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Narrative misinformation from a credible source can be discredited with counternarrative

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Abstract

Former government intelligence officer David Grusch became a hot new topic in the UFO world when he declared that the government was hiding an alien ship crash retrieval program. Can this media coverage be influential in increasing belief in UFOs? And can a credible critic of Grusch's claims successfully negate the impact of the media coverage on the acceptance of misinformation? A three-condition experiment (N = 287) showed that a counternarrative can successfully negate the influence of his claims on conspiratorial beliefs. We suggest that these results have practical implications for journalists in their coverage of controversial claims.

Keywords

Public perception of science and technology; Science and media

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1 ▪ Introduction

On July 26th, 2023, former intelligence officer on the United Aerial Phenomena Task Force, David Grusch, came before congress to testify to his personal knowledge about a decades-long crash retrieval program in which the United States government was secretly reverse-engineering technology found from other-worldly spaceships [National Cable Satellite Corporation, 2023a]. This congressional hearing followed an interview of Grusch by author Ross Coulthart that appeared on NewsNation [Gipson et al., 2023] and ignited a new wave of interest in extraterrestrial life that has continued in the following months with a series of reports and interviews with Grusch, with his strongest supporters claiming that he is the most credible whistleblower on UFOs to date. Grusch said in his interview and in the congressional hearing that he had trusted and complete access to highly classified programs from his position as an intelligence officer and that in this position he collected information on these programs for a full four years. This level of credibility, according to his supporters, is why he is so believable. David Grusch makes a variety of claims in his interviews, including that the U.S. has recovered both crashed alien ships and the ships' pilots. With this surge of media coverage and reporting in this area in the past year, the question quickly arises whether this media coverage is able to change public opinion on whether the conspiracy of a government coverup is really true.

Alien visitation to Earth with a government coverup is typically relegated by scientists and government officials to the area of science fiction, myth, or otherwise unsubstantiated belief [Routledge et al., 2017; Swami et al., 2009, 2011; Zimmer, 1985]. Belief in UFOs as aliens took a sharp increase in the summer of 1947 when a pilot reported seeing flying discs, and a rancher, near the town of Roswell, New Mexico, came across some wreckage on his ranch and reported it to authorities [Ziegler, 1999]. Accounts of the contents of the wreckage conflicted, with authorities seeming to change their story several times. The latest official report claimed that it was a high-altitude balloon and part of a then-classified experiment named Project Mogul. Rumors and news stories, however, spread that it was an alien ship that crashed, that alien bodies were recovered, and that the government simply stole all the evidence away and covered it up. This theory that the U.S. government or other governing entities are hiding these visitations is today a known and common conspiracy theory. Ziegler [1999] argues that the interest that the government showed in reported UFO sightings in the following years may have been an eventual catalyst for adherence to this conspiracy theory, especially given the secretive nature with which organizations like the CIA undertook their reporting and surveillance of data related to the event and subsequently reported UFO sightings. Conspiracies, definitionally, involve some sort of secret arrangement by a relatively small group of people that are acting in their self-interest to the detriment of others [Uscinski et al., 2016], and to many people, this event fits that description.

Our goal is not to make claims about the veracity of a conspiracy theory. Our focus in this study is on the claim that there has been a government coverup of alien visitation to Earth, a claim that is broadly considered untrue by the majority of the scientific community [Routledge et al., 2017; Swami et al., 2011]. Misinformation has been recently described as information that opposes the best currently available expert information [Vraga & Bode, 2020], and the dominant expert narrative today is that such a conspiratorial government coverup is not true. However, we make no comment on the possibility of extraterrestrial life in the Universe. Swami et al. [2009] demonstrated that the belief in government conspiracies and alien visitation, support for the scientific search for extraterrestrial life, and general

beliefs about the existence of extraterrestrial life were cognitively distinct ideas through a factor analysis. We did, however, seek to understand more about the role of news coverage in belief in conspiracy theories, specifically regarding the widely discounted theory that the government has covered up crashed alien ships.

1.1 ▪ *Media and conspiracy beliefs*

Media viewing is known to be associated with belief in conspiracy theories, UFOs, and paranormal activity. Sparks and colleagues [1998] showed participants videos regarding UFOs, finding that a video segment reporting on Roswell in a supportive way encouraged higher belief in UFOs, while a video of a scientific authority discrediting a supposed UFO sighting lowered belief in UFOs. Sparks and Pellechia [1997] found similar results using printed stories that participants read. Sparks and Miller [2001] observed a correlation between viewing paranormal television programming and belief in paranormal activities. More recently, Stise et al. [2024] found a correlation between belief in UFOs and viewing of Fox News and the Joe Rogan Experience. They also found belief in UFOs was positively correlated with YouTube use [see also Landrum et al., 2021], but no such relationship was found between belief in UFOs and general podcast listening or other social media platforms. However, Valenzuela et al. [2024] recently observed a within-subjects effect of social media use on conspiratorial thinking.

