Science Advances

AAAS

Supplementary Materials for

The social media context interferes with truth discernment

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This PDF file includes:

August 26, 2022

1 Models predicting accuracy evaluations

As discussed in the main text, we fit a linear model at the rating level to predict accuracy evaluations. The pooled model includes condition dummies (Sharing-asked and order), a veracity dummy, a wave dummy and all interactions. We use two-way sandwich clustered errors.

The model in Table S1 shows a significant three-way interaction between veracity, sharing-asked, and wave ($p < 0.001$). Therefore, we consider the two waves separately, and run a separate model for each.

Table S1: Linear model predicting accuracy evaluation across both waves. We use a headline veracity dummy variable (0=false, 1=true), and sharing-asked dummy variable indicating whether the participant rated sharing as well as accuracy (0=Accuracy only, 1=Accuracy-Sharing or Sharing-Accuracy), an order dummy variable indicating the order of the two ratings for conditions where both accuracy and sharing were asked (center-coded: -0.5=Accuracy-Sharing, 0.5=Sharing-Accuracy, 0=Accuracy only), and a z-scored wave dummy.

	Estimate	Std. Error	z value	Pr($>$|z|)
(Intercept)	0.276	0.005	58.047	0.000
veracity	0.271	0.007	37.343	0.000
scale(wave)	0.034	0.004	8.095	0.000
sharing-asked	0.019	0.006	3.277	0.001
order	0.029	0.007	4.292	0.000
veracity:scale(wave)	-0.072	0.007	-10.132	0.000
veracity:sharing-asked	-0.052	0.009	-5.876	0.000
veracity:order	-0.037	0.010	-3.572	0.000
scale(wave):sharing-asked	0.000	0.005	0.033	0.974
scale(wave):order	-0.004	0.006	-0.629	0.530
veracity:scale(wave):sharing-asked	0.031	0.009	3.518	0.000
veracity:scale(wave):order	0.018	0.010	1.689	0.091

The model specification for wave 1 is identical to the pooled analysis, except that it subsets on wave 1 data and does not include the wave dummy.

Since wave 2 involved political headlines, when subsetting on wave 2 we also include subject partisanship and political concordance in the model (as per our pre-registration).

2 Models predicting sharing intentions

As discussed in the main text, we fit a linear regression predicting sharing intentions. Like the pooled accuracy evaluation model, the sharing intention model includes condition dummies (accuracy-asked and order), a veracity dummy, a wave dummy and all interactions.

Table S2: Linear model predicting accuracy evaluation for wave 1 (COVID). We use a headline veracity dummy variable (0=false, 1=true), and sharing-asked dummy variable indicating whether the participant rated sharing as well as accuracy (0=Accuracy only, 1=Accuracy-Sharing or Sharing-Accuracy), and an order dummy variable indicating the order of the two ratings for conditions where both accuracy and sharing were asked (center-coded: -0.5=Accuracy-Sharing, 0.5=Sharing-Accuracy, 0=Accuracy only).

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.219	0.008	28.749	0.000
veracity	0.389	0.013	29.064	0.000
sharing-asked	0.019	0.010	1.970	0.049
order	0.036	0.012	3.078	0.002
veracity:sharing-asked	-0.103	0.017	-6.158	0.000
veracity:order	-0.066	0.020	-3.265	0.001

Next we look for differential patterns of engagement for the "sharing" outcome relative to liking and commenting in wave 2. To do so, we reshape the sharing data into a long format, with three rows for each participant-item pair, corresponding to the three types of engagement the participant indicated for that item. This model model includes condition dummies (accuracy-asked and order), a veracity dummy, engagement type dummies (taking sharing as the held-out baseline), and all interactions.

3 Moderation Analyses

To measure political partisanship, we asked participants "Which of the following best describes your political preference?" with answers from 1=Strongly Democratic to 6=Strongly Republican.

We build on the Table S3 by looking at the potential moderator of political partisanship on both accuracy evaluations and sharing decisions.

Table S3: Linear model predicting accuracy evaluation for wave 2 (politics). We use a headline veracity dummy variable (0=false, 1=true), and sharing-asked dummy variable indicating whether the participant rated sharing as well as accuracy (0=Accuracy only, 1=Accuracy-Sharing or Sharing-Accuracy), and an order dummy variable indicating the order of the two ratings for conditions where both accuracy and sharing were asked (center-coded: -0.5=Accuracy-Sharing, 0.5=Sharing-Accuracy, 0=Accuracy only).

