Supporting Information

for

Fighting misinformation on social media using crowdsourced judgments of news source quality

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1. Full list of news sources

	Mainstream Media	Hyper-Partisan	Fake News
	bloomberg.com	ahtribune.com	americannews.com
	fortune.com	bipartisanreport.com	civictribune.com
	theguardian.com	chicksontheright.com	dailyheadlines.net
	npr.org	dailynewsbin.com	empireherald.com
	salon.com	heatst.com	globalrealnews.com
	newsweek.com	newcenturytimes.com	news4ktla.com
	politico.com	palmerreport.com	newsexaminer.net
Study 1	pbs.org	pamelageller.com	thelastlineofdefense.org
•	economist.com	redflagnews.com	theracketreport.com
	nbc.com	regated.com	usasupreme.com
		rightwingnews.com	uspoliticsinfo.com
		thefederalistpapers.org	worldnewsdailyreport.com
		trueactivist.com	7 1
		usuncut.com	
		youngcons.com	
	abcnews.go.com	breitbart.com	conservativedailypost.com
	cbsnews.com	commondreams.org	freedomdaily.com
	cnn.com	conservativetribune.com	notallowedto.com
	foxnews.com	dailycaller.com	now8news.com
Studies 1 & 2	huffingtonpost.com	dailykos.com	react365.com
Studies 1 & 2	msnbc.com	dailywire.com	thenewyorkevening.com
	nytimes.com	infowars.com	thenew yorke vennig.com
	usatoday.com	infowars.com	
	washingtonpost.com		
	wsj.com		
	aol.com/news	activistpost.com	americannews.com
	Bbc.co.uk	antiwar.com	
		blacklistednews.com	angrypatriotmovement.com bb4sp.com
	bostonglobe.com	crooksandliars.com	beforeitsnews.com
	chicagotribune.com		
	dailymail.co.uk	dailysignal.com	channel24news.com
	latimes.com	ijr.com	clashdaily.com
Study 2	news.yahoo.com	newsmax.com	dailybuzzlive.com
•	nydailynews.com	patriotpost.us	downtrend.com
	nypost.com	rawstory.com	newsbreakshere.com
	sfchronicle.com	redstate.com	onepoliticalplaza.com
		thedailysheeple.com	realnewsrightnow.com
		thepoliticalinsider.com	socialeverythings.com
		westernjournalism.com	whatdoesitmean.com
			yournewswire.com

Table S1. Websites shown to participants in Studies 1 and 2. Notes: ABC news was listed as abc.go.com in Study 1 and abcnews.go.com in Study 2. CBS news was listed as cbs.com in Study 1 and cbsnews.com in Study 2.

2. Average trust and familiarity ratings

	Fami	iliarity	Trust, A	Il Ratings	Trust, Familiar Ratings		
	Democrat	Republican	Democrat	Republican	Democrat	Republican	
Mainstraam madia	0.812	.760	.510	.395	.582	.466	
Mainstream media	(.391)	(.427)	(.320)	(.312)	(.288)	(.296)	
Hyper Dorticen	.143	.150	.110	.150	.205	.328	
Hyper-Partisan	(.350)	(.357)	(.195)	(.217)	(.258)	(.285)	
Estra Massa	.084	.110	.119	.150	.333	.339	
Fake News	(.278)	(.313)	(.207)	(.217)	(.288)	(.280)	

Table S2. Average fraction familiar and trust ratings by source type and preferred political party in Study 1. Shown are both trust ratings when considering all data, and when restricting to ratings where the participants indicated being familiar with the source. Standard deviations shown in parentheses.

	Familiarity		Trust, A	Il Ratings	Trust, Familiar Ratings		
	Democrat	Republican	Democrat	Republican	Democrat	Republican	
Mainstraam madia	.612	.576	.464	.317	.570	.399	
Mainstream media	(.487)	(.494)	(.316)	(.310)	(.279)	(.314)	
Hyper Dorticen	.138	.153	.209	.199	.379	.451	
Hyper-Partisan	(.345)	(.360)	(.269)	(.268)	(.339)	(.333)	
Folso Nove	.098	.099	.214	.184	.487	.478	
Fake News	(.297)	(.299)	(.272)	(.257)	(.334)	(.342)	

Table S3. Average fraction familiar and trust ratings by source type and preferred political party in Study 2. Shown are both trust ratings when considering all data, and when restricting to ratings where the participants indicated being familiar with the source. Standard deviations shown in parentheses.

		_	Familia			rust, All				ar Ratings
		Dem	Rep	Combined	Dem	Rep	Combined	Dem	Rep	Combined
Mainstream	pbs.org	0.93	0.92	0.93	0.73	0.58	0.65	0.76	0.60	0.68
Media	nytimes.com	0.94	0.91	0.93	0.66	0.44	0.55	0.68	0.46	0.57
	nbc.com	0.96	0.96	0.96	0.62	0.48	0.55	0.63	0.48	0.56
	cbs.com	0.94	0.95	0.95	0.61	0.49	0.55	0.62	0.49	0.56
	washingtonpost.com	0.94	0.93	0.93	0.64	0.45	0.54	0.65	0.46	0.55
	npr.org	0.78	0.69	0.73	0.64	0.42	0.53	0.76	0.54	0.65
	usatoday.com	0.93	0.93	0.93	0.57	0.48	0.53	0.58	0.49	0.54
	cnn.com	0.98	0.96	0.97	0.63	0.42	0.53	0.63	0.42	0.53
	msnbc.com	0.94	0.94	0.94	0.59	0.40	0.50	0.60	0.40	0.50
	huffingtonpost.com	0.95	0.93	0.94	0.53	0.38	0.46	0.55	0.39	0.47
	abc.go.com	0.73	0.72	0.73	0.50	0.41	0.45	0.58	0.49	0.53
	bloomberg.com	0.79	0.79	0.79	0.45	0.41	0.43	0.53	0.47	0.50
	newsweek.com	0.82	0.81	0.81	0.47	0.38	0.43	0.53	0.43	0.48
	foxnews.com	0.95	0.96	0.96	0.27	0.56	0.41	0.27	0.57	0.42
	wsj.com	0.59	0.49	0.54	0.44	0.34	0.39	0.64	0.55	0.60
	economist.com	0.64	0.46	0.55	0.43	0.31	0.37	0.56	0.49	0.52
	fortune.com	0.63	0.55	0.59	0.40	0.33	0.37	0.52	0.45	0.49
	theguardian.com	0.78	0.59	0.69	0.41	0.26	0.34	0.48	0.35	0.42
	politico.com	0.59	0.46	0.53	0.36	0.22	0.29	0.51	0.34	0.42
	salon.com	0.41	0.25	0.33	0.25	0.13	0.19	0.45	0.23	0.34
Hyper-	dailywire.com	0.48	0.55	0.52	0.18	0.21	0.20	0.23	0.29	0.26
Partisan	breitbart.com	0.57	0.50	0.53	0.11	0.22	0.17	0.09	0.34	0.22
	thefederalistpapers.org	0.21	0.27	0.24	0.12	0.19	0.16	0.21	0.38	0.30
	infowars.com	0.48	0.42	0.45	0.11	0.19	0.15	0.12	0.29	0.20
	conservativetribune.com	0.09	0.13	0.11	0.09	0.21	0.15	0.17	0.46	0.31
	dailykos.com	0.25	0.16	0.20	0.17	0.12	0.14	0.33	0.19	0.26
	bipartisanreport.com	0.12	0.09	0.10	0.14	0.15	0.14	0.31	0.31	0.31
	dailycaller.com	0.19	0.24	0.21	0.11	0.17	0.14	0.19	0.36	0.27
	dailynewsbin.com	0.10	0.12	0.11	0.12	0.14	0.13	0.32	0.35	0.33
	newcenturytimes.com	0.06	0.08	0.07	0.12	0.14	0.13	0.29	0.38	0.33
	rightwingnews.com	0.08	0.14	0.11	0.08	0.17	0.12	0.16	0.38	0.27
	ahtribune.com	0.03	0.04	0.04	0.10	0.14	0.12	0.24	0.48	0.36
	trueactivist.com	0.06	0.07	0.06	0.11	0.13	0.12	0.31	0.27	0.29
	palmerreport.com	0.08	0.05	0.07	0.11	0.12	0.12	0.30	0.26	0.28
	youngcons.com	0.06	0.09	0.07	0.09	0.14	0.11	0.24	0.33	0.28
	usuncut.com	0.06	0.05	0.05	0.10	0.12	0.11	0.25	0.25	0.25
	chicksontheright.com	0.05	0.12	0.08	0.07	0.15	0.11	0.18	0.40	0.29
	commondreams.org	0.06	0.04	0.05	0.11	0.12	0.12	0.38	0.33	0.35
	regated.com	0.02	0.03	0.02	0.10	0.12	0.11	0.41	0.35	0.38
	pamelageller.com	0.03	0.04	0.03	0.09	0.12	0.10	0.29	0.38	0.34
	heatst.com	0.04	0.06	0.05	0.09	0.11	0.10	0.31	0.29	0.30
	redflagnews.com	0.04	0.04	0.04	0.08	0.11	0.10	0.35	0.19	0.27
Fake News	worldnewsdailyreport.com	0.33	0.43	0.38	0.18	0.21	0.20	0.31	0.31	0.31
	thenewyorkevening.com	0.11	0.08	0.10	0.16	0.16	0.16	0.45	0.44	0.44
	americannews.com	0.10	0.14	0.12	0.13	0.17	0.15	0.41	0.34	0.37
	conservativedailypost.com	0.09	0.18	0.14	0.09	0.21	0.15	0.16	0.41	0.29
	news4ktla.com	0.08	0.09	0.08	0.14	0.15	0.15	0.50	0.46	0.48
	dailyheadlines.net	0.11	0.17	0.14	0.13	0.15	0.14	0.35	0.32	0.33
	usasupreme.com	0.05	0.06	0.05	0.11	0.16	0.14	0.37	0.45	0.41
	globalrealnews.com	0.09	0.10	0.10	0.12	0.15	0.14	0.34	0.37	0.35
	uspoliticsinfo.com	0.09	0.11	0.10	0.12	0.15	0.14	0.30	0.33	0.31
	now8news.com	0.04	0.06	0.05	0.12	0.15	0.13	0.42	0.46	0.44
	freedomdaily.com	0.09	0.12	0.10	0.11	0.15	0.13	0.29	0.26	0.27
	newsexaminer.net	0.08	0.11	0.09	0.11	0.14	0.13	0.28	0.28	0.28
	civictribune.com	0.04	0.06	0.05	0.12	0.14	0.13	0.29	0.36	0.33
	empireherald.com	0.07	0.07	0.07	0.11	0.14	0.12	0.33	0.33	0.33
	thelastlineofdefense.org	0.04	0.05	0.05	0.09	0.13	0.11	0.31	0.31	0.31
	react365.com	0.05	0.05	0.05	0.09	0.13	0.11	0.29	0.26	0.28
	theracketreport.com	0.05	0.05	0.06	0.10	0.12	0.11	0.23	0.24	0.28
	uiciackeu epoliteoili	0.05	0.00	0.00	0.10	0.11	0.10	0.55	0.24	0.20

Table S4. Fraction familiar and average trust ratings for each source in Study 1. Websites are sorted within each category by combined all-data trust ratings.