Several studies have observed qualifiers for these types of effects. King et al. [2007] noted that people who have a high level of faith in intuition were more influenced by a positive mood in believing ghost videos, while Ramsey et al. [2011] demonstrated that a more highly credible source is more influential in encouraging belief in the paranormal. Further studies have observed that trust in social media [Xiao et al., 2021] and general disposition to think in terms of conspiracies [Enders et al., 2023] can increase the influence of social media to believe in a particular conspiracy belief. Knowing that TV, social media, and news coverage can impact beliefs in UFOs, the paranormal, and conspiracy theories, in this study we expect to find that Grusch's story will be convincing to viewers. However, given the scant evidence of government cover-ups of alien invasions, this type of story would be, and has been [National Cable Satellite Corporation, 2023b] rejected by scientific and government authorities as misinformation. We used this coverage of Grusch to investigate whether narrative misinformation can be counterargued.

1.2 ▪ *Counterarguing the media*

A common strategy for countering information or stories that are factually incorrect is to find the factually correct information and present it, such as fact-checking. Fact-checking appears to be a generally robust strategy for combatting misinformation [Walter et al., 2020] and appears to have efficacy to endure over time as well [Porter & Wood, 2021]. However, recent meta-analyses have found no significant overall effects for the correction of science-related misinformation [Walter & Murphy, 2018; Chan & Albarracín, 2023], and additionally, different forms of fact-checking or correction have been differentially effective. Corrections that are partial or do not make a strong claim about the veracity of the original misinformation (such as a scale of truthfulness) tend to be weaker in their effect [Walter et al., 2020], while more detailed corrections have an overall tendency to be more effective [Chan & Albarracín, 2023]. Video corrections also tend to be more effective than text-based

corrections [Young et al., 2018], and corrections from highly credible sources, such as credible news media or government agencies [van der Meer & Jin, 2020; Vraga & Bode, 2017], tend to be more effective than social peers or single social media users.

On the flip side, counterarguing against misinformation can come with significant challenges. When misinformation comes from credible sources, it can be much harder to counterargue than when the misinformation doesn't have such credible backing [Zeng et al., 2024]. Research has also shown that when facts are mixed with opinions, fact-checking is significantly less effective [Walter & Salovich, 2021], and often misinformation comes with evidence of its own, which is more convincing to audiences [Hameleers, 2022]. Additionally, some instances of misinformation are formed as narratives [Shelby & Ernst, 2013], which may, as stories, be uncheckable or unprovable, factually speaking. Arguing against them may necessitate the use of counternarratives or the ability to demonstrate that the story cannot be true [see Vraga et al., 2019].

Grusch's testimony, which we use in this study, embodies several of the challenges presented in misinformation. First, Grusch's position as a high-ranking intelligence officer gave him access to highly secretive special access programs, by his own testimony and subsequent verification [National Cable Satellite Corporation, 2023a; Gipson et al., 2023]. This sets him up as a credible source, as he speaks against the official stories and reports from the government, which would make correction of misinformation more challenging [Zeng et al., 2024]. Additionally, many points of Grusch's story cannot be immediately confirmed or denied as in a fact check, as his story is largely based on conversations he's had and documents he claims to have read. Grusch, in fact, is claiming that the government's official reports and press releases are incorrect, denying the veracity of what might be used in a fact check. It is clear then, that simply stating corrective information is not a viable approach. To work toward counterarguing this narrative, we adopted a video, narrative format [see Young et al., 2018] to test whether Grusch's story would be convincing to an audience with a supportive commentator but unconvincing when a critic attempts to discredit it.

1.3 ▪ *Current research*

Sparks et al. [1998] used narrative video formats to test whether a one-sided message in support of a UFO story or a two-sided message in which a UFO sighting was being discredited had impacts on viewers' belief in the stories. In line with their hypotheses, the two-sided message with a critic resulted in lower belief that the sighting was of a visitor from beyond Earth. Their study used real television programming for their news content, giving ecological validity to the claim that news coverage in narrative format can encourage or discourage belief in extraterrestrial visitation to Earth. One limitation of Sparks et al. [1998] was that their two programs were totally different from one another. It is therefore difficult to state unequivocally that the differential influence was a result of the one- vs. two-sidedness, rather than a difference in the convincing nature of the story or general approach of the news cast.

