Quantifying the Persistence of Misinformation

PSCI 107 Final Project

by Anna Callahan

The Data

Sex Trafficking, Russian Infiltration, Birth Certificates, and Pedophilia: A Survey Experiment Correcting Fake News

Porter, Ethan, Thomas J. Wood, and David Kirby. 2018. “Sex Trafficking, Russian In-filtration, Birth Certificates, and Pedophilia: A Survey Experiment Correcting Fake News.”Journal of Experimental Political Science 5(2): 159-164.

The Experiment

The Survey

What is the research question?

Testing whether the consequences of fake news can be neutralized by issuing corrections.

Why is this important?

The experiment we will analyze today directly quantifies the impact of issuing corrections to fake news stories, which could provide important evidence as to why Facebook, Twitter, and other platforms should increase fact checking efforts.

The Experiment

What was the treatment?

All survey respondents were randomly assigned two out of six possible fake news stories to read or watch. Members of the randomly assigned treatment group were also exposed to corrections of the fake news stories.

What was the outcome variable?

The outcome was a measurement of the degree to which agreeing with the fake news stories changed as a result of exposure to the corrections.

The Experiment

What was my hypothesis?

Using common knowledge, I hypothesized that undergoing the treatment (viewing corrections to fake news stories) would reduce the degree to which respondents agreed with the fake news stories. The mechanism behind this hypothesis is that if people trust news outlets, they will also trust when that same news outlet issues a correction.

What was the conclusion?

The conclusion of the experiment was the finding that respondents randomly assigned to the treatment group were less likely to believe the fake news stories.

The Experiment

How did the experiment work?

This survey experiment randomly selected participants for the control and treatment groups. Members assigned to the control group were exposed to two randomly selected fake news stories. Members assigned to the treatment group were exposed to two randomly selected fake news stories and corrections to the fake news stories. All respondents were asked about the degree to which they agreed with the content of the news stories, with responses ranging across a 5 point scale of agreement, from Strongly disagree to Strongly agree.

Exploratory Data Analysis

Examining participant responses after exposure to fake news stories about PizzaGate

