Re-imagining the Power of Priming and Framing Effects in the Context of Political Crowdfunding Campaigns

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ABSTRACT

In recent years, political crowdfunding campaigns have emerged through which politicians raise money to fund their election campaigns. Divisive issues discussed in these campaigns may not only motivate donations but also could have a broader priming effect on people's social opinions. In the U.S., more than one-third of the population with moderate opinions show a tendency to swing their opinion based on recent and more accessible events. In this paper, we ask: can such campaigns further prime people's responses to partisan topics, even when we discuss those topics in a non-political context? To answer this question, we analyzed the influence of exposure to a political candidate's crowdfunding campaign on responses to a subsequently seen, unrelated scientific topic that is not inherently political but is seen as partisan in the U.S. (climate change). We found that exposure to an attitude-inconsistent political candidate's crowdfunding campaign (a campaign that is counter to someone's existing political beliefs) can have a significant priming effect on subsequently seen politically charged topics. This effect may occur due to the activation of in-group identity by the candidate's partisan campaign. Guided by these findings, we investigated elements that can mitigate this self-categorization effect. We found that carefully designed content following framing techniques such as schema framing and threat/safety framing can mitigate people's sense of self-categorization toward non-political topics.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**.

KEYWORDS

political crowdfunding, priming effect, framing technique, charitable crowdfunding

1 INTRODUCTION

Over the last decade, various online crowdfunding platforms have connected thousands of charitable projects to the crowd. Recently, a new trend has been rising – collecting funds for political events through crowdfunding. While public fundraising has been a part of the political process for quite some time in the U.S., traditionally, major sources of donations were wealthy individuals, PACs (political action committees), and corporations. Only a tiny fraction used to come directly from individual "small donations" ($200 or less). However, this had changed since the 2008 U.S. presidential campaign when President Barack Obama raised more than two-thirds of his total election funds through online crowdfunding [58]. Following the success of that campaign, politicians have widely pursued this new avenue for funding their election campaigns using various crowdfunding platforms such as CrowdPac [17], FireFund [30], uCampaign [108], and Flippable [29]. Figure 1 shows a screenshot of an example political crowdfunding campaign.

Figure 1: An example of a political crowdfunding campaign. Each campaign provides the name of the candidate, the position for which the candidate is running, and the location of his/her candidacy. The campaign shows the amount of funding received in real-time and how many people donated to the campaign. Similar to other crowdfunding campaigns, these campaigns also allow the campaign owners to share their donation appeals through social media.

The primary objective of political crowdfunding is to assist politicians in raising funds directly from citizens and assess the acceptance of their political agendas among potential supporters. With the advent of crowdfunding, supporters with relatively low financial strength are now seen as a massive resource for most parties, bringing renewed attention to the age-old phenomenon of funding election campaigns. Crowdfunding can speak to much broader

groups than a party's usual supporter base while minimizing the party's and donors' time and effort. This is a good method to create commitment for a political project since every donation creates a new "fan" for politicians who feel committed to winning the election. This attribute distinguishes crowdfunding from other types of online political fundraising and is critical to political candidates who strive for public support [88]. Although political crowdfunding is potentially becoming a medium for building a strong sense of community, the impact of these campaigns may go far beyond that.

These campaigns often focus on socially divisive partisan issues that can not only sensitize potential supporters but also may serve as echo chambers for groups from the extreme ends of the political spectrum [79]. Will online exposure to these political crowdfunding campaigns make people disapprove of partisan issues, even when those issues are not being discussed in the political context? Will the arguments and agendas presented in these campaigns activate the audience's in-group political party identity and make them more hostile toward out-group members? If so, are there interventions that could mitigate the potential disapproving attitudes and make people's opinions less biased toward partisan topics presented in a non-political context?

A recent Gallup poll shows that one-third of the U.S. population identify themselves as having politically moderate views [93]. This group of people may not actively donate to these campaigns, but

Prior research has shown that when people are exposed to attitude-consistent and attitude-inconsistent information simultaneously, they prefer to selectively attend to attitude-consistent information and avoid or ignore attitude-inconsistent information [49, 78]. They may also seek to self-categorize themselves based on attitude consistency through identifying an "in-group" and "out-group" [77, 90], becoming sensitized to the ideologies and values that seemingly identify the out-group. This process may reinforce a social identity, i.e., people may identify themselves as belonging to a group with similar ideological viewpoints. Consequently, by staying loyal to their self-constructed identity, they may develop a highly disapproving attitude specifically toward partisan issues. Even when people consider ostensibly scientific issues because of partisan conflict, they may ignore and disregard solid scientific evidence and decide what to believe based on their long-standing beliefs and partisan ideology.

This observation is accurate for both liberals and conservatives [64] in the United States. These observations motivated us to explore whether exposure to conflicting issues in political crowdfunding campaigns can exacerbate attitude polarization. Although the impact of partisan identity has been studied for traditional news media [54, 66], it is critical to examine the effect of political crowdfunding campaigns because these campaigns not only expose people to politically divisive agendas but also show, in real-time, how many people are supporting these agendas by donating money and sharing it on social media, a group of strong social signals for activating in-group favoritism. Investigating collaborative practices within crowdfunding platforms and among the communities of various stakeholders has been a mainstream research topic for HCI researchers. Yet, empirical understanding of the long-lasting impact of crowdfunding campaigns, especially beyond the boundary of crowdfunding platforms, is limited. This paper aimed to bridge this

gap by primarily focusing our attention on political crowdfunding platforms.

To study how exposure to political crowdfunding campaigns can potentially influence people's opinions, we conducted a user study with 432 participants recruited via Amazon Mechanical Turk (MTurk). First, we intended to see whether exposure to a political crowdfunding campaign, especially one inconsistent with participants' own political beliefs and attitudes, could prime their opinion by strengthening their partisan identity and making their opinion biased on politically-charged scientific topics. When we asked participants' opinions on an attitude-inconsistent political crowdfunding campaign, we found that they were least supportive of the campaign compared to others who were asked to evaluate an attitude-inconsistent online news article or a non-political crowdfunding campaign. Next, we aimed to find whether this priming effect could impact their opinion about politically-charged scientific issues even when the issue was presented in a non-political context. We asked participants to examine a charitable crowdfunding campaign on climate change, a highly partisan topic, especially in U.S. politics. We designed two different campaigns on climate change. In one campaign, the owners supported initiatives to stop climate change, whereas the other campaign supported communities that suffered due to the climate action law (which was created to save the environment from human activities that can cause climate change). As hypothesized, because of the priming effect and salient in-group identity, liberal participants became more supportive toward the "stop climate change" campaign, whereas conservatives supported the "campaign against climate action law" more.

Building on these findings, we were curious whether framing strategies can mitigate the disapproving behavior caused by exposure to attitude-inconsistent political campaigns. We, therefore, conducted a follow-up user study with 435 MTurk users where we applied two types of framing techniques to revise the primary descriptions of the charitable campaigns: schema framing and threat/safety framing. For example, to apply the threat/safety framing, we created two different versions of a single charitable campaign. In one version, we paraphrased the existing statements to sound more threatening and intimidating to the audience, whereas in another version, we included assuring statements so that the audience could feel more safe and secure. We found that framing strategies did help our participants to reduce the disapproving attitude due to having to engage with attitude-inconsistent political crowdfunding campaigns. More importantly, we observed that the effectiveness of the framing techniques depended on participants' original political beliefs. In summary, our work makes three contributions to the HCI community.

1) First, we provide a deeper empirical understanding of political crowdfunding campaigns. These campaigns should not only be considered as simple donation-solicitation initiatives. Our findings show that the long-term priming effects of political crowdfunding campaigns may influence users' opinions on socially divisive topics, and such influence can potentially impact individuals' decisions even beyond the boundaries of crowdfunding platforms.

2) We empirically investigate and show the effectiveness of various framing approaches in minimizing the impact of

long-term priming effects of political crowdfunding campaigns. Our findings indicate that the effectiveness of different framing techniques may vary based on people's political affiliations.

3) Finally, we share implications for designers of political crowdfunding platforms how they can incorporate nudges to minimize priming effect of the political campaigns hosted in their platforms. In addition, we include implications for how creators of charitable campaigns can employ framing strategies to receive more funding for their donation-based campaigns.

2 LITERATURE REVIEW

In this literature review, we first provide background on how different communities can develop partisan sensitization and in-group favoritism. Next, we explain how the CHI community contributed to identifying the influence of social platforms on people's political beliefs. Within this account, we introduce political crowdfunding platforms, which are the main focus of this paper, and how these platforms have become a new type of social media for influencing people based on their political ideology. We also discuss how our community often treats non-political scientific topics as partisan topics. Finally, we focus on priming and framing techniques in the context of people's political ideology.

2.1 Political Ideologies and Activation of Partisan Identity

Social identity theory explains people's perception of their own identity using the in-group and out-group effects. The term in-group identifies a social group in which someone psychologically identifies as a member. On the contrary, someone identifies a social group as an out-group when they perceive that they do not belong to that group. The in-group vs. out-group categorization can be stimulated by many factors such as sex, age, race/ethnicity, or geographic location, and this identification can naturally bring some benefit [5]. However, in-group identification can amplify social bias too. For instance, Cairns et al. [10] have shown that at the time of religious violence, community members can naturally become more protective about their religious identity. Thus they can develop in-group favoritism and become more hostile toward the out-group members, i.e., people from other religious communities.

Apart from religion, political ideology is one of the most prominent factors that contribute toward in-group vs. out-group categorization [47]. Prior work had shown that when political identity became salient, people became more sensitive to an attack that was attributed to in-group members [90]. Politicians have opportunistically used this self-categorization strategy to motivate their supporters through social media. In a longitudinal study, researchers found that politicians used Facebook posts to create a complex flow of attention between in-group and out-group concerns which led them to create converging sentiments among their supporters [19].

Political crowdfunding platforms have provided convenience to politicians to gain support from new supporters at the expense of less money and time. However, it is yet to understand whether these political crowdfunding campaigns can inadvertently trigger the in-group and out-group categorization among the audience,

primarily through their unique and robust social signals. If so, how will that impact the audience's opinion in general?

2.2 Social platforms and their Relationship with the Political Domain

Researchers in Human-Computer Interaction (HCI) have repeatedly investigated how people's engagement with social media impacts their political ideology. For instance, in a recent study, Wang et al. [109] have shown how Facebook helps college students to receive diverse perspectives on political issues. However, everyone does not commonly adopt this trend of consuming diverse opinions through Facebook. People with strong partisan identity curate their social media feeds that are reflective of their political preferences [33, 65, 82] and change their settings to see fewer posts from individuals in their network who hold differing political views [67, 107].

In addition to consuming political news, social media platforms also work as a direct communication medium between political candidates and their supporters, although these interactions have not always been categorized as positive interactions. Prior work has shown that adversarial users often use Twitter to harass political figures. Highly adversarial users primarily deliver negative comments to politicians of the party that they oppose and express fewer positive comments to the politicians of the party that they support through Twitter [41]. Some of the adversarial attacks in social media happen obscurely through regular information campaigns. Empirical analysis has found that by imitating ordinary users, such information operations systematically micro-target audiences of different political ideologies to foster antagonism and undermine trust in information intermediaries [1].

To summarize, the CHI community has primarily studied the direct influence of social platforms on the political context. Some notable examples are how social platforms are increasing political divide [34], providing opportunities for engagement and deliberations on political issues [96, 109], assisting protesters in non-democratic conditions [7], and influencing biased opinion by presenting partisan content [51]. If we continue to think of only the direct influence of social platforms, we miss various forms of indirect and cross-platform influences. Political crowdfunding platforms have provided us with a unique opportunity to explore such an impact. We contribute to this more nuanced understanding, the indirect influence of social platforms on HCI by closely examining the content of political crowdfunding platforms on non-political social platforms. Political crowdfunding platforms are exciting in this context because, unlike other social platforms that contain political content along with all other types of content, these platforms are solely dedicated to political content and nothing else.

2.3 Political Crowdfunding Platforms

The earliest known political crowdfunding campaign was done in 1885 when the publisher of the newspaper "The World" successfully raised $100,000 from more than 160,000 donors to finance the pedestal for Statue of Liberty [76]. Political crowdfunding campaigns have gained much interest in U.S. politics in recent years. Traditionally politicians in the U.S. received the majority of their funding from large donors and PACs (political action committees).

With the launch of the political crowdfunding platforms, politicians found it convenient to jump-start their fundraising initiatives. Before filing their candidacy, politicians can launch their crowdfunding campaigns on these platforms where they can explain their political agendas and intention for running for elective positions. Anyone supporting any specific politician can donate money through these crowdfunding campaigns. This funding enables the politicians to gauge their level of public support even before they decide to run for a position. Gauging public support is particularly useful for politicians running for the first time for an elective position as they may not know if they are viable as a candidate in the political arena. In addition to judging public opinion, politicians found crowdfunding as a powerful medium for committing voters to participate in the voting process.

One of the most popular political crowdfunding platforms in the U.S. is CrowdPac [17] which allows potential candidates to gauge public support before they decide to submit their candidacy. Before the 2020 presidential election, more than four million users got engaged with Crowdpac, and till now, 4003 candidates explored using the platform. As a dedicated platform for political crowdfunding, Crowdpac not only made the remote fundraising process more accessible, especially for newer candidates but also endorsed demographic diversity among candidates by welcoming more scientists, doctors, professors, candidates under 35, and women [97]. By lowering fees compared to their competitors and adding social media features to their platform, Crowdpac made it possible for candidates to fulfill their funding goal by donations received from individual donors rather than depending on donations from corporate PACs.