We aimed to follow up on Sparks et al. [1998] by using a narrative video format using televised footage of David Grusch and some of the coverage surrounding him. We used the same news story for both a supportive and skeptical condition by editing in different commentators after the end of the news segment. This approach controlled for variation in the nature of the actual conspiracy claims and allowed us to examine differences unique to

the commentary on the story. Although Grusch's case is only a single example of how these stories may emerge and should be treated as such, it is nonetheless a real-world application of these strategies, as the news sources we are using are live coverage, clipped from real news casts.

We expect to observe that the video, narrative format of the story will be successful in counterarguing against the narrative, overcoming the challenges of Grusch's own credibility [Zeng et al., 2024], the inability to fact-check his story [Walter & Salovich, 2021], and the fact that his claims speak to a compelling narrative. We predict the following:

H1: Participants viewing a supportive commentator will show increased belief in UFOs in comparison to participants in the control and critic conditions.

H2: Participants viewing a critical commentator will not show any increased belief in UFOs after watching the video in comparison with the control condition.

2 ▪ Method

To test our hypotheses, we requested a sample of 300 people from Prolific, an online research platform that has been recently shown to provide higher quality data than comparable platforms or student and convenience samples [Douglas et al., 2023; Peer et al., 2017, 2022]. In the request, we asked Prolific to stratify participants across age, sex, and ethnicity, which provides a proportionate number of participants from each stratified group based on the U.S. Census but does not specify any particular location within the U.S. Each participant was registered as being based in the U.S. and was eligible to receive $3.00 as compensation on completion of the survey. The study is a between-subjects and within-subjects mixed design, in that we have experimental conditions and a pre-test/post-test component. The design was therefore a 3×2 with 3 between-subject levels (experimental condition) and 2 within-subjects levels (pre-test vs. post-test).

2.1 ▪ *Participants*

After removing four incomplete surveys and nine people who were able to correctly guess the study's purpose, 287 participant responses were retained for analysis. Our sample was around 45 years old on average ($M = 45.6$, $SD = 16.1$), with 133 indicating that they are male, 147 reporting female, five identifying as non-binary/third gender, and two opting not to disclose. In terms of education, 15.7% of the sample had a high school diploma or less, while 63.8% reported going to college, and 20.6% reported at least some graduate training. A little less than half (40.4%) of participants reported an annual income of less than $50,000 in 2023, while 39.7% reported an annual income between $50,001 and $130,000. An additional 15% reported an annual income of more than $130,000, and the remaining 4.9% opted not to report income. The sample was weighted toward Democrats (48.1%), with 17.4% reporting as Republican, 25.8% reporting as independent, and 8.7% saying that they have another or no political affiliation.

2.2 ▪ *Procedure*

After being presented with a consent form and agreeing to participate in the study, participants were given a brief introduction to the nature of the survey, then presented with

pre-test questions about belief in UFOs. Then participants were automatically and randomly divided into one of three conditions containing either the supportive video, the critic video, or the control video. After watching the assigned video, respondents answered the post-test questions, which were identical to the pre-test questions. Then, they responded to questions about advertisements placed in the videos and their attitudes about science. Next, they were asked if they have any sort of experience with the paranormal. Before we collected demographic information, we asked what they thought the purpose of the study was. This was to remove responses from participants who may have been answering questions based on what they thought the survey was asking of them as a demand characteristic. Finally, we collected demographic information, and then participants were eligible for compensation.

2.3 ▪ *Materials*

For the experimental materials, we used YouTube videos to create three separate stimulus videos as two experimental conditions and a control condition. For the first two conditions, we took footage from Grusch's NewsNation interview with Ross Coulthart [Gipson et al., 2023] and from the congressional hearing [National Cable Satellite Corporation, 2023a] and edited and spliced them together to create a presentation of Grusch's claims. The interview footage shows Grusch claiming that the U.S. government has recovered alien spacecraft and the pilots of these crafts, also describing the process he undertook to collect information and government documents to substantiate his claims. The video also describes how the U.S. inspector general has determined Grusch's claims to be credible. The congressional hearing shows Grusch giving his testimony before congress, highlighting his credentials, access to classified documents, and inside information about secret government programs. We then inserted either a supportive or critical respondent to Grusch's claims at the end of each of these videos to create supportive and critical conditions. For the supportive condition, we used parts of an NBC broadcast in which Jeremy Corbell, a filmmaker who is supportive of Grusch's claims, is interviewed to explain why he trusts Grusch's testimony and to express excitement for what will happen next [NBC News, 2023]. For the critical condition, we took parts from an additional NewsNation broadcast [NewsNation, 2023], in which the host invited a conspiracy theory debunker, Mick West, to explain why he does not believe Grusch's claims, pointing out inconsistencies and weaknesses in Grusch's testimony. For each of these conditions, the videos are identical in the first two segments of the video, containing Grusch's interview with Ross Coulthart first, and Grusch's testimony before congress second. The two videos only differ in the commentary that is given after these two segments. For the control condition, we used a video uploaded to YouTube by the Cornell Lab of Ornithology on Tanah Papua and exotic bird species [Cornell Lab of Ornithology, 2018].

