	0.15	0.07	0.01	0.28	1 SD Above	0.03
Democrat	Conservative	0.11	0.05	0.01	0.21	Mean	0.04
Democrat	Conservative	0.07	0.05	-0.03	0.16	1 SD Below	0.16
Democrat	Liberal	0.33	0.05	0.24	0.42	1 SD Above	0.00
Democrat	Liberal	0.17	0.04	0.08	0.25	Mean	0.00
Democrat	Liberal	0.01	0.06	-0.12	0.13	1 SD Below	0.94
Republican	Conservative	0.05	0.06	-0.07	0.17	1 SD Above	0.39
Republican	Conservative	0.07	0.05	-0.02	0.16	Mean	0.13
Republican	Conservative	0.09	0.04	0.00	0.17	1 SD Below	0.04
Republican	Liberal	0.09	0.04	0.01	0.17	1 SD Above	0.03
Republican	Liberal	0.09	0.04	0.01	0.16	Mean	0.02
Republican	Liberal	0.08	0.06	-0.03	0.20	1 SD Below	0.14