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A test of vaccine endorsement by political in- versus out-group sources: Effect on vaccination likelihood and exploration of mediation through perceived bias and liking

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Abstract

This study investigated whether political endorsements from in- versus out-group political elites would influence likelihood of COVID-19 vaccination. In March 2021, we ran an experiment with Democrats and Republicans in the United States to examine whether they would be more likely to get vaccinated following endorsements by former Presidents Obama or Trump. Participants reported greater likelihood of getting vaccinated if the vaccine was endorsed by an elite from their own rather than the opposing party. This effect was driven by Trump, who increased vaccination likelihood among Republicans but decreased it among Democrats. We also investigated the mechanisms underlying this persuasion effect and found that perceived bias and liking were plausible mediators, whereas perceived trustworthiness and expertise were not. This study highlights the potential of having endorsements from both Democrat and Republican political elites to increase support for health behaviors in a politically charged climate.

KEYWORDS
COVID-19, perceived bias, persuasion, political party

1 | INTRODUCTION

As COVID-19 vaccines became available, their success depended on uptake—for which politicization of the pandemic posed a major challenge (Dolman et al., 2023). In mid-March 2021, when most people were yet to be vaccinated, we examined whether people would be more persuaded by pro-vaccine messages from elites in their own versus the opposing political party.

Prior work documented increased persuasion by political in- versus out-group sources (Cohen, 2003; Pink et al., 2021), and found mediation through perceived credibility (Traberg & van der Linden, 2022). Yet, which aspect(s) of credibility are impacted by political in- versus out-group sources remains unclear. Source credibility is comprised of trustworthiness, expertise, and lack of bias (Hovland et al., 1953; Wallace et al., 2020). Prior work has theorized, but not tested, that perceived bias drives in- versus out-group effects (Traberg & van der Linden, 2022). We therefore examined perceived bias, trustworthiness, and expertise as mediators. We also included liking, as prior work linked liking to persuasion (Chaiken, 1980) and liking is correlated with the other potential mediators (Wallace, 2019; Wallace, Simon, & Wegener, 2021).

Our main focus was a comparison between former Presidents Trump (Republican) and Obama (Democrat). Exploratorily, we also included conditions with Dr. Fauci, chief medical advisor to the White House at the time, and a control source. We focus the main text on Trump versus Obama, as pre-registered. Results with the control source and Dr. Fauci are in the Supplemental Online Material (SOM). The pre-registration, materials, data, and code for analyses are available here: https://osf.io/r5cdb/?view_only=b083fd0ef76e4b36a1db1360f9a70f70.

2 | METHOD

2.1 | Participants

This study was run on 15 March 2021 when only about 24% of U.S. residents had received a dose of COVID-19 vaccination (CDC COVID Data Tracker, 2021). Using Prolific's pre-screening, we recruited 300 Democrats and 300 Republicans who were United States citizens living in the United States who had reported to Prolific that they had not received a COVID-19 vaccine. This resulted in 601 participants. We conducted exclusions consistent with our pre-registered criteria (details in SOM), resulting in 500 participants (M_{age} = 34.22, SD_{age} = 12.41; 48.2% Male, 50.4% Female, 1.4% non-binary; 9.9% Hispanic or Latino; 82% White, 6.2% Black, 12.2% Asian, 1.8% Native American, 0.2% Pacific Islander, 2.2% Mixed Race, 0.6% other racial identification) for analysis.

2.2 | Design and procedure

After consenting, participants were randomly assigned to imagine receiving a pro-vaccine message from one of four sources: Barack Obama, Donald Trump, Dr. Anthony Fauci, or a no-source control. We used this hypothetical paradigm rather than providing real messages to equate message content.[1] Participants reported perceived source bias, trustworthiness, expertise, and likeability, as well as their likelihood of COVID-19 vaccination. Participants reported demographic information, including their political party identification and were debriefed and thanked.