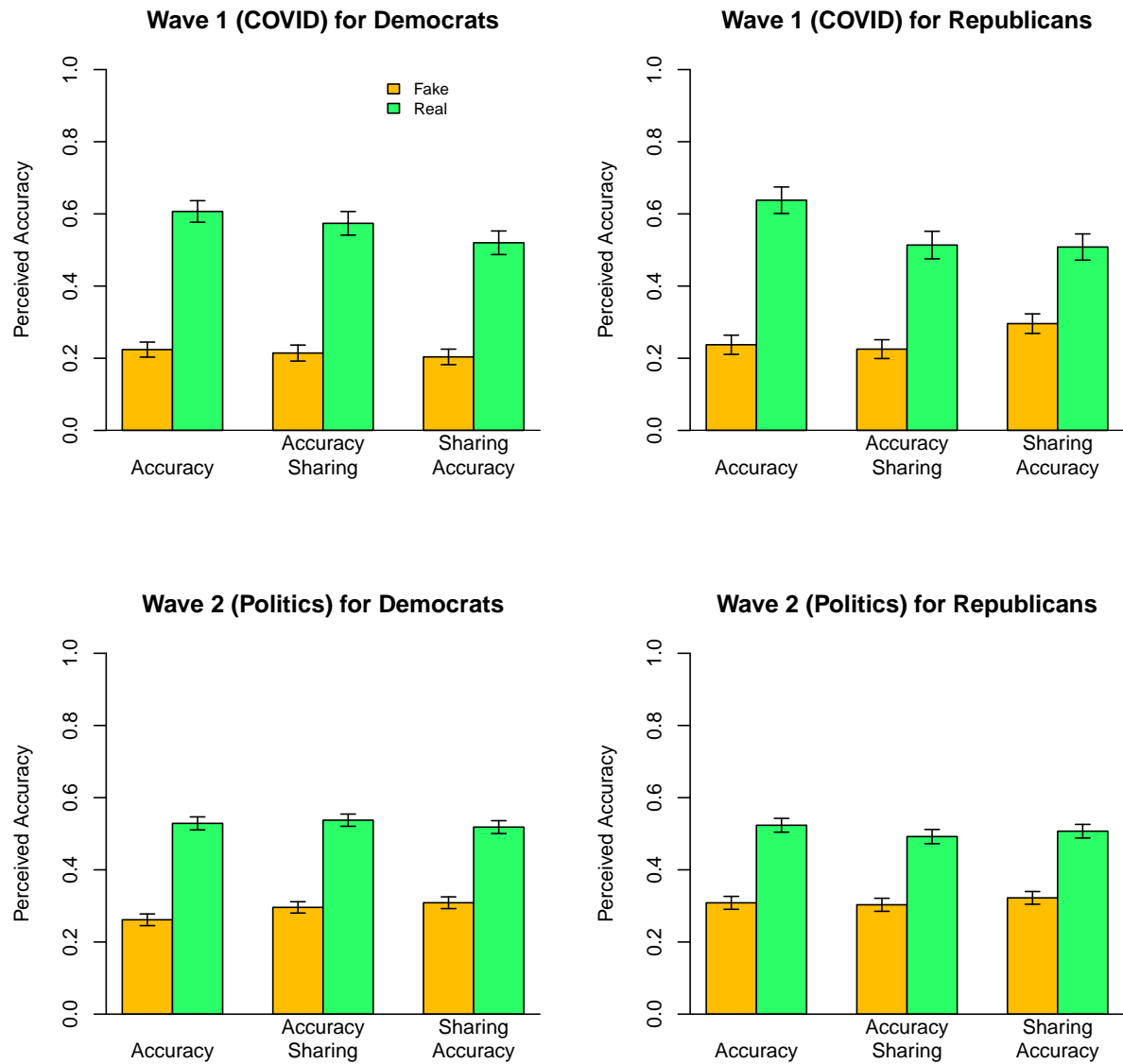|	Estimate	Std. Error	z value	Pr($>$|z|)
(Intercept)	0.283	0.006	46.370	0.000
sharing-asked	0.024	0.007	3.168	0.002
order	0.016	0.009	1.836	0.066
veracity	0.243	0.009	26.827	0.000
scale(republican)	0.028	0.007	4.243	0.000
concord	0.053	0.012	4.368	0.000
sharing-asked:veracity	-0.035	0.011	-3.146	0.002
order:veracity	-0.021	0.013	-1.680	0.093
sharing-asked:scale(republican)	-0.023	0.008	-2.875	0.004
order:scale(republican)	0.014	0.009	1.559	0.119
veracity:scale(republican)	-0.032	0.009	-3.394	0.001
sharing-asked:concord	-0.013	0.015	-0.894	0.371
order:concord	-0.024	0.017	-1.408	0.159
veracity:concord	-0.024	0.018	-1.348	0.178
scale(republican):concord	-0.003	0.013	-0.212	0.832
sharing-asked:veracity:scale(republican)	0.011	0.011	0.973	0.331
order:veracity:scale(republican)	0.021	0.013	1.603	0.109
sharing-asked:veracity:concord	0.033	0.022	1.496	0.135
order:veracity:concord	-0.010	0.025	-0.406	0.685
sharing-asked:scale(republican):concord	0.011	0.016	0.710	0.477
order:scale(republican):concord	-0.008	0.018	-0.441	0.660
veracity:scale(republican):concord	0.039	0.019	2.076	0.038
sharing-asked:veracity:scale(republican):concord	-0.026	0.023	-1.154	0.249
order:veracity:scale(republican):concord	-0.018	0.026	-0.700	0.484