		1	Famili	arity	Т	rust, All	Ratings	Trus	t, Famili	ar Ratings	Fact-
		Dem	Rep	Combined	Dem	Rep	Combined	Dem	Rep	Combined	checker ratings
Mainstream	cbsnews.com	0.77	0.77	0.77	0.57	0.38	0.48	0.62	0.42	0.52	0.66
Media	cnn.com	0.84	0.83	0.83	0.60	0.34	0.47	0.65	0.36	0.50	0.84
	usatoday.com	0.77	0.76	0.77	0.52	0.39	0.45	0.58	0.43	0.51	0.66
	abcnews.go.com	0.68	0.60	0.64	0.55	0.35	0.45	0.61	0.42	0.52	0.56
	washingtonpost.com	0.77	0.75	0.76	0.56	0.33	0.45	0.63	0.36	0.50	0.91
	nytimes.com	0.73	0.67	0.70	0.57	0.32	0.45	0.66	0.36	0.51	0.91
	foxnews.com	0.85	0.86	0.86	0.34	0.55	0.45	0.36	0.59	0.47	0.44
	msnbc.com	0.81	0.77	0.79	0.56	0.31	0.44	0.61	0.34	0.48	0.66
	huffingtonpost.com	0.76	0.76	0.76	0.50	0.32	0.41	0.58	0.35	0.47	0.47
	news.yahoo.com	0.68	0.66	0.67	0.47	0.34	0.40	0.53	0.41	0.47	0.59
	chicagotribune.com	0.60	0.53	0.57	0.47	0.29	0.38	0.56	0.35	0.46	0.53
	bbc.co.uk	0.50	0.42	0.46	0.46	0.30	0.38	0.65	0.44	0.54	0.81
	nypost.com	0.60	0.55	0.58	0.45	0.30	0.38	0.53	0.37	0.45	0.38
	aol.com/news	0.56	0.52	0.54	0.40	0.29	0.35	0.48	0.37	0.43	0.41
	wsj.com	0.34	0.33	0.33	0.37	0.30	0.34	0.65	0.55	0.60	0.72
	nydailynews.com	0.47	0.41	0.44	0.40	0.26	0.33	0.48	0.35	0.42	0.34
	bostonglobe.com	0.38	0.35	0.37	0.40	0.27	0.33	0.59	0.38	0.48	0.75
	latimes.com	0.47	0.38	0.42	0.43	0.22	0.33	0.58	0.33	0.46	0.75
	dailymail.co.uk	0.45	0.40	0.43	0.34	0.25	0.30	0.46	0.38	0.42	0.44
	sfchronicle.com	0.21	0.19	0.20	0.32	0.20	0.26	0.58	0.35	0.46	0.59
Hyper-	dailywire.com	0.36	0.35	0.35	0.27	0.22	0.25	0.38	0.33	0.35	0.16
Partisan	conservativetribune.com	0.10	0.15	0.13	0.20	0.27	0.24	0.46	0.56	0.51	0.03
	newsmax.com	0.15	0.23	0.19	0.22	0.24	0.23	0.40	0.48	0.44	0.13
	thepoliticalinsider.com	0.22	0.24	0.23	0.24	0.21	0.22	0.40	0.38	0.39	0.03
	breitbart.com	0.35	0.41	0.38	0.18	0.27	0.22	0.16	0.42	0.29	0.16
	westernjournal.com	0.12	0.13	0.13	0.23	0.21	0.22	0.48	0.50	0.49	0.06
	dailycaller.com	0.13	0.18	0.16	0.22	0.21	0.21	0.35	0.47	0.41	0.13
	infowars.com	0.29	0.28	0.28	0.20	0.21	0.21	0.24	0.39	0.31	0.03
	patriotpost.us	0.10	0.13	0.11	0.19	0.22	0.21	0.39	0.45	0.42	0
	dailysignal.com	0.11	0.10	0.11	0.22	0.18	0.20	0.49	0.38	0.43	0
	dailykos.com	0.16	0.11	0.13	0.23	0.17	0.20	0.48	0.41	0.44	0.16
	activepost.com	0.08	0.09	0.09	0.21	0.18	0.20	0.45	0.55	0.50	0
	redstate.com	0.09	0.13	0.11	0.19	0.21	0.20	0.39	0.54	0.46	0.06
	rawstory.com	0.10	0.08	0.09	0.21	0.17	0.19 0.19	0.43	0.53	0.48	0.09
	ijr.com	0.05				0.17		0.56		0.55	0.09
	thedailysheeple.com antiwar.com	0.08	0.08	0.08	0.20	0.17	0.18 0.18	0.48	0.48	0.48 0.54	0.09
	blacklistednews.com	0.07	0.07	0.07	0.20	0.10	0.18	0.49	0.59	0.50	0
	commondreams.org	0.09	0.07	0.08	0.20	0.17	0.18	0.47	0.58	0.57	0.03
	crooksandliars.com	0.07	0.07	0.07	0.20	0.10	0.18	0.53	0.58	0.56	0.03
Fake News	channel24news.com	0.07				0.17		0.54			
rake News	dailybuzzlive.com	0.17	0.13	0.15 0.28	0.28	0.21	0.25 0.24	0.54	0.48	0.51	0.06
	thenewyorkevening.com	0.30	0.27	0.28	0.28	0.21	0.24	0.43	0.30	0.54	0
	conservativedailypost.com	0.11	0.10	0.11	0.20	0.25	0.24	0.38	0.49	0.34	0
	americannews.com	0.12	0.13	0.14	0.24	0.20	0.23	0.43	0.47	0.43	0
	realnewsrightnow.com	0.09	0.10	0.09	0.24	0.19	0.21	0.45	0.46	0.45	0
	freedomdaily.com	0.09	0.10	0.03	0.22	0.19	0.21	0.43	0.40	0.43	0.03
	now8news.com	0.12	0.08	0.08	0.22	0.13	0.20	0.57	0.53	0.55	0.03
	newsbreakshere.com	0.08	0.08	0.08	0.21	0.18	0.19	0.49	0.56	0.53	0
	beforeitsnews.com	0.07	0.07	0.07	0.20	0.19	0.19	0.53	0.55	0.54	0
	yournewswire.com	0.07	0.07	0.07	0.20	0.17	0.19	0.33	0.35	0.45	0.06
	onepoliticalplaza.com	0.07	0.09	0.08	0.20	0.17	0.19	0.49	0.57	0.53	0.00
	whatdoesitmean.com	0.07	0.07	0.07	0.20	0.18	0.19	0.51	0.56	0.54	0
	downtrend.com	0.06	0.08	0.07	0.20	0.17	0.19	0.54	0.51	0.53	0
	socialeverythings.com	0.07	0.06	0.07	0.20	0.17	0.19	0.55	0.59	0.57	0
	angrypatriotmovement.com	0.07	0.08	0.07	0.20	0.19	0.18	0.51	0.51	0.51	0
	bb4sp.com	0.06	0.06	0.06	0.17	0.16	0.18	0.55	0.49	0.52	0
	clashdaily.com	0.07	0.07	0.07	0.20	0.15	0.18	0.46	0.42	0.44	0
	react365.com	0.06	0.07	0.06	0.18	0.16	0.17	0.48	0.55	0.52	0
	notallowedto.com	0.04	0.05	0.05	0.18	0.16	0.17	0.61	0.60	0.60	0

Table S5. Fraction familiar and average trust ratings for each source in Study 2 and (last column) for professional fact-checkers.

3. Robustness across subgroups

Here we demonstrate that our key results are robust across various subgroups within our data. First, we restrict to the only most ideological participants in our sample – those who indicated the maximum or minimum values on both the social conservatism scale and economic conservatism scale (S1: N=102 maximal liberals, N=49 maximal conservatives; S2: N=83 maximal liberals, N=114 maximal conservatives). Figure S1 shows the average trust given to each source by maximal liberals and maximal conservatives in each study.

As expected, the ideological differences in trust ratings are qualitatively similar but larger in magnitude compared to what was described in main text. In Study 1, extreme liberals trusted mainstream media outlets 18.0 percentage points more than extreme conservatives, F(1,150)=32.38, p<.0001, extreme conservatives trusted hyper-partisan sites 9.7 percentage points more than extreme liberals, F(1,150)=10.18, p=.002, and extreme conservatives trusted fake news sites 9.6 percentage points more than extreme liberals, F(1,150)=8.82, p=.004. In Study 2, liberals trusted mainstream media outlets 18.6 percentage points more than conservatives, F(1,196)=28.02, p<.0001, and there was no significant difference between extreme conservatives and extreme liberals in trust of hyper-partisan sites (3.0 percentage points, F(1,196)=0.62, p=.43) or fake news sites (0.0 percentage points, F(1,196)=0.00, p=1.00).

Despite these more exaggerated ideological differences, however, it remains true that among both extreme liberals and extreme conservatives, mainstream media sources receive much higher average trust scores than either hyper-partisan sites or fake news sites (S1: F(1,150)>30, p<.0001 for all comparisons; S2: F(1,196)>10, p<.002 for all comparisons). Furthermore, when calculating a politically balanced trust rating for each outlet by weighting extreme liberal and extreme conservative participants equally, every single mainstream media outlet receives a higher trust score than every single hyper-partisan or fake news site (except for the San Francisco Chronicle in Study 2). Thus, crowd-sourced trust ratings are effective even among highly partisan individuals.