2.3 | Measures

All source perceptions were measured with two items on nine-point scales anchored with "1—*not at all*" to "9—*very much*" adapted from Wallace, Wegener, et al. (2021), which were averaged to create an index for each perception.

The items below used the names of sources instead of [source]. In the control condition, [source] was replaced with "the person who provided the message".

2.3.1 | Perceived bias

An example perceived bias item is, "How much would you see [source] as biased in their opinion of whether Americans should get the COVID-19 vaccine?", $r = 0.89$.

2.3.2 | Perceived trustworthiness

An example perceived trustworthiness item is, "To what extent would you perceive that [source] tried to honestly share their viewpoint about COVID-19 vaccination?", $r = 0.92$.

2.3.3 | Perceived expertise

An example source expertise item is, "To what extent would it seem like [source] is an expert on the COVID-19 vaccine?", $r = 0.84$.

2.3.4 | Liking

An example source liking item was, "How much would you like [source]?", $r = 0.91$.

2.3.5 | Likelihood of vaccination

In the three named source conditions, participants responded to two items such as, "If [source] publicly advocated for Americans to receive the vaccine, how likely would you be to get a COVID-19 vaccine?" (1—*extremely unlikely*, 9—*extremely likely*). In the control condition, participants were simply asked two items capturing how likely they were to get the vaccine, $r = 0.98$.

2.3.6 | Political party identification

Participants reported their political affiliation with two items, such as, "How would you describe your political party affiliation?" (1—*Strong Democrat*, 2—*Democrat*, 3—*Independent, leaning Democrat*, 4—*Independent, leaning Republican*, 5—*Republican*, 6—*Strong Republican*), $r = 0.99$.

3 | RESULTS

3.1 | Analysis plan

Descriptive statistics are reported in the SOM. Below, we provide omnibus tests of hypotheses by conducting a series of General Linear Models (GLMs) in which the source factor, participants' centered party identification, and

their interaction predicted each outcome. The interaction is of primary interest, as people should have more favorable reactions toward a source from their own versus the opposing political party.

We next report our pre-registered planned contrast analyses in which each outcome was regressed on the Trump-versus-Obama contrast (Trump = −1, Obama = 1, Fauci and no source = 0), centered participant party identification, and their interaction. When predicting each source perception, we examined models with and without the other source perceptions as covariates to test the independence of effects.

We finally explored mediation to test which, if any, source perceptions, are plausibly responsible for the effect of Trump-versus-Obama on vaccination likelihood.

3.2 | Effects of source and party identification on vaccination likelihood

We ran a GLM in which the source factor, party identification, and their interaction predicted vaccination likelihood (Figure 1). Of most importance, there was a significant interaction, $F(3, 492) = 4.42$, $p = 0.004$, $\eta_p^2 = 0.026$. We broke this down focusing on the comparison between Trump and Obama. There was no main effect of Trump-versus-Obama, $b = -0.01$. 95% CI [−0.33, 0.31], $t(496) = -0.05$, $p = 0.96$, $r = 0.00$. Democrats were overall significantly more likely to get a vaccine, $b = -0.94$. 95% CI [−1.07, −0.80], $t(496) = -13.60$, $p < 0.001$, $r = -0.52$, consistent with stronger support for COVID-19 prevention behaviors among Democrats (Ruisch et al., 2021). Most importantly, there was a significant interaction, $b = -0.30$. 95% CI [−0.48, −0.11], $t(496) = -3.08$, $p = 0.002$, $r = -0.14$. Democrats (−1 *SD*) reported significantly less vaccination likelihood in reaction to Trump versus Obama, $b = 0.49$. 95% CI [0.04, 0.93], $t(496) = 2.16$, $p = 0.032$, $r = 0.10$. The opposite was true for Republicans (+1 *SD*), $b = -0.51$. 95% CI [−0.96, −0.06], $t(496) = -2.21$, $p = 0.028$, $r = -0.10$. Thus, vaccination likelihood was higher when endorsed by a political in- versus out-group member.