A similar platform, called uCampaign [108], allows candidates to create social apps with minimum effort to raise money for election campaigns and promotes fundraising through word of mouth. This platform would ask the primary supporters of a campaign to contact ten more people they knew and request them to join the app and donate money for the campaign. In 2016, uCampaign used this word of mouth strategy to help Senator Ted Cruz win the Iowa Caucus. Some platforms in this domain are more specific to their goal. One example is Flippable [29], whose mission is to flip state governments from red to blue by choosing candidates to fund from only those states where Democratic candidates are not holding the following three positions together: State House of Representatives, State Senate, and the governorship. Similar to Flippable, ActBlue serves Democratic candidates and committees, progressive organizations, and nonprofits that share their values. Since 2004, ActBlue received $8,546,349,509 as donations from their supporters, which is 33% more than the total amount raised by Kickstarter to this date. WinRed, on the other side, was created with the mission to support GOP candidates to win across the U.S. Not all platforms in this category have focused on a specific political party. For instance, a platform called "314 Action" is dedicated to bringing scientists and STEM leaders into public offices. Their initiatives elected nine scientists so far to the House and Senate.

Here, we discussed several political crowdfunding platforms that have gained attention from mainstream media. This, by no means, represents an exhaustive list of all political crowdfunding platforms. Instead, the emergence of such a variety of political crowdfunding platforms indicates that politicians are considering small-scale donations as a vital component to the success of their campaigns.

While these platforms are creating more opportunities for small donors to participate in political campaigns actively, little is known about the potential of these often issue-laden political crowdfunding campaigns to affect people's perceptions and ideological beliefs. We aim to fill the gap in this work.

2.4 Effects of Priming and Framing on Political Ideology

In political communication literature, the concept of priming and framing received significant attention. Priming refers to "changes in the standards that people use to make political evaluations" [43]. It adopts a memory-based model that assumes that people form attitudes of information based on the considerations that are most salient when they make decisions [37, 94]. According to this point of view, a concept's accessibility within memory is determined in part by the frequency [39] and recency [38, 40, 100] with which it has been used in the past. Framing, on the other hand, differs significantly from this memory-based model. It is based on the assumption that how an issue is characterized in news reports can influence how it is understood by audiences [94]. It is primarily based on the theories of psychology that explain how different presentation styles may potentially influence people's choices and decisions differently in identical decision-making scenarios [18, 46, 81].

Past work showed that because of the dependency on the memory-based model, the effect of priming could be mitigated by drawing individuals' attention to the potential influence of factors that they deem as transitory or irrelevant [95]. Like priming, researchers have designed various techniques to reduce the framing effect. For instance, Baumer et al. [3] have shown that frame reflection by highlighting the framing words can significantly reduce the impact of framing on polarizing the audience's opinion. However, effort in reducing the framing effect does not necessarily mean that framing is only used to deceive the audience; instead, framing is often used to present a complex topic in a more comprehensible way too [32].

Many researchers believe that political ideology, a long-standing belief, can be malleable, at least temporarily, using framing strategies. This is because, someone's attitude about a topic depends not only on their long-term political ideology but also on their momentary state of mind or "schema". Previous studies have shown that conventional conservative ideology follows *personal merit schema*, which means that according to conservative ideology, success is seen as the product of hard work, wise decision-making, and other aspects of personal merit [6, 26, 27, 50, 60]. On the other hand, liberal ideology relates success to luck, social advantage, help from others, and other factors independent of personal merit. Researchers call it the *good fortune schema* [50]. If at any moment, conservatives experience the good fortune schema (against their political ideology) as the most salient thought, their further judgment, at least for a short duration, may potentially reflect the liberal point of view and vice versa [9]. Good fortune and personal merit schema are examples of such political framing strategies. Similar effect was observed using threat vs safety framing too [9] (described in details in section 4).

Many political scientists believe in the robustness of both priming and framing effect on political communication. Past work established the priming effect primarily in mainstream news media [91]. In this paper, we aimed to extend this body of literature by realizing the priming effect in the context of political crowdfunding. Political crowdfunding platforms not only present political agendas and ideologies similar to mainstream new media but also show active participation of the supporters through various social signals such as monetary donations and social media shares. In comparison to traditional news media, our goal is to understand how political crowdfunding campaigns prime people's opinions on politically charged topics, even when the topics are presented in a non-political context.

Framing, on the other hand, is mostly used to persuade individuals in a certain direction. In our work, we viewed framing as an effective way to counter the priming effect. A better understanding of the interrelation of the priming and framing effect in the context of political crowdfunding will allow crowdfunding platform designers to be better equipped to protect their donors from in-group favoritism in the future. To summarize our objectives, we aimed to answer the following two research questions:

RQ1 How exposure to *political* crowdfunding campaigns prime individuals' attitudes toward politically-charged topics discussed in a non-political context?

RQ2 Can framing techniques mitigate individuals' priming effect and in-group favoritism and make them more open toward appeals from non-political platforms?

3 STUDY 1: IMPACT OF POLITICAL CROWDFUNDING CAMPAIGNS

3.1 Goal

To answer RQ1, we conducted a user study. Our primary goal was to explore whether and how exposure to political crowdfunding campaigns prime people's self-perceptions and personal beliefs on politically charged topics. To this end, we compared the priming effect of political crowdfunding campaigns against news articles that are known to have an observable priming effect on their readers [43]. We used only attitude-inconsistent political crowdfunding campaigns in our study as we hypothesized that attitude-inconsistent content would have a higher priming effect (if any) than the attitude-consistent one.

We defined a political campaign or a news article as "attitude-inconsistent" for a participant when the participant is leaning toward a political party and the political campaign or the news article is for a candidate of the rival political party. For instance, a political campaign created to support a Democratic candidate would be considered an attitude-inconsistent campaign for supporters of the Republican party. Here, we designed the study to observe the priming effect (if any) on charitable crowdfunding campaigns that are either supporting or refuting climate change, a politically charged topic, in a non-political context.

A recent survey conducted by Pew Research Center showed that climate change had created the broadest partisan gap in the USA [89]. Political messaging from party leaders and the media has been a significant driver of the divide. In this paper, we have used climate change as a topical lens to examine how people's perception of politically charged topics would be affected by political crowdfunding campaigns, specifically when it is discussed in philanthropic appeals.

3.2 Materials

3.2.1 Political Crowdfunding Campaigns. We prepared two political crowdfunding campaigns for our study: one for a Republican candidate and another for a Democratic candidate. To keep these campaigns similar to actual political crowdfunding campaigns, we took inspiration from existing campaigns posted on political crowdfunding platforms [17]. In the Republican campaign, we considered an imaginary candidate planning to run for the US House, 2nd district. The other campaign was for an imaginary Democratic candidate who was also planning to run for the same congressional district. In these campaigns, we decided not to mention the candidates' state. Instead, we asked our participants to assume that the candidates were running from their state since reducing the psychological distance by reducing physical distance prompts people to be more motivated to process details [57]. We explained the detailed procedure followed to create these political crowdfunding campaigns in Appendix A.

3.2.2 News Articles. We prepared two news articles for our study: one featuring an interview of a Republican candidate and another featuring a Democratic candidate. To make these articles look realistic, we showed that the article on the Republican candidate was published on FoxNews.com (conservatively slanted traditional source) whereas the article of the Democratic candidate on MSNBC.com (liberally slanted traditional source). We chose these media sources based on the trustworthiness expressed by Republican and Democratic supporters in a recent Pew survey [67]. We discussed the same agendas that we considered to design the crowdfunding campaigns in the news articles to maintain external validity. We refer to these articles as the "Republican article" and the "Democratic article" in the rest of the paper.

3.2.3 Charitable Crowdfunding Campaigns. In addition to the political campaigns and news articles, we created two charitable crowdfunding campaigns on the topic "climate change". The title of the first campaign was "Restore Global Climate by Preventing Deforestation and Promoting Active Reforestation", which was aligned with the Democratic point of view toward climate change. We refer to this campaign as the "Pro climate change campaign". The primary objective of this campaign was to seek funding to support a local initiative that was trying to prevent deforestation and encourage active reforestation to save the local community from gradual landslides. On the other hand, we created the second campaign, titled "Save the Communities Suffering for the Climate Action Law", which was aligned with the Republican point of view. We will refer to this campaign as the "Anti climate change campaign". The main goal of this campaign was to rehabilitate the coal miners who lost their jobs in coal mines and oil industries. The detailed procedure followed to design these charitable crowdfunding campaigns is explained in Appendix B.

The unintentional differences in perceived persuasiveness of the materials in each pair might impact the opinion of the participants.

To minimize that effect, we pretested the perceived persuasiveness of all materials based on social impact theory. We included the results of all pretesting in the Appendix C to the paper. In summary, we did not find any significant differences between the materials in each pair.

3.3 Study procedure

We created an online platform to conduct the user study; Fig 2 shows the sequence of the activities that we followed. The study was conducted in two phases. In the first phase, participants started the study by completing a 16-item political typology quiz [13] published by Pew Research Center. This quiz classifies political leaning into nine sub-categories ranging from core conservative to solid liberal. For our purpose, we used this quiz to identify whether a participant leans toward liberal or conservative ideology. We also asked participants to complete an 11-item political party quiz [12] published by Pew. This quiz helped us determine where someone fits on the partisan political spectrum ranging from solid liberal to core conservative. Furthermore, this quiz let us know the participants' opinions on various politically divisive issues such as climate change, the right to abortion, health care for everyone, and so on. For our purpose, we used this quiz to identify whether a participant was leaning toward the Democratic or Republican Party. We also identified the opinion of the participants on climate change. Since we wanted to capture the reaction of the participants on political crowdfunding campaigns to partisan cues, we excluded three participants who were identified as *independent* by the political party quiz.

We divided participants into three groups. Participants of the first group were exposed to an attitude-inconsistent political campaign, i.e., Republican participants were exposed to the Democratic candidate's crowdfunding campaign and vice-versa. The second group read an attitude-inconsistent new article, i.e., in this condition, Republican participants were exposed to the Democratic candidate's news article and vice-versa. We called the first group the *"crowdfunding group"* and the second group the *"news article group"*. We instructed each participant of these two groups to assume that their assigned content was for a political candidate considering running from their congressional district.

Finally, the third group was the control group. The control group participants were not exposed to any political campaign or news article; instead, we asked them to read a non-political travel campaign where the campaign creator asked for funding for a personal trip. We pretested this travel campaign to make sure that this campaign was not influenced by any specific political ideology (conservative or liberal). The purpose of presenting this travel campaign was to expose control group participants to a campaign that would not necessarily instigate their partisan leaning but would require the same amount of time and effort that the exposure groups would spend to read the corresponding political crowdfunding campaign. We called the third group the *"Control group"*. Once other groups finished reading their assigned content, we asked them to complete a short survey, called "political campaign survey", to understand their opinion on the political campaign. We also asked the news article group participants to complete a short survey called "news article survey". Finally, control group participants completed a "control survey". Once participants completed the survey, we informed them that it was the end of the experiment. We did not want participants to consciously relate the political campaign with the charitable campaigns. Therefore, we did not mention the second phase of the study at the end of the survey.

After ten days, we launched the second phase of the study. We believed that understanding the connection between the first and second phases of the study might influence the participants' responses in the second phase. To avoid that, we created a new HIT in MTurk using a new requester id. In the qualification section, we created a custom qualification through which we only recruited those participants who participated in the first phase. The condition of the qualification criteria was hidden from participants. To compare outcomes from two phases of the study, we needed a moderately high retention rate for MTurk workers. To this end, we paid participants $4 for each phase of the study, where each phase took a little less than 20 minutes on average to complete. This payment rate was more than the federal minimum wage in the USA ($7.25/hr), and significantly more than the median hourly wage of Mturk workers ($2/hr) [36]. Although higher pay was not found to be an essential factor for the improved performance of MTurkers [2], we believe that it helped us to maintain a relatively high retention rate. We also posted the two phases of the study at the same time of the day (10 am local time) assuming that the same group of workers will most likely be available during that time. In addition, we provided a brief description for each activity of the study at every level to make sure that MTurkers felt more comfortable and confident to complete the HIT [4]. All but seven participants from the first phase chose to complete the new HIT. We used the following narrative to present this task as an experiment for testing the merit of a socio-economical crowdfunding campaign:

> *Crowdfunding has become a standard practice for raising money to help the community. Charitable crowdfunding campaigns assist people to cope up with various challenges such as social and community issues, medical treatments, personal accidents, educational liabilities, emergencies, and so on. The purpose of this study is to understand how crowdfunding campaigns presented on a popular crowdfunding platform help people raise funding to drive community initiatives related to socio-economical issues. Here, we will ask you to review a sample crowdfunding campaign collected from that platform. Please read the campaign carefully. Later, we will ask you some questions to know your opinion on the campaign.*

We randomly picked one charitable campaign, either the "Pro climate change campaign" or the "Anti climate change campaign", for each participant and allowed participants to read the campaign as long as they wanted. When participants finished reading the campaign, we asked them to answer a set of survey questions about the campaign to know their opinion. We call this survey the *charitable campaign survey*. Finally, all participants completed a demographic survey. In the end, we debriefed participants about two connected phases of the user study and explained that we were interested to know how their opinions on the charitable campaigns
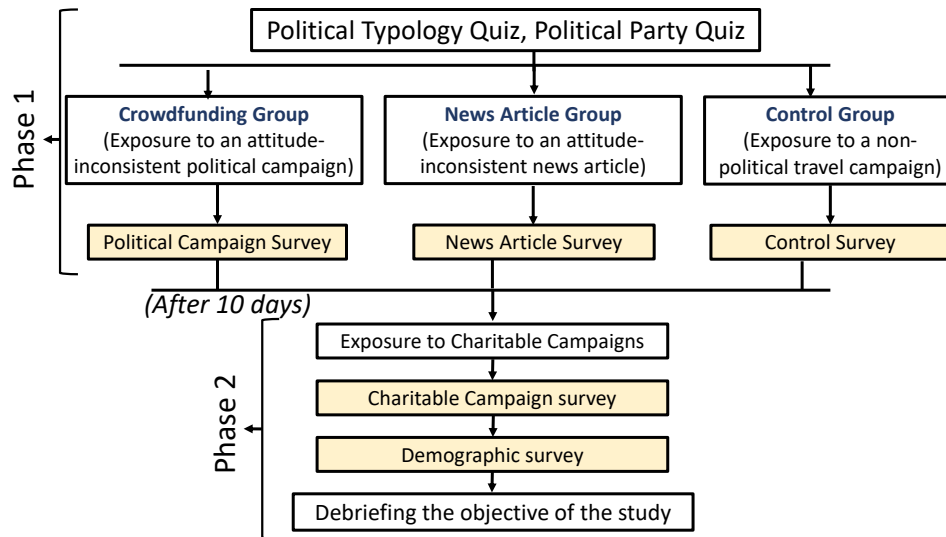
Figure 2: This flowchart shows the steps that we followed sequentially in the first study. The study was divided into two phases (marked in the figure). The second phase was conducted ten days after the first phase. The yellow boxes represent the surveys taken by the participants at different stages.

