

Supplemental Appendix

“Placebo Selection In Survey Experiments: An Agnostic Approach”

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A. Survey Flow and Question Wording

Standard: Introduction (1 Question)
BlockRandomizer: 2 -
Group: Student Loans
Block: SL Experiment - Treatment (3 Questions) Standard: SL Experiment - Outcome (1 Question)
Group: KKK
Standard: KKK Experiment - Treatment (4 Questions) Standard: KKK Experiment - Outcome (1 Question)
BlockRandomizer: 2 -
Standard: SL Experiment - Classification (6 Questions) Standard: KKK Experiment - Classification (7 Questions)
Standard: Demographics (10 Questions) Standard: Debriefing (1 Question)

Start of Block: SL Experiment - Treatment

Display This Question:

If `treatment_assignment = 1`

sl-treatment

Please read the following text:

According to the U.S. Department of Education, college student loan debt now exceeds one trillion dollars, which surpasses the total credit card debt in the United States. This has led to proposals for a student loan forgiveness program. A number of expert economic analysts suggest that a student loan forgiveness program would have serious negative effects on the economy. When individuals accept a student loan, they know they are required to pay it back. By transferring this individual responsibility and debt to the national government, the burden falls on all taxpayers and lets students avoid their financial obligations.

Display This Question:

If `treatment_assignment = 3`

sl-placebo

Please read the following text:

`$(e//Field/placebo)`

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Display This Question:

If treatment_assignment = 2

sl-control

Please continue.

End of Block: SL Experiment - Treatment

Start of Block: SL Experiment - Outcome

exp1-outcome To what extent do you oppose or support the proposal to forgive student loan debt?

- Strongly oppose (1)
- Oppose (2)
- Slightly oppose (3)
- Neutral / Neither oppose nor support (4)
- Slightly support (5)
- Support (6)
- Strongly support (7)

End of Block: SL Experiment - Outcome

Start of Block: KKK Experiment - Treatment

Display This Question:

If treatment_assignment2 = 1

kkk-c1

Please read the following text:

How far is Ohio State University (OSU) prepared to go to protect freedom of speech? The Ku Klux Klan has requested a permit to conduct a speech and rally on the OSU campus during the Fall of 2020. Officials and administrators will decide whether to approve or deny the request in September.

Numerous courts have ruled that the U.S. Constitution ensures that the Klan has the right to speak and hold rallies on public grounds, and that individuals have the right to hear the Klan's message if they are interested. Many of the Klan's appearances in the state have been marked by violent clashes between Klan supporters and counter demonstrators who show up to protest the Klan's racist activities. In one confrontation last October, several bystanders were injured by rocks thrown by Klan supporters and protesters. Usually, a large police force is needed to control the crowds.

Opinion about the speech and rally is mixed. Many students, faculty, and staff worry about the rally, but support the group's right to speak. Clifford Strong, a professor in the law school, remarked, "I hate the Klan, but they have the right to speak, and people have the right to hear them if they want to. We may have some concerns about the rally, but the right to speak and hear what you want takes precedence over our fears about what could happen."

Display This Question:

If treatment_assignment2 = 2

kkk-c2

Please read the following text:

Can campus police prevent a riot if the KKK comes to town? The Ku Klux Klan has requested a permit to conduct a speech and rally on the Ohio State University (OSU) campus during the Fall of 2020. Officials and administrators will decide whether to approve or deny the request in September.

Numerous courts have ruled that the U.S. Constitution ensures that the Klan has the right to speak and hold rallies on public grounds, and that individuals have the right to hear the Klan's message if they are interested. Many of the Klan's appearances in the state have been marked by violent clashes between Klan supporters and counterdemonstrators who show up to protest the Klan's racist activities. In one confrontation last October, several bystanders were injured by rocks thrown by Klan supporters and protesters. Usually, a large police force is needed to control the crowds.

Opinion about the speech and rally is mixed. Many students, faculty, and staff have expressed great concern about campus safety and security during a Klan rally. Clifford Strong, a professor in the law school, remarked, "Freedom of speech is important, but so is the safety of the OSU community and the security of our campus. Considering the violence at past KKK rallies, I don't think the University has an obligation to allow this to go on. Safety must be our top priority."

Display This Question:

If *treatment_assignment2* = 3

kkk-control Please continue.

Display This Question:

If *treatment_assignment2* = 4

kkk-placebo

Please read the following text:

#{e:/Field/placebo2}

End of Block: KKK Experiment - Treatment

Start of Block: KKK Experiment - Outcome

kkk-outcome Would you support or oppose allowing the Ku Klux Klan (KKK) to demonstrate on the Ohio State University campus?

