PEACE TO VIOLENCE: EXPLAINING THE VIOLENT ESCALATION OF NONVIOLENT DEMONSTRATIONS

Daniel Gustafson

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Approved by:

Stephen E. Gent

Navin A. Bapat

Mark J.C. Crescenzi

ABSTRACT

DANIEL GUSTAFSON: Peace to Violence: Explaining the Violent Escalation of Nonviolent Demonstrations
(Under the direction of Stephen E. Gent.)

Under what conditions do nonviolent demonstrations escalate to violence? I answer this question using a novel theory of individual preference formation in protests that begin peacefully. Rather than considering protest groups as unitary actors, I present a theory of collective action in which a group's decision is the product of a probabilistic aggregation of individual preferences. I argue that individuals involved in a nonviolent demonstration use the immediacy of their needs and the sustainability of collective action to decide whether or not to initiate violence against the state. Specifically, I hypothesize that the likelihood of violent escalation will increase when the relative food price is high, a demonstration is rural, and the event is spontaneous. An analysis of nonviolent demonstrations in Africa and Latin America largely supports my expectations.

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INTRODUCTION

During the collapse of the Soviet Union, several communist populaces mounted campaigns of political opposition. These contentious movements varied cross-nationally in their tactical choices and abilities to force government concessions. Some states, such as Czechoslovakia during the Velvet Revolution, saw large and rapid governmental changes as a result of nonviolent demonstrations. Others, like Romania, saw protests change to riots and cause the eventual overthrow of the communist regime. Why do some nonviolent demonstrations remain peaceful while others escalate to violence? I argue that during periods of civil opposition, nonviolent demonstrations are more likely to become violent when individual members are impatient or believe that collective action is unsustainable.

Rather than considering protest groups as unitary actors, I present a theory of collective action in which a group's decision is the product of a probabilistic aggregation of individual preferences. I argue that individuals involved in a nonviolent demonstration use the immediacy of their needs and the sustainability of collective action to decide whether or not to initiate violence against the state.

Specifically, I explore the relative food price of a country, location of the event, and whether the demonstration was spontaneous or organized as determinants of violent escalation. First, lower food prices in a country should allow nonviolent demonstrations to continue using peaceful tactics to attempt to force concessions. Higher food prices may necessitate a switch to violent tactics because the need for nutrition must be immediately resolved. Second, nonviolent events in centralized urban areas are more easily able to overcome barriers to collective action and begin demonstrations. Additionally, urban areas allow an individual's participation in nonviolent activities to be complementary—encouraging sustainable demonstration. Peaceful demonstrations in rural settings have less potential participants for large protests and should be unlikely to form sustainable nonviolent action,

leading members to consider violence more frequently. Finally, organized demonstrations demonstrate that leaders have borne the costs of collective action, signalling the sustainability of nonviolent action. Conversely, the duration of spontaneous protests is highly uncertain and may cause demonstrators to consider a switch to violent tactics before collective action collapses.

In this study, I briefly consider the extant literature on civil contention and tactical choices. Next, I present my theory of individual preference aggregation and violent escalation. I follow my argument with a research design to empirically test my hypotheses, and I present the results of my statistical analysis of 3,347 nonviolent events in Africa and Latin America from 2000-2014. I find strong support for my hypotheses relating to the impact of relative food price and demonstration spontaneity on violent escalation. I find mixed results for my hypothesis on the event location's role in causing a violent outbreak. I close this project with a discussion of my findings and suggestions for future work.

Civil Opposition and Tactical Choices

Scholars have increasingly focused on why civil opposition occurs, and several studies can be separated into two discrete camps based upon whether they argue that the causes of conflict are motivational or environmental (Collier, Hoeffler and Rohner 2009).[1] Motivational theories generally refer to arguments that explore rebels' reasons to violently mobilize. Some argue that opposition groups are fundamentally driven to express dissatisfaction with the government based upon deeply held grievances (Gurr 2000; Sambanis 2001). Under this framework, aggrieved individuals make the strategic decision to oppose the state in an attempt to redress their grievances. Other research, however, suggest that rebels are motivated solely by economic incentives (Collier and Hoeffler 2004; Regan and Norton 2005).

A growing body of literature suggests that food insecurity is a key cause of grievance

[1] Although the majority of scholarly work on political conflict has explored rebellion and other violent tactics, similar mechanisms generate all sorts of contentious political action (McAdam, Tarrow and Tilly 2003).

formation. While scholars have explored this topic in the past (Tilly 1971), protests and riots have been an incredibly common manifestation of political opposition in recent history, and scholars have taken notice. (Brinkman & Hendrix 2011, Salehyan et al. 2012). Indeed, studies have shown that food prices are significant predictors of food riots (Bellemare 2015), antigovernment demonstrations (Arezki and Bruckner 2011), and urban unrest in democratic countries (Hendrix and Haggard 2015).

Arguments that rely on greed or grievance are often contrasted with environmental theories of conflict. In these studies, the key explanatory factor of civil war onset is the feasibility of conflict. For example, Fearon and Laitin (2003) argue that conditions that favor insurgency—such as mountainous terrain or natural resources—increase the likelihood of civil war. Walter (2004) argues that civil war is more likely to occur in states that have a history of civil conflict. Theoretically, these studies of civil war onset have given us several different avenues through which conflict can emerge. Empirically, however, findings are seemingly tenuous and almost always contradicting other results. Because of this, scholars often choose to pair empirical analyses of conflict with strong theoretical models.

Since Fearon (1995) introduced his rationalist explanations for conflict and the bargaining model of war, rationalist studies have focused on information issues and incentives to misrepresent (Fearon 1997; Schultz 1998; Wagner 2000) or commitment problems (Kydd 2003; Powell 2006, 2012) as the primary causes of international conflict. Civil conflict scholars have also applied these concepts to their work to capture strategic interactions and bargaining between states and nonstate actors (Bapat 2006; Bell and Wolford 2015; Schultz 2010; Walter 2002). Very few studies, however, consider nonviolent actors in a rationalist framework.[2] This lack of strategic theorizing has impeded knowledge on the dynamics of tactical selection.