Next, we turn to demographics. In Figures S3 and S4, we show average trust ratings subsetting on gender and age. The pattern is similar in all cases, with mainstream sources receiving much higher ratings than hyper-partisan or fake news sites.

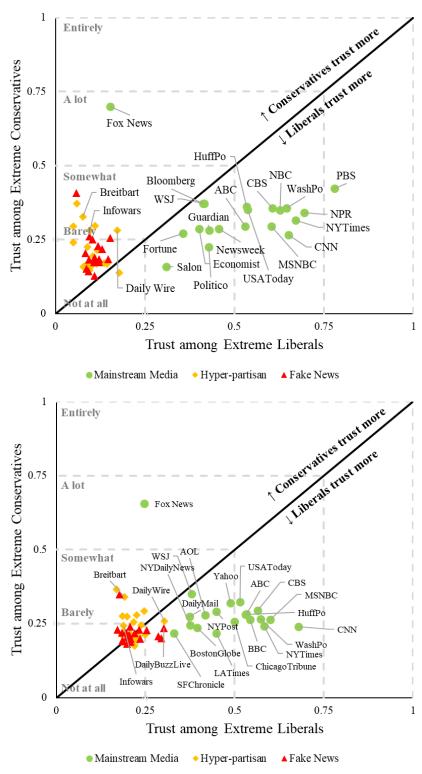


Figure S1. Average trust ratings for each source among maximal liberals and maximal conservatives in Study 1 (A) and Study 2 (B).

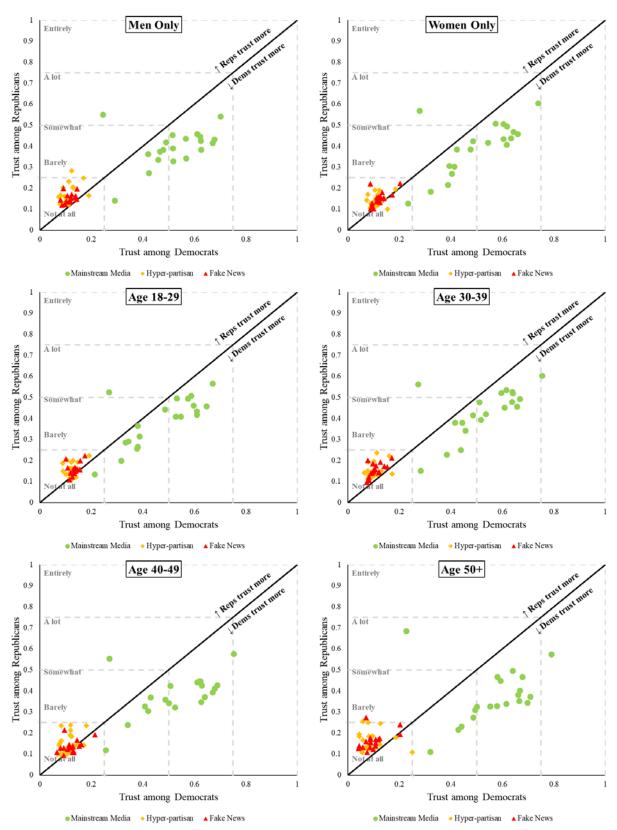


Figure S2. Average trust ratings for each source among Democrats and Republicans in Study 1, separating based on gender and age.

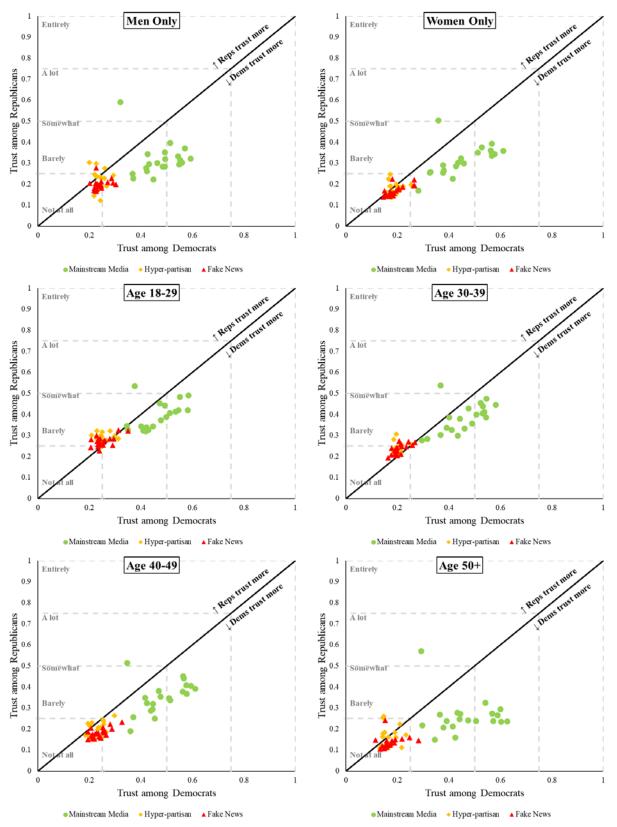


Figure S3. Average trust ratings for each source among Democrats and Republicans in Study 2, separating based on gender and age.

4. Participant-level analysis of relationship with fact-checker ratings

In the main text, we report item-level correlations between the ratings of participants and professional fact-checkers. Here we report the version of this analysis we pre-registered, which is conducted at the level of the trust rating (i.e. 60 observations per participant) using linear regression with robust standard errors clustered on participant, taking professional fact-checker rating and participant partisanship (dummy for Republican) as the independent variables. We reported the item-level analysis in the main text because, even though the results are essentially identical, in retrospect we concluded that the item-level results were easier to interpret.

As with the item-level correlations, we find significant positive relationships between the professional fact-checker ratings and the ratings of Democratic participants, b = .405, F(1,970) = 728.51, p < .0001, as well as between the professional fact-checker ratings and the ratings of Republican participants, b = .188, F(1,970) = 204.86, p < .0001. Furthermore, there was a significant negative interaction between the Republican dummy and the fact-checker rating, b = .217, F(1,970) = 118.18, p < .0001, indicating that the relationship with professional fact-checker scores was significantly stronger for Democratic participants than for Republican participants.

5. Cognitive reflection and media source discernment

Here we report the results of *post hoc* regressions predicting media source discernment, which is calculated by converting trust ratings for mainstream sources to a *z*-score and subtracting it from the *z*-scored mean trustworthiness ratings of hyper-partisan and fake news. As independent variables we include performance on the Cognitive Reflection Test (CRT) and political ideology (average of a 5-point social conservative item and a 5-point economic conservative item). We also examine the interaction between these two terms, and the impact of controlling for age, gender, education (categorical across 8 different education levels) and – in Study 2, where this data was available – ethnicity (by including dummy variables coding for black, Hispanic, and other). Regression results are shown in Tables S6 and S7. As can be seen, the results reported in the main text are robust to the inclusion of demographic controls.

Study 1: MTurk	(1)	(2)	(3)	(4)
CRT	0.162***	0.123***	0.316***	0.294***
Conservatism	-0.342***	-0.328***	-0.283***	-0.263***
CRT x Conservatism			-0.172*	-0.191*
Age		0.017		0.023
Female		0.013		0.012
Education dummies	No	Yes	No	Yes
R^2	0.15	0.19	0.15	0.19
N	1,001	996	1,001	996

Table S6. Regression results predicting media source discernment in Study 1. Standardized coefficients (betas) are shown. *p<0.05; **p<0.01; ***p<0.001

Study 2: Lucid	(1)	(2)	(3)	(4)
CRT	0.151***	0.127***	0.362***	0.313***
Conservatism	-0.283***	-0.306***	-0.190***	-0.225***
CRT x Conservatism			-0.246**	-0.215*
Age		0.082*		0.084*
Female		0.105***		0.103***
Ethnicity:Black		-0.027		-0.025
Ethnicity:Hispanic		0.021		0.025
Ethnicity:Other		-0.061*		-0.063*
Education dummies	No	Yes	No	Yes
R^2	0.10	0.18	0.11	0.18
N	968	941	968	941

Table S7. Regression results predicting media source discernment in Study 2. Standardized coefficients (betas) are shown. *p<0.05; **p<0.01; ***p<0.001

6. The relationship between familiarity and trust

In the main text, we showed that trust ratings of laypeople effectively differentiate between mainstream sources and hyper-partisan or fake news sources, despite the fact that most participants were not familiar with most of the hyper-partisan or fake news sites. Here, we examine the role of familiarity in more detail.

We begin by observing that the crowdsourced trust ratings performed more much poorly when excluding trust ratings for which the participant indicated being unfamiliar with the website being rated (Figure S4). This exclusion dramatically increases the trust ratings of hyperpartisan websites and fake websites (trust ratings are more than twice as high when excluding unfamiliar ratings; see Tables S2 and S3), but produces a much smaller increase in trust ratings for mainstream media outlets (trust is 10% to 25% higher when excluding unfamiliar ratings). As a result, excluding unfamiliar ratings substantially reduces the difference in perceived trust between mainstream media outlets and both hyper-partisan and fake news sites.

From a practical perspective, these data indicate the dangers of filtering on experience: crowd-sourced ratings of outlet trustworthiness do *not* do a particularly good job of differentiating between reputable and non-reputable sources if the ratings of unfamiliar participants are excluded.

These observations also shed light on the cognitive basis of media trust judgments. In particular, they allow us to identify participants' baseline trust attitudes in the absence of information. Are people *initially agnostic*, such that without prior knowledge about a given source they are agnostic as to its reliability – and then as they accumulate information in the form of exposure to content from the outlet, they update their opinion about the outlet's trustworthiness to be more positive or negative, depending on their assessment of the observed content? Are they *initially skeptical*, such that participants without prior knowledge about a given source typically assume that the source is unreliable, and sources are then able to earn a trust by producing content that is deemed to be reliable? Or are they *initially trusting*, such that participants without prior knowledge about a given source typically assume that the source is reliable, but sources are then able to lose trust by producing content that is deemed to be unreliable?