- Strongly oppose (1)
- Oppose (2)
- Slightly oppose (3)
- Neutral / Neither support nor oppose (4)
- Slightly support (5)
- Support (6)
- Strongly support (7)

End of Block: KKK Experiment - Outcome

Start of Block: SL Experiment - Classification

Display This Question:

If *treatment_assignment* = 1

ct-treatment

You were assigned to read this text:

According to the U.S. Department of Education, college student loan debt now exceeds one trillion dollars, which surpasses the total credit card debt in the United States. This has led to proposals for a student loan forgiveness program. A number of expert economic analysts suggest that a student loan forgiveness program would have serious negative effects on the economy. When individuals accept a student loan, they know they are required to pay it back. By transferring this individual responsibility and debt to the national government, the burden falls on all taxpayers and lets students avoid their financial obligations.

Display This Question:

If *treatment_assignment* = 2

ct-control

Please continue.

Display This Question:

If *treatment_assignment* = 3

ct-placebo

You were assigned to read this text:

\$(e://Field/placebo)

Display This Question:

If treatment_assignment != 2

ct-genuine How confident are you that the article you read is a genuine news story, describing actual events?

- Not at all confident (1)
- Only slightly confident (2)
- Somewhat confident (3)
- Moderately confident (4)
- Very confident (5)

Display This Question:

If treatment_assignment != 2

ct-computer

Do you think the article you just read was written by a human or a computer?

- Definitely human (1)
- Probably human (2)
- Either human or computer (3)
- Probably computer (4)
- Definitely computer (5)

Display This Question:

If treatment_assignment != 2



ct-categories How would you describe the main topic of the article you just read? Select all that apply.

- Business (0)
- U.S. politics (1)
- Politics outside the U.S. (2)
- Sports (3)
- Entertainment (4)
- Science (5)
- Media (6)
- Crime (7)
- Weather (8)
- Personal story (9)
- Other (-1) _____

End of Block: SL Experiment – Classification

Start of Block: KKK Experiment - Classification

Display This Question:

If treatment_assignment2 = 1

Q22

You were assigned to read this text:

How far is Ohio State University (OSU) prepared to go to protect freedom of speech? The Ku Klux Klan has requested a permit to conduct a speech and rally on the OSU campus during the Fall of 2020. Officials and administrators will decide whether to approve or deny the request in September.

Numerous courts have ruled that the U.S. Constitution ensures that the Klan has the right to speak and hold rallies on public grounds, and that individuals have the right to hear the Klan's message if they are interested. Many of the Klan's appearances in the state have been marked by violent clashes between Klan supporters and counter demonstrators who show up to protest the Klan's racist activities. In one confrontation last October, several bystanders were injured by rocks thrown by Klan supporters and protesters. Usually, a large police force is needed to control the crowds.

Opinion about the speech and rally is mixed. Many students, faculty, and staff worry about the rally, but support the group's right to speak. Clifford Strong, a professor in the law school, remarked, "I hate the Klan, but they have the right to speak, and people have the right to hear them if they want to. We may have some concerns about the rally, but the right to speak and hear what you want takes precedence over our fears about what could happen."

Display This Question:

If treatment_assignment2 = 2

Q23

You were assigned to read this text:

Can campus police prevent a riot if the KKK comes to town? The Ku Klux Klan has requested a permit to conduct a speech and rally on the Ohio State University (OSU) campus during the Fall of 2020. Officials and administrators will decide whether to approve or deny the request in September.

Numerous courts have ruled that the U.S. Constitution ensures that the Klan has the right to speak and hold rallies on public grounds, and that individuals have the right to hear the Klan's message if they are interested. Many of the Klan's appearances in the state have been marked by violent clashes between Klan supporters and counterdemonstrators who show up to protest the Klan's racist activities. In one confrontation last October, several bystanders were injured by rocks thrown by Klan supporters and protesters. Usually, a large police force is needed to control the crowds.

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Display This Question:

If $treatment_assignment2 = 3$

Q24 Please continue.

Display This Question:

If $treatment_assignment2 = 4$

Q25

You were assigned to read this text:

#{e:/ /Field/placebo2}

Display This Question:

If $treatment_assignment2 \neq 3$

ct2-genuine How confident are you that the article you read is a genuine news story, describing actual events?

- Not at all confident (1)
- Only slightly confident (2)
- Somewhat confident (3)
- Moderately confident (4)
- Very confident (5)

Display This Question:

If $treatment_assignment2 \neq 3$

ct2-computer

Do you think the article you just read was written by a human or a computer?

- Definitely human (1)
- Probably human (2)
- Either human or computer (3)
- Probably computer (4)
- Definitely computer (5)

Display This Question:

If treatment_assignment2 != 3

ct2-categories How would you describe the main topic of the article you just read? Select all that apply.