Conventionally, studies of contentious politics have classified substate actors into two categories—those that use violence as a tactic and those that do not. International relations scholars often implicitly assume this dichotomous distinction because they conceptualize nonviolent and violent groups as fundamentally different. A growing vein of scholarship

[2] A notable exception is Cunningham (2013).

challenges this assumption (Chenoweth and Lewis 2013). Indeed, Asal et al. (2013) reject this false dichotomy and suggest that groups may choose from a full 'menu' of tactics including solely violent, solely nonviolent, or mixed strategies. Cunningham (2013) finds that there are several factors that positively affect the likelihood of a group using violence or nonviolence and concludes that it is possible that the same causal mechanism may drive a group to take organized action, and the environment in which the group finds itself may determine the most appropriate tactical approach.

Another common assumption in much of the conflict literature lies in the idea that violent tactics are necessarily more effective in achieving a desired outcome than nonviolence.[3] Some scholars, however, have challenged this assumption by presenting evidence that nonviolent groups may be more successful than violent groups (Celestino and Gleditsch 2013; Chenoweth and Stephan 2011; Karatnycky and Ackerman 2005).

The extant literature suggests that two common sets of nonviolent tactics exist. First, a group may opt to use traditional political means—such as voting or lobbying—to try to redress its grievances. These routine activities, however, are often insufficient because the group may be too weak to meaningfully influence domestic politics (Celestino and Gleditsch 2013; Chenoweth and Stephan 2011). In autocracies or politically underdeveloped regimes, there is usually very little space for traditional political opposition, so groups must act extra-institutionally (Tarrow 1994). Second, a group can use nonviolent "direct action" in the form of demonstrations or boycotts to affect politics (Celestino and Gleditsch 2013, 389). Direct action is more common in turbulent political environments and is often a natural second choice for groups excluded from the standard political process.

While a group may begin by using only violence or nonviolence, it may vary its tactics over time. Although studies of violent and nonviolent movements answer important questions relating to conflict dynamics, very little work has explored the reasons that groups change their broad strategies of opposition. In addition, it is unclear in the current literature why single events change from peaceful demonstrations to antigovernment violence.

[3] In this context, nonviolence is defined as "strategic nonviolent resistance," which should be understood as separate from principled nonviolence which is informed by ethical or spiritual notions (Stephan and Chenoweth 2008, 10).

This project contributes to the study of civil conflict by presenting a novel theory of violent escalation. It addresses the broad literature on tactical choices, bargaining, and conflict prevention.

Theoretical Setup

I conceptualize the strategic interaction between a state and opponent during a nonviolent demonstration, as the opposition group tries to extract concessions from the state while the government seeks an end to opposition. I assume that the opposition group cannot redress its grievances through traditional political institutions. Politically excluded groups try to express opposition opinions and bargain for concessions by acting unconventionally—through protest (Tarrow 1994) or armed conflict (Wagner 2000).

Empirically, some groups begin as violent entities. However, I assume that all else equal, individuals would prefer to reach their goals nonviolently. The opposition group's primary goal is to coerce concessions from the government while remaining nonviolent. The costs of participating in violence are high and often entail risking one's life, creating a significant collective action problem (Lichbach 1995). For that reason, I assume that individuals prefer to use violence only as a last resort.

I assume that a state has three distinct options when responding to a nonviolent opposition demonstration—it may delay, concede, or repress. It may delay any decision in the hopes that the opposition group is unresolved and relents. I assume that the government strongly prefers this action because it is low cost, but it is potentially risky. Eventually, the demonstration may gain mass support or begin using violence, meaning that the government can no longer ignore it.

By delaying, the state trades short-term cost for long-term risk. Rather than conceding to the group or repressing it immediately, the state allows the group to continue demonstrating, which can increase it's support domestically and abroad. Nonviolent groups are more likely to win concessions from the state in the long-term because they inflict consistent costs on the state by disrupting economic activity and occupying security personnel. These costs can be bearable in the short term but weaken the state as time goes on. Therefore,

I argue that before the state chooses to take action, it prefers to delay in the hope that the demonstration breaks up. This strategy is not ideal for the state as it still suffers the costs of opposition, but it is the best alternative in the short term. Additionally, I argue that government delay can have the unintended consequence of encouraging a nonviolent opposition group to embrace violent tactics.

If the state chooses to take action against a nonviolent group that does not relent, it must decide to either repress or offer conciliatory policies. While the government's strategy in this interaction is important for the dynamics of civil opposition, I choose to explicitly focus on the nonstate actors' decisions in this project. Thus, assuming that an opposition group initiates nonviolent direct action and the state chooses to delay, under what conditions do demonstrations escalate to violence?

Traditionally, conflict scholars have treated the strategic interaction between actors engaged in conflict as a bargaining process. These models have produced invaluable insights, but they often require two simplifying assumptions that are problematic for modelling the interaction between a government and a civil opposition group. First, scholars would likely assume that negotiations occur between two homogeneous units. In a civil conflict setting, a bargaining model would likely treat the process as a series of decisions made by a government and the leaders of an opposition group. Empirically, leaders often negotiate with governments over concessions, but they do not necessarily make decisions that produce observable behavior. For example, if a leader agrees to cease violence in exchange for concessions, she may not be able to enforce this agreement. Some leaders certainly *can* exert strong influence over their members, but I would argue that this is sort of cohesion is rare. In fact, scholars have found that divergent preferences lead most contentious campaigns to fragment over time (Christia 2012; Cunningham 2011). Thus, I consider a model in which decisions are driven by individual members' preferences but can be constrained by the extent to which leaders organize demonstrations.

