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A comment on Herzog, Baron, and Gibbons (2022)

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Abstract

Herzog, Baron, and Gibbons (2022) explore the effects of exposure to official elite rhetoric and group cues on public support against the international nuclear weapons prohibition norm. The authors find that elite cues, in particular security and institutional cues, increase individuals' opposition to the Treaty on the Prohibition of Nuclear Weapons (TPNW). However, elite cues do not seem to have an effect on changing individuals' broader attitudes towards nuclear weapons, as measured by individuals' existing opposition to nuclear arms. We replicate and expand the authors' methods and results to test the robustness of the effects found in the study. First, we reproduce the main finding using the authors' original data and method. We do not find any coding errors that undermine the authors' analysis or conclusions. Second, we test the robustness of the results by (1) using a different operationalization of party identity, and (2) calculating additional subgroup analysis for gender. We find no significant differences between our replicated and the original results, however females' support for the TPNW is more responsive to security cues, while males' support is more responsive to institutions cues.

1. Introduction

Herzog, Baron, and Gibbons (2022) test the effect of negative messages from elites and group cues on individuals' attitudes towards nuclear disarmament using a national survey experiment run in the United States. Based on findings in the foreign policy cues literature, the authors expect that the public will perceive and follow elite opinions on foreign policy, but anticipate that group cues may matter more. Furthermore, they expect that different types of negative messages with different justifications for opposing disarmament will vary in their persuasiveness and thus may generate heterogeneous effects on public attitudes. To test these predictions, the authors conduct a survey experiment on a sample recruited through the polling firm Dynata. They administer four treatments, three of which consist of elite cues from U.S. government elites (a security cue, a norms cue, and an institutions cue) and one which constitutes a group cue. In each of the elite cue treatments, the authors vary the reasons given for opposing the nuclear ban treaty to test whether rhetoric is important and if so, which framing is most convincing. The security cue treatment involves justifying opposition to the TPNW using the government's desire not to eliminate nuclear weapons that could be used as protection against other nuclear powers. The norms cue treatment involves framing opposition as a matter of not wanting to subvert norms of the NPT. Finally, the institution cue treatment explains opposition to the TPNW due to the ban's status as a weakly enforced and verified international institution.

The authors' main results show that while all four types of negative messages have a negative and statistically significant effect on subjects' support for joining the Treaty on the Prohibition of Nuclear Weapons (TPNW), negative messages did not have any significant effect on broader attitudes towards nuclear weapons. However, security and institutions-based elite arguments elicited the greatest treatment effects on opposition towards joining the TPNW. In other words,

respondents that were exposed to the norms cue were significantly less likely to express support for the TPNW, and this effect is especially strong for negative messages framed on security or institutional grounds. The group cue decreased the likelihood that someone would support the TPNW by 10.4 percentage points, being exposed to the security cue by 17 percentage points, being exposed to the norms cue by 8.4 percentage points, and being exposed to the institution cue by 19.1 percentage points. The three elite cues also had heterogeneous effects by partisanship: Democrats were most persuaded by elite arguments based on institutions, while Republicans were most persuaded by elite arguments based on security.

We decided to extend the project by trying to see if there was a heterogeneous effect by gender on the reaction to the cues presented. In the control group, women supported the TPNW around 70 percent while men supported the TPNW around 50 percent. Overall, women tend to hold more liberal views than men and this gender difference could affect the influence of certain foreign policy elite cues. Similarly, men are more likely to be supportive of the use of force, which may affect their perceptions. We find that men changed their support for the TPNW most in response to the institutional cue, while women changed their support for TPNW most in response to the security cue. Contrary to the authors' expectations, males who received the norms cue were actually *more*, not less, likely to support the TPNW.

Our findings are largely in line with the previous literature. A gender gap is well established within the literature of public opinion and the use of force, with women being less likely to be supportive of the use of force. This can be seen in the high support of the treaty within the female control group. Generally, women and men hold differences in policy preferences around foreign policy (Fite et al. 1990; Togeby 1994; Bendix and Jeong 2020). In addition, recently some studies have shown that women tend to respond differently to foreign affairs issues than men,

specifically on nuclear weapons (Bae & Lee 2021). Within the US, Canada, and the U.K. there is a gender difference in attitudes towards nuclear war and disarmament, men are more likely to support the use of nuclear weapons as a deterrent than women (Silberman & Kumka 1987; Lizotte 2020; Clements & Thomson 2021).

When Herzog, Baron, and Gibbons (2021) examined the effect of elite cues on public opinion on the TPNW, the original study does not look at the differences of the cues between genders. If there is already an existing gender gap in attitudes towards nuclear weapons, the elite cues could affect these groups differently. Thus, we would assume gender may play a role in turning public opinion since women may hold different foreign policy views than men originally. We test this by running another subgroup analysis estimating the effect of the cues based on gender. What we see is that women and men respond strongly to different cues: women are more likely to be persuaded by the security cue, and men the institutions cue.

The rest of this paper is organized as the follows. First, we attempt to reproduce the main results of Herzog, Baron, and Gibbons (2022) to see if the code and the data provided the authors produce the results in the paper. Second, we conduct a couple of robustness checks. We use a different operationalization measure of the party identity. Then, we run the additional subgroup analysis to look for heterogeneous effects by the gender. In conclusion, we discuss where additional replications could look to expand.

