Behavioral Science to Strengthen Democracy for All

Leveraging Transparency & Improving Discernment for Better U.S. Elections

A partnership between Duke University's Center for Advanced Hindsight & Irrational Labs

Duke UNIVERSITY | CENTER FOR ADVANCED HINDSIGHT

IRRATIONAL LABS

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EXECUTIVE SUMMARY

Trust in government is near historic lows, with a key contributing factor being the exponential spread of election-related misinformation. This has had devastating consequences - concerns over the fidelity of the 2020 presidential election, persistent threats to election officials, and polarized communities. Understanding how to increase trust and reduce the spread of misinformation in elections is one of the most pressing issues of this decade. It is central to the continued flourishing of our democratic system. With this background, we conducted 10 lab studies and 9 field experiments to explore the effectiveness of interventions designed to improve election outcomes. We focused on 3 main concepts:

1. **Operational Transparency to Increase Trust:** We conducted 3 initial lab studies and show there is a high appetite for increased election administration transparency, those with low trust are the most movable (e.g., Trump voters and conservative voters), and video-based operational transparency interventions are effective at increasing trust.

   In partnership with Shasta County, Yolo County, and Orange County, California, we ran 4 field experiments. Print and email-based interventions designed to increase operational transparency increase trust with some consistency. This link is mediated by perceived transparency and the perception that one's vote is counted. Interventions that increase trust also increase voter turnout with some consistency. Effects are strongest amongst those who have no party preference, who we expect are the least politically engaged and so have the biggest knowledge gap.

   Following the midterms, we completed a final lab study with all treatments from the previous studies to learn more about how they impact voters. Counter to previous studies, we find treatment conditions increase trust in elections for voters on the left but decrease it for those on the right. This difference in results suggests local election officials play a key role as messengers to reach those with lower trust.

2. **Providing Support for EOs:** We ran 1 lab study, and prototyped 2 field studies focused on the effectiveness of gratitude, as expressed through thank-you notes, at improving feelings of happiness and appreciation for workers. Initial evidence suggested thank-you notes were effective in the lab but, due to difficulties launching field studies, we could not conclusively determine the impact in the field.

3. **Reducing the Impact of Election-Based Misinformation:** Finally, we designed 7 studies (4 in the lab and 3 in the field) to inoculate against and correct misinformation. Within these messenger-based studies, we find that messengers play an important role in the inoculation process. Election officials and other personalized messengers remain the most effective at improving misinformation discernment and distrust in inaccurate content. These messengers are especially effective around elections, indicating inoculation has more impact when misinformation is prevalent and trusted sources are most needed.

   Active and passive learning through both an inoculation game and guide, respectively, positively impact discernment of manipulation and misinformation. We find the game is especially effective for election deniers and Conservatives. In the field, using a range of Twitter ads, we successfully get individuals within misinformation channels to click on a link to the game (43%) but few complete it. For participants who complete the game, we see a similar increase in post-test discernment.

In the final group of studies, we test inoculation ads in the lab and corrections for misinformation spreaders on Twitter. We see inoculation ads with varying message frames effectively improve discernment. The accuracy nudge and prebunking-based ads work best, with increased impact on those who believe misinformation. In our Twitter feedback study, we see varying types of feedback are effective (e.g. fact-checking), reducing the number of inaccurate tweets post-correction.

Across these 19 studies, we find a positive picture for operational transparency, gratitude, inoculation, and corrections as a means to improve trust, voting outcomes, and misinformation beliefs and sharing. Finally, we point to ways to explore these concepts for 2024.

Highlights

Operational Transparency

Be Transparent:
Transparency prompts, emails, postcards & videos increase trust in government & elections

Up to 15% increase in trust & higher voter turnout

Building EO Resilience

Express Gratitude:
Gratitude from key messengers (e.g. constituents, supervisors, religious leaders) improve happiness & appreciation

Thank you note made workers “extremely” happy & appreciated

Effective Messengers

Use Effective Messengers:
The relevant personalized messengers, like EOs, improve discernment & distrust in inaccurate content especially around elections

Up to 18% increase in misinformation discernment

Inoculation & Corrections

Inoculate & Correct:
Active & passive games & guides, inoculation ads, and corrections effectively improve misinformation discernment & subsequent sharing

Up to 9% increase in misinformation discernment

INTRODUCTION

An Overview

Election mis-, mal-, and disinformation, paired with diminishing out-group sentiments has continued to contribute to the erosion of trust in US elections. This has resulted in a range of negative outcomes for impacted communities. Election workers, for example, have come under attack, being exposed to harassment and a range of threats from voters that question the legitimacy of election results. Though a range of research has explored interventions that can be used to address deteriorating trust and increasing misinformation, these often lack integrative design which uses feedback from varying experts and collaborators. By consulting the impacted people and a range of experts in the field, we built out several theories, backed by behavioral science, and focused on testing the potential pillars needed to strengthen US democracy.

Our Approach

The Six Stages

We employed our six project stages to enable this work: Partner, Identify, Explore, Prototype, Test, and Disseminate.

By forming meaningful partnerships, and conducting exploratory research and interviews with stakeholders from varying areas primarily in Phase 1 (see Phase 1 report here), we were able to develop our understanding of the problem of deteriorating democracy and the key contributors. Using these insights, we developed a range of interventions with the goal of testing through randomized controlled trials (RCTs), which allowed us to measure the impact and effectiveness of these interventions in Phase 2.

Phase 2 Key Activities

Phase 2 consisted of building behavioral intervention prototypes and testing their effectiveness in the lab and using large field experiments with our partners to generate evidence and have an impact on the 2022 election. The key deliverables were as follows:

1. Run field research with partners

2. Generate at least 10-15 workable, prototyped concepts to tackle problems in civic engagement, with a particular focus on trust and misinformation.
3. For each partnership, implement and rigorously evaluate at least one solution.
4. Produce a methodologically technical and consumable report for each solution implemented.
5. Producing multiple 6-monthly summary reports.
6. Develop plans to scale roughly 1 in 3 of the solutions implemented – based on the impact and feasibility of the solutions.
7. Generate estimated impact from these interventions.
8. Disseminate strong initial results.
9. Finalize the Phase 3 plan.

Our Partnerships

We partnered and collaborated with a range of institutions and individuals to build and test these interventions. Some of these include the following groups:

Potential Solutions

Through initial exploration and research, we identified three key solutions to combat the election-based issues stemming from voter distrust. The key mechanisms that we identify are 1) Operational transparency to increase trust, 2) Improving EO and voter outcomes through gratitude, and 3) Inoculation and corrections to address the issue of misinformation belief and spread.

This report provides a summarized overview of our experimental research and findings from phases 1 and 2 (July 2021 to December 2022) in collaboration with the Brennan Center for Justice, Irrational Labs, and a range of election partners. Based on initial exploration, we identified 4 key areas of interest: 1) Transparency, 2) Election Official Support, 3) Messengers and Messaging, and 4) Digital Literacy and Misinformation Games. Within these

workstreams, we prototyped 19[1] and ran 16 studies focused on building trust, improving EO outcomes, and reducing the spread of misinformation.

Reading this Report

The report structure is as follows:

1. Chapter 1: Operational Transparency To Increase Trust
2. Chapter 2: Supporting Our Election Workers And Officials
3. Chapter 3: How Misinformation Works
    a. Chapter 3A: Who Should Communicate Election Information
    b. Chapter 3B: Inoculating Against & Correcting Misinformation
4. Chapter 4: Putting It Together

Each section begins with an overview of the background and literature before delving into potential solutions, experimental exploration of these solutions, and potential implications and next steps based on our findings. Each section can be read independently to better understand the impact of a range of interventions designed to increase operational transparency, improve election official outcomes, and address election-based misinformation.

Throughout the report, each section focuses on a series of randomized controlled trials (RCTs) conducted both in the lab (usually through an online survey) and the field (through physical or digital interventions). The impact of these studies is communicated with a specific focus on statistical significance, as noted through the p-values. P-values less than 0.05 are generally used to determine the impact of an intervention relative to a control group.

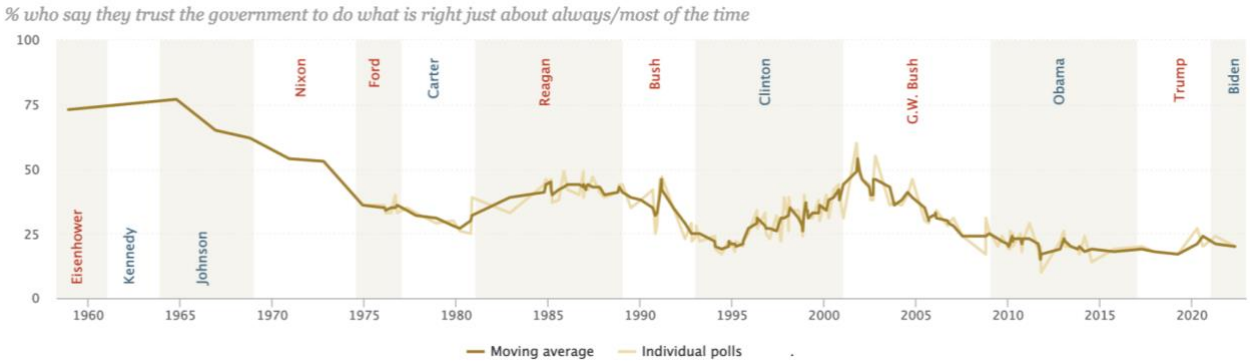
[1] There were 19 studies prototyped, but this final report only details the results of 18, excluding the results of an exploratory study - our trust and misinformation pretest, which was used to identify the trust measures and misinformation headlines used in these other studies.

CHAPTER 1:
OPERATIONAL TRANSPARENCY TO INCREASE TRUST

The Problem

The growing spread of misinformation and political polarization has led people to distrust both the government and each other. Research shows as misinformation grows on social media, it erodes trust in authorities and governing bodies.[2,3,4] Trust in government is near historic lows since first measured in 1958 - see Figure 1. Only two-in-ten Americans say they trust the government in Washington to do what is right "just about always" or "most of the time".[5]

Figure 1: Trust in Government over Time



Furthermore, in 2022 more voters were confident about the administration of U.S. elections than in 2020 (70% vs. 62%) but voter confidence has not returned to 2018 levels (81%).[6] This lack of trust in elections has played out with devastating consequences in the United States, most notably with concerns over the fidelity of the 2020 presidential election resulting in rioters storming the US Capitol Building on January 6th, 2021.

Partisanship drives trust in the current US system. Voters have higher trust in elections when their preferred party wins and is in power. Since 2016, political parties have begun to take stances on aspects of election administration, polarizing trust at a more nuanced level. 79% of voters who back Republican congressional candidates are confident that votes cast in person will be accurately counted.[7] However, only 37% of Republican supporters are confident absentee and mail ballots will be counted accurately.[8]

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[2] Xiao, X., Borah, P., & Su, Y. (2021). The dangers of blind trust: Examining the interplay among social media news use, misinformation identification, and news trust on conspiracy beliefs. Public Understanding of Science, 30(8), 977-992.

[3] Filkuková, P., Ayton, P., Rand, K., & Langguth, J. (2021). What should I trust? Individual differences in attitudes to conflicting information and misinformation on COVID-19. Frontiers in psychology, 12, 588478.

[4] Carlin, R. E., & Love, G. J. (2018). Political competition, partisanship and interpersonal trust in electoral democracies. British Journal of Political Science, 48(1), 115-139.

[5] Nadeem, R. Two Years After Election Turmoil, GOP Voters Remain Skeptical on Elections, Vote Counts. Pew Research Center - U.S. Politics & Policy https://www.pewresearch.org/politics/2022/10/31/two-years-after-election-turmoil-gop-voters-remain-skeptical-on-elections-vote-counts/ (2022).

[6] Nadeem, R. 1. Views of election administration and confidence in vote counts. Pew Research Center - U.S. Politics & Policy https://www.pewresearch.org/politics/2022/10/31/views-of-election-administration-and-confidence-in-vote-counts/ (2022).

[7] Ibid.

[8] Ibid.

Generalized trust refers to the degree to which individuals "trust" someone they meet without prior knowledge or interaction history.[9] Generalized trust is often cited as an important factor for the functioning of democracy.[10,11,12,13] Trust varies by the function of different levels of government, party affiliation, and sociodemographics such as race. Citizens may have higher trust in some areas, while lower in others.[14,15,16] To fully appreciate the trust in our electoral system, we must grasp how it differs across these groups.

Understanding how to increase trust in elections amongst voters is one of the most pressing issues of this decade and central to the continued flourishing of our democratic systems. The antecedents of trust and distrust are complex.[17] Mettler argues distrust in government comes from a lack of understanding of operations and how the public benefits from government policies.[18] Indeed, election processes comprise a complex set of operations that vary at the county level, often unseen or underappreciated by citizens. Additionally, people typically know less about complex policies than they think they do (illusion of explanatory depth), contributing to political polarization.[19] For instance, asking people to explain policies in detail both undermined their illusion of explanatory depth and led to less extreme political attitudes.[20] Similarly, Mettler's operational transparency theory argues that uncovering hidden processes and effort will increase transparency thereby also increasing trust in government and institutions.[21]

Solutions

Operational transparency has been studied in relation to government service platforms, revealing higher government trust levels.[22,23] Most recently, Buell (2021) found significantly higher government trust levels for residents who viewed photos of city workers responding to a city service request through an app, and, further, residents were more likely to continue using the app over the next 13 months.[24] Ultimately they show that when people see the work going on behind the scenes, they value the service more.

Theory of Change

We apply this idea to elections. Our central thesis is that by increasing the operational transparency of election processes and security, we will increase trust in elections.

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[9] Uslaner, E. M. (2007). The foundations of trust: macro and micro. Cambridge journal of economics, 32(2), 289-294.

[10] Ibid.

[11] Lundmark, S., Gilljam, M., & Dahlberg, S. (2016). Measuring generalized trust: An examination of question wording and the number of scale points. Public Opinion Quarterly, 80(1), 26-43.

[12] Putnam, R. D. (1993). What makes democracy work?. National civic review, 82(2), 101-107.

[13] Uslaner, E. M. (2008). Where you stand depends upon where your grandparents sat: The inheritability of generalized trust. Public opinion quarterly, 72(4), 725-740.

[14] Mangum, M. (2012). Explaining African-American political trust: Examining psychological involvement, policy satisfaction, and reference group effects. International Social Science Review, 87(1/2), 3-18.

[15] Price, G. N. (2012). Race, trust in government, and self-employment. The American Economist, 57(2), 171-187.

[16] Jamison, A. M., Quinn, S. C., & Freimuth, V. S. (2019). "You don't trust a government vaccine": Narratives of institutional trust and influenza vaccination among African American and white adults. Social Science & Medicine, 221, 87-94.

[17] Solomon, R. C., & Flores, F. (2003). Building trust: In business, politics, relationships, and life. Oxford University Press.

[18] Mettler, S. (2011). The submerged state: How invisible government policies undermine American democracy. University of chicago Press.

[19] Fernbach, P. M., Rogers, T., Fox, C. R., & Sloman, S. A. (2013). Political extremism is supported by an illusion of understanding. Psychological science, 24(6), 939-946.

[20] Ibid.

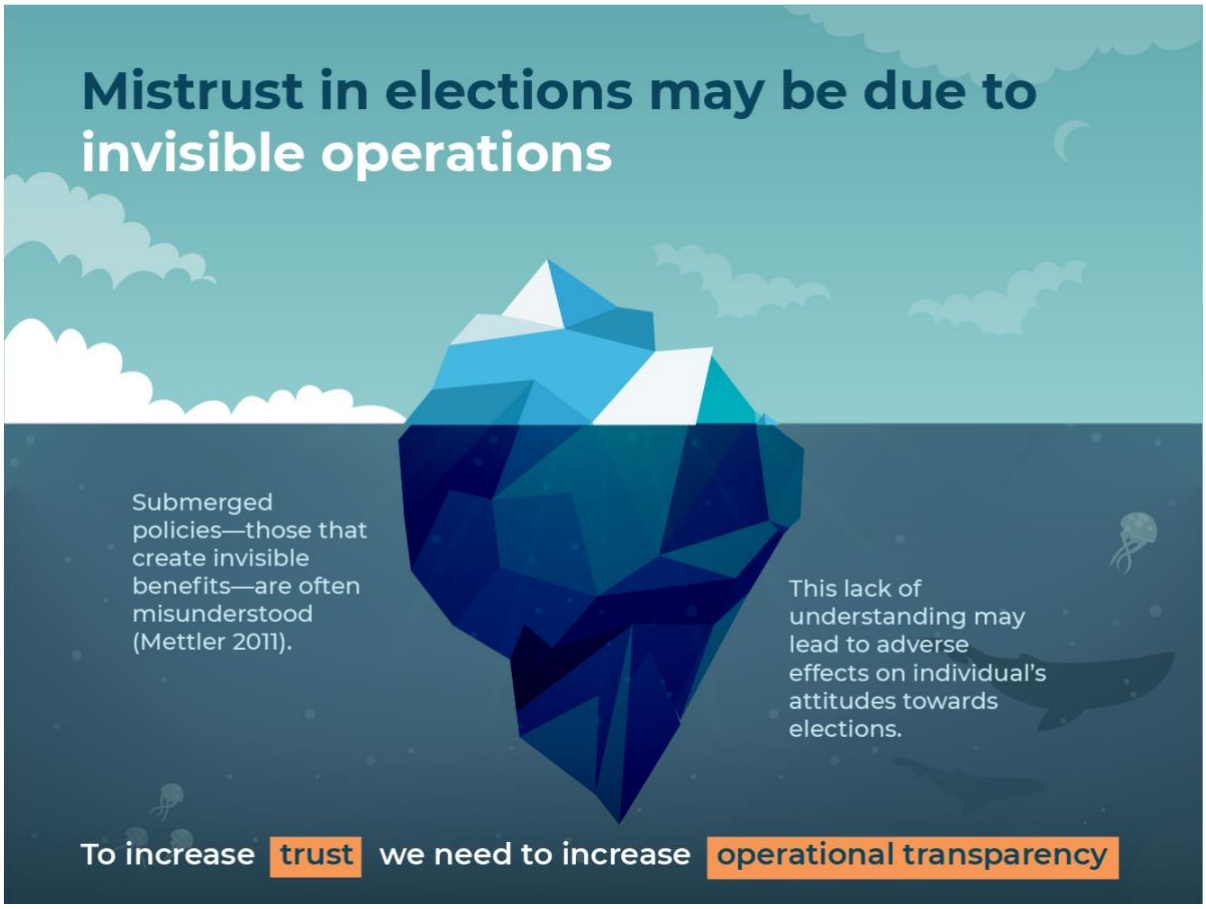
[21] Mettler, S. (2011). The submerged state: How invisible government policies undermine American democracy. University of chicago Press.

[22] Buell, R. W., Porter, E., & Norton, M. I. (2021). Surfacing the submerged state: Operational transparency increases trust in and engagement with government. Manufacturing & Service Operations Management, 23(4), 781-802.

[23] Kim, S., & Lee, J. (2012). E-participation, transparency, and trust in local government. Public administration review, 72(6), 819-828.

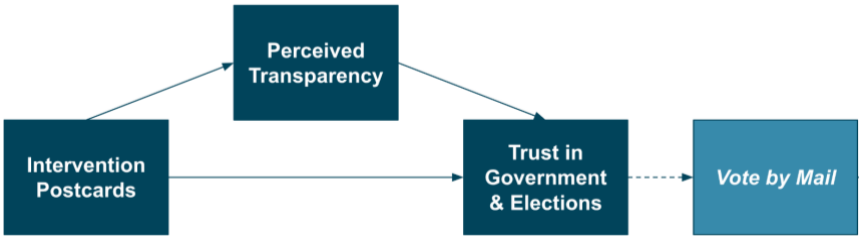
[24] Buell, R. W., Porter, E., & Norton, M. I. (2021). Surfacing the submerged state: Operational transparency increases trust in and engagement with government. Manufacturing & Service Operations Management, 23(4), 781-802.

Figure 2: Operational Transparency Theory



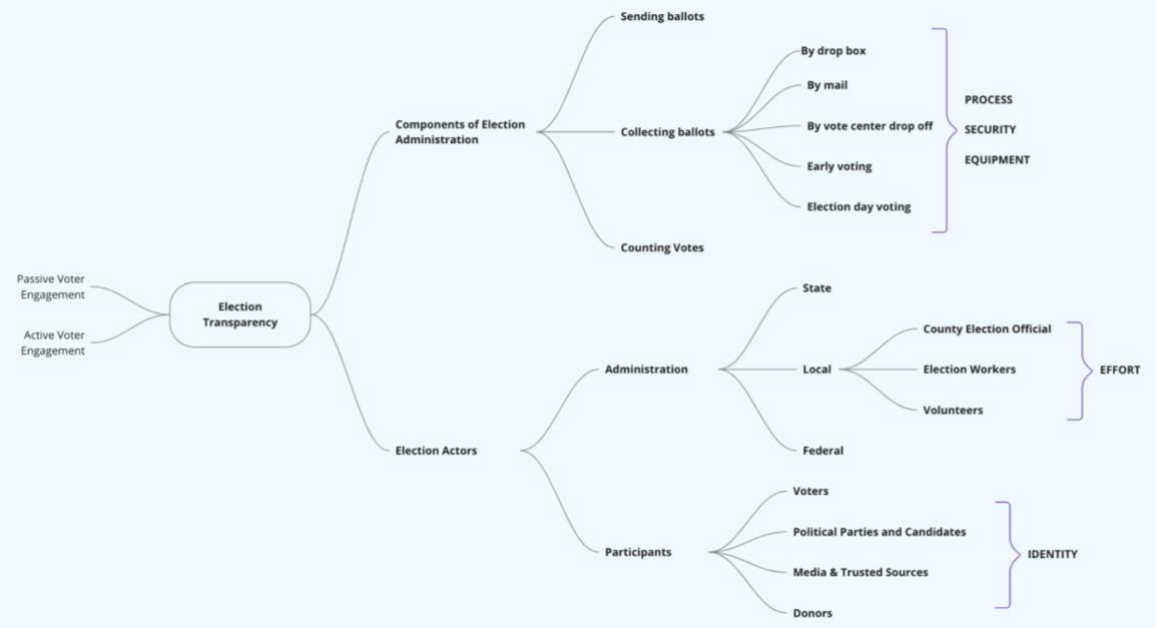
Our theory of change, see Figure 3 below, encompasses the operational transparency intervention itself (e.g., a postcard sent directly to voters), perceived transparency (e.g., a person's evaluation of the intervention), and trust in government and elections (e.g., that individual's trust measure). We hypothesize, for instance, that if we increase operational transparency of mail-in voting through communication interventions, people will have increased trust in the mail-voting process, leading to higher rates of vote-by-mail.

Figure 3: Perceived Transparency as a Mediator between Operational Transparency and Trust



To operationalize these ideas, we developed a practical framework for election transparency - see Figure 4. We identified several components of elections that could be more transparent and, with the help of our partnering election officials, selected five to focus on: sending a ballot, collecting ballots, in-person voting, counting votes, and the work of election officials.

Figure 4: Conceptual Framework for Operational Transparency in Elections



Applying these ideas, we conduct 8 studies (4 lab and 4 field experiments) to explore and test the effectiveness of interventions designed to increase the operational transparency of election-related components on trust.

We outline these studies in the remainder of this report, which is split into four sections. In Phase 1 we show exploratory research. In Phase 2 we lay out four field experiments and show both voter file (election outcomes) and survey-based (psychological outcomes). In Phase 3, we outline explanatory research in the form of a follow-up online experiment. Finally, the discussion summarizes the findings and explores the implications.

Our Findings

1. Increasing transparency increases trust, which increases voting behavior.
2. Transparency prompts are mostly effective, as is shown through higher government and election trust levels for those that experience transparency-based interventions. They are especially effective for those in the middle.

Introduction: Transparency Phase 1

To frame the field studies, we ran a series of lab studies to test methods of operationalizing transparency in the election context. Building off Buell (2021), we sought to understand how effective transparent messaging is at improving trust across levels of government.[25] We also wanted to see if voters care about operational transparency across various features of election administration: the overall election process, election security, the effort that goes into the elections process, and the actors involved in the elections process. We measure trust with the three dimensions in organizational trust literature: integrity, competence, and benevolence.[26] Trust in a variety of institutions was measured - local, state, and

[25]Buell, R. W., Porter, E. & Norton, M. I. Surfacing the Submerged State: Operational Transparency Increases Trust in and Engagement with Government. M&SOM 23, 781–802 (2021).

[26]McEvily, B. & Tortoriello, M. Measuring trust in organisational research: Review and recommendations. Journal of Trust Research 1, 23–63 (2011).

federal government as well as the supreme court, religious leaders, congress, and the executive branch. Measures are listed in Appendix A.

1. Mail-In Background Survey

Method

Sample 1 represents 502 American participants on Amazon Mechanical Turk who took an exploratory survey in the Summer of 2022. Participants lived mostly in California, New York, North Carolina, and Michigan. The survey explored voters' opinions of mail voting and experiences with the process, help us understand what part of the mail-voting process voters have issues with, and understand how voters perceive election mistakes. We collected qualitative responses to the questions: "How do you think most fraud is committed?" and "How would you personally fix an [election] mistake?" Vote-by-mail experience questions were only shown to people who indicated they voted by mail at least once before.

Results

The exploratory study revealed several trends related to election mistakes and transparency. Election workers (30.1%) and election officials (23.2%) were perceived as most responsible for election mistakes. Most voters surveyed believed election mistakes are most likely early in the process, when registering voters and maintaining the voter list (73%), and least likely during in-person voting (71%). Given the high perception of election mistakes, 97% of voters said they wanted more transparency around if and how their vote has been received and counted, indicating this is an important part of the vote-by-mail process.

