

POLITICIZED SCIENCE AND ATTITUDE POLARIZATION

Defeating Merchants of Doubt: Subjective Certainty and Self-affirmation Ameliorate Attitude

Polarization via Partisan Motivated Reasoning

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Randomization Check

We conducted a series of between-subjects univariate analysis of variance (ANOVA) to examine whether the randomization of participants in our experimental conditions was successful. No significant difference was found across conditions with respect to gender, age, education, family income, party identification, and prior beliefs about the three politicized scientific issues. The results are summarized in Table A below.

Table A. Randomization Checks

Variables	Scientists-led politicization	Partisan-led politicization	Treatment1	Treatment2	Treatment3	Total	<i>F</i>	partial η^2	
Gender	.50	.50	.50	.50	.50	.50	.000	.000	
Age	45.20	45.13	45.33	45.60	44.39	45.13	.102	.000	
Education	4.57	4.57	4.45	4.61	4.51	4.54	.650	.003	
Family income	5.66	5.71	5.76	5.57	5.75	5.69	.139	.001	
Party identification	.09	.11	.13	.15	.00	.10	.166	.001	
Prior beliefs	Climate change	4.16	4.09	4.11	4.17	4.14	4.13	.287	.001
	GMfoods	3.72	3.58	3.61	3.60	3.50	3.60	1.312	.006
	Algae blooms	3.80	3.76	3.94	3.81	3.74	3.81	.871	.004
<i>N</i>	168	168	168	168	168	840			

* *Note.* Numbers in columns are means for each experimental group. Gender was dummy coded (0 = men, 1 = women).

The exact questions are spelled out below. Except education and family income, the other measures were assessed before participants being exposed to certainty manipulations and news stimuli.

Gender. “What is your gender?” Participants were given choices of (1) Men and (2) Women.

Age. “What year were you born? (e.g., 1964, 1972, 1981)” Participants were asked to write down.

Education. “What is the highest level of school you have completed or the highest degree you have received?” Participants were given multiple choices of (1) Elementary school graduate, (2) Middle school graduate, (3) High school graduate, (4) Associated degree in college-occupational/vocational program, (5) Bachelor's degree and (6) Master's degree or higher.

Family income. “What is your total family income last year?” Participants were given multiple choices of (1) Less than KRW10,000,000 (2) KRW 10,010,000 – KRW 20,000,000 (3) KRW 20,010,000 – KRW 30,000,000 (4) KRW 30,010,000 – KRW 40,000,000 (5) KRW 40,010,000 – KRW 50,000,000 (6) KRW 50,010,000 – KRW 60,000,000 (7) KRW 60,010,000 – KRW 70,000,000 (8) KRW 70,010,000 – KRW 80,000,000 (9) KRW 80,010,000 – KRW 90,000,000 (10) KRW 90,010,000 – KRW 100,000,000 (11) Greater than KRW 100,000,000

Party identification. Participants first indicated “which party you are supporting” from a list of political parties in South Korea. Only those identifying themselves as supporters of the Minjoo Party of Korea (MPK, the largest liberal party) and the Liberty Korean Party (LKP, the largest conservative party) were then asked “to what extent you are supporting your parties” on a 3-point scale (1 = *somewhat support*, 3 = *strongly support*). These measures were recoded into a single measure ranging from –3 (*strong supporters of conservative LKP*) to +3 (*strong supporters of liberal MPK*).

Prior beliefs about scientific issues. Participants indicated “how dangerous you find (1) climate change, (2) GM foods, or (c) algae blooms is” on 5-point scales (1 = *not at all dangerous*, 5 = *very much dangerous*) respectively.

Analyses on Participants’ Prior beliefs about the Three Target Issues

In response to the reviewer’s comments, we further analyzed whether individuals’ prior beliefs about the three target issues are different along party lines. A 5 (experimental conditions) $\times$ 2 (party identification) between-subjects univariate analysis of variance (ANOVA) was performed on prior beliefs about (1) climate change, (2) GM food technology, and (3) algae blooms. The two-way ANOVA found no significant interaction effects on (1) climate change, $F(4, 830) = .443, p = .778$, partial $\eta^2 = .002$, (2) GM food technology, $F(4, 830) = .464, p = .763$, partial $\eta^2 = .002$, and (3) algae blooms, $F(4, 830) = .434, p = .784$, partial $\eta^2 = .002$. The result allows us to examine the main effects of the two independent variables (i.e., experimental conditions and party identification) separately. First, as noted above, we found no difference of prior beliefs across experimental conditions (see Table A). Second and importantly, we found that prior beliefs about the three target issues varied depending on individuals’ party identification. That is, compared to supporters of the conservative LKP, those of the liberal MPK expressed greater concerns about climate change ($M_{LKP} = 4.00$ versus $M_{MPK} = 4.27$), GM foods ($M_{LKP} = 3.48$ versus $M_{MPK} = 3.72$), and algae blooms ($M_{LKP} = 3.19$ versus $M_{MPK} = 4.43$). Table B summarizes the results.

Table B. Differences of Prior Beliefs about the Three Target Issues along Partisan Lines

Variables		LKP supporters	MPK supporters	Total	<i>F</i>	partial η^2
Prior beliefs	Climate change	4.00 (.89)	4.27 (.71)	4.13 (.82)	46.008 ***	.053
	GMfoods	3.48 (.94)	3.72 (.83)	3.60 (.90)	33.857 ***	.039
	Algae blooms	3.19(1.06)	4.43 (.69)	3.81 (1.09)	488.209 ***	.370
	<i>N</i>	420	420	840		

Note. *** $p < .001$.