Second, bargaining models may be subject to an exogenous risk of negotiation breakdown (Muthoo 1999). Under this risk, actors may be compelled to reach a deal due to fear that talks will fall apart, and the terms of the agreement may be altered. While bargaining

partners may genuinely worry about exogenous breakdown, I would argue that it is inappropriate to apply this constraint to the interaction between a government and nonviolent opposition group. Here, perhaps the most common form of breakdown occurs when the nonviolent group turns violent. Therefore, the risk of bargaining breakdown is endogenous because demonstrators themselves may force negotiations to fall apart. I explore a situation in which individual members of a nonviolent opposition group drive bargaining breakdown by deciding to escalate from peaceful demonstrations to violence.

Following previous studies of collective action, I consider a collection of individuals who have preferences over oppositional tactics drawn from a random distribution (Chwe 2000; Siegel 2009). The aggregation of these demonstrators' preferences produce the observed behavior of the group in a probabilistic manner. For example, if a majority of individuals in a demonstration prefer to continue acting nonviolently, the group will likely remain nonviolent. As the amount of individuals that prefer switching to violence increases, the group becomes increasingly likely to become violent. I argue that an individual opposition member prefers to switch to violent tactics as her needs become more immediate or the perceived sustainability of collection action decreases. Therefore, groups with large amounts of impatient members are more likely to escalate nonviolent civil opposition to violence.

Impatience and the Sustainability of Collective Action

I argue that the underlying reason that nonviolent groups escalate to violence lies in the aggregation of individual preferences over tactics within the group. Because of this, it is important to consider the conditions under which constituent group members are likely to prefer changing tactics. Individuals situated within a nonviolent opposition movement are more inclined to prefer escalating to violent contention when they are impatient with nonviolent tactics. I argue that if they no longer believe that their needs will be satisfied via peaceful demonstration or if they believe that collective action is unsustainable, opposition group members will be more apt to switch to violent tactics as a last resort to quickly force government concessions. Thus, individuals whose needs are immediate or believe their window of opportunity is closing are more likely to prefer escalating to violent con-

flict. I consider three sources of impatience and the perception of unsustainable collective action—relative food price, urbanization, and spontaneity of demonstrations.

If individuals believe that the state will redress their grievances quickly or mass mobilization is sustainable, they will be more likely to remain peaceful. If, however, they believe that nonviolent demonstration is proving ineffective or that collective action is unsustainable, they will be more apt to engage in violence. Thus, I argue that violence is a result of the perceived failure of nonviolent collective action. [4]

Individuals within a nonviolent demonstration reach their patience thresholds more quickly when they are increasingly unwilling to wait and see whether nonviolent tactics will coerce change. The *relative food price* is one fundamentally important factor in determining a nonviolent demonstrator's patience. Food unavailability represents an immediate need, as individuals comprising opposition groups must be able to feed themselves and their families. Especially in developing countries, hunger or starvation is an issue that requires rapid rectification. If nonviolence does not quickly produce concessions in cases of high food price and low food availability, group members will be more apt to embrace violent tactics out of desperation. The immediacy of the need for food drives individuals to become impatient with nonviolent tactics, leading to an increased chance of violent escalation.

H_1: *As a country's relative food price increases, nonviolent demonstrations are more likely to escalate to violence.*

The degree to which a nonviolent demonstration is sustainable can also affect individuals' patience. If a group member believes that nonviolent demonstrations are likely temporary and at risk of falling apart, she will be more likely to support a tactical switch to coerce concessions. Conversely, if an individual believes that protests or other nonviolent tactics are likely to continue, she will be more patient and will continue to remain

[4] This may seem counterintuitive given the wealth of scholarly work that argues that violent opposition is a result of solving the collective action problem. It is important to note, however, that my argument applies to a limited set of violent activities such as riots or isolated terrorist attacks rather than coordinated, sustained armed conflict.

peaceful. Under these assumptions, an individual's participation in nonviolent demonstration is defined by strategic complementarity, meaning that the more people participate, the more likely each individual is to contribute (Chwe 2000; Siegel 2009). Therefore, a group member will believe that nonviolent opposition is sustainable as the potential and probable number of participants grows.

Since urban settings contain more people and help mitigate the collective action problem, nonviolent demonstrations that take place in urban areas are more likely to be sustainable. I argue that the perception of sustainability increases individuals' likelihood of remaining nonviolent because group members face a lower risk of group collapse. Conversely, protests that take place in rural areas may be characterized as unsustainable because there are fewer pockets of people from which to draw participants. Such rural groups of individuals will perceive the nonviolent demonstration as fragile and become impatient with peaceful tactics. Therefore, they may choose to begin using violent tactics to coerce change before their opportunity to influence government disappears.

H_2: *If a nonviolent demonstration takes place in an rural area, it is more likely to escalate to violence.*

One of the main ways that leaders of an opposition group can affect the decisions made by individual group members is by coordinating demonstrations. The degree to which nonviolent demonstrations are organized or spontaneous can have a large effect on individuals' perceptions of sustainability. Organized demonstrations suggest that members planned the opposition in advance, indicating a high level of sophistication and dedication to the cause. In order for this to occur, groups must generally have a leadership structure that bears the costs of coordination. Here, leaders send a signal to group members that collective action is sustainable as a result of their commitment. Out of this, individuals face a lower risk of group disintegration and can expect demonstrations to continue.

Spontaneous collective action, however, does not have a guaranteed duration or frequency. As a result of the uncertain qualities of unplanned demonstrations, individuals are

more likely to perceive that the collective action is unsustainable. Spontaneous nonviolent demonstrations also face a higher risk of group collapse because no leaders exist to bear significant collective action costs. Thus, in the face of a seemingly temporary window of influence, individuals are more apt escalate to violence as a last resort.

