Pre-analysis plan for an experiment on LGBT group interests

Clara Vandeweerdt

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1 Introduction

Theories of political opinion, both old (Campbell et al., 1960; Kinder, 1998; Conover, 1984) and new (Achen and Bartels, 2016) have emphasized social groups as a relatively easy reference point for ordinary people trying to make sense of the political world. Compared to concepts such as ideology or values, group memberships are concrete, visible, and they play are large role in daily life. They are also connected to emotion in a way that makes them highly salient (Green et al., 2004; Mason, 2018). As a result, people's group memberships, and their attitudes toward their in- and out-groups, have the potential to be strong drivers of political opinions. In particular, we expect people to have policy opinions that benefit their in-group (i.e., a group that they are a member of), even or especially at the cost of an out-group.

In this pre-analysis plan, I introduce the third study in a series of experiments that ask whether in-group interests structure people's opinions. In this study, I investigate whether people who identify as LGBT (lesbian, gay, bisexual or transgender) change their opinions about societal problems when they learn that those problems affects LGBT citizens especially. Previous versions of the study aimed to answer the same question for gender and racial groups.[1]

The main hypothesis in this survey experiment, is that people change their attitudes about an issue when they are told that the issue happens more frequently to people of their own social group–in this case, people with a non-heterosexual sexual orientation. In particular, I am interested in three kinds of attitudes: concern, importance, and support for government spending. In addition, I investigate whether the key mechanism is in-group favoritism. I do this, first, by checking whether in-group identification moderates the effect of the new information. Second, I try to rule out an alternative mechanism: that people use the group information as a heuristic for their own self-interest. In other words, I see whether the effect is due to respondents changing their beliefs about whether the issue will affect them personally. Finally, if we find a significant treatment effect, I ask whether the effect is due to priming, and I use instrumental variables analysis to focus on the effect of actual (rather than intended) changes in racial disparity beliefs.

[1] The third study in this series was originally planned to be a study on age groups. However, because the gender and race versions turned up small effects, I decided that an LGBT version of the study would be a harder test for the null hypothesis that social group interests do not matter.

2 Design

In the following sections, I introduce the sample and give an overview of the experimental procedure. Next, I dive deeper into descriptions of the treatment and of the dependent variable measurement.

2.1 Sample

Participants for this study will be recruited from a pool of 396 American Mechanical Turk workers (18 years and older). These are workers who completed another survey task on Mechanical Turk at least one month, and up to X months, prior to being recruited for this survey. All workers indicated, in a question that was part of these tasks, that they identified as LGBT and were willing to be recontacted for another paid survey. I will invite all of these minority workers by e-mail to participate in a 3-4 minute study about social groups. The actual number of participants will depend on the success of the recruiting procedure. I expect it to be around 215.

Given this set-up, we can calculate the minimum detectable size (MDE, with a power of .80) for the effect of in-group interests on each of the three dependent variables: concern, importance, and government spending. We can draw on previous surveys to estimate of the variance of each dependent variable from. For concern about the issue, measured on a four-point Likert scale, the MDE is .25. Issue importance, measured as the issue's place in an eight-place ranking, would have an MDE of .69. Finally, support for government spending, measured once again on a four-point scale, has an MDE of .33.

2.2 Experimental procedure

The procedure for the study is as follows:

- Check that respondent identifies as LGBT, and filter out respondents who do not. Measure centrality of LGBT identity.
- Measure personal importance of issue.
- Randomly assign respondent to one of two issues (unemployment or sexual assault) or to the control group. Treated respondents receive information that LGBT people are disproportionately affected by the issue. Control respondents receive no information.
- Dependent variables: for each of the issues, ask respondent about:
  - whether they see the issue as a (serious) problem
  - how important the issue is compared to others
  - support for government spending on issue
- Mediator: Ask respondent how likely it is that the problem will be a threat to them in the future.
- Issue/group beliefs: ask respondent which group is disproportionately affected by each of the issues, and how certain respondent is about his or her answer.

- Four-item version of Just World Belief scale (Lerner, 1980).

To measure centrality of the group to the respondent's identity, I use the Centrality subscale developed by Leach et al. (2008). The scale consists of three items (with seven-point agree-disagree scales as answer options), which we average into an overall identification score:

- I often think about the fact that I am LGBT
- The fact that I am LGBT is an important part of my identity.
- Being LGBT is an important part of how I see myself.

The question on beliefs about in-groups and issues consists of two parts for each issue. First, we ask whether the issue happens more to LGBT people, more to straight people, or whether it is about the same. Next, we probe whether the respondent has a lot of confidence, a moderate amount, or only a little confidence in their answer. This results in a seven-point scale. Respondents who answer "about the same" are placed at the midpoint. Respondents who answer 'more to LGBT people" or "more to straight people" are placed on either side of the midpoint, with the most confident respondents sitting at the ends. Finally, the scale is coded in such a way that the top half of the scale represents a correct answer (e.g., unemployment affects LGBT people more), and the bottom half represents an incorrect one.

In the question that probes the potential mediator, personal interest, I ask whether the issue is likely to be a threat to the respondent *or someone close to them*. Answer options range from "Will probably not happen" to "Has already happened". I add the reference to people close to the participant, in order to protect his or her privacy, and to make the question less invasive. This way, participants do not have to confirm whether they themselves were affected.