Table 1: Distribution of participants in Crowdfunding Group, News Article Group, and Control Group

	Conservatives	Liberals
Crowdfunding Group	70	76
News Article Group	68	74
Control Group	72	72
Total	210	222

were influenced by the political campaign shown in the first phase of the study.

3.4 Measures in the Surveys

To design our political campaign, news article, and charitable campaign surveys, we consulted existing literature on crowdfunding, cognitive dissonance, and biased assimilation and attitude polarization [15, 22, 55, 87]. We identified 18 survey questions from the literature mentioned above to measure the participants' opinion on our crowdfunding campaigns on seven-point Likert scales. We classified these 18 questions into five main factors: 1) intended donation amount, 2) persuasiveness, 3) empathy, 4) sense of community, and 5) comfort level. Table 5 attached in Appendix D shows a list of representative survey questions from each factor. Also, we asked participants to self-report their change-in-attitude toward the charitable campaign using three-point scales (+1 = more favorable attitude toward the campaign, -1 = less favorable attitude toward the campaign, 0 = no change) just before completing the demographic survey.

3.5 Participants

We recruited 432 participants from Amazon Mechanical Turk (as shown in Table 1). All participants were U.S. citizens, and their HIT

approval rate was 95% or higher for all requesters' HITs. 210 of them identified themselves as conservatives and Republicans and 222 as liberals and Democrats (based on the political party quiz and political typology quiz responses). Based on the political party quiz, all participants who identified themselves as Republicans and conservatives agreed to the statement that *"this country (the United States) has gone too far in its efforts to protect the environment"*. On the contrary, liberal and Democratic participants agreed that *"this country should do whatever it takes to protect the environment"*. Participants' average age was 35.77 (SD=9.02), and 48% were females. Approximately one-third of the participants (36%) had donated to at least one charitable crowdfunding campaign before participating in the study. 72% of participants had donated to at least one election campaign, but only 71 participants donated to online political crowdfunding campaigns. However, 69% of participants were familiar with political crowdfunding campaigns. More than half of the participants (72%) identified themselves as Caucasian, 10% as Asian, 14% as African-American, and 4% as others. On average, each participant took 36 minutes to complete the two experiments and received $4.00 for participating in each part. We did not consider the responses of four participants since they spent less than 5 minutes to complete the study.

3.6 Results

We started our analysis by first examining the validity of our design manipulation. We compared the responses of the political campaign survey and the news article survey against the control survey. We hypothesized that participants in the crowdfunding and news article groups would be less supportive of their attitude-inconsistent content than the participants in the control group. The detailed analysis is included in Appendix E. Overall, participants in the crowdfunding group and the news article group were significantly

less supportive of their attitude-inconsistent political content than the control group participants of their non-political campaign. Thus, these findings validated our study design, and we proceeded with our analysis of survey responses.

3.6.1 Analysis of the Responses of the Charitable Campaign Surveys (RQ1). The primary objective of RQ1 was to analyze whether and how exposure to political crowdfunding campaigns prime people's opinion on charitable campaigns on politically charged topics such as climate change even when the charitable campaign was presented in a non-political context. We hypothesized that exposure to an attitude-inconsistent campaign would activate participants' political identity. This exposure would trigger their in-group favoritism, which would prime their opinion for charitable campaigns, especially when the charitable campaigns were about a politically charged topic.

Our experiment included three between-subject independent variables: participants' political leaning (liberal vs. conservative), user groups (crowdfunding group, news article group, and control group), and the type of the campaign (pro-climate change campaign/anti-climate change campaign). All conservative participants' opinions were consistent with the Republican party's point of view on climate change and vice versa. Thus, we decided not to consider participants' opinions on climate change as an independent variable for our analysis. We again considered the following five dependent variables for our analysis: 1) intended donation amount, 2) persuasiveness, 3) empathy, 4) sense of community, and 5) comfort level. Since we had five dependent variables, we could have performed multivariate multiple regression or MANOVA analysis. Since our independent variables are categorical variables and our sample size is small, we decided to perform MANOVA analysis to understand the effect of our independent variables on all five dependent variables. The multivariate analysis revealed a significant three-way interaction among the independent variables on the dependent measure ($F(6,836) = 89.91$, $p < 0.001$, Wilk's $\lambda = 0.84$, $\eta^2 = 0.31$). We performed separate 2 X 2 X 2 ANOVAs on five dependent variables to further understand this interaction.

Table 2 presented a summary of the results. We found significant three-way interactions between participants' political leaning, user groups, and the type of the campaign for all five dependent measures: intended donation ($F(2,420) = 28.46$, $p < 0.001$, $\eta^2 = 0.51$, persuasiveness ($F(2,420) = 36.46$, $p < 0.001$, $\eta^2 = 0.55$, empathy ($F(2,420) = 25.12$, $p < 0.001$, $\eta^2 = 0.41$, sense of community ($F(2,420) = 31.62$, $p < 0.001$, $\eta^2 = 0.53$, and comfort level ($F(2,420) = 22.95$, $p < 0.001$, $\eta^2 = 0.37$. Next, we examined if any two-way interaction was statistically significant. We accepted the statistical significance of a two-way interaction at a Bonferroni-adjusted alpha level (0.05/12 = 0.004). We found that for all five dependent variables, there were statistically significant two-way interactions of political leaning and the type of the charitable campaigns. However, we did not find any other two way interaction as statistically significant.

Figure 3 shows the average persuasiveness ratings of liberal and conservative participants who were in the crowdfunding, news article, or control group. The figure shows that when conservative participants were exposed to an attitude-inconsistent political candidate's crowdfunding campaign, they gave significantly higher persuasiveness ratings to the "anti-climate change campaign" than
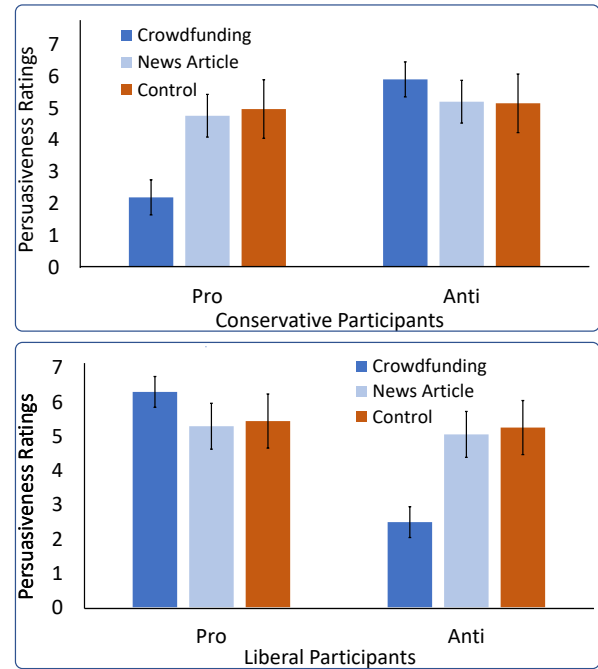

Figure 3: Average persuasiveness ratings of participants for both charitable campaigns of crowdfunding, news article, and control groups for conservative (on the left) and liberal (on the right) participants. For both conservatives and liberals, ratings of the crowdfunding group were significantly different for the charitable campaigns.

the "pro-climate change campaign". However, when conservative participants were exposed to a political news article or when they were not exposed to any political content at all (control condition), their persuasiveness ratings did not differ significantly for the pro and anti campaigns. We observed a similar trend for the liberal participants but in the opposite direction. Since we observed a similar trend for intended donation amount, empathy, sense of community, and comfort level factors, we did not include figures for each one of them.

Finally, we performed a one-sample t-test on the change of attitude measure to observe whether participants experienced any change of attitude during the experiment. We found that the ratings of the participants in the news article group ($t(140) = 2.13$, $p = 0.18$, $d = 0.04$) and control group ($t(142) = 2.07$, $p = 0.21$, $d = 0.04$) were not significantly different from 0. This was expected as the participants in the control group saw a non-political campaign. However, ratings of the participants in the crowdfunding group were significantly lower than 0 ($t(144) = 4.03$, $p < 0.01$, $d = 0.14$). This means that participants of the crowdfunding group became less favorable toward the attitude-inconsistent charitable campaign at the end of the user study. One explanation is that exposure to the attitude-inconsistent political crowdfunding campaign in the first part made participants in the crowdfunding group more sensitive to their political beliefs and partisan identity. Later, even exposure

Table 2: Opinion of the participants during the second phase for the pro climate change and anti climate change campaigns. The first column shows the user groups (crowdfunding group, news article group, and control group). The second column shows the political leaning of the participants and the third column shows the type of the charitable campaigns. The last five columns represent the dependent variables of our analysis (intended donation amount, persuasiveness, empathy, sense of community, and comfort level). This table shows the average ratings of the participants for their assigned charitable campaign.

Groups	Political Leaning	Type of Campaign	Int. Don.	Persua.	Empathy	Sen. Com.	Com. Lev.
Crowdfunding	Conservative	Pro	12.28	2.2	2.31	1.9	2.01
		Anti	39.21	5.9	5.92	6.11	5.76
	Liberal	Pro	36.77	6.3	6.14	5.98	5.63
		Anti	16.28	2.5	2.37	2.04	2.02
News Article	Conservative	Pro	21.56	4.76	5.33	5.17	5.31
		Anti	25.33	5.2	5.48	5.3	5.56
	Liberal	Pro	26.81	5.3	5.24	5.32	5.46
		Anti	23.68	5.06	5.11	5.14	5.18
Control	Conservative	Pro	20.92	4.97	5.39	5.32	5.21
		Anti	23.83	5.15	5.54	5.47	5.39
	Liberal	Pro	27.67	5.45	5.38	5.41	5.44
		Anti	22.11	5.26	5.19	5.25	5.01

to the charitable campaigns on climate change made them less favorable toward the campaign.

These findings suggest that exposure to an attitude-inconsistent political campaign significantly affected the reactions of both liberal and conservative participants. Although we took extra care to present the political campaign and the charitable campaigns as part of two separate studies (ten days apart), exposure to an attitude-inconsistent political campaign had a priming effect, making participants more sensitive to their partisan identity. It may have triggered defensive in-group favoritism and out-group hostility. Therefore, when they had to evaluate the content of a politically charged topic in a non-political context, their opinion became more polarized. This finding confirms our initial hypothesis that exposure to attitude-inconsistent political campaigns can affect people's opinions on politically charged topics such as climate change.

This finding can be explained by the self-categorization theory that claims that whenever people experience some external priming, their sense of in-group favoritism becomes salient. Their partisan attitude becomes more sensitive in their behavior. Although many things can initiate these external triggers, a reminder of the partisan ideology is known to be a strong trigger in this scenario [43, 48]. In our study, an attitude-inconsistent political campaign might have worked as a trigger among all participants in the inconsistent-exposure group. As a reaction to that, participants became more sensitive to their partisan ideology. They showed in-group favoritism, i.e., conservatives became highly supportive of the attitude-consistent anti-climate change campaign, and liberals became highly motivated by their attitude-consistent pro-climate change campaign. Because of out-group hostility, both groups expressed negative opinions toward their corresponding attitude-inconsistent campaign. However, since control group participants did not experience this priming effect, they did not feel the urge to compensate for their behavior by expressing a highly polarized attitude toward charitable campaigns.

It is intriguing to observe that although the news article group experienced a priming effect in the first stage (as observed through the manipulation check), they did not show that effect toward the

charitable campaign. This means that their priming effect did not last for ten days. One possible explanation is that since participants were most likely familiar with news articles on attitude-inconsistent political candidates and since those news articles did not show any other form of social support such as donated money and the number of people who supported the campaign by donating or sharing on social media, it did not have a long-lasting priming effect on them as they had from the political crowdfunding campaign. Here it is worth mentioning that observing the effect of the source of the news article and the content of the news article separately was beyond the scope of this paper. This raises the potential for future study that examines the impact of the sources of news articles more explicitly for a deeper understanding of the impact of attitude-inconsistent news articles.

These findings made us wonder whether any external intervention could help participants in the crowdfunding group reduce their priming effect to better deal with their sense of in-group favoritism. Previously, researchers have found that in most cases, people have mixed feelings and values where for some causes, they lean towards conservative ideology, and for other causes, they lean towards liberal ideology. At any point in time, people's reaction to a topic does not always depend on their political beliefs; instead, their salient state of mind can decide how they will react. Therefore, if liberals experience conservatives' threat framing, their opinion can shift toward conservative ideology and vice versa [9]. A similar outcome can be observed by applying schema framing strategies. These framing techniques were tested separately in different studies. No one has compared different types of framing strategies and their effectiveness systematically. Moreover, it is not known how effectively these framing techniques would redesign politically charged topics (such as campaigns on climate change) so that even participants with highly active partisan identity would not become disapproving toward those topics. This is what we intended to answer in RQ2. To answer RQ2, we conducted another user study which we explained in the next section.