Our data clearly differentiate between these accounts. In particular, they are uniquely consistent with the initially skeptical account of trust in media, whereby people trust an outlet only after becoming familiar with the coverage that outlet produces (and judging that coverage to be trustworthy). This is demonstrated by an examination of the relationship between familiarity and trust at both the level of individual ratings (Figure S4) and sources (Figure S5). As can been seen in Figure S4, ratings of unfamiliar outlets are heavily skewed towards distrust – indicating that lack of familiarity is associated with distrust, rather than indifference (as per the initially agnostic account) or trust (as per the initially trusting account). Furthermore, while Figure S5 shows a clear strong positive relationship between familiarity and trust, we see no outlets that received high trust scores despite being unfamiliar to most participants. Conversely, there are several outlets which had comparatively high levels of familiarity but low levels of trust (e.g. Breitbart and Infowars among Democrats). This pattern supports the initially skeptical account whereby in the absence of familiarity, participants typically assume an outlet is untrustworthy.

Importantly, these results also speak against a simpler account of the relationship between familiarity and trust, whereby familiarity necessarily leads to increased trust. A long tradition in cognitive science has demonstrated such "illusory truth effects" in the context of specific statements, whereby merely reading a statement (and thus becoming familiar with it) makes the statement seem more true on subsequent encounters (1, 2). This effect has been shown to extend to highly implausible partisan fake news, even when the headlines do not align with one's ideology (3). However, the data in Figure S6 suggest that this mechanism is *not* operating at the level of sources (rather than individual statements). In particular, the fact that Breitbart and Infowars are much more familiar than other hyper-partisan sources for Democrats, but are not trusted more than other hyper-partisan sources, indicates that familiar does not directly lead to increased trust. Instead, our results suggest that familiarity is necessary *but not sufficient* for increased trust. Nonetheless, it is worth noting that to the extent that familiarity opens the door to increased trust, unreliable sites that manage to gain notoriety may also gain some degree of increased trust (particularly amongst those who are ideologically aligned). Such an effect work against the effectiveness of the crowdsourcing approach.

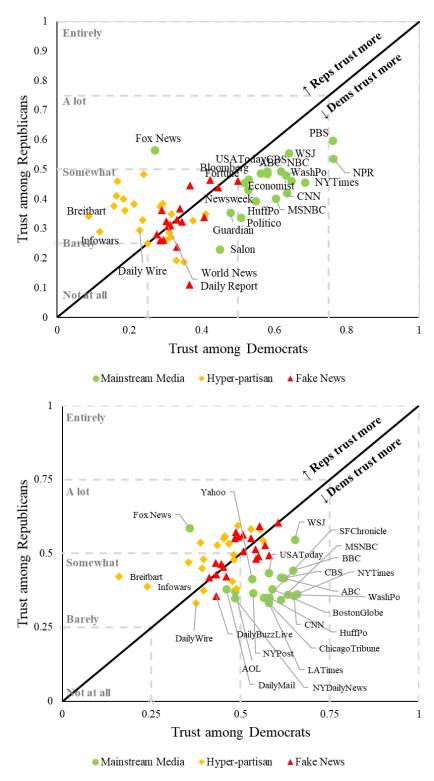


Figure S4. Average trust ratings for each source when restricting to familiarity ratings, in Study 1 (A) and Study 2 (B).

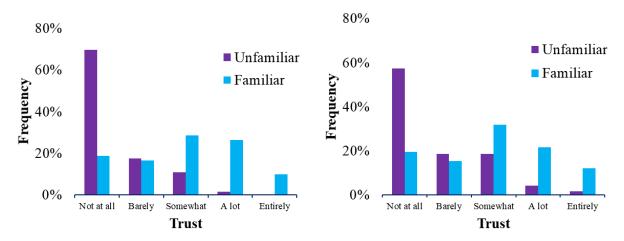


Figure S5. Distribution of individual trust ratings for unfamiliar versus familiar sources in Study I(A) and Study 2(B).

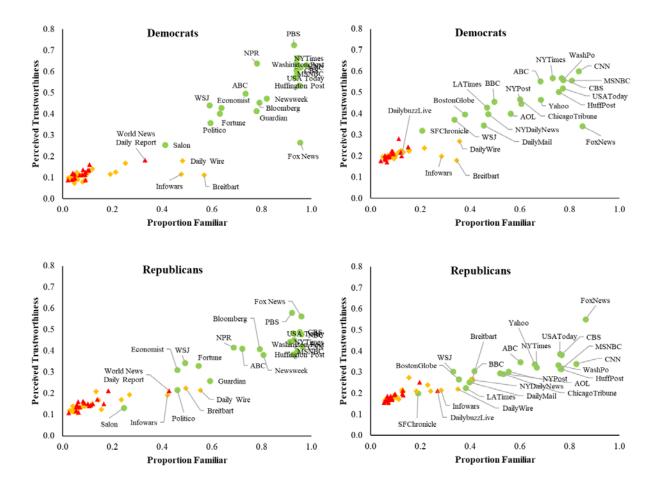


Figure S6. Average trust ratings (including unfamiliar participants) for each source plotted against proportion of participants familiar with each source, for Democratic (top row) and Republican (bottom row) participants from Study 1 (left column) and Study 2 (right column).

7. Regression model details for participant-level analyses associated with Figure 1

The statistical tests reported alongside Figure 1 in the main text were generated using the following regression model

$$y = b_1 + b_2 * Party + b_3 * FakeNews + b_4 * Party * FakeNews + b_5 * Hyperpartisan + b_6 * Party * Hyperpartisan + \epsilon$$

where Party takes on the value 0 if the participant is a Democrat and 1 if the participant is a Republican; FakeNews takes on the value 0 if the source is not a fake news site and 1 if the source is a fake news site; and Hyperpartisan takes on the value 0 if the source is not a hyperpartisan site and 1 if the source is a hyper-partisan site (thus mainstream sites are the reference group when coding source type). The resulting coefficients for each study are shown in Table S8. Finally, to test the significance of each of the differences reported the main text, we performed Wald tests evaluating the relevant net coefficients, which are listed in Table S9.

	(1)	(2)
	Study 1	Study 2
Fake News (b ₃)	-0.391***	-0.250***
	(0.00835)	(0.00928)
Hyper-partisan (b ₅)	-0.399***	-0.255***
	(0.00807)	(0.00929)
Party $(0=D, 1=R)$ (b_2)	-0.115***	-0.147***
	(0.0123)	(0.0144)
Party X Fake (b ₄)	0.146***	0.117***
	(0.0133)	(0.0123)
Party X Hyper-partisan (b ₆)	0.154***	0.137***
	(0.0132)	(0.0128)
Constant (b ₁)	0.510***	0.464***
	(0.00730)	(0.00930)
Observations (ratings)	60,075	57,911
Clusters (participants)	1,010	971
R-squared	0.304	0.113

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05

Table S8. Regression results predicting trust ratings based on source type and party. Robust standard errors clustered on participant. Unstandardized coefficients are shown, with standard errors in parentheses.

Comparison	Test
Dem vs Rep for mainstream sources	b2=0
Dem vs Rep for hyper-partisan sources	b2+b6=0
Dem vs Rep for fake news sources	b2+b4=0
Mainstream vs hyper-partisan for Dems	b5=0
Mainstream vs hyper-partisan for Reps	b5+b6=0
Mainstream vs fake news for Dems	b3=0
Mainstream vs fake news for Reps	b3+b4=0
Overall interaction beweteen party and source type	Joint significance test of b4 and b6
[Mainstream vs hyper-partisan] for Dems vs Reps	b6=0
[Mainstream vs fake] for Dems vs Reps	b4=0

Table S9. Shown is the relevant test to evaluate each of the comparisons make in the main text related to Figure 1.

8. Partisanship versus ideology

In Table S10 we show that the results reported above in Table S8 are extremely similar when using a continuous measure of ideological conservatism, rather than a binary Democrat versus Republican measure of partisanship. To construct the continuous ideology measure, we average participants' responses to 5-point Likert scales assessing social conservatism and economic conservatism. For ease of interpretation, we rescale the conservatism variable to the interval [0,1] (so that a maximally liberal participant scores 0 and a maximally conservative participant scores 1). We also show that the relationships with conservatism are similar when just analyzing Democratic participants or just analyzing Republican participants. This emphasizes the robustness of our findings.

	(1)	(2)	(3)	(4)	(5)	(6)
	S1-All	S1-Dems	S1-Reps	S2-All	S2-Dems	S2-Reps
Fake News	-0.467***	-0.458***	-0.382***	-0.307***	-0.311***	-0.208***
	(0.0128)	(0.0152)	(0.0365)	(0.0142)	(0.0180)	(0.0286)
Hyper-partisan	-0.476***	-0.460***	-0.408***	-0.320***	-0.312***	-0.231***
	(0.0124)	(0.0145)	(0.0369)	(0.0143)	(0.0180)	(0.0298)
Conservatism (0-1)	-0.197***	-0.0798*	-0.144**	-0.253***	-0.168***	-0.135*
	(0.0217)	(0.0378)	(0.0484)	(0.0266)	(0.0449)	(0.0552)
Conservatism X Fake	0.297***	0.225***	0.205***	0.214***	0.170***	0.107**
	(0.0242)	(0.0414)	(0.0520)	(0.0218)	(0.0406)	(0.0368)
Conservatism X	0.307***	0.202***	0.244***	0.246***	0.157***	0.160***
Hyper-partisan	(0.0241)	(0.0402)	(0.0533)	(0.0223)	(0.0410)	(0.0382)
Constant	0.554***	0.534***	0.491***	0.527***	0.523***	0.412***
	(0.0110)	(0.0131)	(0.0343)	(0.0150)	(0.0179)	(0.0403)
Observations (ratings)	59,537	37,802	21,735	57,733	31,228	26,505
Clusters (participants)	1,001	635	366	968	524	444
R-squared	0.307	0.370	0.179	0.113	0.153	0.047

Robust standard errors in parentheses

Table S10. Regression results predicting trust ratings based on source type and ideology. Robust standard errors clustered on participant. Unstandardized coefficients are shown, with standard errors in parentheses.