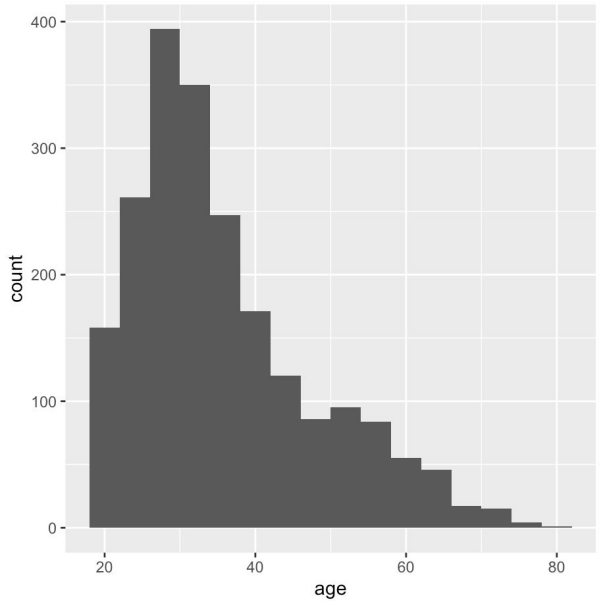
Variables

Demographic variables

- age
- gender
- race
- education
- political_party
- political_ideology

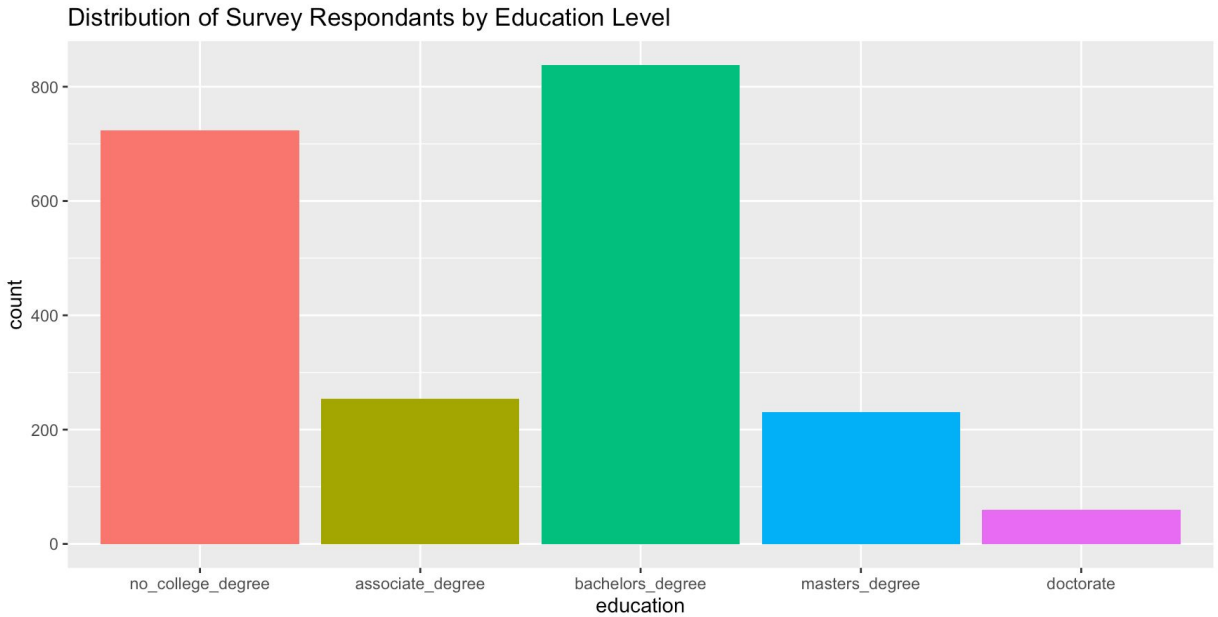
Age

The distribution of respondent age was skewed towards younger people.



Education

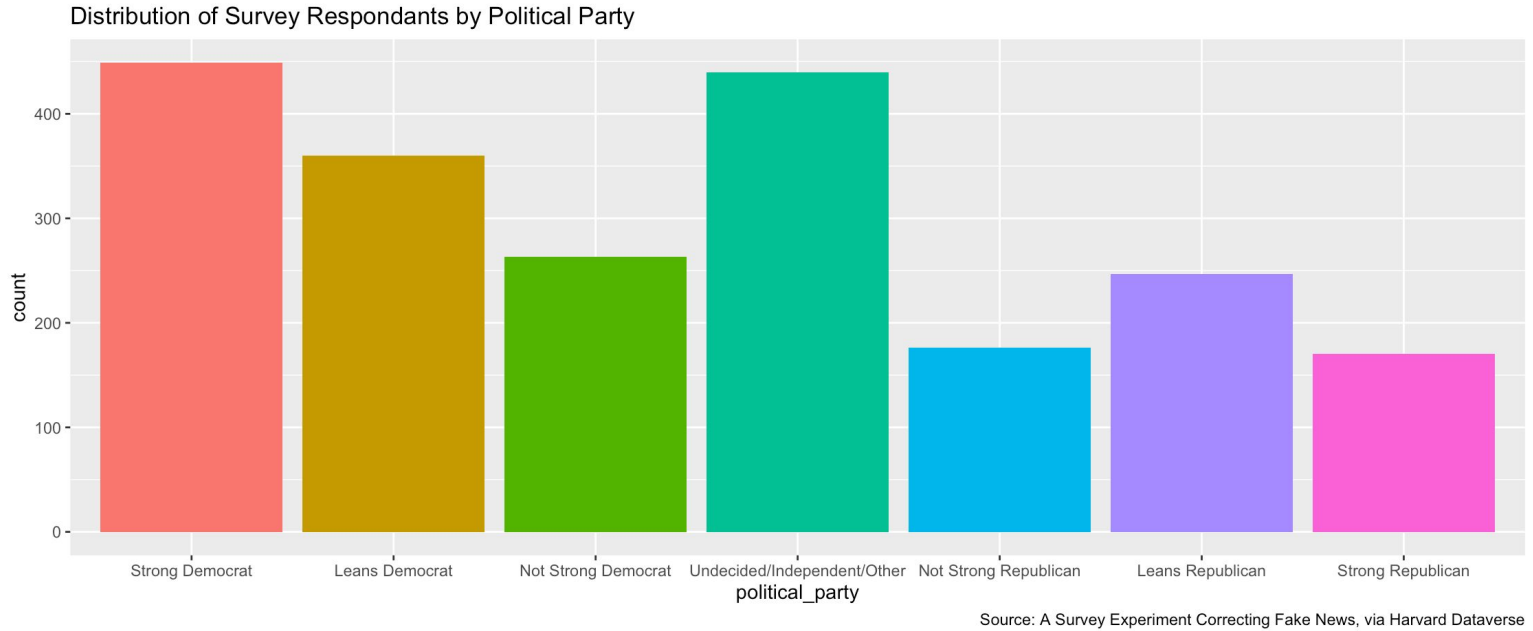
About half (53.6%) of respondents graduated with a bachelor's degree or higher.