Figure S1: Average perceived accuracy of true (green) and false (yellow) news across waves and conditions for Democrats and Republicans. Error bars are standard errors.
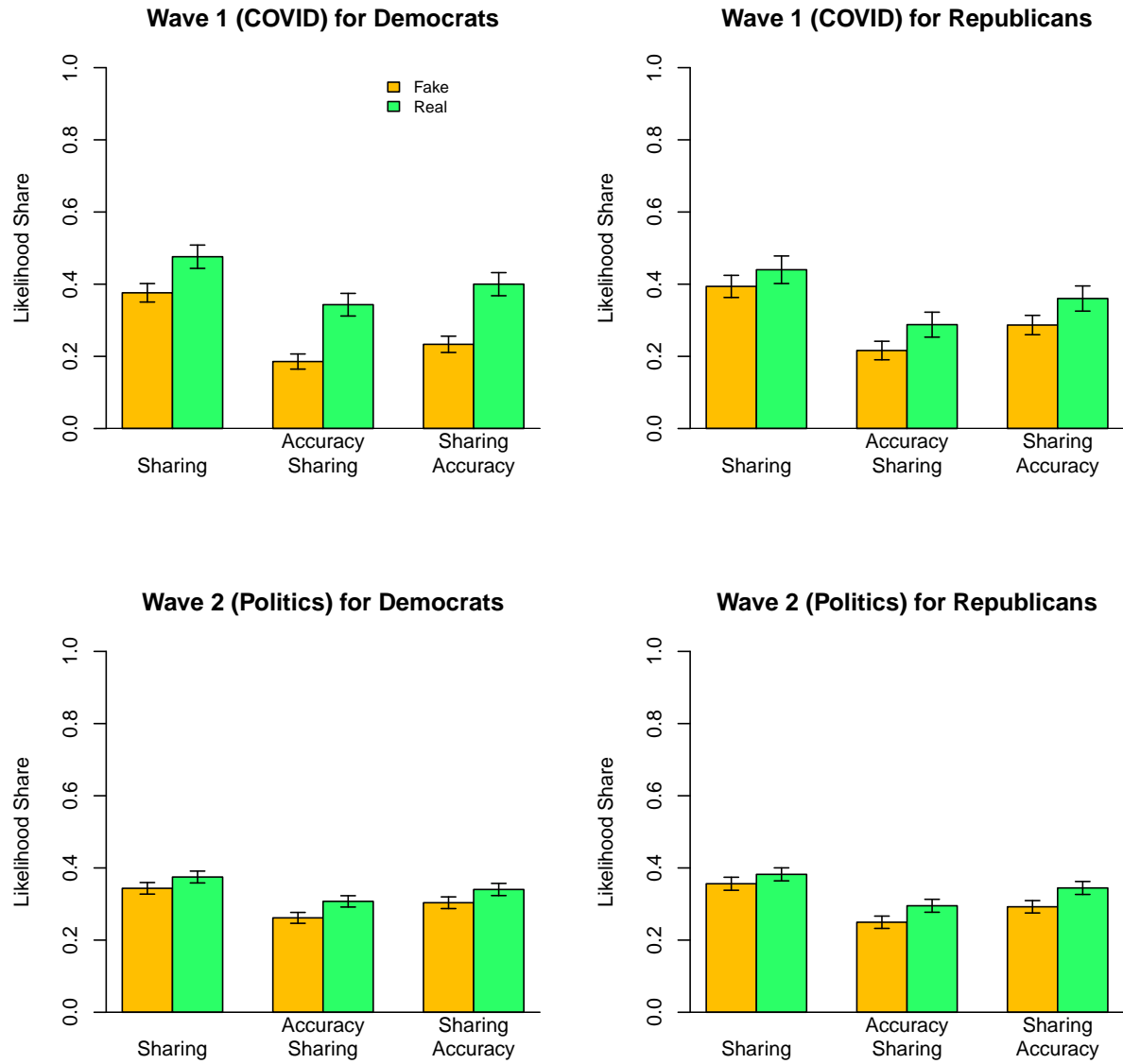
Figure S2: Average sharing intent of true (green) and false (yellow) news across waves and conditions for Democrats and Republicans. Error bars are standard errors.