^{***} p<0.001, ** p<0.01, * p<0.05

9. Partisan differences in trust are robust to accounting for political slant of sources

Here we present a set of post hoc analyses which take the political slant of the sources into account. Our goal was to assess the extent to which the partisan differences we observed (where Republicans trust mainstream sources less than Democrats) were explained by alignment with the political slant of the sources. This analysis was motivated by the observation that in our set of 60 sources, the mainstream sources appeared to be largely left-leaning, whereas the hyperpartisan and fake news sites tended to be right-leaning.

To determine the political slant of sources, we utilized the website Media Bias/Fact Check (https://mediabiasfactcheck.com/), which provides assessments of the liberal versus conservative bias of a great deal of news sites using a 7-point scale [1=Extreme Left, 2=Left, 3=Left-center, 4=Least Biased, 5=Right-center, 6=Right, 7=Extreme Right]. The website had partisan bias ratings for 44 of our 60 sites: all 20 mainstream sites, 16 hyper-partisan sites, and 8 fake new sites (see Table S11).

We first assessed the robustness of the interaction between partisanship and fact-checker ratings (i.e. the weaker associate between participant ratings and fact-checker ratings among Republicans) in several ways. We began by creating a "political concordance" variable by reversing the coding of the slant variable for Democratic participants (i.e. 1=Maximal misalignment between source slant and participant partisanship, 7=Maximal alignment between source slant and participant partisanship), and showing that the Party X Fact-checker interaction remains significant and large when including this variable as a covariate (Table S12 model 2 versus model 3). Next, we allowed for non-parametric relationships between participant partisanship and source slant by including dummies for each level of source slant, and interacting each of these dummies with party (model 4). Finally, we repeated our main analyses restricting only to left-leaning sources (model 5), and only to right-leaning sources (model 6). In each case, the Party X Fact-checker interaction remains significant and large. These results indicate that the disagreement between Republicans and professional fact-checkers is not just a consequence of the over-representative of left-leaning sites among mainstream outlets and of right-leaning sites among hyper-partisan and fake news outlets in our list of sources.

We then showed similar results when looking at partisan differences by source type (i.e. the analysis presented in Table S8, accompanying Figure 1), rather than using fact-checker ratings – see Table S13. In particular, in all model specifications, Republicans trust mainstream news sources significantly less than Democrats (the coefficient on the Party dummy is significantly smaller than zero).

Together, these analyses support the conclusion that there are meaningful partisan differences in the ability to discern news source reliability, over and above any differences driven by political slant of the news sources in question.

Mainstream		Hyper-partisa	ın	Fake news		
	Left-				Extreme	
nytimes.com	center	dailykos.com	Left	clashdaily.com	right	
	Left-				Extreme	
washingtonpost.com	center	crooksandliars.com	Left	downtrend.com	right	
	Left-				Extreme	
usatoday.com	center	dailywire.com	Right	conservativedailypost.com	right	
	Right-					
wsj.com	center	redstate.com	Right	onepoliticalplaza.com		
			Conspiracy		Conspiracy	
	Left-		+ Psuedo-		+ Psuedo-	
latimes.com	center	blacklistednews.com	science	yournewswire.com	science	
	Left-				Extreme	
nydailynews.com	center	dailycaller.com	Right	bb4sp.com	right	
					Conspiracy	
	Right-	_			+ Psuedo-	
nypost.com	center	commondreams.org	Left	beforeitsnews.com	science	
					Conspiracy	
	Left-		D		+ Psuedo-	
bostonglobe.com	center	ijr.com	Right	whatdoesitmean.com	science	
C 1 . 1	Left-		D: 1.			
sfchronicle.com	center	newsmax.com	Right	socialeverythings.com		
1 '1 '1 1	D: 1.	.1 1'.' 1' '1	D: 1.		Extreme	
dailymail.co.uk	Right	thepoliticalinsider.com	Right	angrypatriotmovement.com	right	
msnbc.com	Left	activepost.com		channel24news.com		
					Extreme	
cnn.com	Left	rawstory.com	Left	freedomdaily.com	right	
	Left-				Extreme	
abcnews.go.com	center	westernjournal.com	Right	newsbreakshere.com	right	
			Extreme			
foxnews.com	Right	conservativetribune.com	right	realnewsrightnow.com	Satire	
	Left-					
cbsnews.com	center	dailysignal.com	Right	notallowedto.com	Satire	
	Left-					
bbc.co.uk	center	patriotpost.us	Right	now8news.com	Satire	
,	Left-		Right-	1265		
news.yahoo.com	center	antiwar.com	center	react365.com		
1 /	Left-	.1 1 1 1 1				
aol.com/news	center	thedailysheeple.com	Conspiracy	americannews.com		
1 66	T C	1 21	Extreme	1		
huffingtonpost.com	Left	breitbart.com	right	dailybuzzlive.com		
	D: 1.		Conspiracy			
1.	Right-		+ Psuedo-		Extreme	
chicagotribune.com	center	infowars.com	science	thenewyorkevening.com	right	

Table S11. Ratings from MediaBiasFactCheck.com for each of the websites in Study 2. Websites not rated are left blank. Websites rated as conspiracy, pseudo-science, or satire are not included in our partisanship analyses, as these ratings do not include partisan leanings.

	(1)	(2) Sources	(3) Sources	(4) Sources	(5) Left-	(6) Right-
		with slant	with slant	with slant	leaning	leaning
_	All sources	ratings	ratings	ratings	sources	sources
Party (0=Dem, 1=Rep)	-0.0120	-0.00138	-0.0326*	-0.0698***	-0.0256	-0.00629
	(0.0150)	(0.0151)	(0.0152)	(0.0157)	(0.0157)	(0.0151)
Fact-checker rating	0.405***	0.412***	0.379***	0.388***	0.419***	0.350***
	(0.0150)	(0.0152)	(0.0151)	(0.0146)	(0.0158)	(0.0162)
Party X Fact-checker	-0.217***	-0.234***	-0.169***	-0.150***	-0.226***	-0.0851***
	(0.0199)	(0.0204)	(0.0197)	(0.0199)	(0.0209)	(0.0226)
Source concordance			0.00810***			
			(0.000675)			
Left-Center				-0.0101*		
				(0.00493)		
Right-Center				-0.00754		
				(0.00528)		
Right				-0.0353***		
				(0.00417)		
Extreme Right				-0.0266***		
				(0.00383)		
Party X Left-Center				0.00474		
				(0.00714)		
Party X Right-Center				0.0231**		
				(0.00808)		
Party X Right				0.0915***		
				(0.00730)		
Party X Extreme Right				0.0708***		
				(0.00626)		
Constant	0.202***	0.198***	0.181***	0.223***	0.200***	0.201***
	(0.0105)	(0.0106)	(0.0108)	(0.0106)	(0.0109)	(0.0106)
	,			,		
Observations (ratings)	57,911	42,461	42,461	42,461	18,338	24,123
Clusters (participants)	971	971	971	971	971	971
R-squared	0.111	0.120	0.121	0.122	0.132	0.047

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05

Table S12. Regression results predicting trust ratings based on party and third-party fact-checker ratings. Robust standard errors clustered on participant. Unstandardized coefficients are shown, with standard errors in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
	(1)	(2) Sources	Sources	(4) Sources	(5) Left-	(6) Right-
	All	with slant	with slant	with slant	leaning	leaning
	sources	ratings	ratings	ratings	sources	sources
Fake News	-0.250***	-0.255***	-0.206***	-0.216***		-0.186***
	(0.00928)	(0.00952)	(0.00915)	(0.00988)		(0.00822)
Hyper-partisan	-0.255***	-0.253***	-0.230***	-0.236***	-0.281***	-0.182***
	(0.00929)	(0.00920)	(0.00891)	(0.00861)	(0.0103)	(0.00795)
Party (0=Dem, 1=Rep)	-0.147***	-0.147***	-0.132***	-0.125***	-0.177***	-0.0548***
	(0.0144)	(0.0144)	(0.0142)	(0.0154)	(0.0151)	(0.0142)
Party X Fake News	0.117***	0.124***	0.0257*	-0.0346*		0.0320**
	(0.0123)	(0.0127)	(0.0120)	(0.0153)		(0.0116)
Party X Hyper-partisan	0.137***	0.138***	0.0933***	0.0684***	0.139***	0.0559***
	(0.0128)	(0.0127)	(0.0117)	(0.0121)	(0.0140)	(0.0112)
Source concordance			0.0138***			
			(0.000903)			
Left-Center				0.0574***		
				(0.00552)		
Right-Center				0.0375***		
				(0.00513)		
Right				0.00286		
				(0.00625)		
Extreme Right				-0.00721		
C				(0.00743)		
Party X Left-Center				-0.0349***		
Tarry A Lett Center						
Party X Right-Center				(0.00843) -0.0395***		
rarty A Right-Center						
D. W.D. L.				(0.00762)		
Party X Right				0.0697***		
				(0.00868)		
Party X Extreme Right				0.137***		
				(0.0122)		
Constant	0.464***	0.464***	0.401***	0.432***	0.487***	0.395***
	(0.00930)	(0.00930)	(0.00975)	(0.0102)	(0.00969)	(0.00933)
Observations (ratings)	57,911	42,461	42,461	42,461	18,338	24,123
Clusters (participants)	971	971	971	971	971	971
R-squared	0.113	0.122	0.125	0.127	0.136	0.054

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05

Table S13. Regression results predicting trust ratings based on party and source type. Robust standard errors clustered on participant. Unstandardized coefficients are shown, with standard errors in parentheses.

10. Full materials – Study 1

Start of Block: WorkerID

WorkerID

To begin, please enter your Amazon Mechanical Turk Worker ID here:

(Please see below for where you can find your Worker ID.)

Your Worker ID starts with the letter A and has 12-14 letters or numbers. It is NOT your email address. If we do not have your correct Worker ID we will not be able to pay you.

IDInst Note that your Worker ID can be found on your dashboard page:

End of Block: WorkerID

Start of Block: Instruction

Inst

You will be presented with a series of media sources.

We are interested in two things:

- 1) Whether you are familiar with the media source.
- 2) Whether you trust the information that comes from the media source.