4 STUDY 2: IMPACT OF FRAMING ON POLITICALLY CHARGED TOPICS IN THE NON-POLITICAL CONTEXT

4.1 Goal

The goal of this second study is to understand whether framing can prevent people from developing a negative opinion toward politically charged topics discussed in a non-political context even after getting exposed to an attitude-inconsistent political campaign. We also aim to compare the effectiveness of two types of framing techniques that previous studies have proposed (assuming that they will reduce the priming effect and the disapproving opinion).

4.2 Materials

We reused the political campaigns that we designed for study 1. Besides, we redesigned the charitable campaigns following two framing techniques: 1) schema framing and 2) threat/safety framing.

4.2.1 Schema framing. Schema framing can have two different variations: 1) personal merit schema and 2) good fortune schema. Conservative ideology believes in personal merit schema where success is considered as an outcome of hard work, wise decision-making, and other aspects of personal merit [26, 27, 99]. On the other hand, liberal ideology believes in good fortune schema where success is a result of good fortune, social advantage, help from others, and other factors independent of personal merit [99]. Previous studies had shown that when conservatives were asked to adopt the good fortune schema, their opinion reflected liberal ideology. Similarly, when liberals were framed to adopt personal merit schema, their opinion supported conservative ideology [9]. Inspired by these findings, we revised the content of the charitable campaigns to stimulate the schema framing among participants. For the "pro-climate change campaign", we created two different versions. In one version, we revised the content in such a way so that the campaign reflects the properties of good fortune schema such as chance, opportunity, and help from others. In the other version, we used the properties of the personal merit schema, such as hard work, self-discipline, and wise decisions, to reorganize the campaign's description. For instance, we included and highlighted the following new section in the campaign's description that showed help from others:

> *"In several locations, the climate restoration team was fortunate enough to receive support from local authorities where volunteers willingly took care of the planted trees throughout the year."*[Good fortune schema]

Similarly, we revised the "anti-climate change campaign" following the properties of the good fortune and personal merit schema and created two different versions of the campaign. For instance, we added the following section in the campaign's description where we discussed how tirelessly volunteers worked with the coal miners' community:

> *"Since 2010, our volunteers are working tirelessly to make a list of miners who have lost their jobs in coal mines during the last ten years and did not get any steady alternative job yet."*[Personal merit schema]

We highlighted all these additional sections in the campaigns' description, assuming that participants would specifically focus on these sections and thus, be influenced by the framing conditions. Moreover, we hypothesized that revising the "pro-climate change campaign" with the good fortune schema would make conservative participants more favorable toward their attitude-inconsistent charitable campaign. In contrast, applying the personal merit schema to the "anti-climate change campaign" would make liberal participants more favorable toward their attitude-inconsistent campaign.

4.2.2 Threat/Safety framing. Experimentally increasing a feeling of physical safety can motivate conservative people to think more like socially liberal people [71]. On the other hand, when liberals face a threat scenario, they show a tendency of behaving more like a conservative [70]. A similar framing strategy is known to have a strong framing effect on the audience of media content [72]. We designed our second pair of framing based on the literature mentioned above with the hypothesis that applying the threat and safety framing on the charitable campaigns would make both conservative and liberal participants more favorable toward their corresponding attitude-inconsistent campaigns. We reconstructed the two different versions of the "pro-climate change campaign", one following the safety framing strategy and another applying the threat framing condition. For instance, we included the following section that showed an increased sense of safety:

> *"In multiple locations, because of our initiatives, the number of landslides reduced significantly in the last five years. Reforestation also reduced the intensity of tidal surges to a great extent. It provided a sense of safety to the residents of the coastal areas, particularly during cyclones and hurricanes."*[Safety framing]

Similar to the schema framing, we also revised the "anti-climate change campaign" by following the threat and safety framing conditions. For instance, we added the following section in the campaign's description where we highlighted the potential threats that the coal miners' community would suffer from if necessary steps were not taken:

> *"This massive unemployment situation forced the children of our coal miners' community to deal with endemic poverty, opioid abuse, and a deficient K-12 education system. Because of this educational attainment during young adulthood, these children are likely to suffer from lifelong implications of economic adversity and insufficient health care facilities."*[Threat framing]

4.3 Study Procedure

We reused the same online platform that we used for the first study with some modifications to conduct this study. First, participants completed the same political typology quiz and the political party quiz that we used in study 1 to identify the participants' political ideology and political leaning. Since our goal was to observe the effect of framing after exposing participants to an attitude-inconsistent political crowdfunding campaign, we divided participants into three groups. The first group of participants was randomly chosen to receive schema framing (either good fortune or personal merit based on their political position), the second group of participants was randomly chosen to receive threat/safety framing, and the final group (the control group) received no framing at all. We call the first group

the "schema framing group", the second group the "threat/safety framing group", and the final group the "control group". In summary, we divided our participants into six mutually exclusive groups as shown in Table 3.

We started by asking all participants to read a political crowdfunding campaign and let us know their opinion about the campaign. We showed each participant an attitude-inconsistent political campaign. Once participants finished reading their assigned campaign, we asked them to complete the "political campaign survey", to record their opinion on the political campaign. Once participants completed the survey, we informed them that it was the end of the experiment.

After ten days, we followed the same strategy as we did in the first user study. We used a new requester id to create a new HIT where we asked participants to participate in a new study. All but nine participants agreed to participate in the second part. This time, we used the same narrative as we did in the first study to ask all participants to let us know their opinion about a charitable crowdfunding campaign. We presented either the "pro-climate change campaign" or the "anti-climate change campaign" and allowed them to read the campaign as long as they wanted. Here, we showed them a charitable campaign that was revised using schema framing to participants of the schema framing condition. Similarly, threat/safety framing condition participants saw a charitable campaign revised using threat/safety strategy, and control condition participants saw an original campaign (Table 3). When participants finished reading their assigned campaign, we asked them to complete a charitable campaign survey. Next, on a scale of 1 to 7, they rated how fortunate they felt, their personal merit assessment, their sense of safety, and their sense of uncertainty at that moment. We call this the "framing validation survey". Finally, all participants completed a demographic survey. To maintain a high retention rate of participants, we followed the same strategies that we did in the first study. In the end, we debriefed participants about our study design and explained that we were interested to know how their opinions on the charitable campaigns were influenced by the political campaign shown in the first part of the study.

4.4 Designing the Surveys

We reused the same political and charitable campaign surveys that we used for study 1. In addition to these two surveys, we used a new framing validation survey in this study. In this survey, we asked participants four more questions to measure: 1) how fortunate they felt, 2) their assessment of personal merit, 3) their sense of safety, and 4) their sense of uncertainty. We included these questions in the framing validation survey because each question directly captured the feeling induced by at least one framing condition. We hypothesized that participants in the control condition would experience none of these feelings as intensely as those in the framing condition. Finally, we included a change of attitude measure as we did in stage 1.

4.5 Participants

In this study, we recruited 414 new participants using the same method we followed in the first study. Participants' average age was 37.72 (SD=10.62), and 47% were females. We recruited only U.S.

citizens to participate in this study, and their HIT approval rate was 95% or higher for all requesters' HITs. No participant from the first study was allowed to participate in this study. 212 participants had identified themselves as conservatives and Republicans and 202 participants as liberals and Democrats (based on the political typology quiz and the political party quiz responses). Based on the political party quiz, all conservative participants agreed that *"this country has gone too far in its efforts to protect the environment"*. On the contrary, all but three liberal participants agreed that *"this country should do whatever it takes to protect the environment"*. 41% of our participants had donated to at least one charitable crowdfunding campaign before participating in the study. 69% of participants had donated to at least one election campaign in the past, but only 26 participants have also donated to an online political crowdfunding campaign. However, 74% of participants knew about political crowdfunding campaigns. More than half of the participants (69%) identified themselves as Caucasian, 11% as Asian, 17% as African-American, and 3% as others. On average, each participant took 46 minutes to complete the study and received $4 for their participation in each part.

4.6 Results

We started our analysis by validating the effectiveness of the framing manipulations. To this end, we analyzed the ratings of the framing validation survey. We hypothesized that for the participants of a specific framing condition, the corresponding question's rating would be significantly higher than the ratings of any other questions. These findings matched our initial hypothesis and thus, validated the effectiveness of our framing conditions. The detailed analysis can be found in Appendix F.

4.6.1 Analysis of the Responses of the Charitable Campaign Surveys (RQ2). Next, to answer our main research question, we analyzed the ratings of the charitable campaign surveys. We hypothesized that compared to the non-framing condition, participants in the framing conditions would show less in-group favoritism toward the charitable campaigns.

We had three independent variables: participants' political leaning (liberal/conservative) and framing-condition (schema framing/threat vs. safety framing/no framing), and the type of the charitable campaign (pro-climate change campaign/anti-climate change campaign.). Similar to study 1, we considered the same five dependent variables for our analysis: 1) intended donation amount, 2) persuasiveness, 3) empathy, 4) sense of community, and 5) comfort level. We first performed a MANOVA test to understand the effect of our independent variables on the combined dependent variables. The multivariate analysis revealed a significant three-way interaction among the independent variables on the dependent measures ($F(6,828) = 68.04$, $p < 0.01$, Wilk's $\lambda = 0.68$, $\eta^2 = 0.52$ (moderate effect size)). We performed separate 2 X 2 X 2 ANOVAs on five dependent variables to further understand this interaction.

Table 4 shows the summary of the results. We found significant three-way interactions between participants' political ideology, framing condition, and the type of the campaign for all five dependent measures: intended donation amount ($F(2,408) = 69.13$, $p < 0.01$, $\eta^2 = 0.52$), persuasiveness ($F(2,408) = 41.97$, $p < 0.01$, $\eta^2 = 0.40$, empathy ($F(2,408) = 45.27$, $p < 0.01$, $\eta^2 = 0.42$, sense of community

Table 3: The participants in this study were divided into the following six mutually exclusive groups. Each participant was asked to read a charitable crowdfunding campaign. Participants of the framing conditions read the modified versions of the charitable campaigns but participants of the control condition, were exposed to the original charitable campaigns. The third column in this table shows the number of participants assigned in each condition.

Participants' Groups	Condition of the Charitable Campaigns	No of Participants
Conservative schema framing	Charitable campaigns updated following good fortune schema	70
Conservative safety framing	Charitable campaigns updated following safety framing condition	74
Conservative no framing	No framing applied on the charitable campaigns	68
Liberal schema framing	Charitable campaigns updated following personal merit schema	66
Liberal threat framing	Charitable campaigns updated following threat framing condition	70
Liberal no framing	No framing applied on the charitable campaigns	66

Table 4: Opinion of the participants for the pro climate change and anti climate change campaigns captured during the second study. The second column shows the framing conditions for both conservative and liberal participants. Ratings of the pro and anti climate change campaigns were significantly different only for the no framing condition. No significant difference was found for the framing conditions.

Political Leaning	Framing	Type of Campaign	Int. Don.	Persuasiveness	Empathy	Sen. Com.	Com. Lev.
Conservative	Good Fortune	Pro	28.22	4.98	4.68	4.92	4.48
		Anti	36.56	5.87	5.55	5.8	5.36
	Safety Framing	Pro	32.26	5.2	5.17	4.89	5.08
		Anti	35.11	5.62	5.73	5.31	5.47
	No Framing	Pro	11.39	2.27	2.29	2.01	2.06
		Anti	37.88	5.79	5.82	6.18	5.82
Liberal	Personal Merit	Pro	34.11	6.22	6.07	6.01	5.78
		Anti	31.22	5.76	5.61	5.58	5.44
	Threat Framing	Pro	37.45	6.14	5.96	6.1	5.89
		Anti	30.73	5.29	5.12	5.22	5.02
	No Framing	Pro	38.22	6.21	6.01	5.89	5.74
		Anti	19.11	2.43	2.29	2.17	2.11

($F_{(2,408)}$ = 52.04, $p < 0.01$, η^2 = 0.47), and comfort level ($F_{(2,408)}$ = 56.13, $p < 0.01$, η^2 = 0.48). Next, we examined if any two-way interaction was statistically significant. We accepted the statistical significance of two-way interactions at a Bonferroni-adjusted alpha level of 0.004. We found two-way interactions were statistically significant for all dependent variables between political ideology and framing condition. However, we did not find statistically significant simple effects for schema framing or threat/safety framing conditions.

Similar to study 1, Figure 4 shows the persuasiveness ratings of participants for all three framing conditions. The figure shows that persuasiveness ratings for participants with conservative and liberal ideologies differed significantly for different framing conditions. When conservative participants did not receive any framing after getting exposed to an attitude-inconsistent political campaign, they experienced a strong in-group effect. They found their attitude-consistent charitable campaign (anti-climate change campaign) significantly more persuasive than the attitude-inconsistent charitable campaign (pro-climate change campaign). This behavior was consistent with the outcome of study 1. However, when conservative participants received safety framing, their persuasiveness ratings

for two conflicting charitable campaigns became very close. This behavior was exactly the opposite of their behavior during the non-framing condition. Finally, for the good fortune schema framing, the conservative participants showed comparatively lower polarization in terms of persuasiveness than the non-framing condition; however, they were still more polarized than the safety framing condition. When we analyzed the persuasiveness factor for the liberal participants, we again observed that the framing conditions (personal merit schema framing and threat framing) influenced the liberal participants' reactions. Similar to conservative participants, in framing conditions, the persuasiveness ratings of liberal participants also became much less polarized than the non-framing condition. Since other dependent variables (intended donation amount, empathy, sense of community, and comfort level) followed the same trend as persuasiveness, we did not include figures for those here.