H_3: *If a nonviolent demonstration is spontaneous, it is more likely to escalate to violence.*

Research Design

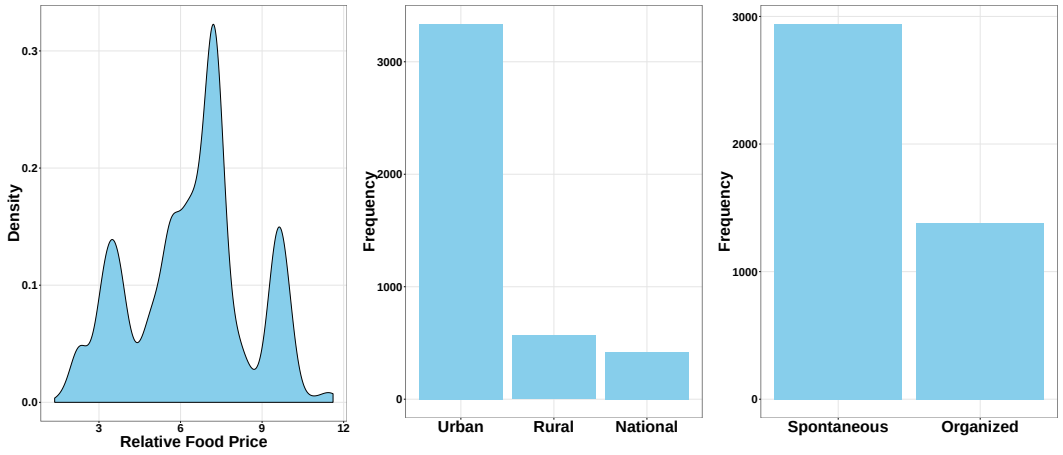
To test my hypotheses about the conditions under which a nonviolent demonstration escalates to violence, I will primarily use the Social Conflict Analysis Dataset (SCAD) (Salehyan et al. 2012). SCAD contains event level information on social disturbances such as protests and riots for Africa and Latin America from 1990-2014. While most conflict datasets only contain information on large-scale events such as wars or attacks, SCAD captures different sources of political and social contention. For this study, I limit my sample to include only events from 2000-2014 that begin as nonviolent antigovernment events. All observations are measured at the event level. Table 1 shows descriptive statistics for all variables that I include in this analysis.

	N	Min.	Max.	1s	Median	Mean
Escalation	4322	0	1	1004	0	0.23
Relative Food Price	3396	1.37	11.61	—	6.71	6.41
Location	4322	0	2	—	1	0.97
Polity	4227	-9	10	—	0	0.73
$ln(GDP_{pc})$	4238	4.66	9.82	—	7.44	7.32
Repression	4322	0	1	1561	0	0.36
Organized	4322	0	1	1382	0	0.32

Table 1: Descriptive Statistics

The dependent variable for this analysis is a binary measure of whether the nonviolent event escalated to antigovernment violence. To create this variable, I code whether or not each individual event began nonviolently and escalated to violence. This includes all cases that began as peaceful demonstrations—both organized and spontaneous—and escalate to

violent riots or nonstate violence.[5]



(a) (b) (c)

Fig. 1: Distributions of (a) *Relative Food Price*, (b) *Location*, & (c) *Organized*

The primary independent variable used to assess H_1 is the relative food price in a given country. To measure a state's relative food price, I use data from the United Nations Food and Agriculture Organization: Food Security Indicators. Specifically, I use the "V 2.5: Domestic food price index." This indicator is a measure of consumer cost of food and nonalcoholic beverages calculated from the World Bank's 2011 International Comparison Program and food price indices from the International Labour Organization (ILO). It is measured in terms of purchasing power parity relative to the United States and controlled for inflation. Each measure is a ratio of a country's basket of food-goods in local currency relative to the same basket of goods in the United States also expressed in local currency. For example, an individual in a country with a *Relative Food Price* of 7 pays 7% more on average for the same good than an individual in the United States. The dataset contains measures for all countries included in the Millennium Development Goals (MDG) from 2000-2014. The first panel of Figure 1 shows the distribution of this variable.

To evaluate H_2, I use the *Locnum* variable from SCAD. This measure codes the locality of the event, which I use as a proxy for the sustainability of contention. I collapse this measure into a categorical variable coded as 0 if the event is urban, 1 if it is rural, or 2

[5] In SCAD, $Etype = \{1, 2\}$ and $Escalation = \{3, 4\}$.

if it is nationwide.[6] I then treat this variable as a factor in all of my regressions. I use *Urban* events as the excluded category in order to obtain coefficient estimates for *Rural* and *National* events. The second panel of Figure 1 shows the distribution of events by location.

To test H_3 on the effect of the spontaneity of demonstrations, I create a binary measure of demonstration organization from the *Etype* variable in SCAD. Here, if the event type is coded as an organized demonstration, I assign it a value of 1. If it is coded as a spontaneous demonstration, I assign it a value of 0. I expect the organization of a demonstration to be negatively associated with the probability of escalation.

I control for several factors that influence whether or not a nonviolent demonstration escalates to violence. First, I control for regime type in each country using the Polity2 measure from the Polity IV dataset (Marshall and Jaggers 2002). Regime type in a country could effect the potential response to a demonstration as well as the constraints on opposition groups' decisions. Next, I control for the relative capacity of the government using per capita GDP. I include this measure because states with various capabilities should experience different types of opposition dynamics. Finally, I control for whether or not the government uses violent repression against demonstrators, as this dynamic changes the decision-making calculus of the group. While I am unable to untangle the sequencing of events—whether the government represses before or after a demonstration turns violent—I can condition my results on the occurrence of repression to ensure that any effect I find for my key independent variables is not simply a violent response to state repression.

To evaluate my hypotheses, I estimate logistic regressions because my dependent variable is dichotomous. I use a pooled time series approach for my main analysis, but my results are robust to model specification.[7]

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[6] I collapse values of $Locnum = \{1, 2, 4\}$ to 0, $Locnum = \{3, 5\}$ to 1, and $Locnum = \{7\}$ to 2.

[7] I include both a bivariate model and a model that includes country and year fixed effects in the appendix. I attempted to estimate a model with random effects and mixed effects, but the model did not converge. I also attempted to estimate a model with county, year, and country-year fixed effects, but my data do not support this.

Results

Table 2 shows the results of two pooled time series logistic regressions of *Escalation* using a sample of events across Latin America and Africa from 2000-2014. My original sample contained over 4,000 observations, but I restrict my sample to 3,347 observations using casewise deletion of missing values.[8] I find strong support for both H_1 and H_3 and mixed results for H_2.

