Supplementary Materials

Differential Susceptibility to Misleading Flat Earth Arguments on YouTube

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I. Method

Sample

Data Collection Procedures

Participants were recruited using TurkPrime, a platform managed by Amazon's Mechanical Turk. Using TurkPrime, we were able to request 500 participants who were categorized as YouTube workers (for about 21 cents a participant) and who are "naïve" (25 cents per worker). That is, the top 2% of workers who complete 34% of all HITs were excluded from being able to participate in this study. Doing so helps reduce the likelihood that participants have seen common survey questions (e.g., the science knowledge questions in the Ordinary Science Intelligence scale).

$ 750.00	Worker Payment ($1.50 per worker)
$ 250.00	Guaranteed Bonus Payment ($0.50 per worker)
$ 200.00	20% Amazon Fee
$ 50.00	Pro Features Fee
$ 105.00	Panel Fee
$ 125.00	Naivete Fee
$1,480.00	Total Survey Cost

Sample Size

We requested 500 participants on TurkPrime. Sample size was chosen based off a balance between financial constraints and prior work. We had five conditions and aimed to have 100 participants per condition[1]. Data collection stopped as soon as 500 participants entered their completion code on the MTurk platform. The final sample was 499 (see drop criteria section below).

Drop Criteria

We set up the survey to automatically drop participants who did not match our criteria (which was specified in the survey instructions displayed to potential participants).

- 529 participants began the survey

On the consent page of the survey, we asked participants whether they were under 18 or 18 or older and if they live in the U.S. If participants were under 18 or if they said they did not live in the U.S., then they were booted out of the survey on the following page.

- 17 participants were dropped for saying that they were under 18
- 2 participants were dropped for saying that they did not live in the U.S.

In addition, we included an attention check question in the survey. The item was embedded in the conspiracy section of the survey. It stated "If you are paying attention, choose "probably true". Participants who did not choose "probably true" were booted out of the survey after the conspiracy question block.

[1] One of these conditions was the "sensory" condition and was exploratory. We had two different videos for this condition and each had only 50 participants. This condition is left out of the primary analyses for this study.

- 6 participants missed the attention check question

Finally, given that the survey was expected to take around 20 minutes, consistent with previous surveys, we dropped participants who took *less than 5 minutes* to finish the entire survey. Of the remaining participants, the average length to complete the survey was 14.37 minutes (SD = 9.04, median = 12.2 minutes).

- 5 participants took less than 5 minutes to complete the survey

Final Sample: 499 participants

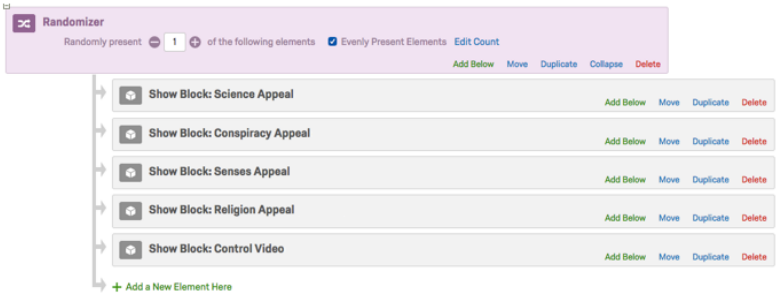
Final participant count in each condition

Control	Conspiracy	Religious	Science	Sensory 1	Sensory 2
102	104	101	95	50	47

Variables

Manipulated Variables

For this study we experimentally manipulated which video clip participants watched. Using a block randomizer in the Qualtrics survey flow, participants were randomly assigned into one of five conditions that varied based upon the type of argument the video clips presented: scientific, conspiratorial, religious, sensory, or the control condition.



Each of the experimental clips (which ranged from 20 to 30 seconds long) were cut from a widely shared YouTube video entitled "200 Proofs the Earth is Not a Spinning Ball" created by Eric Dubay. This video had been reposted by the account Planet Plane after Eric Dubay's account was taken down by YouTube.

For the exploratory "sensory" condition, we tested two potential video clips. Therefore, participants who were assigned to the sensory condition were randomly shown one of two sensory videos. The transcripts for each of the video clips follow.

Science Argument

"In a 19th century French experiment by M. M. Biot and Arago, a powerful lamp with good reflectors was placed on the summit of Desierto las Palmas in Spain and able to be seen all the way from Camprey on the Island of Iviza. Since the elevation of the two

points were identical and the distance between covered nearly 100 miles, if Earth were a ball 25,000 miles in circumference, the light should have been more than 6600 feet, a mile and a quarter, below the line of sight.'"

Conspiracy Argument

"Professional photo analysts have dissected several NASA images of the ball-Earth and found undeniable proof of computer editing. For example, images of the Earth allegedly taken from the moon have proven to be copied and pasted in as evidence by rectangular cuts found in the black background of the Earth by adjusting brightness and contrast levels. If they were truly on the moon and Earth were truly a ball, there would be no need to fake such pictures."

Religious Argument

"The Bible, Koran, Strimam Bablicam[sic], and many other holy books describe and purport the existence of a geocentric stationary flat Earth. For example, 1st Chronicles 16:30 and Psalm 96:10 both read he has fixed the Earth firm, immovable. And Psalm 93:1 says, "… the world also is stablished, that it cannot be moved." The Bible also repeatedly affirms that the Earth is outstretched as a plane with the outstretched heavens everywhere above, not all around, giving a scriptural proof the Earth is not a spinning ball."

Sensory Argument

Sensory Video 1

"The horizon always rises to the eye level of the observer as altitude is gained, so you never have to look down to see it. If Earth were in fact a globe, no matter how large, as you ascended, the horizon would stay fixed and the observer would have to tilt, looking down, further and further to see it."

Sensory Video 2

"The idea that people are standing, ships are sailing, and planes are flying upside down on certain parts of earth while others tilted at 90 degrees and all other impossible angles is complete absurdity. The idea that a man digging a hole straight down could eventually reach sky on the other side is ludicrous. Common sense tells every free-thinking person correctly that there truly is an up and down in nature unlike the everything is relative rhetoric of the Newtonian Einsteinian paradigm."

Measured Variables and Indices

Cognitive Response State: Argument Strength

Measured on a scale from 0 to 100 using slider bars

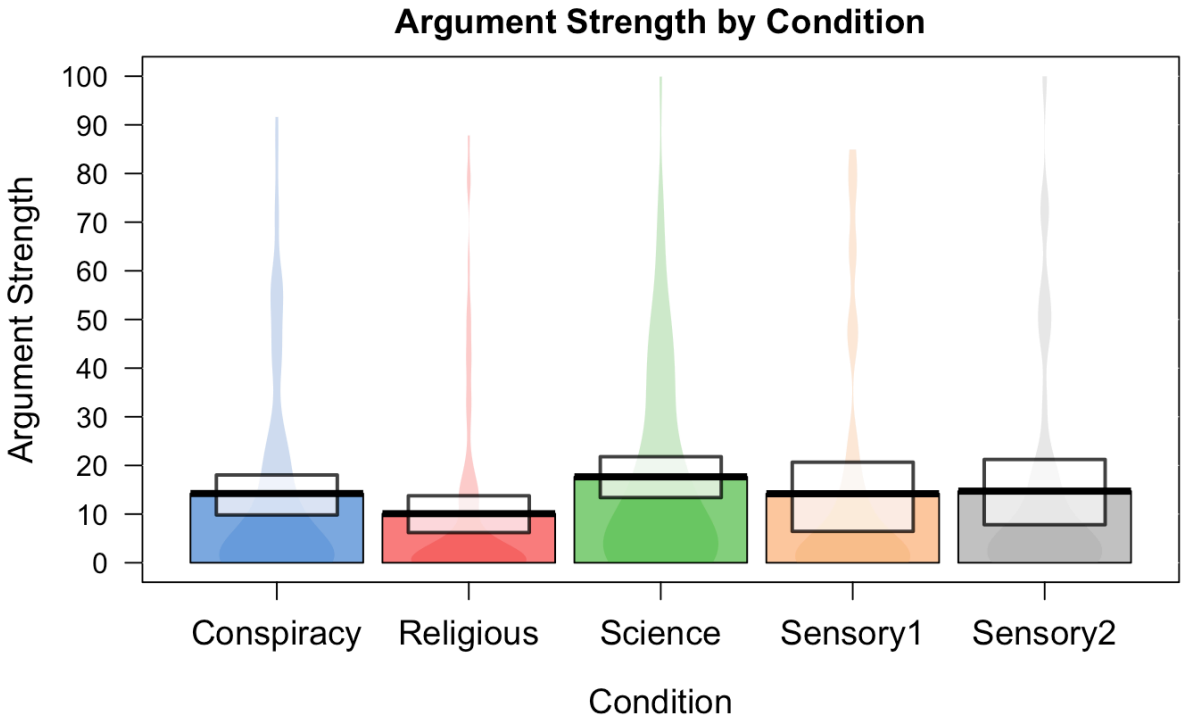
Believable: How believable did you find the argument made in this video clip?
Convincing: How convincing did you find the argument made in this video clip?
Strong: In your opinion, how strong an argument do you feel this video clip makes?

Note that people who saw the control video were NOT asked to rate the video's argument strength. Thus, we do not have argument strength scores for these participants.

	Believable (n = 392)			Convincing (n = 396)			Strong (n = 394)		
Control	NaN			NaN			NaN		
	M	**Med**	**SD**	**M**	**Med**	**SD**	**M**	**Med**	**SD**
Conspiracy	15.07	4	23.16	13.23	2.5	20.91	14.53	4	21.89
Religious	10.76	0	22.43	9.29	0	19.99	9.93	1	17.28
Science	17.49	6	22.55	15.88	6	20.87	19.10	14.5	21.73
Sensory1	13.48	2	24.45	13.68	1	23.90	15.40	3.50	23.73
Sensory2	12.96	3	21.86	14.62	4	22.68	16.60	5	26.47
TOTAL	14.10	2.5	22.87	13.09	2	21.32	14.82	5	21.79

Cronbach's alpha = 0.95; 95% CI[0.94, 0.96]

Averaged Scale: Mean = 14.06 (SD = 21.01, median = 4.5)



There's no significant difference in argument strength between the conditions, $F(4, 391) = 1.61$, $p = .170$

Cognitive Response State: Counterarguing

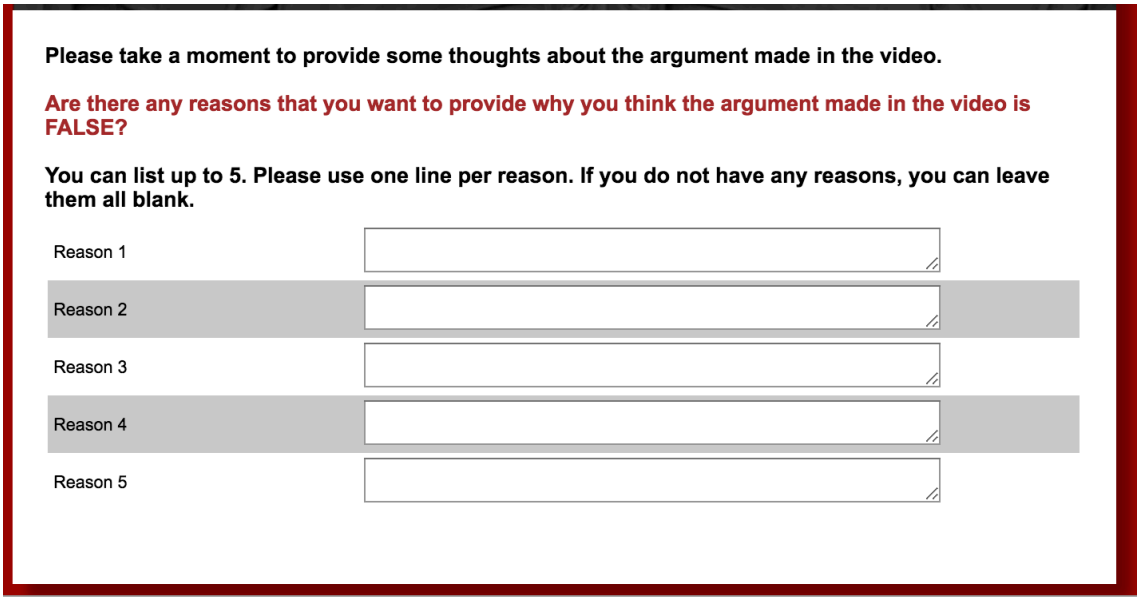
A second potential measure of cognitive response state is counterarguing. Although some have defined counterarguing by measuring argument strength, other researchers (e.g., Boukes, Boomgaarden, Moorman, & de Vreese, 2015; Young, 2008) have asked participants to write down their thoughts that they had after watching a video clip and these thoughts were coded as agreeing or disagreeing with the critical message of the video.

In a similar vein, we asked participants the following two questions:

FALSE. "Are there any reasons that you want to provide why you think the argument made in the video is FALSE? You can list up to 5. Please use one line per reason. If you do not have any reasons, you can leave them all blank."

TRUE. "Are there any reasons that you want to provide why you think the argument made in the video is TRUE? You can list up to 5. Please use one line per reason. If you do not have any reasons, you can leave them all blank."