- Business (0)
- U.S. politics (1)
- Politics outside the U.S. (2)
- Sports (3)
- Entertainment (4)
- Science (5)
- Media (6)
- Crime (7)
- Weather (8)
- Personal story (9)
- Other (-1) _____

End of Block: KKK Experiment - Classification

B. Placebo vignettes

Due to the sizable number of placebo vignettes generated by GPT-2, we have created a shared Google Sheet that lists all of the vignettes: <http://bit.ly/placebosheet>. To use our method in Qualtrics, one should create an embedded data field that generates a random integer for each respondent. The total number of vignettes in the database is 4,696. To access the placebo text, a GET request should be pointed to <http://ourlocalcommunities.com/placebo.php>. The relevant query parameter is *num*, and this should be set to the random integer field. Finally, the *Set Embedded Data* parameter should be set equal to the placebo Web Service field. This can then be piped into the survey using Qualtrics' Piped Text feature (see Figure 2).

The image shows two sections of the Qualtrics interface. The top section is titled "Set Embedded Data:" and contains two rows of configuration. The first row shows "placebo_assignment" set to "\${rand://int/1:4696}". The second row shows "treatment_assignment" set to "\${rand://int/1:3}". Below these rows is a link "Add a New Field" and a set of action buttons: "Add Below", "Move", "Duplicate", "Add From Contacts", "Options", and "Delete".

The bottom section is titled "Web Service" and contains a "URL:" field with the value "http://ourlocalcommunities.com/placebo.php" and a "Test" button. Below the URL is a "Method:" dropdown menu set to "GET". Underneath is a "Query Parameters" section with a row for "num" set to "\${e://Field/placebo_assignment}", with minus and plus icons to its right. Below the query parameters is a link "Add a custom header to send to web service...". At the bottom of the section is a checkbox "Fire and Forget" and another "Set Embedded Data" section with a row for "placebo" set to "placebo", with minus and plus icons to its right. Action buttons "Add Below", "Move", "Duplicate", and "Delete" are located at the bottom right of this section.

Figure 1: Qualtrics settings

Example Block Options ▾

↩ Display This Question: If treatment_assignment Is Equal to 1	▾
<input type="checkbox"/> Treatment <small>si-treatment</small> ⚙	
↩ Display This Question: If treatment_assignment Is Equal to 2	▾
<input type="checkbox"/> Control <small>si-control</small> ⚙	
<input checked="" type="checkbox"/> Placebo <small>si-placebo</small> ⚙	\$(e://Field/placebo)