2. Trust & Transparency Lab Study

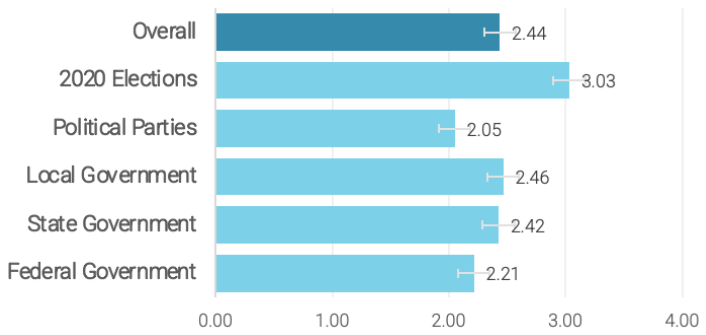
Method

Sample 2, also collected in the Summer of 2021, consisted of 328 Amazon Mechanical Turk workers randomly assigned to 1 of 4 conditions to test how government trust is affected by transparency-based prompts - Process, Effort, Election Official, and a Control (See Appendix B). The control condition saw a prompt about the world's tallest man. We measured trust in government and election results before and after showing participants either a transparency-based intervention or a control condition.

Results

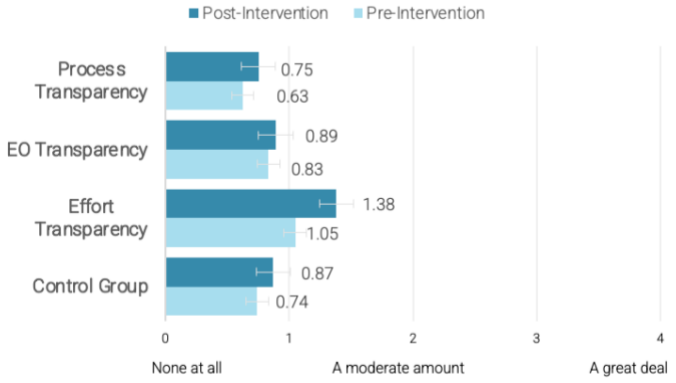
Shown in Graph 1 below, trust was measured across five areas and aggregated into an overall score. Respondents had the least trust in political parties and the most trust in the 2020 election results.

Graph 1: Baseline Trust & Confidence In Government By Condition (Sample 1)



Overall, we see the conditions had little impact on trust. However, for individuals with lower baseline trust (<50%) the effort and other transparency prompts seem to have generated some movement. The effort prompt increased overall trust slightly (p=0.11) and had a strong descriptive increase in *federal* government trust (p=0.23), closing the gap between low and moderate-trust voters - see Graph 2.

Graph 2: Pre & Post Trust In Federal Government For Low-Trust Individuals By Condition (Sample 1)



3. Transparency Process Videos

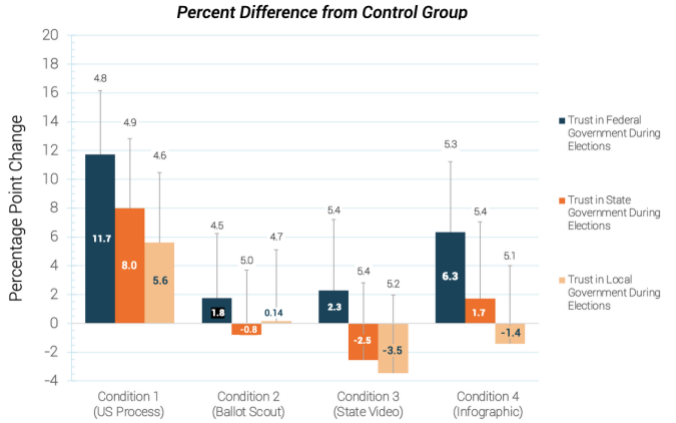
Method

In the Spring of 2022, for **Sample 3**, 942 Amazon Mechanical Turk workers were randomized into a control group (non-election video or infographic) or one of four treatment conditions that showed the mail voting process. This study tested increasing transparency to improve trust across levels of government. One condition required participants to live in a state with a vote-by-mail process video to match appropriately, including Ohio, Missouri, California, and Washington (see Appendix C for survey instruments).

Results

A U.S. mail voting process video created by CNN produced the highest, most significant trust in federal, state, and local government during elections. This condition resulted in a statistically significant 6% increase in trust compared to other conditions (p<.05) for all participants but was even more effective for certain groups. Trump Voters and Conservatives saw significant increases in trust of 10-11% (p<.05), which is encouraging as they have the lowest levels of trust generally. The state-specific condition significantly increased trust for Moderates, 15% on average, across all levels of government (p<.05).

Graph 3: Percentage Difference In Federal, State, & Local Government Trust By Condition (Sample 2)



Findings: Transparency Phase 1

These lab studies capture voters' high demand for election administration transparency. Text-based operational transparency prompts seem to have some potential, especially for those with low trust, and we hypothesize a larger sample would highlight the effect. Video-based operational transparency interventions also increase trust, especially for those with less trust in elections. These initial exploratory results helped develop interventions for field partners during the 2022 Midterm elections.

Introduction: Transparency Phase 2

Phase 2 tested operational transparency interventions in the field, during live elections. Specifically, we look at the impact of interventions on trust and voting outcomes for registered voters in Shasta County (two studies), Yolo County, and Orange County, California.

Figure 5 summarizes each field study sample with the number of voters available and the number of responses to an emailed survey. For the Orange population, participants were split between receiving the survey before or after the election to assess the impact of election results on trust. Yolo County participants received the survey before the election, whereas Shasta County received it afterward.

Figure 5: Summary of Field Study Populations

Study Sample	Intervention Type	Registered Voters (voting behavior analysis)	Survey Respondents (trust measure analysis)
Sample 1 - Shasta County	Emails	40,171 registered voters with an email address	472
Sample 2 - Shasta County	Postcards	109,277 registered voters	711
Sample 3 - Orange County	Emails & Postcards	1,812,759 registered voters	6,920
Sample 4 - Yolo County	Emails with Videos	38,315 registered voters with email address	665

We focused the interventions on increasing transparency across 5 areas: process, security, equipment, effort, and identity. We were not able to test all ideas in each field study - Figure 6 shows a breakdown.

Figure 6: Summary of Intervention Focus Areas, Coverage Across Studies, and Intervention Medium

Focus area	Description of the concept	Shasta County 1	Shasta County 2	Yolo County	Orange County
Process	Highlights steps voters need to take to complete the mail-in voting process and how the ballot is processed.	Email prompt	Postcard prompt	Video	Postcard or email prompt
Security	Highlights security measures that elections have in place for mail ballots and ballots from drop boxes.	Email prompt	Postcard prompt	Video	Postcard or email prompt
Equipment	Highlights the equipment that election offices use to secure ballots, process ballots, and count ballots.			Video	Postcard or email prompt
Effort	Highlights election officials, volunteers, election workers, and the work they do for elections.		Postcard prompt		Postcard or email prompt
Identity	Highlights the shared identity between the election office and the voters.		Postcard prompt		Postcard or email prompt

Voter file data allowed us to evaluate the impact of interventions on the method of voting and voting itself. The survey data cannot be connected to the voter file data but assesses the impact on self-reported trust measures across studies.

4. Shasta 1

Method

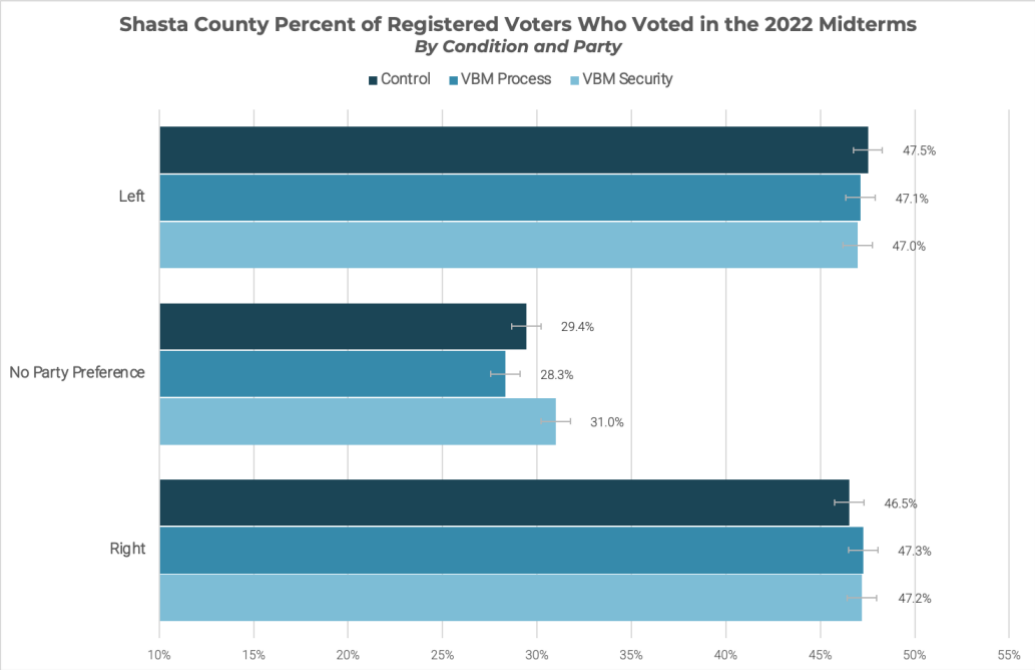
Sample 1 consisted of 40,171 registered voters in Shasta County, California with valid email addresses on file. The study tested two versions of a transparency email: 1) Vote-by-mail process and 2) Vote-by-mail security, against a basic reminder, shortly before the June 7th statewide primary (See Appendix D). Approximately 20,000 of Shasta County's registered voters with email addresses on file received the basic reminder condition, whereas the remaining half were randomly split between one of the two transparency email conditions. 472 voters completed the follow-up survey which was distributed by email.

Results

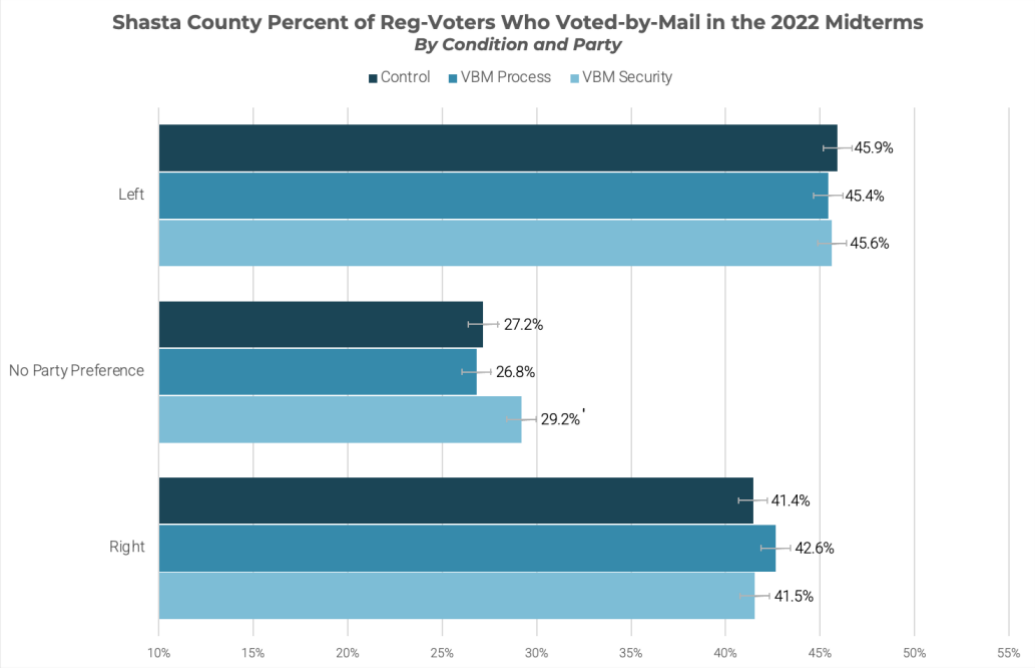
Voter File Data

The Vote-by-mail security condition may have slightly increased voting and voting-by-mail ($p\sim0.1$) for voters with No Party Preference. Descriptively, the Vote-by-mail process condition increased both outcomes for those registered to a party on the right of the political spectrum. Because this study tested treatment emails against a basic reminder, and the data showed movement on voting outcomes, these results increased confidence in the viability of intervening via direct voter communications. Higher fidelity interventions with significant impacts on behavior compared to a no-contact control would be of interest for California counties deciding on whether or not to be a Voters Choice Act county.

Graph 4: Post-Intervention Voting Outcomes by Condition (Sample 1)



Graph 5: Post-Intervention Voting-by-Mail Outcomes by Condition (Sample 1)



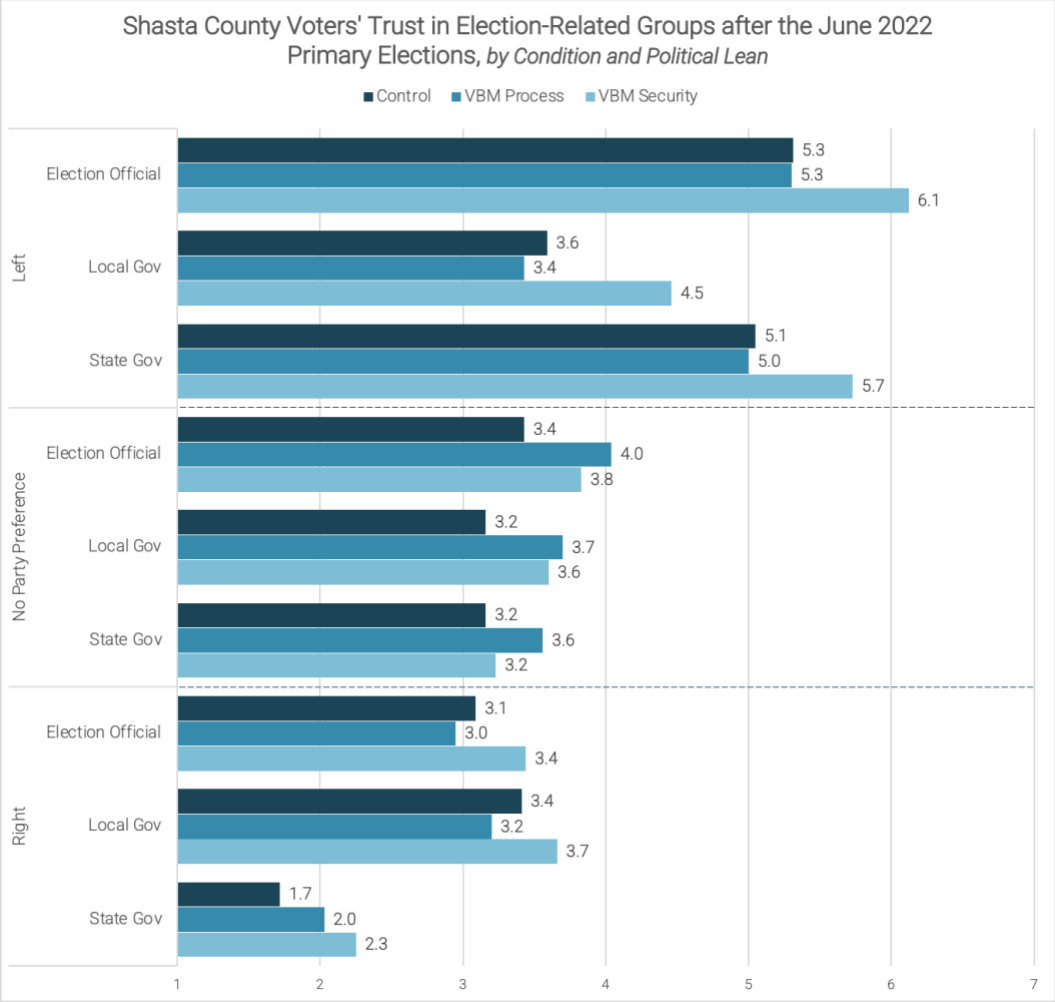
Survey Data

Survey results for the Shasta County June 2022 Primary elections are limited by the response rate. Of the approximately 40,000 invited to participate, there were only 480 usable responses. This response rate is likely attributable to the survey method, which had Irrational Labs directly invite voters to participate in the survey. In the future, the team hopes to send the survey directly from election offices.

Despite sample size constraints, the Vote-by-Mail Security condition significantly increased trust in Local Government and trended towards significantly increasing trust in Election Officials, State Government, and Federal Government (p=0.06, 0.10, and 0.09 respectively). This impact increases confidence in finding significant

results with higher fidelity interventions and larger samples. Figure 7 shows the effect of Vote-by-Mail Security on trust may be driven by the impact on voters who lean left or right on the political spectrum.

Graph 6: Trust in Election-Related Groups by Condition and Political Lean (Sample 1)



5. Shasta County 2

Method

Sample 2 consisted of approximately 111,500 registered voters in Shasta County. The election office directly mailed postcards to voters, except those in the control group, ahead of the November 8th general election. All postcards were sent via a mail distribution company on behalf of the Shasta County election office and arrived in homes the week of October 24th, 2022. Participants were randomized into a no-contact control group and four postcard conditions: 1) Vote-by-mail process, 2) Vote-by-mail security, 3) Voter file security, and 4) Highlighting local election workers (See Appendix D). The randomization balanced conditions on party registration, past voting behavior, and the percentage of voters with an email on file. 711 voters completed the follow-up survey which was distributed by email.

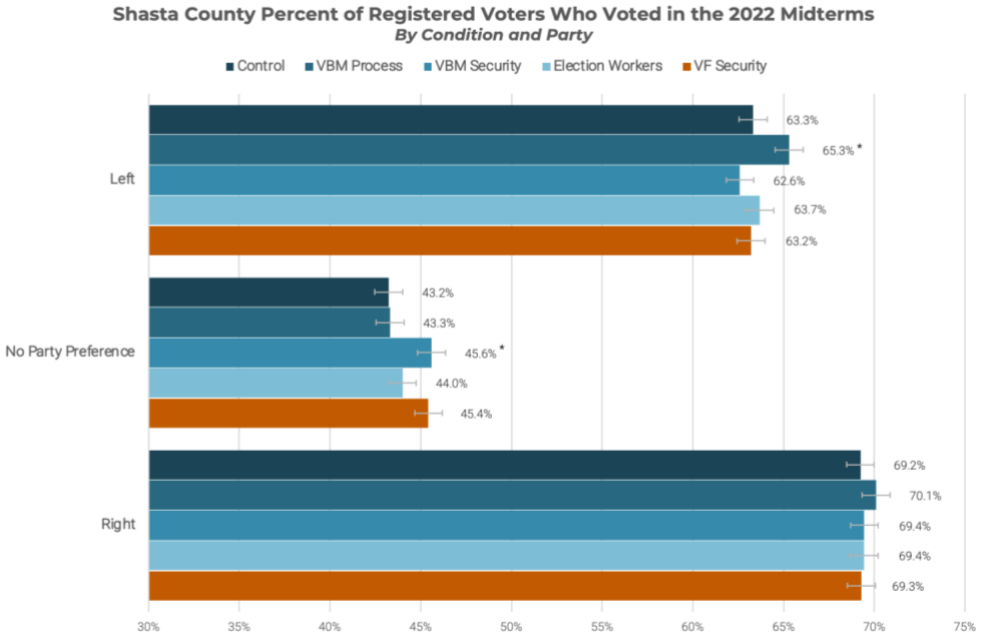
Results

Voter File Data

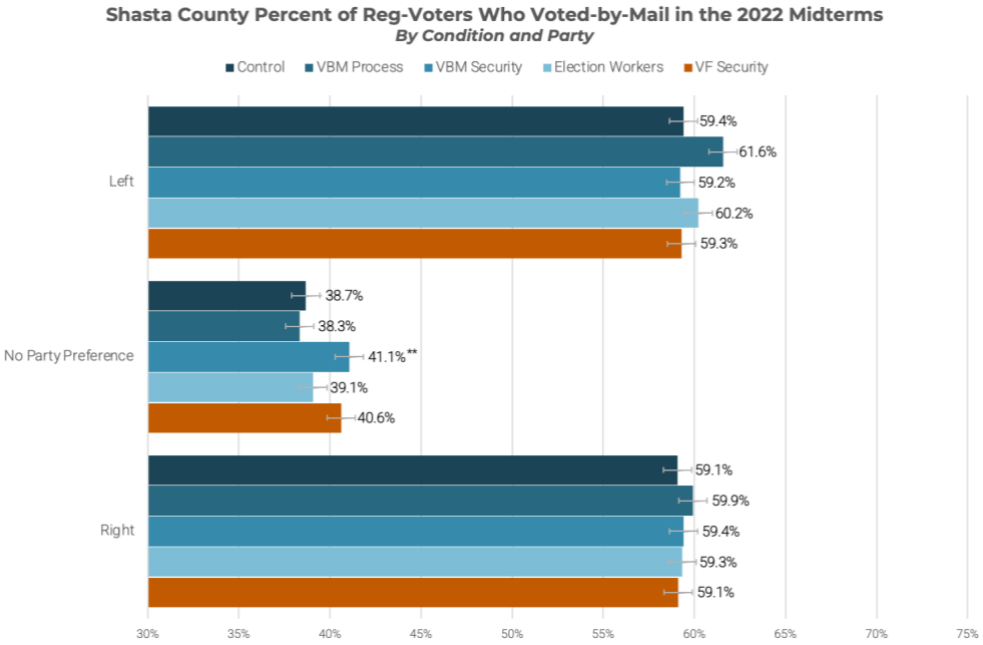
In **sample 2**, the Vote-by-Mail Process and Vote-by-Mail Security conditions both had significant, positive main effects on voting and vote-by-mail behavior for the 2022 midterm elections. The Vote-by-Mail Process condition

increased outcomes by about 1%, whereas the Vote-by-Mail condition increased outcomes by about 0.5%. When looking at a partisan split, we see that the Vote-by-Mail Process condition is most effective on those on the left and on the right, whereas the Vote-by-Mail Security condition works for those with no party preference.

Graph 7: Post-Intervention Voting Outcomes by Condition and Political Party (Sample 2)



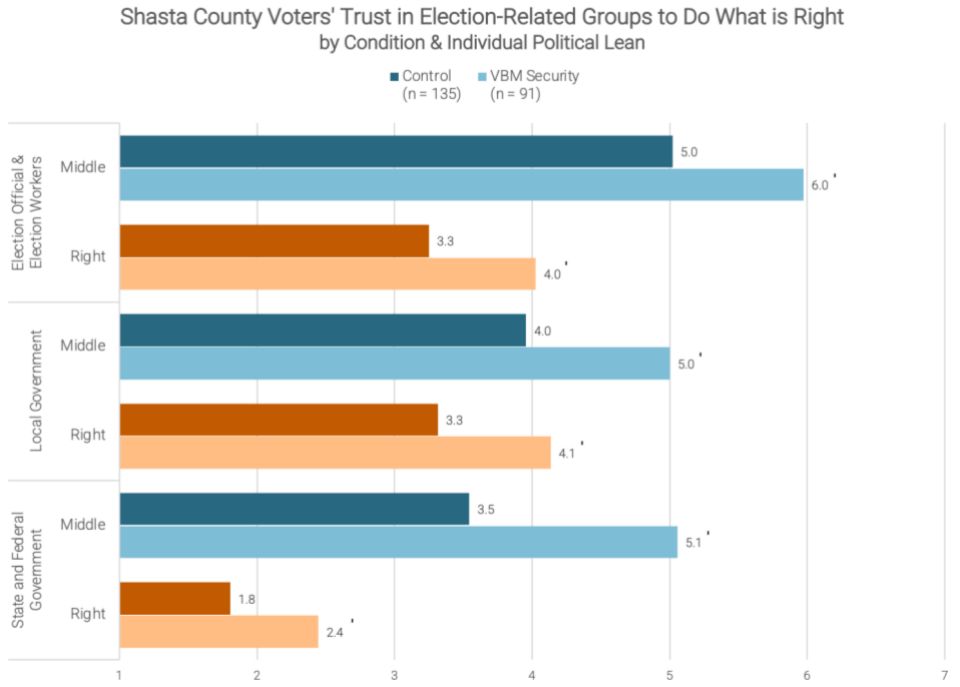
Graph 8: Post-Intervention Vote-by-Mail Outcomes by Condition and Political Party (Sample 2)



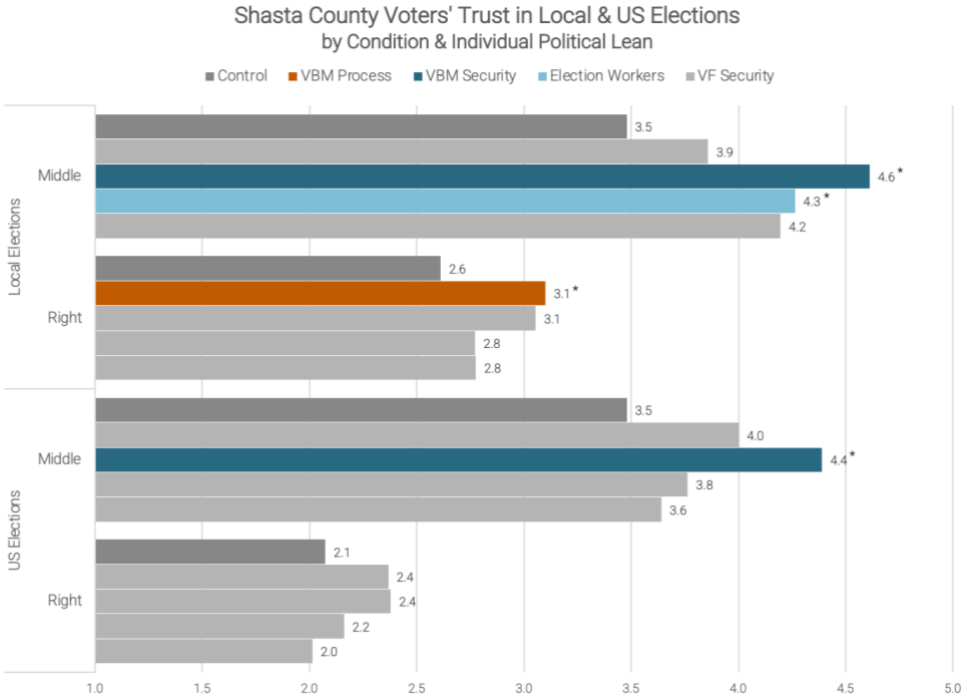
Survey Data

Most notable from the survey data is the effect of Vote-by-Mail Security, which consistently significantly increases (or is trending) trust across the election actors, levels of government, and across local and US elections. These positive effects are focused on voters who self-identify as in the middle or on the right of the political spectrum, as shown in the graphs below. The Vote-by-Mail Process condition also performs well - significantly increasing trust most strongly in local elections, and having a trending effect on election officials and workers.