Within each of these three videos, we embedded two 15-second advertisements from the National Association of REALTORS to distract from the main purpose of the study and make it appear as though we were interested in reactions and interest in the advertisements [National Association of REALTORS, 2023a, 2023b]. This strategy was successfully able to distract participants from the survey, as many participants answered the question about the study's purpose with reference to the advertisements. These advertisements were placed between sections of the videos, transitioning from the NewsNation interview to the congressional hearing, and from there to either the supporter or critic video segments. For the control video, there were not such clear sections as in the two experimental conditions, and so advertisements were placed between scene transitions to mimic the same effect.

With this setup, advertisements were placed identically in the two experimental conditions and in a similar location timewise in the control condition. Each of the three videos was between 8:54 and 9:04 minutes long. For the experimental conditions, the NewsNation interview ran from the beginning to the 3:18 minute mark, the congressional hearing was from 3:33 to 5:13, and the final segment, either the supporter or critic content, began at approximately 5:28 to the end of the video, with the 15-second ads placed between each segment. The full versions of each of the videos from which our videos were edited can be found through the cited web pages [National Cable Satellite Corporation, 2023a; NBC News, 2023; Gipson et al., 2023; NewsNation, 2023].

2.4 ▪ *Measures*

Belief in UFOs. For the pre- and post-test measures, we used all eight items from the UFO belief index from Sparks et al. [1998], measured on a 7-point Likert scale from strongly disagree (1) to strongly agree (7). In addition, we created four new items, measured on the same scale, that relate directly to the perception that the U.S. government is involved in hiding information related to UFOs. These items were:

- The U.S. government is probably withholding physical evidence that would clearly establish that UFOs from places other than earth actually do exist.
- The U.S. government has obtained crashed spacecrafts that didn't come from our planet.
- The U.S. government has recovered alien bodies from crashed spacecrafts that didn't come from our planet.
- In future years, the American public will probably learn that many Unidentified Flying Objects are actually spacecrafts from places other than our planet.

These twelve items produced high reliability scores ($\alpha_{\text{pre-test}} = .97$, $\alpha_{\text{post-test}} = .98$) and were combined into a single index by taking an unweighted mean of all items. Because we added four new items, we also ran an exploratory principal factors analysis on both the pre-test and post-test sets, finding in both cases that a single dimension emerged with an eigenvalue greater than one, and we therefore treat the twelve items as a single index (see Table 1 for results).

Science attitudes. To measure perceptions toward science generally, we used the full Negative Perceptions of Science Scale from Morgan et al. [2018], which uses eleven different items that are contrary to the dominant scientific narrative and measures average agreement with these positions on the same seven-point Likert scale as above ($\alpha = .86$).

Paranormal experiences. A single item asked "Have you ever experienced anything that fell outside the realm of normal experience. For example, some people say they've encountered ghosts or flying saucers, while others may claim that they've caught a glimpse of the future before it occurred. These events might be called paranormal. Has anything like this ever happened to you?" This item had responses of "Yes", "No", and "Not sure".

Study purpose. One open-ended qualitative response question was asked to assess their perceptions of what the study was for: "What do you think was the purpose of this study?"

Table 1. Exploratory factor analysis on the belief in UFOs scale.