Figure 2: Piped text example

C. Turing-like tests

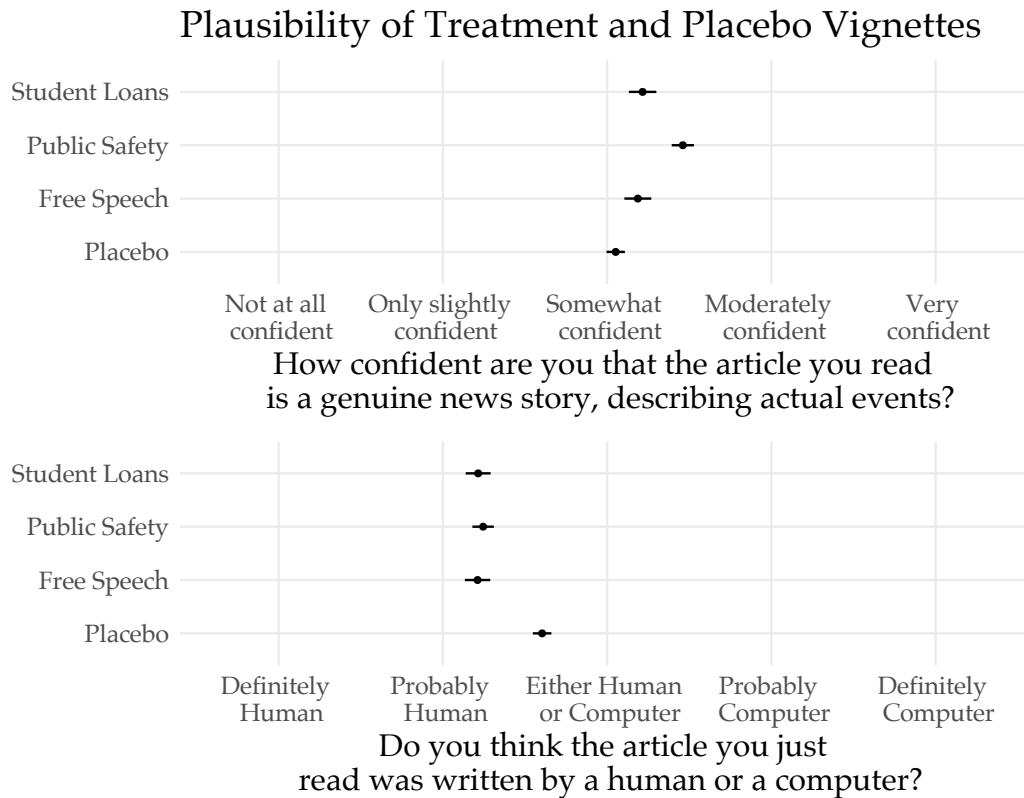


Figure 3: This figure reports mean estimates of two Likert items measuring the plausibility of each condition with corresponding 95% confidence intervals. Though differences between the placebo condition and treatment conditions are significant, a majority of respondents still express a moderate degree of confidence that the vignette is a genuine news story and that it was written by a human being. Moreover, these features of placebo vignettes do not appear to affect compliance behaviors. As we note in the manuscript, we expect realism to increase as generative text models improve.

D. Effect sizes across different baselines

We consider the different inferences that might be drawn if one uses a placebo versus a pure control condition. Though effect sizes for the student loans treatment are largely unaffected by the choice of the baseline, there is about a .03 standard deviation unit decrease in effect sizes in the KKK experiment when the placebo condition is the baseline. If the requisite assumptions governing placebo designs hold, this particular estimate provides an estimate of $E[\tau_i]$, or the theoretically relevant portion of the treatment. Though the difference between estimates across baselines is not statistically significant, using the placebo condition as the baseline renders the effect of the public safety frame statistically insignificant at the .05 level (two-tailed). Taken together, in two out of the three cases, use of the placebo condition as a baseline produces a more conservative estimate of the effect size relative to the pure control, and affects whether a statistically significant estimate is recovered in one case.

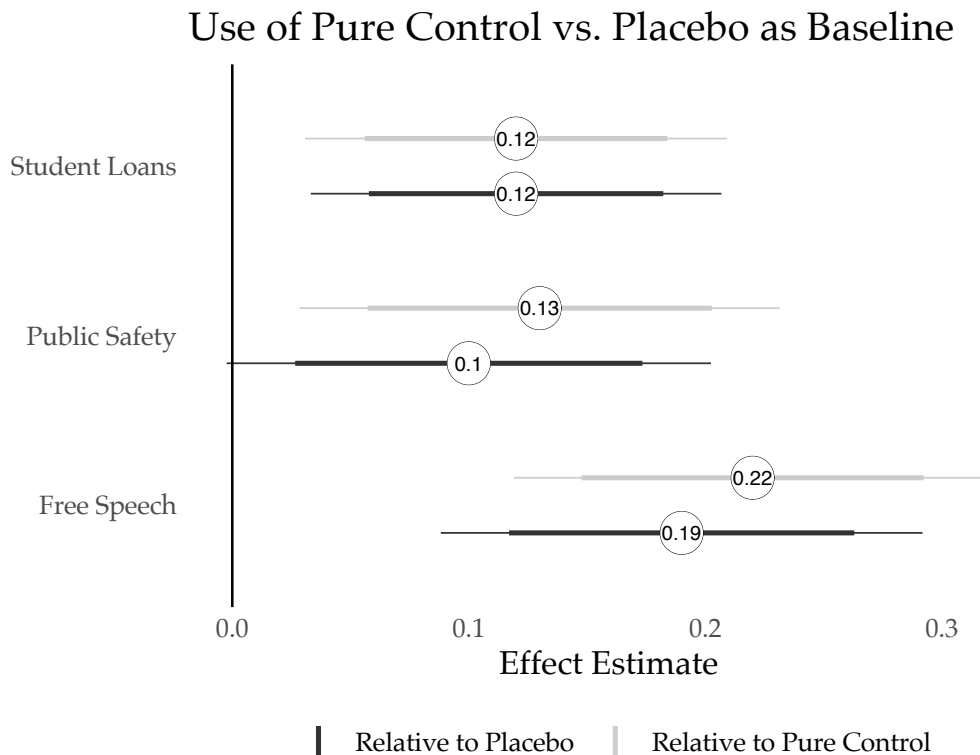


Figure 4: This figure reports average treatment effects with the pure control and placebo conditions as baselines. 95% (narrow bar) and 84% (heavy bar) confidence intervals are shown. 84% confidence intervals (heavy bar) allow for visual tests of equality across conditions; the use of 95% confidence intervals results in Type II errors when comparing visible coefficients.