Note that reactions to Obama's endorsement were similar to control, while Trump's endorsement increased vaccination likelihood among Republicans and decreased it among Democrats compared to control. This likely reflects Democrats' high baseline vaccination favorability and the prevalence of public vaccination endorsements from Democrat, but not Republican elites; the Obama endorsement was likely psychologically similar to control. Additionally, a single endorsement from Trump did not close the ideological vaccination gap, indicating the need for other interventions.
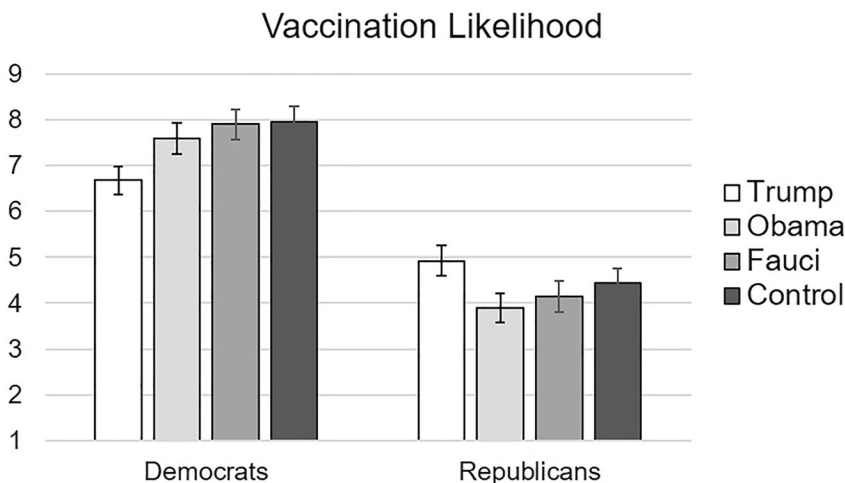

FIGURE 1 Effects of sources among Democrats (−1 SD) and Republicans (+1 SD) on vaccination likelihood.
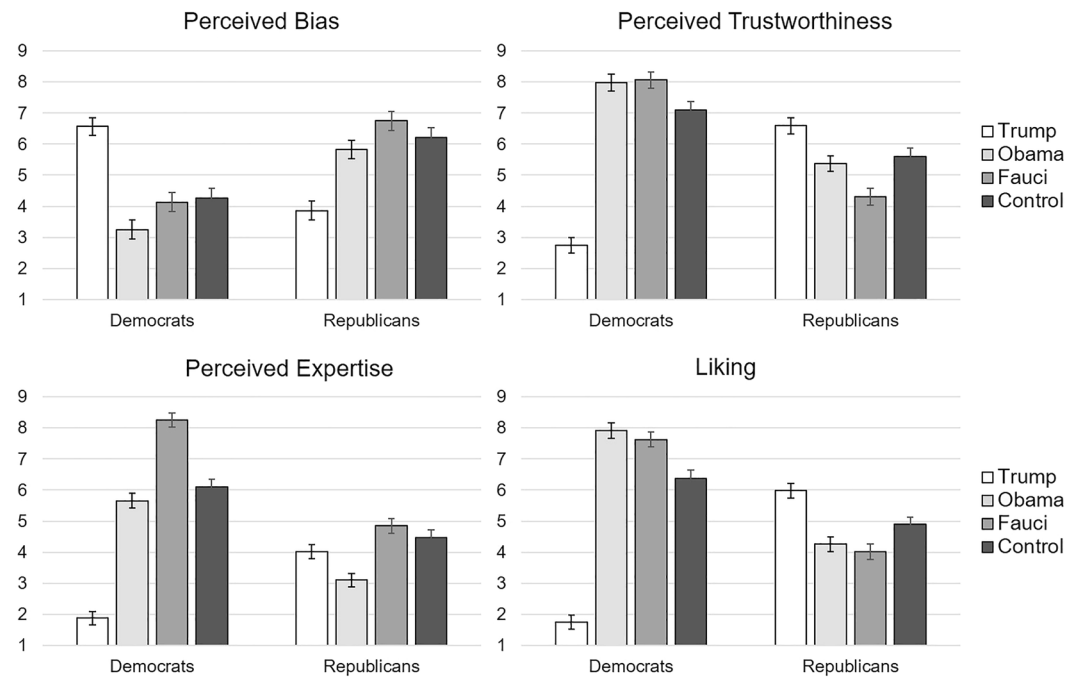
FIGURE 2 Effects of source condition among Democrats (−1 SD) and Republicans (+1 SD) on perceived bias, trustworthiness, expertise, and liking.