We randomized whether they saw the FALSE or TRUE question first



In some cases, participants wrote responses in the TRUE question that were not arguments in support of the video clip (e.g., "This is honestly the dumbest thought pattern anyone can have. The Earth is not Flat"; "There is no reason for the argument to be true"). Therefore, two research assistants coded the arguments provided to make certain that they were providing arguments in support of the video clip in the TRUE question boxes and against the video clip in the "FALSE" boxes.

Counterarguments

On average, participants provided 1.57 counterarguments (Median = 1, SD = 1.47) and 0.16 pro-video arguments (Median = 0, SD = 0.52).

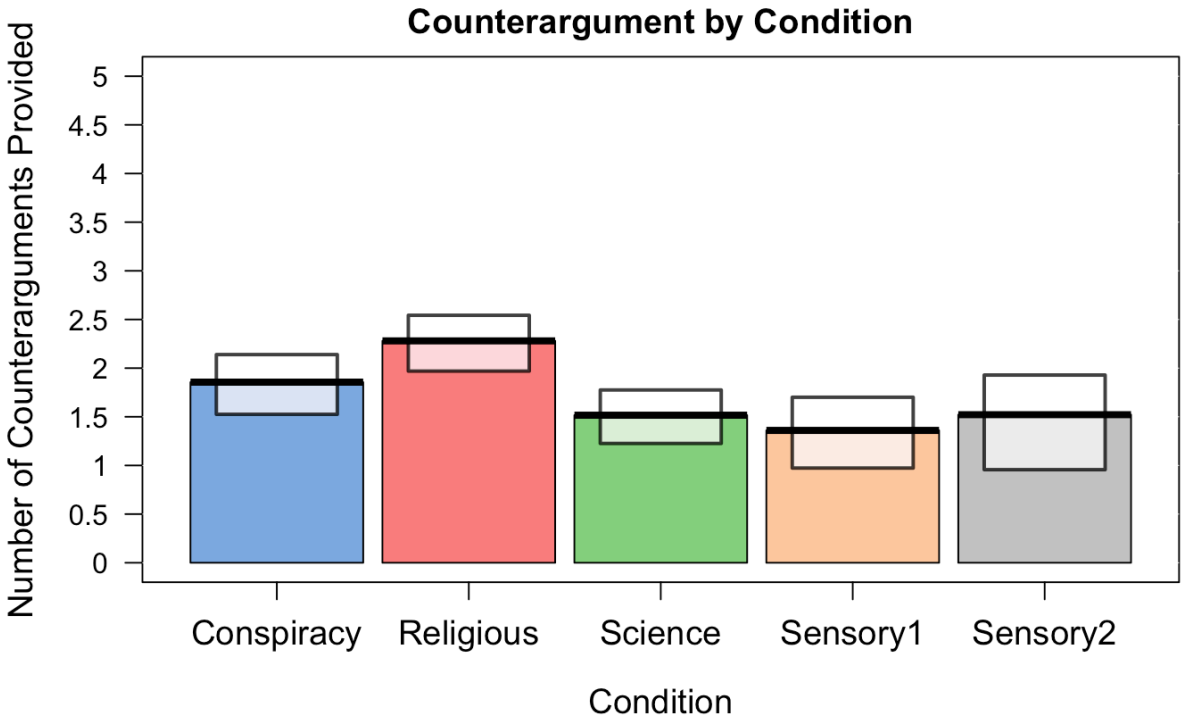
Consistent with prior work (Boukes et al., 2015), we subtracted the pro arguments from the con arguments to get a counterargument score (M = 1.42, Median = 1, SD = 1.54).

Condition	Counterarguments	Pro-Arguments	TOTAL
Conspiracy	M=2.11 (SD=1.43)	M=0.25 (SD=0.62)	M=1.86 (1.62)
Religious	M=2.45 (SD=1.36)	M=0.17 (SD=0.47)	M=2.28 (1.43)
Science	M=1.66 (SD=1.35)	M=0.17 (SD=0.18)	M=1.52 (1.40)
Sensory1	M=1.60 (SD=1.20)	M=0.24 (SD=0.56)	M=1.36 (1.32)
Sensory2	M=1.68 (SD=1.37)	M=0.17 (SD=0.80)	M=1.52 (1.76)

There is a significant difference in counterargument between the conditions, $F(4, 388)=4.86$, $p<.001$.

Follow-up tests with Tukey correction suggest that participants counterargued more in the **religious** condition than in the science condition (diff = -0.76, p = .004), the sensory1 condition (diff = -0.92, p = .004), and the sensory2 condition (diff = -0.76, p=.039).

The religious and conspiracy condition did not differ significantly (diff = 0.42, p=.261), and the conspiracy condition did not differ from the other conditions (all ps > .300).



Media Effects: Openness to Exploring Flat Earth Ideology

Measured on a 6-point Likert scale, where
1 = Strongly disagree
2 = Disagree
3 = Somewhat disagree
4 = Somewhat agree
5 = Agree
6 = Strongly agree

c/me1 I find myself questioning the shape of the Earth
c/me2 I plan to watch more YouTube videos to learn more about Flat Earth views
c/me3 I plan to watch more YouTube videos to learn more about why scientists say the Earth is a globe
c/me4 I plan to read articles to learn more about flat earth views
c/me5 I plan to read articles to learn more about why scientists say the earth is a globe
c/me6 I plan to conduct my own experiments to determine the shape of the Earth
c/me7 I plan to talk with friends and/or family about the shape of the Earth

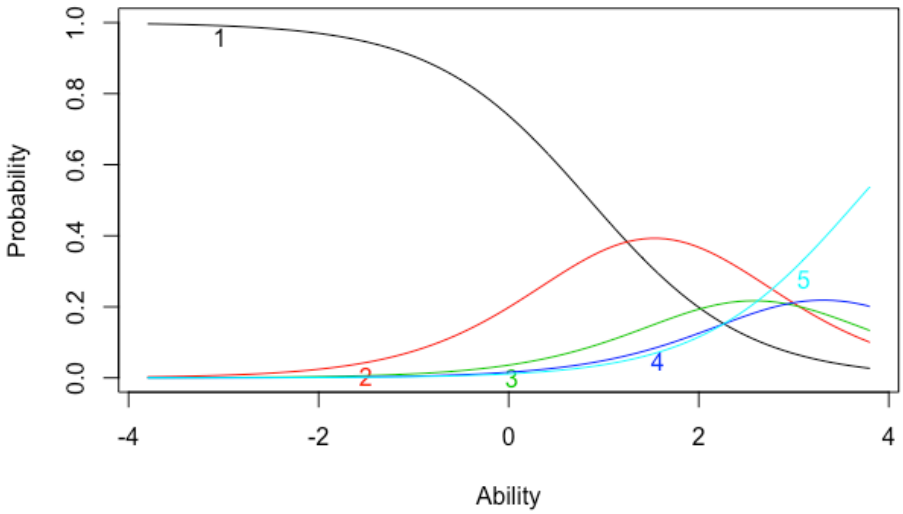
**NOTE for the experimental conditions, each of the items began with the statement "As a result of the video clip,…"

Item Response Theory

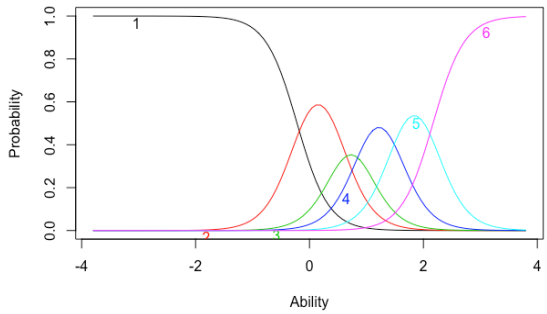
We examined the items and their properties as a scale using a GRM model, but only using the control condition (as responses may have been influenced by watching the video clip in each of the experimental conditions.

Some of the items performed better than others at capturing variance across the different levels of Openness to Flat Earth Ideology.

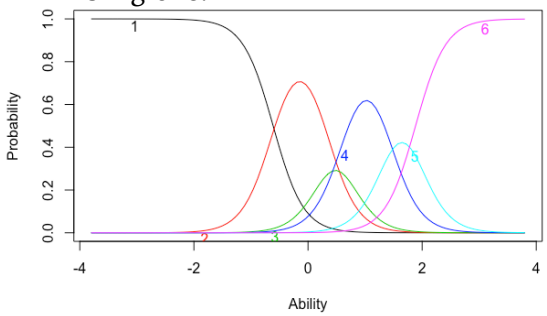
CME1 – I find myself questioning the shape of the Earth



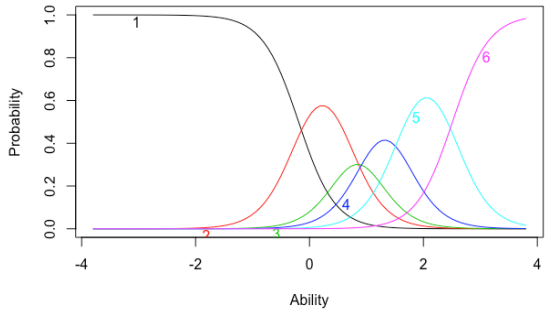
CME2. I plan to watch more YouTube videos to learn more about Flat Earth views.



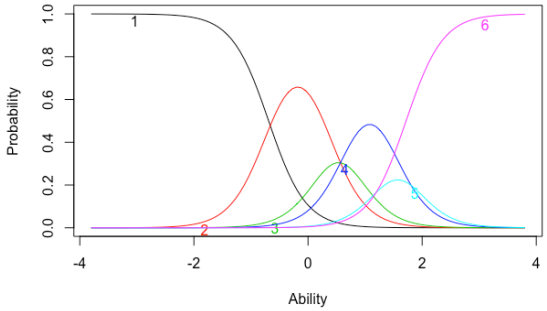
CME3. I plan to watch more YouTube videos to learn more about why scientists say the Earth is a globe.



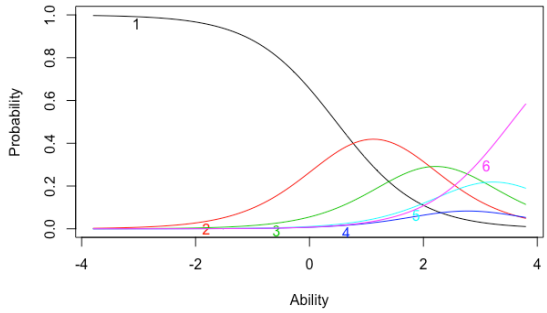
CME4. I plan to read articles to learn more about Flat Earth views.



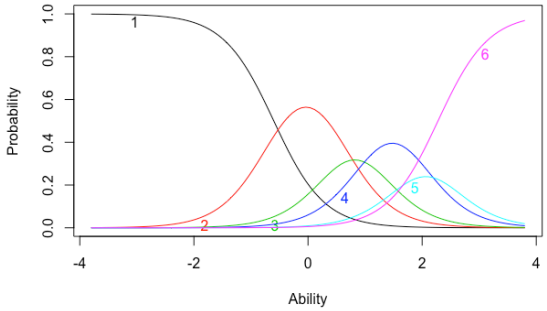
CME5. I plan to read articles to learn more about why scientists say the Earth is a globe.



CME6. I plan to conduct experiments to determine the shape of the Earth.

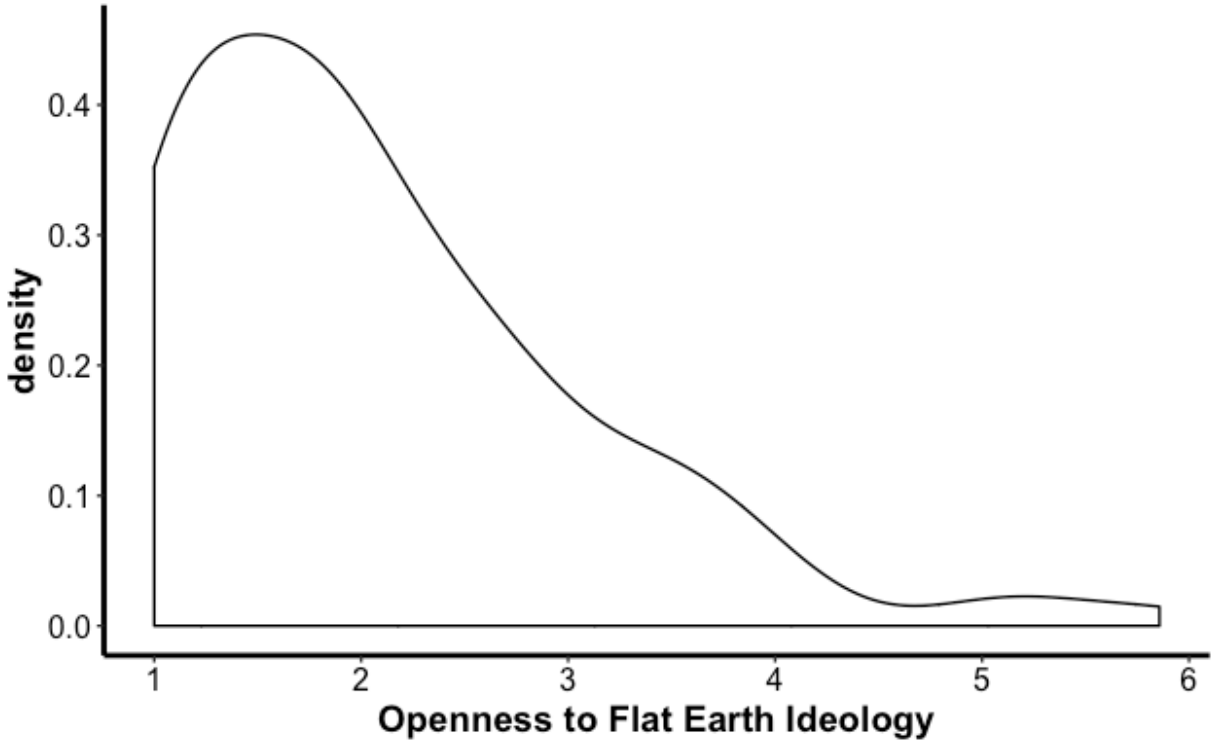


CME7. I plan to talk to my family and/or friends about the shape of the Earth.



