

# **Mobilization under threat: Emotional appeals and pro-democracy political participation online**

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## **Abstract**

Despite significant risks, large numbers of people living under authoritarian governments participate in pro-democracy politics. Increasing amounts of this pro-democracy participation are taking place or being organized online. Do emotions play a causal role in inducing pro-democracy participation? Can emotions that mobilize participation be spread via social media? Through an experiment carried out by an opposition party in Zimbabwe, I test whether campaign appeals to opposition supporters' emotions affect their level of political participation in online pro-opposition discussions. I find that across two different issue areas, randomly assigned anger appeals increase participation on average by 0.4 standard deviations more than enthusiasm appeals with the same informational content. In real terms, this represents between 30% and 170% more participation in the groups assigned to the anger appeals across four different measures of participation. There is little evidence that these effects are stronger in areas with more poverty or that have historically been affected by more violence, or when coupled with messages emphasizing personal power. These results suggest that anger appeals that highlight grievances can be an important force for mobilizing online political participation in repressive environments with many demographic groups.

# 1 Introduction

Information and communication technology (ICT), including social media platforms, has become a common channel for citizen mobilization in autocracies around the world. While ICT is clearly not a purely pro-democratic force (King et al., 2017; Roberts, 2018), its potential to spread information and invigorate citizen participation both on- and offline has been demonstrated in cases like Egypt, Iran, China, and Burkina Faso. In Zimbabwe, for example, videos made by a pastor who draped himself in the Zimbabwean flag and recorded irate video messages about the state of the economy in the summer of 2016 spread quickly on social media and drove participation in protests.<sup>1</sup> The fact that internet shutdowns and arrests of social media activists have become a common element in the autocrat's toolkit suggests that authoritarian regimes are also well aware of ICT's potential to mobilize movements that threaten their hold on power (Freedom House, 2019).

Despite widespread recognition that ICT has become a major battlefield for pro- and anti-democratic forces, we know little about how pro-democracy participation online actually occurs. Do the strategies of political entrepreneurs make a difference in whether or not people participate in pro-democracy ways online? If so, what strategies are most effective in mobilizing online political participation in non-democratic states? Furthermore, while ICT has typically been conceptualized as a means of spreading information, it clearly also transmits intense emotional content. Does that emotional content have an important effect on subsequent mobilization, or should it be seen as an irrelevant part of the packaging of information about others' preferences and actions?

This article sheds light on these questions through an online field experiment conducted in partnership with an opposition political party called Transform Zimbabwe (TZ) in the spring of 2015. Zimbabwe is an electoral autocracy where the ruling party holds regular elections but uses a range of tactics including state repression to ensure that the opposition has little chance of taking power. In the experiment the party tested two versions of an emotional appeal that targeted the emotions of anger or enthusiasm by using different images, music, and slight changes in wording

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<sup>1</sup>Allison, Simon. 26 May 2016. "The man behind #ThisFlag, Zimbabwe's accidental movement for change." The Guardian. <https://www.theguardian.com/world/2016/may/26/this-flag-zimbabwe-evan-mawarire-accidental-movement-for-change>.

while carrying the same informational content. The anger versions of the appeals highlighted economic grievances, while the enthusiasm version of the appeal only described the party's positive vision for the future without any negative emotional content. These appeals were randomly assigned to geographically-based WhatsApp groups of the party's supporters that were then tracked for the following 24 hours. This research design thus tests whether the emotional valence of an opposition party's messages affects online mobilization.

The results show that the anger appeals led to significantly more pro-opposition participation online. 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 four different measures of pro-opposition participation constructed from the WhatsApp group transcripts in the 24 hours after the appeals were sent out. This translates into 1.8 additional messages sent out, 0.6 additional participants, 0.3 additional repetitions of the party slogan, and one additional party symbol being sent out in the average group that received the anger appeal compared to the average group that received the enthusiasm appeal. These findings suggest that anger can be an important driver of online political mobilization in authoritarian contexts.

This study is part of a growing literature on the role of information and communication technology (ICT) on contentious politics. It is clear that ICT has become a key tool for activists trying to mobilize expressions of dissent in many cases (Tufekci and Wilson, 2012; Breuer et al., 2015). However, we lack a strong empirical understanding of how ICT may mobilize citizens, and existing studies have tended to theorize ICT as facilitating the spread of information and reducing coordination costs (Little, 2016; Zeitzoff, 2017; Enikolopov et al., 2019). This study shows that even holding information constant, the emotional content transmitted over social media can have a powerful mobilizing effect. This article thus provides additional evidence to the argument by Jost et al. (2018) that social media shapes protest participation by transmitting not only information but also content that affects motivation including messages emphasizing anger, social identification, and collective efficacy.

