

Mobilization under threat: Emotional appeals and dissent in autocracy

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Abstract

Although participation in opposition politics carries significant risks for many citizens, large numbers consistently turn out to support opposition parties. Why do citizens mobilize against threatening regimes despite the risk of high personal costs? Through an experiment carried out by an opposition party in Zimbabwe, test whether campaign appeals to opposition supporters' emotions affect their level of political participation in pro-opposition discussion groups. I find that across two different issues, randomly assigned anger appeals increase action on average by 0.38 standard deviations more than enthusiasm appeals with the same informational content. In real terms, this represents between 32% and 174% more participation in the groups assigned to the anger appeals across four different measures of participation. The effects may be strongest in areas with past repression. These results suggest that anger can be an important force for mobilizing political participation in repressive environments.

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1 Introduction

42% of the world's population lives in countries where political imprisonment and brutality are common.¹ All but about a dozen governments around the world held direct national elections between 2000 and 2006 (Hyde and Marinov, 2012). In many of these cases, opposition parties work to mobilize voters – to varying degrees of success – despite threats of punishment from ruling parties that are unwilling to submit to competitive elections. The threat of coercion is a major impediment to competitiveness in elections in Africa in particular: across the 36 countries surveyed during the sixth round of the Afrobarometer survey, 46% of citizens reported that they fear violence during elections. Fear of violence is higher in autocratic countries, and this survey excludes more repressive autocracies such as Ethiopia, Eritrea, Rwanda, the Republic of Congo, and Angola.

Thus, though most Africans have the opportunity to vote, for large proportions of citizens voting can carry severe consequences. Yet despite the risk, millions continue to turn out to support opposition parties such as the Movement for Democratic Change in Zimbabwe in 2008, the Coalition for Unity and Democracy in Ethiopia in 2005, and Combat for Political Change in Togo in 2015. Why do citizens in repressive regimes take the risk of engaging in pro-opposition politics? How do these opposition parties mobilize their supporters to act despite the threat of repression?

Emotions may be one tool that political entrepreneurs use to influence citizens. Emotions are almost ubiquitous in political acts such as canvassing, protest, and speech. Are emotions important to understand participation in risky political actions? Although case studies have richly documented how emotions occur during political participation, it has been difficult to quantify the extent to which they matter, or identify at what point they influence behavior. Understanding whether individuals are more likely to participate when they experience certain emotions requires that we isolate the causal effect of an emotion, which is often confounded with information or personal characteristics. Both of these are particularly difficult to do in an environment like an electoral autocracy in Africa where emotions may in fact have the largest effect on mobilization.

¹The assessment of state repression is based on living in a country rated as a 4 or 5 on the Human Rights Watch indicator of the Political Terror Scale. Population data is from the United Nations. Most recent available data is from 2014.

I bring evidence to bear on the question of how emotions influence political participation in a high-risk environment by partnering with an opposition party in Zimbabwe to conduct a field experiment testing the impact of campaign appeals with different emotional content. Zimbabwe is an electoral autocracy where 61% of citizens during the 2015 Afrobarometer reported fear of violence during elections. Though Zimbabwe was experiencing relatively low and infrequent political violence at the time of this experiment (Freedom House, 2015), opposition supporters have faced severe levels of political violence, particularly around election time, for the past fifteen years. This violence most recently peaked in 2008 when more than a hundred were killed and thousands assaulted or displaced after the ruling party lost the first round of the presidential election (HRW, 2008; Bratton and Masunungure, 2008; Sachikonye, 2011).

This experiment was conceived and carried out by an opposition party that was founded in 2013 after an election that revealed a loss of public support for the main opposition party Movement for Democratic Change. The party was founded out of a Christian prayer network and has a small but national base of support built through the network and a series of rallies that they ran in eight out of ten of Zimbabwe's provinces in 2014. After these rallies, the party set up a communications infrastructure using the mobile messaging application WhatsApp to create chat groups in constituencies where they had supporters. In this experiment, they randomly assigned these WhatsApp groups to receive angry or enthusiastic campaign messages with the same informational content, after which I used the anonymized transcripts from the groups to track how the appeals affected the party's supporters. The party designed two rounds of image- and video-based messages that had the same information but invoked anger or enthusiasm using images, music, and small deviations in the wording of the ads.

I find that anger appeals lead to significantly more pro-opposition participation. Specifically, participation was 0.38 standard deviations higher in groups that received the anger appeal compared to those that received the enthusiasm appeal on an index of pro-opposition participation. This translates into 2.7 additional messages sent out, 0.8 additional participants, 0.4 additional repetitions of the party slogan, and 0.8 additional party symbols being sent out in the average group that

received the anger appeal compared to the average group that received the enthusiasm appeal. There is some evidence that these effects are stronger with voters in constituencies that were exposed to past violence. These findings suggest that anger can be an important factor in efforts to increase political mobilization in repressive contexts.

This study builds on recent empirical work documenting that partisan concerns and the mobilization strategies of political parties matter, even in the context of high levels of vote buying and intimidation, in explaining transitions to democracy (Bunce and Wolchik, 2011), opposition party vote share and consolidation (LeBas, 2011), and party identification (Bratton et al., 2012). This study tests those claims at a micro level using random assignment to identify causal relationships in a real political setting.

The idea that anger is a powerful mobilizing tool is grounded in many foundational theories of mass mobilization. Gurr (1970), for instance, similarly argues that the anger caused by relative deprivation enables citizens to overcome the collective action dilemma, and that this anger is even redoubled by the threat of repression. Scott similarly argues that dissent is experienced as “a loss of temper, a rush of anger that overwhelms one’s deliberative self rather than an act of calculated anger” (Scott, 1990, 218). In cases ranging from the wave of democratizations that swept across Africa in the early 1990s to the Arab Spring, anger over declines in the standard of living or repression have been pointed to as a catalyst for the onset and spread of pro-democracy protest movements (Bratton and Van de Walle, 1992; Pearlman, 2013).

Furthermore, this study adds to the literature on the role of emotions in political participation. There is a large body of research in political science showing qualitatively that emotions matter in launching and sustaining participation in politics. Much of this has examined the impact of communications in a lab setting with subjects often recruited from university student bodies (Valentino et al., 2011; Weber, 2013). My study is one of a few recent experiments that uses information and communication technology to randomly assign subjects in a real-life setting to exposure to messages with different emotional content (Ryan (2012) is another example from the U.S. setting using Facebook to deliver treatments). Testing whether the findings of experiments

conducted largely with American students extend to real, highly contentious political settings is an important contribution to this literature.