Cronbach's alpha: 0.88 95% CI [0.87, 0.89]

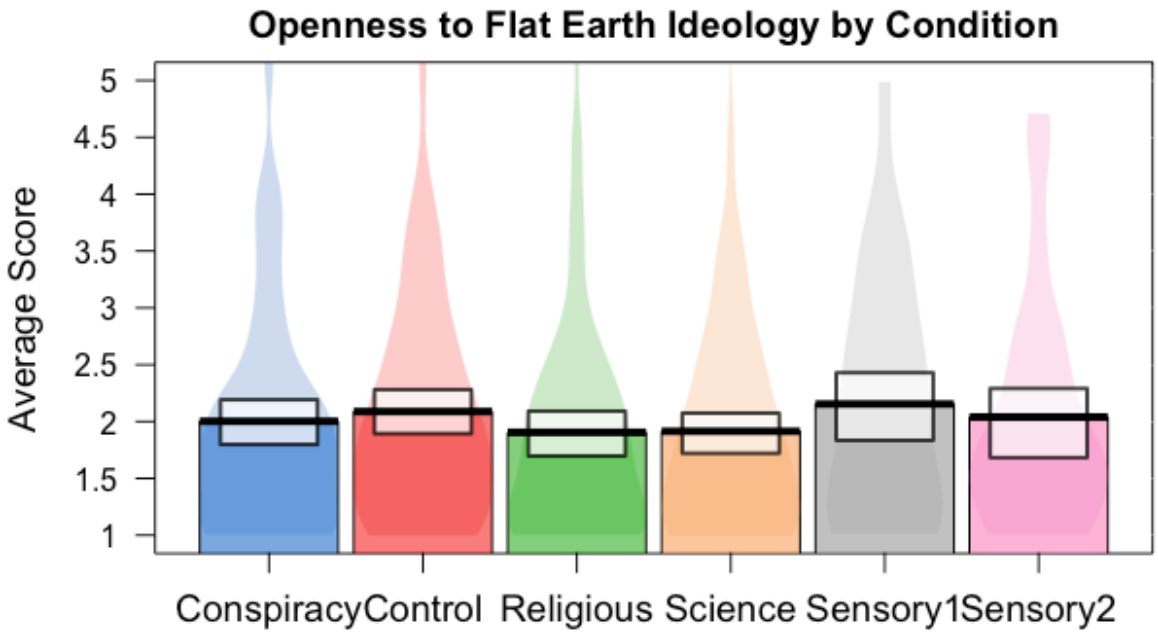
Distribution of Openness to Flat Earth Ideology scores among the Control group participants (n = 102).



Scores range from 1 to 6

	Mean	*SD*	*Median*
Control	2.09	1.0	1.86
Conspiracy	2.00	1.0	1.86
Religious	1.90	1.0	1.71
Science	1.91	0.9	1.71
Sensory1	2.15	1.1	1.93
Sensory2	2.04	1.0	1.71

A one-way ANOVA showed no significant differences in ***Openness to Flat Earth Ideology*** scores across the different conditions, $F(5, 493) = 0.732$, $p = .600$.



Disposition: Conspiracy Mentality

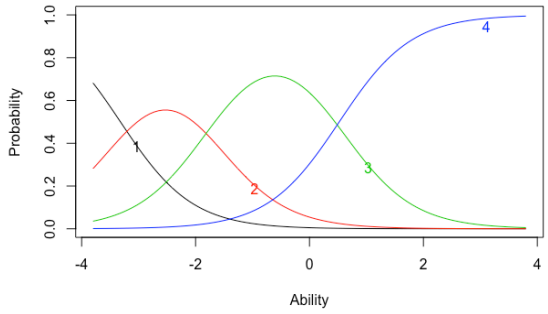
Measured on a 4-point scale:

1 Definitely False
2 Probably False
3 Probably True
4 Definitely True

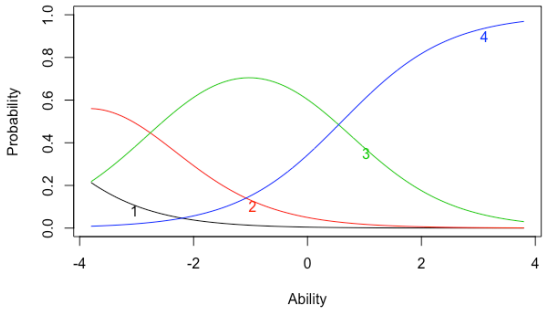
CM1. Many very important things happen in the world, which the public is never informed about.
CM2. Politicians usually do not tell us the true motives for their decisions
CM3. Government agencies closely monitor all citizens
CM4. Events which superficially seem to lack a connection are often the result of secret activities.
CM5. There are secret organizations that greatly influence political decisions.

Item Response Theory

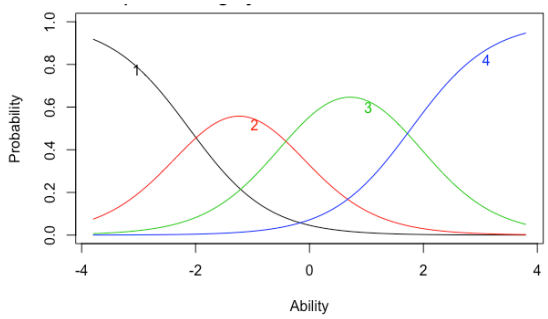
CM1. Many very important things happen in the world, which the public is never informed about.



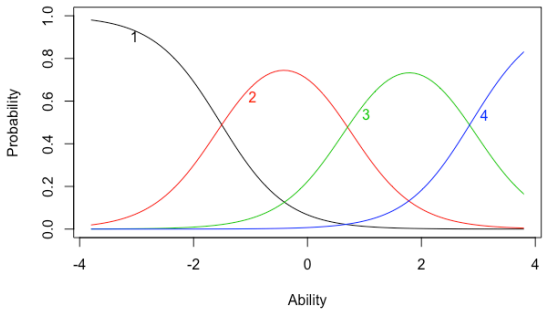
CM2. Politicians usually do not tell us the true motives for their decisions



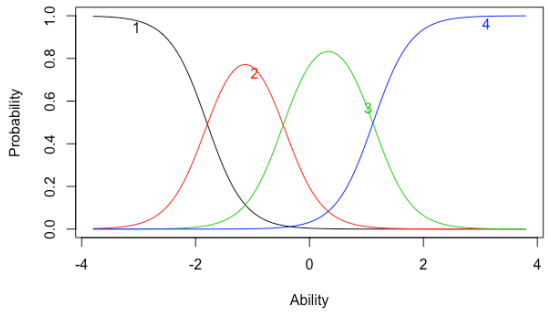
CM3. Government agencies closely monitor all citizens



CM4. Events which superficially seem to lack a connection are often the result of secret activities.



CM5. There are secret organizations that greatly influence political decisions.

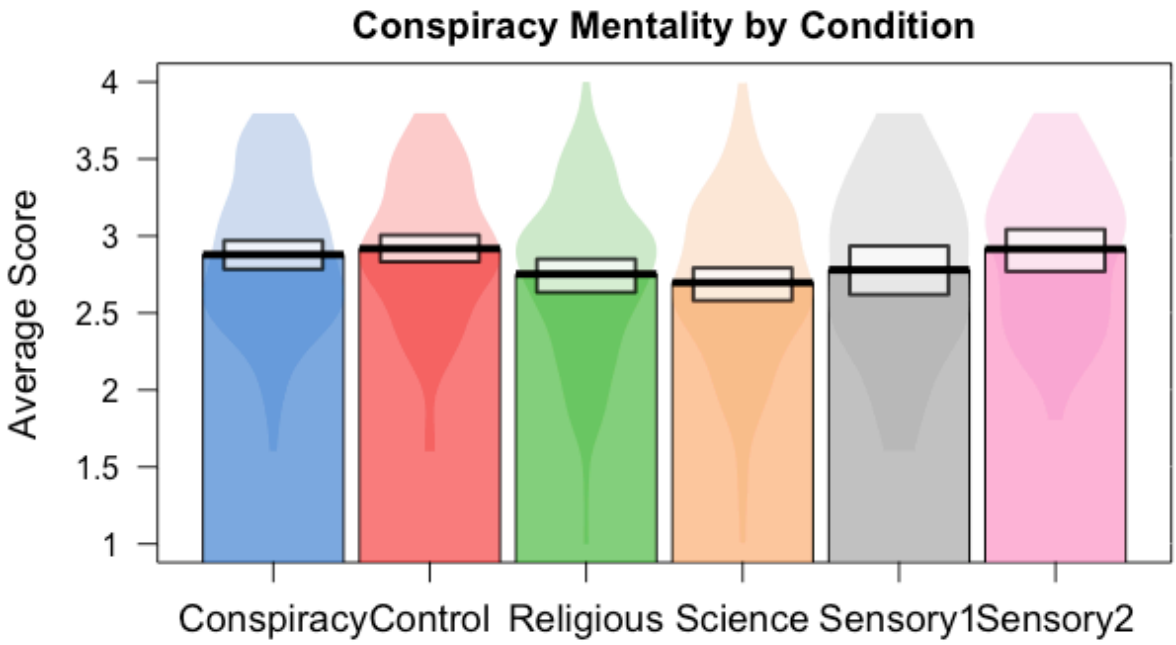


Cronbach's alpha: 0.75 95% CI [0.71, 0.78]

	Mean	*SD*	*Median*
Control	2.92	0.47	3.00
Conspiracy	2.88	0.48	2.88
Religious	2.75	0.53	2.80
Science	2.70	0.54	2.60
Sensory1	2.78	0.56	2.80
Sensory2	2.91	0.49	3.00

A one-way ANOVA showed significant differences in ***Conspiracy Mentality*** scores across the different conditions, $F(5, 493) = 2.87$, $p = .014$.

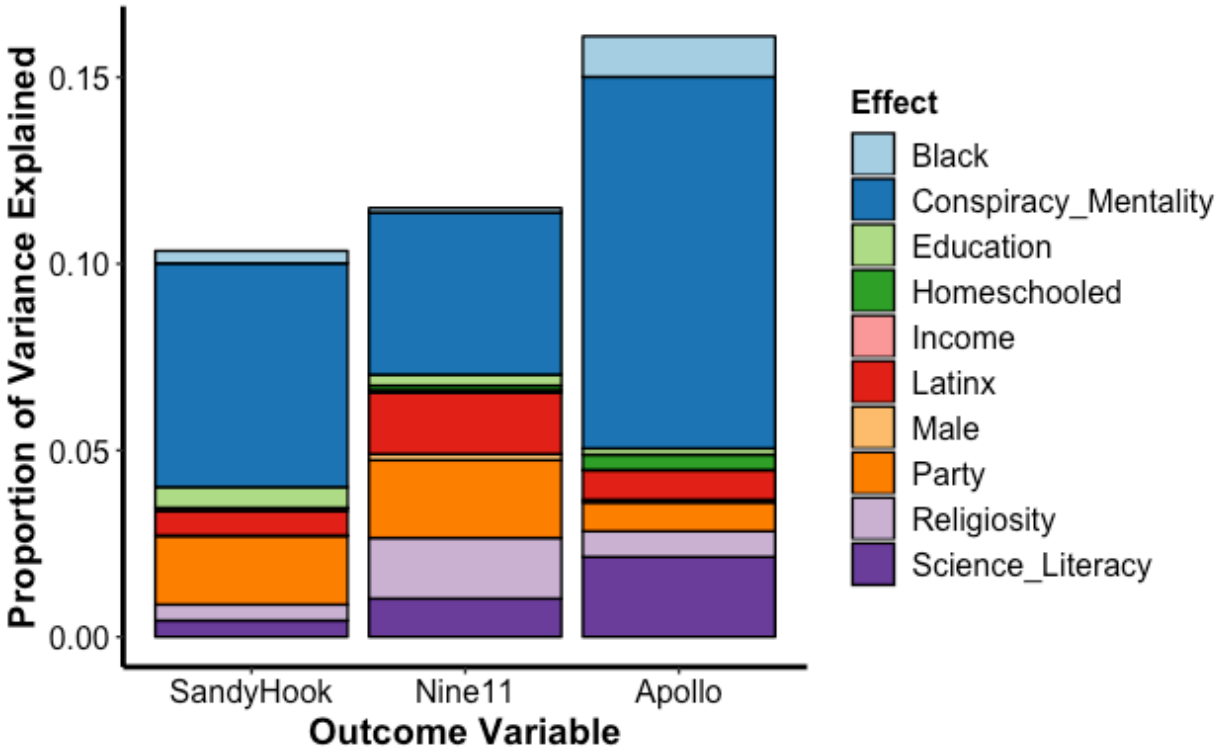
Tukey HSD tests for multiple comparisons show significant differences ONLY between the science and control condition ($p = .030$).



