Do Trump Reminders Cause Cognitive Dissonance?

Experiments and Causality

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April 24, 2018

Introduction

In the uncharted world of the Donald Trump presidency, there is an abundance of division, misinformation, confirmation bias, and at times cognitive dissonance. While there is nothing new about partisan politics and presidential approval dividing along political lines, we suspect that Trump elicits a distinctive emotional response from many that transcends this typical political divide. For example, as mainstream media sources have been clear in their opposition–such as the Washington Post's post-inauguration slogan[1], "Democracy Dies in Darkness"–many conservative media and political pundits have reacted to the rise of Trump similarly, with National Review publishing an issue[2] titled "Against Trump," prior to election day. We wonder whether this strong emotional response is prevalent and felt outside of the media and political punditry and seek to test whether even a subtle reminder of Trump can cause a moment of cognitive dissonance (i.e. inconsistent beliefs triggered by emotion). Or, alternatively, do we observe that typical Americans are consistent in their levels of optimism about the most important aspects of their lives, irrespective of who is president?

Research Question

In this experiment, we seek to survey respondents who are representative of the American public to answer the following question:

Does a subtle reminder of Donald Trump cause an immediate change in the level of optimism toward key aspects of life, such as employment or retirement prospects?

We consider it important given the appearance of the current political climate. It is our hope that there is *no* strong effect across subjects, though we hypothesize that there could be heterogeneous effects for smaller segments of the population, including subsets of the political parties.

A related survey was conducted recently to determine the level of optimism American workers have in employment outlook a year after President Trump's election[3]. It found that a large majority of Americans (48.9%) do not feel differently about their employment outlook since Trump's victory. However, men were estimated twice as likely as women to be more optimistic although there were subtle differences by race, education and geography. In our study, we control for these factors while considering the possibility of heterogeneous treatment effects.

Hypothesis

Given the strong emotional response that Trump elicits from people across the political spectrum, we hypothesize that even a subtle mention of his name can momentarily affect the immediate level of optimism some Americans have on priorities that should be considered important and neutral across political lines, like employment, education, retirement, and cybersecurity. Whether the effect will be more positive or more negative, we assume it will be similar to the dividing attitudes in the news media. Conservatives will be more optimistic than liberals when it comes down to the association of Trump's name, but like the media in general, we expect the optimism will largely go downhill with the treatment of Trump applied to any topic.

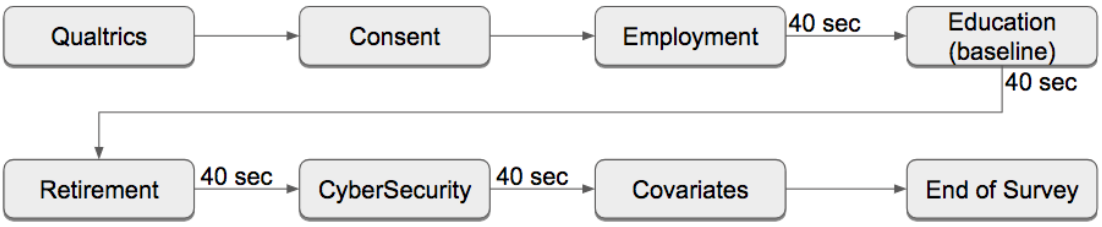


Figure 1: Survey Flow

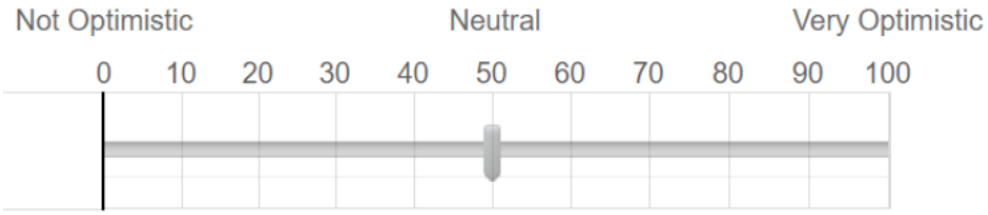


Figure 2: Scale used for employment, education, and retirement prompt

Experiment

Research Design

Our experiment draws upon two sets of nearly identical surveys randomly assigned to one of two groups, our treatment and control. Both surveys contain four prompts on the subjects of employment, education, retirement and cybersecurity, followed by the questions:

1. How do you feel about the general employment outlook for Americans over the next two decades?
2. How do you feel about how the education system is preparing students to enter the workforce?
3. How do you feel about your prospects for saving enough for retirement?
4. How would you rate the threat of cyber-attacks to your security, private information or livelihood?

For those respondents who are assigned to treatment group, they see all prompts with the same type of treatment wording, which we will call the "Trump treatment" hereafter. Subjects assigned to control see no mentions of Trump, but instead see a simple reference to the same period, such as "in 2018." An example prompt follows, with the treatment emphasized:

Now approaching a decade since the worst of the 2008 financial crisis, a steady recovery in the United States has brought a return of modest, sustained economic growth averaging roughly 2% annually, along with rising wage growth of over 3%. While rapid technological advancement has brought new efficiency and growth opportunities to many segments of the economy, many geographic areas and industries also face difficulties competing in global markets and continuing to provide economic opportunities. Overall, however, the unemployment rate has reached a decade-low of close to 4% ***one year into the Donald Trump presidency****, a level lower than pre-crisis unemployment and considered by some economists to be full employment.*

Education is the only prompt that does not contain any Trump treatment in either subject group, which serves two purposes. First, it serves as a baseline to verify that the level of optimism in both treatment and control are approximately equal. It also poses as a diversion to the exact purpose of the survey by omitting the Trump reference. With each prompt, the respondent is given a minimum of 40 seconds to read the text and then answer the question, which is a sliding scale from 0 to 100. We use this wide scale in order to achieve some variance in the distribution of responses. The flow of the survey as well as an example of the scale are shown in Figure 1 and Figure 2-3 respectively.

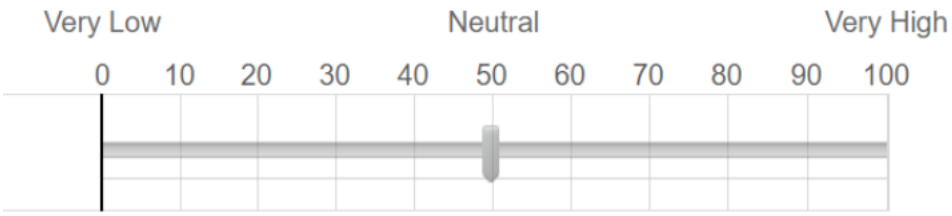


Figure 3: Scale used for cybersecurity prompt

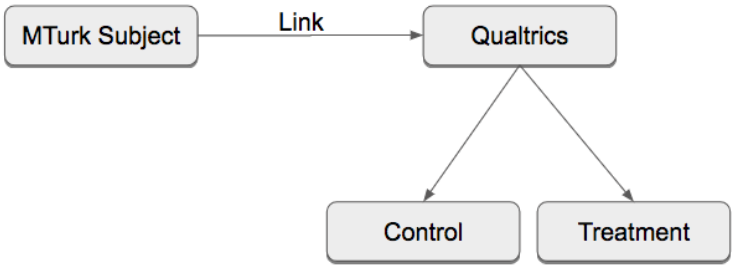


Figure 4: Random Assignment

Randomization Engineering

To collect a broad sample of the American population, we turned to Mechanical Turk to select our subjects. We used Qualtrics to assign subjects equally to their respective control and treatment groups as shown in Figure 4. We sought a group of at least 450 respondents to achieve statistical power of at least 90%, where we assumed the maximum variation in the response variable (i.e. a standard deviation of roughly 25 points).