TABLE 1 Results of general linear models (GLMs) with the source factor, party identification, and their interaction predicting perceived bias, trustworthiness, expertise, and liking.

	Bias			Trustworthiness			Expert			Liking		
	$F(3, 492)$	p	ηp^2	$F(3, 492)$	p	ηp^2	$F(3, 492)$	p	ηp^2	$F(3, 492)$	p	ηp^2
Party identification	26.37	<0.001	0.05	28.40	<0.001	0.06	69.48	<0.001	0.12	43.01	<0.001	0.08
Source factor	3.34	0.019	0.02	23.44	<0.001	0.13	89.23	<0.001	0.35	36.34	<0.001	0.18
Source*Party	36.72	<0.001	0.18	82.59	<0.001	0.34	58.55	<0.001	0.26	121.62	<0.001	0.43

3.3 | Effects of source and party identification on perceived bias, trustworthiness, expertise, and liking

We conducted a series of separate GLMs in which the omnibus source factor, centered participant party identification, and their interaction predicted each source perception (Figure 2, Table 1). Consistent with hypotheses, there was a significant interaction between the source factor and participants' party identification on each perception.

In separate models we regressed each source perception on the Trump-versus-Obama contrast, participants' centered party identification, and their interaction, without statistically adjusting for the other source perceptions (Table 2, rows 1–3). Consistent with people having more favorable reactions to members of their own political party, there was a significant interaction on each source perception. Democrats perceived Obama as less biased, $b = -1.68$, 95% CI [−2.11, −1.25], $t(496) = -7.75$, $p < 0.001$, $r = -0.33$, more trustworthy, $b = 2.70$, 95% CI [2.30, 3.09], $t(496) = 13.42$, $p < 0.001$, $r = 0.52$, more expert, $b = 2.03$, 95% CI [1.64, 2.42], $t(496) = 10.16$, $p < 0.001$, $r = 0.42$, and more likeable, $b = 3.17$, 95% CI [2.81, 3.52], $t(496) = 17.18$, $p < 0.001$, $r = 0.61$, than Trump. Republicans perceived Trump as less biased, $b = 0.96$, 95% CI [0.53, 1.39], $t(496) = 4.36$, $p < 0.001$, $r = 0.19$, more trustworthy,

TABLE 2 Effects of the Trump-versus-Obama contrast, party identification, and their interaction on perceived bias, trustworthiness, expertise, and liking (first three rows), and same model controlling for the other source perceptions (last seven rows).