	Baseline	No Repression
Intercept	-6.96^*	-4.47^*
	(0.67)	(0.59)
Relative Food Price	0.27^*	0.24^*
	(0.04)	(0.03)
Rural	0.27	0.28^*
	(0.14)	(0.13)
National	1.68^*	1.98^*
	(0.15)	(0.13)
Polity	-0.01	-0.02^*
	(0.01)	(0.01)
$\mathbf{ln(GDP_{pc})}$	0.37^*	0.22^*
	(0.06)	(0.06)
Organized	-0.62^*	-0.55^*
	(0.12)	(0.10)
Repression	2.51^*	
	(0.10)	
AIC	2636.19	3346.70
BIC	2685.12	3389.51
Log Likelihood	-1310.09	-1666.35
Deviance	2620.19	3332.70
N	3347	3347

$^*p < 0.05$

Table 2: Logistic Regression — with and without *Repression*

I present two models of escalation because of the complications associated with including a measure of *Repression*. In SCAD, repression is coded as a 0 if no repression occurs, 1 for non-lethal repression, and 2 if the government initiates lethal repression. I collapse this measure into a binary variable coded 1 if any repression occurs and 0 otherwise. Including this measure of repression in a model of violent escalation is problematic because it is unclear whether repression is endogenous to the data-generating process. For example, the government may initiate repression, causing peaceful demonstrators to fight back.

[8] In a future version, I plan to incorporate multiple imputation techniques to ensure that my results are not biased as a result of non-random missingness.

This event would be coded as having escalated and experienced repression. Alternatively, violent escalation may occur in the absence of a response, but the government can initiate repression *after* observing violence from the event. This event would also be coded as having escalated and experienced repression. Because sequencing is unclear in these events, it is impossible to tell whether repression is causing escalation or if it is merely a post hoc government response. Therefore, I estimate two models of violent escalation—one that includes a measure of repression and one that does not. Overall, my results are robust to the inclusion of *Repression*, but the model fits improves when the measure is included.

Leading up to H_1, I argued that as the relative food price in a state increases, so should the likelihood of a nonviolent demonstration escalating to violence. I find strong support for this hypothesis, as the coefficient on *Relative Food Price* is positive and statistically different from 0 at the $p < 0.05$ level. I also find that a state's food price has a large substantive effect on the likelihood of a nonviolent event becoming violent. Figure 2 shows the predicted probability of escalation across all observed values of *Relative Food Price* for urban events.[9] In this plot, the black line represents the point estimate of the predicted probability of escalation and the blue shaded region shows the 95% confidence interval around that estimate. At the lowest observed value of this variable, the predicted probability of escalation is about 5%. This probability increases to about 15% at its mean, and it jumps to about 38% at its maximum value. Thus, the predicted probability of violent escalation increases by about 33 percentage points across all observed values of *Relative Food Price*. As a result of the statistical and substantive significance, I find strong support for H_1, indicating that as the food price in a country increases, nonviolent demonstrations in that state are more likely to escalate to violence.

I argued that nonviolent demonstrations occurring in rural areas are more likely to escalate to violence than urban demonstrations in H_2, and I find mixed results for this hypothesis. The coefficient estimates in both models indicate that *Rural* events are associated with a higher likelihood of *Escalation* than *Urban* events. In the first model with repression included, I find that the effect of *Rural* demonstrations is not statistically different from

[9] All other variables are held constant at their means.

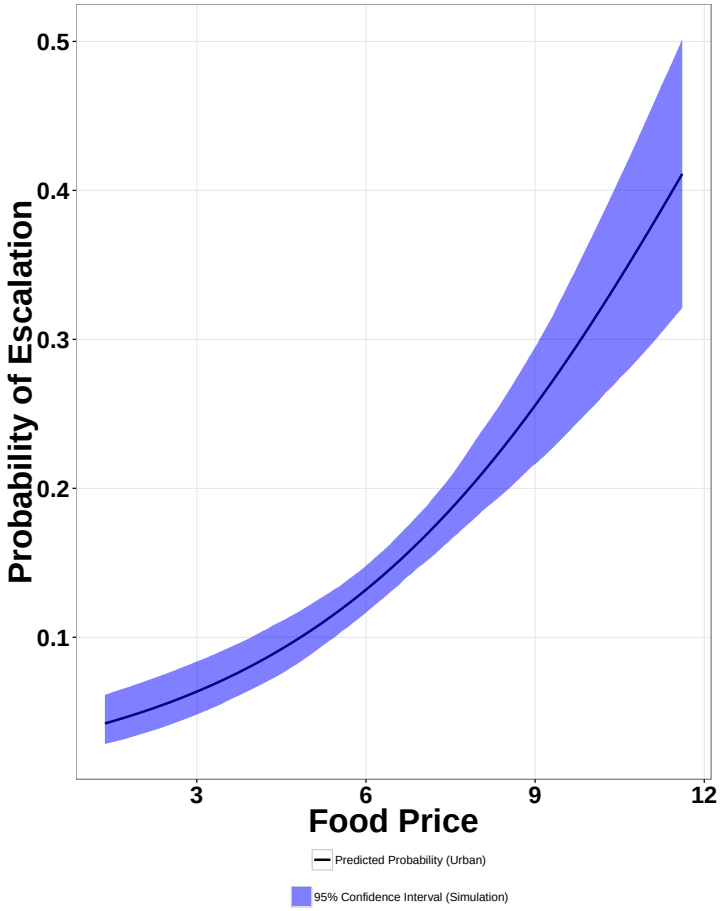


Fig. 2: Predicted Probability of Escalation for Values of *Relative Food Price*

the effect of *Urban* demonstrations at the 95% confidence level ($p = .057$). In the second model with repression excluded, the impact of *Rural* demonstration is significantly different from the impact of *Urban* demonstration. To illustrate the differential effects of location on the likelihood of violent escalation, I explore each demonstration setting's substantive implications.