Predictive validity

Conspiracy Mentality is the strongest predictor of rejecting the official story of world events.

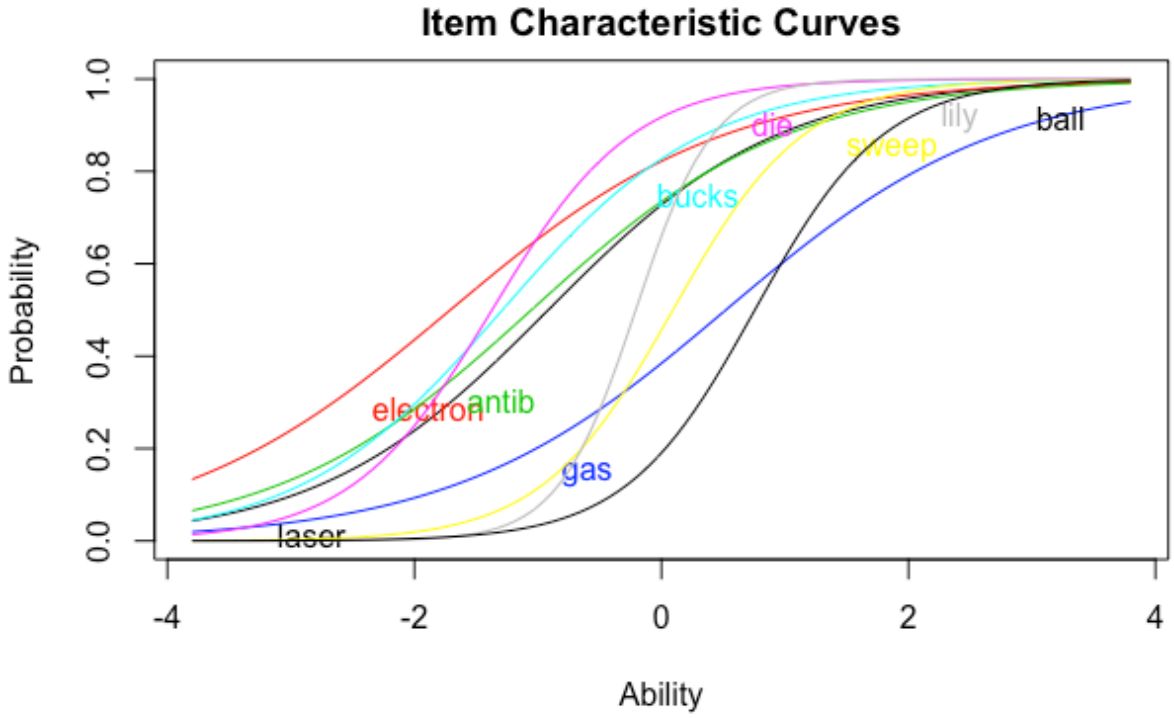
	Sandy Hook		9/11		Apollo Moon Landing	
	F value	*lmg*	*F value*	*lmg*	*F value*	*lmg*
Conspiracy Mentality	20.11***	0.060	12.44***	0.043	35.55***	0.100
Party	1.96	0.018	3.30*	0.021	1.06	0.008
Religiosity	0.14	0.004	5.79*	0.016	0.26	0.007
Science Intelligence	0.08	0.004	1.76	0.010	4.28*	0.021
Homeschooled	0.01	0.000	0.65	0.001	1.70	0.004
Education	0.72	0.006	0.26	0.003	1.47	0.002
Male	0.05	0.000	1.28	0.002	0.44	0.001
Black	0.38	0.003	0.44	0.001	1.32	0.011
Hisp/Latinx	2.92^{t}	0.007	6.77**	0.016	2.85^{t}	0.008
Income	0.68	0.001	0.03	0.001	0.02	0.000

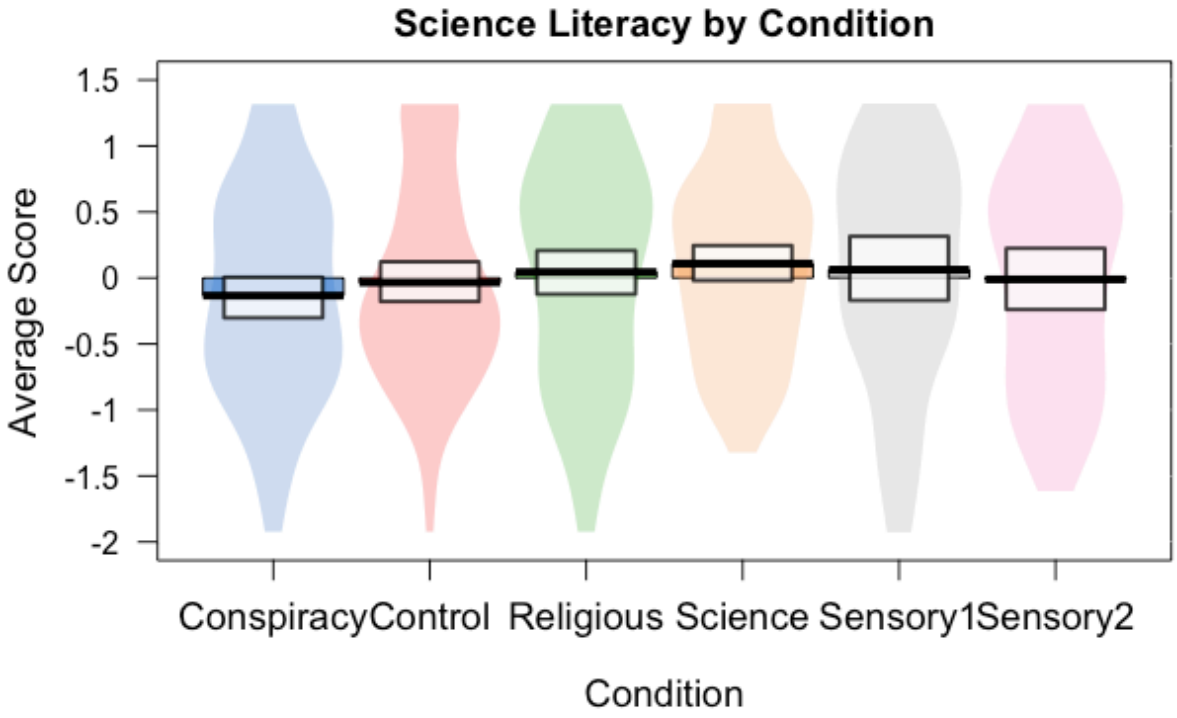


Disposition: Science Intelligence

OSI1 Lasers work by focusing sound waves (FALSE)
OSI2 Electrons are smaller than atoms (TRUE)
OSI3 Antibiotics kill viruses as well as bacteria (FALSE)
OSI4 Which gas makes up most of the Earth's atmosphere (NITROGEN)
OSI5 In the BIG BUCKS lottery, the chances of winning a $10.00 prize are 1%. How many people would win a $10.00 prize if 1,000 people each buy a single ticket from BIG BUCKS? (10)
OSI6 Imagine that we roll a fair, six-sided dice 1,000 times. Out of the 1,000 rolls, ideally, how many times would the die come up as an even number? (500)
OSI7 In the ACME Publishing Sweepstakes, the chances of winning a car is 1 in 1,000. What percent of tickets win a car? (.01%)
OSI8 In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? (47 days)
OSI9 A bat and a ball cost $1.10 in total. The bat costs $1.00 MORE than the ball. How much does the ball cost? (5 cents)

Item Response Theory





There is no significant difference between the conditions in ***Science Intelligence***, $F(5, 493) = 1.10$, $p = .358$.

Disposition: Religiosity

We measured religiosity with three items: religious guidance, frequency of prayer, and biblical literalism.

Religious Guidance: How much guidance does your faith, religion, or spirituality provide in your day-to-day life?

1. I'm not religious
2. None at all
3. A little
4. A moderate amount
5. A lot
6. A great deal
7. I prefer not to answer

Prayer: Do you pray? If so, how often?

1. I don't pray
2. Rarely
3. Monthly
4. Weekly
5. At least Daily

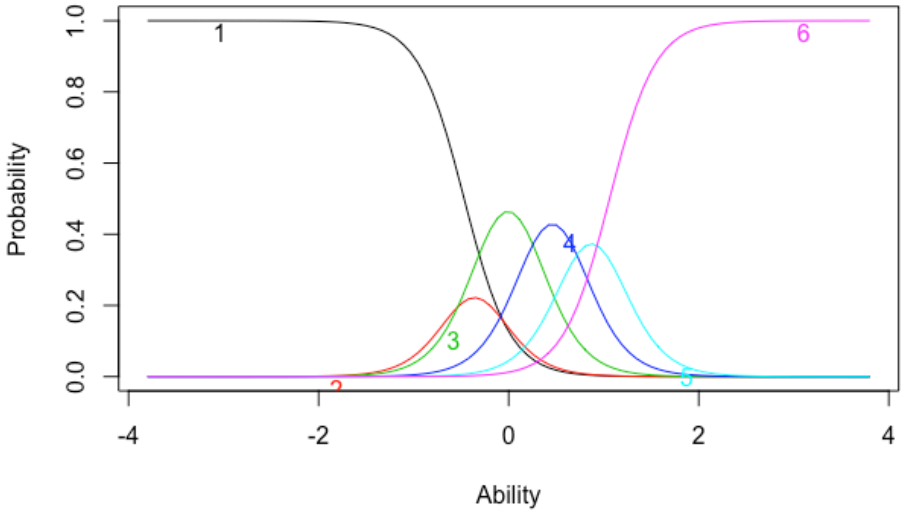
Biblical Literalism: To what extent do you agree or disagree with the following statement:

Religious scripture such as the Bible should be taken literally. For example, the tale in which Jonah is swallowed by a giant fish (or whale) and is spit back onto the shore three days later actually happened and is not simply a fictional moral tale.

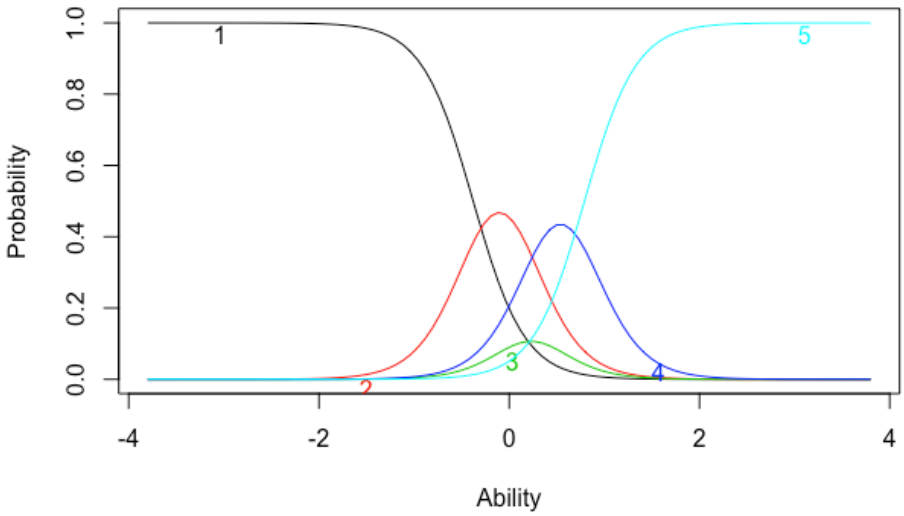
1. Strongly agree
2. Agree
3. Somewhat agree
4. Somewhat disagree
5. Disagree
6. Strongly disagree