2.3 Treatment: racial groups and their issues

This study covers two issues that happen more often to LGBT people than to heterosexual people: unemployment and sexual assault. As noted above, I randomly assign each participant to one of two issue treatment groups, or to the control group. Treated participants read a statistic about how one of the two issues affects their social group especially. The treatment statements are:

- In the US, unemployment affects LGBT people more than straight people. LGBT Americans are 50% more likely to be jobless than straight Americans.
- In the US, sexual assault affects LGBT people more than straight people. LGBT Americans are three times more likely to have been sexually assaulted than straight Americans.

2.4 Dependent variables: concern, importance, spending support

I measure three outcome variables: concern about the issue (i.e. whether the issue is seen as a problem, cf. Wlezien 2005), importance of the issue (relative

to other issues, cf. Conover 1984), and support for government spending to help tackle the issue. I ask each respondents about all three dependent variables for each of the two issues involved. To help conceal the purpose of the study I also ask about the issues of climate change and air pollution.

Problem perception is measured on a four-point Likert scale. from "Not at all serious/not a problem" to "Very serious". In the question about importance, people rank the two studied issues along with six other ones: climate change, air pollution, poverty, suicides, addiction to opioids (strong painkillers), and car accidents. The question about government spending is once again a four-point Likert scale ranging from "Do not favor" to "Favor very much".

3 Analyses

3.1 Dependent variables and units

The dependent variables in this survey are three types of attitudes about social issues: concern, perceived issue importance, and support for spending. We measure each of the variables for two issues with an LGBT bias: unemployment and sexual assault.

I conduct three main analyses, one for each dependent variable (attitude type). For treated participants, I leave non-treated issues out of the analysis, in case the treatment spills over into other issue opinions. For control participants, I include their responses on both issues. Thus, the unit of analysis here is the person-issue, and n will be about 284 person-issues: one issue coming from each of the roughly 142 treated participants, and two issues coming from each of the roughly 71 control participants. All analyses use standard errors clustered at the person level. All analyses include personal importance of the issue as a control variable.

3.2 Effects of in-group interests

The main research question is whether the change in issue attitudes between phases is larger for treated person-issues than for non-treated person-issues. For each of the dependent variables, we start out with a basic model including only the following indicators:

- Treated: indicates whether the person received an informational treatment connecting their group to the issue
- Issue: indicates which issue the attitude question was about

The coefficient on Treated gives us an overall estimate of whether respondents change their attitudes (concern, importance, spending support) when they learn that their group is particularly affected by an issue. All models, including this one, are linear models.

Next, we may want to know whether the effect of learning is particularly large for one of the issues. To answer that question, we can estimate a separate model for each issue, including only the observations (from both the treatment and control groups) on that issue. For clarity, I will show the effect size estimates (and their uncertainty) in a graph rather than reporting a regression table for each of the 6 (3 dependent variables $\times$ 2 issues) analyses.

This issue-by-issue analysis is very low-powered. The estimated minimum detectable effect size for the 4-point-scale dependent variables is .43 to .57 (with a power of .8). For that reason, I plan to combine it with the issue-by-issue analyses of the gender and racial group experiments mentioned above. By presenting all the issue-specific results at once, we are able to explore possible patterns in the kinds of issues that seem to show most group-centric opinion formation.

3.3 Group identification as a moderator

Once we have established whether there is a main effect of in-group interests, we want to know whether the effect is larger for people who identify more with the in-group. To address that hypothesis, I add the following covariates to the basic model:

- Group identification: constructed from four items measuring the connection between self and group (see above)
- interaction between Treated and Group identification

The interaction effect indicates whether or not the in-group interest treatment is most effective for those respondents who are strong identifiers. To interpret its size, we may calculate the estimated effect of the treatment for respondents who are one standard deviation above or below the mean identification level, respectively.

3.4 Self-interest as a mediator

Finally, if there is an effect of in-group interests on any of the three issue attitudes, we may be interested to see whether this effect is mediated by people's perception of their self-interest. We measure self-interest by the respondent's perceived likelihood that the problem will be a threat to them in the future. One simple way to test for mediation is by fitting two simple linear regressions: one of the mediator on the treatment indicator, and one of the outcome on treatment indicator and mediator (Baron and Kenny, 1986). We can calculate standard errors in the way suggested by Imai et al. (2010).

The key assumption for this identification strategy is that the value of the mediator is as-if random given the value of the treatment (Imai et al., 2010). This assumption is violated if, for example, a person's general pessimism predicts both how seriously they take a societal problem, and how much they anticipate being harmed by that problem themselves. As this example illustrates, most confounders will affect mediator and outcome in the same direction, causing an upward bias in our indirect effect estimates. For that reason, the effect estimates should be read as an upper bound.

Appendices

A Change in beliefs

In the main analysis, I measure the average effect of receiving in-group information. To be precise, this is an intention-to-treat effect rather than a treatment

effect. For various reasons, the treatment may not actually have affected some respondents' belief in the connection between their group and the issue at hand. For example, some respondents are no doubt aware of the connection beforehand; for those people, the treatment cannot have an effect on their attitudes. Fortunately, the design includes a measure of belief in the association between in-group and issue (measured on a seven-point scale, see above).

In order to estimate a true average treatment effect, we need to conduct an instrumental variables analysis, using the treatment as an instrument for belief. The effect we are estimating is now a conditional one: it is the effect of the informational treatment on compliers, people who would actually change their beliefs about the issue when faced with an informational treatment like ours. The results of these analyses will be included in an appendix to the paper; only their conclusions will be referenced in the main text.

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