Figure 3 shows the predicted probability of escalation across values of *Relative Food Price*, broken down by location. Here, each solid line represents the point estimate of the predicted probability of escalation, and the dashed lines correspond to the 95% confidence interval around that estimate. The green lines represent *National* demonstrations, the blue lines indicate *Rural* events, and the red lines show *Urban* demonstrations. For many values of *Relative Food Price*, rural demonstrations may appear to be related to a higher predicted probability of escalation compared to urban demonstrations, as H_2 suggests. However, the two sets of simulated predicted probabilities are indistinguishable from one another in sev-

eral instances. While the relationship between *Rural* and *Urban* demonstrations is in line with H_2, there is too much uncertainly around these estimates to declare them statistically different from one another. Therefore, I am unable to conclude that rural demonstrations lead to a higher likelihood of violent escalation than do urban demonstrations.

Interestingly, national demonstrations appear to be more likely than only rural or only

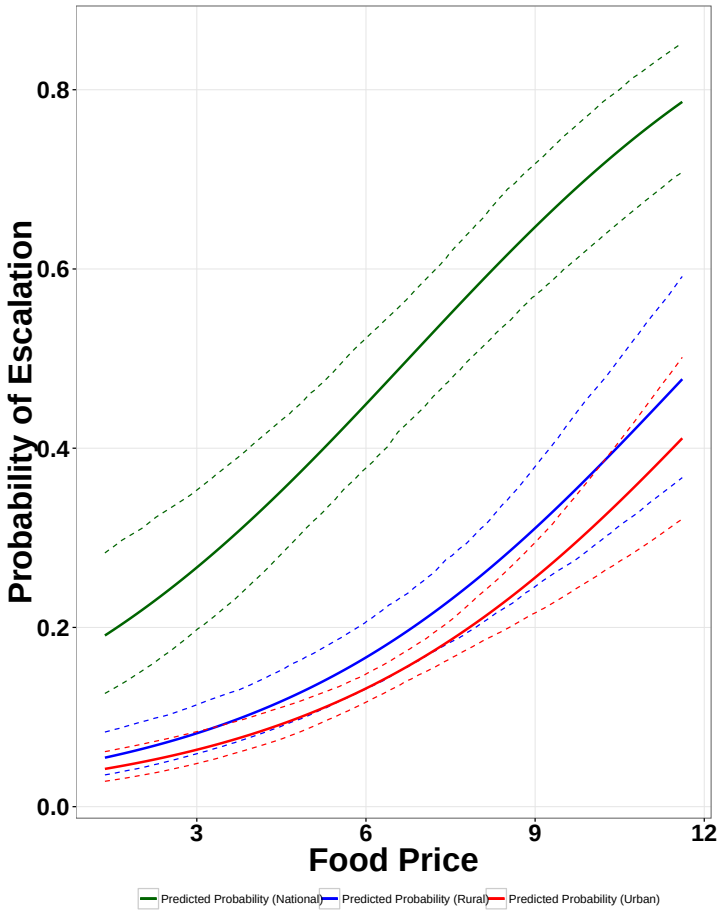


Fig. 3: Predicted Probability of Escalation for Values of *Relative Food Price* by *Location*

urban demonstrations to escalate to violence. This finding directly contradicts my theory that the perception of sustainable collective action should prevent individuals from desperately switching to violent tactics. I would argue, however, that this finding is a result of a quirk in the data. It is unclear how a demonstration that is coded as *National* differs from a number of separate demonstrations occurring contemporaneously. If simultaneous demonstrations are coded as one national demonstration, the escalation of one group of protestors could change the entire coding of that event. Thus, the finding that *National* demonstrations have a higher probability of escalating than isolated peaceful protests could just be due to

the fact that each subnational demonstration has a baseline probability of escalation, and adding these together strictly increases the predicted probability.

For H_3, I argued that spontaneous demonstrations are more likely to result in violent

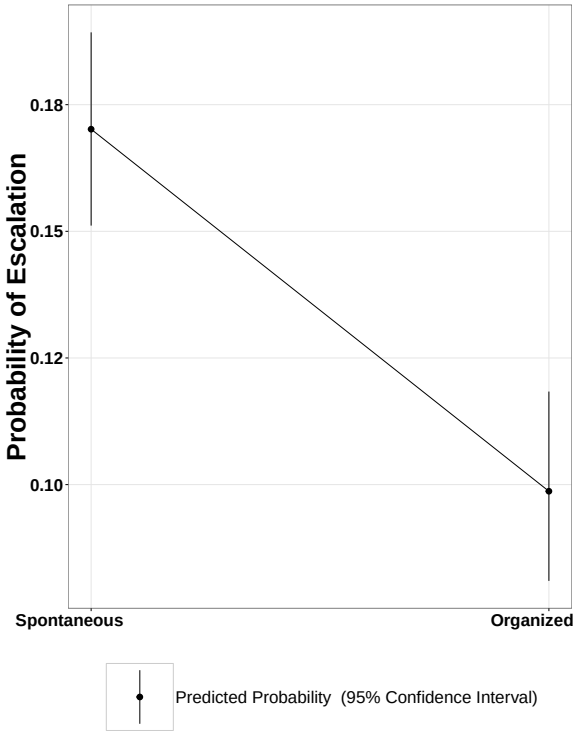


Fig. 4: Predicted Probability of Escalation for Values of *Organized*

escalation. The estimated coefficient on *Organized* is negative and statistically different from 0, lending support for this hypothesis. Further, the substantive effect as displayed in Figure 4 serves as strong evidence that spontaneous demonstrations are more likely escalate than organized events. When a demonstration is spontaneous, my model predicts roughly a 17% probability of escalation. When an event is organized, however, this probability drops roughly 7 percentage points to about 10%. Because the predicted probability of violent escalation significantly drops between spontaneous and planned demonstrations, my analysis demonstrates strong support for H_3.