Source: A Survey Experiment Correcting Fake News, via Harvard Dataverse

Political Party

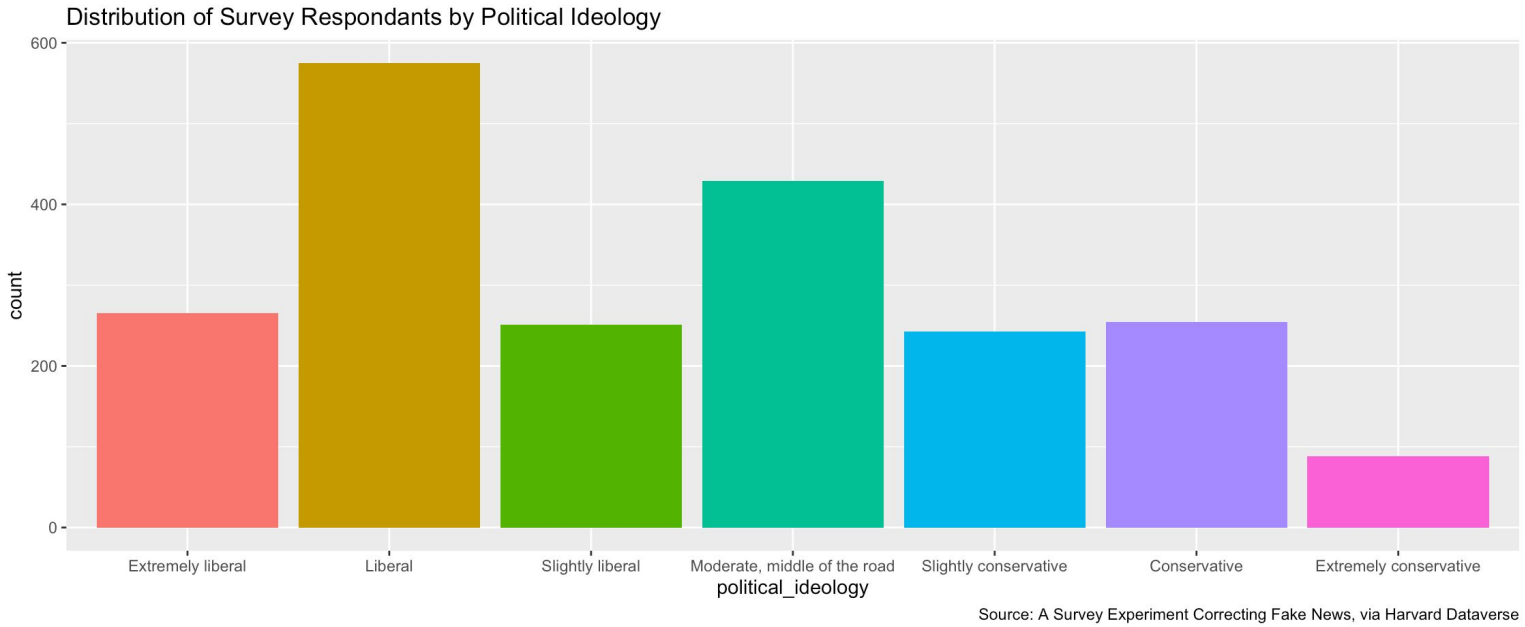
Distribution of respondents by political party skewed democratic.



Source: A Survey Experiment Correcting Fake News, via Harvard Dataverse

Political Ideology

Distribution of respondents by political ideology skewed liberal.



Source: A Survey Experiment Correcting Fake News, via Harvard Dataverse

Summary

1. The distribution of respondent age was skewed towards younger people.
2. The gender distribution was relatively even.
3. The vast majority of respondents (>76%) identified as white.
4. About half (53.6%) of respondents graduated with a bachelor's degree or higher.
5. Distribution of respondents by political party skewed democratic.
6. Distribution of respondents by political ideology skewed liberal.