Finally, we performed a one-sample t-test on the change of attitude measure to observe whether participants experienced any change of attitude during the experiment. We found that the ratings of the participants in the framing condition was not significantly different from 0 ($t_{(137)}$ = 1.97, p = 0.29, d = 0.06). However,
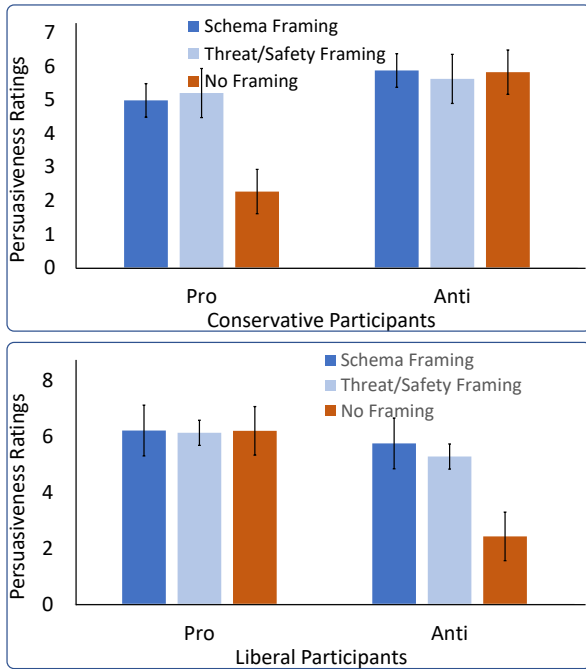
Figure 4: Average persuasiveness ratings of participants for schema framing, threat/safety framing, and no framing conditions for conservative (on the left) and liberal (on the right) participants. Safety framing condition was the most effective framing for the conservative participants whereas liberal participants found the personal merit schema as the most effective one.

ratings of the participants in the non-framing condition were significantly lower than 0 ($t(68) = 4.75$, $p < 0.01$, $d = 0.19$). These results show that participants in the framing conditions did not experience any change of attitude during the user study. However, participants of the non-framing condition became less favorable toward the attitude-inconsistent political campaign at the end of the user study. This finding implies that framing treatments helped participants to not develop an unfavorable attitude toward the attitude-inconsistent political campaign.

These findings indicate that the framing conditions can effectively assist people to reduce the priming effect and mitigate their in-group favoritism to politically charged topics even after the exposure to an attitude-inconsistent political campaign. Framing strategies helped participants cope with their internal sensitization, which made their opinion highly polarized in the first study. These findings are consistent with previous literature where researchers argued that political position is not a concrete ideology for most people. Instead, many people have moderate and divided opinions on different political issues, and framing political ideas may sway their opinions. One important observation was that conservative participants showed the least polarized attitude for the safety framing condition. However, for liberal participants, the personal merit schema framing condition was the most effective one. One possible explanation is that conservative people naturally get driven by fear

of threat [44]. Since the safety framing condition gave them a sense of relief from threat, they found it more appealing, and as a result, they became least polarized in that condition. On the contrary, since liberal participants generally are characterized by openness to new experiences and do not focus specifically on negative or fear elements, they found the threat framing less effective and experienced the least amount of in-group effect in the personal merit framing condition.

5 DISCUSSION AND FUTURE WORK

Political discussions often divide people along ideological lines. A recent nationwide survey conducted by Pew Research Center has found that partisan division has become more extensive than any point in the last two decades [110]. In this work, we examined whether and how the exposure of political crowdfunding campaigns can potentially sensitize people about their political ideology and activate their perception of in-groups and out-groups. We hypothesized that people's social opinions for topics that do not have a specific partisan endorsement could also be affected because of this sensitization. Indeed, our results have shown that exposure to attitude-inconsistent political campaigns did make our participants more sensitive about their partisan beliefs.

First, we present an empirical analysis of how social signals presented through political crowdfunding campaigns create a more substantial priming effect on individuals. We compared the priming effect of political crowdfunding campaigns with mainstream news articles since news articles are known to have a priming effect on their readers [8]. Our analysis showed that participants exposed to an attitude-inconsistent political crowdfunding campaign showed a significant priming effect even after ten days of the initial exposure. We tested this priming effect using charitable crowdfunding campaigns on climate change, a politically charged topic in the United States. Although those charitable campaigns did not explicitly highlight any partisan context, participants' opinions of these campaigns still got biased because of the initial priming effect.

Second, we showed how framing techniques could reduce the priming effect significantly among participants. Our findings can have direct design implications for charitable crowdfunding campaigns. The implications will be particularly strong for charitable campaigns focusing on politically charged and socially divisive topics. This finding is intriguing in part because carefully designed frames can positively increase the amount of donation for such charitable campaigns.

5.1 Long-term Retention of Priming Effect

In the context of the priming effect, it is critical to understand how long this influence may retain among individuals. In our setup, any priming effect that typically goes away within a short time may not be of major concern, as exposure to politically charged topics and political campaigns most likely would not happen within a few minutes. We are more interested in understanding how long-term priming effects can influence individuals' self-perception and personal beliefs on various sensitive topics. Our experiments revealed that even after 10 days, participants' reaction to charitable campaigns showed a significant influence of the priming effect. This was consistent with the findings of Moutsopoulou et al. [69]

where they have shown that since a specific form of priming effect influences people's long-term memory, the impact may stay active well beyond one week. When individuals remain engaged in an activity that requires the use of implicit memory (memory without awareness) rather than explicit memory (conscious recollection), the priming effect may retain for years without any significant memory decay [68]. Since participants of the first study were not initially aware of the second part of the study (exposure to non-political crowdfunding campaign), they did not have any incentive to memorize the content presented in the first part consciously. This might have triggered their implicit memory, resulting in the long-term (10 days) retention of the priming effect. While the long-term priming effect was primarily studied in the context of memorizing words and pictures, our work offers crucial insight into this effect beyond the domain of learning and memorization. Our observation of the long-term priming effect of political crowdfunding platforms opens up future research avenues for studying the implicit priming effect of social platforms on people's long-standing beliefs and opinions.

5.2 Online Exposure through Crowdfunding Campaigns

Our findings indicate that the impact of political crowdfunding campaigns cannot be understood just by analyzing the campaigns in isolation; instead, it may require a more thorough approach to understand the complex dynamic of political campaigns. The convenient accessibility of campaigns in crowdfunding platforms can be seen as a new opportunity for political candidates to reach and influence potential future supporters. This may allow candidates to reach those people who were hard to reach in the past. These platforms can play an even more prominent role in the future, especially when the global pandemic makes it harder for politicians to reach out to their supporters directly through physical appearances and in-person rallies.

Although promising for candidates, political crowdfunding platforms may not be considered as a **typical** crowdfunding platform for gathering donations. This is because these platforms not only show the stance of the politicians on their political agendas but also show in real-time how much money is donated by how many people in support of a specific politician. This is an excellent example of the support of potential voters at the grassroots level, which we often miss out on when traditional fundraising methods are adopted. Our findings showed that these social signals might subconsciously prime individuals' opinions on partisan topics. We anticipate that our findings will increase the critical awareness of the followers of crowdfunding campaigns who would otherwise think of crowdfunding campaigns as humble attempts to gather donations. To understand the full impact of political crowdfunding campaigns, future research should investigate the impact of simultaneous exposure of both Democratic and Republican crowdfunding campaigns in a single platform or in two rival platforms.

5.3 Socially Sensitive Topics and their Characteristics

In our first experiment, we found that participants who did not see an initial partisan candidate's fundraising campaign showed

much more tolerance for charitable crowdfunding campaigns even when the charitable campaign was inconsistent with their own political ideology. This finding was inconsistent with Dey et al. [22]. Their work showed that whenever people were exposed to diverse opinions on stigmatized topics, they became more polarized. One key difference between these two works was that we designed our experiments to observe people's opinions on climate change, whereas the previous work primarily focused on equal rights for the LGBTQIA community. While it is yet to be validated (in future research), we believe that people's reactions to different politically charged topics may vary significantly on their level of bias about those topics. A similar trend was also observed when researchers studied the applicability of the *contact hypothesis* [80] in reducing social prejudice. Researchers found that the contact hypothesis effectively reduced prejudice against disabled people but could not explain why it did not reduce racial and ethnic tension. A better understanding of the nature of various politically charged topics can be helpful for the designers of crowdfunding platforms. It can help political crowdfunding platforms organize campaigns to provoke the least amount of priming effect and promote maximum support for the campaign beneficiaries.

Systematic attempts to examine the multidimensional impact of socially sensitive topics are not new. For instance, Leiserowitz [53] found that public responses to climate change in the USA are less influenced by scientific facts but more by both psychological and socio-political factors. A recent Gallup poll shows that about a third to almost half of the public believes that the seriousness of global warming is generally exaggerated [31] and the current facts do not match with their political ideology. Not only in the case of climate change, but a recent study also found that during the current pandemic, partisanship was a relatively strong predictor of one's likelihood of wearing masks to prevent viral spread. A poll of over 2,400 American's revealed that Democrats are more likely than Republicans (75% versus 53%) to report wearing masks in public [52]. While we do not claim that political crowdfunding platforms are the only place frequently exposing individuals to socially sensitive topics, the rapid expansion of the online political platforms and increasing amount of donations through them indicate that these platforms may become ideal platforms for observing the influence of a full spectrum of socially sensitive topics. Our work expands the discussion around the impact of socially sensitive topics such as climate change on social platforms in the CHI community.

Both charitable campaigns used in our user study showed that they had already received the majority of their funding goals (80%) from the crowd. We anticipated that this design choice would help participants believe that both of these campaigns were highly popular among the crowd irrespective of their conflicting stances toward climate change and, as a result, would eliminate all suspicions about the fundability of these campaigns. We hypothesized that this design choice would capture participants' opinions on those charitable campaigns avoiding apparent confusion. One shortcoming of this design choice was that we could not explain how participants would react if no funding information were shown. However, examining the effect of high vs. low (or no) funding for charitable campaigns was not in the scope of our paper. Further work remains to be done to fully realize the impact of different levels of funding for charitable campaigns on potential donors.

5.4 Influence of Political Systems

We have conceptualized the influence of political crowdfunding campaigns in the context of the two-party political system practiced in the United States. When recruiting participants from MTurk, we ensured that all participants were US citizens and were familiar with the two-party system. This study design made the scenarios presented in the first and the second study more relatable to participants. However, a two-party political system often faces the challenges of hyper-partisanship [24]. As we observed in our first study, when a politically charged topic such as climate change was discussed outside of the political context after ten days of the initial exposure, it still had a differential effect on the participants' opinions. To generalize these findings in the global context, one key factor to consider is the potential differences in a multi-party political system. A multi-party political system generally focuses on a wide range of agendas and policies by promoting coalition-building skills while discouraging polarization. Evaluating the effect of political crowdfunding campaigns in countries with a multi-party political system such as Canada or the United Kingdom remains for future work. We feel that our findings, obtained from a two-party political system, will provide a basis for future investigation, in which we will consider different types of political systems to increase generalizability.

5.5 The Diversity of Online and Offline User Groups

To conduct our user studies, we recruited participants from MTurk. Although MTurkers were found to be a suitable representative of the US population for a political ideology study, there could still be a sample bias in our findings. Participants' average age in our user studies was less than 40 years. This finding may limit the generalization of our results in some critical ways. Older people who are not part of the online workforce may perceive political crowdfunding campaigns differently. Perhaps, they would be more influenced by political crowdfunding campaigns than regular MTurk workers, as past work has shown that older adults are more susceptible to inaccurate information [102]. In addition to different age groups, the popularity of political crowdfunding campaigns can also promote in-group vs. out-group bias among the group of people who regularly access online material vs. the group of people who rarely go online. Moreover, we divided participants into two main groups for our analysis: liberals and conservatives. Our initial analysis showed that on average, neither the group of conservative participants nor the group of liberal participants was from the extreme end of the spectrum based on their political leaning. However, people from the edge, who are considered as partisan anchors', might have a stronger reaction to political crowdfunding campaigns. Our findings will work as a definite first step for future work to identify the long-term impact of priming strategies on people from diverse communities.

5.6 Priming, Framing, and the Involvement of the CHI Community

A recent poll showed that 91% of people from the United States said that the country is divided over politics which is higher than the percentage of people who reported that America is divided over issues of race and ethnicity (83 percent) or religion (77 percent) [59]. Could more exposure to framed charitable solicitation also serve to make Americans less partisan on political arguments? Because of the influence of the political leadership on a long list of politically charged topics, these discussions can no longer remain limited to the domain of political science; rather the CHI research community can help by furnishing a conceptual framework for understanding the long-term effect of framing on the online crowd, especially when political crowdfunding campaigns are bringing renewed attention and/or a new way of thinking about a long-standing phenomenon of donating to politicians for running election campaigns.

Understanding the long-term effects of priming and framing on the audience is vital since adversaries can exploit these strategies in many ways. Previous work has shown that there are certain risks of applying framing strategies for mass manipulation [73]. Framing is known as a factor that reduces the quality of decision-making in a broad range of situations [45]. Someone with financial motivation may even apply an increased level of priming effect to receive more donations for their political crowdfunding campaigns. We, under any circumstances, do not endorse such exploitation.

We believe our findings will build awareness of the effect of priming and framing especially in the context of political crowdfunding. Yet, we want to stress that these findings are not without ethical consequences concerning moral and societal obligation. We take this opportunity to invite further studies to find the right balance between the priming and framing effects so that campaign owners and platform designers may responsibly apply these techniques. For instance, at the rise of the COVID-19 pandemic, several tech giants such as Google, Pinterest, Facebook, YouTube, and Twitter have taken initiatives to ban users who repeatedly attempted to circulate harmful misinformation on COVOD-19 vaccinations[11, 20, 42, 56, 61]. Platform designers of political crowdfunding campaigns might consider a similar approach where politicians would be banned permanently or temporarily (based on the severity of their actions) for priming potential donors on a list of socially sensitive issues. Such policy might deter adversaries from launching political campaigns with a strong priming effect on these platforms.