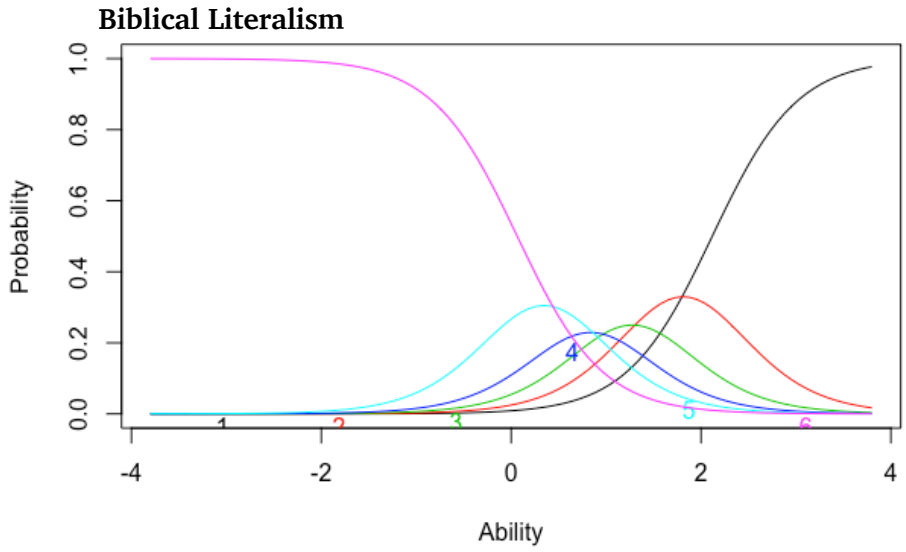
Item Response Theory

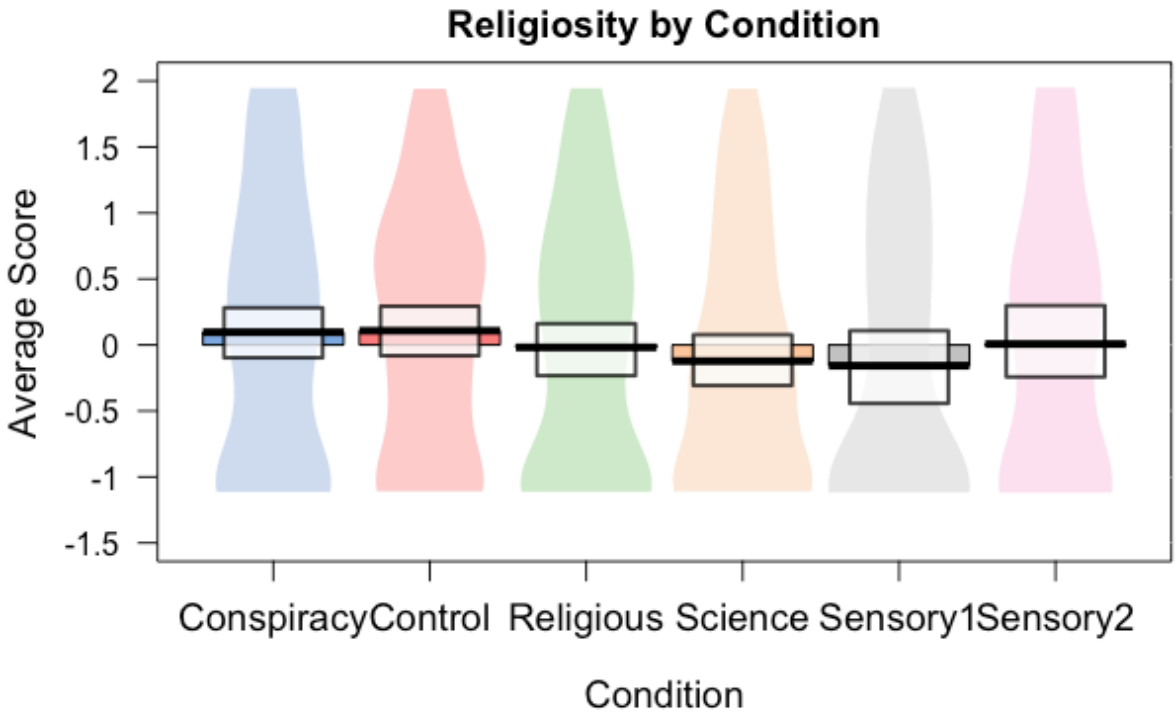
Religious Guidance



Frequency of Prayer







There is no significant difference between the conditions in ***Religiosity***, $F(5, 493) = 0.97$, $p = .433$.

II. Results

Correlation between variables

	REL	SL	AS	CA	ORFE
Conspiracy Mentality (CM)	0.27***	-0.34***	0.33***	-0.15**	0.32***
Religiosity (REL)		-0.29***	0.21***	-0.16**	0.23***
Science Intelligence (SL)		-	-0.34***	0.12$^{\tau}$	-0.34***
Argument Strength (AS)			-	-0.43***	0.59***
Counterargument (CA)				-	-0.13**
Openness to Researching Flat Earth (ORFE)					-

***p<.001, **p<.01, *p<.05, $^{\tau}p$<.10

Predicting Response States

Argument Strength

Moderating (conditional) effects of dispositional variables

	coef	*Sum Sq*	*df*	*F*	*p*	
Clip (ref: Science)		643	2	1.01	.364	.01
vs Conspiracy	-14.39				.356	
vs Religious	7.97				.574	
Conspiracy Mentality	11.18	6416	1	20.24	<.001	.07
Religiosity	8.30	742	1	2.34	.127	.01
Science Intelligence	26.29	3496	1	11.03	.001	.04
Clip (Science) X Conspiracy Mentality		876	2	1.38	.253	.01
vs Conspiracy X Conspiracy Mentality	2.46				.655	
vs Religious X Conspiracy Mentality	-6.19				.223	
Clip (Science) X Religiosity		467	2	0.74	.480	.01
vs Conspiracy X Religiosity	1.16				.684	
vs Religious X Religiosity	3.29				.234	
Clip (Science) X Science Intelligence		110	2	0.17	.841	.00
vs Conspiracy X Science Intelligence	2.23				.557	
vs Religious X Science Intelligence	1.14				.747	
Conspiracy Mentality X Science Intelligence	-11.99	5510	1	17.38	<.001	.06
Conspiracy Mentality X Religiosity	-3.25	655	1	2.07	.152	.01
Religiosity X Science Intelligence	-0.59	51	1	0.16	.688	.00
Residuals		*90016*	*284*			

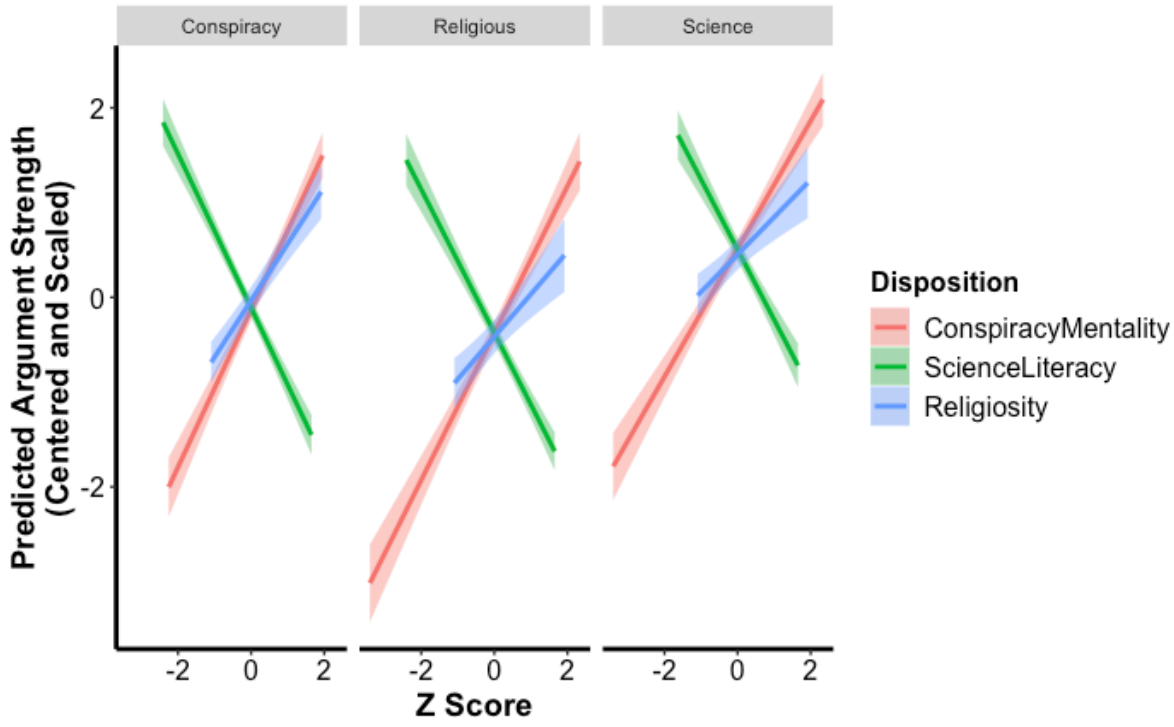
***p<.001, **p<.01, *p<.05, $^{\tau}p$<.10

Note that when including all of the variables in the model that the sign of the coefficient for Science Intelligence is positive, which is inconsistent with the raw correlation and the sign of the

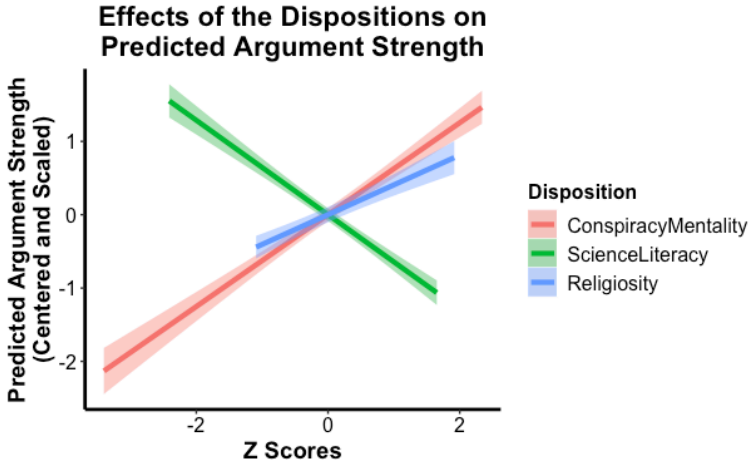
coefficient when the interactions are not included in the model (but the other dispositions are accounted for). In order to limit confusion for the readers, in the body of the submitted manuscript, we report the coefficients based on a hierarchical regression.

The F values and associated p values are for the full model using type III sums of squares.

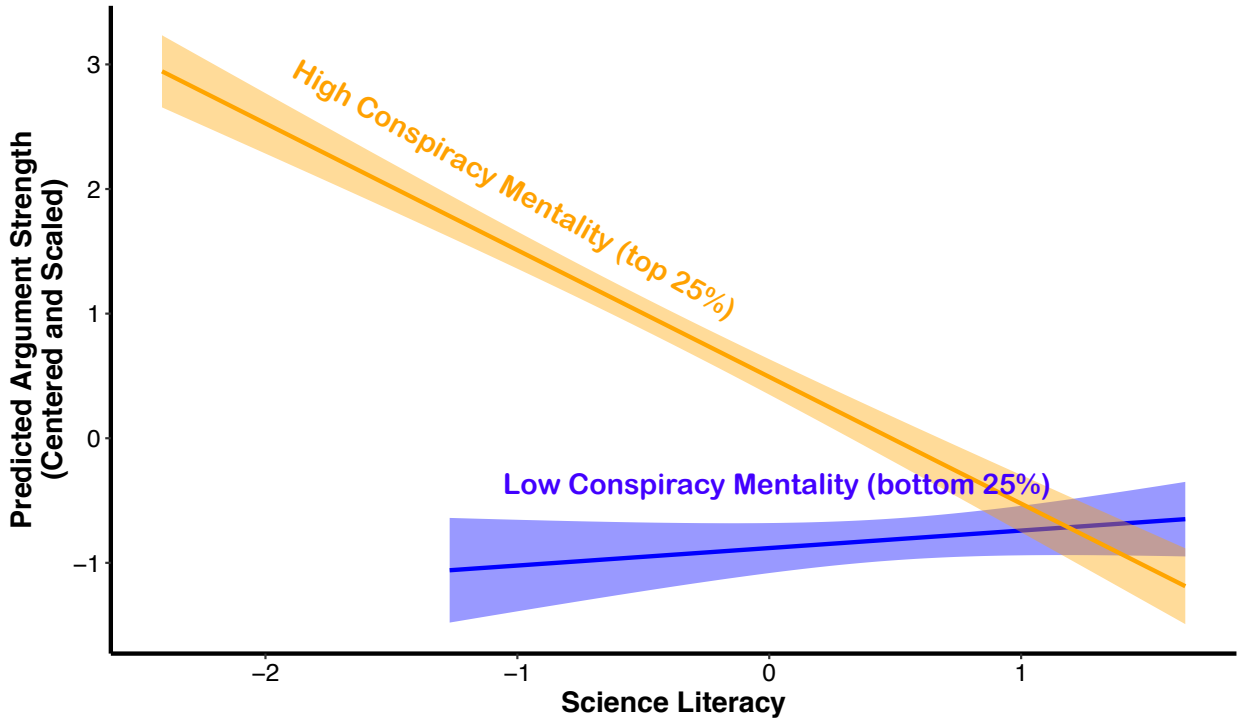
DV: Argument Strength	coef	*Sum Sq*	*df*	*F*	*p*	
Clip (ref: Science clip)		643	2	1.01	.364	
vs Conspiracy clip	-6.98				*.008*	
vs Religious clip	-8.56				*.001*	
Conspiracy Mentality	9.44	6416	1	20.24	<.001	***
Science Intelligence	-6.26	3496	1	11.03	.001	**
Religiosity	1.27	742	1	2.34	.127	
Clip (Science):Conspiracy Mentality		876	2	1.38	.253	
vs Conspiracy clip	2.46				*.655*	
vs Religious clip	-6.19				*.223*	
Clip (Science):Science Intelligence		110	2	0.17	.841	
vs Conspiracy	2.23				*.557*	
vs Religious	1.14				*.747*	
Clip (Science):Religiosity		467	2	0.74	.480	
vs Conspiracy clip	1.16				*.684*	
vs Religious clip	3.29				*.234*	
Conspiracy Mentality : Sci Literacy	-11.99	5510	1	17.38	<.001	***
Conspiracy Mentality : Religiosity	-3.25	655	1	2.07	.152	
Religiosity : Science Intelligence	-0.59	51	1	0.16	.688	
Residuals		*90016*	*284*			



Effect of Conspiracy Mentality & Effect of Science Intelligence



Interaction of Conspiracy Mentality by Science Intelligence


High Conspiracy Mentality (top 25%)
Low Conspiracy Mentality (bottom 25%)
Predicted Argument Strength
(Centered and Scaled)
3
2
1
0
−1
−2
−1
0
1
Science Literacy