	Bias				Trustworthiness				Expertise				Liking			
	b	t	p	r	b	t	p	r	b	t	p	r	b	t	p	r
Party identification	0.32	4.87	<0.001	0.21	-0.29	-4.66	<0.001	-0.20	-0.39	-6.47	<0.001	-0.28	-0.33	-5.79	<0.001	-0.25
Trump-Obama contrast	-0.36	-2.35	0.019	-0.10	1.06	7.39	<0.001	0.31	0.78	5.50	<0.001	0.24	1.17	8.87	<0.001	0.37
Trump-Obama contrast × Party identification	**0.79**	**8.53**	**<0.001**	**0.36**	**-0.98**	**-11.46**	**<0.001**	**-0.46**	**-0.74**	**-8.77**	**<0.001**	**-0.37**	**-1.19**	**-15.25**	**<0.001**	**-0.56**
Party identification	0.20	3.20	0.002	0.14	0.05	1.31	0.189	0.06	-0.17	-3.74	<0.001	-0.17	-0.06	-1.51	0.131	-0.07
Trump-Obama contrast	0.19	1.28	0.203	0.06	0.16	1.63	0.103	0.07	-0.09	-0.86	0.392	-0.04	0.42	4.86	<0.001	0.21
Bias	-	-	-	-	-0.18	-6.42	<0.001	-0.28	0.09	2.58	0.010	0.12	-0.07	-2.51	0.012	-0.11
Trust	-0.43	-6.42	<0.001	-0.28	-	-	-	-	0.36	7.35	<0.001	0.31	0.46	12.69	<0.001	0.50
Expert	0.16	2.58	0.010	0.12	0.27	7.35	<0.001	0.31	-	-	-	-	0.29	8.66	<0.001	0.36
Like	-0.19	-2.51	0.013	-0.11	0.53	12.69	<0.001	0.50	0.45	8.66	<0.001	0.36	-	-	-	-
Trump-Obama contrast × Party identification	**0.25**	**2.53**	**0.012**	**0.11**	0.00	0.05	0.963	0.00	0.08	1.09	0.276	0.05	**-0.47**	**-8.37**	**<0.001**	**-0.35**

Note: Interaction bolded when significant.

b = −0.59, 95% CI [−0.99, −0.19], $t(496)$ = −2.89, p = 0.004, r = 0.13, more expert, b = −0.47, 95% CI [−0.87, −0.07], $t(496)$ = −2.32, p = 0.021, r = −0.10, and more likeable, b = −0.85, 95% CI [−1.22, −0.48], $t(496)$ = −4.52, p < 0.001, r = −0.20, than Obama.

Some of these results could reflect halo or spillover effects. Therefore, we conducted parallel analyses that controlled for all other perceptions (Table 2, last seven rows). The key interaction between party identification and Trump-verus-Obama only remained significant when predicting perceived bias and liking (bottom row in bold). This suggests that the effects observed on trustworthiness and expertise might be due to spillover from perceived bias and/or liking. Republicans continued to perceive Trump as less biased, b = 0.62, 95% CI [0.22, 1.02], $t(496)$ = 3.06, p = 0.002, r = 0.14, and more likeable, b = −0.37, 95% CI [−0.61, −0.14], $t(496)$ = −3.09, p = 0.002, r = −0.14, than Obama. Democrats no longer significantly perceived Obama as less biased, b = −0.24, 95% CI [−0.72, 0.25], $t(496)$ = −0.96, p = 0.34, r = −0.04, but they perceived him as more likeable, b = 1.22, 95% CI [0.95, 1.49], $t(496)$ = 8.90, p < 0.001, r = 0.37.

3.4 | Which source perceptions plausibly mediate the effect of partisan sources on vaccination likelihood?

We examined which source perceptions mediated the effect of the interaction between Trump-versus-Obama and participants' political affiliation and on vaccination likelihood (Figure 3). In this mediation test, all potential source perceptions were controlled for in both the a and b paths. Output from a moderated mediation model without controls in the a path is available in the SOM.