Graph 9: Surveyed Trust in Election-Related Groups, *Best Performing Condition by Political Lean* (Sample 2)

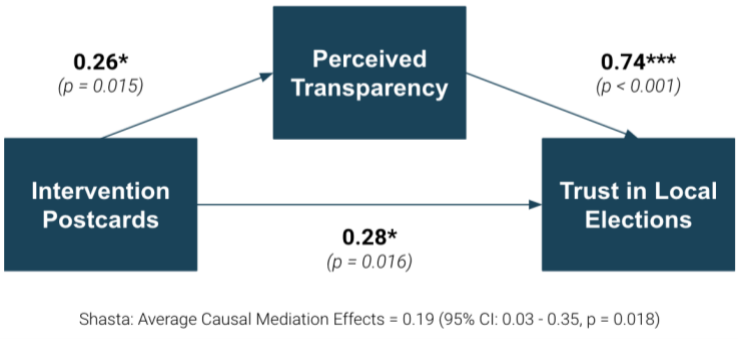


Graph 10: Surveyed Trust in Local & US Elections by Condition and Political Lean (Sample 2)



In the sample 2 survey data, Perceived Transparency significantly mediated the impact of the treatment on trust in local elections. Such a mediation implies that the postcards work, at least in part because they are increasing how transparent voters perceive elections to be, and suggests that other interventions designed to increase perceived transparency should be effective interventions.

Figure 7: Causal Mediation Effects for Interventions



Shasta: Average Causal Mediation Effects = 0.19 (95% CI: 0.03 - 0.35, p = 0.018)

The only other variable tested that significantly mediated the impact of the treatment conditions on trust was "the belief that my vote is counted accurately in all elections." However, perceived transparency can predict this belief, suggesting primacy in a causal chain. Perceived understanding of elections, feeling like voters know their election official, and perceived election official capability and motivation to conduct an accurate election do not successfully mediate this model.

6. Orange County

Method

Sample 3 consisted of approximately 1,814,000 registered voters in Orange County, California. Registered voters were sent a postcard, or email if the election office had an email address on file. The interventions were delivered as part of the county's 2nd required communication as a Voter's Choice Act county in California. The Registrar of Voters' office distributed these materials, in voters' preferred language, shortly after mailing ballots out in October. The study tested seven conditions in addition to a control: 1) Vote-by-mail process, 2) Vote-by-mail security, 3) Dropbox security, 4) Highlighting local election workers, 5) Orange County as a trusted source, 6) Voters as part of election security, and 7) Voter identity. The control was Orange County's standard communication, which also served as the address side of all treatment postcards (See Appendix D). 6,920 completed the follow-up survey which was distributed by email.

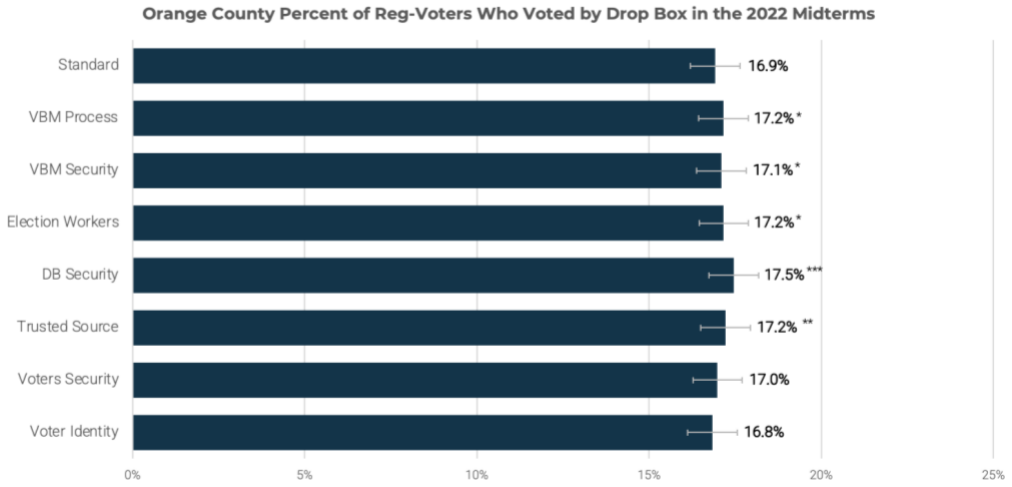
Results

Voter File Data

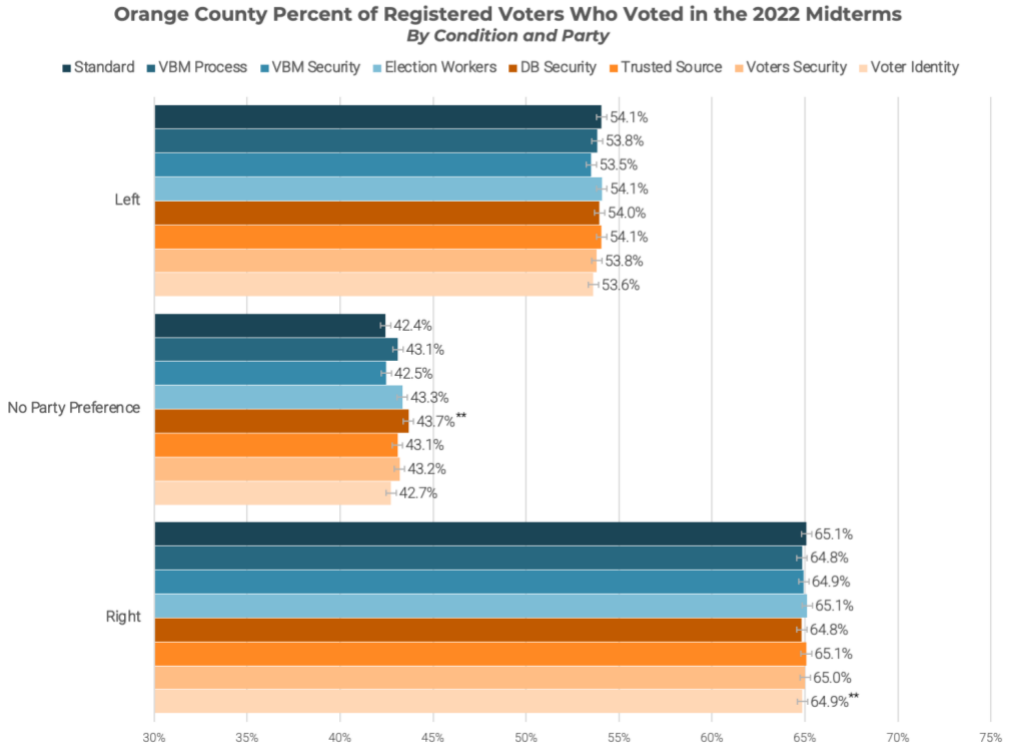
In **sample 3**, the Drop Box Security condition is the most prominent condition - having a significant, positive main effect on voting, vote-by-mail, and vote-by-drop box behavior for the 2022 midterm elections. Looking at the interaction of Drop Box Security with political party affiliation on voting behavior, this effect is highly significant for voters registered as having no political party preference.

The Voter Identity condition also has a significant, but negative, effect on voting and a negative effect on vote-by-mail that is trending towards significance. There is no significant interaction of this condition with the political party, although descriptively this impact is strongest on those registered to a party on the left or right of the political spectrum. The only other significant effect in the models is Vote-by-Mail security on voting behavior. However, this is washed out once past voting behavior is accounted for.

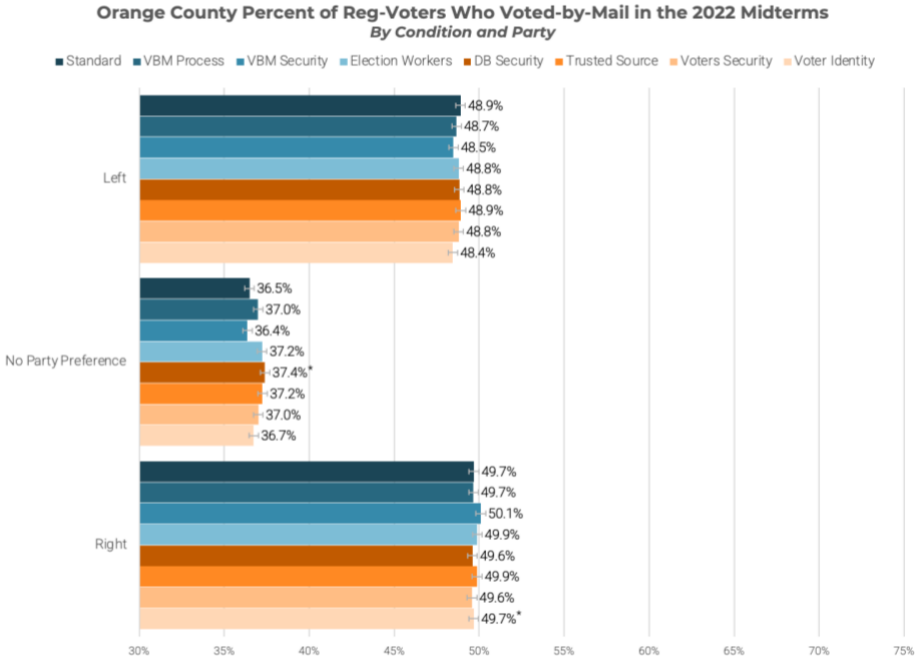
Graph 11: Post-Intervention Voting by Drop Box, by Condition (Sample 3)



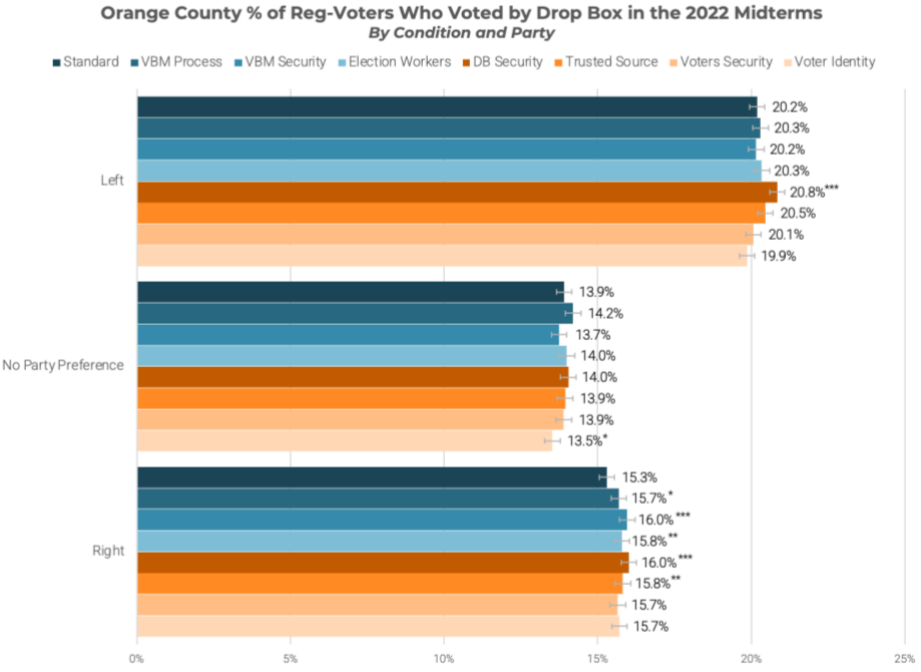
Graph 12: Post-Intervention Voting Outcomes by Condition and Political Party (Sample 3)



Graph 13: Post-Intervention Vote-by Mail Outcomes by Condition and Political Party (Sample 3)



Graph 14: Post-Intervention Drop Box Voting Outcomes by Condition and Political Party (Sample 3)



Language Breakdown

Next we were able to explore the differential effects of the conditions broken out by the language that was on file for the vote. Note that these data were only received in aggregate, not at the individual level, as such we were only able to run tests of difference (z tests). The table below shows the percentage of individuals who voted and voted by mail under various conditions for each language group.

Across the board, the "**Trusted Source**" condition emerges as one of the most effective interventions, particularly for increasing in-person voting among Korean and Vietnamese speakers. This condition was designed to highlight the election office as a trusted source so it is especially interesting that it works for non-English speakers as it implies that this condition may be correcting concerns about misinformation or the reliability of voting processes.

English Speakers: The interventions, particularly the "Drop Box" and "Election Workers" conditions, consistently show significant increases in both in-person and mail-in voting for English speakers.

Korean and Vietnamese Speakers: These two groups show the most significant increases in voter turnout across multiple interventions, both for in-person and mail-in voting. The "Trusted Source" and "VBM Security" interventions are particularly effective, indicating that tailored messaging and secure voting processes resonate strongly with these communities.

Chinese and Spanish Speakers: The responses from these groups are more variable. While there are some significant improvements in specific conditions (e.g., "Drop Box" for Chinese mail-in voters), the effects are less consistent compared to Korean and Vietnamese speakers. This might suggest the need for more customized or intensive engagement strategies for these groups.

Overall, this analysis shows that there is some variance by language group. If election offices are looking to reach a broad array of language groups, care should be taken. Highlighting the election office as a trusted source for election office appears to be a strong bet when engaging non english speaking groups.

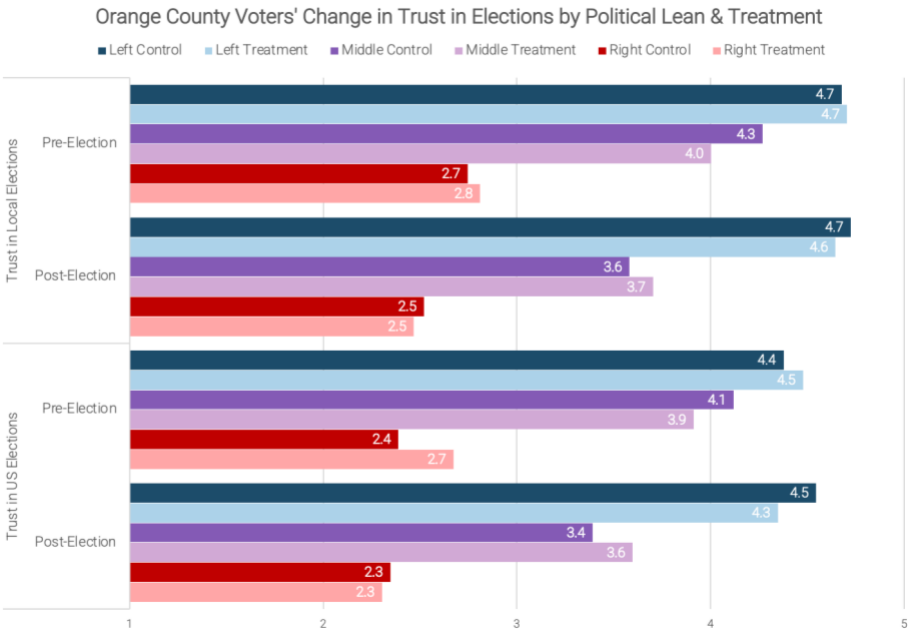
	Voted					Voted by Mail				
	English	Chinese	Korean	Spanish	Vietnamese	English	Chinese	Korean	Spanish	Vietnamese
Control	55.46%	45.1%	51.1%	36.7%	55.2%	46.35%	40.7%	48.2%	32.5%	51.6%
Drop Box	55.77%**	48.18%	52.99%	36.36%	54.80%	46.64%*	44.23%	50.15%	32.09%	51.05%
Election Workers	55.78%**	42.87%	50.32%	37.12%	55.16%	46.67%**	38.21%	47.74%	32.90%	51.43%
Trusted Source	55.69%	45.14%	54.62%**	36.42%	56.89%*	46.63%*	41.32%	51.71%**	32.62%	53.07%
VBM Process	55.40%	46.52%	52.73%	37.63%	56.40%	46.31%	41.50%	50.83%*	33.37%	52.79%
VBM Security	55.25%	45.27%	50.80%	36.11%	57.46%**	46.28%	41.19%	48.62%	32.32%	54.03%**
Voter Identity	55.38%	47.74%	53.32%	36.38%	56.68%	46.21%	43.72%	50.68%	31.87%	52.62%
Voter Security	55.60%	43.95%	52.33%	36.81%	56.16%	46.39%	40.63%	50.12%	32.95%	52.04%
Observations	1,674,319	8,028	16,562	40,186	42,492	1,674,319	8,028	16,562	40,186	42,492

Note: *p<0.1; >**p<0.05; >***p<0.01

Survey Data

For the Orange County follow-up survey, voters were randomly assigned to either receive the survey invitation before or after the election. As hypothesized, election results becoming available to voters had the largest impact on trust in elections and changed in potentially predictable ways. Whereas voters on the left of the political spectrum remained fairly stable before and after the election, those in the middle and on the right experienced a slight decrease in trust. Surprisingly, the treatment communications seem to interact with this change, as seen in Graph 15. For those in the middle, trust is slightly lower before the election but they experience a smaller decrease after the election. For those on the right, trust is higher before the election and leads to a larger decrease after the election.

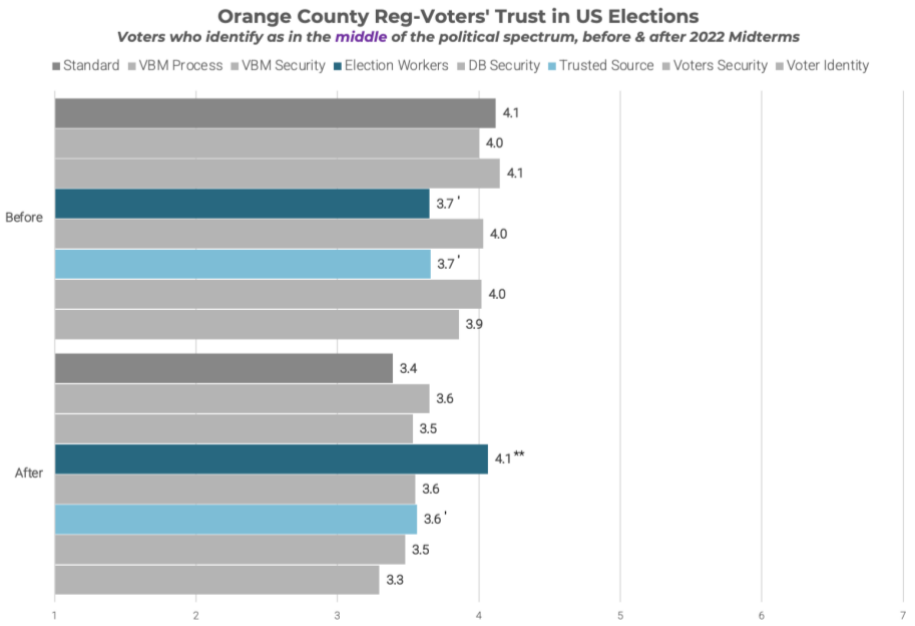
Graph 15: Surveyed Trust in Elections by Treatment, Political Party, and Time of Survey (Sample 3)



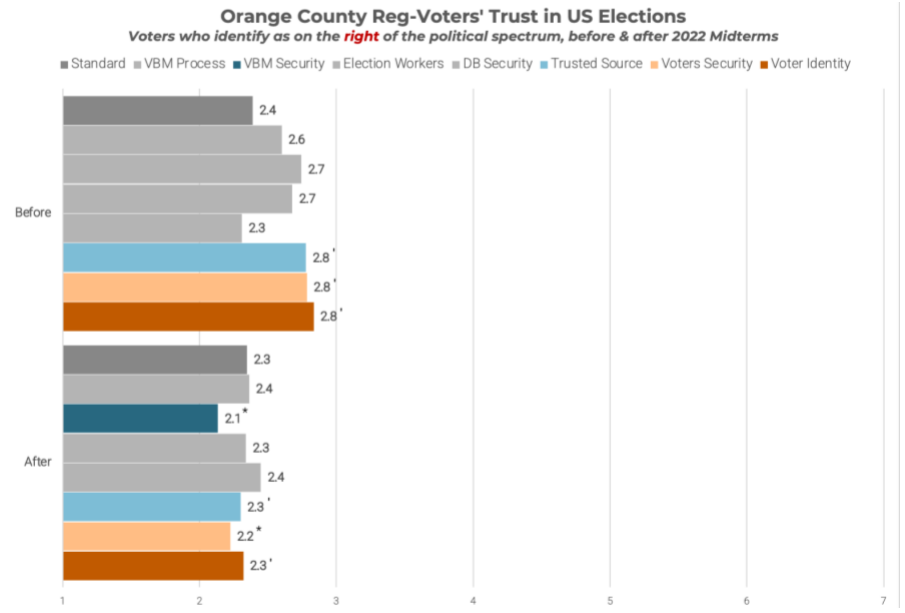
These interactions seem to be limited to a subset of the treatment conditions, as shown in the graphs below. For voters who identify as in the middle of the political spectrum, the Election Workers condition trends towards or significantly increased trust in election officials, local government, and state and federal government, as well as trust in local and US elections. This effect is limited to after the election. For voters on the right, a number of conditions do significantly better before the election and worse after the election.

There seem to be some threads between the two data sources. For example, voters on the right who received the Voter Identity condition experienced higher trust before the election but then voted significantly less. After seeing the results, voters in that condition then trusted elections less.

Graph 16: Surveyed Trust in US Elections by Condition and Time of Survey, for Voters in the Middle (Sample 3)



Graph 17: Surveyed Trust in US Elections by Condition and Time of Survey, for Voters in the Middle (Sample 3)



In the Orange County survey data, there is no main effect of the treatment conditions compared to the control, before or after the election. As such, there is no mediation model to analyze. The treatment conditions also do not significantly impact perceived transparency. Similar to Shasta County, perceived transparency does have a highly significant impact on trust in local elections and on trust in US elections. This supports the takeaway that interventions designed to increase perceived transparency should be effective at increasing trust. There is also a similar impact of the belief that one's own vote counts accurately in all elections and trust, which is influenced by perceived transparency.

7. Yolo

Method

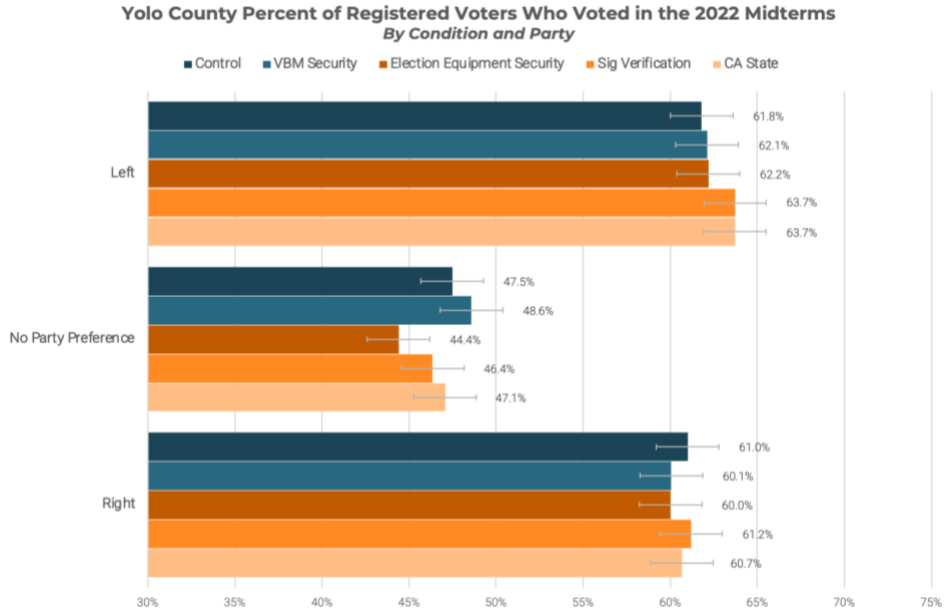
Sample 4 consists of 39,600 registered voters in Yolo County with an email on file. The Yolo County election office agreed to develop three videos about the mail-voting process: 1) the general vote-by-mail process, 2) election security measures, 3) and vote-by-mail election equipment. These three Yolo County video conditions were compared to the California Secretary of State's mail voting video and a no-contact control group. All videos were translated into Spanish, Russian, Mandarin, Punjabi, and Korean with voice-overs, to include as alternatives to the English originals. Videos were sent on October 28th by email linked to closed YouTube videos (i.e., only those with the link could see the video). 665 voters completed the follow-up survey.

Results

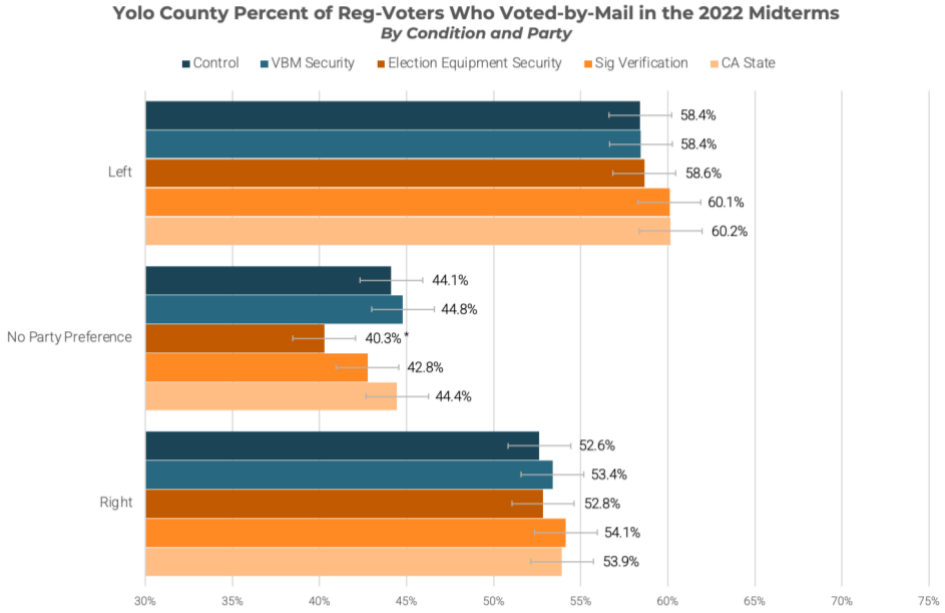
Voter File Data

Lastly, in **sample 4**, no conditions produced a significant effect on voting behavior. However, when interacted with political party, Election Equipment Security significantly decreases voting-by-mail behavior for those with no party preference.