Counterargument

Moderating (conditional) effects of dispositional variables

DV: Counterarguing	Coef	*Sum Sq*	*Df*	*F values*	Pr(>F)	η_p^2
Clip (Ref = Science)		3.22	2	0.74	.478	.00
vs. Conspiracy	*0.57*				*.661*	
vs. Religious	*1.43*				*.227*	
Conspiracy Mentality	-0.25	7.43	1	3.41	.066	.01
Religiosity	-0.01	0.00	1	0.00	.998	.00
Science Intelligence	-0.37	0.91	1	0.42	.518	.00
Clip (Science) X Conspiracy Mentality		0.63	2	0.14	.866	.00
vs. Conspiracy	*-0.04*				*.928*	
vs. Religious	*-0.22*				*.610*	
Clip (Science) X Religiosity		0.35	2	0.08	.922	.00
vs. Conspiracy	*-0.03*				*.893*	
vs. Religious	*0.06*				*.797*	
Clip (Science) X Science Intelligence		4.00	2	0.92	.400	.01
vs. Conspiracy	*-0.30*				*.338*	
vs. Religious	*0.07*				*.824*	
Conspiracy Mentality X Science Intelligence	0.18	1.29	1	0.59	.443	.00
Conspiracy Mentality X Religiosity	-0.07	0.29	1	0.14	.713	.00
Religiosity X Science Intelligence	-0.03	0.18	1	0.08	.775	.00
Residuals		*614.46*	*282*			

Effects if only looking at the individual factors (no interactions)

DV: Counterarguing	**df**	**SS**	***F***	**Coef.**	***p***	η_p^2
COND (ref = Conspiracy)	2	32.30	7.56		<.001**	.05
vs. Religious				0.35	*.090*$^{\tau}$	
vs. Science				-0.47	*.028**	
Conspiracy Mentality	1	6.93	3.24	-0.32	.073$^{\tau}$	.01
Religiosity	1	8.52	3.99	-0.18	.047*	.01
Science Intelligence	1	1.54	0.72	0.10	.397	.00
Residuals	291	621.60				

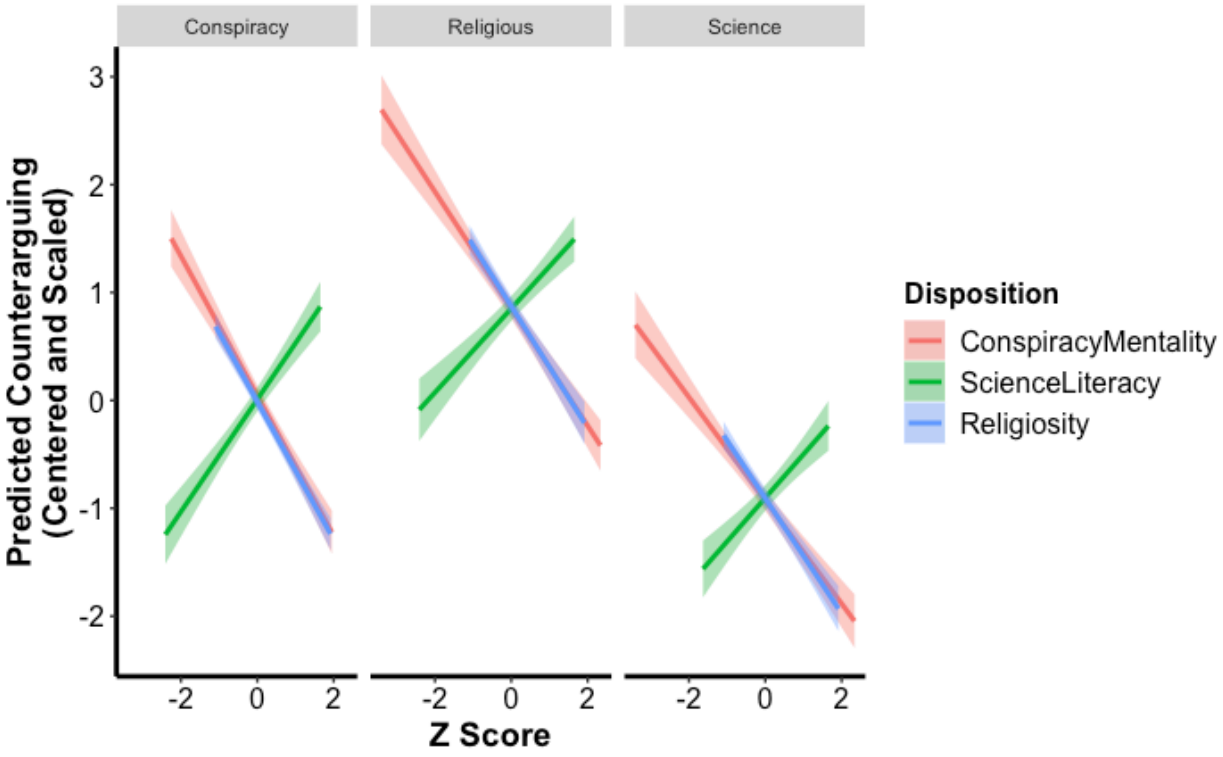
***p<.001, **p<.01, *p<.05, $^{\tau}p$<.10

[1]Using Type II Sums of squares as there are no significant interactions

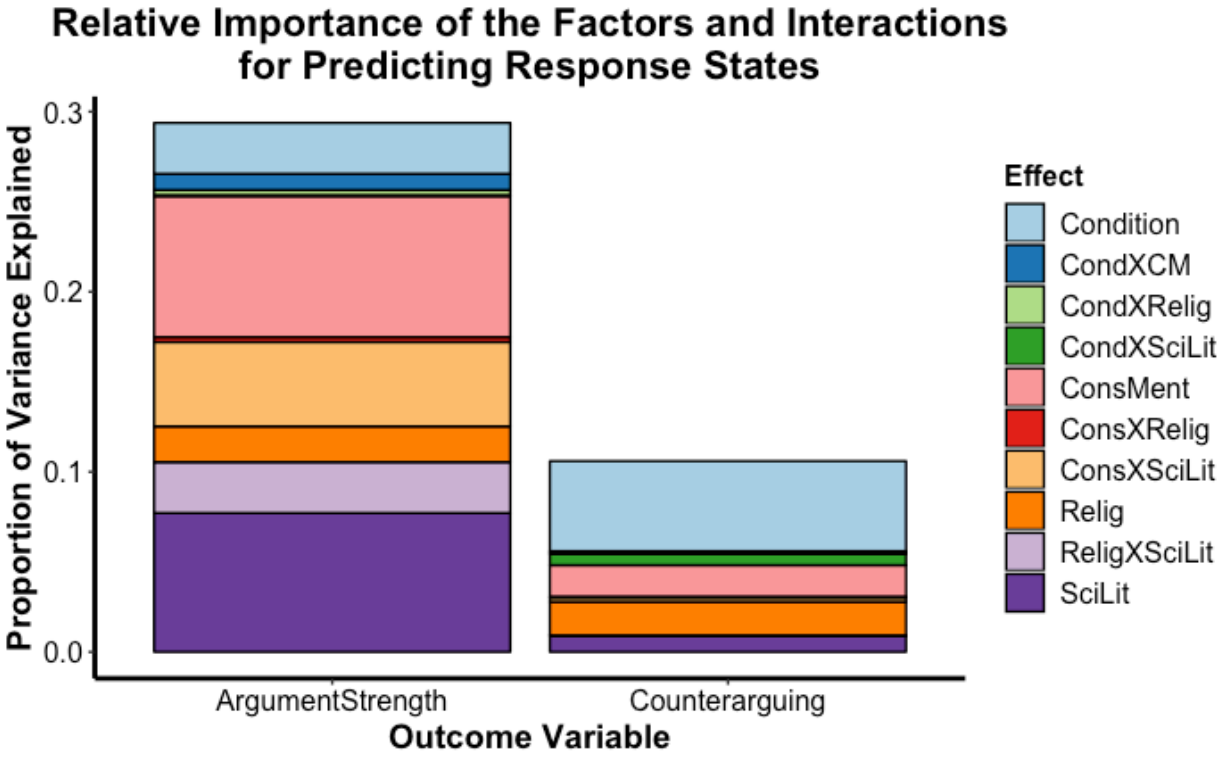
In the paper, we also tested for a potential three-way interaction

Table 1. Results from the GLM models for predicting perceptions of argument strength and predicting counterarguing. Statistical significance is based on Type III analyses (accounting for all model factors). Reported coefficients (b) are based on hierarchical regression, first accounting for the main effects, second accounting for the main effects and the two-way interactions, and third accounting for all effects including the three-way interaction.

	Argument Strength			**Counterarguing**		
	b	*F* values	η_p^2	b	*F* values	η_p^2
Video Clip (ref = Science)		1.33	.01		0.29	.00
Science vs. Conspiracy	*-6.98*			*0.47*		
Science vs. Religious	*-8.56*			*0.81*		
Conspiracy Mentality	9.43	19.16***	.06	-0.32	3.15 ᵀ	.01
Religiosity	1.27	2.53	.01	-0.18	0.00	.00
Science Intelligence	-6.26	11.48***	.04	0.10	0.45	.00
Clip X Conspiracy Mentality		1.75	.01		0.05	.00
Science vs. Conspiracy	*2.46*			*-0.04*		
Science vs. Religious	*-6.19*			*-0.22*		
Clip X Religiosity		0.90	.01		0.05	.00
Science vs. Conspiracy	*1.16*			*-0.03*		
Science vs. Religious	*3.29*			*0.06*		
Clip X Science Intelligence		2.30	.02		2.58 ᵀ	.02
Science vs. Conspiracy	*2.23*			*0.30*		
Science vs. Religious	*1.14*			*0.07*		
Conspiracy Mentality X Science Intelligence	-11.99	18.03***	.06	0.19	0.65	.00
Conspiracy Mentality X Religiosity	-3.25	2.27	.01	-0.07	0.09	.00
Religiosity X Science Intelligence	-0.59	0.23	.00	-0.04	0.05	.00
Clip X Conspiracy Mentality X Science Intelligence		2.42ᵀ	.02		2.37 ᵀ	.02
Science vs. Conspiracy	*1.86*			*-0.19*		
Science vs. Religious	*12.86*			*-1.09*		



Test of relative importance



Proportion of variance accounted for using the LMG method

	Argument Strength	Counterarguing
Condition	0.03	0.05
Condition:ConspiracyMentality	0.01	0.00
Condition:Religiosity	0.00	0.00
Condition:ScienceLiteracy	0.00	0.01
ConspiracyMentality	0.08	0.02
Religiosity	0.02	0.02
ScienceLiteracy	0.08	0.01
ConspiracyMentality:ScienceLiteracy	0.05	0.00
ConspiracyMentality:Religiosity	0.00	0.00
Religiosity:ScienceLiteracy	0.03	0.00

Predicting Openness to Researching Flat Earth Views

Conditional effects

Crucial to the DSMM is that media effects are **conditional**. Therefore, there may be effects of dispositional variables and/or interactions between the dispositions and the clips (i.e., the conditions).

Type III Sums of Squares are reported as at least one of the interactions is significant

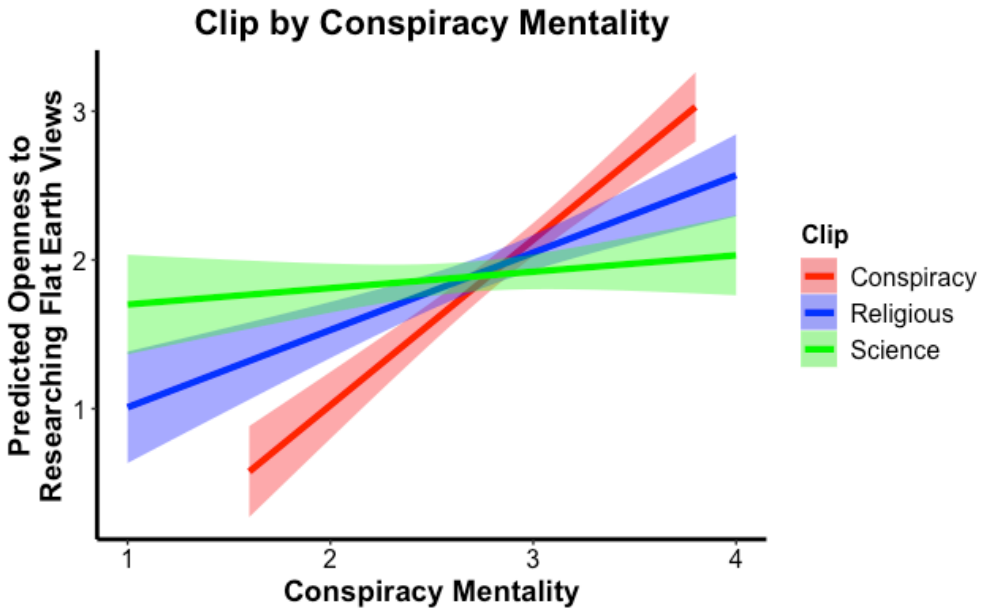
DV: Openness to researching flat earth	*Coef*	*SS*	*df*	*F*	*p*	
Condition (Ref: Conspiracy Clip)		5.35	2	4.80	.009	**
Conspiracy vs Religious Clip	*0.83*				*.178*	
Conspiracy vs Science Clip	*1.88*				*<.002*	**
Argument Strength	0.02	40.04	1	71.82	<.000	***
Counterargument	0.09	4.36	1	7.82	.006	**
Conspiracy Mentality	0.47	1.39	1	2.50	.115	
Religiosity	0.04	0.33	1	0.59	.443	
Science Intelligence	-0.11	0.05	1	0.09	.763	
Condition X Conspiracy Mentality		5.86	2	5.26	.006	**
Conspiracy vs Religious Clip	*-0.27*				*.212*	
Conspiracy vs Science Clip	*-0.69*				*.002*	**
Argument Strength X Science Intelligence	-0.01	7.78	1	13.95	<.000	***
Counter Argument X Science Intelligence	-0.12	4.16	1	7.47	.007	**
Conspiracy Mentality X Science Intelligence	0.13	0.63	1	1.14	.287	
Residuals		157.79	283			