TODO: add power test

Unfortunately, even though we have requested Mechanical Turk to select subjects only in the United States, we still receive users whose country of origin is not from the United States. Out of 688 subjects, 580 reside in the United States and 108 reside outside of the United States.

US	Non-US
580	108

In addition, we filtered out subjects who did not complete the survey (including those who did not provide their consent) as well as subjects who took the survey more than once, which left us with 557 subjects: 262 in control and 295 in treatment.

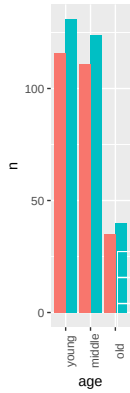
Control	Treatment	Total
262	295	557

The reason why we removed repeated test-takers with the same IP address is because we have no way to confirm whether or not the test-takers are roommates, people who are visiting, or the same individual. If they were different people who ended up not using the same device, we still cannot differentiate because all devices connected to the same router share the same external IP address. In addition, the data themselves are conflicting with some answers completely the same while others completely different in terms of the covariates. For this reason, we decided to be conservative and removed these repeated test-takers from our analysis.

Measurement of variables: covariates

To increase the precision of our estimated treatment effects on the subjects' optimistic score, we also collected key covariates from the subjects in the form of a multiple choice answers. Covariates were chosen based on how likely they might influence the subjects on deciding their optimism level in the four prompts. For

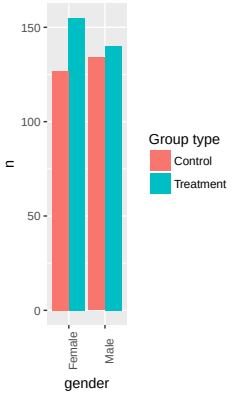
Age differences between control and treatment



	young adult	middle−aged adult	old adult
0	116	111	35
1	131	124	40

	young adult	middle−aged adult	old adult
0	0.469635627530364	0.472340425531915	0.466666666666667
1	0.530364372469636	0.527659574468085	0.533333333333333

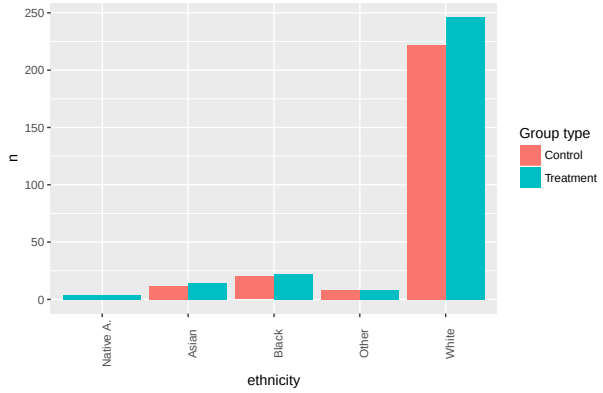
Gender differences between control and treatment