Graph 18: Post-Intervention Voting Outcomes by Condition and Political Party (Sample 4)



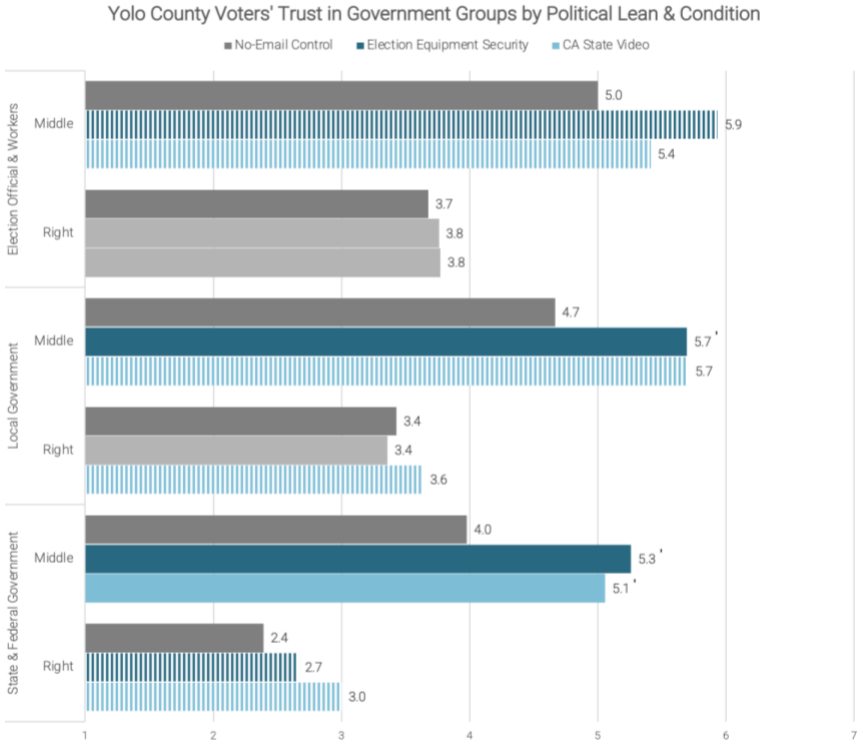
Graph 19: Post-Intervention Vote-by-Mail Outcomes by Condition and Political Party (Sample 4)



Survey Data

The survey data from Yolo County is limited by the sample size collected. This is especially true for groups of voters who identify themselves as on the right or in the middle of the political spectrum. As in Shasta and Orange County, the treatment conditions did not generate much change in trust for those who identify as on the left of the political spectrum. Descriptively, there does appear to be an impact of conditions on trust for the other two groups.

Graph 20: Yolo County Trust in Government Groups



Findings: Transparency Phase 2

The field studies show us that print and email-based interventions designed to increase operational transparency increase trust with some consistency. This link between the interventions and trust is mediated by perceived transparency and the perception that your vote is counted in Shasta County compared to a no-contact control, but not versus standard election information in Orange County. These mixed results with the mediation model suggest more voter engagement from the election officials increases transparency and trust. We see the interventions that increase trust and also increase voter turnout, with some consistency.

The video-based conditions in Yolo County did not work as planned. However, we expect that this is more to do with a lack of exposure (only ~5% of people not watching them) and smaller sample sizes (the effect sizes are comparable to the other studies, but with less sample) rather than a true null effect. This belief is driven by similar effect sizes to the other studies and the successful impact of a video condition in the lab.

We show the effects on voting and trust are often strongest amongst those who have no party preference, who we expect are the least politically engaged and so have the biggest knowledge gap, aligning with the findings from Phase 1. Descriptively, we see that there is the highest trust in Election Officials and Election Workers. We see the effect of the interventions extends beyond local elections to US elections and in places to different levels of government as well. However, results vary by political party. For unaffiliated and right-leaning voters, transparency interventions indicate a positive impact on trust particularly with the vote-by-mail security condition. Additionally, the vote-by-mail security condition has a significantly positive effect on unaffiliated voters' trust in local and US elections, but not State elections. Overall, these experiments present a positive picture of operational transparency as a means to improve trust and voting outcomes.

Introduction: Transparency Phase 3

The purpose of Phase 3 is to test each condition employed in field studies in the lab to provide more explanatory results. We compiled all conditions into one lab study that we ran on MTurk in Spring 2023.

8. Phase 3 Follow-Up Study

Method

Participants were randomly assigned to view information about topics related to government and answer questions in one of four themes: 1) Process, 2) Effort, 3) People, and 4) Control. Participants were randomized into one of up to 21 study conditions to establish which most effectively increases trust in the election process. The study attempted to source as many participants from California as possible, as all of the treatment materials were developed for California counties. After filtering out those who failed attention checks or are not eligible to vote in the United States, there were a total of 2,799 participants. 784 of these participants live in California, whereas the rest are from other states across the country. Initial hopes were to have a full ~3,150 participants from California to best mirror the application of the intervention materials in the field, especially for conditions like the Yolo branded videos.

Results

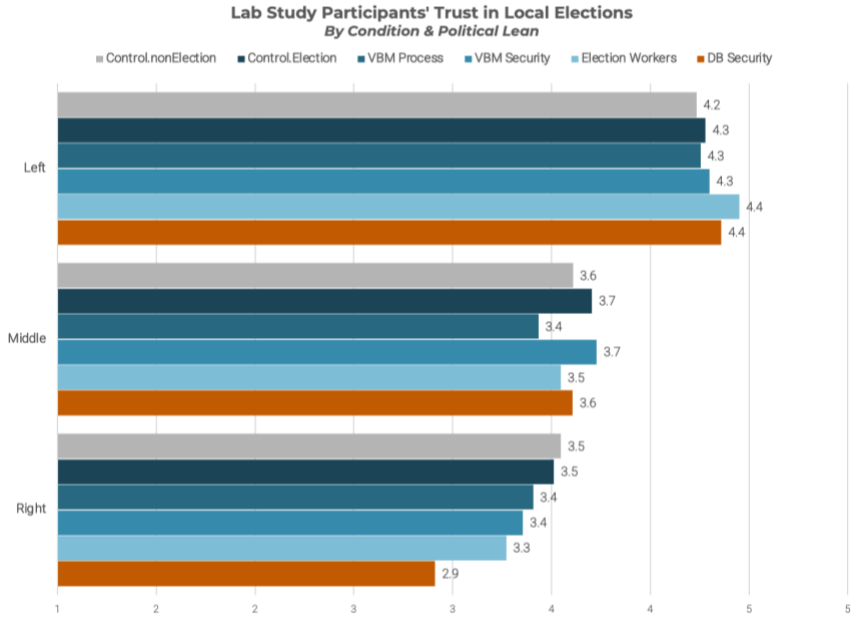
When looking at the full sample for the Phase 3 lab study, combinations of treatments were compared. First, the full collection of treatment conditions was tested against the four control conditions, two of which were election-related and two of which were not. The treatment conditions interacted with political orientation, as with previous samples. Participants who identified on the right of the political spectrum trusted local and US elections significantly less after engaging with a treatment, whereas those on the left trusted local and US elections more

(significant and trending, respectively). Similar effects also trended towards significant or were significant for trust in election officials, local government, and state/federal government.

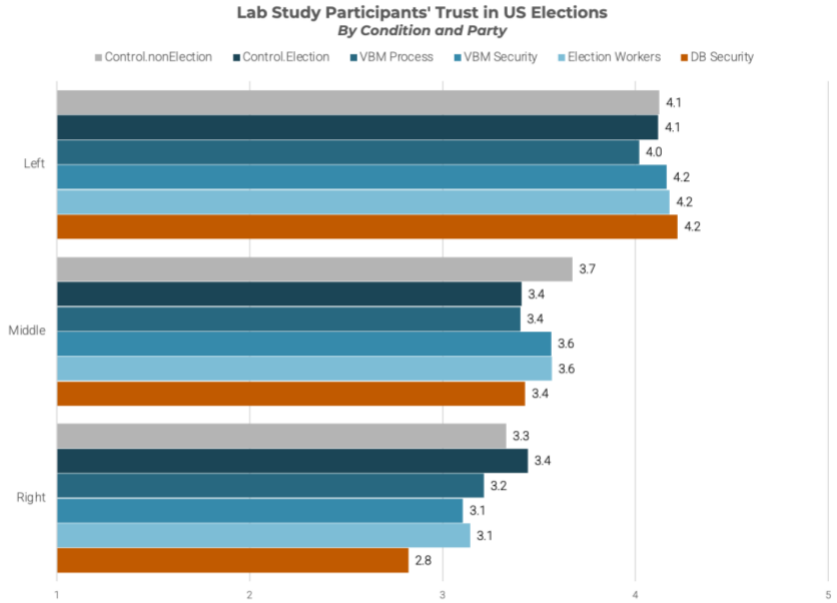
When broken down more granularly, the Non-Election Controls were compared to individuals or groups of treatment conditions. For example, each of the four field studies had a Vote-by-Mail Security condition so they were grouped together. Drop Box Security proved to have the only consistent, significant effect across trust in local elections and trust in US elections. The condition significantly increased trust for participants who leaned left but decreased trust for those who lean right.

Although the treatment conditions did not have a direct impact on trust in elections, they did increase perceived transparency which in turn significantly increased trust.

Graph 21: Lab Study Trust in Local Elections (Phase 3)



Graph 22: Lab Study Trust in US Elections (Phase 3)



Findings: Transparency Phase 3

As mentioned in the Methods section, the implications of this study are much more limited than expected because of the small sample of California voters. The interaction of conditions with political lean proved to be the largest deviation from previous samples. Whereas with field study samples the middle and right showed the most movement on trust measures, the final lab study provided a much more traditional impact. Treatment conditions tended to increase trust among those on the left while decreasing trust for those on the right. We believe this effect may be due to the sample being online and conducted with anonymous researchers, rather than voters interacting with their personal election officials. Such a takeaway aligns with the previous studies in suggesting that election officials are powerful messengers for those who have lower trust in elections.

Transparency Summary

Our Findings

Building on initial studies on operational transparency, for instance, Buell (2021), we aimed to determine if increasing the perceived transparency of election processes would increase trust in elections. Overall, we assert that interventions to increase operational transparency increase trust, an effect that is mediated by perceived transparency and the perception that one's vote counts. Going further than our predictions, we see that the interventions that increase trust also increase voter turnout with some reliability - an effect that is potentially a result of increased trust in vote-by-mail or vote-by-drop box. These interventions work both when there is a 'no contact' control and when the control is a contact but without the operational transparency component (showing that the effect on voting outcomes is not simply the presence of a reminder). There are also consistent effects across contexts (at least within California), across election types (primary and mid-term), and across the political spectrum, both in the field and in the lab. Overall, we see this as a reliable and valid effect.

The fact that the Drop Box Security condition performs particularly well in Orange County, and for some groups in the lab, is interesting. The safety, security, and effectiveness of election drop boxes was an issue that has caused concern in Orange County, so much so that this intervention was requested especially by our field partners in the Election Office.[27] This finding highlights two things: firstly, the importance of embedded research teams that draw from the context within which they work and secondly it suggests that when election officials are aware of concerns amongst their constituents, communicating directly about it has a positive impact. This latter point is likely accentuated by the point that we see high trust scores for Election Officials, meaning they are likely very strong messengers for this information. The Phase 3 lab study further highlights the need for Election Officials as messengers by implying their unique ability to engage successfully with less-trusting voters.

Limitations

We center our contribution from this section of the report on trust. However, this is implicitly a psychological construct that we measure through surveys - for which we see very low response rates. We expect this is largely driven by a lack of incentive for the survey. This causes fair concerns about the validity of our survey-based assertions. However, the consistency of our findings across contexts and across lab and field survey data goes some way in alleviating this.

One way in which these studies could have been strengthened is by linking the voter file and survey data to enable mediation analysis between the interventions, survey-based and behavior-based measures. This would give a

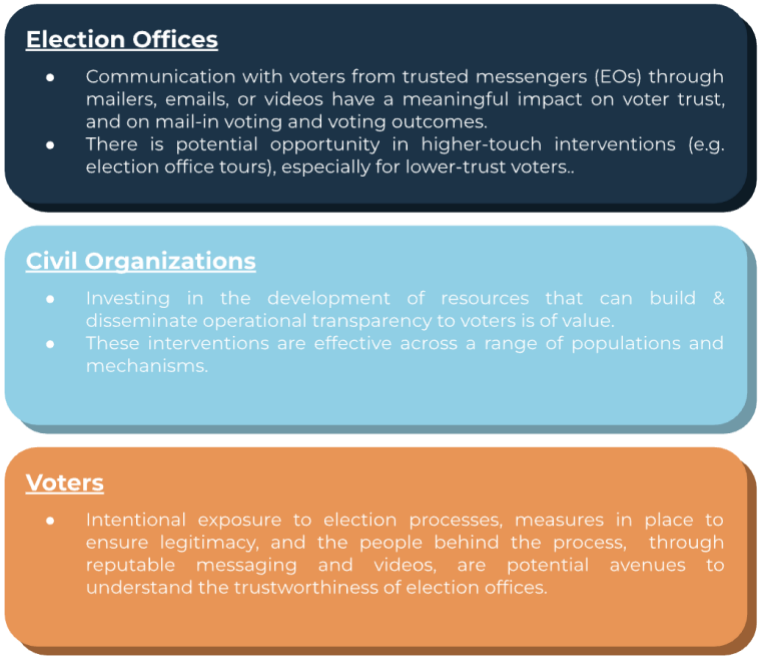
[27] Staggs, B. Orange County man who became face of GOP ballot drop box controversy says it 'destroyed' his life. Orange County Register https://www.ocregister.com/2021/01/27/orange-county-man-who-became-face-of-gop-ballot-drop-box-controversy-says-it-destroyed-his-life (2021).

clearer sense of whether it is indeed trust that is acting as the mechanism to improve voter outcomes. This may be technically possible for future studies like these but was not possible in the limited time available.

Implications

Across the studies conducted over these phases, we identify a range of findings that have implications for election offices, civil organizations, and voters. The implications are summarized in Figure 8.

Figure 8: Summary of Transparency Implications



What's Next

Future trust research should look to expand the states in which operational transparency is tested. Given the effect seems strongest amongst those who are politically disengaged and have lower turnout, it would be especially interesting to see the impact of such interventions in purple states where the margins are fine.

Further, a considerable implication from the mediation analysis, is that the effect is driven by a combination of increased transparency and an increased sense that one's vote counts - which directs future efforts intended to increase trust in elections to focus on interventions on improving these mechanisms. These could be communications based - e.g. SMS messages to tell people that their ballot has been processed - but they could also go beyond - e.g. voting machines giving receipts when ballots are entered, platforms that enable election counting room live streams with commentary, or in-person tours of election offices. Especially for those with the lowest trust and or the biggest knowledge gap in terms of how elections work, these more involved interventions could have substantial impacts on trust.

Clearly, this is just the tip of the iceberg. As the 2024 elections approach and the divisive rhetoric ramps up again in earnest, collectively we must improve trust in our elections. Operational transparency gives us the means to do that.

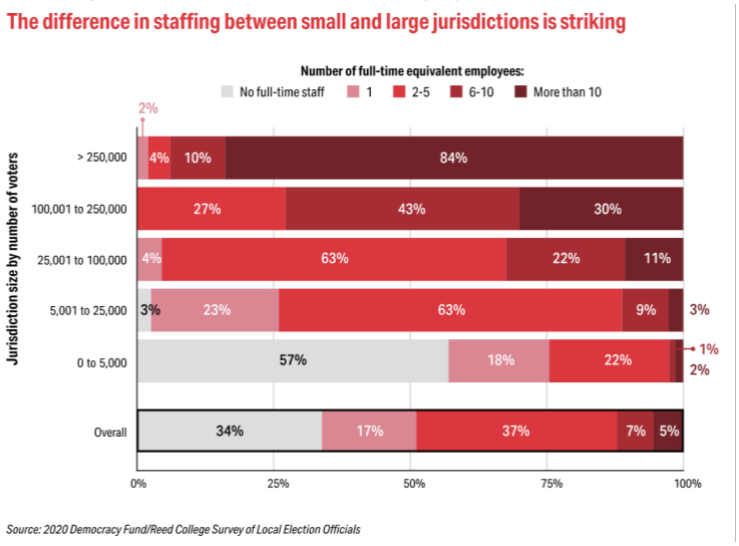
CHAPTER 2:
SUPPORTING OUR ELECTION WORKERS AND OFFICIALS

The Problem

Local election officials and workers play a key role in conducting fair and transparent elections, the cornerstone of American democracy[28]. They often face a range of challenges as a result of voter backlash around election outcomes over the past few years[29]. The exhaustion caused by election officials' work has been amplified recently. Hundreds of physical and verbal threats, political attacks[30], and doxing[31] stem from election mis- and disinformation and accusations of voter fraud[32]. As noted in the Brennan Center's 2022 local election official survey, over 1 in 6 election officials are threatened as a result of their job and 1 in 3 feel unsafe[33].

The difficulties of working as an election official are further accentuated by the limited support within their roles, especially within smaller jurisdictions[34]. The Democracy Fund's 2021 report details that three-quarters of jurisdictions serving less than 5,000 voters have only one full-time staff member, and 25 percent of jurisdictions serving between 5,000 and 25,000 voters have only one elections staffer.

Figure 9: Election Office Staffing by Jurisdiction Size



Source: 2020 Democracy Fund/Reed College Survey of Local Election Officials

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[28] Local election contact information: U.S. vote foundation. Local Election Contact Information | U.S. Vote Foundation. (n.d.). Retrieved May 1, 2023, from https://www.usvotefoundation.org/election-offices

[29] Reports, S. Threatened U.S. election workers get little help from law enforcement. *Reuters* (2021). Available at: https://www.reuters.com/investigates/special-report/usa-election-threats-law-enforcement/. (Accessed: 19th April 2023)

[30] So, L., & Szep, J. (2021, September 8). U.S. election workers get little help from law enforcement as terror threats mount. Reuters. Retrieved May 1, 2023, from https://www.reuters.com/investigates/special-report/usa-election-threats-law-enforcement/

[31] Election official security: U.S. Election Assistance Commission. Election Official Security | U.S. Election Assistance Commission. (n.d.). Retrieved May 1, 2023, from https://www.eac.gov/election-officials/election-official-security

[32] Agudo, M., Waldman, M., Edlin, R., Norden, L., Tisler, D., Miller, L., Ramachandran, G., Friel, K., Johnson, H., Howard, E., & Weiser, W. R. (2023, May 1). Election officials under attack. Brennan Center for Justice. Retrieved May 1, 2023, from https://www.brennancenter.org/our-work/policy-solutions/election-officials-under-attack

[33] Agudo, M., Waldman, M., Edlin, R., & Norden, L. (2023, May 1). Local election officials survey (March 2022). Brennan Center for Justice. Retrieved May 1, 2023, from https://www.brennancenter.org/our-work/research-reports/local-election-officials-survey-march-2022

[34] Gronke, P. (2021, June 16). Understanding the career journeys of today's local election officials and anticipating tomorrow's potential shortage. Democracy Fund.

Furthermore, over half of the local election officials nationwide noted that their staff consists of only one person. Increasing election-based threats, limited resources, and spreading misinformation about the validity of US electoral results have had a notable impact on election officials' well-being and job turnover[35] while threatening confidence in our electoral system and those involved.

Solutions

Research indicates that both expressing[36,37] and receiving[38] gratitude results in positive outcomes. When we think about the issues of threats, there's potential benefit in prompting voters to think about why they're grateful to EOs and what they do (e.g. improve empathy and reduce aggression). Meanwhile, expressing gratitude to election officials and workers could mitigate the negative effects of threats, improve their job satisfaction, and promote a more positive and collaborative atmosphere.

Gratitude interventions are proven to positively affect physical and psychological well-being. Expressing gratitude improves physical well-being and happiness levels, while also contributing to positive behavioral changes - like driving affective commitment, a sense of belonging, pride, and willingness to participate.

To address these issues, we designed a series of studies to support election workers and officials during and after elections. Leading up to the 2022 midterms, we aimed to explore how we could equip election officials and workers with the tools to combat backlash, while also building durable motivation.

Across three studies, we focused on how gratitude can be used to improve election perceptions for both voters and election workers. Overall, we aimed to understand the challenges facing our electoral system and to provide evidence-based recommendations for improving the well-being of both voters and election workers. By exploring the potential benefits of gratitude, we hope to promote a more positive and collaborative electoral environment that upholds the principles of democracy and protects the safety of all involved.

Our Findings

1. Gratitude generally increases feelings of happiness and appreciation for workers. These are particularly effective when sent by a voter, supervisor, or religious leader.
2. There are potential opportunities to build on this concept in the field, by having voters send thank-you notes and having election workers be recipients of thank-you notes from a range of messengers.

Introduction: EO Gratitude Studies

Using insights from existing research, we aimed to test the impact of several thank-you note messengers on the happiness or appreciation felt by individuals who have been employed. Building on this, the goal was to determine the effect of thank-you notes on both senders (voters) and receivers (election workers). An overview of the designed studies is shown in Figure 11. All prototyped materials are shown in Appendix E.

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[35] ibid

[36] Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: an experimental investigation of gratitude and subjective well-being in daily life. Journal of personality and social psychology, 84(2), 377. https://web.p.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=95099deb-9eb5-4575-81a4-939dd3e7cac7%40redis

[37] Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive Psychology Progress: Empirical Validation of Interventions. American Psychologist, 60(5), 410–421. https://doi.org/10.1037/0003-066X.60.5.410

[38] Raggio, R.D., Folse, J.A.G. Gratitude works: its impact and the mediating role of affective commitment in driving positive outcomes. J. of the Acad. Mark. Sci. 37, 455 (2009). https://doi.org/10.1007/s11747-009-0144-2

Figure 10: Overview of the designed gratitude studies

Study	Study 1 - Receiver	Study 2 - Senders	Study 3 - Receiver
Sample	Lab Study Generic with a focus on people who have worked	NC Election Day (Nov 8th) voters & GA Runoff (Dec 6th) Distributed through Common Cause volunteers	NC Election Workers Distributed through Durham's Election Office
Sample Size	n = 688	Distributed: 3,000 Responses: ~20	n = 600
Design	Conditions: 7 messengers	Conditions: 1. Digital 2. Digital Prefilled 3. Control - No Thank You Note	Conditions: 1. Constituent Thank You Note 2. Supervisor Thank You Note 3. Control - No Thank You Note

9. Gratitude Messengers in the Lab

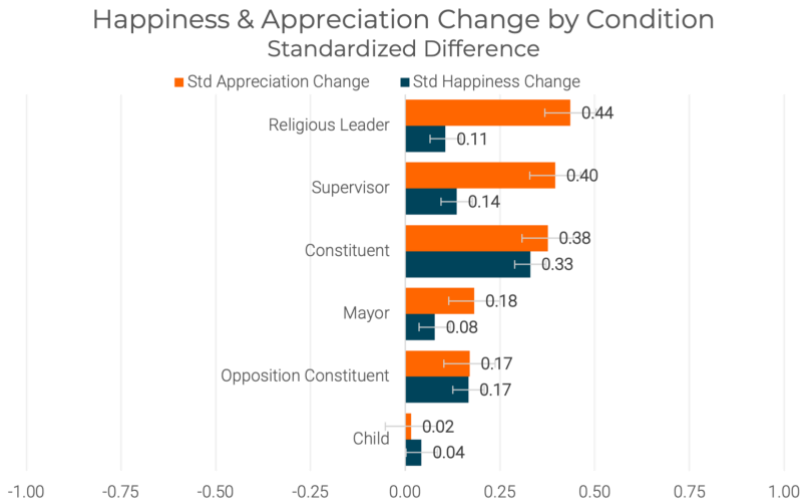
Method

This pilot study explored the impact of thank-you note messengers and how these notes and other forms of gratitude can be used as a tool to build happiness for employees, and eventually election workers. 688 participants were randomly assigned to a condition where they were shown a thank-you note from 1 of 6 messengers, or no thank-you note (the control). The conditions were a thank-you note from either: 1) a Constituent, 2) an Opposition constituent, 3) a Supervisor, 4) a Mayor, 5) a Religious Leader, 6) a Child, or 7) there was no thank-you note (the Control group). Within-group comparisons were explored based on participants' baseline feelings of happiness and appreciation within the workplace, compared to these sentiments after being shown a thank-you note from the assigned messenger.

Results

Thank-you notes from all messengers increased feelings of appreciation the most but also increased happiness. On average, Constituent thank-you notes resulted in the highest post-note feelings of both happiness and appreciation. Meanwhile, Religious leader thank-you notes resulted in the highest change in appreciation.

Graph 28: Change In Happiness & Appreciation by Condition



10-12. Gratitude Field: NC Elections, GA Runoff, and Durham Election Workers

As a follow-up from the initial lab study, we aimed to conduct field studies to understand how gratitude can be utilized to encourage both voters and election workers by having them send and receive thank-you notes.

In the first sender field study, three variations of gratitude sheets were distributed throughout 29 North Carolina polling locations on the day of the 2022 midterms, nudging voters to send thank-you notes to their local election workers. In the second field study, Georgia voters would have similarly been prompted to send election workers a thank-you note on the day of the Georgia Runoff Elections. Due to a response rate under 1% in NC and timing issues during the Georgia runoff, neither study was completed successfully.

For a receiver field study, we were interested in how election workers receiving thank-you notes impacted election worker well-being. We aimed to examine whether receiving a thank-you note led to election workers feeling appreciated, motivated in their work, and likely to remain in their role for future elections. 600 Durham-based election workers were randomized into 3 developed conditions, where they either received a thank-you note from: 1) Their Supervisor, 2) A Voter, or 3) no one (the Control). This study is pending as thank-you notes have not been distributed to election workers.

