

## Survey Nonresponse and Mass Polarization:

### The consequences of declining contact and cooperation rates

---

**Amnon Cavari**

Assistant Professor

Lauder School of Government, Diplomacy and Strategy

Reichman University (IDC)

[cavari@idc.ac.il](mailto:cavari@idc.ac.il)

**Guy Freedman**

Ph.D. Candidate

Department of Government

University of Texas at Austin

[freedmanguy@utexas.edu](mailto:freedmanguy@utexas.edu)

### Online Supplementary Material

*Recent studies question whether declining response rates in survey data overstate the level of polarization of Americans. At issue are the sources of declining response rates—declining contact rates, associated mostly with random polling mechanisms, or declining cooperation rates, associated with personal preferences, knowledge, and interest in politics—and their differing effects on measures of polarization. Assessing 158 surveys (2004-2018), we show that declining cooperation is the primary source of declining response rates and that it leads to survey overrepresentation of people who are more engaged in politics. Analyzing individual responses to 1223 policy questions in those surveys, we further show that, conditional on the policy area, this survey bias overestimates or underestimates the partisan divide among Americans. Our findings question the perceived strength of mass polarization and move forward the discussion about the effect of declining survey response on generalizations from survey data.*

## Appendix A: Operationalization of Variables

*Polarization.* Following the work of CF and MP, our measure of polarization in public opinion and congressional action is the Cohen's d coefficient of effect size following mean differences between the parties (Cohen 1988). By using mean differences, we do not consider what is a Republican or a Democrat position but focus on the level of agreement—or disagreement—between the two partisan groups.

Cohen's d is measured as the difference between two means, divided by the pooled standard deviation.

$$Cohen's\ d = \frac{\bar{X}_1 - \bar{X}_2}{SD_{pooled}}$$

Cohen's d provides a measure that is normally distributed, insensitive to sample sizes or the range of values in a given variable, and is comparable in size. It is essentially an expression of the difference between two means in standard deviations. A value of .2 is considered a small effect because the two means are .2 standard deviations apart; .5 is medium because they're half a standard deviation apart; and .8 is large because they are .8 standard deviation apart (Cohen 1988, pp. 20-27).

*Party Identification.* Party identification is operationalized using the Pew routine two-stage questions – party identification with a follow-up for all independents and unaffiliated (missing from only two surveys—in 2004 and 2009). We included leaners within their respective partisan association as they approximate their respective party than being independents, especially with regards to attitudinal preferences (Klar and Krupnikov 2016; Theodoridis 2017).

*Education.* Education is measured as the proportion of respondents in each survey that have a full academic degree (bachelor or more). We used the same categorization for census data – calculating the proportion of Americans with a full academic degree.

## Appendix B: Categorization of Policy Items

Our data builds on and extends the data used by Cavari and Freedman and replicated by Mellon and Prosser (Cavari and Freedman 2018; Mellon and Prosser 2021). The categorization of survey questions is based on the Comparative Agendas Policy Codebook (available at <https://www.comparativeagendas.net/pages/master-codebook>). Given the nature of the survey data, we combined CAP policy areas (referred below using the CAP number codes) into broader policy categories (Cavari 2017, 125). ECONOMY includes economic issues – Macroeconomy (1), labor and employment (5), and domestic commerce (15). FOREIGN AFFAIRS includes foreign-related issues – Defense (16), Trade (18) and foreign affairs (19); SOCIAL WELFARE includes social issues – health (3), education (6), and social welfare (13). CIVIL RIGHTS (2), IMMIGRATION (9), AND ENERGY (8) follow their definition in the policy agendas codebook. All coding was done by the current authors—classifying each survey question into the proper category. The categorization of each survey question into each of the six major policy domains is available on the APSR Dataverse: <https://doi.org/10.7910/DVN/UECUBY>

## Appendix C: Robustness Check to Model

To test the possible non-linear effect of time, we added to our model a polynomial term for time. The results (summarized in Table 1\* below) show no substantive effect on our main coefficients of interest. Cooperation rates have a negative and significant effect on polarization on economy, energy, and immigration; a positive effect on polarization on foreign affairs, and no effect on civil rights and welfare. The effect of time (linear) remains positive and significant for all domestic issues and negative on foreign affairs. The covariate accounting for the polynomial effect of time is positive in most models.

## References (for Online Supplementary Material)

- Cavari, Amnon. 2017. *The Party Politics of Presidential Rhetoric*. New York: Cambridge University Press.
- Cavari, Amnon, and Guy Freedman. 2018. "Polarized Mass or Polarized Few? Assessing the Parallel Rise of Survey Nonresponse and Measures of Polarization." *Journal of Politics* 80 (2): 719–25.
- Cohen, Jacob. 1988. *Statistical Power Analysis for the Behavioral Sciences*. Mahwah, New Jersey: Earlbaum.
- Klar, Samara, and Yanna Krupnikov. 2016. *Independent Politics: How American Disdain for Parties Leads to Political Inaction*. New York, NY: Cambridge University Press.
- Mellon, Jonathan, and Christopher Prosser. 2021. "Correlation with Time Explains the Relationship between Survey Nonresponse and Mass Polarization." *Journal of Politics* 83 (1): 390–95.
- Theodoridis, Alexander G. 2017. "Me, Myself, and (I), (D), or (R)? Partisanship and Political Cognition through the Lens of Implicit Identity." *The Journal of Politics* 79 (4): 1253–67.

Table 1\*: The Effect of Measures of Response Rates on Measures of Mass Polarization, including Polynomial Measure of Time

	Economy		Civil Rights		Energy		Immigration		Welfare		Foreign Affairs	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Response	-0.20** (0.06)		-0.06 (0.06)		-0.19*** (0.04)		-0.25*** (0.05)		-0.03 (0.09)		0.28*** (0.04)	
Contact		-0.12 (0.08)		-0.15** (0.06)		-0.23*** (0.05)		-0.29*** (0.04)		0.41** (0.13)		0.15** (0.05)
Cooperation		-0.23** (0.07)		0.00 (0.05)		-0.16*** (0.05)		-0.18*** (0.05)		-0.08 (0.11)		0.37*** (0.05)
Congress	-0.07 (0.07)	-0.11 (0.09)	-0.03 (0.08)	-0.03 (0.07)	0.06 (0.05)	0.06 (0.06)	0.21*** (0.05)	0.20*** (0.05)	-0.00 (0.10)	0.01 (0.14)	0.21*** (0.05)	0.27*** (0.06)
Year	0.26*** (0.06)	0.31*** (0.07)	0.14* (0.06)	0.10 (0.05)	0.26*** (0.04)	0.29*** (0.05)	0.35*** (0.04)	0.34*** (0.04)	0.29** (0.09)	0.52*** (0.11)	-0.21*** (0.04)	-0.25*** (0.05)
Year <sup>2</sup>	0.02 (0.07)	0.04 (0.09)	0.21* (0.08)	(0.18)* (0.07)	0.17*** (0.05)	0.21*** (0.06)	0.15** (0.05)	0.16** (0.05)	0.17 (0.11)	0.27 (0.15)	0.25*** (0.05)	0.31*** (0.06)
K	3.31	2.28	2.33	2.83	5.07	3.93	4.71	4.42	3.05	1.79	8.01	5.98
N	130	130	210	210	96	96	105	105	153	153	529	529