	Female	Male
0	127	134
1	155	140

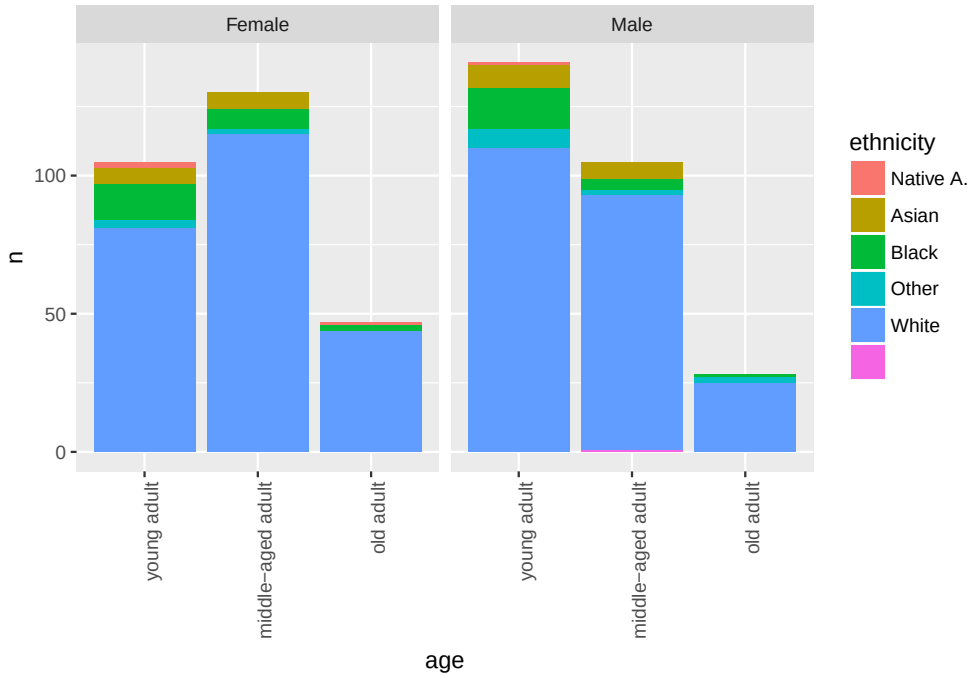
	Female	Male
0	0.450354609929078	0.489051094890511
1	0.549645390070922	0.510948905109489

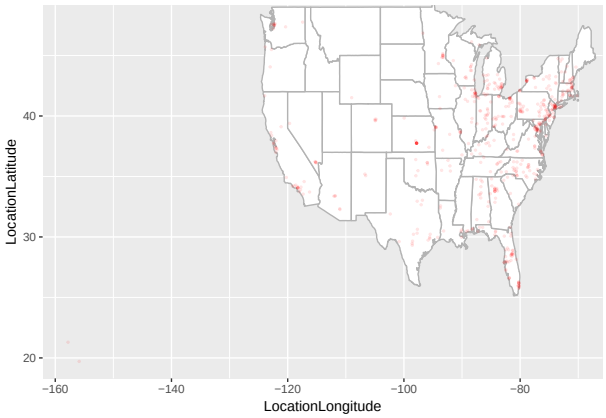
Ethnicity differences between control and treatment



	Native A.	Asian	Black	Other	White
0	0	12	20	8	222
1	4	14	22	8	246

	Native A.	Asian	Black	Other	White
0	0	0.461538461538462	0.476190476190476	0.5	0.474358974358974
1	1	0.538461538461538	0.523809523809524	0.5	0.525641025641026





Modeling choices

To estimate any treatment effects on our subjects' levels of optimism, we first examine the distributions of scores to verify whether ordinary least squares regression is appropriate and there are significant differences between the two groups. For each outcome measure, we see a high variance of responses, with the mean employment optimism at [5x%], retirement savings at [4X%], and cybersecurity risk at [7X%]; the education check has mean [4X]%. Within each question, the treatment and control distributions do not show significant differences as measured by Cohen's d (all less than 0.2). Still, with some imbalances in the key covariates, OLS regression can control for these differences and estimate any treatment effects with stronger precision than a comparison of means.

Because of the scale and wide variance of our outcome variables, we expect that OLS regression will produce the most efficient and unbiased estimates of any treatment effects, particularly after controlling for the key covariates explored above. After hypothesizing which variables will have relationships with the outcomes, we can select models for which those covariates contribute to the model fit, according to a log-likelihood ratio test. Similarly, we also test interaction terms to estimate heterogeneous treatment effects by political preference. While our intuition is that there could be significantly different emotional responses to the Trump reference from some Left/Liberal respondents, the preliminary analysis below on retirement optimism shows little effect, if maybe a positive one.

Result

References

1. "The Washington Post: 'Democracy dies in darkness' | TheHill." The Hill - covering Congress, Politics, Political Campaigns and Capitol Hill, 22 Feb. 2017, www.people-press.org/2017/10/05/the-partisan-divide-on-political-values-grows-even-wider.
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