End of Block: Instruction

Start of Block: Familiarity



Familiarity Do you recognize the following websites?

	No (0)	Yes (1)
bloomberg.com (2)	0	0
fortune.com (3)	0	0
foxnews.com (4)	0	0
huffingtonpost.com (5)	0	0
theguardian.com (6)	0	0
npr.org (7)	0	0
msnbc.com (8)	0	0
cnn.com (9)	0	0
washingtonpost.com (10)	0	0
newsweek.com (11)	0	0
usatoday.com (12)	0	0
nytimes.com (13)	0	0
politico.com (14)	0	0
salon.com (15)	0	0
pbs.org (16)	0	0
wsj.com (17)	0	0
economist.com (18)	0	0
abc.go.com (19)	0	0
cbs.com (20)	0	0

nbc.com (21)	0	0
pamelageller.com (22)	0	0
trueactivist.com (23)	0	0
thefederalistpapers.org (24)	0	0
palmerreport.com (25)	0	0
redflagnews.com (26)	0	0
regated.com (27)	0	0
rightwingnews.com (28)	0	0
chicksontheright.com (29)	0	0
youngcons.com (30)	0	0
usuncut.com (31)	0	0
newcenturytimes.com (32)	0	0
dailycaller.com (33)	0	0
dailynewsbin.com (34)	0	0
dailywire.com (35)	0	0
heatst.com (36)	0	0
conservativetribune.com (37)	0	0
ahtribune.com (38)	0	0
dailykos.com (39)	0	0
breitbart.com (40)		

infowars.com (41)	0	0
react365.com (42)	0	0
civictribune.com (43)	0	0
empireherald.com (44)	0	0
now8news.com (45)	0	0
notallowedto.com (46)	0	0
theracketreport.com (47)	0	\circ
news4ktla.com (48)	0	0
newsexaminer.net (49)	0	0
usasupreme.com (50)	0	0
americannews.com (51)	0	0
freedomdaily.com (52)	0	0
thelastlineofdefense.org (53)	0	0
dailyheadlines.net (54)	0	\circ
commondreams.org (55)	0	\circ
bipartisanreport.com (56)	0	0
uspoliticsinfo.com (57)	0	0
thenewyorkevening.com (58)	0	0
worldnewsdailyreport.com (59)	0	0

conservativedailypost.com (60)	0	0
globalrealnews.com (61)	0	0
End of Block: Familiarity		
Ct t CD1 1 III t		

Start of Block: Trust

Trust How much do you trust each of these domains?

	Not at all (1)	Barely (2)	Somewhat (3)	A lot (4)	Entirely (5)
bloomberg.com (2)	0	0	0	0	0
fortune.com (3)	0	0	0	0	0
foxnews.com (4)	0	0	0	0	0
huffingtonpost.com (5)	0	0	0	\circ	\circ
theguardian.com (6)	0	0	0	\circ	\circ
npr.org (7)	0	0	0	\circ	0
msnbc.com (8)	0	0	0	\circ	0
cnn.com (9)	0	0	0	\circ	\circ
washingtonpost.com (10)	0	0	0	0	0
newsweek.com (11)	0	0	0	\circ	\circ
usatoday.com (12)	0	0	0	\circ	\circ
nytimes.com (13)	0	0	0	\circ	\circ
politico.com (14)	0	0	0	\circ	\circ
salon.com (15)	0	0	0	\circ	0
pbs.org (16)	0	0	0	\circ	0
wsj.com (17)	0	0	0	\circ	0
economist.com (18)	0	0	0	\circ	0
abc.go.com (19)	0	0	0	\circ	0
cbs.com (20)	0	0	0	0	0

nbc.com (21)	0	\circ	0	0	\circ
pamelageller.com (22)	0	0	\circ	0	0
trueactivist.com (23)	0	0	0	0	0
thefederalistpapers.org (24)	0	0	0	0	0
palmerreport.com (25)	0	0	0	0	0
redflagnews.com (26)	0	0	0	0	0
regated.com (27)	0	0	0	\circ	0
rightwingnews.com (28)	0	0	\circ	0	0
chicksontheright.com (29)	0	0	\circ	\circ	0
youngcons.com (30)	0	0	\circ	\circ	0
usuncut.com (31)	0	0	0	0	0
newcenturytimes.com (32)	0	0	\circ	0	0
dailycaller.com (33)	0	0	\circ	\circ	0
dailynewsbin.com (34)	0	0	\circ	\circ	0
dailywire.com (35)	0	0	\circ	\circ	0
heatst.com (36)	0	0	0	0	0
conservativetribune.com (37)	0	0	0	\circ	0
ahtribune.com (38)	0	0	0	0	0
dailykos.com (39)	0	0	\circ	\circ	0

breitbart.com (40)	0	\circ	0	0	0
infowars.com (41)	0	0	0	0	0
react365.com (42)	0	0	0	0	0
civictribune.com (43)	0	0	0	\circ	0
empireherald.com (44)	0	0	0	0	0
now8news.com (45)	0	0	0	0	0
notallowedto.com (46)	0	0	0	0	0
theracketreport.com (47)	0	0	0	0	0
news4ktla.com (48)	0	0	0	0	0
newsexaminer.net (49)	0	0	0	0	0
usasupreme.com (50)	0	0	0	0	0
americannews.com (51)	0	0	0	0	0
freedomdaily.com (52)	0	0	0	0	0
thelastlineofdefense.org (53)	0	0	0	\circ	0
dailyheadlines.net (54)	0	0	0	0	0
commondreams.org (55)	0	0	0	0	0
bipartisanreport.com (56)	0	0	0	0	0
uspoliticsinfo.com (57)	0	0	0	\circ	0
thenewyorkevening.com (58)	0		0	0	0

worldnewsdailyreport.com (59)	0	\circ	\circ	0	0
conservativedailypost.com (60)	0	0	0	0	0
globalrealnews.com (61)	0	\circ	0	0	0
End of Block: Trust					
Start of Block: CRT					
CRTInst In the next section, y accurately as possible.	you will be ask	xed 3 question	s. Please do yo	our best to ans	swer as
Page Break					
*					
CRT1_1 The ages of Mark an Adam. How many years old i		ip to 28 years	total. Mark is	20 years older	r than
Page Break					
*					
CRT1_2 If it takes 10 second will it take 50 printers to prin			10 pages of pa	nper, how mar	ny seconds
Page Break					

CRT1_3 On a loaf of bread, there is a patch of mold. Eve takes 40 days for the patch to cover the entire loaf of bread the ratch to cover helf of the loaf of bread?	• •
the patch to cover half of the loaf of bread?	
Page Break	
CRT_Chk Have you seen any of the last 3 word problems	s before?
O Yes (1)	
O Maybe (2)	
O No (3)	
End of Block: CRT	
Start of Block: Demographics *	
Age What is your age?	
Sex What is your sex?	
Male (1)	
Female (2)	

Education What is the highest level of school you have completed or the highest degree you have received?								
O Less than high school degree (1)								
O High school graduate (high school diploma or equivalent including GED) (2)								
O Some college but no degree (3)								
Associate degree in college (2-year) (4)								
O Bachelor's degree in college (4-year) (5)								
O Master's degree (6)								
O Doctoral degree (7)								
O Professional degree (JD, MD) (8)								
English Are you fluent in English								
O Yes (1)								
O No (2)								

god How strongly do you believe in the existence of a God or Gods?
O 1 - Very little (1)
O 2 (2)
O ₃ (3)
O 4 (4)
O 5 (5)
O 6 (6)
O 7 - Very much (7)
χ_{\rightarrow}
Party Which of the following best describes your political position?
Party Which of the following best describes your political position? Democrat (1)
O Democrat (1)
O Democrat (1) O Republican (2)
Democrat (1)Republican (2)Independent (3)

Social_Conserv On social issues I am:
O Strongly Liberal (1)
O Somewhat Liberal (2)
O Moderate (3)
O Somewhat Conservative (4)
O Strongly Conservative (5)
Economic_Conserv On economic issues I am:
O Strongly Liberal (1)
O Somewhat Liberal (2)
O Moderate (3)
O Somewhat Conservative (4)
O Strongly Conservative (5)

POTUS2016 Who did you vote for in the 2016 Presidential Election?

Reminder: This survey is anonymous.
O Hillary Clinton (1)
O Donald Trump (2)
Other candidate (such as Jill Stein or Gary Johnson) (3)
I did not vote for reasons outside of my control (4)
O I did not vote, but I could have (5)
○ I did not vote out of protest (6)
ClintonTrump If you absolutely had to choose between only Clinton and Trump, who would you
prefer to be the President of the United States? O Hillary Clinton (1) O Donald Trump (2)
O Hillary Clinton (1)
O Hillary Clinton (1) O Donald Trump (2) DemRep If you absolutely had to choose between only the Democratic and Republican party,
O Hillary Clinton (1) O Donald Trump (2) DemRep If you absolutely had to choose between only the Democratic and Republican party, which would do you prefer?

Congress2018 If an election for U.S. Congress were being held today, who would you vote for in the district where you live?
O The Democratic Party candidate (1)
O The Republican Party candidate (2)
Other (3)
O Not sure (4)
O I would not vote (5)
Skip To: End of Block If If an election for U.S. Congress were being held today, who would you vote for in the district wh $!=$ Not sure
Congress2018_2 If you were forced to choose one of the following options (in terms of who you would vote for in the U.S. Congressional election), which would you choose?
O The Democratic Party candidate (1)
O The Republican Party candidate (2)
Other (3)
O I would not vote (4)
End of Block: Demographics
Start of Block: Random
Random Did you respond randomly at any point during the study?
Note: Please be honest! You will get your HIT regardless of your response.
O Yes (1)
O No (2)

Google Did you search the internet (via Google or otherwise) for any of the media sources?	
Note: Please be honest! You will get your HIT regardless of your response.	
O Yes (1)	
O No (2)	
End of Block: Random	
Start of Block: Comments/ Length *	
Zipcode Please enter the ZIP code for your primary residence.	
Reminder: This survey is anonymous.	
Comments Do you have any comments about our survey?	
Length Roughly how long did this survey take you to complete?	
End of Block: Comments/ Length	

11. Full materials – Study 2

Start of Block: Instruction

Inst

You will be presented with a series of media sources.