More broadly, this study contributes to a literature on whether the mobilizing strategies of

opposition political parties and activists matter. Previous scholars have argued that the mobilization strategies of political parties can explain transitions to democracy (Bunce and Wolchik, 2011), opposition party vote share and consolidation (LeBas, 2011), and party identification (Bratton et al., 2012). One key factor in this literature is the extent to which opposition parties employ grievance-based strategies similar to the anger appeals studied here. Group-based grievance appeals have been cited as key mobilizing tactics for parties in emerging multiethnic democracies (Horowitz, 1985), the emergence of populist right-wing parties in Europe (Ivarsflaten, 2008), and race cues in the US (Valentino et al., 2002). Recent research has used survey experiments to test for the effectiveness of grievance-based electoral appeals in Kenya (Horowitz and Klaus, 2018). While Horowitz and Klaus (2018) find that explicit grievance appeals increase support among only a small subset of voters in a survey experiment, the results of this online field experiment show that the anger-based grievance appeal increased participation across a broad range of demographic groups. The findings here also extend research on the effects of partisan emotional appeals from developed democracies like the U.S. to contentious, authoritarian settings (Miller and Krosnick, 2004; Brader, 2006; Ryan, 2012; Weber, 2013).

Do these results extend to participation in higher stakes forms of political participation, such as protest attendance or pro-opposition voting? Online political participation has been criticized as “slacktivism” and some have argued that participation online crowds out participation in more traditional forms of collective action. On the other hand, there is existing research suggesting that online participation may indeed be positively related, perhaps even causally, to offline political action (Steinert-Threlkeld et al., 2015; Larson et al., 2019). Recent observational work has found that the expansion of access to technology such as cell phone networks caused increases in participation in protest (Manacorda and Tesei, 2016; Christensen et al., 2018), and that receiving information about protest via social media is associated with intentions to participate in offline forms of protest (LeBas and Young, 2020). Regardless of the possible effects of online participation on offline action, which we can ultimately only speculate about in this context, in authoritarian regimes where preference falsification is common, online participation in itself is meaningful as a signal to others

of the existing level of support for the opposition in society (Kuran, 1991, 1995). This article ultimately joins a growing body of research on the determinants of online political participation in contexts characterized by repression or other forms of coercive violence (Barberá et al., 2015; Pan and Siegel, 2020).

## **2 Social media, emotional appeals, and political mobilization**

Decisions about political participation are made in emotional environments. The perceived stakes of political outcomes—whether a candidate who represents your group is elected, whether policies that will bring real benefits or harms to you will be put into place—are high, and often involve a moral dimension. Political decisions may be even more emotional in non-democratic regimes where the threat of state repression can lead to acute anger and fear among citizens critical of the regime.

A large body of research in psychology and political psychology argues that distinct emotions can have meaningful causal effects on subsequent political behavior. Psychologists differ in the emphasis that they place on the cognitive versus non-cognitive channels through which emotions might affect behavior. 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 (Frijda, 1986; LeDoux, 1996). Others emphasize the way that emotions arise from and reinforce cognitive appraisals such as perceptions of responsibility, individual control, and certainty (Lerner and Keltner, 2000).

Because of the effects they can have on behavior, emotions are frequently invoked during political campaigns in both democracies and non-democracies. 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 (Ridout and Searles, 2011). In less democratic environments, fear appeals may also involve threats directed at individuals or groups (Young, 2019). Brader (2006, 68-69) defines an emotional appeal as “any communication that is intended to elicit an emotional response from some or all who receive it.” The literature on

emotional appeals in politics also recognizes that emotional appeals can work through both a direct and cognitive channel. First, emotional appeals may trigger automatic responses. 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, emotional appeals may 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 (Albertson and Gadarian, 2015). Emotional appeals are transmitted through images, sounds, and ideas that trigger emotional responses (Brader, 2006). Research in established democracies has tended to study emotional appeals in televised advertisements (Brader, 2006). In many non-democratic settings, which tend to be lower-income, emotional appeals are also frequently transmitted through channels like radio, face-to-face rallies, or increasingly, low-cost ICT like facebook and WhatsApp.

How might appeals with different emotional content affect participation in online pro-opposition groups? Emotions are commonly disaggregated based on their valence and activation. Emotional valence represents the extent to which an emotion is positive or negative, while activation refers to its sense of mobilization or energy (Barrett and Russell, 1999). Other scholars have argued that emotions should also be characterized by a third dimension called “motivational direction” that links emotions to either approach or avoidance tendencies (Harmon-Jones et al., 2013). In this three-dimensional space, anger and enthusiasm are both high-activation, approach-oriented emotions that differ in their valence: negative for anger, and positive for enthusiasm. The fact that anger and enthusiasm are both approach-oriented emotions helps explain their common use in emotional appeals designed to compel action.