EO Gratitude Summary

Our Findings

Both theoretically and in the lab, there is evidence that gratitude plays an important role in increasing feelings of both happiness and appreciation. We also find that this impact is moderated by the messenger expressing gratitude. While all tested messengers in the lab were effective at increasing both happiness and appreciation through a thank you note, we find that the religious leader, constituent, and supervisor do the best job at improving feelings of appreciation, while the constituent, opposition constituent, and supervisor thank-you note result in the strongest change in happiness.

In the field, there are also several opportunities for testing the impact of expressing gratitude through a thank-you note while testing varying mechanisms (e.g. digital, physical, or prefilled note), to better understand how we can get voters to better understand and express appreciation for the work election workers do, which can subsequently improve voter trust and reduce the negative feedback and threats targeted at EOs.

Similarly, there are opportunities to test the impact of gratitude geared towards EOs and workers in high-stress jobs, which have potential implications ranging from lower job turnover to increased well-being, and an increased likelihood of continued service.

Limitations

While there is potential for impact, due to small sample sizes and limited field testing, it is difficult to understand the impact that gratitude would have within the context of both election workers and voters in the field.

Implications

These findings have a range of implications for varying groups. For Election Offices, thanking election workers has the potential to have a huge impact at scale - improving well-being and willingness to stay in their roles. For Civil Organizations, investing in systems that improve election worker and official well-being can have a strong impact. Meanwhile, for Voters, there is value in showing appreciation.

What's Next

Future research should look to test more extensively in the field, with a specific focus on building out tools and resources that: 1) Allow voters to understand the work that EOs do and easily express gratitude (e.g. websites and online tools) for their service, and 2) Are easily accessible by election workers and officials.

While moderation would be needed, resources like this should leverage operational transparency into what election workers do to preserve democracy, inoculate against inaccurate narratives, and note why EOs should be thanked for their hard work. This would likely build trust in U.S. elections and their operators, while also improving the well-being of both voters and EOs.

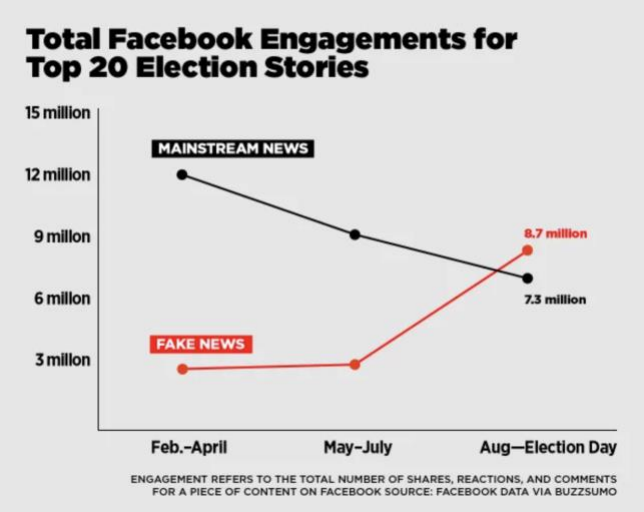
CHAPTER 3:
HOW MISINFORMATION WORKS

The Problem

In an age of excess information, election mis- and dis--information have become more prevalent in recent years[39]. Paired with the issues of political polarization and government mistrust, the issue of inaccurate and misused content has become particularly salient within social media and online[40]. False or misleading information about candidates, election processes, and voting procedures can profoundly impact the democratic process, leading to Americans' eroded trust in the electoral system[41], the government, and each other.

Despite misinformation being primarily disseminated by a smaller group of highly active misinformation spreaders[42], a key issue is its stickiness. Misinformation remains easy to access and proliferated through online filter bubbles and echo chambers[43], facilitating continued polarization. This results in trends of high engagement with and sharing of inaccurate content, as seen in Figure 12.

Figure 11: Fake vs. Real News Engagement



As noted by WHO, we are in the midst of an infodemic, characterized by excessive amounts of information, with a large portion being mis- and disinformation[44]. Research from PEW Research Center indicates that this has led to confusion about basic facts[45] and high levels of distrust across multiple media sources, as shown by none of

[39] Organisation for Economic Co-operation and Development. (2020). Transparency, Communication and Trust: The Role of Public Communication in Responding to the Wave of Disinformation about the New Coronavirus. OECD Publishing.

[40] Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., ... & Zittrain, J. L. (2018). The science of fake news. Science, 359(6380), 1094-1096.

[41] Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. Journal of Economic Perspectives, 31(2), 211-236.

[42] Glenski, M., Weninger, T., & Volkova, S. (2018). Propagation from deceptive news sources who shares, how much, how evenly, and how quickly?. IEEE Transactions on Computational Social Systems, 5(4), 1071-1082.

[43] Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. Journal of economic perspectives, 31(2), 211-236.

[44] Novel Coronavirus(2019-nCoV) - who. (n.d.). Retrieved May 1, 2023, from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf

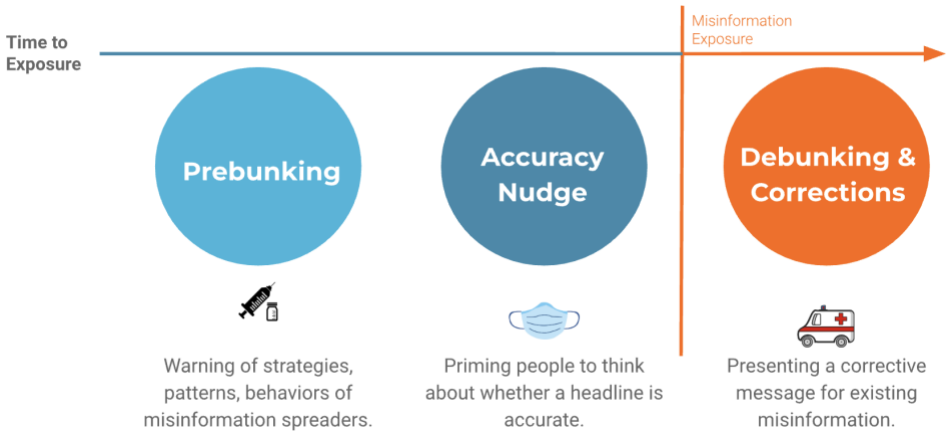
[45] Barthel, M. (2020, August 27). Many Americans believe fake news is sowing confusion. Pew Research Center's Journalism Project. Retrieved May 1, 2023, from https://www.pewresearch.org/journalism/2016/12/15/many-americans-believe-fake-news-is-sowing-confusion/

30 news sources being trusted by over 50 percent of US adults[46]. With the raising concerns on mis-, dis-, and mal-information it has become even more crucial to highlight accurate, reliable information for voters.

Solutions

A range of theories exist on addressing the growing spread of misinformation, ranging from inoculation theory to prebunking, accuracy nudges, and debunking. As is seen in Figure 13, these theories often focus on the relevant intervention based on time to exposure, with inoculation-based interventions like prebunking and accuracy nudges being more useful up to and at the point of misinformation exposure, and debunking and corrections proving more useful post-exposure.

Figure 12: Misinformation Addressing Techniques Based On Time To Exposure



Messengers

There has been less research on which messenger is most effective within the context of election-based messaging. However, using trusted messengers to offer counter-messages has been effective in past research. Within the context of health behaviors, Pink et al[47] found that unvaccinated Republicans exposed to the Republican elite endorsement reported higher vaccination intentions, while Republicans who viewed the Democratic elite endorsement had more negative attitudes towards the vaccine. In another study[48], researchers found people are more likely to act on information when they perceive the messenger to be similar to themselves.

General Inoculation

Inoculation theory is a social psychological theory that explains how an attitude or belief can be protected against influence, similar to how a body can be protected against disease–for example, through pre-exposure to weakened versions of a future threat. It suggests that exposing individuals to weakened versions of false information can help to build resistance to subsequent exposure to more potent forms of misinformation[49].

Prebunking & Inoculation Games

A strategy rooted in inoculation theory is to provide people with watered-down versions of misinformation and strategies to help them recognize it in the future, called pre-bunking[50]. This is a major strategy used in diffusing

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[46] Atske, S. (2022, March 28). U.S. media polarization and the 2020 election: A nation divided. Pew Research Center's Journalism Project. Retrieved May 1, 2023, from https://www.pewresearch.org/journalism/2020/01/24/u-s-media-polarization-and-the-2020-election-a-nation-divided/

[47] Pink, S. L., Chu, J., Druckman, J. N., Rand, D. G., & Willer, R. (2021). Elite party cues increase vaccination intentions among Republicans. Proceedings of the National Academy of Sciences, 118(32), e2106559118.

[48] Dolan, P., Hallsworth, M., Halpern, D., King, D., Metcalfe, R., & Vlaev, I. (2012). Influencing behaviour: The mindspace way. Journal of economic psychology, 33(1), 264-277.

[49] Cook, J., Lewandowsky, S., & Ecker, U. K. (2017). Neutralizing misinformation through inoculation: Exposing misleading argumentation techniques reduces their influence. PloS one, 12(5), e0175799.

[50] Roozenbeek, J., & van der Linden, S. (2019). The fake news game: actively inoculating against the risk of misinformation. Journal of Risk Research, 22(5), 570-580.

misinformation and involves exposing people to false information intentionally[51]. The small dose of misinformation is then followed by an explanation of how individuals can avoid falling victim to these attacks.

The gamification of learning content has also proven effective in teaching individuals how to distinguish fact from fiction when paired with inoculation theory. Sander van der Linden accredits the spread of misinformation to the following six "degrees of manipulation": impersonation, conspiracy, emotion, polarization, discrediting, and trolling[52]. However, exposing people to both the tactics used to convey misinformation like these and to weakened forms of misinformation can build up psychological resistance[53] to similar forms of misinformation.

Misinformation games across domains (e.g., COVID, climate change, etc.) have effectively built an individual's ability to accurately judge different types of misinformation[54,55]. Past studies have shown that playing games like Harmony Square, GoViral, Bad News, and Factitious improve discernment, confidence, and persist over time[56].

Accuracy Nudges

Another body of research on corrections and framing indicates they (sometimes) work[57,58]. Providing an "accuracy nudge" and minimal digital literacy tips have increased accuracy-based judgments by up to 50%[59]. Providing warnings that individuals may be subjected to misinformation prior to exposure may help combat source monitoring errors[60]. For example, a Twitter field study by Pennycook et al.[61] found that nudging people towards the idea of accuracy reduces misinformation sharing online.

Corrections

Corrections, on the other hand, involve correcting false information after it has already been spread[62]. Existing research has found false news and misinformation are particularly potent online because of the low barrier-to-entry, and the virality with which it spreads. Studies have found that false information may reach more people than its truthful counterpart and may be more readily accepted depending on individual characteristics[63]. Post-exposure, misinformation spreads rapidly and is difficult to correct because it evokes strong emotions[64], and is usually simpler than the truth[65], especially if it is consistent with pre-existing beliefs.

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[51] Gampa, A., Wojcik, S. P., Motyl, M., Nosek, B. A., & Ditto, P. H. (2019). (Ideo) Logical reasoning: Ideology impairs sound reasoning. Social Psychological and Personality Science, 10(8), 1075-1083.

[52] Roozenbeek, J., & Van der Linden, S. (2019). Fake news game confers psychological resistance against online misinformation. Palgrave Communications, 5(1), 1-10.

[53] Roozenbeek, J., and van der Linden, S. (2020). *Breaking Harmony Square: A game that "inoculates" against political misinformation*. The Harvard Kennedy School Misinformation Review 1(8).

[54] Basol, M., Roozenbeek, J., & Van der Linden, S. (2020). Good news about bad news: Gamified inoculation boosts confidence and cognitive immunity against fake news. Journal of cognition, 3(1).

[55] Compton, J., van der Linden, S., Cook, J., & Basol, M. (2021). Inoculation theory in the post-truth era: Extant findings and new frontiers for contested science, misinformation, and conspiracy theories. Social and Personality Psychology Compass, 15(6), e12602.

[56] Maertens, R., Roozenbeek, J., Basol, M., & van der Linden, S. (2021). Long-term effectiveness of inoculation against misinformation: Three longitudinal experiments. Journal of Experimental Psychology: Applied, 27(1), 1.

[57] Brashier, N. M., Pennycook, G., Berinsky, A. J., & Rand, D. G. (2021). Timing matters when correcting fake news. Proceedings of the National Academy of Sciences, 118(5), e2020043118.

[58] Mosleh, M., Martel, C., Eckles, D., & Rand, D. G. (2021). Shared partisanship dramatically increases social tie formation in a Twitter field experiment. Proceedings of the National Academy of Sciences, 118(7), e2022761118.

[59] Sirlin, N., Epstein, Z., Arechar, A. A., & Rand, D. G. (2021). Digital literacy is associated with more discerning accuracy judgments but not sharing intentions.

[60] Brashier, N. M., Pennycook, G., Berinsky, A. J., & Rand, D. G. (2021). Timing matters when correcting fake news. Proceedings of the National Academy of Sciences, 118(5), e2020043118.

[61] Pennycook, G., Epstein, Z., Mosleh, M., Arechar, A. A., Eckles, D., & Rand, D. G. (2021). Shifting attention to accuracy can reduce misinformation online. Nature, 592(7855), 590-595.

[62] Nyhan, B., & Reifler, J. (2010). When corrections fail: The persistence of political misperceptions. Political Behavior, 32(2), 303-330.

[63] Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. Science, 359(6380), 1146-1151.

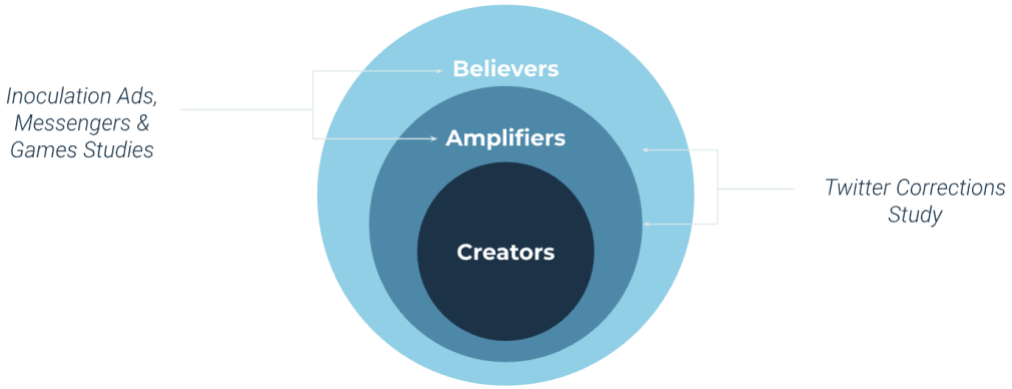
[64] Roozenbeek, J., and van der Linden, S. (2020). Breaking Harmony Square: A game that "inoculates" against political misinformation. The Harvard Kennedy School Misinformation Review 1(8).

[65] Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. Psychological science in the public interest, 13(3), 106-131.

Recommended strategies to increase the effectiveness of correction include that corrections may be more effective if they affirm individual values and pre-existing worldviews, provide an alternative narrative, and create skepticism regarding the misinformation source. The effectiveness of misinformation correction may also depend on social context, the strength of beliefs, and the nature of the correction. Since misinformation evokes emotion, which may produce continued influence even after correction, effective corrections provide an alternative narrative, evoke emotion, and affirm individually-held values.

Using these insights, we designed 7 studies (4 in the lab and 3 in the field) based on inoculation theory, prebunking, and debunking research to address the spread of election misinformation across different audiences. By exploring the benefits of these mechanisms, we identified effective approaches for addressing the spread of election misinformation and promoting a more informed and engaged electorate. As seen in Figure 14, we designed a range of interventions to target misinformation creators, amplifiers, and believers.

Figure 13: Intervention Design Based on Misinformant Type



Our Findings

1. Messengers matter: The messengers that share inoculating messages play an important role, especially around elections. Individual-level personalization through election officials has a strong impact on inoculation effectiveness and message trust.
2. Gamified interventions are effective: Both passive and active inoculation teach individuals how to more accurately spot misinformation, with games especially working on those with lower baseline discernment scores (e.g. those that believe that the elections were rigged and conservatives) and having a stronger impact on one's likelihood of engaging with (liking and sharing) misinformation.
3. Corrections and general inoculation techniques are also effective: Inoculation ads, especially those that utilize accuracy nudge-based concepts, are effective at improving one's ability to spot misinformation. All correction methods, especially fact-checking, were effective at reducing the subsequent spread of election-based misinformation.

The first subsection will explore the effectiveness of messengers at inoculating against misinformation, and the second will look at the effectiveness of a range of techniques (e.g. games, ads, corrections) for reducing susceptibility to and engagement with misinformation.

CHAPTER 3A:
WHO SHOULD COMMUNICATE ELECTION INFORMATION

Introduction: Inoculation Messengers

Existing literature shows generally, the messenger communicating a message is important. Within the context of elections, we were interested in understanding how we can cut through the noise to deliver trusted, impactful messages around election-based misinformation. We launched two lab studies focused on the impact of a range of messengers on accuracy discernment, trust in inoculation content, and trust in the messenger.

13. Messengers in the Lab 1

Method

577 MTurkers were shown 3 of the best-performing inoculation ads from the ads study (see Inoculation Ads in the Lab). Ads were framed as being shared by 1 of 12 different messengers based on the condition to which they were randomly assigned. Subjects completed a headline rating task, viewed inoculation content from a messenger, and completed a post-intervention rating task. Both the baseline and post-intervention measures consisted of 4 Democratic and Republican-leaning, inaccurate and accurate, fact-checked, and pretested posts.

The experimental messengers that were tested are as follows:

1. Election organizations, including a 1) State page with a state flag, 2) State page with an EO image, 3) Local page with a state image, or 4) Local page with an EO image,
2. Individual election officials including a 5) Verified male election official (through a blue tick), 6) Male election official, 7) Female election official, and
3. Non-elections-related individuals and entities, including a 8) Celebrity, 9) Community Organization, 10) Faith Group Leader, 11) Fact-Checking Organization, and 12) Generic Messenger - a 'typical' male voter (the control).

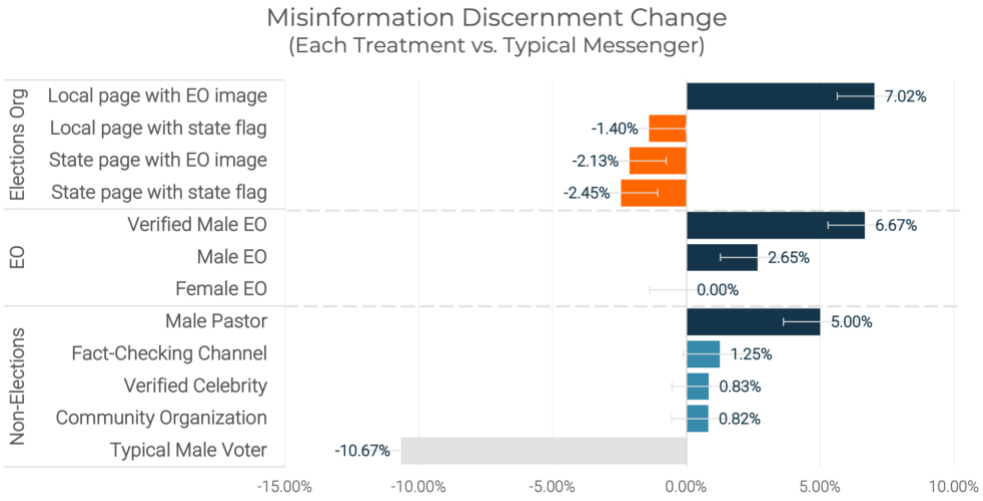
We collected data in October 2022 across 14 swing states of interest, with individuals shown state-specific content based on the area they were registered to vote when available. Details are shown in Appendix F.

Results

Misinformation Discernment

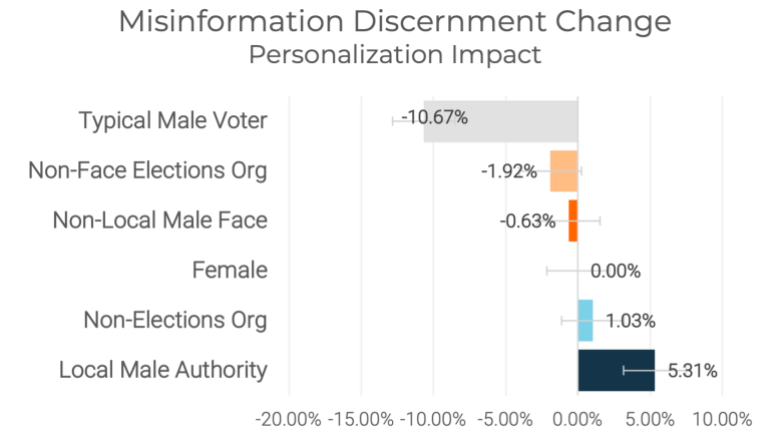
All messengers improved misinformation discernment, or one's ability to accurately spot misinformation, compared to a typical voter (the control) by between 8 to 18%. The impact was strongest for a local page represented by an EO ($p<0.001$), a verified EO ($p<0.001$), and a local pastor ($p<0.01$).

Graph 29: Misinformation Discernment Change by Messenger



When messenger groups are aggregated, we see inoculation messenger pages personalized with an image of an individual (vs. a flag or icon) are most effective. The impact of these face-based images is better than that of institutions (e.g. fact-checkers, election pages with flags, community organizations) and the typical voter (the control). The impact was strongest when inoculation was done through a local male local authority ($p<0.001$) (inclusive of male EOs, pastors, and a celebrity). The variation in impact speaks to the importance of personalization and the value of leveraging local trust, which has stronger evidence across a range of studies.

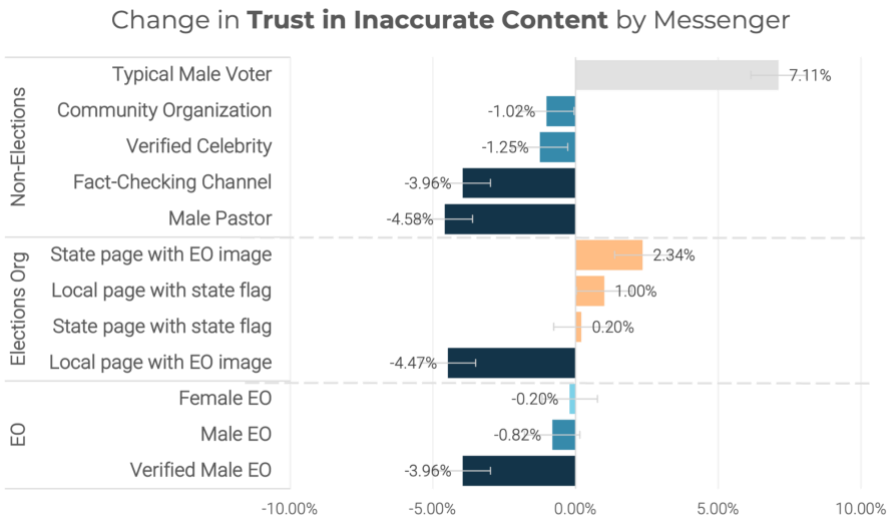
Graph 30: Misinformation Discernment Change by Personalization Type



Trust in Content

We see that most messengers decreased trust in inaccurate content compared to a typical voter by between 5 to 12% ($p=0.01$). The impact was strongest for the local pastor, a local page with an EO image, a verified EO, and a fact-checking channel ($p<0.05$ for each).

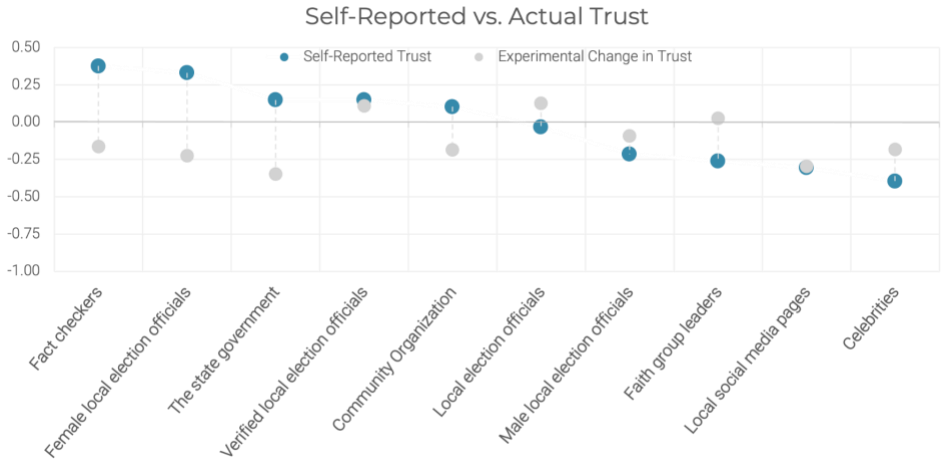
Graph 31: Misinformation Content Trust Change by Messenger



Self-Reported Trust

When trust scores are normalized, we find that although participants trusted local, male, personalized sources the most, they reported having the strongest trust in fact-checkers, female EOs, and the state government.

Graph 32: Expected vs. Actual Messenger Trust



14. Messengers in the Lab 2

Building on study 1 results, a follow-up study checked if the impact held with a larger sample size across the US. We also over-sampled misinformation believers beyond the 2022 midterms.

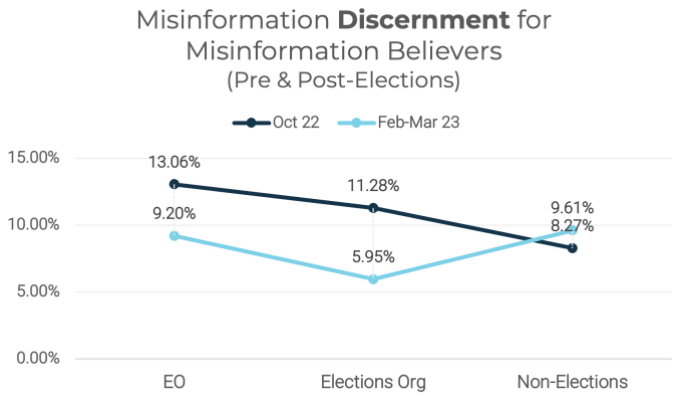
Method

2,000 MTurkers were recruited between February and March 2023 across the US to view inoculating content from 1 of the same 12 messengers. We again used headline ratings to determine how their behavior (perceptions of accuracy, trust in content, confidence in accuracy ratings, and the likelihood of engaging) changed with inoculation-based content from each messenger.