Table S4: Linear model predicting sharing sharing intention across waves. We use a headline veracity dummy variable (0=false, 1=true), and an accuracy-asked dummy variable indicating whether the participant rated accuracy as well as sharing (0=Sharing only, 1=Accuracy-Sharing or Sharing-Accuracy), an order dummy variable indicating the order of the two ratings for conditions where both accuracy and sharing were asked (center-coded: -0.5=Accuracy-Sharing, 0.5=Sharing-Accuracy, 0=Accuracy only), and a z-scored wave dummy.

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.362	0.005	72.958	0.000
accuracy-asked	-0.091	0.006	-15.349	0.000
order	0.053	0.007	8.006	0.000
veracity	0.039	0.007	5.331	0.000
scale(wave)	-0.012	0.005	-2.437	0.015
accuracy-asked:veracity	0.021	0.009	2.396	0.017
order:veracity	-0.001	0.010	-0.085	0.932
accuracy-asked:scale(wave)	0.032	0.006	5.607	0.000
order:scale(wave)	-0.008	0.006	-1.249	0.212
veracity:scale(wave)	-0.021	0.007	-2.866	0.004
accuracy-asked:veracity:scale(wave)	-0.010	0.009	-1.122	0.262
order:veracity:scale(wave)	-0.003	0.010	-0.343	0.731

Table S5: Linear model predicting engagement relative to sharing.

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.355	0.006	60.729	0.000
accuracy-asked	-0.073	0.007	-10.274	0.000
order	0.048	0.008	6.083	0.000
veracity	0.026	0.008	3.146	0.002
liking	-0.024	0.008	-2.874	0.004
commenting	0.013	0.008	1.599	0.110
accuracy-asked:veracity	0.015	0.010	1.500	0.134
order:veracity	-0.003	0.011	-0.248	0.804
accuracy-asked:liking	0.007	0.010	0.736	0.462
accuracy-asked:commenting	-0.005	0.010	-0.484	0.629
order:liking	-0.001	0.011	-0.063	0.950
order:commenting	-0.013	0.011	-1.133	0.257
veracity:liking	0.005	0.012	0.418	0.676
veracity:commenting	-0.006	0.012	-0.527	0.598
accuracy-asked:veracity:liking	0.007	0.014	0.469	0.639
accuracy-asked:veracity:commenting	0.003	0.014	0.198	0.843
order:veracity:liking	-0.004	0.016	-0.255	0.799
order:veracity:commenting	0.001	0.016	0.070	0.944

Table S6: Item-level linear model predicting effect of sharing first on accuracy. Sharability is the likelihood of sharing in the share-only condition.

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.042	0.043	0.972	0.331
sharability	-0.035	0.113	-0.313	0.754
veracity	-0.071	0.012	-5.720	0.000
wave	-0.033	0.014	-2.403	0.016

Table S7: Item-level linear model predicting effect of sharing first on accuracy. Baseline_acc is the perceived accuracy in the accuracy-only condition.

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.124	0.015	8.115	0.000
baseline_acc	-0.355	0.051	-6.916	0.000
veracity	0.025	0.017	1.460	0.144
wave	-0.038	0.010	-3.748	0.000

Table S8: Linear model predicting accuracy judgements with continuous political partisanship moderator.