2 Theories of Emotions in Political Mobilization

Decisions about political participation take place in highly emotional environments. This may be even more true in repressive political systems where the threat of violence leads to acute and frequent fear and anger. In this section, I synthesize research in neurology, psychology, and behavioral economics to draw conclusions about how anger and enthusiasm appeals should influence opposition supporters in an electoral autocracy.

2.1 Emotions, cognition and behavior

Emotions play an integral role in decision-making and cognition of all kinds, including decisions about political participation. Emotions are patterned chemical and electrochemical processes triggered by dedicated brain regions in response to a stimulus that cause changes in how the body and brain functions that may prepare an individual for action (Damasio, 2000). These include physiological changes to the autonomic nervous system including breathing patterns and heart rate changes in cognitive functions such as memory and attention. Anger, for example, is related to activity in the left anterior region of the brain, which is also related to lack of inhibition and action (Harmon-Jones and Sigelman, 2001; Murphy et al., 2003). In addition, there is evidence that it is associated with changes in peripheral physiology like blood flow to the hands that might prepare an individual to fight (Ekman et al., 1983).

As a result, emotions are associated with action tendencies, particularly approach and avoidance responses (Frijda, 1986). Some have argued that these action tendencies enable organisms to react to a potentially valuable or dangerous stimulus faster than the logical response to that stimulus can be formulated (LeDoux, 1996; Keltner and Gross, 1999). Anger is associated with a desire to change the status quo, remove obstacles, or hurt a target (Frijda et al., 1989; Roseman et al., 1994).

The Appraisal Tendency Framework (ATF) proposes a view of emotions as both being caused by and causing cognitive appraisals that lead to action (Lerner and Keltner, 2000, 2001). ATF builds on a view that emotions are characterized by six different cognitive dimensions: certainty, pleasantness, attentional activity, control, anticipated effort, and responsibility (Smith and Ellsworth, 1985). Anger, for instance, arises from appraisals of “(a) other-responsibility for negative events, (b) individual control, and (c) a sense of certainty about what happened” (Lerner and Keltner, 2000, 476). In turn, anger has been shown to have causal effects on judgment, decision-making and behavior. Individuals who have been experimentally induced to feel anger have been shown to make stronger attributions of responsibility and causality, even in unrelated domains (Keltner et al., 1993; Goldberg et al., 1999), more optimistic perceptions of risks (Lerner and Keltner, 2001; Lerner et al., 2003), more heuristic processing (Bodenhausen et al., 1994), and stronger preferences for punitive or aggressive policies or actions (Lerner et al., 1998, 2003).

Similarly to anger, enthusiasm is seen as an emotion governed by the mental system designed to respond to incentives (called the appetitive, incentive or approach system), while anxiety is part of a separate system that monitors and reacts to threats (the aversive, threat or avoidance system) (Carver, 2004; Carver and Harmon-Jones, 2009). Enthusiasm is activated when progress towards incentives exceeds expectations, or has the potential to do so, while anger is triggered when progress is blocked (Frijda, 1986). This framework has led some to predict that anger and enthusiasm should have similar effects, but that the effect of anger on behavior should dominate that of enthusiasm because it stems from a negative appraisal:

“Anger and enthusiasm, then, both lead us to take action in order to achieve or preserve goals. Those who are angry may struggle even harder to reach a positive outcome. Those who are enthusiastic may also take positive action to continue their success, though the effect may be weaker than is the case for anger.”

(Valentino et al., 2011, 43)

2.2 Emotional appeals in politics

Emotional appeals are common in political campaigns. Political messages appeal to anger about the state of the nation, enthusiasm for a candidate or policy, and fear of threats to the nation or what might happen should a certain candidate be elected. In less institutionalized electoral environments, fear appeals may also involve threats directed at individuals or groups. Brader (2006) defines an emotional appeal as “any communication that is intended to elicit an emotional response from some or all who receive it” (68-69). Emotions in political communications can influence decision-making in two ways. First, emotions can trigger automatic action responses before cognitive processes come to conclusions about what actions are required in a given situation (LeDoux, 1996). Activists, for instance, describe putting people into “attack mode” by transforming “inchoate anxieties and fears... into moral indignation and anger toward concrete policies and decision-makers” (Jasper, 2008, 107). Second, emotions change how cognitive processes function. Emotions in political communications may make their targets more hasty in their decision-making, less skeptical, or more likely to question their preexisting beliefs.

Emotional appeals are often transmitted through images, sounds, and ideas that trigger emotional responses (Brader, 2006). This emotional content is processed quickly and non-cognitively and then shapes how the informational message is subsequently received. While emotional and informational content are clearly linked, the fact that they are transmitted through different mediums and the generally low level of informational content in political ads means that the emotional content can be isolated and experimentally manipulated to measure the causal effect of emotions in political appeals.

The study of emotional appeals using lab and field experiments has a long history in American politics (for a very early example, see Hartmann (1936)). Existing work on emotional appeals began by analyzing appeals based only on whether the emotional valence of the ads was positive or negative. These early studies that pooled emotional appeals using anger and fear found mixed results, with some showing that negative appeals demobilized voters (Ansolabehere et al., 1994; Ansolabehere, 1995), and others that anxiety appeals had mobilizing effects (Marcus and MacKuen,

1993). However, more recent work that disaggregates appeals based on whether they invoke anger or fear has generally found that ads that invoke anger mobilize political action (Miller and Krosnick, 2004; Ryan, 2012; Weber, 2013) while fear stimulates attention, information seeking, and more complex cognitive processes, but not action (Brader, 2005, 2006). These experiments testing the impact of specific political ads are supported by a number of lab experiments and correlational studies testing for the effect of emotions invoked in a domain unrelated to politics on subsequent political decisions and behavior that also show that anger is related to higher levels of political participation and action (Huddy et al., 2007; Valentino et al., 2011; Groenendyk and Banks, 2014).

2.3 Emotions in the context of repression

There are several reasons to expect that the role of emotions in political mobilization may be even greater in a repressive context. In weak democracies or autocracies where political participation is risky, citizens must weigh the cost and benefit of political participation. In consolidated democracies, the main barrier is the opportunity cost, while in electoral autocracies, the cost includes the risk of significant economic or physical sanctions. Emotional appeals by opposition or pro-democracy groups may be even more important in this context.

First, citizens in repressive environments may react more strongly to negative appeals that focus on thwarted goals because they have stronger grievances than citizens in open and responsive political systems. Much of the foundational work on emotions in politics has focused on the role of emotions in protest under dangerous conditions, including the U.S. civil rights movement, the Solidarity movement in Poland, and ethnic violence in the Balkans (Petersen, 2002; Jasper, 2008; Goodwin et al., 2009). In countries with unresponsive political institutions, the average citizen may feel more anger about politics than a citizen living in a developed democracy. In such contexts, the stakes and the personal risks are extremely high, and emotions may be both strong enough and necessary to explain participation.