Results

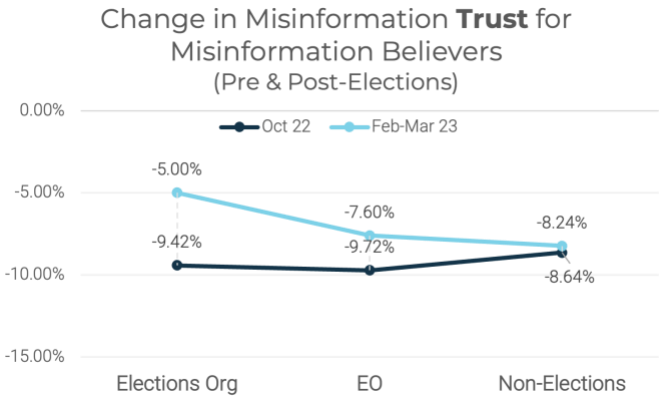
We see a similar impact of each messenger on misinformation discernment as the first study. When misinformation believers that can vote in 1 of the 14 key states are compared to that subset from the first messengers study, we see inoculation impact is consistent over time. There are non-significant changes ($p>0.05$) in misinformation discernment between both periods, but also a notably weaker trend in impact for election organizations in non-election periods (Graph 33). This could indicate inoculation is most effective around elections and when the content is most needed.

Graph 33: Misinformation Discernment Change by Messenger Before vs. After Elections



There was also a consistent change in inaccurate content trust (or misinformation distrust) for misinformation believers over time ($p>0.05$). We see that the strongest difference in misinformation distrust occurs for inoculating messages from election organizations. The weaker impact for election organizations in non-election periods could again potentially indicate that inoculation is most effective around elections.

Graph 34: Misinformation Content Trust Change by Messenger Before vs. After Elections



Findings: Inoculation Messengers

Through 2 lab studies, we found that authority-based messengers are effective at combating misinformation and building trust. Notably, most inoculation messengers increased misinformation discernment and misinformation distrust, relative to a typical voter.

Personalized, local messengers are most effective, with the male local and verified EOs consistently generating the strongest impact. Meanwhile, other face-based, local accounts also worked well at improving misinformation discernment. We found that the same holds true for trust. A pastor and local EO page had the strongest impact on misinformation trust, decreasing trust in accurate content, with the fact-checking channel and verified EO having a similar impact.

Finally, inoculation messengers impacted misinformation believers the most consistently over time. However, we found election officials and organizations are even more impactful closer to elections.

CHAPTER 3B:
INOCULATING AGAINST & CORRECTING MISINFORMATION

Introduction: Gamified Inoculation

Using insights on the utility of prebunking, we created two inoculation resources. These interventions were based on van der Linden et al's[66] work on the "degrees of manipulation" (impersonation, conspiracy, emotion, polarization, discrediting, and trolling) used to spread misinformation and research on the benefits of using both active and passive learning techniques[67]. There was a central focus on building out content across tools that addressed the specific manipulation techniques and narratives (e.g. conspiracy theories) used to spread misinformation around US elections.

In collaboration with TILT, we designed Politricks, to teach players how to detect the presence of misinformation by explaining manipulation strategies used by election misinformation spreaders. We also taught players why these strategies are so influential before testing their ability to spot these tactics.

15. Politricks in the Lab

Method

543 participants from MTurkers within the 14 US states of interest were recruited in October 2022. Participants were randomly assigned to one of two inoculation treatment conditions or the control condition. Treatment conditions included either an active learning-based misinformation inoculation game (Politricks) or a passive learning-based inoculation guide, while the control group played Tetris. In both treatment conditions, participants learn about three methods of manipulation used to spread election-based misinformation: emotional storytelling, conspiracy theories, and conformity (through the bandwagon fallacy).

Within the game, players are taught about manipulation strategies used by separate 3 bad actors. Game players defeat these characters and are awarded points for selecting content that is correctly aligned with the character's strategy. Within the passive guide, users are taught the same 3 manipulation strategies and similarly provided with quizzes and feedback as they read the guide. After experiencing a treatment, participants viewed a series of randomly presented factual and fake, and manipulative and non-manipulative headlines. Participants' ratings of each headline's manipulativeness, confidence in their rating, and willingness to share the headline was used to measure discernment and engagement likelihood.

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[66] Roozenbeek, J., & Van der Linden, S. (2019). Fake news game confers psychological resistance against online misinformation. Palgrave Communications, 5(1), 1-10.

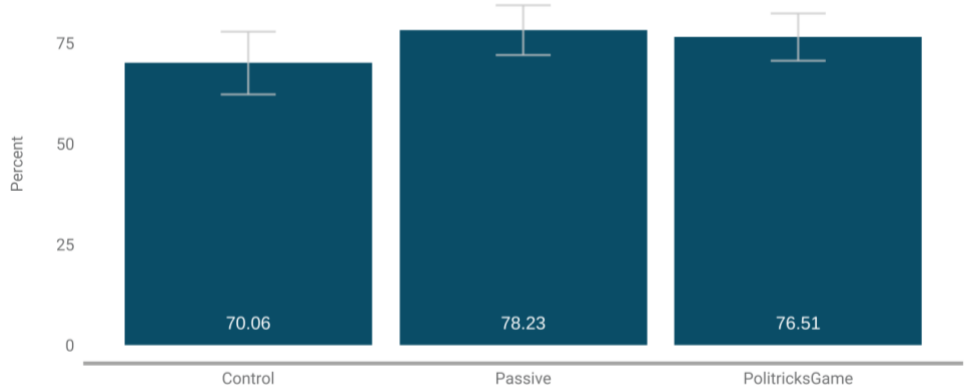
[67] Green, M., McShane, C. J., & Swinbourne, A. (2022). Active versus passive: evaluating the effectiveness of inoculation techniques in relation to misinformation about climate change. Australian Journal of Psychology, 74(1), 2113340.

Results

Bad Discernment

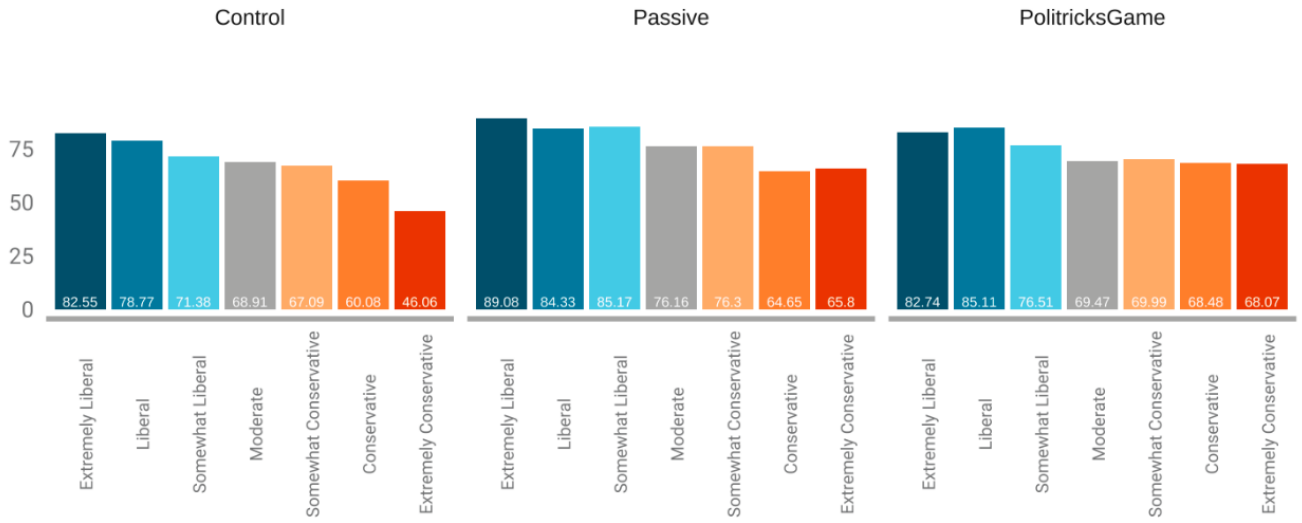
Generally, we found participants were good at bad discernment (i.e. they could accurately identify manipulative content as manipulative and inaccurate content as inaccurate) but both active and passive inoculation helped. The control group's bad discernment accuracy averaged 70%, whereas Politricks and the passive guide significantly increased discernment by 6.4% p<0.001) and 8.2% (p<0.001) respectively.

Graph 35: Ability to Accurately Spot Manipulative and Inaccurate Content by Condition



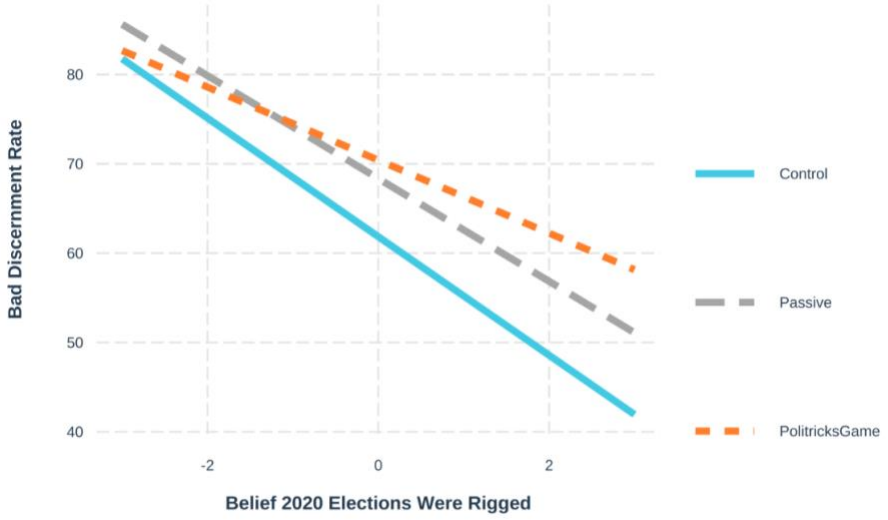
We saw a downward trend in bad discernment by political orientation, with stronger Conservative beliefs resulting in worse discernment scores across all experimental conditions. However, despite these lower overall scores, the game worked best to improve scores as individuals became more strongly Conservative.

Graph 36: Ability to Accurately Spot Manipulative and Inaccurate Content by Political Orientation & Condition



We saw a similar downward trend in bad discernment for individuals that held stronger beliefs that the 2020 elections were "rigged". Also similar to political orientation, bad discernment scores decreased at a slower rate and held over 50% after experiencing inoculation.

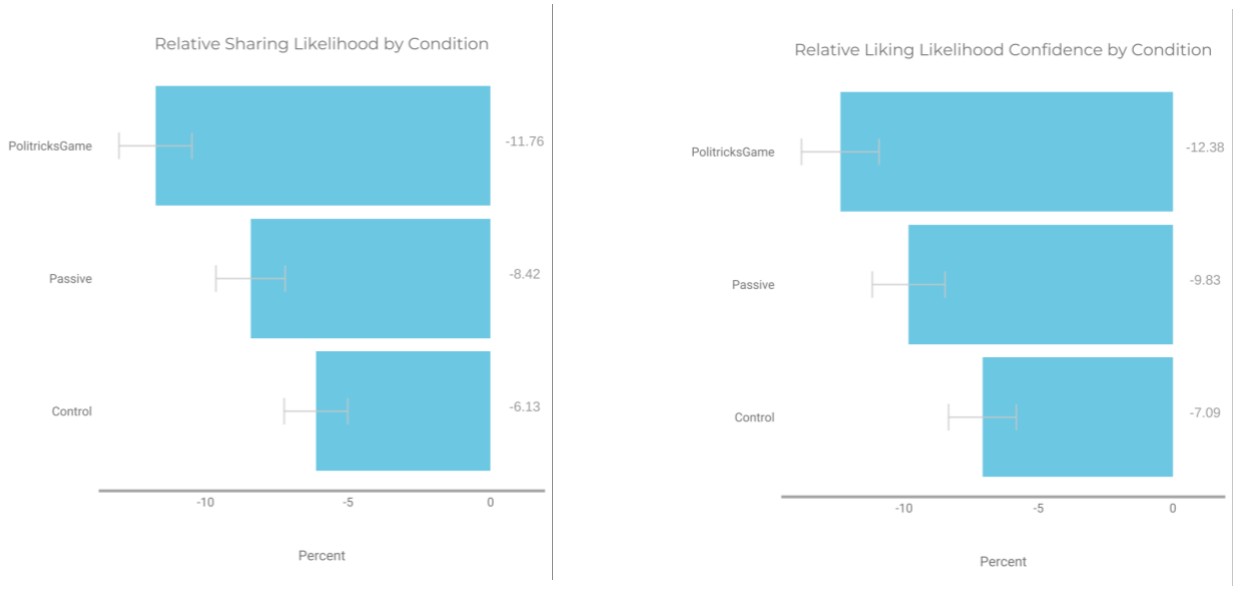
Graph 37: Ability to Accurately Spot Manipulative and Inaccurate Content by Belief that the Elections were Rigged & Condition



Misinformation Engagement

The Politricks game had the strongest impact on sharing and liking likelihood, reducing both by ~12% ($p<0.01$) relative to those that played Tetris in the control.

Graph 38: Relative Likelihood of Engaging with Manipulative Content by Condition



16. Politricks in the Field

Building initial lab insights, we aimed to understand how we could expose the misinformation consumers to the game and if the impact of Politricks held in the field. Targeting misinformation spreaders on Twitter with a range of targeted Twitter ads, we aimed to determine if playing Politricks improved discernment in the field.

Method

Between the day of the 2022 midterm elections (November 8th) and December 12th, over 700,000 US-based Twitter users were exposed to paid ads on Twitter with a link to Politricks. Twelve ad images were designed using

a range of message frames (e.g. focusing on civic duty, competing to win the game, and taking individual action to reduce the spread of misinformation).

These ads nudged individuals to play the game and learn about manipulation techniques used to share election misinformation while piquing interest in playing the game after clicking on the link. The ads led to one of two versions of the game which contained the same game content but flipped the order in which the optional pre and post-intervention headline rating tasks were shown.

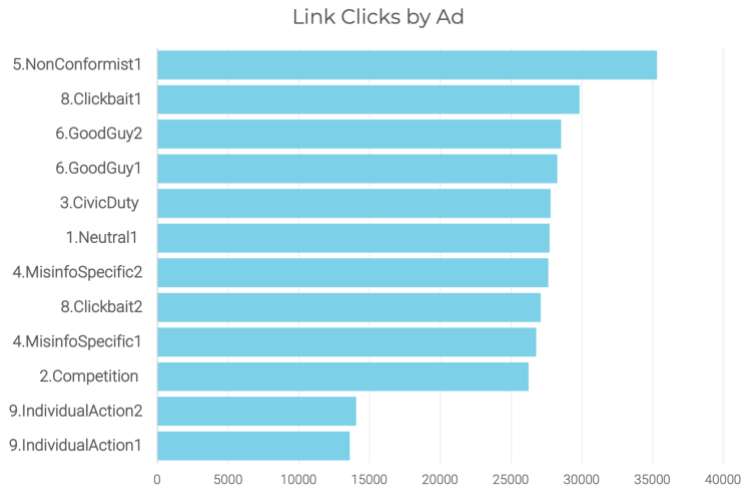
Individuals were targeted if they were a 'follower lookalike' of several known misinformation spreaders (e.g. @DavidIcke_, @BreitbartNews) or using keywords trending in the misinformation space (e.g. #stopthesteal, 5g, #decertifytheelections). We aimed to determine which ads were most effective (i.e. resulted in the highest link clicks), and if individuals were able to more accurately judge headlines as manipulative after playing the game.

Results

Engagement with Ads

We found all of the ads generated relatively high engagement. Of the 719K that were exposed to any of the ads, 312,830 clicked on the link to the game, resulting in a click-through rate of 43.48%. Ads with the highest engagement included non-conformist messaging, alluding to 'red pill, blue pill' language, content around 'learning the truth about elections', and content framed around building awareness of political misinformation. The final ad images shown are detailed in Appendix G.

Graph 39: Link Clicks to Game by Ad Type

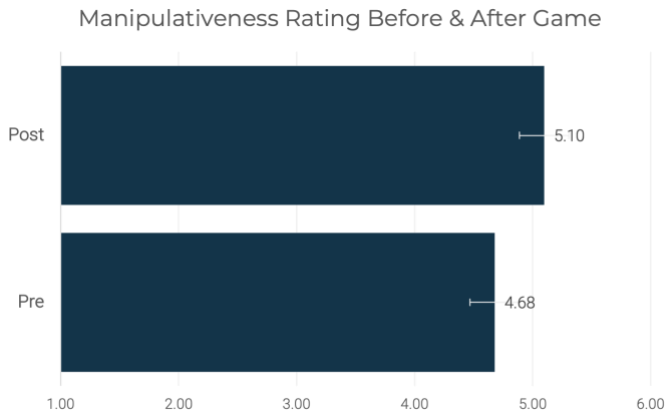


However there was high drop-off, with only 29,810 (or approximately 9.5% of link clicks) active visits, and 3,155 active engagements (or 1% of link clicks) with the game.

Discernment Impact

For those who completed the game and both pre-/post-game headline rating tasks, we again saw an increase in perceptions of manipulativeness after playing the game. Manipulation discernment increased by 8% increase in, as is seen in Graph 40, similar to what we see in the lab. However, the small sample (n=41) and self-selection into the headline rating task in the field means further testing is needed.

Graph 40: Manipulativeness Rating of Manipulative Content Before & After the Game



Findings: Games

In both the lab and field study, we found that both active and passive inoculation were effective at improving an individual's ability to spot manipulation techniques and misinformation by between 7%. The benefit of the created game on outcomes was amplified for Conservatives and individuals that believe that the 2020 elections were rigged. We also saw both interventions reduced the likelihood of sharing and liking manipulative or inaccurate content. The only limitation in the field is getting misinformation engagers to play the game, indicating an opportunity to refine the game to effectively reach and engage people on social media.

Introduction: Inoculation & Corrections

A range of research indicates inoculation and corrections are effective strategies to reduce online misinformation. We aimed to understand the extent to which these theories held within the lab and field as it relates to election-related misinformation. We aimed to give guidance on the impact of social media ads, by first testing in the lab, and exploring the potential of responding to misinformation on Twitter based on which types of responses seem most effective. Building on insights from this first Twitter study, we prototyped a second corrections study designed to test misinformation feedback at scale.

17. Inoculation Ads in Lab

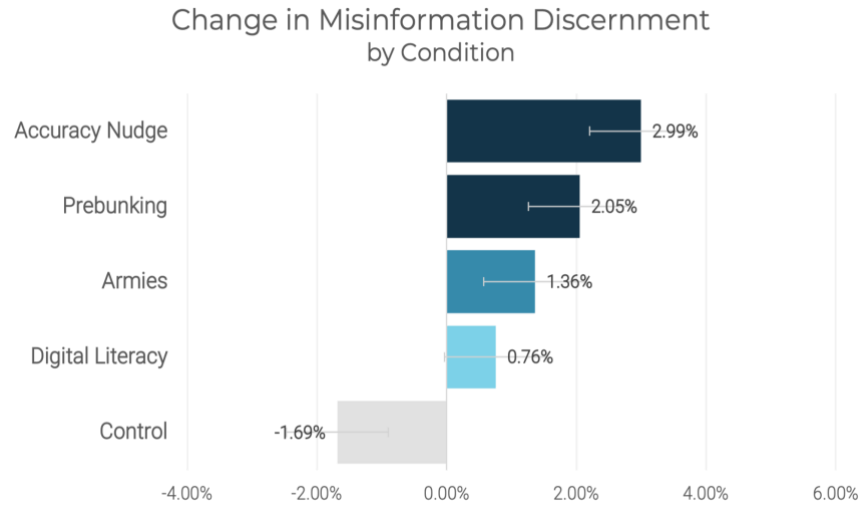
Method

In this first ad lab study, 1,178 participants completed a survey to explore belief in misinformation-based headlines both before and after viewing inoculation ads. Data was collected in June 2022 across 14 swing states of interest. Participants were randomly assigned to a condition and shown three ads utilizing one of five potential message frames. Like in the messenger studies, subjects completed a baseline headline rating task, then viewed inoculation content, before completing the post-intervention rating task. This determined how their behavior changed with inoculation-based content. Both baseline and post-intervention measures consisted of 4 different fact-checked, pretested, Democratic or Republican-leaning, and inaccurate or accurate posts.

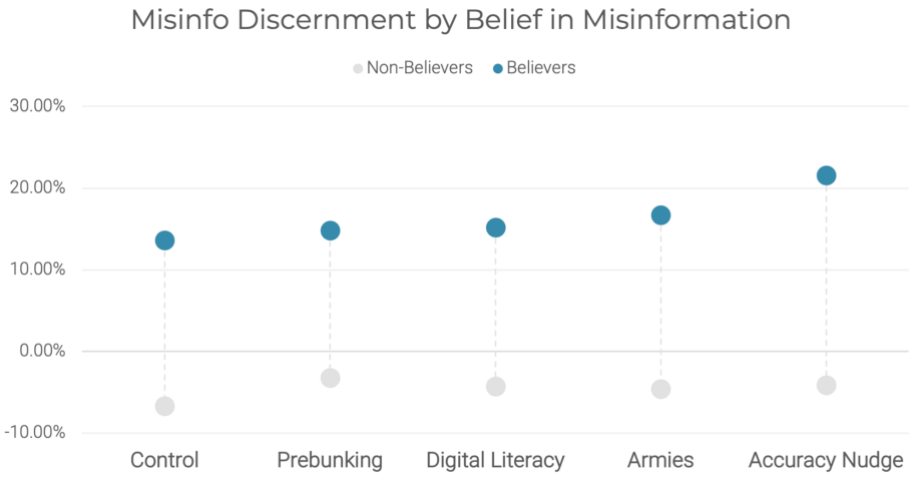
The 5 ad frames/conditions are as follows: 1) Accuracy Nudges - prompting them to think about the accuracy of online content, 2) Prebunking - details on how misinformation spreads and is amplified, 3) Digital Literacy - prompting to utilize more optimal information gathering processes, 4) Armies - the 'silent majority' (or non-misinformation believers) were prompted to speak up and share election facts, and 5) the Control - a trending topic on Twitter at launch, ". Details on the actual ads shown are in Appendix G.

Results

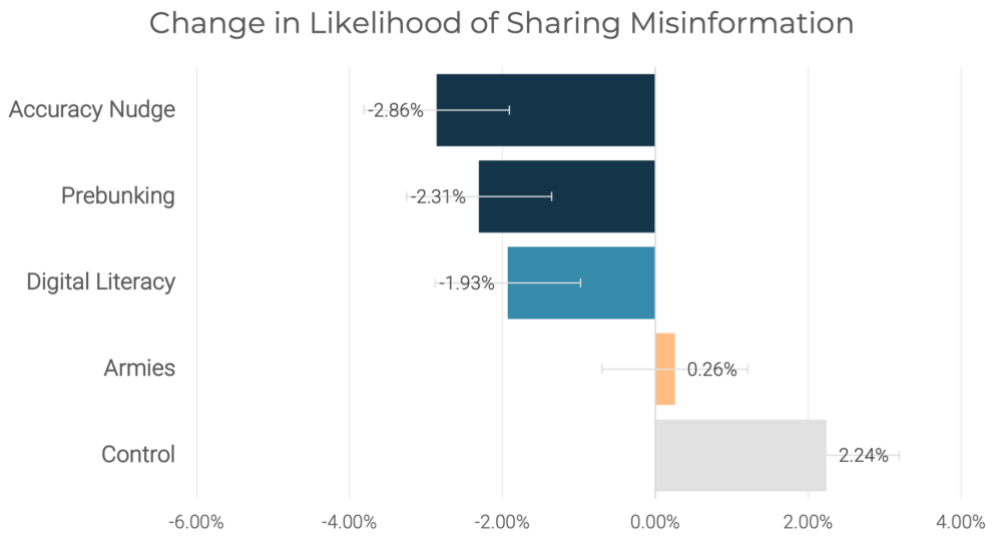
Ads had a weak but positive impact on spotting misinformation. All inoculation ads improved misinformation discernment relative to the control. The Accuracy Nudge condition improved misinformation discernment by nearly 5% ($p<0.05$) relative to the control. Prebunking similarly improved discernment by almost 4% ($p<0.05$).



For those that believed misinformation in the baseline headline rating task, discernment improved by up to 18% after seeing the ads ($p<0.001$) relative to non-susceptible individuals. Actual change rates ranged from 15-22% for misinformation believers across all conditions. Notably, treatment effects were lower and mostly negative for those not already susceptible to misinformation, indicating value in primarily targeting misinformation believers.



Ads had a similar impact on sharing behavior. Ads reduced the likelihood of sharing relative to the control. The Accuracy Nudge condition reduced sharing likelihood the most, by 5% ($p<0.01$) relative to the control. Prebunking similarly improved sharing likelihood by about 4% ($p<0.01$).



18. Twitter Misinformation Corrections: Study 1

Method

In this field study, we identified misinformation amplifiers on Twitter and had Irrational Labs' social media monitors provide direct, public feedback between October 18th and November 19th, 2022. Feedback was provided shortly after the Cyber Ninjas audit, whenever misinformants posted election-based misinformation.