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.269	0.005	53.663	0.000
veracity	0.282	0.008	36.722	0.000
scale(wave)	0.024	0.005	5.236	0.000
sharing-asked	0.018	0.006	2.980	0.003
order	0.019	0.007	2.668	0.008
scale(republican)	0.019	0.005	3.518	0.000
veracity:scale(wave)	-0.065	0.008	-8.575	0.000
veracity:sharing-asked	-0.050	0.009	-5.275	0.000
veracity:order	-0.031	0.011	-2.868	0.004
scale(wave):sharing-asked	0.009	0.006	1.597	0.110
scale(wave):order	-0.005	0.007	-0.720	0.471
veracity:scale(republican)	-0.024	0.008	-3.031	0.002
scale(wave):scale(republican)	0.014	0.005	2.828	0.005
sharing-asked:scale(republican)	-0.007	0.006	-1.151	0.250
order:scale(republican)	0.026	0.007	3.591	0.000
veracity:scale(wave):sharing-asked	0.025	0.009	2.660	0.008
veracity:scale(wave):order	0.017	0.011	1.543	0.123
veracity:scale(wave):scale(republican)	-0.013	0.008	-1.579	0.114
veracity:sharing-asked:scale(republican)	-0.003	0.010	-0.294	0.768
veracity:order:scale(republican)	0.008	0.011	0.702	0.482
scale(wave):sharing-asked:scale(republican)	-0.025	0.006	-4.091	0.000
scale(wave):order:scale(republican)	-0.021	0.007	-2.887	0.004
veracity:scale(wave):sharing-asked:scale(republican)	0.022	0.010	2.181	0.029
veracity:scale(wave):order:scale(republican)	0.023	0.012	1.932	0.053

Table S9: Linear model predicting accuracy judgements with continuous political partisanship moderator for wave 1 (COVID)

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.229	0.008	27.429	0.000
veracity	0.390	0.014	26.912	0.000
sharing-asked	0.003	0.010	0.251	0.802
order	0.025	0.012	2.081	0.037
scale(republican)	-0.004	0.009	-0.494	0.622
veracity:sharing-asked	-0.090	0.018	-4.991	0.000
veracity:order	-0.059	0.022	-2.732	0.006
veracity:scale(republican)	-0.003	0.015	-0.206	0.837
sharing-asked:scale(republican)	0.032	0.011	2.965	0.003
order:scale(republican)	0.057	0.013	4.462	0.000
veracity:sharing-asked:scale(republican)	-0.036	0.018	-1.988	0.047
veracity:order:scale(republican)	-0.028	0.022	-1.271	0.204

Table S10: Linear model predicting accuracy judgements with continuous political partisanship moderator for wave 2 (political)

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.283	0.006	46.313	0.000
veracity	0.243	0.009	26.760	0.000
sharing-asked	0.024	0.007	3.153	0.002
order	0.016	0.009	1.878	0.060
scale(republican)	0.028	0.007	4.240	0.000
veracity:sharing-asked	-0.035	0.011	-3.120	0.002
veracity:order	-0.021	0.013	-1.640	0.101
veracity:scale(republican)	-0.032	0.009	-3.438	0.001
sharing-asked:scale(republican)	-0.023	0.008	-2.917	0.004
order:scale(republican)	0.014	0.009	1.589	0.112
veracity:sharing-asked:scale(republican)	0.010	0.011	0.919	0.358
veracity:order:scale(republican)	0.022	0.013	1.707	0.088

Table S11: Linear model predicting accuracy judgements with binary political partisanship moderator for wave 1 (political)

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.230	0.008	27.394	0.000
veracity	0.390	0.015	26.913	0.000
sharing-asked	0.001	0.010	0.113	0.910
order	0.024	0.012	1.939	0.052
scale(republican_binary)	0.007	0.008	0.781	0.435
veracity:sharing-asked	-0.089	0.018	-4.947	0.000
veracity:order	-0.057	0.022	-2.651	0.008
veracity:scale(republican_binary)	0.009	0.015	0.596	0.551
sharing-asked:scale(republican_binary)	0.019	0.010	1.797	0.072
order:scale(republican_binary)	0.040	0.012	3.278	0.001
veracity:sharing-asked:scale(republican_binary)	-0.052	0.018	-2.860	0.004
veracity:order:scale(republican_binary)	-0.016	0.021	-0.755	0.450

Table S12: Linear model predicting accuracy judgements with binary political partisanship moderator for wave 2 (political)

