

Title: Predicting misinformed COVID-19 beliefs appendix for “Exploring partisans’ biased and unreliable media consumption and their misinformed health-related beliefs”

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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 B: Predicting misinformed COVID-19 beliefs

This analysis uses the PROCESS Macro for R. The outcome variable for this analysis was misinformed COVID-19 belief (i.e., *cmisinfo*), the antecedent is participants’ ideology on a liberal to conservative Likert-type scale (i.e., *ideo*), the mediator is the average left-to-right leaning media bias for participants’ media selections (i.e., *bias*), and the moderator is the average reliability of those selections (i.e., *reliable*). We included several demographic variables as covariates, including age, education, male (as opposed to female), Black (i.e., participants who identify as Black regardless of whether they have other identifications), Hispanic (i.e., participants who identify as Hispanic or Latino/a/x, regardless of whether they have other identifications) and income. Participants with missing data (e.g., who failed to select any media sources, failed to provide answers to any one of the demographic questions, like age or gender) were deleted from the analysis automatically by the PROCESS macro (i.e., listwise deletion), thus leaving a sample size of 2,630. To ensure reproducibility of findings, we set a custom seed for the bootstrapping analysis of 31216.

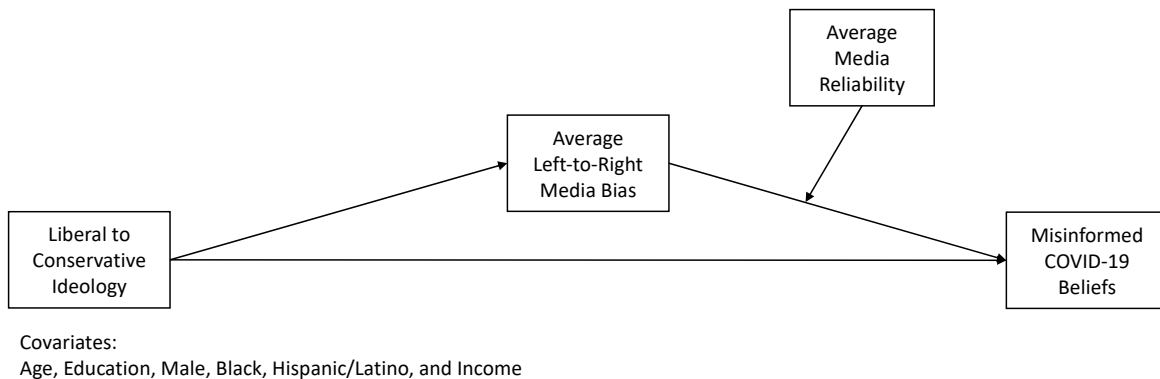


Figure B1. Model examined using PROCESS.

The first step of the PROCESS analysis predicts the mediator: the average left-to-right media bias (i.e., bias). This model is significant, $F(7, 2622) = 87.68, p < .001, R = 0.44, R^2 = 0.20, MSE = 58.11$. We find that the average bias for participants’ media selections is significantly predicted by conservative political ideology (*ideo*), even when controlling for the potential effects of demographic variables. Table 1 summarizes the individual effects.

Table B1. Results for predicting the mediator (average left-to-right media bias).

	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	95% CI	
constant	-7.8186	0.7304	-10.7050	< .001	-9.2508	-6.3864
Ideology	2.8770	0.1237	23.2522	< .001	2.6344	3.1196
Age	-0.0052	0.0091	-0.5680	.570	-0.0230	0.0127
Education	-0.3726	0.1137	-3.2774	.001	-0.5955	-0.1497
Male	0.5606	0.3084	1.8175	.069	-0.0442	1.1653
Black	-1.5504	0.4865	-3.1869	.002	-2.5043	-0.5965
Hispanic	-0.7093	0.6053	-1.1717	.241	-1.8962	0.4777
Income	0.1394	0.0763	1.8269	.068	-0.0102	0.2890

The second step of the PROCESS analysis predicts the outcome, belief in misinformation about COVID-19 (i.e., *cmisinfo*). This model is significant, $F(10, 2619) = 67.93$, $p < .001$, $R = 0.45$, $R^2 = 0.21$, $MSE = 0.71$. We find that, in addition to political ideology, the left-to-right bias and reliability of participants' selected news sources (and the interaction of the latter two variables) predict belief in misinformation about COVID-19, even when controlling for potential effects of demographic variables. Table 2 summarizes the individual effects.

Table B2. Results for predicting the outcome variable (misinformed COVID-19 beliefs).