Yet while both anger and enthusiasm are high in activation and motivational approach, anger may have a particularly powerful mobilizing effect. 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). Anger is thus associated with a desire to change the status quo, remove obstacles, or hurt a target (Frijda et al., 1989; Roseman et al., 1994). These behavioral tendencies

are supported at least in part by shifts in attributions associated with the emotion of anger: anger has been shown in experiments to increase perceptions that others are responsible for negative states, decrease perceptions of risks, increase heuristic processing, and increase preferences for punitive or aggressive policies or actions (Keltner et al., 1993; Bodenhausen et al., 1994; Lerner et al., 1998; Goldberg et al., 1999; Lerner and Keltner, 2001; Lerner et al., 2003). Indeed, the idea that anger induced by political or economic grievances is a powerful mobilizing tool is grounded in many foundational theories of mass mobilization (Gurr, 1970; Scott, 1990; Bratton and Van de Walle, 1992; Pearlman, 2013). For all of these reasons, I expected that an anger appeal would ultimately generate more pro-opposition action than an enthusiasm appeal (*Prediction 1*).<sup>2</sup>

In addition to this overall prediction, the literature on emotions and decision-making suggests that the anger appeals might be especially effective in particular circumstances. Several core appraisals are widely believed to be important determinants of anger: that the individual has been blocked from attaining an important goal, that the cause of that frustrated goal is an external agent's illegitimate action, and a sense of personal control or coping ability (Smith and Ellsworth, 1985; Lazarus, 1991; Lerner and Keltner, 2000; Berkowitz and Harmon-Jones, 2004). This implies that anger appeals may be particularly effective in mobilizing people for whom these underlying appraisals are most likely to resonate, and when combined with other messaging that reinforces the appraisals.

One characteristic that might make it more likely that an anger appeal resonates is socioeconomic status. One of the core appraisals underlying the emotion of anger is a sense of personal control or coping ability. When individuals believe that they are unable to cope with a negative situation, then they should be more likely to react fearfully than angrily (Bandura, 1988). An obvious factor shaping individual coping ability—both real and perceived—is socioeconomic status (SES). Higher-SES individuals might be particularly likely to react to an anger appeal with anger and action because they are more likely to judge that they are actually able to effectively cope with the negative

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<sup>2</sup>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. The pre-registration document can be downloaded at <url masked>.

situation being highlighted in the appeal. In addition, higher SES over the course of a lifetime may be associated with psychological characteristics that make individuals more likely to react angrily in a negative situation (Bandura, 1982). This logic suggests that the anger appeals would have a larger impact in areas with higher socioeconomic status (*Prediction 2*).

A second demographic characteristic that might shape the effectiveness of anger appeals is the severity of the threat of state repression. Individuals in areas where state repression is more prevalent may harbor stronger grievances against the ruling party and thus be more likely to adopt the appraisals that the economic failures highlighted in the anger appeals are in fact due to the willful, illegitimate acts of an external actor. Second, anger may have a particularly powerful effect on political participation to the extent that it enables action by reducing the perceived risk of repression (Lerner and Keltner, 2001). Thus, I expected that anger appeals would have an even larger impact in areas that have experienced more past repression (*Prediction 3*).

Finally, anger appeals might be particularly effective in conjunction with messages that reinforce their underlying appraisals. Many emotional appeals also contain messages that emphasize personal efficacy, power, or control (Tannenbaum et al., 2015). In the case of anger appeals, messages that further reinforce appraisals of personal control or coping ability might increase the likelihood that the viewer actually feels anger instead of demobilizing negative emotions like sadness or fear. Thus, I expected that the anger appeal would be more effective in conjunction with messages that emphasize personal power and control (*Prediction 4*).

### **3 The Zimbabwean context**

Since gaining independence in 1980, Zimbabwe has held regular, contested elections but these have not resulted in a peaceful transition of power. The ruling party ZANU-PF, which has been in power for the past 40 years, grew out of the independence struggle and enjoyed high initial popular support that diminished in the 1990s (LeBas, 2011). In 1999, a viable opposition movement emerged and dealt ZANU-PF a surprise loss in a constitutional referenda. For the past 20 years, politics in

Zimbabwe has revolved around competition between ZANU-PF and the main opposition party the Movement for Democratic Change (MDC). Various splinter parties have emerged from these two major parties and have almost always either disappeared or re-integrated into their parent parties.

ZANU-PF has been able to remain in power through a variety of tactics. Its ability to maintain control is thanks in part to legitimate appeals to voters, including its liberation struggle credentials and some popular policies such as a redistributive land reform program. However, in periods when popular support has eroded, ZANU-PF has completely politicized the resources of the state to use in clientelistic transactions and has relied heavily on the threat of repression through state security forces and state-aligned civil society groups.