2. Reproducibility

The authors provide three R scripts: one with helper functions, one for cleaning the datasets, and one for the main analysis. When we re-run them, we do not find any major coding errors. One minor point that we find is that there is some inconsistency in how NA values are coded for the gender variable (NAs and the number 95). We drop both the NAs and number 95 in our subgroup analysis, which reduces the number of observations by 18.

3. Replication

In order to check for the robustness of the findings of the study, we conduct two replication tasks: different operationalization of party identity and additional subgroup analysis by gender. In the below paragraphs, we explain each replication task with more detail.

First, we use a different operationalization of the party identity. While the authors force a three-level category to measure party identity, we try the same analysis with a subset of respondents who have identified themselves clearly as Republican, Democrat or Independent. In other words, if a respondent has classified oneself as an Independent on the first question that asks about the party identity, we keep that value, instead of relying on the follow-up question that asks for whether the respondent leans towards the Democrat or Republican. The reason is that someone with a weak partisan identity can be systematically be different from those who with strong partisan identity.

Distribution by Different Operationalization of Party Identities

	Forced	Not forced
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Democrat (-1)	540	450
Independent (0)	222	411
Republican (1)	437	339
Adjusted	20	19

When we do not force party identity by taking into consideration the follow-up question in a survey, we can see that there is a more balanced distribution of the three party identities, each near 400 in observation number. As a result, the covariate balance across treatments changes as the following table.

Covariate Balance Table

	Control	Group	Security	Norms	Institution
PID (forced)	-0.126 (0.057)	0.020 (0.056)	-0.101 (0.058)	-0.134 (0.055)	-0.089 (0.058)
PID	-0.147 (0.05)	0.011 (0.051)	-0.097 (0.053)	-0.102 (0.05)	-0.13 (0.052)

When we include the newly operationalized party identity and rerun the analysis, the main results change slightly. However, the change is not big enough to undermine the authors' claims. None of the coefficients show a change in the sign, nor a big change in magnitude.

Main results with different operationalization of party identity

	Model 1	Model 2
Group cue	-10.4 (-4.5)	-8.0 (4.3)
Security cue	-17.0 (4.5)	-16.9 (4.4)
Norms cue	-8.4	-8.1

	(4.4)	(4.3)
Institutions cue	-19.1	-19.5
	(4.5)	(4.4)

Lastly, we run an additional subgroups analysis, checking whether there is a heterogeneous effect by different genders. Gender differences in response to treatments was not examined originally by Herzog, Baron, and Gibbons (2022). Again, we are assuming there will be differences in strength of the treatment effects based on the literature there appears to be an existing gender gap in support for nuclear weapons. As stated before in the existing literature men and women tend to hold different foreign policy preferences and women tend to support nuclear disarmament more than men. Using this knowledge that women and men hold different support for foreign policy and differences in support for disarmament, we assume that there will be a heterogeneous effect by different genders.

Subgroup Analysis - Estimated Treatment Effects by Gender

	Control	Group cue	Security cue	Norms cue	Institutions cue
Male	57.9 (4.4)	-4.2 (4.6)	-7.5 (4.8)	2.9 (4.6)	-17.1 (4.4)
Female	72.3 (4.2)	-17.6 (4.4)	-27.6 (4.6)	-20 (4.4)	-21.9 (4.6)

The above table shows the point estimates of mean responses for each treatment with the bootstrapped standard errors in the parentheses. Following the original study, we bootstrapped with 10,000 replicates. Without any treatment, female respondents were more positive about joining the TPNW than the male respondents: The point estimates were 72.3% for female versus 57.9% for male respondents, with p value of 0.0185. Under the knowledge that women have higher support for nuclear disarmament, then the differences in response to these cues shows that

the differences in cue response is mostly likely the result of different persuasion techniques. These persuasion techniques could be dependent on foreign policy preferences as well. Overall, the female respondents appear to be very susceptible to the treatments.

4. Conclusion

Replicating is important to increase the credibility and confidence in political science research. By looking at the robustness of the paper's findings and extending the paper, we are contributing to a rising increase in replication projects within political science research. In this paper, we explored whether the results of Herzog, Baron, and Gibbons (2022) still hold, and how their study could be expanded.

By extending the paper's findings through the different operationalization of party identity, we were able to increase the credibility of the authors claims. While we did see a little change, it was not enough to go against the results that the authors present. In addition to the party, we examined how different genders responded to cues. Among female and male respondents, we see differences in response to cues regarding the TPNW. Female respondents were more likely to respond to the security cue while male respondents were more likely to respond to the institutional cue. The difference in how genders responded to different cues provides information on what cues are more effective in different groups similar to how different parties respond. Examining the differences in gender shows there is a difference in what cues different genders will respond to when examining public opinion of foreign policy of nuclear weapons. We found that male respondents were actually more likely to support the treaty when presented with the norms cue. Since this effect was unpredicted, future studies could examine the heterogeneous effects between genders.

Ultimately, this project contributes to the attempt to increase the validity of political science study. As the number of replicated projects increases within political science, we hope to strengthen the credibility of the literature. Future replicators could expand on this difference by examining the differences between the two genders to see if female or male respondents react at different rates to the cues.

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