I find that two of my control variables are statistically different from 0. First, a country's GDP per capita is positively associated with an increased likelihood of violent escalation. This is a puzzling finding, as we might expect that more capable states experience less violence in general. As previously mentioned, I also find that the use of repression by the state increases the likelihood of violent escalation. This finding may be dubious, as the data

may represent demonstrators initiating violence and the state responding with repression. The effect size of *Repression* is large, as the predicted probability of escalation shifts from about 6% to about 46% when moving from no repression to an event that experiences repression.[10] While the occurrence of repression does influence the predicted probability of escalation, it does not solely drive the results of my primary independent variables.[11]

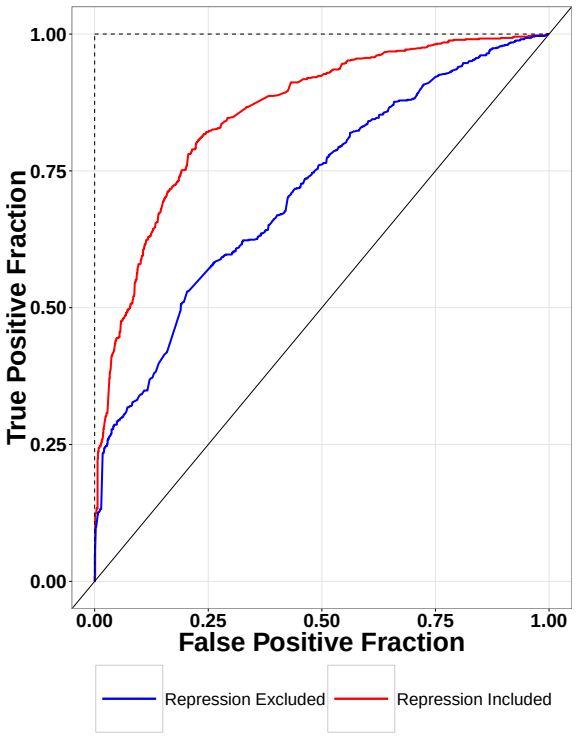


Fig. 5: ROC Curves

To check the overall fit of my models, I explore the discrimination of my logistic regressions using receiver operating characteristic (ROC) curves. The ROC curves—shown in Figure 5—plot the false positive rate ($1-$specificity) versus the true positive rate (sensitivity) for all possible cutpoints. ROC curves measure how well a statistical test is able to classify dichotomous outcomes from pre-test conditions. Here, the ROC curves demonstrate how well my logistic regressions performed at predicting whether or not a nonviolent event escalated to violence. The black diagonal represents an uninformative model, while

[10] See Figure 6 in the Appendix.

[11] See Figure 7 in the appendix.

the dashed curve shows what a perfect model would look like. I calculate the fit of both of my logistic regressions. The red curve indicates the model that includes a measure of *Repression*, and the blue curve shows the fit of the model without the *Repression* variable.

Clearly, both models outperform the naive model. To determine how well the models fit, I calculate the area under the curve (AUC) of both ROC curves where the perfect model has an AUC of 1. I find that the model including *Repression* has an AUC of .86 and the model excluding *Repression* has an AUC of .71. Thus, the model including *Repression* is better at discriminating between cases of escalation or non-escalation. However, I remain skeptical as to whether repression is causing escalation or simply a result of a demonstration's shift to violence. Both AUC measures indicate fair to very good model fit, but there is still room for improvement.

Conclusion

Aggrieved actors often form nonviolent opposition groups in an attempt to gain concessions from the government, but they do not always remain peaceful. Rather than considering the strategic interaction between an opposition group and a government, I conceptualize a group's observed behavior as an aggregation of individual preferences. I argue that peaceful demonstrations are more likely to escalate to violence when individual members are unsatisfied with the effectiveness of nonviolent direct action or believe that collective action is unsustainable. Specifically, I identify the relative food price in a country, location of the event, and whether a demonstration is organized or spontaneous as factors that affect individuals' decisions of whether or not to engage in violence.

I find strong support for my hypotheses that violent escalation is more likely when the relative food price increases and when events are spontaneous. I find mixed results for my hypothesis that events in rural locations are more likely to devolve to violence than events in urban locations. These findings and my broader theory contribute to the well-established literatures on civil conflict, nonviolent opposition, and intrastate bargaining.

In spite of my contributions, this project suffers from two key limitations. First, data unavailability has prevented me from testing my hypotheses at the group level. While it

is important to know the conditions under which nonviolent demonstrations escalate to violence, I am also interested in whether or not these tactical switches take hold in more coordinated groups. For example, if a nonviolent campaign faces the same sorts of constraints outlined in this study, would it also be likely to embrace violent tactics? Second, government repression is certainly an important part of the strategic interaction between a state and individuals engaged in nonviolent demonstration. Because we are unable to tell the sequencing of events in these data, we cannot make claims about government repression's causal impact on violent escalation. Each of these limitations could be solved with the emergence of newly collected data.

Aside from projects made possible by new data collection efforts, this study opens several future avenues of research. The most important next step in this process is to develop and test an argument for the government's decisions. Rather than assuming that the state initially delays action against a nonviolent opposition, it would be interesting to study the conditions under which governments choose to delay, initiate repression, or concede. Additionally, it would be important for future studies to better incorporate the role of leadership in tactical decision-making. Finally, it would be useful to relax the assumption that opposition groups prefer to use nonviolent tactics originally. Future work should investigate the causes of initial tactical decisions.

Beyond academic interests, this project has broad policy implications. Policymakers should be concerned with factors that influence the onset of violent conflict, and this study has outlined several characteristics of nonviolent demonstrations that have the potential to turn violent. My results suggest that food security is an essential component in mitigating the risk of violent escalation. Therefore, policymakers may craft policies that better assure food availability in an attempt at conflict prevention.