	Pre-Test Eigenvalue	Post-Test Eigenvalue
Factor 1	8.94	9.40
Factor 2	0.31	0.34
Factor 3	0.19	0.10
Factor 4	0.09	0.08
Factor 5	0.03	0.02
Factor 6	0.01	0.02
Factor 7	0.00	−0.01
Factor 8	−0.02	−0.03
Factor 9	−0.04	−0.03
Factor 10	−0.06	−0.05
Factor 11	−0.08	−0.05
Factor 12	−0.10	−0.09
Factor Loadings (Factor 1)		
	Pre-Test Loading	Post-Test Loading
The U.S. government is probably withholding physical evidence that would clearly establish that UFOs from places other than earth actually do exist.	0.91	0.94
The U.S. government has obtained crashed spacecrafts that didn't come from our planet.	0.94	0.95
The U.S. government has recovered alien bodies from crashed spacecrafts that didn't come from our planet.	0.91	0.94
In future years, the American public will probably learn that many Unidentified Flying Objects are actually spacecrafts from places other than our planet.	0.89	0.92
At least some of the Unidentified Flying Objects (UFOs) that have been reported over the years are probably spaceships from other planets.	0.91	0.93
I believe that spaceships from other planets have actually landed on Earth.	0.93	0.95
There is no convincing evidence to show that living creatures from outer space actually exist.	−0.61	−0.72
People who report that they have been captured by space aliens are either badly mistaken or they are deliberately not telling the truth.	−0.75	−0.77
I think that there is now sufficient evidence to show that aliens from outer space have indeed visited our planet.	0.91	0.92
The reports that claim that the government has actually collected the wreckage from the crash of a flying saucer from outer space are probably false.	−0.88	−0.85
I think there is little doubt at this point that space aliens have visited earth in some sort of flying saucer.	0.72	0.78
Despite the many personal testimonies, I do not believe there is any strong reason to think that our planet has ever been visited by alien life forms from outer space.	−0.91	−0.91

Notes: this table shows the results of an exploratory factor analysis for items measuring Belief in UFOs and their coverup. Because only Factor 1 emerged with an eigenvalue greater than 1, it was retained as a single factor. The left side of the table shows Pre-Test values, while the Post-Test values are on the right. Similarly, the factors examined are on the top half of the table, and the factor loadings from the retained factor are on the bottom. Negatively loading factors were reverse coded for the final index, which was an unweighted mean of all twelve items.

3 ▪ Results

An initial ANOVA with condition entered to predict pre-test scores showed no significant differences among the three experimental conditions in their pre-test scores ($F(2,284) = 1.05$, $p = .35$), indicating that random assignment to the three conditions was successful to create equal and comparable groups.

3.1 ▪ *Descriptive statistics*

Pre-test, participants reported an average belief in UFOs slightly below the mid-point of the scale (M = 3.73, SD = 1.59), indicating that, on average, they were slightly more inclined to disbelieve in alien UFOs than to believe in them. Post-test, the mean score was slightly higher (M = 3.80, SD = 1.69) as an overall sample average.

Additionally, participants were on average disinclined to endorse the various beliefs on the negative perceptions of science scale (M = 3.17, SD = 1.16), indicating that the sample rejected these beliefs more than they accepted them. Additionally, 101 participants (35.2%) claimed to have had some sort of paranormal experience in the past, while 154 (53.7%) said that have not and 32 (11.1%) were unsure. Participants in our sample who had reported experience with the paranormal (M = 4.50, SD = 1.47) showed higher pre-test belief in UFOs than those who did not (M = 3.17, SD = 1.50) or weren't sure (M = 4.01, SD = 1.37).

3.2 ▪ *Testing the hypotheses*

Within each condition, only the supportive group substantially raised their beliefs in UFOs and the government conspiracy. In the critic conditions and control conditions, pre-test and post-test scores did not rise. In fact, the control condition showed a slight decrease in UFO belief, though we didn't expect or predict this ($t(97) = 2.06$, $p = .042$). However, participants in the supportive condition raised their reported beliefs according to the post-test index (M = 4.10, SD = 1.73) in comparison to the pre-test index (M = 3.83, SD = 1.66), going from slightly below the middle of the scale "neither agree nor disagree" to slightly above the middle of the scale, and a significant change ($t(93) = 3.81$, $p < .001$). These means are all presented in Figure 1.

To more robustly test the hypotheses that participants hearing the supportive commentator will believe more strongly in the existence of UFOs than participants in the critic or control conditions and that the critic condition would not increase belief in comparison to the control condition, we entered the data into a linear regression model predicting the post-test score on the belief scale and using the condition as a dummy-coded variable. We entered the pre-test score as a control variable, along with attitudes toward science, perceived experience with the paranormal, and additional demographic and general belief variables. The overall model explained 91% of the variance in post-test beliefs ($F(12,274) = 237.45$, $p < .001$). The inclusion of the pre-test beliefs is a significant reason the variance explained is so high for this model. With the inclusion of the pre-existing beliefs, the other variables in the model are measuring effects beyond the pre-formed beliefs, or predicting how beliefs may have changed between the first and second measurements. Therefore, it should not be suggested that the significant or insignificant predictors in the model are or are not related to initial belief formation. Rather the question at hand is whether the variables, and the