There have been three major episodes of state repression in post-independence Zimbabwe. First, shortly after independence in the 1980s, ZANU-PF deployed the newly created armed forces into a minority-majority region called Matabeleland that had supported a rival liberation movement. As many as 20,000 Zimbabweans were killed by the government during this period (CCJPZ, 1997). Second, after the emergence of the MDC, ZANU-PF began using the security forces and a range of party-affiliated social groups to repress opposition candidates, organizers, and supporters (LeBas, 2006; Sachikonye, 2011). This wave of repression peaked in 2008, when the MDC won the first round of the presidential election and cost ZANU-PF its legislative majority (Bratton and Masunungure, 2008; Human Rights Watch, 2008). After 2008, a “Government of National Unity” was formed out of negotiations with the international community, and the opposition began to lose public support to the ruling party. State repression receded between 2008 and 2018, and the ruling party won large parliamentary majorities in elections in 2013 and 2018 without widespread pre-election violence. However, the 2018 elections ushered in a third phase of active repression, as a new, less adept ZANU-PF president who came into power in 2017 in a military coup has relied heavily on the security forces to quash post-election and economic protests (Beardsworth et al., 2019).

This study took place during a period of low repression and opposition fragmentation in the wake of the MDC’s weak performance in the 2013 elections. Transform Zimbabwe is run by

a former MDC youth leader, and staffed by many former MDC activists. In 2017, Transform Zimbabwe re-merged with the main MDC faction to compete in the 2018 elections under the banner of the “MDC Alliance.” At the time of this study, they were investing in building grassroots structures and competing in by-elections to fill empty parliamentary seats.

The MDC and MDC-aligned opposition parties like Transform Zimbabwe have historically used both positive and negative campaign messages, often invoking the emotions of enthusiasm and anger, to mobilize voters. The opposition has long had a strong, albeit somewhat general, positive policy platform. The MDC emphasizes a moderate social democratic policy platform, including free primary education, housing assistance, and universal access to health care (Zamchiya, 2013). Some analysts, however, have argued that this broad positive economic platform fails to mobilize Zimbabwean voters (Makgetlaneng, 2005; Southall, 2013). In addition to these positive messages in favor of democracy and its economic platform, the opposition has a long history of using the ruling party’s economic failings to mobilize voters. Economic demonstrations, strikes, stayaways, and food riots led by the Zimbabwe Congress of Trade Unions (ZCTU) in the 1990s laid a critical foundation for the formation of the MDC (McCandless, 2011). Protests around economic grievances including price increases and electoral irregularities have continued to play a pivotal role in the opposition’s strategy for mobilizing voters.

## **4 Research design**

Estimating the causal impact of emotional appeals on political mobilization in a repressive environment is difficult for a number of reasons. First, identifying the causal impact of emotions requires exogenous variation in exposure to emotional appeals. Without exogenous variation, it is impossible to isolate the effect of the emotional appeal from factors that might drive supporters to select into exposure. In this case, I use random assignment of opposition supporters 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. To hold information constant, TZ 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 considerations. This project would not have been possible without the collaboration of an opposition party that was interested in 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 only 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 [XXXXX] University that detailed each party's role and responsibilities. Because of this delimitation of roles, this research was determined not to involve human subjects by the [XXXXX] University IRB.

Fourth, we wanted to measure an outcome that was at once behavioral, meaningful, and within the level of risk that TZ's supporters had accepted to take when they joined the groups. Although TZ also mobilizes its supporters to engage in offline actions such as rallies, for the experiment we decided to focus on the lower-risk outcome of 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 sanctioning people if they had these images on their phones. Nevertheless, data collected by organizations tracking political violence in Zimbabwe and media reports at the time show few actual cases of citizens being targeted with sanctions for speech, particularly for speech made in private chat groups

like the TZ WhatsApp groups.

#### **4.1 Description of the treatments**

This experiment was implemented over two rounds that took place two weeks apart. The emotional appeal consisted of an image or video message that was reinforced in text sent out in a three-hour window. TZ decided to reiterate the image or video messages in text messages to ensure that some version of the emotional appeal reached even supporters who had limited data plans or cellular access. Messages were distributed in English with some introductory greetings in Shona or Ndebele depending on the language of the group members, according to the standard practices of the party.

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 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 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. In both rounds the treatments were followed up with a message asking the group members “Are you angry / hopeful yet? Join Transform Zimbabwe today!”

The emotional appeal was also cross-randomized with a second treatment designed to reinforce one of the appraisals believed to underlie anger in a factorial design. Specifically, half of the groups that received the anger appeal and half of the groups that received the enthusiasm appeal also received a greeting message that included the sentence: “We have the power to transform

Zimbabwe!” to reinforce the appraisal of personal agency. The rest of the groups received the control version of this second treatment, an introductory message that ended with the sentence “Our transformation has been held back for too long!”