	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	95% CI	
constant	1.0975	0.1580	6.9477	< .001	0.7878	1.4073
Ideology	0.0997	0.0151	6.5961	< .001	0.0701	0.1294
Bias	-0.0587	0.0099	-5.9391	< .001	-0.0780	-0.0393
Reliable	-0.0143	0.0031	-4.5803	< .001	-0.0204	-0.0082
BiasXReliab	0.0023	0.0003	7.6035	< .001	0.0017	0.0030
Age	-0.0133	0.0010	-13.1552	< .001	-0.0153	-0.0113
Education	-0.0439	0.0126	-3.4799	.001	-0.0686	-0.0191
Male	0.1973	0.0342	5.7743	< .001	0.1303	0.2643
Black	0.4133	0.0539	7.6633	< .001	0.3075	0.5191
Hispanic	0.1371	0.0669	2.0472	.041	0.0058	0.2683
Income	-0.0080	0.0085	-0.9440	.345	-0.0246	0.0086

Furthermore, the test of the higher order unconditional interaction between left-to-right bias and reliability on misinformed COVID-19 beliefs found that it was significant, $F(1, 2619) = 57.81$, $p < .001$, R -change = 0.02. To probe this interaction, PROCESS provides the effects of left-to-right bias on misinformed COVID-19 beliefs at multiple levels of outlet reliability (the moderator). These results are shown in Table 3.

Table B3. Conditional effects of average left-to-right media bias (i.e., bias) at different values of the moderator, average source reliability (i.e., reliable).

Reliable	effect	se	t	p	95% CI	
12.9700	-0.0282	0.0061	-4.6051	< .001	-0.0403	-0.0162
15.0232	-0.0234	0.0056	-4.2037	< .001	-0.0344	-0.0125
17.0763	-0.0186	0.0050	-3.6997	< .001	-0.0285	-0.0087
19.1295	-0.0138	0.0045	-3.0576	.002	-0.0226	-0.0049
21.1826	-0.0090	0.0040	-2.2301	.026	-0.0169	-0.0011
21.7505	-0.0076	0.0039	-1.9609	.050	-0.0153	-0.0000
23.2358	-0.0042	0.0036	-1.1599	.246	-0.0112	0.0029
25.2889	0.0007	0.0032	0.2053	.837	-0.0056	0.0070
27.3421	0.0055	0.0029	1.8715	.061	-0.0003	0.0112
27.4442	0.0057	0.0029	1.9609	.050	0.0000	0.0114
29.3953	0.0103	0.0028	3.7281	< .001	0.0049	0.0157
31.4484	0.0151	0.0027	5.5225	< .001	0.0097	0.0205
33.5016	0.0199	0.0029	6.9791	< .001	0.0143	0.0255
35.5547	0.0247	0.0031	7.9773	< .001	0.0187	0.0308
37.6079	0.0296	0.0034	8.5719	< .001	0.0228	0.0363
39.6611	0.0344	0.0039	8.8862	< .001	0.0268	0.0420
41.7142	0.0392	0.0043	9.0291	< .001	0.0307	0.0477
43.7674	0.0440	0.0049	9.0744	< .001	0.0345	0.0535
45.8205	0.0488	0.0054	9.0664	< .001	0.0383	0.0594
47.8737	0.0536	0.0059	9.0304	< .001	0.0420	0.0653
49.9268	0.0585	0.0065	8.9806	< .001	0.0457	0.0712
51.9800	0.0633	0.0071	8.9251	< .001	0.0494	0.0772

Lastly, PROCESS provides the direct and indirect effects of the antecedent, liberal-to-conservative political ideology (i.e., *ideo*) on the outcome variable, misinformed COVID-19 beliefs (i.e., *cmisinfo*). The direct effect is statistically significant (effect = 0.10, 95% CI [0.07, 0.13], *SE* = 0.02, *t* = 6.60, *p* < .001). Furthermore, bootstrapped confidence intervals for the conditional indirect effects of ideology on misinformed COVID-19 beliefs are summarized in Table 4. The index of moderated mediation is 0.007 (bootstrapped 95% CI [0.005, 0.009], bootstrapped *SE* = 0.001). That is, liberal-to-conservative ideology both directly and indirectly (via left-to-right bias of selected media) influences misinformed COVID-19 beliefs in our study sample.

Table B4. Bootstrapped conditional indirect effects of liberal to conservative ideology (through left-to-right media bias) on misinformed COVID-19 beliefs.

reliable	effect	Boot <i>SE</i>	Boot 95% CI	
34.4850	0.0640	0.0091	0.0465	0.0824
42.6012	0.1188	0.0143	0.0917	0.1474
47.6400	0.1528	0.0185	0.1178	0.1901