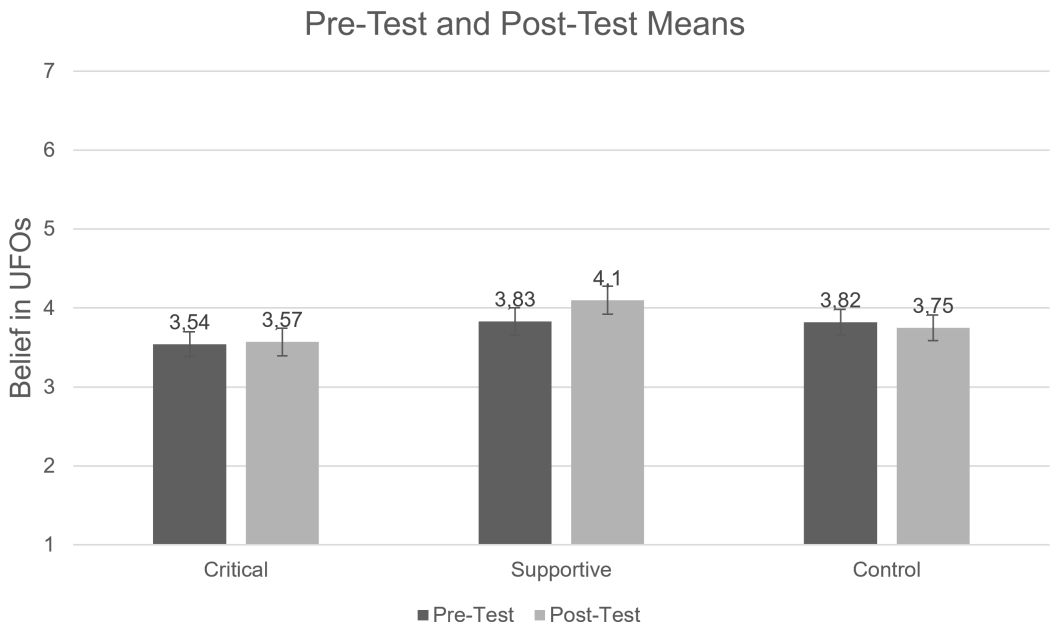

Figure 1. Pre-test and post-test means across conditions.
Notes: this figure shows the pre-test and post-test scores on the UFO belief scale within each of the three conditions in the experiment — the supportive condition, the critical condition, and the control condition.

variance explained, can predict the changes from pre-test to post-test. This model showed a significant effect for the supporter condition in comparison to the control (B = .33, $p < .01$), but there is no effect for the skeptic condition (B = .10, $p = .17$), indicating that belief in UFOs rose when participants watched the testimony with the supporter but did not rise significantly when they watched the testimony with the skeptic.

Additionally, general beliefs about science did not explain a significant amount of variance in the model (B = .01, $p = .744$), but perceiving previous experience with paranormal activities did explain some of the difference between pre-test and post-test scores (B = .16, $p = .03$). Other demographic variables did not explain a significant amount of variance, though notably education levels and political beliefs both came close to a traditional .05 cutoff value. Full results of the model are presented in Table 2.

In addition to our proposed hypotheses, we explored possible interaction effects between condition and science beliefs and prior experience, also presented in Table 2. Without prior hypothesizing on these points, these tests should be considered exploratory. Including the interaction terms, the model explained 92% of the variance in post-test scores ($F(18,268) = 160.39$, $p < .001$), representing a non-significant increase in R^2 compared to the original model ($F(6,268) = 1.46$, $p = .19$). Of the four possible interactions, with two conditions and two variables the conditions can interact with, only the interaction of science beliefs and the skeptic condition returned significant (B = .18, $p = .01$). Marginal effects, illustrated in Figure 2, indicate that at highly negative perceptions about science, the skeptic was unsuccessful in reducing the effect of the testimony, while the skeptic was effective with low levels of negativity about science.

Table 2. Linear regression model predicting post-test scores.