We are interested in two things:

- 1) Whether you are familiar with the media source.
- 2) Whether you trust the information that comes from the media source. That is, in your opinion, does the source produce truthful news content that is relatively unbiased/balanced.

End of Block: Instruction

Start of Block: Familiarity



Familiarity Do you recognize the following websites?

	No (0)	Yes (1)
nytimes.com (2)	0	\circ
washingtonpost.com (3)	0	0
usatoday.com (4)	0	0
wsj.com (5)	0	0
latimes.com (6)	0	0
nydailynews.com (7)	0	0
nypost.com (8)	0	0
bostonglobe.com (9)	0	0
sfchronicle.com (10)	0	0
dailymail.co.uk (11)	0	0
msnbc.com (12)	0	0
cnn.com (13)	0	0
abcnews.go.com (14)	0	0
foxnews.com (15)	0	0
cbsnews.com (16)	0	0
bbc.co.uk (17)	0	0
news.yahoo.com (18)	0	0
aol.com/news (19)	0	0
huffingtonpost.com (20)	0	\circ

chicagotribune.com (21)	0	0
dailykos.com (22)	0	0
crooksandliars.com (23)	0	0
dailywire.com (24)	0	0
redstate.com (25)	0	0
blacklistednews.com (26)	0	0
dailycaller.com (27)	0	0
commondreams.org (28)	0	0
ijr.com (29)	0	0
newsmax.com (30)	0	0
thepoliticalinsider.com (31)	0	0
activepost.com (32)	0	0
rawstory.com (33)	0	0
westernjournal.com (34)	0	0
conservativetribune.com (35)	0	0
dailysignal.com (36)	0	0
patriotpost.us (37)	0	0
antiwar.com (38)	0	0
thedailysheeple.com (39)	0	0
breitbart.com (40)	\bigcirc	

infowars.com (41)	0	\circ
clashdaily.com (42)	0	0
downtrend.com (43)	0	0
conservativedailypost.com (44)	0	0
onepoliticalplaza.com (45)	0	0
yournewswire.com (46)	0	0
bb4sp.com (47)	0	0
beforeitsnews.com (48)	0	0
whatdoesitmean.com (49)	0	0
socialeverythings.com (50)	0	0
angrypatriotmovement.com (51)	0	0
channel24news.com (52)	0	0
freedomdaily.com (53)	0	0
newsbreakshere.com (54)	0	0
realnewsrightnow.com (55)	0	0
notallowedto.com (56)	0	0
now8news.com (57)	0	0
react365.com (58)	0	0
americannews.com (59)		

dailybuzzlive.com (60)	0	0
thenewyorkevening.com (61)	0	0
End of Block: Familiarity		
Start of Block: Trust		

Trust How much do you trust each of these domains?

	Not at all (1)	Barely (2)	Somewhat (3)	A lot (4)	Entirely (5)
nytimes.com (2)	0	0	0	0	0
washingtonpost.com (3)	0	0	0	0	0
usatoday.com (4)	0	0	0	0	0
wsj.com (5)	0	0	0	0	0
latimes.com (6)	0	0	0	\circ	\circ
nydailynews.com (7)	0	0	0	0	0
nypost.com (8)	0	0	0	0	0
bostonglobe.com (9)	0	0	0	\circ	0
sfchronicle.com (10)	0	0	0	0	\circ
dailymail.co.uk (11)	0	0	0	0	\circ
msnbc.com (12)	0	0	0	\circ	0
cnn.com (13)	0	0	0	0	0
abcnews.go.com (14)	0	0	0	0	0
foxnews.com (15)	0	0	0	0	0
cbsnews.com (16)	0	0	0	0	0
bbc.co.uk (17)	0	0	0	0	0
news.yahoo.com (18)	0	0	0	0	0
aol.com/news (19)	0	0	0	0	0
huffingtonpost.com (20)	0	0	0	0	0

chicagotribune.com (21)	0	\circ	0	0	\circ
dailykos.com (22)	0	0	0	0	0
crooksandliars.com (23)	0	0	0	0	0
dailywire.com (24)	0	0	0	0	0
redstate.com (25)	0	0	0	0	0
blacklistednews.com (26)	0	0	0	0	0
dailycaller.com (27)	0	0	0	0	0
commondreams.org (28)	0	0	0	\circ	0
ijr.com (29)	0	0	0	0	0
newsmax.com (30)	0	0	0	0	0
thepoliticalinsider.com (31)	0	0	0	0	0
activepost.com (32)	0	\circ	0	0	0
rawstory.com (33)	0	0	0	0	0
westernjournal.com (34)	0	0	0	0	0
conservativetribune.com (35)	0	0	0	0	0
dailysignal.com (36)	0	0	0	\circ	0
patriotpost.us (37)	0	0	0	0	0
antiwar.com (38)	0	0	0	0	0
thedailysheeple.com (39)	0	0	0	0	0

breitbart.com (40)	0	0	0	0	0
infowars.com (41)	0	0	0	0	0
clashdaily.com (42)	0	0	0	0	0
downtrend.com (43)	0	0	0	0	0
conservativedailypost.com (44)	0	0	0	0	0
onepoliticalplaza.com (45)	0	0	0	0	0
yournewswire.com (46)	0	0	0	0	0
bb4sp.com (47)	0	0	0	0	0
beforeitsnews.com (48)	0	0	0	0	0
whatdoesitmean.com (49)	0	0	0	\circ	0
socialeverythings.com (50)	0	0	0	0	0
angrypatriotmovement.com (51)	0	0	0	\circ	0
channel24news.com (52)	0	0	0	0	0
freedomdaily.com (53)	0	0	0	\circ	0
newsbreakshere.com (54)	0	0	0	\circ	0
realnewsrightnow.com (55)	0	0	0	0	0
notallowedto.com (56)	0	0	0	\circ	0
now8news.com (57)	0	0	0	0	0
react365.com (58)	0	0	0	0	0

americannews.com (59)	0	\circ	\circ	0	\circ
dailybuzzlive.com (60)	0	0	0	0	0
thenewyorkevening.com (61)	0	0	0	0	0
End of Block: Trust					
Start of Block: CRT					
Inst In the following section years accurately as possible.	ou will be ask	ed several que	estions. Please	do your best	to answer
Page Break					
CRT1_1 The ages of Mark and Adam. How many years old is		p to 28 years	total. Mark is	20 years olde	r than
Last Click (2)					
Page Submit (3) Click Count (4)					
Page Break					
*					
CRT1_2 If it takes 10 seconds will it take 50 printers to print			10 pages of pa	iper, how mai	ny seconds

CRT1_2_RT Timing
First Click (1)
Last Click (2)
Page Submit (3) Click Count (4)
Page Break
*
CRT1_3 On a loaf of bread, there is a patch of mold. Every day, the patch doubles in size. If it takes 40 days for the patch to cover the entire loaf of bread, how many days would it take for the patch to cover half of the loaf of bread?
CRT1_3_RT Timing
First Click (1) Last Click (2)
Page Submit (3)
Click Count (4)
Page Break
CRT3_1 If you're running a race and you pass the person in second place, what place are you in?
CRT3_1_RT Timing
First Click (1) Last Click (2)
Page Submit (3)
Click Count (4)
Page Break

CRT3_2 A farmer had 15 sheep and all but 8 died. How many are left?
CRT3_2_RT Timing
First Click (1) Last Click (2)
Page Submit (3)
Click Count (4)
Page Break
CRT3_3 Emily's father has three daughters. The first two are named April and May. What is the third daughter's name?
CRT3_3_RT Timing First Click (1) Last Click (2) Page Submit (3) Click Count (4)
Page Break
CRT3_4 How many cubic feet of dirt are there in a hole that is 3' deep x 3' wide x 3' long?
CRT3_4_RT Timing First Click (1) Last Click (2) Page Submit (3) Click Count (4)
End of Block: CRT

Start of Block: Demographics American Do you live in the United States? O Yes (5) O No (please specify where) (6) Social_Conserv On social issues I am: O Strongly Liberal (1) O Somewhat Liberal (2) O Moderate (3) O Somewhat Conservative (4) O Strongly Conservative (5) Economic_Conserv On economic issues I am: O Strongly Liberal (1) O Somewhat Liberal (2) O Moderate (3) O Somewhat Conservative (4) O Strongly Conservative (5)

χ→

Party Which of the following best describes your	political position?	
O Democrat (1)		
O Republican (2)		
O Independent (3)		
Other (specify) (6)		
DemRep_C Which of the following best describe	es your political pre	eference?
O Strongly Democratic (1)		
O Democratic (2)		
C Lean Democratic (3)		
C Lean Republican (4)		
O Republican (5)		
O Strongly Republican (6)		
SocialCircle_2 What percentage of your social c yourself?	ircle (friends and famil	y) do you think votes like
(For example: If you vote Democrat, what percentage also votes Republic		
	0	50 100
What percentage of your social circle (friends and family) do you think votes like yourself?		