The a paths were reported in Table 2. The b paths in which vaccination likelihood was regressed on perceived bias, trustworthiness, expertise, and liking, along with the Trump-versus-Obama contrast, centered party identification, and the interaction between Trump-versus-Obama and party identification are reported in Table 3. Perceived bias, trustworthiness, and liking each independently predicted vaccination likelihood. When controlling for these perceptions, the interaction between Trump-versus-Obama and party identification significantly reversed, suggesting that the original direction of the interaction was driven by the impact of the interaction on the source perceptions. The index of moderated mediation was significant only for perceived bias, −0.03, 95% CI [−0.061, −0.003], and liking, −0.09, 95% CI [−0.18, −0.02], not for perceived trustworthiness, 0.00, 95% CI [−0.05, 0.05], or expertise, 0.00, 95% CI [−0.01, 0.02]. Liking mediated the source effect among both Democrats, 0.24, 95% CI [0.05, 0.45], and Republicans, −0.07, 95% CI [−0.17, −0.01], but perceived bias only mediated the source effect among Republicans, −0.07, 95% CI [−0.15, −0.01], not Democrats, 0.03, 95% CI [−0.03, 0.09]. This suggests that source liking is a plausible independent mediator of party elite endorsements and that perceived bias can be as well, at times.
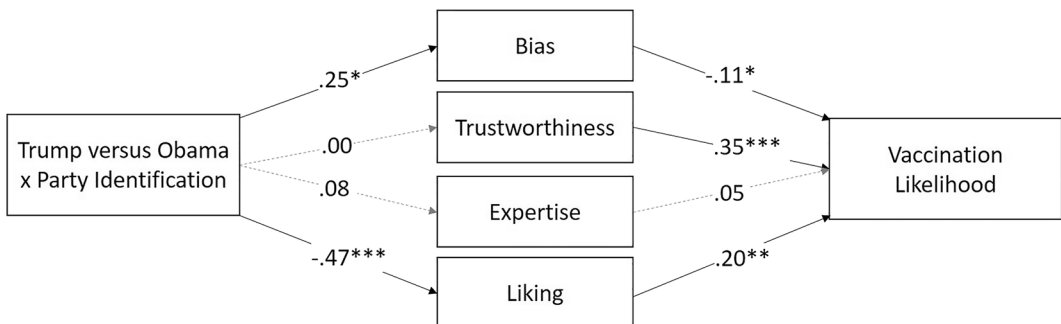

FIGURE 3 Tests of perceived bias, trustworthiness, expertise, and liking as mediators of the effect of Trump-versus-Obama as a function of participant political party identification on vaccination likelihood.

TABLE 3 The Trump-versus-Obama contrast, political party identification, and their interaction, along with perceived bias, trustworthiness, expertise, and liking predicting vaccination likelihood.

	b	t	p	r
Party identification	−0.72	−11.57	<0.001	−0.46
Trump-versus-Obama	−0.69	−4.69	<0.001	−0.21
Bias	−0.11	−2.43	0.015	−0.11
Trustworthiness	0.35	5.10	<0.001	0.22
Expertise	0.05	0.82	0.411	0.04
Liking	0.20	2.69	0.007	0.12
Trump-versus-Obama x Party identification	0.41	4.11	<0.001	0.18

4 | GENERAL DISCUSSION

Consistent with prior work (Cohen, 2003; Pink et al., 2021; Traberg & van der Linden, 2022), vaccination endorsements from elites of one's own versus the opposing political party were more persuasive. This effect was driven by reactions to Trump who, compared to control, increased vaccination likelihood among Republicans but decreased it among Democrats, likely reflecting the rarity of vaccination endorsements from Republicans (Pink et al., 2021).

For the first time, we documented mediation though liking (both parties) and perceived bias (Republicans). We expect the effect of politically congruent versus incongruent sources on persuasion to generalize beyond Trump and Obama as it replicates prior work using alternative exemplars. We are less sure about the generalizability of mediation through liking and perceived bias; future work is needed. Understanding the mechanisms is important, as different communication strategies might be needed to manage different perceptions (e.g. Wallace et al., 2023; Wallace, Wegener, et al., 2021).

CONFLICT OF INTEREST STATEMENT
The authors have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT
The pre-registration, materials, de-identified data, and code are available at this link: https://osf.io/r5cdb/?view_only=b083fd0ef76e4b36a1db1360f9a70f70.

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ENDNOTE
[1] Our results converge with Pink et al. (2021), who ran a similar study at the same time, using real messages from Presidents Trump and Biden.

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