Second, political participation in repressive environments is thought to depend heavily on the risk of repression (Kuran, 1991; Lohmann, 1993), and this is likely to be influenced by emotions.

Signals of the risk of repression in autocracy are rare and often ambiguous (Stern and Hassid, 2012; Stern and O'Brien, 2012). Emotions such as anger and fear influence how people perceive risks, and particularly whether they are optimistic or pessimistic about risks (Johnson and Tversky, 1983; Lerner and Keltner, 2000; Lerner et al., 2003). Results from a lab-in-the-field experiment in Zimbabwe show that fear—even fear induced in a context unrelated to politics—has a strong effect on the perceived risk of repression and propensity to take pro-opposition action (Young, 2017). If anger has the opposite effect, as predicted by appraisal tendency theory, then anger appeals may be even more influential in repressive environments than in those where civil liberties are protected.

2.4 Predictions

I test the following hypotheses about how party communications affect willingness of supporters to take action in a repressive context. These hypotheses were pre-registered with the EGAP design registry in March 2015 before the first treatments were sent out. An update with more detailed descriptions of the analyses was added before the researcher obtained the data in May 2015.² The first hypothesis makes a prediction about the overall effectiveness of the anger appeal relative to the enthusiasm appeal, which the remaining three are focused on predicting where the relative effect of the anger appeal will be largest.

H1: Anger appeals will generate more pro-opposition action than enthusiasm appeals.

Both anger and enthusiasm are approach- or action-oriented emotions and so are more likely than other emotions to engender action. Depending on whether an individual is reaching his goals more or less quickly than expected, he might experience either enthusiasm or anger. Both emotions have the action tendency of spurring individuals to either continue making progress or increase the effort to make progress towards a goal. Anger, however, should have a stronger action tendency than enthusiasm because it is associated with appraisals that goals are being thwarted (Valentino et al., 2011).

H2: Anger appeals will have an even larger impact in areas with high socioeconomic status.

²The pre-registration document can be downloaded at [url masked](#).

People with higher socioeconomic status should be more susceptible to feel anger in response to an anger appeal if they have higher levels of self-efficacy. Because self-efficacy is primarily developed through experiences of mastery, marginalized individuals are less likely to have the opportunity to develop a high sense of their own self-efficacy (Bandura, 1982). People with higher internal efficacy are more likely to perceive negative situations as challenges that they have the capacity to control and therefore respond to them with anger. General self-efficacy has been linked to higher participation in several forms of political actions, including participation in political campaigns (Rudolph et al., 2000) and calling in on radio shows (Newhagen, 1994). Lab experiments have also shown that the greater propensity of high-self-efficacy individuals to respond to a negative situation with anger underlies this correlation between self-efficacy and participation (Valentino et al., 2009). Recent experiments using Mechanical Turk show that the poor are indeed more likely to be demobilized by high-intensity challenges, while those who are better off are actually more mobilized by these situations (Denny, 2016).

H3: Anger appeals will have an even larger impact in areas that have experienced more past repression.

Two factors should influence the relative effectiveness of anger appeals in areas that have experienced past repression. First, people who have faced more past repression may have stronger grievances and thus be more likely to respond with anger to an anger appeal. Second, people who face a higher risk of repression may be more susceptible to change their behavior due to shifts in their perceptions of the risk of repression due to the cognitive effects of anger.

H4: Anger appeals will be more effective in conjunction with messages that emphasize personal power and control.

Appraisal tendency theory predicts that appraisals of certainty and control should reinforce feelings of anger (Lerner and Keltner, 2000). A second layer of messaging emphasizing that the supporters have the power to bring change should reinforce the angry emotion in the ads.

3 Research Design

Estimating the causal impact of emotional appeals on political mobilization in a repressive environment is difficult due to a number of factors. First, identifying the causal impact of emotions requires exogenous variation in exposure to emotional appeals. Without exogenous variation, it is impossible to prove definitively that it is the emotional appeal and not something about the type of people who select into exposure to different appeals or another correlated factor that is driving a relationship between emotional appeals and participation. In this case, I use random assignment of citizens to different emotional appeals to identify the impact of emotions on action.

Second, isolating the effect of emotions requires that the information in the messages be held constant. Citizens should not learn anything new about the political party or the state of the nation from these messages. To hold information constant, the political party that I partnered with agreed to create two versions of the same ad that varied only in the images, music, and small variations in wording. In both messages, the images depict generic, common scenes that all Zimbabweans recognize such as country roads, clinics, and homesteads. The text in both versions of the appeals provides the same information about the party's position and the state of the nation.

Third, studying political participation in an electoral autocracy comes with significant ethical and logistical challenges. This project would not have been possible without the collaboration of an innovative opposition party called Transform Zimbabwe (TZ) that was interested empirically testing how to mobilize its supporters. TZ regularly sends out communications to its supporters and did not fundamentally change its operations during the course of this experiment; they simply introduced random variation in the specific message that went out at a given time. TZ crafted and produced the messages and created and managed the chat groups. The researcher's role was to provide information on the research design and to analyze the anonymized data. TZ's supporters voluntarily joined the WhatsApp groups with knowledge that they would be receiving political messages. To formalize this agreement, a Memorandum of Understanding was signed between the president of TZ and the provost of Columbia University that detailed each party's role and responsibilities.

Fourth, I wanted to choose an outcome measure that was at once behavioral, meaningful, and within the level of risk that TZ's supporters had accepted to take. Although TZ also mobilizes its supporters to engage in actions such as attending rallies and voting, for the experiment we decided to focus on political speech. Opposition supporters believe that political speech, including on social media, is taken seriously by the regime. Around the time of the experiment, a meme making fun of a stumble by the nonagenarian president was being circulated, along with rumors that the police and secret service were randomly entering buses and taking sanctioning people if they had any of these images on their phones.

4 The Zimbabwean context

Since gaining independence in 1980, Zimbabwe has held regular, contested elections but these have not resulted in any peaceful transitions of power between parties, in part because of the ruling party's use of repression. The ruling party ZANU-PF grew out of the independence struggle and enjoyed popular support in the 1980s that diminished in the 1990s in part due to a severe structural adjustment program (LeBas, 2011).