	Original model				Interaction model			
	B	SE	*t*	*p*	B	SE	*t*	*p*
Age	0.00	0.00	−0.97	0.33	0.00	0.00	−0.70	0.48
Gender	−0.03	0.05	−0.54	0.59	−0.02	0.05	−0.41	0.68
Education	−0.05	0.03	−1.85	0.07	−0.05	0.03	−1.96	0.05
Income	0.02	0.02	0.81	0.42	0.02	0.02	0.84	0.40
Politics	−0.05	0.03	−1.81	0.07	0.00	0.01	0.01	1.00
Religion	0.00	0.01	0.10	0.92	−0.04	0.03	−1.45	0.15
Science	0.01	0.03	0.33	0.74	−0.04	0.05	−0.76	0.45
Prior experience (Baseline = “No”)								
“Not sure”	0.02	0.10	0.19	0.85	0.01	0.18	0.07	0.95
“Yes”	0.16	0.07	2.22	0.03	0.13	0.12	1.05	0.29
Pre-Test	0.99	0.02	43.80	< .01	1.00	0.02	43.89	< .01
Skeptic Condition	0.10	0.07	1.37	0.17	−0.37	0.22	−1.70	0.09
Supporter Condition	0.33	0.07	4.47	< .01	0.29	0.22	1.29	0.20
Skeptic * Science					0.18	0.07	2.46	0.01
Supporter * Science					0.00	0.06	−0.08	0.94
Skeptic * Prior Experience								
“No” vs. “Yes”					−0.23	0.27	−0.87	0.38
“No” vs. “Not sure”					−0.12	0.17	−0.67	0.50
Supporter * Prior Experience								
“No” vs. “Yes”					0.12	0.24	0.51	0.61
“No” vs. “Not sure”					0.12	0.16	0.74	0.46
Model Fit	$F(12,274) = 237.45$, $p < .001$, $R^2 = .91$				$F(18,268) = 160.39$, $p < .001$, $R^2 = .92$			

Notes: this table shows the results of two ordinary least squares regression models predicting belief in UFOs and U.S. government coverup of alien visitations. The first model is that which was originally specified. The second model includes post-hoc interaction terms that were not originally hypothesized.

4 ▪ Discussion

From the recent news coverage of UFOs and the headline story from David Grusch, many people across the U.S., and possibly beyond, have had recent exposure to news coverage claiming a decades-long government coverup of crashed alien vehicles. This type of claim has made headlines before but has been treated as false information. We undertook this project to understand the effects of this sort of coverage and to push misinformation theory by testing whether a counternarrative video can successfully negate the effects of such stories. Our analysis showed that the stories being produced about Grusch, his claims, and the U.S. government do have potential to increase belief in the conspiracy that the government is covering up extraterrestrial visitation to Earth. However, we also demonstrated in the experiment that a narrative discussing the problems with such a story has the potential to negate such an effect, though exploratory analyses suggested that this effect was conditional on a person’s general beliefs about science.

This work builds on past literature on UFO and conspiracy beliefs in several specific ways. First, we used highly comparable video clips for each of the experimental conditions. Sparks et al. [1998] used different news segments for each of their one-sided and two-sided

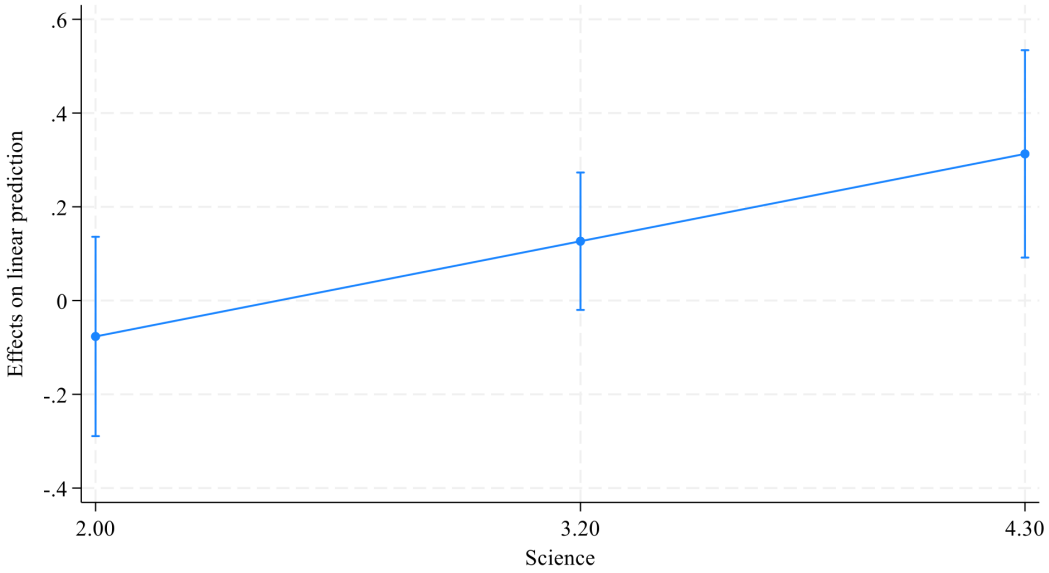

Figure 2. Marginal effects of skeptic condition on post-test beliefs.
Notes: this graph shows the marginal effects of the Skeptic Condition when beliefs counter to the current scientific narrative were a standard deviation below the mean, at the mean, and a standard deviation above the mean.