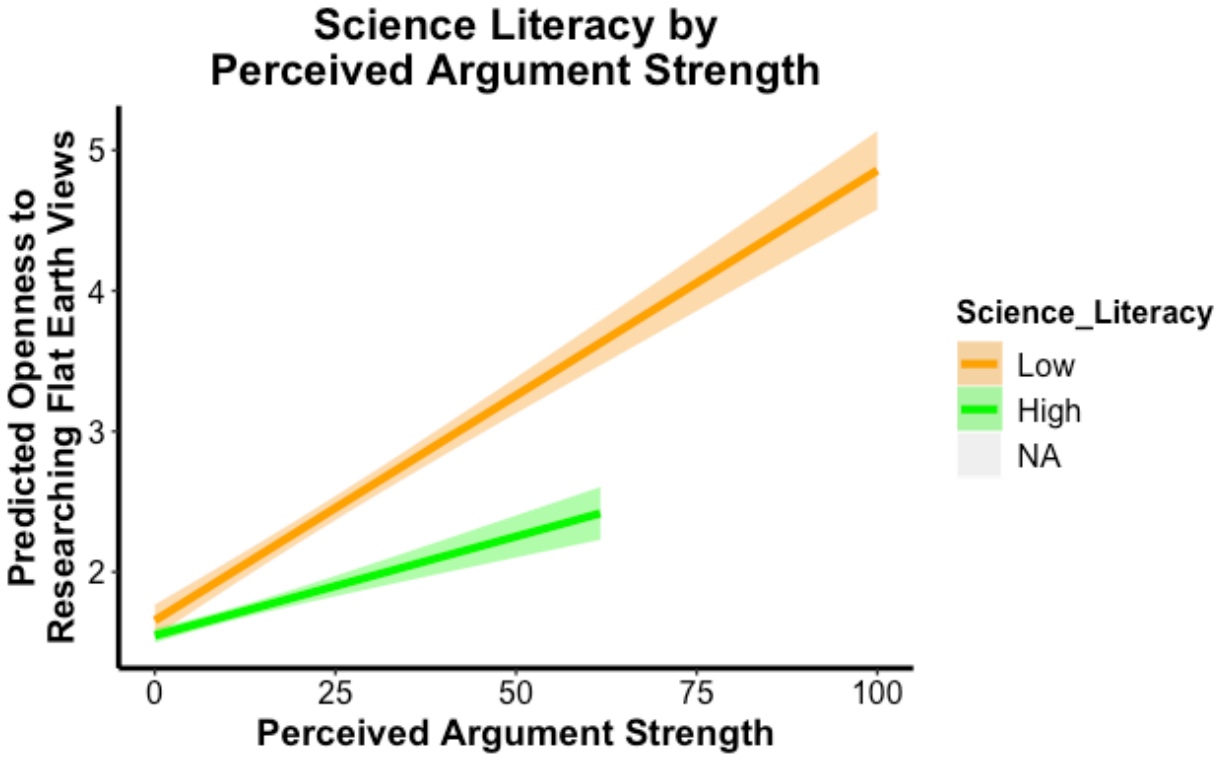
Table that appears in the manuscript:

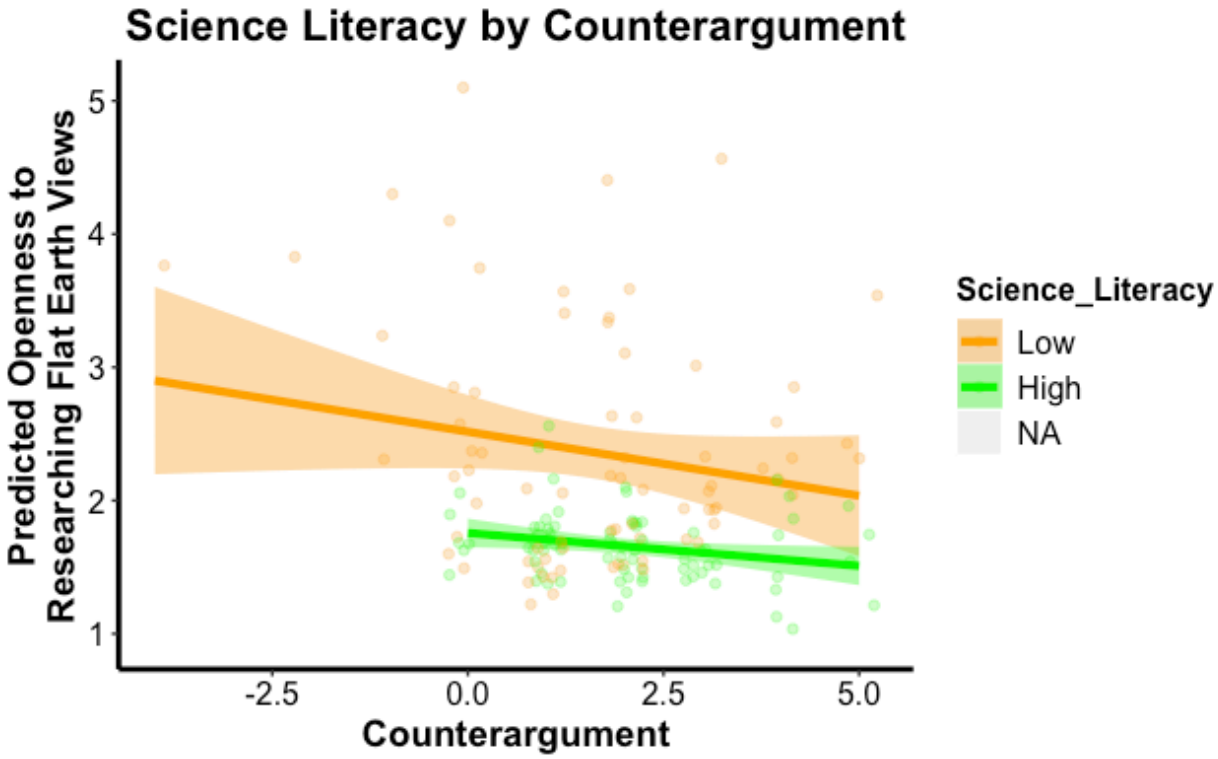
Table 3. Results from the GLM model predicting openness to researching flat Earth views. Statistical significance and effect size (η_p^2) are based on Type III analyses (accounting for all model factors). Reported coefficients (b) are based on hierarchical regression, first accounting for the main effects and then accounting for the main effects and the two-way interactions.

DV: Openness to Researching Flat Earth	b	Sum Sq	df	F values	Pr(>F)	η_p^2
Video Clip (ref = Science)		5.81	2	5.16**	.006	.04
science vs. conspiracy	*0.08*					
science vs. religious	*0.12*					
Conspiracy Mentality	0.16	1.64	1	2.92	.089	.01
Science Intelligence	-0.13	0.00	1	0.00	.957	.00
Argument Strength	0.03	2.54	1	4.51*	.034	.02
Counterargument	0.09	1.32	1	2.34	.127	.01
Religiosity	0.04	0.28	1	0.50	.478	.00
Clip X Conspiracy Mentality		6.34	2	5.64**	.004	.04
science vs. conspiracy	*0.76*					
science vs. religious	*0.44*					
Clip X Science Intelligence		0.33	2	0.29	.747	.00
science vs. conspiracy	*0.08*					
science vs. religious	*-0.02*					
Conspiracy Mentality X Science Intelligence	0.1	0.34	1	0.60	.438	.00
Argument Strength X Conspiracy Mentality	0	0.22	1	0.39	.535	.00
Argument Strength X Science Intelligence	-0.01	7.61	1	13.54***	<.001	.05
Counterargument X Science Intelligence	-0.14	4.71	1	8.37**	.004	.03
Counterargument X Conspiracy Mentality	-0.07	0.63	1	1.12	.292	.00

$^{\tau}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$





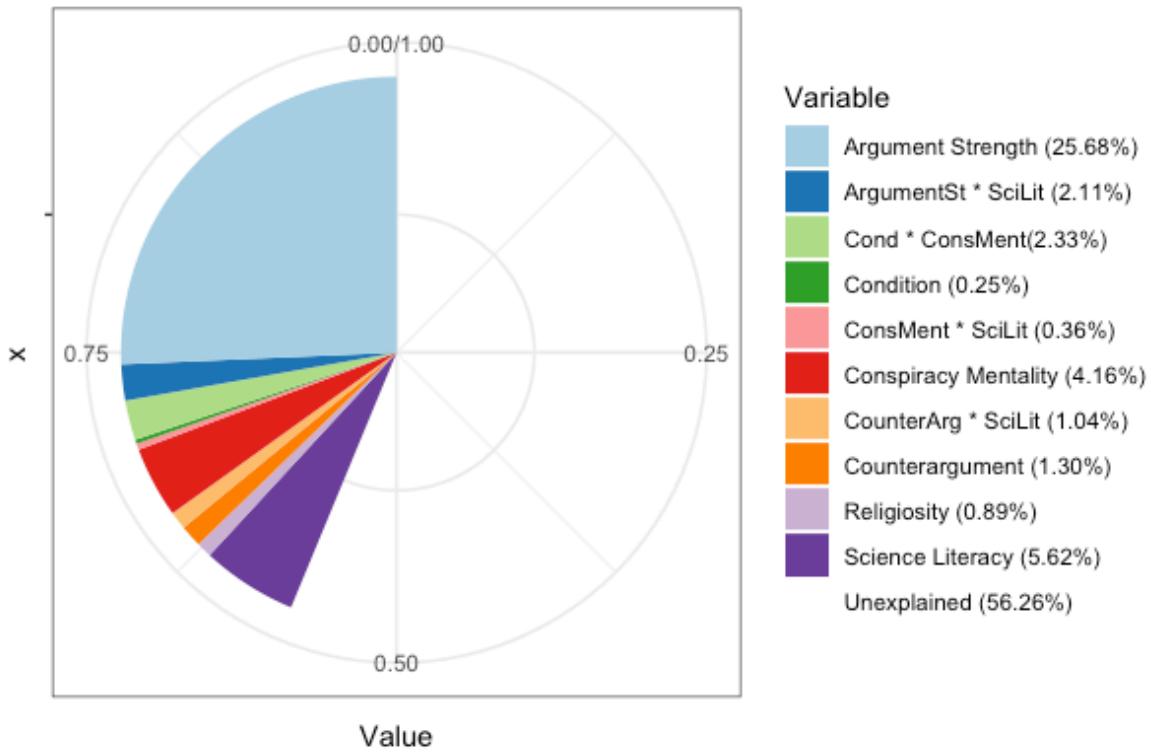


**Note: In the manuscript we changed “science literacy” to science intelligence to be closer to the name of the measure (ordinary science intelligence; Kahan, 2017)

Test of relative importance

Total response variance: 0.9508
Percent of variance explained by model: 43.74%
Metrics are not normalized

Factor	lmg
Condition	0.0025
Condition:ConspiracyMentality	0.0233
argumentStrength	0.2568
CounterArgument	0.0130
ConspiracyMentality	0.0416
Religiosity	0.0089
ScienceLiteracy	0.0562
argumentStrength:ScienceLiteracy	0.0211
CounterArgument:ScienceLiteracy	0.0104
ConspiracyMentality:ScienceLiteracy	0.0036
TOTAL	*0.4374*



Test For Mediation

The differential susceptibility model includes three types of individual variables and three types of response state variables. Within each of those different categories are also multiple different options. Moreover, instead of a continuous measure of media use, we had an experimental manipulation Therefore, to test potential mediation effects (and conditional mediation effects) we had to make a series of decisions, such as whether to include in one model multiple individual dispositional variables, multiple mediation variables, and how to code the experimental manipulation.

We originally decided to use Helmert coding. However, Reviewer 1 thought indicator coding would be more appropriate. In the paper we report the results of the model using indicator coding. Below, we report the results using Helmert coding. The PROCESS output from the model with indicator coding can be found on our OSF.io page: https://osf.io/j8rgv/

Multi-categorical model using argument strength as the mediator

Mediator (Argument Strength) & Moderators (Science Intelligence & Conspiracy Mentality)

In this version of the model, we included both conspiracy mentality and Science Intelligence as potential moderators and controlled for religiosity (given that religiosity did not show any significant effects in preliminary analyses). Argument strength was used as the mediator. In addition, we included potential interactions between the moderators and the mediator in predicting the outcome variable (Y), though this is not explicitly included in the differential susceptibility model.

Experimental manipulation

In this version of the model, we used Helmert coding, which compared the conspiracy clip to the other two clips (science and religious) combined. Then, compared the science clip to the religious clip. In the paper, per reviewer request, we report indicator coding.