ZANU-PF has relied heavily on repression to suppress dissent at multiple points in its history. Shortly after independence in the 1980s, ZANU-PF deployed its armed forces into the Matabeleland region, purportedly for national security purposes. According to independent observers affiliated with the Catholic church, as many as 20,000 citizens were killed by the ZANU-PF government during this period (Catholic Commission for Justice and Peace in Zimbabwe (CCJPZ), 1997). Although electoral competition dropped from 1980 to the late 1990s (Sithole and Makumbe, 1997), in 1999 an opposition party called the Movement for Democratic Change (MDC) grew out of the country's major trade union and began to pose a credible threat to the regime. Shortly after the unexpected defeat of ZANU-PF's proposed constitution in a referendum, a new wave of violence against opposition supporters and organizers began. In addition, the government began tacitly encouraging its supporters to invade white commercial farms and stopped protecting the farmers,

who had been an important source of funding and mobilization for the opposition during the referendum (LeBas, 2006).

Since 2000, repressive violence by the ruling party targeting opposition supporters and organizers has taken a number of forms. In 2001 the government initiated a national youth training program that created a nationwide militia for the party. These militia set up bases around the country and began using more sophisticated forms of torture (Reeler, 2003; Sachikonye, 2011). Party agents, youth wing members, members of the association of independence war veterans, soldiers, and traditional leaders have all played a role in organizing intimidation campaigns around recent elections (Bratton and Masunungure, 2008).

Violent repression reached a peak during the 2008 elections, which took place in a context of hyperinflation, deindustrialization and the collapse of public services. Before the first round, violence began to escalate. Civil society leaders described violence during this period as “a tool of intimidation. By beating up people like Tsvangirai [the opposition presidential candidate] they are sending the message that no one is safe. And when word gets out into the rural areas that you are not safe, this will have enormous impact” (civil society leader Reginald Matchaba-Hove, quoted in OSISA, 8, 2007).

As the votes in the March 2008 election came in, it became clear that ZANU-PF had lost its parliamentary majority and the office of the presidency. At this point, “the party-state launched a terror campaign of a scope and intensity never before seen in Zimbabwe” (Bratton and Masunungure, 2008, 51). This campaign was centrally controlled under the leadership of the Defense Minister Emmerson Mnangagwa (HRW, 2008). Violence during this period was marked by public assault and killings, and the increasing use of graphic forms of torture. Sachikonye noted that the “widespread but calculated use of torture as an instrument to punish the opposition and cause fear amongst its ranks” by the police, military, and militias (2011, p88).

In response, opposition leader Morgan Tsvangirai pulled out of the run-off election scheduled for July 2008. Negotiations brokered by the international community between the government and the opposition led to the formation of a coalition government with Robert Mugabe remaining as

president and Tsvangirai serving as prime minister. Although economic conditions in the country improved dramatically under the coalition agreement, entry into government in February 2009 was the beginning of the MDC's loss of popular support (Bratton and Masunungure, 2012). The MDC, focused on skirmishes over parliamentary procedures and largely dismissive of polls showing that they had lost support, ran an anemic campaign in 2013 (Zamchiya, 2013). By contrast, the ZANU-PF 2013 campaign was "slick, well-funded, united and peaceful" (Tendi, 2013). ZANU-PF won by large margins at the presidential and parliamentary levels.

Post-2013, both ZANU-PF and the MDC fell into succession battles. In 2014 President Mugabe fired his vice president and potential successor Joice Mujuru, purged her supporters from national and regional posts, and promoted his unpopular wife Grace Mugabe to a powerful position as head of the ZANU-PF women's league (Freedom House, 2015). At the same time, the MDC's defeat "catalysed and consolidated sentiment against Tsvangirai who had now lost three presidential elections" (ICG, 2014, 10). A faction led by core members of the MDC leadership split off, creating a third MDC in addition to an earlier regional faction that had split in 2005 (ICG, 2014).

As a result of both ruling party and opposition members being expelled from their parties, a series of by-elections for parliamentary seats were held in 2015 around the time of the fieldwork for this study. The MDC boycotted these elections, leaving ZANU-PF to compete against some of its former members running independents and smaller opposition parties. In cases where the ruling party candidate faced a popular opponent, the elections were preceded with threats and attacks on candidates as well as efforts to monitor, buy off and intimidate voters. Low-level violence occurred sporadically, and was primarily perpetrated by and against members of the same party as part of factional struggles. It is in this context of a long history of repressive violence and growing dissatisfaction with both the ruling party and the opposition that this study took place.

5 Research design

This experiment was carried out by Transform Zimbabwe with two types of messages in two waves. The messages in each wave focused on the same issue (infrastructure and especially road maintenance in the first wave, and health in the second wave) but one of the messages was designed to make supporters angry while the other was designed to make them purely enthusiastic. Both had little informational content and included the same information about the party and its platform. Thus, comparing the effects of these messages allows us to measure the relative effectiveness of anger and enthusiasm messages on mobilizing TZ's supporters.

5.1 Description of the treatments

This experiment was carried out using a factorial design implemented over two rounds. Specifically, the design crossed an emotional appeal with a pre-appeal message emphasizing either that the party's supporters have sufficient power to transform Zimbabwe or that they had been repressed in the past. The emotional content of the ads was re-emphasized in follow-up messages in text both before and after the image or video went out.

During both rounds of the experiment, treatment was administered during a three-hour window during which the party sent out a series of messages to its WhatsApp groups. First, they sent out a message at approximately 3pm with the message emphasizing power or the lack of power. For groups assigned to the treatment condition for this secondary treatment, they received a greeting message that notified them that they would get a special communication material that ended with the sentence: "We have the power to transform Zimbabwe!" For groups assigned to the control for this secondary treatment, the introductory message ended in "Our transformation has been held back for too long!"

At approximately 4pm, the emotional appeal went out, along with a text message reiterating the appeal for supporters who did not have sufficient data to download the media. During the first round, the main treatment consisted of an image or video that presented an issue, namely infrastructure

development or health, in either a positive or negative light. Figure A2 in the Appendix displays the content of the images used in the first round. During the second round, the treatment was a dramatic video that depicted a story of a grandmother seeking treatment for her sick granddaughter in present-day Zimbabwe. In the anger version of the video, the grandmother brings her granddaughter to a rural clinic with no medicine, and then the truck she is traveling in breaks down in a pothole on the way to a district hospital. At the hospital the grandmother waits for a long time and then loses her spot to a man who bribes the nurse. In the enthusiasm version of the video, presented as the Zimbabwe of the future, the granddaughter gets treated well by a nurse at the rural clinic and then travels by car to the district hospital. She is treated there by a professional nurse and in the last scene comes home healthy from school the next day. Figures A3 and A4 in the Appendix shows screenshots of the anger and enthusiasm videos that were used in round two.