5.7 Design Implications

Political crowdfunding platforms are comparatively newer variations of crowdfunding platforms. Despite that, these platforms are expanding rapidly. For instance, a month before the November 2020 election, Crowdpac announced a new set of features so that their users could follow, engage, and communicate with other users, as well as campaigns or causes of interest to them, without leaving the platform. In addition, campaigners had access to new tools to identify and communicate with supporters [16]. These expansion ideas show how donors are eager to get involved in politics, and crowdfunding platforms have swooped in to respond to donors' desires with their data-driven approaches. Some of these platforms are not only collecting donations for their candidates but also working as mediators for matching thousands of like-minded volunteers who are actively helping candidates by sending letters and making phone calls in millions [98, 101]. While all these initiatives are opening up opportunities for renewed engagements at the grassroots

level, it is also time to think about how these platforms can operate and expand responsibly and be accountable for their impact on the engaged community.

The priming effect that we observed in the first study was subliminal in nature. Our results revealed that such priming effect might bias individuals' opinions even after ten days. Although we can not comment for sure how long that effect may last after ten days, the possibility of directing people's opinions in a specific direction for a long time is not thin. We argue that platform managers and system designers need to act with caution to deal with such priming effects. Prior effort on minimizing the priming effect found that individuals with a higher need for cognition (NFC) get less impacted by external priming attempts [86]. However, NFC does not always get instigated automatically as an individual trait; external stimuli, informing the possibility of priming effect, can also motivate people to think about the alternatives [106]. When individuals pay attention to think about several alternatives, they can overcome their biased judgment to a great intent. In the context of political crowdfunding, platform designers can provide such external stimuli by including additional "context levels" to campaigns that can make the audience more aware of the presence of socially divisive topics in the campaign's content. This will be something similar to Twitter's context levels that make people more conscious about facts in comparison to misinformation and disinformation.

In addition to context levels, reminding users about the accuracy of the campaigns' statements through simple nudges may help them substantially overcome the influence of the priming effect. Prior work on accuracy reminders found this as an effective technique for assisting people in identifying misinformation [84]. Such external stimuli may inspire people to reflect on the possibility of priming effect before they make any judgment in the future. Platforms could introduce a multicomponent meter or scale that shows the amount of framing on each socially divisive topic discussed in a political crowdfunding campaign. One way of creating such scales is to employ independent fact-checkers for every campaign. Fact-checkers ratings could be coupled with links of external resources that potential donors may access with minimum effort and better assess the quality of the arguments presented by the politicians in their crowdfunding campaigns. Another intervention item that may instigate users to be more watchful is to add an ideological extremity scale for each politician at the beginning of their campaign page. A one-dimensional scale like this may provide the right amount of nudge to potential donors to be vigilant to identify any priming strategy applied by politicians in their crowdfunding campaigns.

Our work takes the methodological challenges of using observational data to understand social factors related to political crowdfunding campaigns. We adopted beyond the theoretical framework of priming and framing techniques and quantitatively established the importance of such social factors in the context of political crowdfunding campaigns. Our findings provide a rare opportunity to observe political crowdfunding campaigns not only through the lens of a typical fundraising medium for politicians but also opens up further research avenues exploring how politicians may use these crowdfunding platforms to mobilize long-lasting and far-reaching collective actions at the grassroots level.

The implication of our observations goes beyond the domain of political crowdfunding campaigns and can be extended to platforms hosting donation-based crowdfunding campaigns too. Platforms seeking donations often follow specific framing techniques to motivate potential donors for giving donations [105]. For instance, when donors feel a sense of in-group solidarity and identity, charitable asks become much more effective. We believe that the results presented in this paper will provide important details on how framing strategies such as schema framing and threat/safety framing may become practical approaches for non-profit charitable asking.

Donation solicitations designed using framing strategies can assist non-profit organizations to overcome biased judgment and partisan division of potential donors, especially when they are asking for donations on a politically and socially sensitive topic. That said, it is critical to consider that there is a definite distinction between framing an argument in comparison to delivering a persuasive argument. Implicitly, it is assumed that information conveyed by a persuasive message is supposed to be new to its audience. However, framing strategy works the best when communicated information is already known to recipients, stored in their long-term memory [74]. From the campaign creators' perspective, it may not be effective to mold their vision using framing techniques when proposing new initiatives, even on a politically divisive issue. To better handle this challenge, campaign creators might run a preliminary survey to gauge the familiarity of their proposed idea and might decide on using the framing strategy based on the responses to the survey.

Lastly, donation-based campaign creators should also be aware of the fact that the framing literature often considers that human minds are designed to react in specific ways. However, in practice, human minds are not machines. They are not engineered to behave entirely rationally. Instead, like a work of art, the mind thrives on metaphor, narrative, and emotion —- which can sometimes overtake our rationality. Potential donors, consciously aware of the influences of a framing initiative, may be able to look past the frame, assess how it may be influencing them, and thus, react in a way that is not entirely predictable in advance.

6 LIMITATIONS

While our studies make important contributions in understanding the impact of priming and framing in the context of crowdfunding, like all research, it has some limitations. One criticism comes from recruiting the Mechanical Turkers to conduct the studies. We carefully designed our user studies to ensure that participants in the two studies were mutually exclusive groups. We also used new requester ids during the follow-up stages to not disclose the primary objectives of our studies to participants. Even after these precautionary steps, there is a possibility that some of the participants perhaps understood the connection between the two stages of each study because, in both stages, we asked their opinion on some types of crowdfunding campaigns. Understanding the connection might introduce a response bias in the opinion toward charitable campaigns, as Dell et al. [21] observed during their interviews. Mechanical Turkers often anticipate the risk of work rejection [62]. That anticipation might shape their responses in our follow-up studies. Replication work based on the findings of our work needs to keep in mind this limitation before designing their experiments.

Another critical aspect of our work is external validity. Someone may argue about the probability of getting exposed to a charitable campaign soon after getting exposed to a political crowdfunding campaign. We do not know the answer to this question with absolute certainty. However, we made our best effort to estimate the same. We conducted a quick survey on Facebook and Twitter where we asked people whether they have ever donated to any crowdfunding campaign and if so, we asked them the name of the platforms they had already donated for or were considering to donate. We received 519 responses in three days where participants acknowledged donating to at least one crowdfunding campaign. Among them, 79% (411) participants mentioned donating to more than one crowdfunding platform, including 229 (44%) participants who explicitly mentioned donating to a political crowdfunding platform. The 2020 US presidential election may partially explain this high interest in political crowdfunding campaigns. However, these numbers at least show the popularity of political campaigns among individuals, the availability of which in the online crowdfunding setup during the pandemic made it even more likely for individuals to come across political agendas and the discussion around politically charged topics [25]. Here it is worth mentioning that after our user studies, CrowdPac restructured their platform, and with the revised guidelines, they decided to accept only campaigns for progressive Democrat candidates. This may raise concern that the possibility of getting exposed to an attitude-inconsistent political campaign is next to none through CrowdPac because of this changed guideline. However, we believe that our findings have a broader impact than one specific crowdfunding platform. Our observation may be applied to any platform where there is a hint of political bias available, and thus, it is critical to explore these findings in a global context.

In the design of our user study, we asked participants to assume the political candidate from their congressional district. Our primary objective was to present the campaigns realistic to the participants. However, the ideological point of view of the politicians varies significantly based on regions in the United States [63]. Because of this design decision, one participant from an east coast state may perceive the political crowdfunding campaign significantly differently from another participant from a southern state. If our findings are replicated in the future, it will be important to consider how this design choice may impact the intensity of the priming effect on the participants.

We acknowledge that presenting *hypothetical* candidates for evaluating political campaigns may have some implications on participants' opinions. In behavioral psychology, it is often observed that because of real vs. hypothetical dilemmas, people's decisions in a hypothetical condition may vary from their real-life decisions [28]. For instance, if individuals are asked to evaluate an actual political candidate, along with the candidate's partisan identity, they may also consider how the candidate's victory will be beneficial for self-gain. While this possibility is unlikely to occur, we need to keep in mind that partisan identity often dominates other factors in the context of US politics. For American voters, party affiliation is a way to express a bundle of identities, and thus, people often vote against their economic interests and stay true to their partisan identity [104]. In future work, we hope to explore political crowdfunding campaigns in a more realistic condition that will be useful to understand the true potential of political crowdfunding platforms beyond the real vs. hypothetical dilemma.

Finally, we are aware that not all politically charged partisan topics have the same impact as we observed for climate change. Generalizing all partisan topics would be a naive approach since each topic is connected to specific historical events [103] and those events often determine how sensitive a partisan topic would be. A 2016 Pew survey showed that partisan division varies largely across different partisan topics [83]. In fact, on certain partisan topics, including climate change, the partisan gap has been consistently widening in the past two decades [75]. However, by conducting a deeper exploration of the cross-platform effect of political crowdfunding campaigns, we gain richer evidence of how in comparison to traditional political campaigns, online campaigns may further exacerbate political animosity and partisanship on specific partisan topics. This allows us to consider implications for design more broadly for platforms hosting political campaigns despite being grounded within a single topic. Here, we want to note that the time of our user studies was not marked by any significant sociopolitical event that could have potentially affected our results.

7 CONCLUSION

In this paper, we investigated the impact of political crowdfunding campaigns on politically charged topics. Our work shows that discussion of agendas in political crowdfunding campaigns can make people's political ideology more salient. Our work shows that this salient ideology can trigger in-group favoritism and out-group hostility among the users. Because of this in-group favoritism, people's opinions on politically charged topics also become polarized, even when discussed outside the political context. Further investigation shows that framing strategies such as schema framing and threat/safety framing can mitigate people's in-group favoritism. More importantly, we also show that the effectiveness of framing techniques depends on people's original political ideology. This work conceptually sheds light on how social platforms impact people's core ideologies. We conclude by highlighting the challenges of characterizing the broader impact of political crowdfunding platforms and the application of framing techniques on social platforms.

REFERENCES

[1] Ahmer Arif, Leo Graiden Stewart, and Kate Starbird. 2018. Acting the part: Examining information operations within# BlackLivesMatter discourse. *Proceedings of the ACM on Human-Computer Interaction* 2, CSCW (2018), 1–27.

[2] Elena M Auer, Tara S Behrend, Andrew B Collmus, Richard N Landers, and Ahleah F Miles. 2021. Pay for performance, satisfaction and retention in longitudinal crowdsourced research. *Plos one* 16, 1 (2021), e0245460.

[3] Eric PS Baumer, Francesca Polletta, Nicole Pierski, and Geri K Gay. 2017. A simple intervention to reduce framing effects in perceptions of global climate change. *Environmental Communication* 11, 3 (2017), 289–310.

[4] Janine Berg. 2015. Income security in the on-demand economy: Findings and policy lessons from a survey of crowdworkers. *Comp. Lab. L. & Pol'y J.* 37 (2015), 543.

[5] Jonah Berger and Lindsay Rand. 2008. Shifting signals to help health: Using identity signaling to reduce risky health behaviors. *Journal of Consumer Research* 35, 3 (2008), 509–518.

[6] Lawrence Bobo. 1991. Social responsibility, individualism, and redistributive policies. In *Sociological Forum*, Vol. 6. Springer, 71–92.

[7] Javier Borge-Holthoefer, Walid Magdy, Kareem Darwish, and Ingmar Weber. 2015. Content and network dynamics behind Egyptian political polarization on Twitter. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*. 700–711.

[8] Paul R Brewer, Joseph Graf, and Lars Willnat. 2003. Priming or framing: Media influence on attitudes toward foreign countries. *Gazette (Leiden, Netherlands)* 65, 6 (2003), 493–508.

[9] Christopher J Bryan, Carol S Dweck, Lee Ross, Aaron C Kay, and Natalia O Mislavsky. 2009. Political mindset: Effects of schema priming on liberal-conservative political positions. *Journal of Experimental Social Psychology* 45, 4 (2009), 890–895.

[10] Ed Cairns, Jared Kenworthy, Andrea Campbell, and Miles Hewstone. 2006. The role of in-group identification, religious group membership and intergroup conflict in moderating in-group and out-group affect. *British Journal of Social Psychology* 45, 4 (2006), 701–716.

[11] Christina Caron. 2019. Pinterest Restricts Vaccine Search Results to Curb Spread of Misinformation. https://www.nytimes.com/2019/02/23/health/pinterestvaccination-searches.html.

[12] Pew Research Center. 2016. Political Party Quiz. https://www.people-press.org/quiz/political-party-quiz/.

[13] Pew Research Center. 2021. Political Typology Quiz. https://www.people-press.org/quiz/political-typology/.

[14] Jung-Hua Chang, Yu-Qian Zhu, Shan-Huei Wang, and Yi-Jung Li. 2018. Would you change your mind? An empirical study of social impact theory on Facebook. *Telematics and Informatics* 35, 1 (2018), 282–292.

[15] Adam Corner, Lorraine Whitmarsh, and Dimitrios Xenias. 2012. Uncertainty, scepticism and attitudes towards climate change: biased assimilation and attitude polarisation. *Climatic change* 114, 3-4 (2012), 463–478.

[16] Crowdpac. 2020. Crowdfunding Platform Crowdpac is the Social Network for Politics. https://www.prnewswire.com/news-releases/crowdfunding-platform-crowdpac-is-the-social-network-for-politics-301147844.html.

[17] CrowdPac 2021. . https://www.crowdpac.com/.

[18] Kahneman Daniel and Tversky Amos. 1984. Choices, values, and frames. *American Psychologist* 39, 4 (1984), 341–350.

[19] Nilanjana Dasgupta. 2004. Implicit ingroup favoritism, outgroup favoritism, and their behavioral manifestations. *Social justice research* 17, 2 (2004), 143–169.

[20] Gerrit De Vynck. 2021. YouTube is banning prominent anti-vaccine activists and blocking all anti-vaccine content. https://www.washingtonpost.com/technology/2021/09/29/youtube-ban-joseph-mercola/.

