# Supplemental Appendix for Extremism in Survey Measures of Ideology 

Soren Jordan and Grant Ferguson

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Corresponding author: Soren Jordan (sorenjordanpols@gmail.com).

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## 1 Variance Tests

The $F$-test of equal variance reports a statistical test of the equivalence of variances that are assumed to be from a normal distribution. The Levene test tests the null hypothesis that the population variances are equal (called homogeneity of variance). However, it does not assume normality of distributions. The robust Brown-Forsythe test takes advantage of group medians instead of means (like the Levene test; this is their only difference).

## 2 Question Wording

The question wording for the "branching" ideology question used on the 1989 NES Pilot Study is: "Generally speaking, would you consider yourself to be a liberal, a conservative, a moderate, or what, or haven't you thought much about this?" Moderates were asked: "Do you think of yourself as closer to liberals or conservatives?" Liberals/conservatives were asked: "Do you consider yourself to be [very/extremely] [liberal/conservative] or just [liberal/conservative]?" The question wording for the "self-placement" or "SP" ideology question is: "Think about a ruler for measuring political views that people might hold from liberal to conservative. This ruler goes from one to seven. One means [very/extremely] liberal political views, and seven means [very/extremely] conservative political views. Just like a regular ruler, it has points in between, at $2,3,4,5$, or 6 . Where would you place yourself on this ruler, remembering that one is [very/extremely] liberal and seven is [very/extremely] conservative, or haven't you thought much about this?" The variable for wave 1 is V897301. The variable for wave 2 is V898401.

The polarization scores are defined as the absolute value of the number of liberal preferences a respondent has minus the number of conservative preferences across seven issues: general ideology, affirmative action, national defense, government jobs, government health insurance, government spending, and abortion. We omit ideology, given our general interest in the construct.

The question wording for the affirmative action question varies by form. Forms A and B received a question wording that frames affirmative action as discriminating against whites. Forms C and D received a question wording that frames affirmative action as giving out advantages not earned. The actual question for each form is: "Are you for or against employers favoring blacks when thev decide who to hire and promote?" Response categories were $1=$ For favoring blacks (strongly), $2=$ For favoring blacks (not strongly), 3 = Oppose favoring blacks (not strongly), and $4=$ Oppose favoring blacks (strongly). The variable for wave 2 is V898411. Regression of the preference variable on form type showed no significant effect of question frame.

The question wording for the defense spending question varies by form. Form A received a self-placement format. Form B received a self-placement format with the motivator "or haven't you thought much about this?" Form C received a branching format. Form D received a branching format with the motivator "or haven't you thought much about this?"

The actual question for each form is: "Do you think the US should spend less on defense?" Response categories were $1=\mathrm{A}$ lot less spending on defense to $7=\mathrm{A}$ lot more money on defense. The variable for forms A and B is V898412. The variable for forms C and D is V898417. Regression of the preference variable on form type showed slight significant effects of question frame.

The question wording for the government jobs and standard of living question varies by form. Forms A and B received the question: "Should the government see to it that every person has a job and a good standard of living, should it let each person get ahead on their own, or is your position somewhere in between?" Response categories were 1 = Government should see to it (strongly), $2=$ Government should see to it (not strongly), $3=$ In between, 4 $=$ Let each get ahead on their own (not strongly), and $5=$ Let each get ahead on their own (strongly). Forms C and D received the question: "The government in Washington should see to it that every person has a job and a good standard of living. Do you approve strongly, approve somewhat, disapprove somewhat, or disapprove strongly?" Response categories were $1=$ Approve (strongly), $2=$ Approve (somewhat), $3=$ Disapprove (somewhat), and $4=$ Disapprove (strongly). The variable for forms A and B is V898508. The variable for forms C and $D$ is V898631. We present these preferences separately due to the significantly different question types.

The question wording for the government health insurance question varies by form. Forms A and B received the question: "Do you think that there should be a government insurance plan or that all medical expenses should be paid by individuals and private insurance plans?" Response categories were $1=$ Government insurance plan (strongly) to $5=$ Expenses by individuals (strongly). Forms C and D received the question: "There should be a government insurance plan which would cover all medical and hospital expenses for everyone." Response categories were $1=$ Approve (strongly), $2=$ Approve (somewhat), $3=$ Disapprove (somewhat), and 4 = Disapprove (strongly). The variable for forms A and B is V898512. The variable for forms C and D is V898633. We present these preferences separately due to the significantly different question types.

The question wording for the government services and spending question varies by form. Forms A and B received the question: "Some people think the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel it is important for the government to provide more services even if it means an increase in spending." Response categories were $1=$ Reduce spending (large) to $5=$ Provide more services (large). These are reversed to make higher numbers more conservative. Forms C and D received the question: "The federal government should provide fewer services even in areas such as health and education in order to reduce spending." Response categories were $1=$ Approve (strongly), $2=$ Approve (somewhat), $3=$ Disapprove (somewhat), and $4=$ Disapprove (strongly). These are reversed to make higher numbers more conservative. The variable for forms A and B is V898504. The variable for forms C and D is V898635. We present these preferences separately due to the significantly different question types.

The question wording for the abortion question varies by form. Forms A and C received a question wording that with no framing. Forms B and D received a question wording that frames abortion as a pro-choice issue. The actual question for each form is: "There has been some discussion about abortion during recent years. Which one of the opinions I am about to read you best agrees with your view on abortion?" Response categories were 1 $=$ By law abortion should never be permitted, $2=$ The law should permit abortion only in the case of rape, incest or when the woman's life is in danger, $3=$ The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been clearly established, and $4=$ By law, a woman should always be able to obtain an abortion as a matter of personal choice. These are reversed to make higher numbers more conservative. The variable for wave 2 is V898534. Regression of the preference variable on form type showed no significant effect of question frame.

As per Abramowtiz and Saunders (2008), any response other than the absolute moderate is counted as a preference. There are fewer preferences exhibited on forms C and D due to the 1-2-3-4 response structure outlined above.

## 3 Pooling Checks

Table A. 1: Statistical Analysis of Self-Placement Versus Branching Questions

|  | Wave 1 |  |  | Wave 2 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Extremely | Very | Pooled | Extremely | Very | Pooled |
| OLS Dummy | 0.79 | 1.26 | 1.99 | 2.86 | 0.07 | 0.85 |
|  | $(0.37)$ | $(0.26)$ | $(0.16)$ | $(0.09)^{*}$ | $(0.787)$ | $(0.36)$ |

Before we pooled together responses from different question formats, we needed to test whether the self-placement question format produced significantly different results than the branching format. These tests are reported in Table A1. The header "extremely" denotes a comparison of the self-placement and branching question types within the "extremely" endpoints: in other words, comparing forms B and D (see Table 1) from the survey. We tested for a significant difference by regressing the relevant ideology question (extremely, very, or pooled) on a dummy for the self-placement question type. For all of the tests, only the in regression model for the "extremely" question type in the second wave is there a significant difference between the "branching" question type and the "self-placement" question type ( $F$-statistic for the regression $=2.86, p=0.09$ ). This statistic barely reaches statistical significance, and it is not corroborated by any other tests. Accordingly, we feel comfortable with pooling the self-placement and branching formats together for analysis.

Figure A1 illustrates the considerable differences in using the "extremely" and "very" scale endpoints by wave.


Figure A. 1: Distributions of Ideology by Wave and Endpoint Labels