POTUS2016 Who did you vote for in the 2016 Presidential Election?
Reminder: This survey is anonymous.
O Hillary Clinton (1)
O Donald Trump (2)
Other candidate (such as Jill Stein or Gary Johnson) (3)
O I did not vote for reasons outside of my control (4)
O I did not vote, but I could have (5)
O I did not vote out of protest (6)
ClintonTrump If you absolutely had to choose between only Clinton and Trump, who would you prefer to be the President of the United States?
O Hillary Clinton (1)
O Donald Trump (2)

Congress2018 If an election for U.S. Congress were being held today, who would you vote for the district where you live?	' 1n
O The Democratic Party candidate (1)	
O The Republican Party candidate (2)	
Other (3)	
O Not sure (4)	
O I would not vote (5)	
Skip To: IdentCentral_1 If If an election for U.S. Congress were being held today, who would you vote for in the district wh $!=$ Not sure	
Congress2018_v2 If you were forced to choose one of the following options (in terms of who you would vote for in the U.S. Congressional election), which would you choose?	
The Democratic Party candidate (1)	
O The Republican Party candidate (2)	
Other (3)	
O I would not vote (4)	
χ_{\rightarrow}	

IdentCentral_1 "My political attitudes and beliefs are an important reflection of who I am"
1 - Strongly agree (1)
2 - Moderately agree (2)
3 - Somewhat agree (3)
4 - Neither agree, nor disagree (4)
O 5 - Somewhat disagree (5)
○ 6 - Moderately disagree (6)
7 - Strongly disagree (7)
IdentCentral_2 "In general, my political attitudes and beliefs are an important part of my self-image" 1 - Strongly agree (1)
2 - Moderately agree (2) 3 - Somewhat agree (3) 4 - Neither agree, nor disagree (4) 5 - Somewhat disagree (5) 6 - Moderately disagree (6) 7 - Strongly disagree (7)



from doing thing	job. Others thinks that should no	k that such critic t be done. Which	ders, news organ cism is worth it be h position is close	ecause it keeps er to your opin	political leaders ion?	
O Criticism	from news orga	nizations keeps	political leaders	from doing the	ir job. (1)	
O Criticism not be done.	_	nizations keeps	political leaders	from doing thi	ngs that should	
χ; χ→						
Media2 In presenting the news dealing with political and social issues, do you think that news organizations deal fairly with all sides, or do they tend to favor one side? News organizations tend to deal fairly with all sides. (1) News organizations tend to favor one side. (2)						
$X \rightarrow X \rightarrow$						
Media To what extent do you trust the information that comes from the following?						
Media3 To what	extent do vou tr	ust the informat	tion that comes fr	om the followi	no?	
Media3 To what	extent do you tr None at all (1)	ust the informat A little (2)	A moderate amount (3)	om the followi A lot (4)	ng? A great deal (5)	
National news organizations (1)	None at all		A moderate		A great deal	
National news organizations	None at all		A moderate		A great deal	
National news organizations (1) Local news organizations	None at all		A moderate		A great deal	
National news organizations (1) Local news organizations (2) Friends and	None at all		A moderate		A great deal	

Page Break
god How strongly do you believe in the existence of a God or Gods?
O 1 - Very little (1)
O 2 (2)
O ₃ (3)
O 4 (4)
O 5 (5)
O 6 (6)
7 - Very much (7)
End of Block: Demographics
Start of Block: Check
Random Did you respond randomly at any point during the study?
Note: Please be honest! You will get your HIT regardless of your response.
O Yes (1)
O No (2)

Google

Did you search the internet (via Google or otherwise) for any of the media sources?

Note: Please be honest! You will get your HIT regardless of your response.	
O Yes (1)	
O No (2)	
End of Block: Check	
Start of Block: Comments/ Length	
Comments Do you have any comments about our survey?	
Length Roughly how long did this survey take you to complete?	
End of Block: Comments/ Length	

12. Full materials – Expert survey

Start of Block: Instruction

Inst

You will be presented with a series of media sources.

We are interested in two things:

- 1) Whether you are familiar with the media source.
- 2) Whether you trust the information that comes from the media source. That is, in your opinion, does the source produce truthful news content that is relatively unbiased/balanced.

End of Block: Instruction

Start of Block: Familiarity



Familiarity Do you recognize the following websites?

	No (0)	Yes (1)
nytimes.com (2)	0	0
washingtonpost.com (3)	0	\circ
usatoday.com (4)	0	0
wsj.com (5)	0	0
latimes.com (6)	0	0
nydailynews.com (7)	0	\circ
nypost.com (8)	0	0
bostonglobe.com (9)	0	0
sfchronicle.com (10)	0	\circ
dailymail.co.uk (11)	0	\circ
msnbc.com (12)	0	0
cnn.com (13)	0	0
abcnews.go.com (14)	0	0
foxnews.com (15)	0	0
cbsnews.com (16)	0	0
bbc.co.uk (17)	0	0
news.yahoo.com (18)	0	0
aol.com/news (19)	0	0
huffingtonpost.com (20)	0	\circ

chicagotribune.com (21)	0	\circ
dailykos.com (22)	0	0
crooksandliars.com (23)	0	0
dailywire.com (24)	0	0
redstate.com (25)	0	0
blacklistednews.com (26)	0	0
dailycaller.com (27)	0	0
commondreams.org (28)	0	0
ijr.com (29)	0	0
newsmax.com (30)	0	0
thepoliticalinsider.com (31)	0	0
activepost.com (32)	0	0
rawstory.com (33)	0	0
westernjournal.com (34)	0	0
conservativetribune.com (35)	0	0
dailysignal.com (36)	0	0
patriotpost.us (37)	0	0
antiwar.com (38)	0	0
thedailysheeple.com (39)	0	0
breitbart.com (40)		

infowars.com (41)	0	0
clashdaily.com (42)	0	0
downtrend.com (43)	0	0
conservativedailypost.com (44)	0	0
onepoliticalplaza.com (45)	0	0
yournewswire.com (46)	0	0
bb4sp.com (47)	0	0
beforeitsnews.com (48)	0	0
whatdoesitmean.com (49)	0	0
socialeverythings.com (50)	0	0
angrypatriotmovement.com (51)	0	0
channel24news.com (52)	0	0
freedomdaily.com (53)	0	0
newsbreakshere.com (54)	0	0
realnewsrightnow.com (55)	0	0
notallowedto.com (56)	0	0
now8news.com (57)	0	0
react365.com (58)	0	0
americannews.com (59)	0	0
dailybuzzlive.com (60)	0	

thenewyorkevening.com (61)	0	0
End of Block: Familiarity		
Start of Block: Trust		

Trust How much do you trust each of these domains?

	Not at all (1)	Barely (2)	Somewhat (3)	A lot (4)	Entirely (5)
nytimes.com (2)	0	0	0	0	\circ
washingtonpost.com (3)	0	0	0	0	\circ
usatoday.com (4)	0	0	0	0	\circ
wsj.com (5)	0	0	0	0	\circ
latimes.com (6)	0	0	0	0	\circ
nydailynews.com (7)	0	0	0	0	\circ
nypost.com (8)	0	0	0	0	\circ
bostonglobe.com (9)	0	0	0	0	\circ
sfchronicle.com (10)	0	0	0	0	\circ
dailymail.co.uk (11)	0	0	0	0	\circ
msnbc.com (12)	0	0	0	0	\circ
cnn.com (13)	0	0	0	0	\circ
abcnews.go.com (14)	0	0	0	0	\circ
foxnews.com (15)	0	0	0	0	\circ
cbsnews.com (16)	0	0	0	0	\circ
bbc.co.uk (17)	0	0	0	0	\circ
news.yahoo.com (18)	0	0	0	0	\circ
aol.com/news (19)	0	0	0	0	0
huffingtonpost.com (20)	0	0	0	0	\circ

chicagotribune.com (21)	0	0	0	0	0
dailykos.com (22)	0	\circ	0	0	0
crooksandliars.com (23)	0	0	0	0	0
dailywire.com (24)	0	0	0	0	0
redstate.com (25)	0	0	0	0	0
blacklistednews.com (26)	0	0	0	0	0
dailycaller.com (27)	0	0	0	0	0
commondreams.org (28)	0	0	0	0	0
ijr.com (29)	0	0	0	0	0
newsmax.com (30)	0	\circ	0	0	\circ
thepoliticalinsider.com (31)	\circ	0	0	0	0
activepost.com (32)	0	0	0	0	0
rawstory.com (33)	0	0	0	0	0
westernjournal.com (34)	0	\circ	0	0	0
conservativetribune.com (35)	0	0	0	0	0
dailysignal.com (36)	0	0	0	0	0
patriotpost.us (37)	0	0	0	0	0
antiwar.com (38)	0	0	0	0	0
thedailysheeple.com (39)	0	0	0	0	0
breitbart.com (40)	0		0	0	0

infowars.com (41)	0	0	0	0	0
clashdaily.com (42)	0	\circ	\circ	\circ	0
downtrend.com (43)		0	\circ	0	\circ
conservativedailypost.com (44)	0	0	0	0	0
onepoliticalplaza.com (45)	0	0	0	0	0
yournewswire.com (46)	\circ	\circ	\circ	\circ	0
bb4sp.com (47)	0	0	0	0	0
beforeitsnews.com (48)	0	0	0	0	0
whatdoesitmean.com (49)	0	0	0	0	0
socialeverythings.com (50)	\circ	\circ	\circ	0	0
angrypatriotmovement.com (51)	0	0	0	0	0
channel24news.com (52)	0	0	0	0	0
freedomdaily.com (53)	0	\circ	\circ	\circ	0
newsbreakshere.com (54)	0	0	0	0	0
realnewsrightnow.com (55)	\circ	0	0	0	0
notallowedto.com (56)	\circ	0	0	0	0
now8news.com (57)	\circ	0	0	0	0
react365.com (58)	0	0	0	0	0
americannews.com (59)	0	0	0	0	0
dailybuzzlive.com (60)	0		0		0

thenewyorkevening.com (61)	0	0	0	0	0
End of Block: Trust					
Start of Block: Demograph	ics				
Age What is your age?					
Sex What is your gender?					
O Man (1)					
O Woman (2)					
Other (3)					

received?
C Less than high school degree (1)
O High school graduate (high school diploma or equivalent including GED) (2)
O Some college but no degree (3)
Associate degree in college (2-year) (4)
O Bachelor's degree in college (4-year) (5)
Master's degree (6)
O Doctoral degree (7)
O Professional degree (JD, MD) (8)
American Are you based in the United States?
O Yes (5)
O No (please specify where) (6)
Job What is your present position?
Fact-checker (4)
O Journalist (5)
Other (please specify) (6)

Education What is the highest level of school you have completed or the highest degree you have

End of Block: Demographics

Start of Block: Comments/ Length	
Comments Do you have any comments about our survey?	
	-
Length Roughly how long did this survey take you to complete?	
	-
End of Block: Comments/ Length	

13. Supplementary References

- 1. Hasher L, Goldstein D, Toppino T (1977) Frequency and the conference of referential validity. *J Verbal Learning Verbal Behav* 16(1):107–112.
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- 3. Pennycook G, Cannon TD, Rand DG (2018) Prior Exposure Increases Perceived Accuracy of Fake News. *J Exp Psychol Gen.* http://dx.doi.org/10.1037/xge0000465.