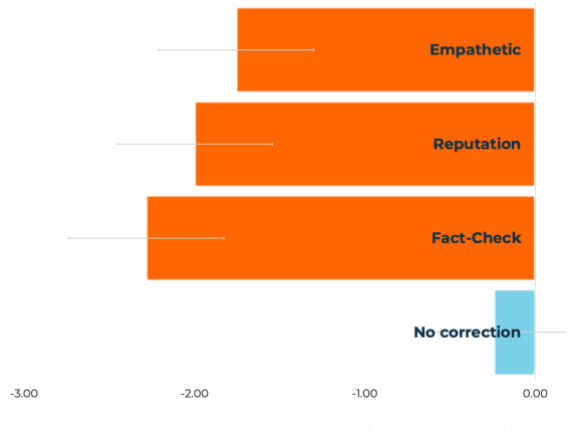
The sample included 323 active Twitter misinformation spreaders in Maricopa County, Arizona. These users were selected based on their historical propensity to post misinformation on Twitter and their primary location. Social media users were assigned to one of four feedback or non-feedback conditions and exposed to corrections via a public reply from our messenger ("Americans for Election Integrity") each time they shared misinformation on Twitter. Stratified random sampling was conducted based on the type of user and historical average tweet volume.

The feedback conditions included: 1) Fact-checking - sharing evidence of a fact-checking source that refutes this claim, 2) Reputational feedback - assessing the reputation of either the poster or the source of the claim, 3) Empathetic feedback - agreeing and empathizing then proposing an alternative narrative based on new evidence, or 4) No feedback (the control). We also logged and assessed misinformation shared for the 5 weeks prior to and after the experiment to determine the impact outside of the experimental period.

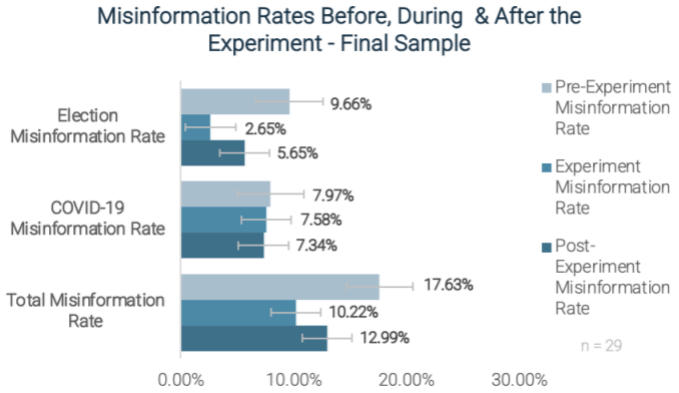
Results

Only 73% of the original sample, 236 users, were considered "active" due to tweeting during the study period. The final sample was reduced to 29 users (or 9.29% of the original sample), who tweeted misinformation.

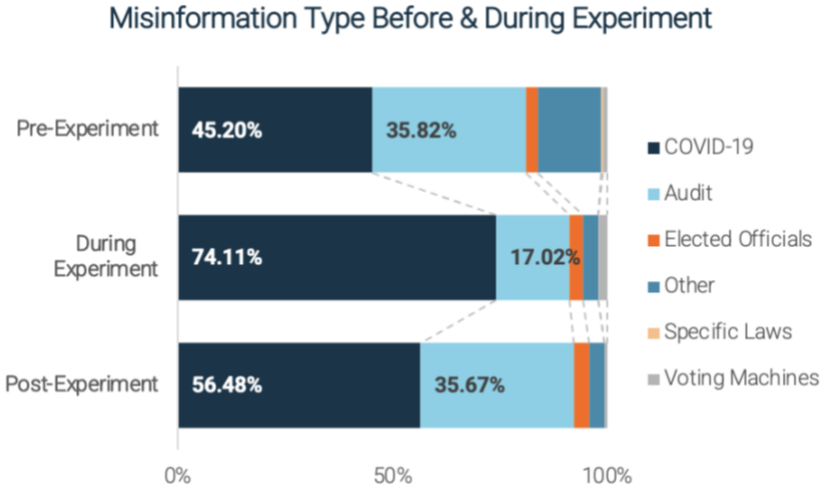
Throughout the experimental period, only 1% of tweets from the entire cohort were focused on election-based misinformation, compared to 10% for active misinformants. With feedback, we can expect a weekly decrease in misinformed tweets. Fact-checking had the strongest impact, reducing misinformation volume by 2 weekly tweets. This was followed by reputation and sympathy, both also seeing statistically significant decreases.



Despite the low volume of misinformation throughout the experiment, we saw election-based misinformation tweets decrease by 7% with feedback for the active sample. Meanwhile, COVID-19 misinformation remained consistently high before, during, and after the experiment.



The majority of misinformation focused on COVID-19 before the experiment and spiked during. Election-related misinformation only accounted for 26% of all misinformation shared, focusing on audits and elected officials.



19. Twitter Misinformation Corrections: Study 2

Building on the results of this first Twitter study, we hoped to test the impact of corrections around the 2022 midterms. We aimed to track and respond to up to 4,000 Twitter users as they shared misinformation across the US and provide feedback in line with the conditions (fact-checking, reputational, empathetic feedback) explored in our first feedback study. However, due to manpower constraints and timing, the study was unable to run.

Findings: Inoculation & Corrections

In both the lab and field, we saw inoculation through ads and corrections on Twitter had a significant impact on misinformation belief, engagement, and subsequent behavior. Both are pilot studies with small samples but these insights provide a meaningful, in-depth peak into the value of inoculating and correcting.

Misinformation Summary

Our Findings

The proliferation of misinformation, especially during election seasons, poses a significant threat to democratic processes. Through several studies, we built and tested strategies, such as trusted messengers to offer counter-messages, inoculation theory, prebunking, accuracy nudges, and corrections. Across all studies, we see these interventions work across contexts. As is seen in Figure 15, some of the strongest changes in the ability to spot misinformation and distrust in inaccurate content include passive inoculation through a misinformation guide, active inoculation through a misinformation game, and using trusted messengers.

In the lab, we found the effects of inoculation interventions are most effective for those who need it the most. Effects are amplified for groups with lower discernment like general misinformation believers, election deniers, and Conservatives. We find these interventions are amplified with the use of suitable, personalized messengers.

Figure 14: Summary of Findings & Impact for Misinformation Studies

	Inoculation Messenger Study	Inoculation Ads Study	Twitter Corrections Study	Inoculation Games
Tested	Best messenger to prebunk in the lab	Best message type to prebunk in the lab	Best message method to debunk on Twitter	Best way to prebunk in the lab & field
Effect of Treatments	+ Misinformation Discernment - Trust in inaccurate content - Engagement (liking & sharing)	+ Misinformation Discernment - Engagement (liking & sharing)	- Subsequently sharing inaccurate election-related tweets	+ Manipulation Discernment + Misinformation Discernment - Engagement (liking & sharing)
Conditions that work best	Local election officials & personalities	Accuracy Nudges & Digital Literacy	All corrections, but primarily fact-checking	Active game & passive guide
Impact & Effect Size (d)	8 - 18% change in discernment d = 0.52 (med)	2 - 5% change in discernment d = 0.17 (small)	1.8 less inaccurate tweets/wk d = 0.17 (small)	6 - 9% change in discernment d = 0.41 (med)

Without a one-size-fits-all solution, adopting a multifaceted approach to combating election misinformation is necessary to promote accurate, reliable information for voters. Across studies, we find actively addressing misinformation narratives before, during, and after exposure does significantly and positively impact subsequent beliefs and engagement. These results show layered interventions create maximum impact. Trusted messengers such as election officials, humanized with a personalized persona, should use messaging strategies proven to reduce the impact of misinformation, like prebunking, accuracy nudges, and corrections.

Limitations

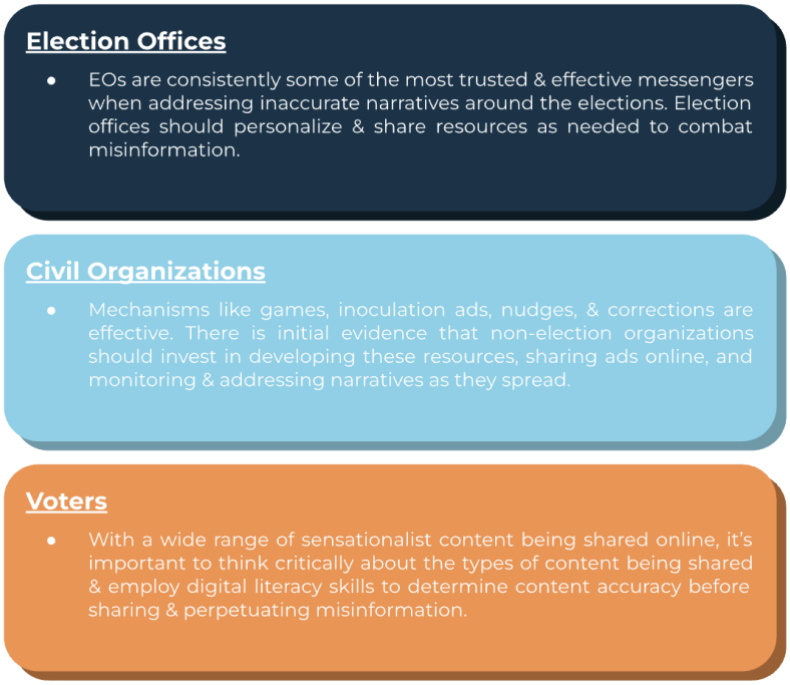
While we are able to find informative, meaningful impact across misinformation studies, they are limited to the lab. Sample sizes are relatively small and data is collected primarily through MTurk surveys, leaving expectations in the field and at scale a projection.

Future research should test a range of interventions in the field to determine if results hold for the populations most in need of inoculation and debunking strategies. Furthermore, since a smaller proportion of the population believes misinformation, and an even smaller proportion shares election misinformation online, field studies should account for these small minorities when identifying the sample.

Implications

In these studies, we outline several findings that have implications for several groups, as shown in Figure 16.

Figure 15: Summary of Misinformation Implications



What's Next

Future misinformation research should extend into the field with larger experimental samples and a focus on scaling interventions for the populations where we see the highest impact. Trusted messengers, for example, could be leveraged through existing EO social media profiles. These could, paired with apt messaging and social media ads, could be tested within misinformation-prone states to determine the impact in the field. Similarly, Politricks, the misinformation game, could be further developed to maximize engagement and shared both online and through election offices or civic organizations to raise awareness of manipulation strategies.

CHAPTER 4:
PUTTING IT TOGETHER

Our Findings

Through 19 prototyped and 16 completed studies between July 2021 and December 2022, we see evidence that transparency, gratitude, and inoculation-based interventions can meaningfully impact voters and election workers. These approaches address issues of eroded election trust and a rise in the spread of misinformation through varying types of behavioral science-based interventions.

Our key finding is that the way in which we can strengthen US democracy lies in building on multi-faceted pillars. This requires 1) a focus on using operational transparency to build election trust, 2) providing resources that help EOs and voters to experience gratitude, 3) leaning on trusted messengers to improve discernment, and 4) utilizing inoculation and corrections to build discernment.

Within the context of the trust studies, we find these transparency interventions result in increased trust, especially for those who lean left or have no party preference, with effects being mediated by perceived trust and perception of their vote being counted. These interventions result in slight increases in voter turnout - potentially due to increased trust in vote-by-mail or vote-by-drop box.

For our gratitude studies, we see evidence that gratitude-based thank-you notes can significantly improve feelings of happiness and appreciation in the workplace. We also see this impact is amplified based on the messenger sending the thank-you note, with the supervisor, constituent, and religious leader being most effective for improving well-being.

With our misinformation studies, we find addressing misinformation before or after the fact is vital. We see the messenger is important, with personalized election workers and religious leaders having the strongest impact on one's ability to accurately spot misinformation and reduce trust in inaccurate content. We see this impact holds over time, with non-significant differences in impact in non-election periods. However, election officials and organizations are more trusted and effective during election periods, providing insight into the importance of timing inoculation interventions.

Lastly, our inoculation and correction studies show both active and passive learning techniques are effective at building discernment. Active learning through our misinformation game is especially effective at reducing the likelihood of engaging with inaccurate content for election deniers and Conservatives. We also see that both inoculation ads and corrections are effective at improving misinformation discernment and reducing the likelihood of subsequently sharing misinformation, respectively.

Next Steps

Though we build on the literature and gain novel insights, our key limitations lie in some workstreams being kept in the lab. Our field studies are currently limited to either relatively small samples or only focus on specific states. These limitations result in constrained confidence in the generalizability and nuance of these concepts.

Moving forward building on these concepts more iteratively, and with even more feedback from the relevant stakeholders (e.g. election offices and officials, voters, community organizations, etc.), would ensure maximum impact. Deepened partnerships would allow us to develop and test these interventions at a greater scale.

Looking toward the 2024 elections, there is a range of issues expected to arise around decreasing election trust and increased misinformation. Protecting voter trust requires proactive development, insights, and interventions backed by behavioral science and will allow us to strengthen the fabric of US democracy.

APPENDICES

Appendix A: Trust Measure Instruments

Main Government Trust Measure:

[Federal]

When it concerns elections …

Competence:

COMP1: The federal government is capable.*

COMP2: The federal government is effective.

COMP3: The federal government is skillful.

COMP4: The federal government is an expert.*

COMP5: The federal government carries out its duty very well.*

Benevolence:

BEN1: If citizens need help, the federal government will do its best to help them.*

BEN2: The federal government acts in the interest of citizens.*

BEN3: The federal government is genuinely interested in the wellbeing of citizens.*

Integrity:

INT1: The federal government approaches citizens in a sincere way.*

INT2: The federal government is sincere.*

INT3: The federal government keeps its commitments.

INT4: The federal government is honest.*

[State]

When it concerns elections …

Competence:

COMP1: My state government is capable.*

COMP2: My state government is effective.

COMP3: My state government is skillful.

COMP4: My state government is an expert.*

COMP5: My state government carries out its duty very well.*

Benevolence:

BEN1: If citizens need help, my state government will do its best to help them.*

BEN2: My state government acts in the interest of citizens.*

BEN3: My state government is genuinely interested in the wellbeing of citizens.*

Integrity:

INT1: My state government approaches citizens in a sincere way.*

INT2: My state government is sincere.*

INT3: My state government keeps its commitments.

INT4: My state government is honest.*

[Local]

When it concerns elections …

Competence:

COMP1: My local government is capable.*

COMP2: My local government is effective.

COMP3: My local government is skillful.

COMP4: My local government is an expert.*

COMP5: My local government carries out its duty very well.*

Benevolence:

BEN1: If citizens need help, my local government will do its best to help them.*

BEN2: My local government acts in the interest of citizens.*

BEN3: My local government is genuinely interested in the wellbeing of citizens.*

Integrity:

INT1: My local government approaches citizens in a sincere way.*

INT2: My local government is sincere.*

INT3: My local government keeps its commitments.

INT4: My local government is honest.*

Source:
https://journals.sagepub.com/doi/pdf/10.1177/0020852315585950?casa_token=baz0IWfGyaMAAAAA:nIIVU-NUa3sLTRw3weo0dZaQmdrZ2OdeCtoR4U1Cy5630vVEfk39cCOM6EtvdkaEj6J964e7HNwAWQ

ANES:

People have different ideas about the government in Washington. These ideas don't refer to Democrats or Republicans in particular, but just to the government in general. We want to see how you feel about these ideas. For example…

1. How much of the time do you think you can trust the government in Washington to do what is right: Just about always/most of the time/or only some of the time;

2. Would you say the government is: Pretty much run by a few big interests looking out for themselves/or that it is run for the benefit of all the people;

3. Do you think that people in government: Waste a lot of the money we pay in taxes/waste some of it/or don't waste very much of it;

4. Do you feel that: Almost all of the people running the government are smart people who usually know what they are doing/or do you think that quite a few of them don't seem to know what they're doing;

5. Do you think that: Quite a few of the people running the government are a little crooked/not very many are/ or do you think hardly any of them are crooked at all?

Source: https://electionstudies.org/wp-content/uploads/2018/04/gershtenson-plane-2007-trust-in-government.pdf

GSS:

Would you say that most of the time people try to be helpful, or that they are just looking out for themselves?

Do you think most people would try to take advantage of you if they got the chance or would they try to be fair?

Some people say that most people can be trusted. Others say you can't be too careful in your dealings with people. How do you feel about it?

I am going to name some institutions in this country. As far as the people running these institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?

- Executive branch of the federal government
- U.S. Supreme Court
- Congress
- Local Government
- State Government
- Etc. (Scientific Community, Press, TV, Organized Labor,...)

Source: https://electionstudies.org/wp-content/uploads/2018/04/nes011889.pdf

PEW:

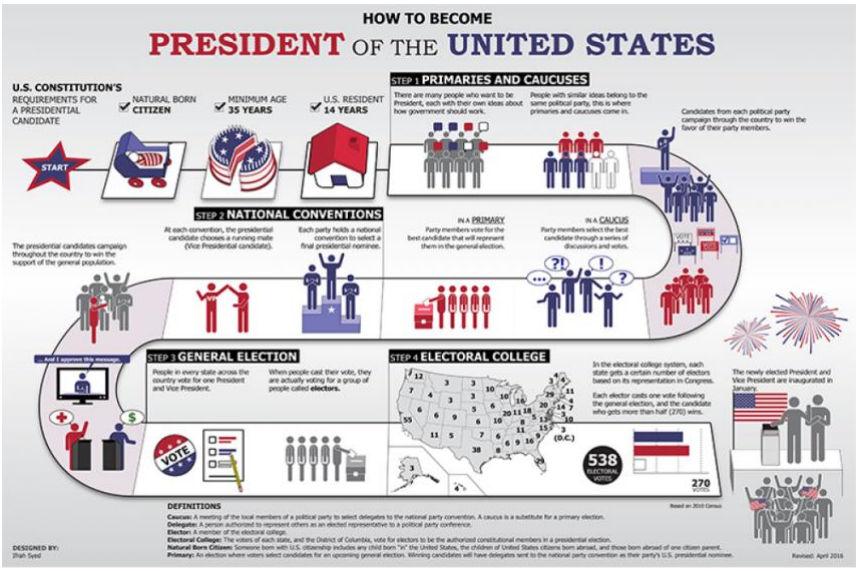
How much confidence do you have in the future of the United States?

Some people say they are basically content with the federal government, others say they are frustrated, and others say they are angry. Which of these best describes how you feel?

Source: https://www.pewresearch.org/politics/wp-content/uploads/sites/4/2021/05/PP_2021.05.17_scope-of-government_TOPLINE.pdf

Appendix B - Lab Study 1 Instruments

Condition	Prompt
Prompt 1 - Process Transparency	Please take your time to read the headline below before answering the questions that follow The Election Process People in every state across the country vote for one President and Vice President. When Americans go to the polls they select their favorite presidential candidate and their running mate. When people cast their vote, they are actually voting for a group of people called electors. Presidential elections use the Electoral College. To win the election, a candidate must receive a majority of electoral votes. The presidential nominee with the most electoral votes becomes the President of the United States. Except in the states of Maine and

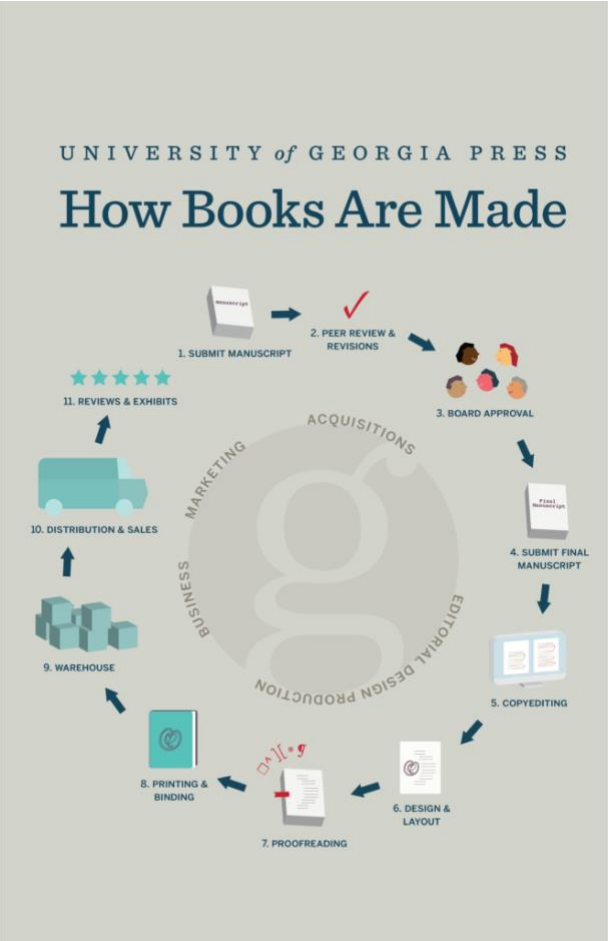
	Nebraska, if a candidate receives the majority of the votes from the people of a state then the candidate will receive all electoral votes of that state. Here is a detailed flow chart showing the steps taken to become the President of the United States: 
Prompt 2 - Effort Transparency	Please take your time to read the headline below before answering the questions that follow Election Effort States have ballot processing and tabulation safeguards designed to ensure each ballot cast in the election can be correctly counted. Before use in elections, voting systems undergo hardware and software testing to ensure they are consistent with state and/or federal requirements. This testing is designed to check that systems function as designed and meet applicable state and/or federal requirements or standards for accuracy, privacy and accessibility. Certification testing usually includes a review of a system's source code as well as environmental, security and functional testing. State procedures often include robust chain-of-custody procedures, auditable logging requirements, and canvass processes. Here is a group of election officials hard at work ensuring that the ballots are correctly counted:

	
Prompt 3 - EO Transparency	Please take your time to read the headline below before answering the questions that follow Election Personnel The typical Local Election Official is most likely a white female between 50–64 years of age, making about $50,000 annually. An election official is responsible for ensuring that voting is conducted fairly. The typical responsibilities of an election official include providing assistance to voters, completing the necessary paperwork, closing the polling station after everyone has voted, and ensuring the election is handled in an orderly and lawful manner. Election officials also regularly remove deceased individuals from voter registration rolls based on death records shared by state vital statistics agencies and the Social Security Administration. Here is a group of election officials in Fairfax County taking an oath before starting the vote count process: 
Prompt 4 - Control Group	Please take your time to read the headline below before answering the questions that follow

	The Tallest Man The tallest man ever recorded was American giant Robert Wadlow (1918–1940), who stood 8 feet 11 inches. Wadlow's size was the result of abnormally enlarged pituitary gland. Here is an illustration of the tallest man ever, Robert Wadlow: 

Appendix C: Lab Study 2 Instruments

Condition	Prompt
Control (video)	Please carefully watch the following "behind-the-scenes" video that explains how Krispy Kreme donuts are made. https://www.youtube.com/watch?v=0UV8E7vWxhU (Embedded Video)
Control (infographic)	Please review the following infographic that explains the process for how books are made.

	
State-specific Mail-in Voting Process Condition (video)	**Ohio Condition:** Please carefully watch the following "behind-the-scenes" video that explains the absentee voting process in **Ohio**. Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It is also referred to as "vote by mail." *disclaimer: election procedures may vary by county. https://www.youtube.com/watch?v=SqAv146yC70 (Embedded Video) **California Condition:** Please carefully watch the following "behind-the-scenes" video that explains the absentee voting process in **California**. Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It is also referred to as "vote by mail." *disclaimer: election procedures may vary by county. https://www.youtube.com/watch?v=62gNNDx5f-I (Embedded Video)

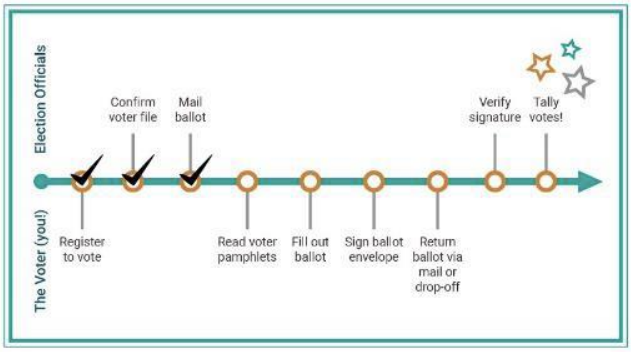
	Washington Condition: Please carefully watch the following "behind-the-scenes" video that explains the absentee voting process in **Washington** state. Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It is also referred to as "vote by mail." *disclaimer: election procedures may vary by county. Elections 2020: Track Your Ballot with the new Intelligent Mail Barcode from King County TV on Vimeo.
	Missouri Condition: Please carefully watch the following "behind-the-scenes" video that explains the absentee voting process in Missouri. Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It is also referred to as "vote by mail." *disclaimer: election procedures may vary by county. https://www.youtube.com/watch?v=444fl8pZeeI (Embedded Video)
Mail-in Voting Process (US Wide) (video)	Please carefully watch the following "behind-the-scenes" video that explains the absentee voting process in the United States. Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It is also referred to as "vote by mail." *disclaimer: election procedures may vary by county. https://www.youtube.com/watch?v=9-LhH3K9PxY (Embedded Video)
Mail-in Voting Process (infographic)	Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It can also be referred to as "vote by mail." *disclaimer: election procedures may vary by county.

	
Ballot Tracking (video)	Please carefully watch the following “behind-the-scenes” video that explains how mail or absentee ballots can be tracked in elections across the United States. Absentee ballots are ballots typically submitted by mail in advance of an election by a registered voter. It is also referred to as "vote by mail." *disclaimer: procedures may vary by county. Democracy Works - Ballot Scout.mp4 from KJO Media on Vimeo.

Appendix D: Field Study Instruments

Field Study 1 - Shasta County Emails

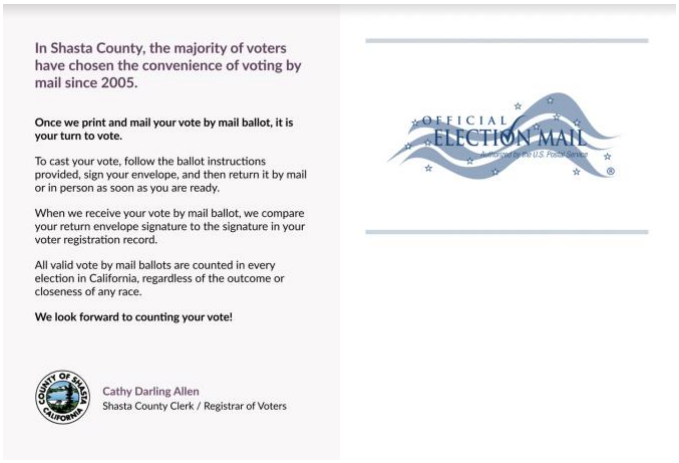
Condition	Prompt
Basic communication	[Basic]: Please review the following infographic that provided details about California's 2022 Statewide Primary.