These treatments were followed up in approximately one hour with a message asking the group members “Are you angry / hopeful yet? Join Transform Zimbabwe today!”

5.2 Randomization and implementation

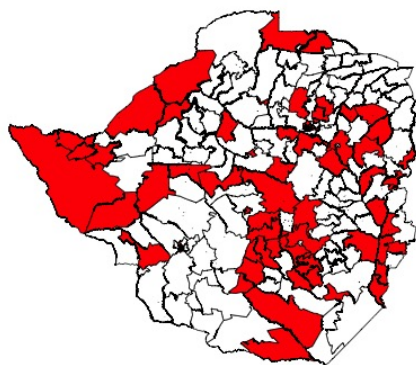
Randomization was carried out in R. WhatsApp groups were block randomized based on the province and size (above or below the province’s median group size). For both rounds, randomization was carried out within a few hours of when the first messages were sent out.

The messages were sent out to 929 TZ supporters who had joined a total of 85 groups in two rounds: 703 supporters in 64 groups in the first round on March 20, 2015, and 929 supporters in 85 groups in the second round on April 3, 2015. Figure 1 shows in red that TZ has constituency-level WhatsApp groups that were part of the experiment in every province in Zimbabwe.

The activity in the groups was monitored for 24 hours before and after the messages were sent out. It was anonymized and shared with the Columbia researcher for analysis. I chose 24 hours as the window to measure outcomes by balancing concerns that network coverage gaps could delay some groups from getting the messages for up to half a day, and wanting to hone in on the immediate, heat-of-the-moment response that individuals had to the appeals.

Figure 1: Constituencies where TZ has WhatsApp groups

(a) All Zimbabwe



(b) Harare



Messages were distributed in English with some introductory greetings in the local languages of Shona or Ndebele depending on the language of the group members, according to the standard practices of the party.

There was some noncompliance due to administrative difficulties within the TZ communications team. Ten of the 150 groups in the experiment (5 assigned to treatment and 5 assigned to control) did not receive the full treatment. However, all of these groups received some part of the treatment. Two groups assigned to the treatment received the control version of the messages, and one group received both the treatment and control versions of the messages.

5.3 Empirical strategy and estimation

5.3.1 Main effects

To test the main hypothesis that the anger appeal would generate more participation than the pure enthusiasm appeal, I estimate the intent-to-treat (ITT) effect using a difference-in-means test.³

I use inverse propensity score weighting to account for the fact that not every unit had an equal

³The results are also similar using a non-parametric test based on randomization inference. This analysis is presented in Appendix ??.

probability of being assigned to treatment. Because this hypothesis specified a direction of the effect, I use a one-sided test of significance.

As indicators of pro-opposition participation, I measured how TZ's supporters responded to the messages with four different metrics:

- Number of messages sent
- Number of supporters who responded
- Number of party slogans ("Viva!")
- Number of party symbols (a V-for-victory sign)

The first two indicators – number of messages and number of respondents – reflect the quantity of the response to the messages. The last two – number of times supporters responded with the party slogan and the number of times they sent the party symbol – reflect the level of enthusiasm of respondents. The primary hypothesis test is based on a mean effects index using all four outcome indicators, although I also show results here testing for the subcomponents that measure quality and those that measure quantity separately.

Figure 2 shows an anonymized transcript of one of the groups assigned to the anger condition. You can see in this transcript that the participants speak in a mix of English and local languages, abbreviations and slang, and how they use the slogan "viva" and the "v for victory" party symbol to express enthusiasm.

The text was lightly pre-processed before these counts were taken. Text shared by a multi-lingual groups in social media chat groups has characteristics that make pre-processing difficult. For instance, participants often use variation in spelling to signal levels of enthusiasm: writing "vivaaaaa" in this context communicates more excitement than "viva." Typical text processing steps like stemming words is not possible when some words are written without punctuation and some words are written without spaces: for example, in the transcript, "hwzt" replaces "how is it?" Emoticons were processed as unicode. For all of these reasons, I limited the preprocessing of the text to simply making everything lower case and chose metrics that depend little on the language being used. "Viva" is the party slogan in every language and is interspersed in written text in Shona,

Figure 2: Example transcript

admin01: Maswera sei mhuri yeZimbabwe! We will be sending you a special video message this afternoon. Our transformation has been held for too long

sub01: Hie guyz

sub02: Bhoo hwzt

sub01: Gud howiz admin01?

sub03: Eagerly waiting for the video my dear sister.

sub01: Viva viva

sub01: Stil waiting for the videos my sistr

sub04: Viva TZ Viva

sub01: Viva

sub05: Waiting for the video

admin01: Today, Zimbabweans die of treatable diseases because our health system is broken. Service delivery and Infrastructure Development will be President Ngarivhume's top priority in his first term in 2018. Join Transform Zimbabwe now!

sub05: In Tonga we say TULIBASAKWA BALOMBI ba TZ

admin01: Are you angry yet? Join Transform Zimbabwe today!

sub04: 🙄🙄

sub04: Viva🙄viva

sub01: Viva tz

sub01: Transform zimba today !!!!

sub04: M ready to transform my country viva Tz viva

sub04: Viva TZimbabwe viva

sub01: Viva tz viva

sub05: I m also ready to transform zim TZ VIVA bazovuma come 2018

sub01: Viva tz

sub01: Viva tz come 2018

sub04: 🏃🏃 yho000 come 2018 i cnt wait

sub01: Are u ready to transform zimbabwe ?

sub04: 🙄

sub04: 🙄

sub01: Jus say viva tz viva

sub01: 🙄

Ndebele, and Tonga. The number of messages and respondents is also independent of language or the balance of slang and formal text.⁴

I also tracked whether the party received donations from each constituency via mobile money transfer. However, because of concerns that few people would donate, in the pre-analysis plan I included a condition that if fewer than 20 donations in total were made in the 24 hours after the treatments were distributed, I would not analyze donations as an outcome. Donations did not meet this threshold, are thus are not analyzed here.

⁴Although I preregistered an outcome measuring the count of the number of words sent out by respondents, I replaced it with the number of messages for several reasons. First, the number of words used to communicate the same idea varies significantly across languages. In Shona, a clause such as “I am going to go” would likely be written as a single word. Second, the number of words varies based on the amount of slang used. Third, many words are run together because of typos: for example, “Viva[symbol]viva” in the transcript would be counted as one word due to lack of spacing. Therefore, it is ambiguous whether excitement would be signaled by more or fewer words if excited participants use more vernacular, slang, abbreviations, or typos.