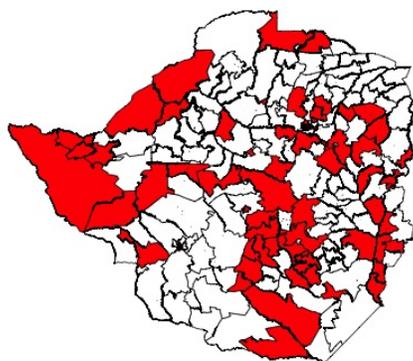
## 4.2 Randomization and implementation

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 had constituency-level WhatsApp groups that were part of the experiment in every province in Zimbabwe.

Figure 1: Constituencies where TZ has WhatsApp groups

(a) All Zimbabwe



(b) Harare



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 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 immediately, and wanting to identify the heat-of-the-moment response

that individuals had to the appeals. Appendix Table A1 shows that there are no indications of a breakdown of randomization procedures.

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) received some but not all 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.

### **4.3 Empirical strategy and estimation**

#### **4.3.1 Main effects**

To test the main hypothesis that the anger appeal would generate more participation than the enthusiasm appeal, I estimate the intent-to-treat (ITT) effect using OLS. I include block fixed effects in all specifications, and in some specifications also include controls for the size of the group, pre-treatment measures of the outcome, and the constituency's past exposure to political violence and level of poverty (described in more detail in Section 4.3.2) to increase precision. I use inverse propensity score weighting to account for the fact that not every unit had an equal probability of being assigned to treatment.

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

1. Number of messages sent
2. Number of supporters who participated
3. Number of party slogans ("Viva!")
4. Number of party symbols (a V-for-victory sign)

The first two indicators – number of messages and number of participants – can be considered reflections of 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 participants. The primary hypothesis test is based on a mean effects index

using all four outcome indicators.

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.

Figure 2: Example transcript

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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: 🏃🏃 yhoouo come 2018 i cnt wait
sub01: Are u ready to transform zimbabwe ?
sub04: 🏃
sub04: 🤔
sub01: Jus say viva tz viva
sub01: 🤔

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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 English, Shona, Ndebele, and Tonga. The number of messages and participants is also independent of language or the balance of slang and formal text.<sup>3</sup>

I also tracked whether the party received donations from each constituency via mobile money transfer. However, because cash donations are not a common practice in Zimbabwean politics, 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.

Finally, as a manipulation check, I had two Zimbabwean researchers code the messages from participants for their level of anger, enthusiasm, sadness, and fear. If the anger appeals worked as intended, they should have elicited an anger response from some or all of the party’s supporters. Both messages included elements intended to elicit enthusiasm for the party, so I did not necessarily expect to see differences across the two appeals in the level of enthusiasm induced. I also measured sadness and fear as non-targeted emotions that may nevertheless have been differentially induced by the two versions of the emotional appeals.

### 4.3.2 Heterogeneous effects

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

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

<sup>3</sup>Although I preregistered an outcome measuring the count of the number of words sent out by participants, I replaced it with the number of messages for several reasons. First, the number of words used to communicate the same idea varies across languages. 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 speak more in their native language, slang, abbreviations, or typos.

where  $Z_{anger}$  is a dummy variable indicating assignment to the anger appeal, and  $Z_{power}$  is a dummy indicating assignment to the 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, while  $Y_{t=0}$  is a pre-treatment measure of the 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 and block fixed effects.

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 had experienced as of 2015. Sokwanele’s data is collected from reports of citizens and service providers for victims of political violence. I use a binary indicator that takes a value of 1 if a constituency reported any violence in 2008.

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 constituency boundaries that were used to define the WhatsApp groups.<sup>4</sup> 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.

## 5 Results

### 5.1 Manipulation check

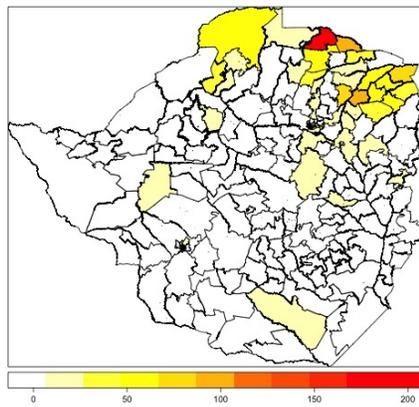
Did the anger appeal actually increase expressions of anger? Did it also increase expressions of enthusiasm more than the purely enthusiastic appeal, or increase expressions of non-targeted

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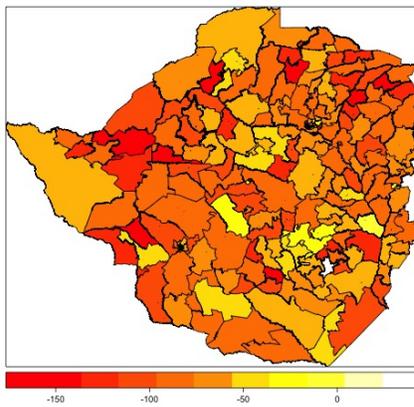
<sup>4</sup>Most of the constituencies (136 out of 150) can be matched with 2012 data, but for 14 constituencies 2005 DHS data is the most recent available.