Balance Testing

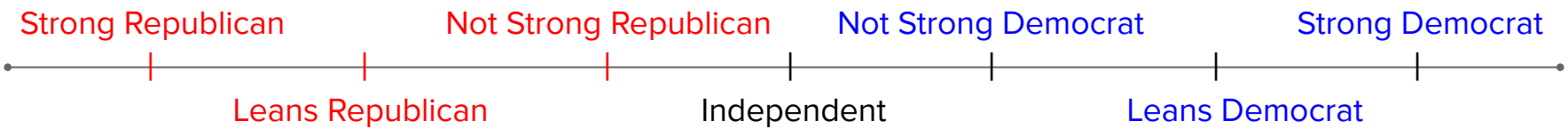
Variables

- Age
- Level of educational attainment
- Political party

Balance Test Results

variable	mean treatment	mean control	p-value
avg_age	35.716	36.118	0.659
avg_party_SR	0.105	0.087	0.417
avg_party_LR	0.128	0.118	0.69
avg_party_NSR	0.048	0.095	0.017
avg_party_I	0.188	0.221	0.294
avg_party_NSD	0.115	0.104	0.639
avg_party_LD	0.188	0.16	0.328
avg_party_SD	0.227	0.216	0.729
avg_ed_NC	0.323	0.364	0.26
avg_ed_AD	0.125	0.106	0.465
avg_ed_BA	0.383	0.415	0.411
avg_ed_MA	0.121	0.09	0.184
avg_ed_PhD	0.048	0.025	0.122

Balance Test Results



- 7 point scale
- Twice as many NSRs in the control than in the treatment

Average Treatment Effect

Multilinear regression results

- Why not a t.test?
- Regressing on group and whether or not they identified as a NSR

- H0: There was no difference in rates of believing fake news stories between the treatment and control groups
- H1: There was a difference in rates of believing fake news stories between the treatment and control groups

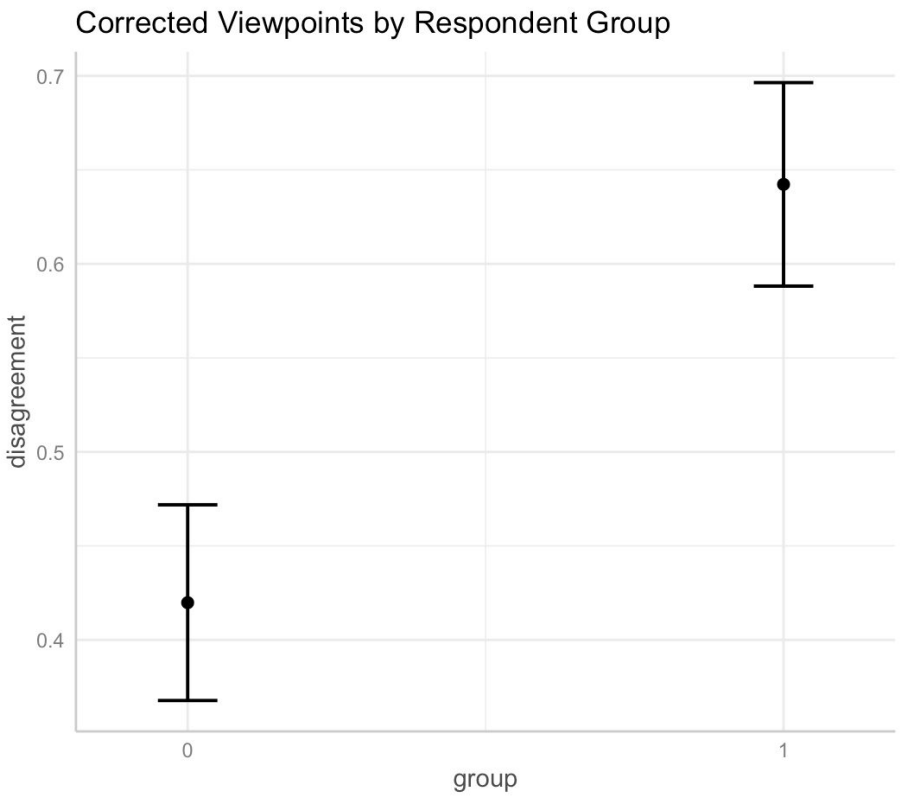
Multilinear regression results

Results indicated that survey respondents who were assigned to the treatment group were around 22.2 percentage points more likely to disagree or strongly disagree with the content of the fake news articles.

Average Treatment Effect of Fake News Corrections

	(1)	(2)
Treated	0.232***	0.222***
	(0.038)	(0.038)
Respondent Identified as Not Strong Republican		-0.202***
		(0.072)
Intercept	0.401***	0.420***
	(0.026)	(0.027)
Observations	670	670
Adjusted R2	0.052	0.062

Visualization



Implications

While fake news may have had a significant impact on the 2016 election, upon seeing a correction, Americans are willing to disregard fanciful accounts and hew to the truth. This evidence could be really helpful in future years as social media platforms hopefully improve fact checking efforts so that the integrity of future elections is protected.

Thank you!