5.3.2 Heterogeneous effects

The remaining three hypotheses make predictions about where the anger appeal will have the largest effect relative to the enthusiasm appeal. I test for these heterogeneous effects using the following specification:

$$Y_{t=1} = \tau_1 Z_{anger} \times X_{poverty} + \tau_2 Z_{anger} \times X_{violence} + \tau_3 Z_{anger} \times Z_{power} + \gamma Y_{t=0} + \theta X_{controls} + \varepsilon$$

where Z_{anger} is a dummy variable indicating assignment to the anger appeal, and Z_{power} is a dummy indicating assignment to the initial message emphasizing personal power. The coefficients on the interaction term $Z_{anger} \times X_{poverty}$ represents the differential impact of the anger treatment in areas with varying levels of poverty and the coefficient on $Z_{anger} \times X_{violence}$ represents the differential impact of the anger treatment in areas that experienced violence in the 2008 elections. $Y_{t=1}$ is the post-treatment measure of the relevant outcome (the mean effects index or sub-indices), while $Y_{t=0}$ is a measure of the pre-treatment outcome of interest. $X_{controls}$ includes the direct effects of all of the components of the interaction terms (the two treatments, poverty, and past violence), as well as the number of members in each group. In some specifications, I also include province fixed effects and interactions between other baseline characteristics and the anger treatment as additional controls. I continue to use inverse-propensity weights to take into account variation in the propensity for treatment across blocks.

To measure past exposure to violence, I use data collected by a civil society group called Sokwanele from the 2008 electoral crisis, the last major episode of electoral violence that the country has experienced and for which I have data at the constituency level. Sokwanele's data is collected from reports of citizens and service providers for victims of political violence. I use a logged and normalized measure of the total number of violent events around the 2008 election.

To measure poverty, I use the anthropogenic data of children under five from the most recent Demographic and Health Surveys (DHS), averaged for all the enumeration areas within the con-

stituency boundaries that were used to define the WhatsApp groups.⁵ My measure of poverty is the normalized inverse of the weight-for-height z -scores of children under five.

Figures 3 show maps of the distribution of exposure to violence and wasting.

6 Results

I carry out the analysis in three parts. First, I present the results of tests of the hypothesis that the anger appeal induced more participation. Second, I use the regression analysis to explore whether the effect is consistent over time and across the individual outcome measures. Third, I test for heterogeneous effects of the treatment effects by poverty level and past exposure to violence. In this paper, I present the pre-specified analysis with some supplementary figures and robustness checks. Appendix G has more details on how I operationalized each pre-registered analysis, and where I deviated from this pre-analysis plan.

6.1 Main effects

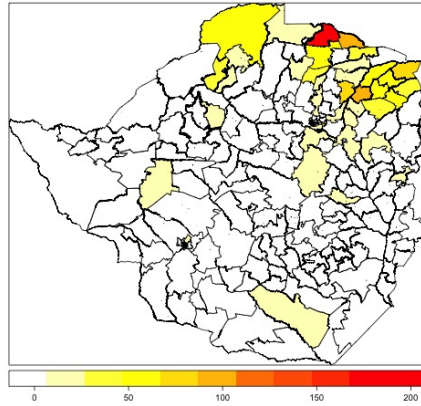
First I present estimates of the ITT and the results of hypothesis tests that the anger messages caused more participation than the enthusiasm messages. Table 1 shows the mean levels for the full mean effects index, mean effects indices of the quantity and quality (enthusiasm) of the response, and the individual components that I measured for the groups that received the anger and enthusiasm messages.

Table 1 presents the mean values of the outcome indices for the groups assigned to receive the anger and enthusiasm messages, along with the p -values associated with tests of the hypothesis that the anger groups' outcomes are larger than the enthusiasm groups' outcomes. The third column presents the unadjusted p -value calculated using randomization inference based on 10,000 permutations, which uses the existing variation in the data to test the sharp null hypothesis of no effect for any unit. The third and fourth columns present the p -values with two different corrections

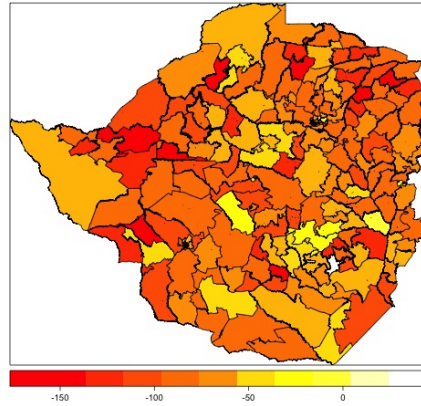
⁵Most of the constituencies (136 out of 150) can be matched with 2012 data, but for 14 constituencies 2005 DHS data is the most recent available.

Figure 3: Maps of Poverty and Violence by Constituency

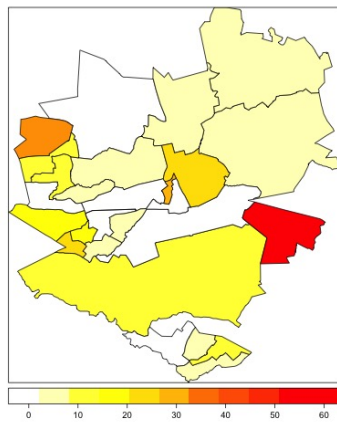
(a) Violence in 2008 (Sokwanele)



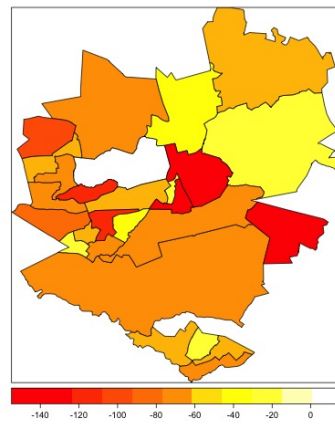
(b) Wasting in 2011 (DHS)



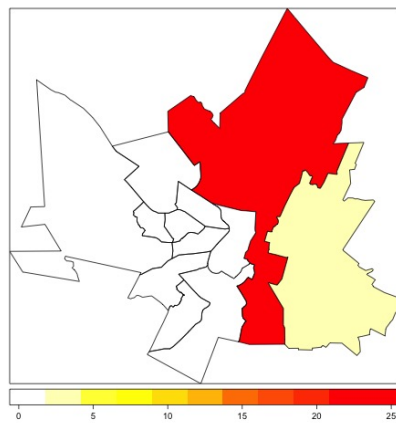
(c) Violence - Harare



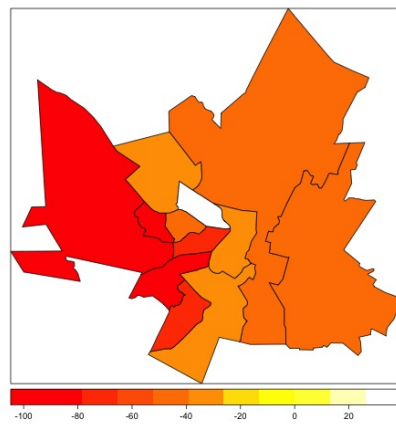
(d) Wasting - Harare



(e) Violence - Bulawayo



(f) Wasting - Bulawayo



for multiple comparisons for the sub-indices. I do not show a multiple comparisons correction for the total effects index because there is only one test of the total effect of the anger messages.