Figure 3: Maps of Poverty and Violence by Constituency

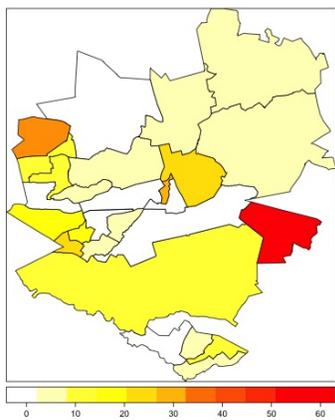
(a) Violence in 2008 (Sokwanele)



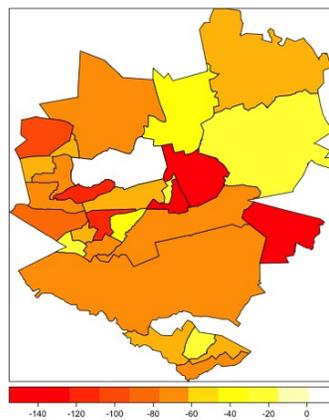
(b) Wasting in 2011 (DHS)



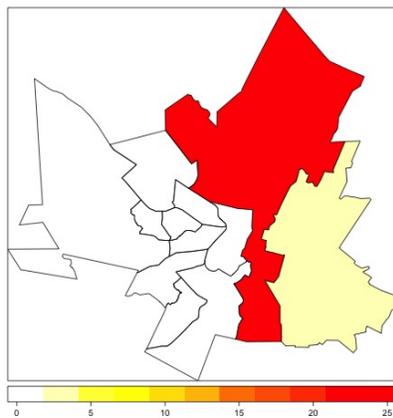
(c) Violence - Harare



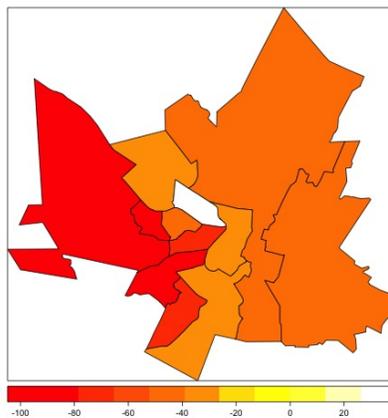
(d) Wasting - Harare



(e) Violence - Bulawayo



(f) Wasting - Bulawayo



negative emotions? Each message was coded by two different native Shona speakers who were blinded to the treatment status of the groups. The inter-rater reliability (IRR) for anger, fear, and

sadness ranged between 92 and 97%, while IRR for enthusiasm was 63%.<sup>5</sup>

Table 1: The anger appeal induced angrier responses than the enthusiasm appeal

	<i>Dependent variable:</i>							
	Anger		Enthusiasm		Sadness		Fear	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Anger Appeal	0.04*** (0.02)	0.03** (0.01)	0.13** (0.06)	0.13** (0.06)	0.03 (0.03)	0.03 (0.03)	0.02 (0.01)	0.01 (0.01)
Log(Group Size)		0.01 (0.01)		0.10* (0.06)		-0.01 (0.02)		0.01 (0.01)
Any Violence		-0.01 (0.02)		-0.05 (0.08)		0.01 (0.04)		0.01 (0.02)
Poverty		-0.001** (0.0002)		0.002* (0.001)		-0.001** (0.0004)		0.0000 (0.0002)
Block FE	✓	✓	✓	✓	✓	✓	✓	✓
Constant	-0.02 (0.06)	-0.05 (0.06)	0.44* (0.22)	0.55** (0.25)	0.11 (0.09)	0.02 (0.11)	-0.01 (0.05)	-0.02 (0.06)
Observations	150	148	150	148	150	148	150	148
R <sup>2</sup>	0.32	0.37	0.36	0.41	0.35	0.39	0.12	0.12

Robust standard errors in parentheses

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The unit of analysis is the WhatsApp group. ITTs are estimated using OLS with weights based on the inverse propensity of being assigned to the unit's realized treatment status.

Table 1 shows that the anger appeal significantly increased the proportion of messages expressing anger sent by participants in the WhatsApp groups. Substantively, groups assigned to the anger appeal had 3-4 percentage points more messages from the party's supporters that were coded by at least one of the two coders as expressing anger. In addition, the anger appeal caused more enthusiastic responses: 13 percentage points more of the responses in groups assigned to the anger appeal were coded as enthusiastic by one of the coders. This should not be interpreted as a manipulation failure given that both appeals were also designed to induce enthusiasm for TZ. By contrast, there was no significant increase in expressions of fear or sadness, suggesting that the anger appeal successfully targeted anger instead of other negative emotions.

<sup>5</sup>It appears that the lower IRR on enthusiasm is a function of the two coders have different thresholds for what was sufficiently enthusiastic: one coder identified 46% of the messages as enthusiastic, while the other found that 81% met the threshold to be coded as enthusiastic.