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.283	0.006	46.240	0.000
veracity	0.243	0.009	26.815	0.000
sharing-asked	0.024	0.007	3.217	0.001
order	0.016	0.009	1.831	0.067
scale(republican_binary)	0.023	0.006	3.820	0.000
veracity:sharing-asked	-0.035	0.011	-3.196	0.001
veracity:order	-0.019	0.013	-1.527	0.127
veracity:scale(republican_binary)	-0.026	0.009	-2.866	0.004
sharing-asked:scale(republican_binary)	-0.018	0.007	-2.437	0.015
order:scale(republican_binary)	0.003	0.009	0.363	0.716
veracity:sharing-asked:scale(republican_binary)	0.007	0.011	0.607	0.544
veracity:order:scale(republican_binary)	0.014	0.013	1.091	0.275

Table S13: Linear model predicting sharing decisions with political partisanship moderator

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.416	0.021	19.788	0.000
veracity	0.125	0.033	3.731	0.000
accuracy-asked	-0.238	0.025	-9.660	0.000
order	0.075	0.026	2.935	0.003
scale(republican)	-0.034	0.023	-1.482	0.138
wave	-0.033	0.012	-2.819	0.005
veracity:accuracy-asked	0.077	0.040	1.922	0.055
veracity:order	0.011	0.043	0.249	0.803
veracity:scale(republican)	-0.025	0.036	-0.694	0.488
accuracy-asked:scale(republican)	0.091	0.027	3.344	0.001
order:scale(republican)	0.038	0.029	1.305	0.192
veracity:wave	-0.048	0.018	-2.618	0.009
accuracy-asked:wave	0.083	0.014	5.971	0.000
order:wave	-0.017	0.015	-1.148	0.251
scale(republican):wave	0.025	0.013	1.961	0.050
veracity:accuracy-asked:scale(republican)	-0.063	0.044	-1.443	0.149
veracity:order:scale(republican)	-0.023	0.048	-0.475	0.635
veracity:accuracy-asked:wave	-0.030	0.022	-1.382	0.167
veracity:order:wave	-0.006	0.024	-0.261	0.794
veracity:scale(republican):wave	0.012	0.020	0.600	0.549
accuracy-asked:scale(republican):wave	-0.056	0.015	-3.682	0.000
order:scale(republican):wave	-0.009	0.016	-0.584	0.559
veracity:accuracy-asked:scale(republican):wave	0.032	0.024	1.338	0.181
veracity:order:scale(republican):wave	0.016	0.026	0.602	0.547

Table S14: Linear model predicting accuracy judgements with binary political partisanship moderator.

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.268	0.005	53.517	0.000
veracity	0.283	0.008	36.768	0.000
scale(wave)	0.023	0.005	5.051	0.000
sharing-asked	0.018	0.006	2.997	0.003
order	0.018	0.007	2.592	0.010
scale(republican_binary)	0.019	0.005	3.754	0.000
veracity:scale(wave)	-0.065	0.008	-8.562	0.000
veracity:sharing-asked	-0.051	0.009	-5.368	0.000
veracity:order	-0.030	0.011	-2.737	0.006
scale(wave):sharing-asked	0.010	0.006	1.735	0.083
scale(wave):order	-0.004	0.007	-0.672	0.502
veracity:scale(republican_binary)	-0.017	0.008	-2.152	0.031
scale(wave):scale(republican_binary)	0.007	0.005	1.587	0.112
sharing-asked:scale(republican_binary)	-0.008	0.006	-1.335	0.182
order:scale(republican_binary)	0.013	0.007	1.852	0.064
veracity:scale(wave):sharing-asked	0.025	0.009	2.663	0.008
veracity:scale(wave):order	0.017	0.011	1.532	0.126
veracity:scale(wave):scale(republican_binary)	-0.015	0.008	-2.007	0.045
veracity:sharing-asked:scale(republican_binary)	-0.009	0.009	-0.969	0.332
veracity:order:scale(republican_binary)	0.006	0.011	0.521	0.602
scale(wave):sharing-asked:scale(republican_binary)	-0.016	0.006	-2.875	0.004
scale(wave):order:scale(republican_binary)	-0.017	0.007	-2.482	0.013
veracity:scale(wave):sharing-asked:scale(republican_binary)	0.026	0.009	2.762	0.006
veracity:scale(wave):order:scale(republican_binary)	0.013	0.011	1.203	0.229