[21] Nicola Dell, Vidya Vaidyanathan, Indrani Medhi, Edward Cutrell, and William Thies. 2012. " Yours is better!" participant response bias in HCI. In *Proceedings of the sigchi conference on human factors in computing systems*. 1321–1330.

[22] Sanorita Dey, Karrie Karahalios, and Wai-Tat Fu. 2018. Effects of Socially Stigmatized Crowdfunding Campaigns in Shaping Opinions. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. ACM, 242.

[23] Diffen.com 2021. Democrat vs Republican - Difference and Comparison. https://www.diffen.com/difference/Democrat_vs_Republican.

[24] Lee Drutman. 2020. America Is Now the Divided Republic the Framers Feared. https://www.theatlantic.com/ideas/archive/2020/01/two-party-system-broke-constitution/604213/.

[25] Maeve Duggan and Aaron Smith. 2016. The Political Environment on Social Media. https://www.pewresearch.org/internet/2016/10/25/the-political-environment-on-social-media/.

[26] Stanley Feldman. 1988. Structure and consistency in public opinion: The role of core beliefs and values. *American Journal of political science* (1988), 416–440.

[27] Stanley Feldman and John Zaller. 1992. The political culture of ambivalence: Ideological responses to the welfare state. *American Journal of Political Science* (1992), 268–307.

[28] Oriel FeldmanHall, Dean Mobbs, Davy Evans, Lucy Hiscox, Lauren Navrady, and Tim Dalgleish. 2012. What we say and what we do: The relationship between real and hypothetical moral choices. *Cognition* 123, 3 (2012), 434–441.

[29] Flippable 2019. . https://flippable.org/.

[30] For radical political crowdsourcing 2019. FIREFUND. https://www.firefund.net/.

[31] Gallup 2021. Is the seriousness of global warming generally exaggerated, generally correct, or is it generally underestimated? https://news.gallup.com/poll/1615/environment.aspx.

[32] Herbert J Gans. 1979. Deciding what's news: story suitability. *Society* 16, 3 (1979), 65–77.

[33] R Kelly Garrett. 2009. Echo chambers online?: Politically motivated selective exposure among Internet news users. *Journal of Computer-Mediated Communication* 14, 2 (2009), 265–285.

[34] Catherine Grevet, Loren G Terveen, and Eric Gilbert. 2014. Managing political differences in social media. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing*. 1400–1408.

[35] Ulrike Hahn, Adam JL Harris, and Adam Corner. 2009. Argument content and argument source: An exploration. *Informal Logic* 29, 4 (2009), 337–367.

[36] Kotaro Hara, Abigail Adams, Kristy Milland, Saiph Savage, Chris Callison-Burch, and Jeffrey P Bigham. 2018. A data-driven analysis of workers' earnings on Amazon Mechanical Turk. In *Proceedings of the 2018 CHI conference on human factors in computing systems*. 1–14.

[37] Reid Hastie and Bernadette Park. 1986. The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line.

[38] Paul M Herr, Steven J Sherman, and Russell H Fazio. 1983. On the consequences of priming: Assimilation and contrast effects. *Journal of experimental social psychology* 19, 4 (1983), 323–340.

[39] E Tory Higgins, John A Bargh, and Wendy J Lombardi. 1985. Nature of priming effects on categorization. *Journal of experimental psychology: Learning, Memory, and Cognition* 11, 1 (1985), 59.

[40] E Tory Higgins, William S Rholes, and Carl R Jones. 1977. Category accessibility and impression formation. *Journal of experimental social psychology* 13, 2 (1977), 141–154.

[41] Yiqing Hua, Mor Naaman, and Thomas Ristenpart. 2020. Characterizing twitter users who engage in adversarial interactions against political candidates. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*. 1–13.

[42] Andrew Hutchinsona. 2019. Pinterest Will Limit Search Results for Vaccine-Related Queries to Content from Official Health Outlets. https://www.socialmediatoday.com/news/pinterest-will-limit-search-resultsfor-vaccine-related-queries-to-content/561885/.

[43] Shanto Iyengar and Donald R Kinder. 2010. *News that matters: Television and American opinion*. University of Chicago Press.

[44] John T Jost, Jack Glaser, Arie W Kruglanski, and Frank J Sulloway. 2003. Political conservatism as motivated social cognition. *Psychological bulletin* 129, 3 (2003), 339.

[45] Daniel Kahneman and Amos Tversky. 2013. Choices, values, and frames. In *Handbook of the fundamentals of financial decision making: Part I*. World Scientific, 269–278.

[46] Daniel Kahneman and Amos Tversky. 2013. Prospect theory: An analysis of decision under risk. In *Handbook of the fundamentals of financial decision making: Part I*. World Scientific, 99–127.

[47] Caroline Kelly. 1989. Political identity and perceived intragroup homogeneity. *British Journal of Social Psychology* 28, 3 (1989), 239–250.

[48] David C Kimball. 2005. Priming partisan evaluations of congress. *Legislative Studies Quarterly* 30, 1 (2005), 63–84.

[49] Joshua Klayman. 1995. Varieties of confirmation bias. In *Psychology of learning and motivation*. Vol. 32. Elsevier, 385–418.

[50] James R Kluegel and Eliot R Smith. 2017. *Beliefs about inequality: Americans' views of what is and what ought to be*. Routledge.

[51] Juhi Kulshrestha, Motahhare Eslami, Johnnatan Messias, Muhammad Bilal Zafar, Saptarshi Ghosh, Krishna P Gummadi, and Karrie Karahalios. 2017. Quantifying search bias: Investigating sources of bias for political searches in social media. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. 417–432.

[52] Shana Kushner Gadarian, Sara Wallace Goodman, and Thomas B Pepinsky. 2020. Partisanship, health behavior, and policy attitudes in the early stages of the COVID-19 pandemic. *Health Behavior, and Policy Attitudes in the Early Stages of the COVID-19 Pandemic (March 27, 2020)* (2020).

[53] Anthony Leiserowitz. 2006. Climate change risk perception and policy preferences: The role of affect, imagery, and values. *Climatic change* 77, 1-2 (2006), 45–72.

[54] Matthew Levendusky. 2013. Partisan media exposure and attitudes toward the opposition. *Political communication* 30, 4 (2013), 565–581.

[55] Charles G Lord, Lee Ross, and Mark R Lepper. 1979. Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of personality and social psychology* 37, 11 (1979), 2098.

[56] Matsakis Louise. 2019. Facebook Will Crack Down on Anti-Vaccine Content. https://www.wired.com/story/facebook-anti-vaccine-crack-down/.

[57] Sam J Maglio. 2020. Psychological distance in consumer psychology: Consequences and antecedents. *Consumer Psychology Review* 3, 1 (2020), 108–125.

[58] Dan Marom. 2012. A Framework for Political Crowdfunding: Lessons From President Obama. https://crowdsourcingweek.com/blog/a-framework-for-political-crowdfunding-lessons-from-president-obama/.

[59] Najle Maxine and Jones Robert P. 2019. American Democracy in Crisis: The Fate of Pluralism in a Divided Nation. https://www.prri.org/research/american-democracy-in-crisis-the-fate-of-pluralism-in-a-divided-nation/.

[60] Herbert McClosky and John Zaller. 1984. *The American ethos: Public attitudes toward capitalism and democracy*. Harvard Univ Press.

[61] Matt McGee. 2013. In Quality Raters' Handbook, Google Adds Higher Standards For "Your Money Or Your Life" Websites. https://searchengineland.com/quality-raters-handbook-your-money-or-your-life-177663.

[62] Brian McInnis, Dan Cosley, Chaebong Nam, and Gilly Leshed. 2016. Taking a HIT: Designing around rejection, mistrust, risk, and workers' experiences in Amazon Mechanical Turk. In *Proceedings of the 2016 CHI conference on human factors in computing systems*. 2271–2282.

[63] Marshall H Medoff. 1997. The political implications of state political ideology: A measure tested. *American Journal of Economics and Sociology* 56, 2 (1997), 145–158.

[64] Jeffrey Mervis. 2015. Politics, science, and public attitudes: What we're learning, and why it matters. https://www.sciencemag.org/news/2015/02/politics-

Psychological review 93, 3 (1986), 258.

science-and-public-attitudes-what-we-re-learning-and-why-it-matters.

[65] Solomon Messing and Sean J Westwood. 2014. Selective exposure in the age of social media: Endorsements trump partisan source affiliation when selecting news online. *Communication research* 41, 8 (2014), 1042–1063.

[66] Miriam J Metzger, Ethan H Hartsell, and Andrew J Flanagin. 2020. Cognitive dissonance or credibility? A comparison of two theoretical explanations for selective exposure to partisan news. *Communication Research* 47, 1 (2020), 3–28.

[67] Amy Mitchell, Jeffrey Gottfried, Jocelyn Kiley, and Katerina Eva Matsa. 2014. Political Polarization & Media Habits. https://www.journalism.org/2014/10/21/political-polarization-media-habits/.

[68] David B Mitchell. 2006. Nonconscious priming after 17 years: Invulnerable implicit memory? *Psychological Science* 17, 11 (2006), 925–929.

[69] Karolina Moutsopoulou, Christina Pfeuffer, Andrea Kiesel, Qing Yang, and Florian Waszak. 2019. How long is long-term priming? Classification and action priming in the scale of days. *Quarterly Journal of Experimental Psychology* 72, 5 (2019), 1183–1199.

[70] Paul R Nail, Ian McGregor, April E Drinkwater, Garrett M Steele, and Anthony W Thompson. 2009. Threat causes liberals to think like conservatives. *Journal of Experimental Social Psychology* 45, 4 (2009), 901–907.

[71] Jaime L Napier, Julie Huang, Andrew J Vonasch, and John A Bargh. 2018. Superheroes for change: Physical safety promotes socially (but not economically) progressive attitudes among conservatives. *European Journal of Social Psychology* 48, 2 (2018), 187–195.

[72] Thomas E Nelson, Rosalee A Clawson, and Zoe M Oxley. 1997. Media framing of a civil liberties conflict and its effect on tolerance. *American Political Science Review* (1997), 567–583.

[73] Thomas E Nelson and Donald R Kinder. 1996. Issue frames and group-centrism in American public opinion. *The Journal of Politics* 58, 4 (1996), 1055–1078.

[74] Thomas E Nelson, Zoe M Oxley, and Rosalee A Clawson. 1997. Toward a psychology of framing effects. *Political behavior* 19, 3 (1997), 221–246.

[75] Frank Newport and Andrew Dugan. 2017. Partisan Differences Growing on a Number of Issues. https://news.gallup.com/opinion/polling-matters/215210/partisan-differences-growing-number-issues.aspx.

[76] BBC News. 2013. The Statue of Liberty and America's crowdfunding pioneer. https://www.bbc.com/news/magazine-21932675.

[77] Stephen P Nicholson. 2012. Polarizing cues. *American Journal of Political Science* 56, 1 (2012), 52–66.

[78] Raymond S Nickerson. 1998. Confirmation bias: A ubiquitous phenomenon in many guises. *Review of general psychology* 2, 2 (1998), 175–220.

[79] Gastón Olivares, Juan Pablo Cárdenas, Juan Carlos Losada, and Javier Borondo. 2019. Opinion polarization during a dichotomous electoral process. *Complexity* 2019 (2019).

[80] Elizabeth Levy Paluck, Seth A Green, and Donald P Green. 2018. The contact hypothesis re-evaluated. *Behavioural Public Policy* (2018), 1–30.

[81] Zhongdang Pan and Gerald M Kosicki. 1993. Framing analysis: An approach to news discourse. *Political communication* 10, 1 (1993), 55–75.

[82] Zizi Papacharissi and Maria de Fatima Oliveira. 2012. Affective news and networked publics: The rhythms of news storytelling on# Egypt. *Journal of communication* 62, 2 (2012), 266–282.

[83] Partisanship and political animosity in 2016. 2016. Views of parties' positions on issues, ideologies. https://www.pewresearch.org/politics/2016/06/22/5-views-of-parties-positions-on-issues-ideologies/.

[84] Gordon Pennycook, Jonathon McPhetres, Yunhao Zhang, Jackson G Lu, and David G Rand. 2020. Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. *Psychological science* 31, 7 (2020), 770–780.

[85] Richard E Petty and John T Cacioppo. 1984. The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of personality and social psychology* 46, 1 (1984), 69.

[86] Richard E Petty, Kenneth G DeMarree, Pablo Briñol, Javier Horcajo, and Alan J Strathman. 2008. Need for cognition can magnify or attenuate priming effects in social judgment. *Personality and Social Psychology Bulletin* 34, 7 (2008), 900–912.

[87] Eva M Pomerantz, Shelly Chaiken, and Rosalind S Tordesillas. 1995. Attitude strength and resistance processes. *Journal of personality and social psychology* 69, 3 (1995), 408.

[88] Solange Pompl and Sergiu Gherghina. 2019. Familiar faces and negative messages: how to crowdfund a political campaign in the UK. https://blogs.lse.ac.uk/politicsandpolicy/how-to-crowdfund-a-political-campaign/.

[89] Nadja Popovich. 2020. Climate Change Rises as a Public Priority. But It's More Partisan Than Ever. https://www.nytimes.com/interactive/2020/02/20/climate/climate-change-polls.html.

[90] Scott A Reid. 2012. A self-categorization explanation for the hostile media effect. *Journal of Communication* 62, 3 (2012), 381–399.

[91] David R Roskos-Ewoldsen and Beverly Roskos-Ewoldsen. 2009. Media priming: An updated synthesis. In *Media effects*. Routledge, 90–109.

[92] LYDIA SAAD. 2012. Conservatives Remain the Largest Ideological Group in U.S. https://news.gallup.com/poll/152021/conservatives-remain-largest-ideological-group.aspx.

[93] Lydia Saad. 2018. Conservative Lead in U.S. Ideology Is Down to Single Digits. https://news.gallup.com/poll/225074/conservative-lead-ideology-down-single-digits.aspx.