## 5.2 Main effects

This section presents the results of tests of the primary substantive hypothesis: did the anger appeal cause more pro-opposition participation in the WhatsApp groups? Table 2 presents the ITTs for the full mean effects index and the four individual components that went into it.

Table 2: The anger appeal induced more pro-opposition participation

	Index		Messages		Participants		Slogans		Symbols	
Anger Appeal	0.38** (0.16)	0.36** (0.16)	1.93 (1.37)	1.79 (1.35)	0.62* (0.33)	0.58* (0.31)	0.34 (0.43)	0.29 (0.41)	0.99** (0.42)	0.97** (0.41)
Pre-Treatment Outcome		0.10 (0.10)		0.23 (0.25)		0.27 (0.17)		0.41 (0.41)		0.08 (0.10)
Log(Group Size)		0.31** (0.16)		2.93** (1.35)		0.86*** (0.33)		0.45 (0.34)		0.25 (0.35)
Any Violence		-0.03 (0.21)		-1.64 (1.83)		-0.83** (0.39)		0.03 (0.60)		0.60 (0.57)
Poverty		0.001 (0.002)		-0.01 (0.02)		0.001 (0.005)		0.001 (0.01)		0.01 (0.01)
Block FEs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Constant	0.54 (0.50)	0.52 (0.57)	1.78*** (0.56)	1.22 (2.42)	0.94** (0.46)	1.33* (0.69)	0.58 (0.99)	0.38 (1.20)	4.50 (2.88)	4.25 (2.95)
Observations	150	148	150	148	150	148	150	148	150	148
R <sup>2</sup>	0.44	0.47	0.37	0.43	0.45	0.55	0.27	0.29	0.45	0.47

Robust standard errors in parentheses

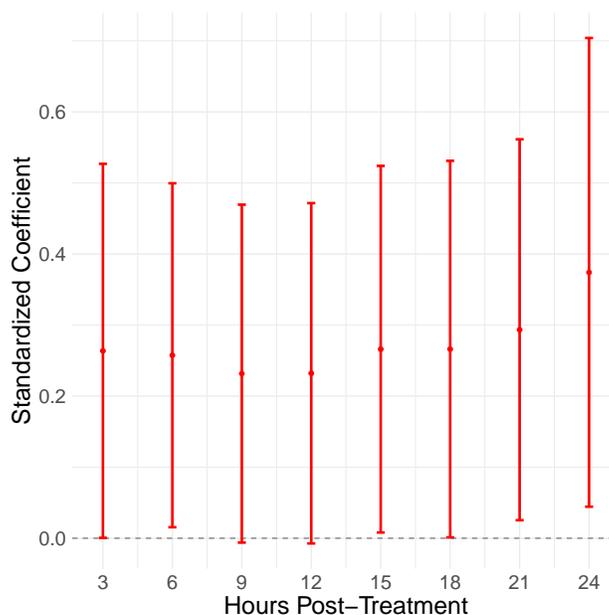
\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

The unit of analysis is the WhatsApp group. The ITTs are estimated using OLS with weights based on the inverse propensity of being assigned to the unit's realized treatment status.

Table 2 shows that the anger appeal induced significantly more pro-opposition participation in the WhatsApp groups, in line with Prediction 1. The means effects index, which gives equal weight to the four standardized subcomponents measured over the 24 hours following the treatments, is 0.36-0.38 standard deviations higher for groups assigned to the anger appeal than those to the enthusiasm appeal. 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. This overall increase in participation is consistent across the four measures, although the increases are only statistically significant for the number of symbols ( $p=0.03$ ) and participants ( $p=0.07$ ). Substantively, the differences are large, representing a 30% increase in the number of participants and a 173% increase in the use of party symbols.

How stable is this effect over time? While the hypothesis tests in Table 2 were based on the level and quality of participation in the 24 hours after the treatments were sent out to each group, we can also test for robustness to various time periods by creating increasingly large windows of time around the treatment in three-hour increments and estimating the ITT within each window. Figure 4 shows that the effect is consistent over time.