Table 1: Difference-in-means tests

	ITT	<i>p</i> -value		
		unadjusted	FDR	FWER
Mean Index - Total	0.378	0.015	-	-
Mean Index - Quantity	0.268	0.070	0.070	0.070
Mean Index - Quality	0.489	0.017	0.034	0.034

The unit of analysis is the WhatsApp group, and all calculations are based on the full sample with $N = 150$. The outcome in Row 1 is a total mean effects index based on the number of post-treatment respondents, messages, symbols and slogans, while the outcomes in Row 2 and 3 are mean effects indices based on only the number of respondents and messages, or symbols and slogans, respectively. The ITTs are estimated using OLS with weights based on the inverse propensity of being assigned to the unit's realized treatment status. The *p*-values in Column 2 are estimated using randomization inference. The adjusted *p*-values in Columns 3 and 4 are corrected using the Benjamini and Hochberg (1995) and Holm (1979) formulas, respectively.

The third column presents the *p*-value after adjusting to take the false discovery rate into account using the Benjamini and Hochberg (1995) formula. The fourth column presents the *p*-value after adjusting to take the family-wise error rate into account using the Holm (1979) correction.

Table 1 shows that using simple comparisons of means, the anger treatment generates significantly more pro-opposition action than the enthusiasm control. This overall result is significant at the 5% level. Based on this test, we can conclude that the anger messages were significantly more effective in generating participation than the purely enthusiastic messages.

The hypothesis test using the quality sub-index is significant at the 5% level, and the test using the quantity sub-index is significant at the 10% level, with and without correcting for multiple comparisons. Results on the individual measures are shown in Appendix Table A1, and results based on parametric difference-in-means tests and with controls are presented in Appendix Tables A2 and A3, respectively.

This effect is driven by substantively large and consistently positive increases in all four of the sub-indicators. Table 2 shows that the treatment outcomes are between 32 and 174% larger than the control outcomes across all four measures. The percent increase in Column 3 represents the ITT estimated with inverse propensity weights divided by the mean of the control group that received purely enthusiastic messages.

Table 2: Treatment outcomes as percent increases over control outcomes

	Enthusiasm Mean	Anger Mean	Percent Increase
Messages	4.78	7.51	40%
Respondents	1.93	2.74	32%
Slogans	0.93	1.37	36%
Symbols	0.57	1.37	174%

In addition, the effect of the anger treatment is stable over time. To examine the robustness of the ITT to different time periods, I create increasingly large windows of time around the treatment in three-hour increments and estimate the ITT with each outcome.

Figure 4: ITTs over time - Mean Index

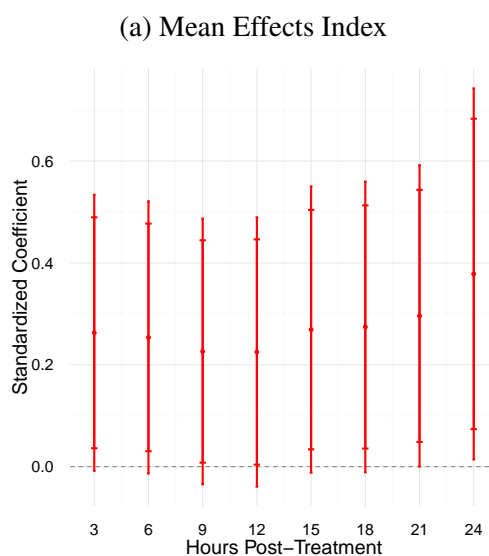


Figure 4 shows that the effect is more precisely estimated in the earlier windows, and slightly larger in the later windows. It loses magnitude during the period between approximately nine pm and three am on the day after the treatment was released when there is little overall activity in the groups. The effect remains significant at the 5% level in a one-sided hypothesis test for all time periods.

6.2 Heterogeneous Effects

So far I have shown that anger appeals from an opposition party lead to a larger response from the party's supporters, consistent with the prediction that anger mobilizes political action. Next I test three hypotheses about where the effects of the anger appeals might be largest. First, the effect of the anger appeal might be even larger in high-income areas if higher-income people are more likely to respond to negative situations with anger rather than fear. Second, areas affected by more violence may be more susceptible to the anger appeal through its potential effect on perceptions of risks and past grievances. Third, the Appraisal Tendency Framework suggests that the anger appeal should work best in conjunction with messages that emphasize personal power.

In this section I present figures showing the marginal effects of the anger appeal relative to the enthusiasm appeal at different levels of violence and poverty. All continuous measures (poverty, members, and pre-treatment outcomes) are standardized. Appendix Table A6 presents the full analysis.

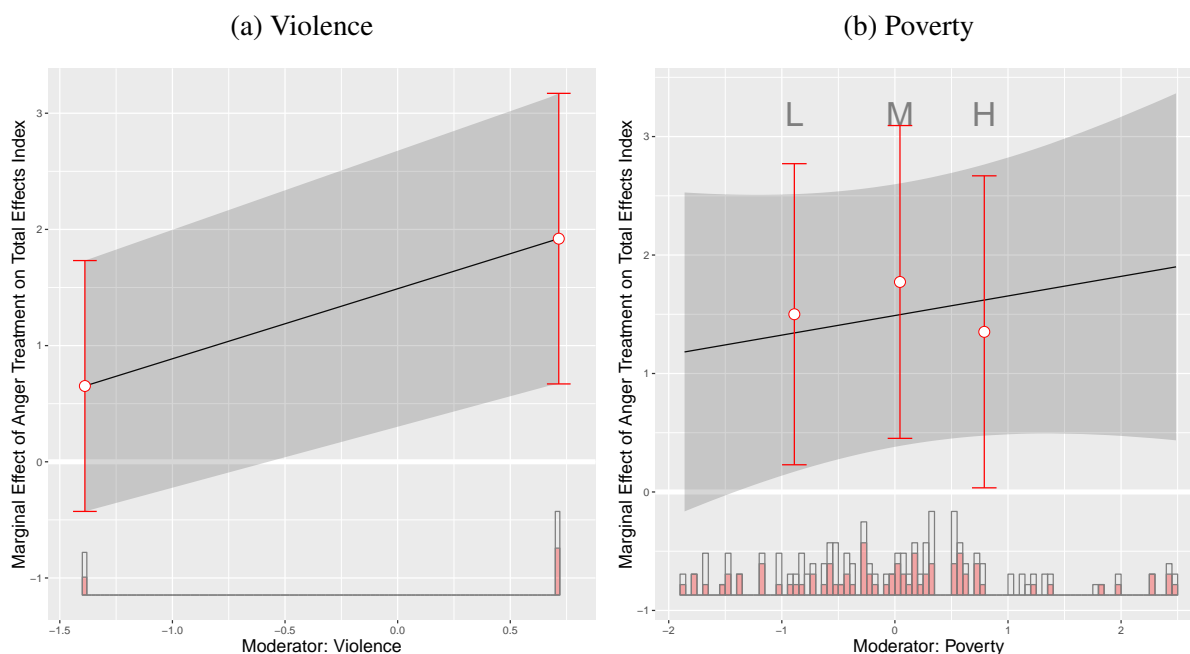
Figures 5 show the marginal effect of the anger appeal at different levels of poverty and past exposure to violence. Because the violence data is noisy and highly skewed, I use a binary version of this variable that takes a value of 1 if the constituency reported any violence in 2008. These marginal effects plots also include all controls from Columns 3, 6, and 9 in Appendix Table A6.