Contrast coding for categorical X variable

	Condition	X1	X2
Conspiracy	1	-0.667	0.000
Science	2	0.333	-0.500
Religious	3	0.333	0.500

Model Specification

Y	Openness to Researching Flat Earth
X	Condition (Clip: Conspiracy, Science, Religious)
M	Argument Strength
W	Conspiracy Mentality
Z	Science Intelligence
Covariate	Religiosity

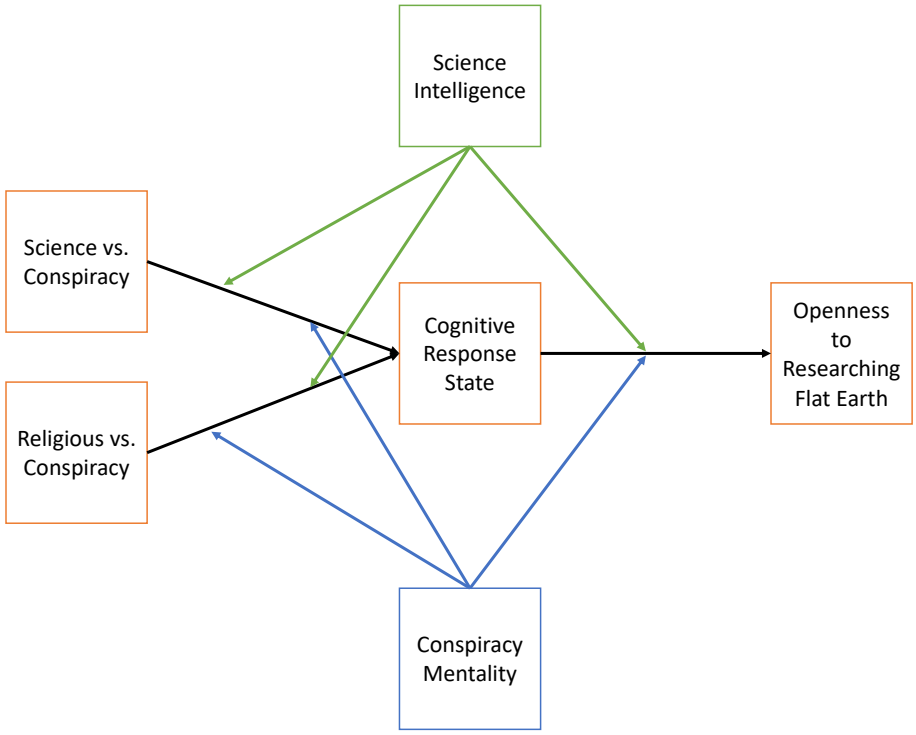


Figure 1. Paths tested for Hypothesis 2. Note that separate models were tested for each of the response state variables. In addition, the conditions were coded using Indicator coding.

Model Results

Predicting Argument Strength

Model Summary

R	R^2	MSE	F	df1	df2	p
0.46	0.22	333.22	8.78	9	289	<.001

	Coeff	*se*	*t*	*p*	LLCI	ULCI
Constant	*-13.29*	*6.28*	*-2.13*	*.034*	*-25.75*	*-1.02*
X1	25.88	13.64	1.90	.059	-0.96	52.73
X2	4.18	14.28	0.29	.770	-23.93	32.28
CM	9.83	2.22	4.43	<.001	5.46	14.20
X1 * CM	-8.18	4.78	-1.71	.088	-17.58	1.21
X2 * CM	-4.62	5.12	-0.90	.369	-14.69	5.48
SL	-6.22	1.48	-4.21	<.001	-9.13	-3.31
X1 * SL	-0.38	3.01	-0.13	.900	-6.30	5.54
X2 * SL	-0.63	3.51	-0.18	.859	-7.54	6.29
Relig	1.08	1.16	0.94	.350	-1.19	3.36

Predicting Openness to Researching Flat Earth

R	R^2	MSE	F	df1	df2	p
0.65	0.42	0.59	17.05	12	286	<.001

	Coeff	*se*	*t*	*p*	LLCI	ULCI
Constant	*0.96*	*0.31*	*3.09*	*.002*	*0.35*	*1.57*
X1	1.43	0.58	2.46	.014	0.29	2.57
X2	-0.99	0.61	-1.62	.106	-2.18	0.21
AS	0.03	0.01	2.29	.023	0.01	0.06
CM	0.23	0.11	2.02	.044	0.01	0.45
X1 * CM	-0.51	0.20	-2.53	.012	-0.91	-0.11
X2 * CM	0.41	0.22	1.89	.060	-0.02	0.84
AS * CM	0.00	0.01	-0.84	.401	-0.01	0.01
SL	-0.02	0.08	-0.27	.790	-0.17	0.13
X1 * SL	-0.05	0.13	-0.35	.724	-0.29	0.20
X2 * SL	-0.04	0.15	-0.25	.803	-0.33	0.25
AS * SL	-0.01	0.00	-2.73	.007	-0.01	-0.00
Relig	0.02	0.05	0.37	.715	-0.08	0.11

Conditional indirect Effects

	CM *Conspiracy Mentality*	***SL*** *Science Intelligence*
Low (16th percentile)	2.20	-0.85
Med (50th percentile)	2.80	0.08
High (84th percentile)	3.20	0.77

	CM	SL	Effect	Boot se	Boot LLCL	Boot ULCI
Conspiracy vs. Other Clips (Science & Religious)	Low	Low	0.26	0.18	-0.04	0.66
	Low	Medium	0.19	0.10	0.02	0.42
	Low	High	0.14	0.08	0.01	0.33
	Medium	Low	0.10	0.12	-0.13	0.34
	Medium	Medium	0.06	0.05	-0.03	0.16
	Medium	High	0.04	0.05	-0.05	0.14
	High	Low	0.00	0.12	-0.22	0.25
	High	Medium	-0.01	0.07	-0.14	0.12
	High	High	-0.01	0.06	-0.14	0.10
Science vs. Religious Clips	Low	Low	-0.17	0.18	-0.51	0.21
	Low	Medium	-0.14	0.08	-0.30	0.01
	Low	High	-0.12	0.08	-0.29	0.01
	Medium	Low	-0.24	0.16	-0.55	0.08
	Medium	Medium	-0.19	0.06	-0.31	-0.07
	Medium	High	-0.14	0.07	-0.29	-0.03
	High	Low	-0.28	0.18	-0.65	-0.05
	High	Medium	-0.21	0.10	-0.42	-0.04
	High	High	-0.15	0.10	-0.37	-0.01

Multi-categorical model using counterarguing as the mediator

Mediator (Counterarguing) & Moderators (Science Intelligence & Conspiracy Mentality)

In this version of the model, we included both conspiracy mentality and Science Intelligence as potential moderators and controlled for religiosity (given that religiosity did not show any significant effects in preliminary analyses). Counterarguing was used as the mediator. In addition, we included potential interactions between the moderators and the mediator in predicting the outcome variable (Y), though this is not explicitly included in the differential susceptibility model.

Experimental manipulation

In this version of the model, we used Helmert coding, which compared the conspiracy clip to the other two clips (science and religious) combined. Then, compared the science clip to the religious clip.

Contrast coding for categorical X variable

	Condition	X1	X2
Conspiracy	1	-0.667	0.000
Science	2	0.333	-0.500
Religious	3	0.333	0.500

Model Specification

Y	Openness to Researching Flat Earth
X	Condition (Clip: Conspiracy, Science, Religious)
M	Counterarguing
W	Conspiracy Mentality
Z	Science Intelligence
Covariate	Religiosity

Model Results

Predicting Counterarguing

Model Summary

R	R^2	MSE	F	df1	df2	p
0.31	0.09	2.15	3.28	9	287	<.001

	Coeff	*se*	*t*	*p*	LLCI	ULCI
Constant	*2.76*	*0.51*	*5.45*	*<.001*	*1.76*	*3.75*
X1	-0.11	1.10	-0.10	.924	-2.26	2.06
X2	1.40	1.15	1.21	.227	-0.87	3.66
CM	-0.32	0.18	-1.80	.073	-0.67	0.03
X1 * CM	0.02	0.38	0.06	.951	-0.73	0.78
X2 * CM	-0.21	0.41	-0.51	.612	-1.02	0.60
SL	0.09	0.12	0.75	.452	-0.15	0.33
X1 * SL	0.29	0.24	1.20	.231	-0.19	0.77
X2 * SL	0.06	0.29	0.20	.840	-0.50	0.62
Relig	-0.20	0.09	-2.11	.035	-0.38	-0.01

Predicting Openness to Researching Flat Earth

R	R^2	MSE	F	df1	df2	p
0.45	0.20	0.79	5.96	12	284	<.001

	Coeff	*se*	*t*	*p*	LLCI	ULCI
Constant	*0.25*	*0.52*	*0.47*	*.637*	*-0.78*	*1.28*
X1	2.11	0.67	3.15	.002	0.79	3.43
X2	-1.07	0.73	-1.47	.143	-2.49	0.36
CA	0.26	0.21	1.26	.209	-0.15	0.67
CM	0.62	0.18	3.39	.001	0.26	0.97
X1 * CM	-0.74	0.23	-3.17	.002	-1.20	-0.28
X2 * CM	0.39	0.26	1.52	.130	-0.12	0.90
CA * CM	-0.11	0.07	-1.45	.148	-0.25	0.04
SL	-0.27	0.12	-2.21	.028	-0.51	-0.03
X1 * SL	-0.05	0.15	-0.35	.726	-0.35	0.24
X2 * SL	-0.10	0.17	-0.60	.551	-0.45	0.24
CA * SL	0.01	0.05	0.09	.929	-0.10	0.11
Relig	0.03	0.06	0.60	.551	-0.08	0.15

Conditional indirect Effects

	CM *Conspiracy Mentality*	***SL*** *Science Intelligence*
Low (16th percentile)	2.34	-0.85
Med (50th percentile)	2.80	0.08
High (84th percentile)	3.26	0.77

	CM	SL	Effect	Boot se	Boot LLCL	Boot ULCI
Conspiracy vs. Other Clips (Science & Religious)	Low	Low	0.00	0.04	-0.10	0.09
	Low	Medium	0.00	0.01	-0.03	0.03
	Low	High	0.00	0.02	-0.03	0.05
	Medium	Low	0.01	0.03	-0.04	0.08
	Medium	Medium	0.00	0.01	-0.02	0.02
	Medium	High	-0.01	0.02	-0.05	0.03
	High	Low	0.02	0.04	-0.05	0.12
	High	Medium	0.00	0.03	-0.07	0.06
	High	High	-0.02	0.04	-0.13	0.06
Science vs. Religious Clips	Low	Low	0.01	0.09	-0.18	0.20
	Low	Medium	0.01	0.05	-0.10	0.12
	Low	High	0.02	0.06	-0.10	0.13
	Medium	Low	-0.03	0.06	-0.17	0.07
	Medium	Medium	-0.03	0.03	-0.10	0.03
	Medium	High	-0.03	0.05	-0.12	0.07
	High	Low	-0.06	0.06	-0.22	0.03
	High	Medium	-0.06	0.05	-0.17	0.02
	High	High	-0.06	0.07	-0.21	0.05

Table with Helmert Coding (see Table 4 in the paper)

Relative conditional indirect effects of the experimental manipulation (video clip watched) on openness to researching flat earth views. Statistical significance was determined using 95% confidence intervals obtained from 5000 bootstrapped samples. Values of the moderators (conspiracy mentality and Science Intelligence) are at the 16th (low), 50th (med), and 84th (high) percentiles.

	Conspiracy Mentality	**Science Intelligence**	**Argument Strength**			**Counterarguing**		
			Effect	*LLCI*	*ULCI*	*Effect*	*LLCI*	*ULCI*
Conspiracy vs Others	Low	Low	0.258	-0.042	0.658	-0.003	-0.096	0.091
	Low	Med	0.186	0.028	0.417	0.000	-0.031	0.032
	Low	High	0.136	0.008	0.329	0.003	-0.029	0.049
	Med	Low	0.096	-0.125	0.335	0.011	-0.042	0.084
	Med	Med	0.063	-0.028	0.161	0.001	-0.019	0.021
	Med	High	0.042	-0.453	0.136	-0.006	-0.050	0.027
	High	Low	0.001	-0.224	0.249	0.024	-0.045	0.124
	High	Med	-0.007	-0.140	0.124	0.001	-0.069	0.061
	High	High	-0.008	-0.144	0.103	0.015	-0.129	0.058
			Effect	*LLCI*	*ULCI*	*Effect*	*LLCI*	*ULCI*
Science vs. Religious	Low	Low	-0.171	-0.506	0.211	0.009	-0.179	0.195
	Low	Med	-0.143	-0.295	0.010	0.014	-0.101	0.115
	Low	High	-0.116	-0.286	0.010	0.018	-0.097	0.133
	Med	Low	-0.238	-0.549	0.083	-0.029	-0.173	0.073
	Med	Med	-0.187	-0.312	-0.067	-0.027	-0.095	0.028
	Med	High	-0.143	-0.294	-0.030	-0.025	-0.115	0.068
	High	Low	-0.275	-0.649	0.054	-0.057	-0.216	0.027
	High	Med	-0.209	-0.424	-0.038	-0.058	-0.174	0.015
	High	High	-0.153	-0.367	-0.004	-0.059	-0.206	0.051