Figure 4: ITTs over time - Mean Effects Index



### 5.3 Heterogeneous Effects

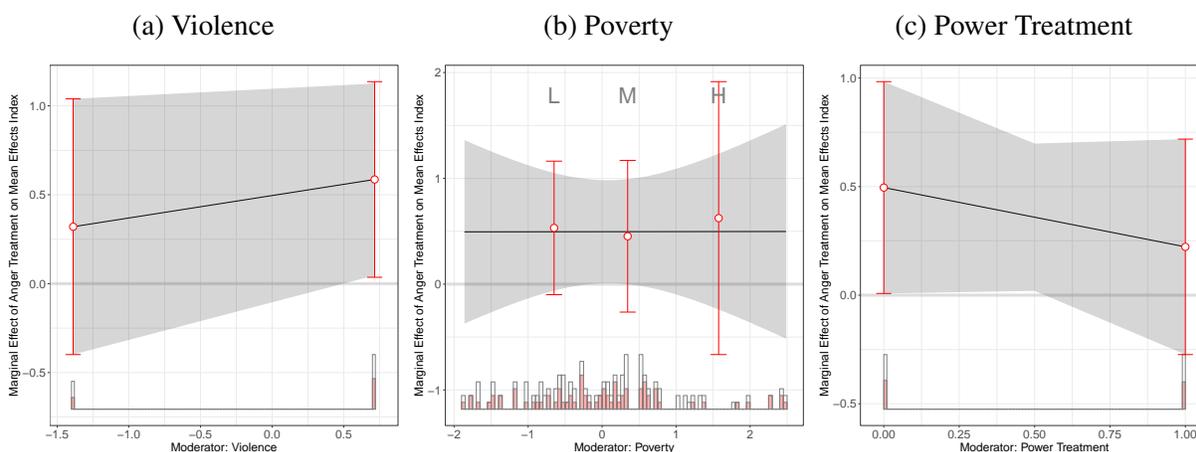
Next I test three hypotheses about where the effects of the anger appeals might be largest. First, the effect of the anger appeal might be even larger in high-income areas if higher-income people are more likely to respond to negative situations with anger rather than fear (Prediction 2). Second, areas affected by more violence may be more susceptible to the anger appeal through its potential effect on perceptions of risks and past grievances (Prediction 3). Third, the Appraisal Tendency Framework suggests that the anger appeal should work best in conjunction with messages that emphasize personal power (Prediction 4).

In this section I present figures showing the marginal effects of the anger appeal relative to the

enthusiasm appeal at different levels of violence, poverty, and assignment to the power appraisal treatment. All continuous measures are standardized. Appendix Table A3 presents the full results.

Figures 5 show the marginal effect of the anger appeal at different levels of poverty, whether or not the constituency reported any violence around the 2008 election according to the Sokwanele data, and whether the group was assigned to the second power appraisal treatment. These marginal effects plots also include the control variables described in Section 4.3.

Figure 5: Marginal effects by previous violence, wasting, and the power treatment - Mean Effects Index



There are no statistically significant heterogeneous effects of the anger treatments based on the level of violence that a constituency reported in 2008, level of wasting in the most recent DHS data, or assignment to the power appraisal treatment. The null findings on the constituency's demographic characteristics suggest that anger appeals are effective with a broad swathe of TZ supporters, contrary to Predictions 2-3. However, they should be interpreted with some caution given that the data used to test these hypotheses is at the constituency rather than group level, creating an ecological inference problem, and was collected several years prior to this experiment. The fact that the anger appeal is not more effective when paired with a message designed to reinforce the anger-aligned appraisal of personal power is evidence against Prediction 4. It is possible that instead of reinforcing the anger appeal the personal power message substitutes for it: indeed, on one of the four outcomes, the power message has a positive and significant effect for groups assigned to the enthusiasm version of the emotional appeal. It is also possible that this treatment – a single

text message sent along with several others – was too weak to have the intended effect, particularly in comparison with emotionally gripping music, stories, and images. These predictions about the conditions in which anger appeals should be most effective should be subjected to more rigorous testing in the future.

## **6 Conclusion**

Millions of citizens throughout Africa speak out against repressive regimes despite the risks. How do opposition parties in Africa effectively mobilize voters in non-democratic environments? I posit that emotions, particularly anger, play a role in overcoming the collective action dilemma that opposition supporters 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 to participate online in a repressive environment. In order to identify the causal effect of anger appeals, I analyze an experiment run by a Zimbabwean opposition party that tested the effectiveness of campaign messages with the same informational content but different emotional valences. This research design enables a test of opposition mobilization that identifies the casual role of emotional appeals over social media on a behavioral measure of political action.

The results are in line with the common argument in the qualitative literature on opposition movements that anger over economic grievances can be harnessed by opposition movements to mobilize their supporters. The anger appeal induced more expressions of anger – as well as significantly more expressions of enthusiasm – than the enthusiasm appeal with the same informational content. These differences are substantively meaningful, representing between 30 and 173% increases over the enthusiasm groups across the four measures of participation. They are more effective across many types of constituencies, not only those with the most capacity to take

action or the strongest political grievances.

These findings suggest that the mobilizing strategies of opposition parties and activists matter, and that in particular more confrontational, grievance-based strategies can be particularly effective in mobilizing participation. Scholars have long emphasized that political entrepreneurs can mobilize risky forms of participation using grievance appeals. The findings also support a more nuanced view of the role of ICT in facilitating expressions of dissent. While much of the literature on ICT has emphasized its importance in spreading information or lowering the cost of coordination among opposition members, this study suggests that the emotional content disseminated via ICT can also have a potent mobilizing effect.

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