[94] Dietram A Scheufele and David Tewksbury. 2007. Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of communication* 57, 1 (2007), 9–20.

[95] Norbert Schwarz and Gerald L Clore. 1983. Mood, misattribution, and judgments of well-being: informative and directive functions of affective states. *Journal of personality and social psychology* 45, 3 (1983), 513.

[96] Bryan C Semaan, Scott P Robertson, Sara Douglas, and Misa Maruyama. 2014. Social media supporting political deliberation across multiple public spheres: towards depolarization. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing*. 1409–1421.

[97] AARTI SHAHANI. 2017. Thinking Of Running For Office? A Website Lets You Test The Waters. https://www.npr.org/sections/alltechconsidered/2017/08/30/546061687/thinking-of-running-for-office-a-website-lets-you-test-the-waters.

[98] Sister District Project 2021. . https://sisterdistrict.com/.

[99] Eliot R Smith. 1986. *Beliefs about Inequality: Americans' Views of what is and what Ought to be*. New York: A. de Gruyter.

[100] Thomas K Srull and Robert S Wyer. 1980. Category accessibility and social perception: Some implications for the study of person memory and interpersonal judgments. *Journal of Personality and Social Psychology* 38, 6 (1980), 841.

[101] SwingLeft 2020. . https://swingleft.org/.

[102] Briony Swire, Ullrich KH Ecker, and Stephan Lewandowsky. 2017. The role of familiarity in correcting inaccurate information. *Journal of experimental psychology: learning, memory, and cognition* 43, 12 (2017), 1948.

[103] History Talk. 2017. Smart conversations about today's most interesting topics - a history podcast for everyone. https://origins.osu.edu/history-talk.

[104] Amanda Taub. 2017. Why Americans Vote 'Against Their Interest': Partisanship. https://www.nytimes.com/2017/04/12/upshot/why-americans-vote-against-their-interest-partisanship.html.

[105] GlobalGiving Team. 2018. Content Vs. Context: The Effects Of Messaging + Framing On Charitable Giving. https://www.globalgiving.org/learn/framing-tips-for-fundraising/.

[106] Erik P Thompson, Robert J Roman, Gordon B Moskowitz, Shelly Chaiken, and John A Bargh. 1994. Accuracy motivation attenuates covert priming: The systematic reprocessing of social information. *Journal of personality and Social Psychology* 66, 3 (1994), 474.

[107] Yariv Tsfati and Joseph N Cappella. 2003. Do people watch what they do not trust? Exploring the association between news media skepticism and exposure. *Communication Research* 30, 5 (2003), 504–529.

[108] uCampaign 2021. . https://ucampaignapp.com/.

[109] Yiran Wang and Gloria Mark. 2017. Engaging with political and social issues on Facebook in college life. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. 433–445.

[110] Amanda Wills. 2014. How Increasing Ideological Uniformity and Partisan Antipathy Affect Politics, Compromise and Everyday Life. https://www.people-press.org/2014/06/12/political-polarization-in-the-american-public/.

A DESIGNING POLITICAL CROWDFUNDING CAMPAIGNS

In the political campaigns, we primarily focused on the political agenda of the corresponding political party [23]. For the Republican candidate, we discussed the candidate's plans on the tax deduction, job opportunities, revised healthcare, and less regulation over the business sector. We refer to this campaign as the "Republican campaign". For the Democratic candidate, we discussed the candidate's plans for an improved education system, sustainable job opportunities, raising the minimum wage, and secured healthcare and medical benefits. We refer to this campaign as the "Democratic campaign" in the rest of the paper. None of these campaigns mentioned environmental policy or anything related to global warming and climate change in the description to avoid a direct relationship between political and charitable campaigns.

We could not use any existing standard campaign in our study directly because of the differences in the length of the description, number of comments, number of shares on social media, and donation amount. To minimize external effects, we designed these

campaigns to be broadly equivalent to critical dimensions such as overall length (between 570 and 620 words), number of paragraphs, and source attribution since these factors are known to be important determinants of message persuasiveness and argument strength [35, 85]. Following the structures of existing political campaigns in CrowdPac, we included the following sections in both of these campaigns: 1) first, we introduced the candidate to the audience, 2) next, we discussed their political agendas aligned with their corresponding political parties, and 3) finally, we explained how the donation made through the crowdfunding campaign would be essential for them to win the election.

B   DESIGNING CHARITABLE CROWDFUNDING CAMPAIGNS

To create these two charitable crowdfunding campaigns, we took inspiration from charitable campaigns posted in GoFundMe and Indiegogo. At the time of our experiment, we found more than 3,000 campaigns related to climate change on GoFundMe. We consulted 30 most recent campaigns from GoFundMe on climate change and the adverse effect of environmental policy on the community. We identified the following six major topics that campaign creators discuss in the description of these campaigns: 1) described their primary objectives, 2) explained why they need financial support to continue working on their predetermined agendas, 3) mentioned the consequences of not receiving the financial assistance from the crowdfunding campaign, 4) reported a list of activities for which they would spend the donated money, 5) mentioned what they expected to achieve by continuing their activities, and 6) acknowledged how the community/supporters extended their support so far to their cause. While designing our custom-built campaigns, we included the same issues for both campaigns so that based on the structure and arguments, they were comparable to each other. In addition to the description of a campaign, a standard campaign has other important elements such as the amount of money donated, the goal of the campaign, and the comments left by the crowd. We again balanced all the critical dimensions of these two campaigns (as we did for the political campaigns) to minimize the effect of the external factors on our participants. For both campaigns, we set the goal of $40,000. We showed that 80% of the goal amounts have already been donated for these campaigns by 1850 donors (determined based on the number of donors of the 30 campaigns considered to design these custom campaigns) to show that these campaigns received a decent amount of support from the crowd.

C   PRETESTING STUDY MATERIALS

C.1   Pretesting Political Crowdfunding Campaigns

To pre-test our political campaigns, we recruited three graduate students from the Political Science department who independently rated our political campaigns. Each rater had at least three years of experience as Ph.D. candidates on comparative politics and political philosophy. We used the perceived persuasion scale developed based on social impact theory to measure the overall persuasive appeal of our custom campaigns [14]. Raters used 7-point Likert

scales to rate whether the campaigns were: 1) compelling, 2) persuasive, 3) logical, and 4) plausible. We performed Fleiss Kappa analysis to measure the agreement between three raters. There was a very high agreement between the raters' judgment, $\kappa = 0.87$ (95% CI, 0.64 to 1.15), p < .01. Paired sample t-test showed no significant difference between the two political campaigns in terms of perceived persuasiveness (t(11) = 1.64, p = 0.27). Furthermore, to check how each campaign was situated on the political ideology spectrum, the raters answered the following question for each campaign [92]:

Question: How would you describe the political view of the candidate represented by the campaign?

(1) very conservative
(2) conservative
(3) moderate
(4) liberal
(5) very liberal
(6) no opinion

All three raters rated the Republican candidate's campaign as *conservative* (the second option) and the Democratic candidate's article as *liberal* (the fourth option).

C.2   Pretesting News Articles

To pre-test news articles, we recruited another group of three graduate students from the Political Science department who had at least three years of experience as Ph.D. candidates. We used the same perceived persuasion scale that we used to pre-test the crowdfunding campaigns [14]. Fleiss-Kappa analysis showed a very high agreement between the raters' judgment, $\kappa = 0.85$ (95% CI, 0.63 to 1.12), p < .01. Paired sample t-test showed no significant difference between the two news articles regarding perceived persuasiveness (t(11) = 1.32, p = 0.42). We also asked raters to rate the political leaning of the articles. All three raters rated the Republican candidate's article as *conservative* (the second option) and the Democratic candidate's article as *liberal* (the fourth option).

C.3   Pretesting Charitable Crowdfunding Campaigns

To pre-test the charitable campaigns, we recruited three HCI researchers (excluding the authors of this paper) who had at least three years of experience researching crowdsourcing and crowdfunding. Each rater independently rated our charitable campaigns using the same 7-point Likert scale to rate the political campaigns. Fleiss-Kappa showed that there was high agreement between the raters' judgment, $\kappa = 0.76$ (95% CI, 0.52 to 0.98), p < .01. Like the political campaigns, we did not find any significant difference in perceived persuasiveness between two charitable crowdfunding campaigns (t(11) = 1.49, p = 0.36). Besides, to check whether charitable campaigns were highly influenced by political ideology, the raters answered the following question for each campaign:

Question: How would you describe the political influence or motivation of the campaign?

(1) Explicitly influenced and motivated by political agenda
(2) Not explicitly influenced or motivated by political agenda
(3) No opinion

Table 5: Representative survey questions that we used in political campaign survey, charitable campaign survey, news article survey, and control survey to measure opinions of the participants.

Dependent Variables	Sample Questions
Intended Donation amount	If you have $50 to donate, how much would you like to donate to this campaign?
Persuasiveness	How persuasive was the campaign?
Empathy	Are you emotionally involved with this campaign or with the agenda of this campaign?
Sense of Community	People supporting this campaign and I value the same thing.
Comfort Level	To what extent did reading this campaign make you feel comfortable?

Table 6: The opinions of the participants captured during the manipulation check (the first phase) from political campaign survey, news article survey, and control survey are listed here. * sign marked those dependent variables for which at least one group of participants was significantly different from two other groups.

Dependent Variables	F-Score for univariate ANOVA	Effect Size	Crowdfunding Group	News Article Group	Control Group
Intended Donation Amount*	F(2,417)=30.32, p<0.001	0.51	8.89	7.18	26.66
Persuasiveness*	F(2,417)=17.55, p<0.001	0.39	2.95	2.36	6.11
Empathy*	F(2,417)=21.27, p<0.001	0.42	2.21	2.77	6.41
Sense of Community*	F(2,417)=15.75, p<0.001	0.36	2.13	1.95	5.65
Comfort Level*	F(2,417)=11.33, p<0.001	0.32	2.35	2.11	6.27

All three raters rated that both of the charitable campaigns were *not explicitly influenced or motivated by political agenda* (the second option).

D   MEASURES IN THE SURVEYS

Table 5 shows a list of representative survey questions from each factor. We used these factors to measure participants' reactions in the user study.

E   MANIPULATION CHECK OF STUDY 1

We started our analysis by first examining the validity of our design manipulation. We compared the responses of the political campaign survey and the news article survey against the control survey. We hypothesized that participants in the crowdfunding and news article groups would be less supportive of their attitude-inconsistent content than the participants in the control group. We had two independent variables for this analysis: user groups (crowdfunding group, news article group, and control group) and participants' political leaning (liberal vs. conservative). In addition to that, we had the following five dependent variables: 1) intended donation amount, 2) persuasiveness, 3) empathy, 4) sense of community, and 5) comfort level. Since we had multiple dependent variables, we performed a one-way MANOVA test to validate our hypothesis. We found a statistically significant difference between the three user groups on the combined dependent variable, $F(4, 414) = 31.72$, $p < 0.001$; Wilks' $\lambda = 0.78$ with a moderate effect size of 0.42. Follow-up univariate ANOVA tests with a Bonferroni adjusted α level of 0.008 showed that for all five dependent variables (intended donation amount, persuasiveness, empathy, sense of community, comfort

level), the three user groups are significantly different from each other.

Tukey posthoc tests showed that (as shown in Table 6) participants of the crowdfunding group and the news article group intended to donate significantly less money than participants of the control group ($F(2,417)=30.32$, $p<0.001$, effect size = 0.51). Furthermore, crowdfunding group and news article group participants felt significantly less empathy ($F(2,417)=21.27$, $p<0.001$, effect size = 0.42), less sense of community ($F(2,417)=15.75$, $p<0.001$, effect size = 0.36), and less comfortable ($F(2,417)=11.33$, $p<0.001$, effect size = 0.32) compared to participants of the control group. Additionally, crowdfunding group and news article group participants found their corresponding content significantly less persuasive ($F(2,417)=17.55$, $p<0.001$, effect size = 0.39) compared to the control group participants. No significant difference was found among participants of the crowdfunding group and the news article group. Overall, these findings indicate that participants in the crowdfunding group and the news article group were significantly less supportive of their attitude-inconsistent political content than the control group participants of their non-political campaign. Thus, these findings validated our study design.

F   VALIDATION OF THE FRAMING CONDITION OF STUDY 2

We started our analysis by validating the effectiveness of the framing manipulations. To this end, we analyzed the ratings of the framing validation survey. We included one survey question for each framing condition in our framing validation survey. We hypothesized that for the participants of a specific framing condition, the corresponding question's rating would be significantly higher

than the ratings of any other questions. We performed one-way MANOVA where the independent variable was the groups of different framing conditions and the dependent variables were the four survey questions regarding the sense of good fortune, personal merit, safety, and uncertainty.

There was a statistically significant difference among different framing groups on the combined dependent variables, $(F_{(10,400)} = 8.81, p<0.01$, Wilk's $\lambda = 0.72, \eta^2 = 0.53$ (effect size)). We further conducted univariate one-way ANOVAs to observe the significance for each dependent variable. We found a statistically significant difference in the sense of good fortune ratings between the participants of different framing condition groups, $F_{(5, 201)} = 11.82, p < .01$; partial $\eta^2 = .44$. Similarly, we found statistically significant differences among the participants of different framing condition groups for sense of personal merit ($F_{(5, 201)} = 11.94, p < .01$; partial $\eta^2 = .58$), sense of safety ($F_{(5, 201)} = 12.64, p < .01$; partial $\eta^2 = .45$), and sense of uncertainty ($F_{(5, 201)} = 11.97, p < .01$; partial $\eta^2 = .68$). Tukey posthoc tests showed that participants' sense of good fortune ratings in the conservative schema framing group was significantly higher than those in any other group. We found a similar trend for the sense of personal merit ratings, the sense of safety ratings, and the sense of uncertainty ratings. No other comparisons were statistically significant. These findings matched our initial hypothesis and thus, validated the effectiveness of our framing conditions.