Figure 5 shows that the effect of the treatment is monotonically increasing with the amount of violence that a constituency has experienced. Although the treatment has no significant effect in constituencies that did not report violence around the 2008 election, it is positive and significant at the 95% level in constituencies that did when other variables are at their averages.

However, there appears to be no relationship between constituency-level poverty and susceptibility to the anger appeals. This may be because the measure of socioeconomic status is very noisy: constructed from the anthropogenic data of children under 5 during the 2005 and 2011 demographic and health surveys, this data is not specific to the group and was collected several years before the experiment.

In addition, I do not find that the anger appeal has larger effects when paired with a message

Figure 5: Marginal effects by previous violence and wasting - Participation Index



that emphasized the personal power of the party's supporters. This could be due to the weak nature of the power treatment, which was a simple one-sentence statement. Although we can conclude that there is no evidence of heterogeneous effects based on this experiment, both of these factors should be explored in future research.

One consideration in the interpretation of these treatment-by-covariate interaction effects is that they may be driven by an omitted variable that is correlated with both the size of the ITT and whether a constituency has experienced violence. However, I include a number of covariates and their interactions with the treatment to condition on factors that might be correlated with repression or poverty and the outcomes. In order to control for the general level of support for the opposition, I include a control for the vote share of the ruling party in that constituency in the first round of the 2008 election and its interaction with the treatment. The size of the groups and their pre-treatment activity are both good proxies for group-level measures of the strength of support for the opposition. Estimating the heterogeneous effects conditional on these controls based on group characteristics, constituency characteristics, and region fixed effects reduces some concerns about endogeneity.

Another important caveat is that these heterogeneous effects should not be interpreted as

variation in individual-level variation in exposure to violence or poverty because the violence and poverty measures are calculated at the constituency level. Thus, the interaction between the anger appeal and constituency-level violence should be interpreted as the effect of being an opposition supporter in an area with a higher risk of violence.

7 Conclusion

Millions of voters throughout Africa mobilize to vote or protest against repressive ruling parties despite the threat of personal sanctions, including violence. Why do these voters risk significant personal losses to vote for opposition parties? How do opposition parties in Africa effectively mobilize voters in repressive environments? I posit that emotions, particularly anger, play a role in overcoming the collective action dilemma that voters face. Theory from psychology predicts that anger should make individuals more likely to take action through a number of channels, including by influencing how individuals perceive risks and their level of inhibition.

This study tests whether and when appeals that invoke anger rather than enthusiasm are more effective in mobilizing opposition supporters in a repressive environment. A few methodological concerns are critical to testing this theory. First, obtaining a causal estimate of the impact of emotional appeals on action requires that we take into account citizens' propensities to select into different types of emotional appeals. Second, it requires that the informational content of the appeals be held constant in order to test for the impact of emotions alone. Third, it requires an empirical test that is realistic and as close to the actual behavior and context that we aim to study as possible.

My empirical design aims to meet these methodological criteria by using a unique partnership with a Zimbabwean opposition party to conduct a field experiment testing angry and enthusiastic communications with their supporters. To prevent supporters of different types from selecting into anger or enthusiasm appeals, we randomly assigned groups of supporters to receive different emotional appeals. To hold the information constant, the party designed two rounds of communication on the topics of infrastructure and health that contained the same information about their platform

and no specific information about the current state of Zimbabwe. The fact that this experiment was carried out by a real political party with its supporters means that my outcomes track the real-life dissent behavior that I aim to understand.

I find strong support for the prediction that anger appeals have a stronger positive effect on the political participation of opposition supporters in a repressive environment than pure enthusiasm appeals. WhatsApp groups assigned to receive the anger appeals had an average participation level of 0.38 standard deviations higher than those assigned to the enthusiasm appeals. This translates into about 1.9 additional messages sent out, 0.62 additional participants, 0.34 additional repetitions of the party slogan, and 0.99 additional party symbols being sent out in groups that received the anger appeals. In other words, the anger appeal caused between 32 and 174% more activity than the enthusiasm appeal across four different measures over the course of 24 hours. These are substantively meaningful differences in participation.

There is some evidence that the relative effectiveness of anger is highest in constituencies that have experienced past repression. The anger appeals had larger effects relative to the enthusiasm appeals in constituencies that experienced some violence during the 2008 election, and in the minority region where the ruling party perpetrated atrocities in the 1980s. This may suggest that anger appeals are most effective when the threat of violence is salient.

These results suggest that emotions play a causal role in the mobilization of citizens in support of democracy. This hypothesis has been the basis of many influential theories of participation in contentious politics in developing countries but has not previously been tested using field experimental methods. This finding is particularly important in Africa, where much of the literature focuses on ethnicity and patronage as explanations for the mobilization of voters. Emotions may help explain the high levels of participation in anti-regime actions despite the high potential costs and often low levels of resources of opposition parties.

These results also have policy implications for political parties and organizations interested in promoting democracy and electoral competition in repressive environments. Many opposition parties focus on a positive message of multiparty democracy and future social benefits. However,

this may not be the most effective way to mobilize voters in a contentious political environment, at least in the short term. These findings support the case knowledge to suggest that anger can be deployed as a tool by pro-democracy opposition movements trying to mobilize their supporters in risky environments.

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