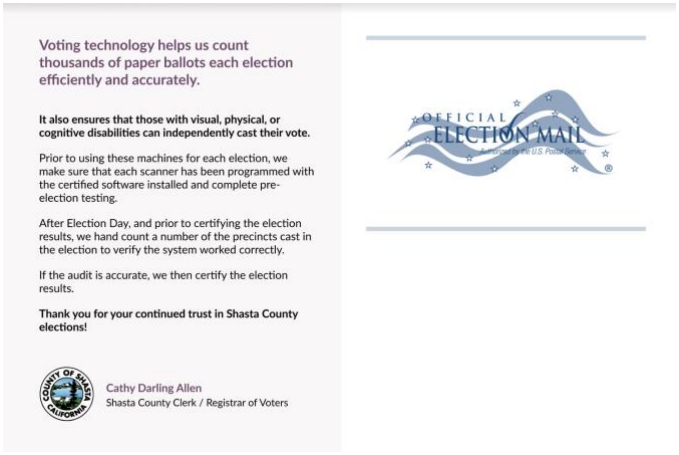
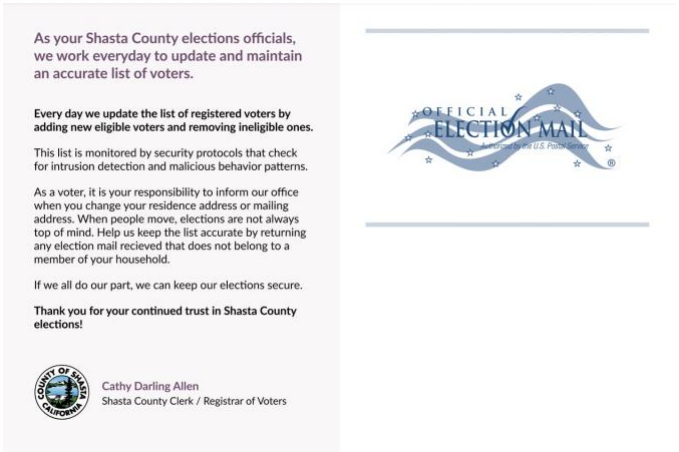
	From Your Local Election Office: **Dear Voter,** All registered voters were mailed a ballot last week for the 2022 Statewide Primary Election. If you have not already returned your ballot, you can choose to vote in person or by mail. You are receiving this email as an effort to increase voter awareness. - ***Your Local Election Team*** **Learn more about the 2022 Primary here** **Check your voter info or ballot status here**
Transparency of process	[Transparency]: Please review the following infographic that provided details about California's 2022 Statewide Primary. **From Your Local Election Office:** The vote by mail process is easy and convenient. See how the process works below.  **Dear Voter,** All registered voters were mailed a ballot last week for the 2022 Statewide Primary Election. If you have not already returned your ballot, you can choose to vote in person or by mail. Your Local Election Team is working hard to keep the election process transparent. You are receiving this email as an effort to increase voter awareness. - ***Your Local Election Team*** **Learn more about the 2022 Primary here** **Check your voter info or ballot status here**

	[Security]: Please review the following infographic that provided details about California's 2022 Statewide Primary. 

Field Study 2 - Shasta County Postcards

Condition	Prompt

Condition 1: Transparency of Vote by Mail	 
Condition 2: Vote by Mail Security	

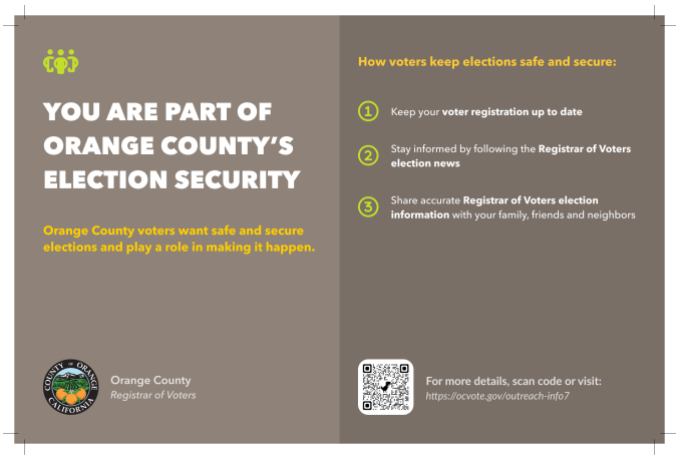
	
Condition 3: Voter File Security	 

Condition 4: Election Worker Security	

Field Study 3 - Orange county postcards

Condition	Prompt
Condition 1: Vote by Mail Transparency	

Condition 2: Vote by Mail Security	
Condition 3: Drop Box Security	
Condition 4: Election Worker Security	

Condition 5: Trusted Source	
Condition 6: Voter Election Security	
Condition 7: Voter Identity	

Field Study 4 - Yolo County Videos

Condition	Prompt
Condition 1 - Vote by Mail	https://youtu.be/00ShmJUi3Ug
Condition 2 - Signature Verification	https://www.youtube.com/watch?v=ve6nWJUBlg8&ab_channel=YoloCountyACE

Condition 3 - Security of Equipment	https://youtu.be/rN0ZtNDzGRQ
Condition 4 - CA State Security	https://www.youtube.com/watch?v=GmiwRD7OBRU&ab_channel=CaliforniaSOS

Appendix E: Gratitude Materials

Gratitude Lab Study

Imagine that you receive the following note from *a religious leader* while working as a Researcher:

Good afternoon,

I wanted to reach out to thank you for the incredible work you are doing as a Researcher. I know that the work can be challenging, but I appreciate your service.

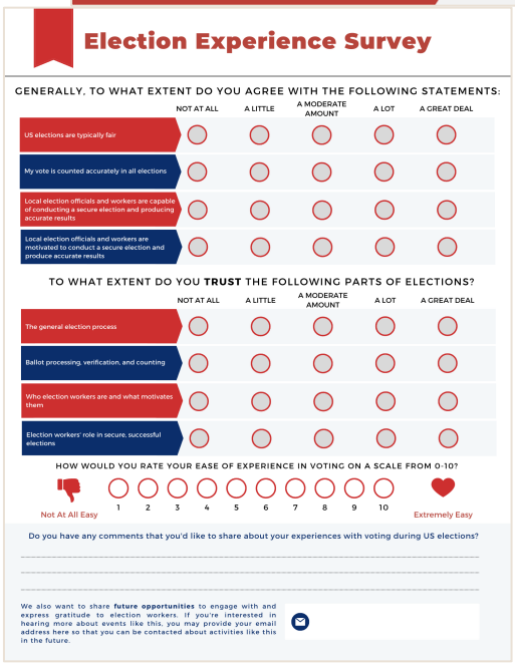
Sincerely,
Pastor Alex

Senders Studies

Condition	Prompt
Condition 1 - Digital Note	

Condition 2 - Digital, Prefilled Note	
Condition 3 - Control	

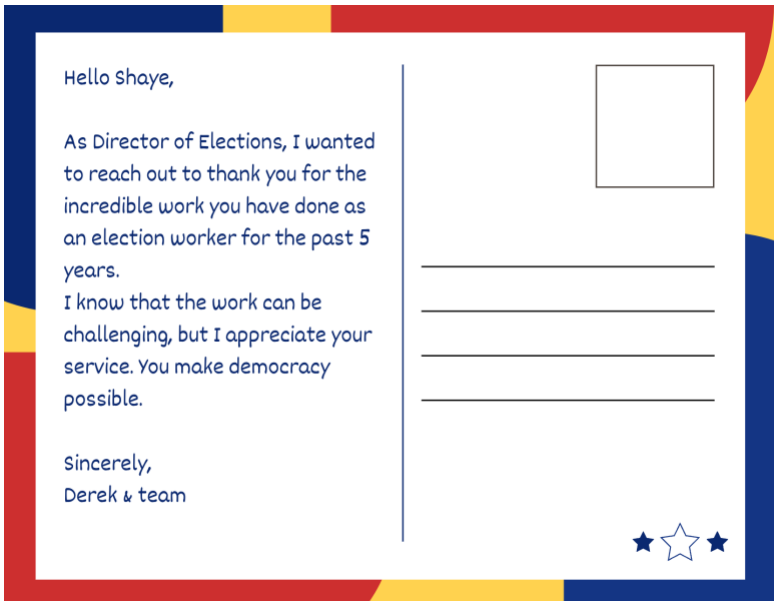
Condition 4 - Physical Note	

Receivers Study

Condition	Prompt

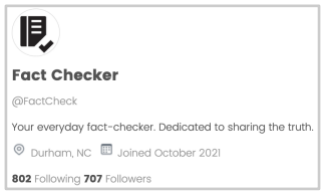
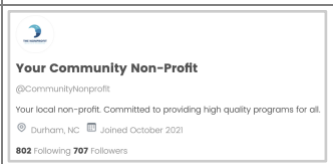
Condition 1 - Voter Thank You Note	

Condition 2 - Supervisor Thank You Note	

Appendix F: Misinformation Tested

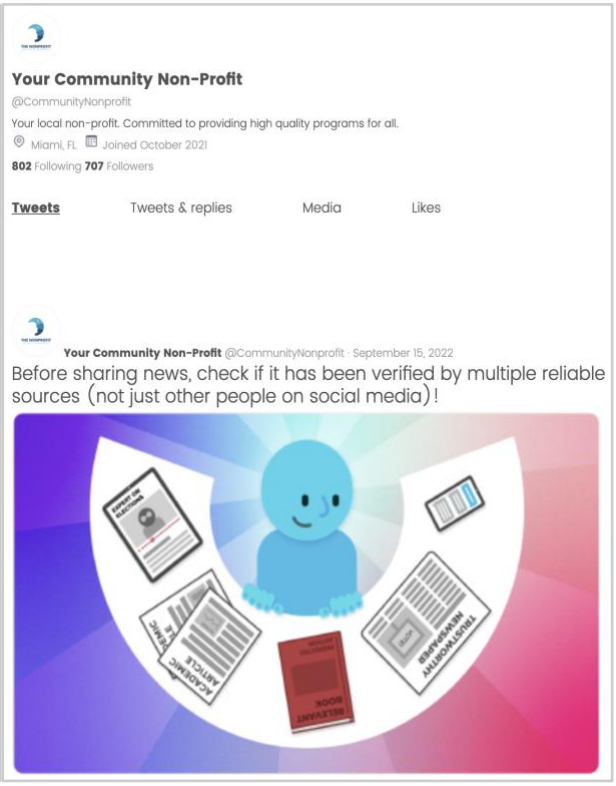
Messenger Images & Details

Messenger	Name	Twitter Handle	Image	Bio	Following / Followers
Baseline *Post-Intervention*	Dean Sullivan	@DeanSullivan		American. Political enthusiast.	802/707
Control	Max Stevens	@MaxStevens		Your everyday American that's passionate about the truth.	802/707
Celebrity	Max Stevens	@MaxStevens		Author. Activist. Leader. New book out now.	1,077/68.2K

Faith Group Leader	Max Stevens	@MaxStevens		Pastor in <County>, <Region>.	802/707
Election Official female	Maxine Stevens	@MaxineStevens		Local election official in <County>, <Region>.	802/707
Election Official male	Max Stevens	@<region>MaxStevens		Local election official in <County>, <Region>.	802/707
Election Official male - Verified	Max Stevens	@<region>MaxStevens		Local election official in <County>, <Region>.	1,077/68.2K
Fact checker	Fact-Checker	@FactChecker			802/707
Community Organization	Your Community Non-Profit	@CommunityNonprofit		Your local non-profit. Committed to providing high quality programs for all.	802/707

State page with EO image	<region> EO Max Stevens	@<region>Elections		State elections page for <Region>.	802/707
Local page with EO image	<County> County EO Max Stevens	@<County>CountyElections		Local elections page for <County> County, <Region>.	802/707
State page with state flag	<County>, <region> Elections	@<region>Elections		State elections page for <Region>.	802/707
Local page with state flag	<County> County Elections	@<County>CountyElections		Local elections page for <County> County, <Region>.	802/707

Sample Inoculation Messages from Messengers



Appendix G: Games Materials

Games Lab Study Headlines & Example

	False		True	
	Manipulative	**Neutral**	**Manipulative**	**Neutral**
Emotional Storytelling	In Pennsylvania, THOUSANDS of mail-in ballots never reached their intended targets of households in majority low-income neighborhoods! Just ask Jake Smith, a first-time voter who was left waiting for his ballot to vote, and never got the chance.	The results from a recent poll run by Pennsylvania suggest that thousands of mail-in ballots never reached their intended targets of households in majority low-income neighborhoods.	TRAGIC! My grandma said she was 15 when minimum wage and inflation increased together, and she had to file for BANKRUPTCY almost losing the house I grew up in. Now it's happening AGAIN and people everywhere are suffering! Meanwhile, the federal minimum wage hasn't increased for 10 years.	It's been over 50 years since minimum wage and inflation increased together, then over a decade since the federal minimum went up at all.
	Biden is so unpopular - NO ONE in my neighborhood has voted for him. The only person I know who did is the weird guy down the street. How is it possible to have 80 million weird guys down the street voting for him? IT HAS TO BE massive fraud.	If Biden is so unpopular, how is it possible for him to get 80 million votes without considering massive fraud?	They say that "robust safeguards" protect against drop box ballot tampering, but my best friend SWEARS BY A VIDEO SHE SAW WHERE DROP BOX BALLOTS WERE SHREDDED in the back of a tractor trailer.	As noted by CISA's rumor control page, there are several robust safeguards across states to protect against tampering with ballots returned via drop box.

Bandwagon Fallacy	The FBI just released a statement that multiple military mail-in ballots were found TRASHED in a ditch in Pennsylvania!!!! ALL of them were for President Trump. Everyone I know says there's something like this happening in their state. That means this must be true election interference and Democrats are okay with it!!!	The FBI just released a statement that multiple military mail-in ballots were found thrown away in a ditch in Pennsylvania. ALL of them were for President Trump. This is true election interference and Democrats are okay with it.	A Georgia State LAW says that a losing candidate can request a recount IF the margin between the candidates is within 0.5%. Laws are passed by the majority vote, and they exist for a reason! In 2020, Biden led by a margin of 12,670 votes or 0.25% of the roughly 5 million ballots cast. Myself and everyone I've spoken to agrees Trump deserved a recount.	Georgia state law allows a losing candidate to request a recount if the margin between the candidates is within 0.5%. In 2020, Biden led by a margin of 12,670 votes or 0.23% of the roughly 5 million ballots cast.
	Over 65% of the country believes that the 2020 election was fraudulent. That number was around 35% a year ago. So many people believing the election was rigged makes me question the results even more.	Over 65% of the country believes that the 2020 election was fraudulent. That number was around 35% a year ago. This means more and more people are believing in election fraud.	I used to like our president, but just like most people in this country, I don't approve of how he's handled things. Just look at this recent U.S. poll from Quinnipiac showing the president's approval rating plummeting to just above 30%!!	In a January 12 2022 Quinnipiac poll, U.S. President Joe Biden's approval rating plummeted to just above 30 percent.
Conspiracy Theory	Finally, a judge has ruled Dominion (a company rumored to be part of an international cabal to steal the election) voting machines were designed to create fraud. Dominion was designed with inherent errors to transfer millions of votes from Trump to Biden!	A judge has ruled Dominion voting machines were designed to create fraud. They have ruled that it was designed with inherent errors to create systemic fraud and influence election results.	Variations in vote totals for different contests on the same ballot occur in every election and provide EVIDENCE of ballot tampering by hidden forces. You can't tell me there isn't a way for those who made the machines to deliberately mess with the outcome. That has fraud written all over it folks.	Variations in vote totals for different contests on the same ballot occur in every election and do not by themselves indicate fraud or issues with voting technology.
	This is Why Democrats Are Not Worried about 2020 — The Fix Is In… Postal Service Institutionalizes Ballot Interference Scheme with New Mail-in Ballot Division	The Postal Service Institutionalizes Ballot Interference Scheme with New Mail-in Ballot Division	Dozens of judges have bought into Liberal Propaganda and are now part of the largest Witch Hunt in history.	In more than 60 cases, judges looked at the election fraud allegations that Trump made and determined they were without any merit.

[redacted] @[redacted] · [redacted]

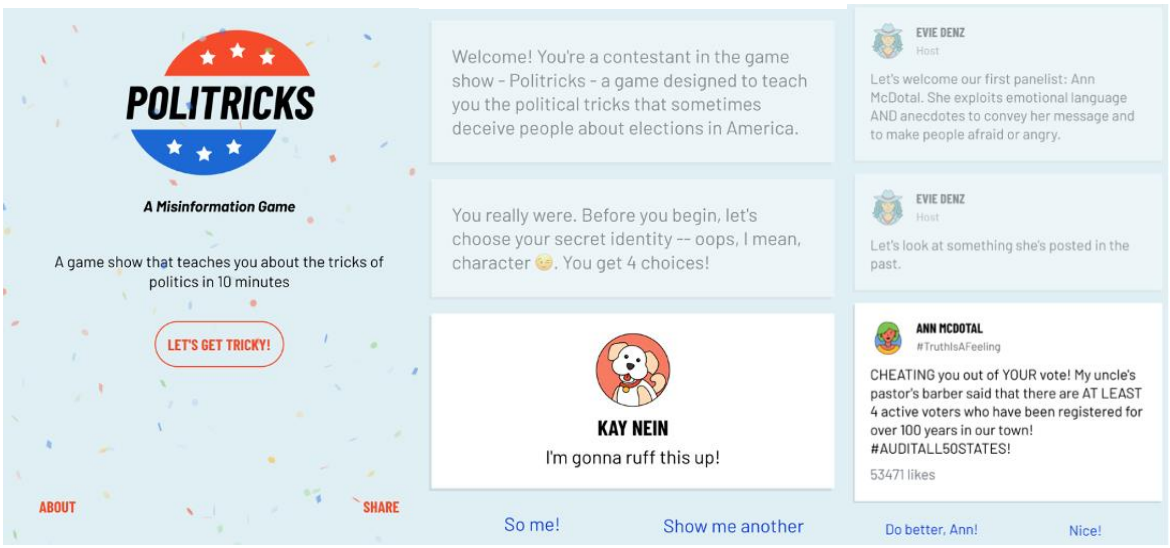
They say that "robust safeguards" protect against drop box ballot tampering, but my best friend SWEARS BY A VIDEO SHE SAW WHERE DROP BOX BALLOTS WERE SHREDDED in the back of a tractor trailer.

For the content above, to what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
This is a manipulative post	○	○	○	○	○	○
I am confident in my assessment of this post's manipulativeness	○	○	○	○	○	○
This is an accurate post	○	○	○	○	○	○
I would share this post on social media	○	○	○	○	○	○
I would 'like' this post on social media	○	○	○	○	○	○

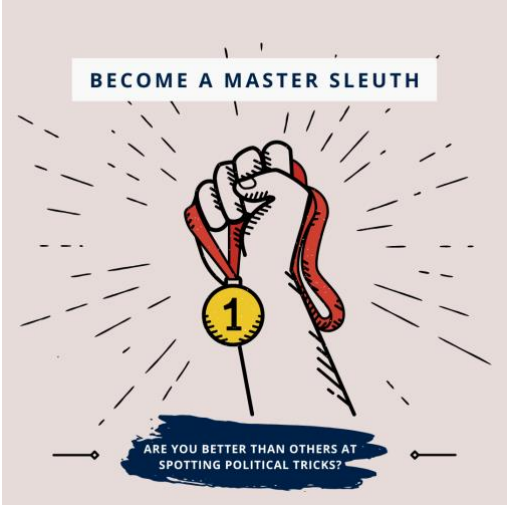
Game Content Outline & Screenshots

Area	**Overview of content shown**
Game Introduction	Introduction to the game
	Select character you want to play as
	Introduction to Host (Evie Denz)
	Introduction to the panelists you'll try to defeat
	Rules on how to win the game
	Details on different rounds you'll play
Play as character	Introduce character
	Introduce character & bio
	Explanation of Fallacy, Concept, or Strategy
	E.g. of type of content they'd post
	Reactions from Followers on his/her page
	First Task
	Attempt to defeat player (1)
	Second Task
	Attempt to defeat player (2)
	Ending and Lesson
	Lesson on Strategy
Wrap-Up + Final Lesson	How to be a better you



Field Study Ads

Category	Image
Neutral	

Competition	
Civic Duty	

Misinformation Specific	 
Non-conformist	

Good Guy	 
Clickbait	

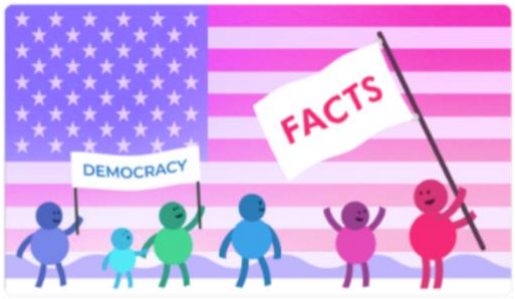
	
Individual Action	 

Appendix G: Inoculation & Correction Materials

Lab Study Ads

Condition	Details	Text	Image
Digital Literacy	Participants were shown details on more optimal information gathering processes when on social media.	People lie on the internet. Before you share a post, always ask yourself what the author has to gain.	
		Misinformation travels fast. Before sharing news, check multiple reliable sources to verify the content.	
		Before sharing news, check if it has been verified by multiple reliable sources (not just other people on social media)!	
		Where are you getting your election facts from? Do the people sharing the content have any of the following traits: contradictory beliefs, nefarious intent, or immune to evidence? If so, they may be a conspiracy theorist!	

Accuracy Nudge	Participants were shown varying messages prompting them to think about the accuracy of content seen on social media.	Check for misinformation! Ask yourself - Is the information in this post written in a style that I expect from a professional news organization?	
		"I read it on the Internet!" Don't forget - always check the source of misinformation you share! There are lots of tricksters out there. Chances are that if it sounds unbelievable, it isn't true. Only share what you are sure is accurate information.	
		Don't be a puppet! There are lots of tricksters out there. Always ask yourself - Is the information I'm sharing motivated by a bad actor? Only share when you're positive the information is accurate.	
Prebunking	Participants were shown details on how misinformation spreads and misinformed content is generally amplified.	Angry words get amplified. When you are worked up, it's harder to focus on the facts. Take a deep breath and share a balanced perspective.	
		Misinformation travels quickly. Check multiple reputable sources before sharing. The more independent organizations are saying a similar thing, the more likely it is to be true.	

		When you read a story online that sounds extreme, consider whether or not it could possibly be true. Is plausible, or just a thrilling work of fiction?	
		If the 2020 presidential election was "rigged", think about how many people would need to be on the secret for it to actually have happened... Hundreds of thousands! Wouldn't someone have concrete evidence of the "big lie" by now?	
Armies	Participants within the 'silent majority' were prompted to speak up and share facts about the elections.	Democracy needs you to speak up! The most noise is made by those with extreme views. Democracy needs level-headed people to make their voices heard on social media.	
		Don't stay silent! The most noise is made by those with extreme views. Encourage others with balanced views to speak up on election facts!	
		The vast majority of people think the presidential election outcome was accurate and fair, but they don't make their voices heard. Democracy needs balanced people like you to speak up!	

Control	Participants were shown content based on a current trending topic on Twitter	Burgers and fries. #ThePerfectCombination	
		My dog and I <3 #ThePerfectCombination	
		#ThePerfectCombination Breakfast and lunch! Gotta love some brunch.	

Twitter Sample Responses

Type of Claim	Claim	Response	Condition
General	Cyber Ninjas is legitimate / Why would you want to stop a legitimate recount?	This is not true. Cyber Ninjas is a partisan organization that has no experience in this.	Fact Check Simple
Specific	Votes were printed on illegal paper	This is not true according to the AP factcheck. Even Cyber Ninjas never even made this claim.	Fact Check Simple
Specific	Routers connected to satellites allowed foreign interference	This is not true according to Maricopa County. Tabulation equipment is never connected to the internet.	Fact Check Simple
Specific	AZ audit could not find the identity of 86,391 voters – they don't appear to exist	This is not true. This claim by a far-right blog misinterprets the recently released Cyber Ninjas report.	Reputational
Specific	74,000 more ballots were returned than requested	This is not true according to the AP factcheck. The number you cite includes early ballots cast in-person.	Fact Check Simple

Specific	Issues with ink bleed-through impacted the vote count	This is not true according to Maricopa County. Even if there is bleed through, it doesn't affect the vote count.	Fact Check Simple
Specific	74,000 more ballots were returned than requested	This is not true according to the AP factcheck. There were 2.3 million ballots requested and 1.9 million returned.	Fact Check Simple
Specific	People voted past the registration deadline	This is not true according to Maricopa County. No ballots were counted of voters who registered after the deadline.	Fact Check Simple
Specific	Votes were printed on illegal paper	This is not true according to the AP factcheck. Even John Brakey who is overseeing the audit doesn't think this is true.	Fact Check Simple
Specific	People voted past the registration deadline	This is not true. Cyber Ninjas do not understand what provisional ballots are or the state laws that dictate registration.	Reputational
General	Voting system software is not reviewed or tested and can be easily manipulated	This is not true. This claim has been disproven again and again, you are baselessly undermining the American election process.	Reputational
General	Voting system software is not reviewed or tested and can be easily manipulated	This is not true according to the CISA. Voting systems undergo testing from state and/or federal voting system testing programs.	Fact Check Simple
Specific	Maricopa County deleted election files prior to audit	This is false. In fact, one of the firms doing an audit of the election walked back its initial claim of the database being deleted.	Reputational
Specific	AZ audit could not find the identity of 86,391 voters – they don’t appear to exist	I understand why you think this, but it turns out that the Cyber Ninjas just couldn't find some voters due to limited public records.	Sympathetic