conditions, making comparison between the two conditions open to other influences other than the counternarrative provided. We used identical news segments in the initial part of the stimulus, varying only the commentator and response after the segment, giving a clear picture of the influence of the commentary itself. Sparks and Pellechia [1997] did have relatively comparable news segments when testing similar hypotheses, but we build on these by presenting the news stories in a video format. Second, Stise et al. [2024] were able to show that news media consumption is related to belief in the paranormal and UFOs, and our paper adds to this more recent look at media effects on UFO beliefs by examining these effects experimentally.

The results of this experiment have potential implications for the use of counternarrative against misinformation. Misinformation has been of major interest in political and science communication spheres in recent years [Jerit & Zhao, 2020; West & Bergstrom, 2021], and our results demonstrate that it is possible for a commentator to effectively undermine misinformation, even when the misinformation presented cannot be fact-checked or objectively discredited. The interaction of science beliefs and the skeptic condition also offers an interesting interpretation of the results, though again we note that this was an exploratory analysis. This analysis seems to suggest that even though beliefs about science didn't directly predict the effect of the video on post-test UFO beliefs, they nonetheless moderated the impact of the skeptic, in that people with more skepticism toward science were more highly impacted by the video testimony, despite the critic. This could imply that attempts to contradict misinformation from a scientific perspective would be less impactful on people who already hold beliefs that are contradictory to the dominant scientific narrative.

Additionally, these results also suggest implications for practicing journalists and their coverage of controversial topics that may run counter to scientific consensus and present misinformation and content that seems to support a conspiracy theory. Knowing that media

coverage of a story like David Grusch's can increase a person's belief in controversial claims that have been challenged by other credible voices, journalists should carefully consider balancing their reports that feature controversial claims by including competing testimony that expresses skepticism about those claims. As we have shown, news consumers who are exposed to two sides on a controversial topic may be less likely to easily accept the claims of a person like David Grusch, whose testimony has been challenged by credible critics who have a well-informed, scientific perspective.

4.1 ▪ *Limitations and future directions*

Our sample was a look at the U.S. population from Prolific. Being a stratified sample based on the U.S. population, this sample offers a good look at the U.S. population and how they may respond to these news videos. We acknowledge, however that this is limited to an online U.S. population, which may be different from an offline sample. Another aspect about our research that is unclear is whether it was the news coverage itself or the supportive commentator that was particularly effective in raising belief in the conspiracy. We had no condition in which there was no commentary, for sake of keeping the conditions as matched as possible, but this disallows us from discriminating between the effect of Grusch's testimony alone from the effect of a supportive commentator who believes the story, and we recognize this limitation and the possible confound of having different speakers at the end of each video. Hameleers [2022] has demonstrated that supposed fact-checkers who are supportive of false information may be believed in similar ways as fact-checkers who present true information, which is a possible alternative explanation that could confound our findings. However, we also point out that our purpose is to provide evidence from real news coverage, and it is unlikely that we would find examples of a strong supporter and a critic who are the same person, for the purposes of experimental manipulation. Therefore, our study cannot specifically establish whether Grusch's claims were intrinsically convincing to people or if the commentator was a key factor, as we have no comparison from a commentator versus no commentator perspective.

Future research can continue to observe whether the overall media coverage of the extraterrestrial coverup by the U.S. government has a measurable impact on beliefs in UFOs. Additionally, future research can continue to study whether narrative videos can effectively counter stories of misinformation across other content areas. Additionally, although we established that this particular critic was able to discourage belief in the conspiracy, the paper cannot lay any claim to what about the message was effective. The critic made a number of claims about the failings or shortcomings of Grusch's story, and we have no way of knowing which critique was the most effective. Future research could look to examine what types of counterarguments, presented in such a way, are most capable of countering misinformation. Finally, there is still the open question from our study whether it was the supporter or the story content that caused the increase in acceptance of the U.S. government conspiracy story, and future research could attempt to make this discrimination clear. Further variations of the coverage and commentators can provide further evidence of the claims supported by this study.

Declaration of interest. The authors report there are no competing interests to declare.

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