

Title: Statistical modeling without Statement 18 for “Conservatives are less accurate than liberals at recognizing false climate statements, and disinformation makes conservatives less discerning: Evidence from 12 countries”

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Note: The material contained herein is supplementary to the article named in the title and published in the Harvard Kennedy School (HKS) Misinformation Review.

Appendix E: Statistical modeling without statement 18

A reviewer of the paper argued that item 18 of the climate truth discernment task, “Carbon dioxide is not a pollutant but a benefit for the environment,” might be more difficult to categorize as being strictly true or false, thus we repeat the main analyses from Appendixes C and D here without statement 18. All original analyses were replicated.

Crucially, the three-way interaction between political ideology and the two dimensions of climate statements was significant, $F(1, 2604) = 7.2542, p < .001$ (see Table E1). Simple slopes within the four types of climate statements show that the more conservative participants were, the more false statements delaying climate action they evaluated as being true (F -ratio = 15.075, $p < .001$). Political ideology neither influenced evaluating true statements delaying climate action (F -ratio = 0.381, $p = .54$) nor false statements supporting climate action (F -ratio = 1.776, $p = .18$) nor true statements supporting climate action (F -ratio = 1.696, $p = .19$). Follow-up equivalence tests were not conducted for the associations between political ideology and truth ratings of true statements supporting climate of delaying climate action and false of statements supporting climate action, as the statements were unchanged from the main analyses.

Table E1. Multilevel model for climate truth discernment performance, passive control condition.

Predictor	Estimate	SE	t-value	95% Confidence Intervals		p
				Lower	Upper	
Intercept	1.87	0.15	12.225	1.57	2.17	< .001
Age	-0.002	0.002	-1.156	-0.007	0.002	.25
Gender	F -value(3, 859.91):		0.2120			.89
Political ideology	0.06	0.02	3.883	0.03	0.09	< .001
True/False	F -value(2, 2604):		228.0319			< .001
Delay/Support	F -value(2, 2604):		210.7428			< .001
Political ideology * True/False	F -value(1, 2604):		7.0618			.008
Political ideology * Delay/Support	F -value(1, 2604):		12.3066			< .001
True/False * Delay/Support	F -value(1, 2604):		61.2818			< .001
Political ideology * True/False * Delay/Support	F -value(1, 2604):		7.2542			.007

Note: Random intercept effects (variance \pm standard deviation): Participant (0.42 ± 0.65); Country (0.06 ± 0.24); Residual (1.09 ± 1.04).

The three-way interaction between political ideology and the dimensions of climate information was not significant, $F(1, 2559) = 1.0493, p = .31$ (see Table E2). The association between political ideology and false statements delaying climate action was significant, $z(853) = 4.2835, p < .001, r = 0.16, 95\% CI[0.8, 0.21]$. An equivalence test suggested that the difference of this association between the two conditions was practically meaningless ($z = -0.0888, \Delta r = -0.01, p = .033$).

Table E2. Multilevel model for climate truth discernment performance, disinformation condition.

Predictor	Estimate	SE	t-value	95% Confidence Intervals		p
				Lower	Upper	
Intercept	2.21	0.15	14.134	1.83	2.42	< .001
Age	-0.008	0.002	-3.185	-1.218	-0.003	.002
Gender	<i>F</i> -value(3, 849.45):		1.4906			.22
Political ideology	0.06	0.02	3.608	0.03	0.10	< .001
True/False	<i>F</i> -value(2, 2559):		194.5094			< .001
Delay/Support	<i>F</i> -value(2, 2559):		184.1970			< .001
Political ideology * True/False	<i>F</i> -value(1, 2559):		17.7850			< .001
Political ideology * Delay/Support	<i>F</i> -value(1, 2559):		28.6855			< .001
True/False * Delay/Support	<i>F</i> -value(1, 2559):		28.5827			< .001
Political ideology * True/False * Delay/Support	<i>F</i> -value(1, 2559):		1.0493			.31

Note: Random intercept effects (variance \pm standard deviation): Participant (0.52 ± 0.72); Country (0.02 ± 0.14); Residual (1.21 ± 1.10).

We decomposed the influence of political ideology within each of the four types of climate statements with simple slopes. This analysis revealed that the more conservative participants were, the more the number of false statements delaying climate action (F -ratio=13.015, $p < .003$) they reported to be true and the fewer number of true statements supporting climate action (F -ratio = 18.908, $p < .001$) they reported to be true. In other words, conservative ideology was associated with misidentifying false statements delaying climate action as true and true statements supporting climate action as false.

As in Appendix D, we applied signal detection theory to more robustly scrutinize participants' truth discernment ability.

Table E3. Multilevel model for climate truth discriminatory ability (d'), passive control condition.

Predictor	Estimate	SE	t-value	95% Confidence Intervals		p
				Lower	Upper	
Intercept	0.35	0.10	3.600	0.16	0.54	< .001
Age	0.009	0.001	6.495	0.16	0.01	< .001
Gender	F-value(3, 861.92):		0.1493			.93
Political ideology	-0.04	0.01	-3.450	-0.06	-0.02	.005
Delay/Support	F-value(1, 867.98):		113.1316			< .001
Political ideology * Delay/Support	F-value(1, 867.98):		46.8433			< .001

Note: Random intercept effects (variance \pm standard deviation): Participant (0.24 ± 0.49); Country (0.01 ± 0.08); Political ideology (0.01 ± 0.08); Residual (0.11 ± 0.33).

We decomposed the influence of political ideology on truth discrimination ability within each statement type (delay of climate action and support of climate action) with simple slopes. This analysis revealed that the more conservative participants were, the worse their ability to discriminate between true and false statements about delaying climate action (F -ratio=11.901, $p = <.001$). This is equivalent to a zero-order correlation of $r = -.13$, $z(868) = -3.9398$, $p < .001$, 95% CI[-0.20, -0.07]. The influence of political ideology did not extend to discrimination ability about statements supporting climate action (F -ratio = 0.008, $p = .93$). Equivalence tests (Lakens, 2017) confirmed that the associations between political ideology and truth discriminatory ability of statements supporting climate action was small enough to be practically meaningless (i.e., significantly smaller than $r = 0.1$; $z(868) = 2.855$, $p = .002$, $r = -0.003$, 90% CI[-0.06, 0.05]).

Table E4. Multilevel model for climate truth discriminatory ability (d'), disinformation condition.

Predictor	Estimate	SE	t-value	95% Confidence Intervals		p
				Lower	Upper	
Intercept	0.44	0.12	3.842	0.22	0.66	< .001
Age	0.005	0.001	3.468	0.002	0.008	< .001
Gender	F-value(3, 845.1):		1.0547			.37
Political ideology	-0.05	0.02	-2.973	-0.08	-0.02	.009
Delay/Support	F-value(1, 853.01):		6.7271			.012
Political ideology * Delay/Support	F-value(1, 853.01):		2.1561			.14

Note: Random intercept effects (variance \pm standard deviation): Participant (0.04 ± 0.20); Country (0.001 ± 0.03); Political ideology (0.01 ± 0.11); Residual (0.55 ± 0.74).

As for the main analyses, we calculated the correlation between political ideology and truth discriminatory ability for statements delaying climate action and statements supporting climate action. This analysis suggested that the more a participant espoused a conservative ideology, the worse their truth discriminatory ability about statements delaying climate action was, $z(853) = -6.9496$, $p < .001$, $r = -0.13$, 95% CI[-0.20, -0.07].