APPENDIX

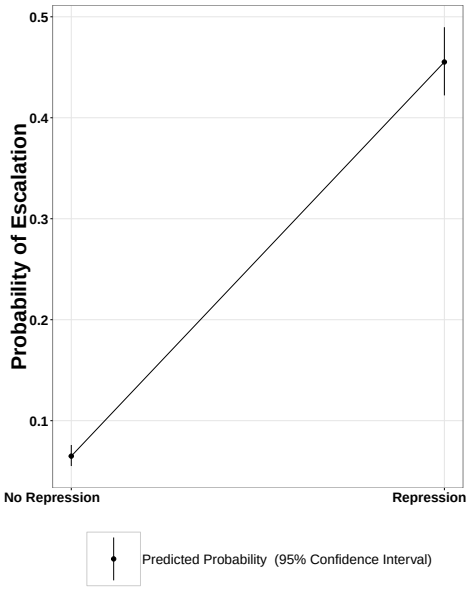
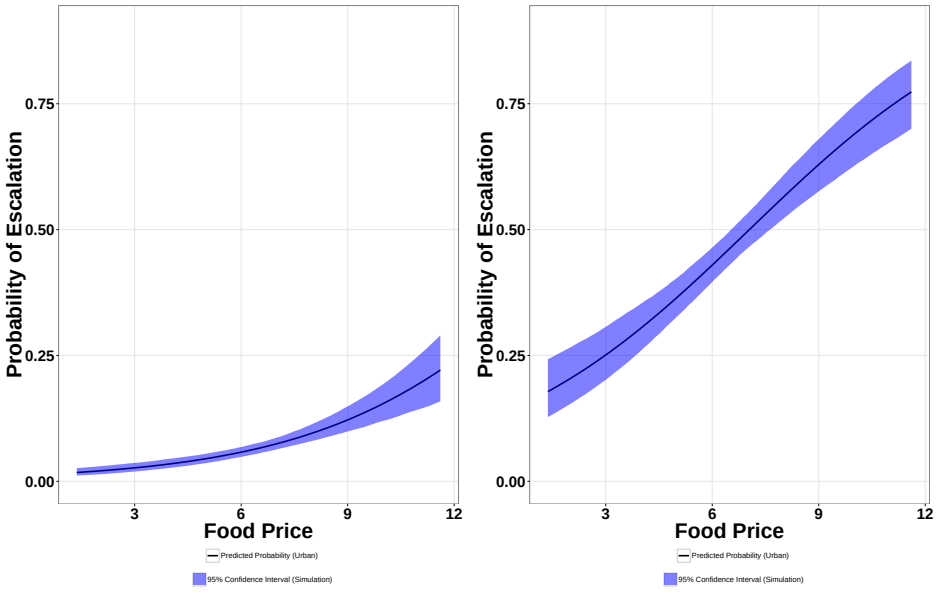


Fig. 6: Predicted Probability of Escalation for Values of *Repression*



(a) No Repression (b) Repression

Fig. 7: Predicted Probability of Escalation for Values of *Relative Food Price* with (a) *No Repression* & (b) *Repression*

	Bivariate	Fixed Effects
(Intercept)	-2.34^*	
	(0.14)	
Food Price	0.19^*	0.62^*
	(0.02)	(0.18)
Rural		-11.01^*
		(2.59)
Urban		-11.30^*
		(2.60)
National		-9.67^*
		(2.60)
Polity		-0.07
		(0.04)
$\ln(\mathbf{GDP_{pc}})$		0.63
		(0.34)
Repression		2.86^*
		(0.12)
Organized		-0.44^*
		(0.13)
AIC	3777.86	2471.01
BIC	3790.12	2880.77
Log Likelihood	-1886.93	-1168.51
Deviance	3773.86	2337.01
N	3396	3347

$^*p < 0.05$

Table 3: Bivariate and Fixed Effects Logistic Regressions — DV: *Escalation*

Dominican Republic	-0.55	**Jamaica**	1.26
	(1.66)		(1.51)
Trinidad and Tobago	-14.10	**Mexico**	1.49
	(757.43)		(1.56)
Guatemala	0.55	**Honduras**	0.09
	(1.05)		(1.15)
El Salvador	-15.30	**Nicaragua**	3.57^{*}
	(811.07)		(1.28)
Costa Rica	-14.55	**Panama**	0.43
	(1410.88)		(2.01)
Gambia	-0.61	**Mali**	0.29
	(1.17)		(0.63)
Senegal	0.09	**Benin**	-15.83
	(0.58)		(825.03)
Mauritania	-3.21^{*}	**Niger**	0.16
	(0.57)		(0.67)
Ivory Coast	0.32	**Guinea**	-1.32^{*}
	(0.69)		(0.43)
Burkina Faso	-1.39	**Sierra Leone**	1.96^{*}
	(0.77)		(1.00)
Ghana	-15.99	**Togo**	0.57
	(1356.90)		(0.64)
Cameroon	-2.23^{*}	**Nigeria**	0.51
	(0.81)		(0.68)
Gabon	0.53	**Chad**	-0.35
	(1.39)		(0.84)
Congo	-16.65	**Uganda**	1.06
	(3956.18)		(0.98)
Kenya	1.52	**Tanzania**	-1.79^{*}
	(1.03)		(0.66)
Burundi	0.47	**Rwanda**	-16.04
	(0.83)		(1405.13)
Angola	-4.03^{*}	**Mozambique**	2.29^{*}
	(1.42)		(0.80)
Zambia	-3.49^{*}	**Malawi**	-1.28^{*}
	(0.70)		(0.56)
South Africa	1.72	**Lesotho**	-14.25
	(1.58)		(1250.71)
Botswana	2.64	**Madagascar**	0.13
	(2.06)		(0.67)
Mauritius	-15.21	**Morocco**	-0.90
	(1841.22)		(0.96)
Algeria	-0.21	**Tunisia**	1.35
	(1.11)		(1.32)
Egypt	-0.39		
	(0.74)		

$^{*}p < 0.05$ Excluded country: Haiti

Table 4: Country Fixed Effects

Year Fixed Effect	
2001	-0.26
	(0.35)
2002	0.53
	(0.32)
2003	0.03
	(0.33)
2004	-0.01
	(0.33)
2005	0.15
	(0.36)
2006	-0.23
	(0.41)
2007	-0.13
	(0.45)
2008	-1.03^{*}
	(0.49)
2009	-0.11
	(0.44)
2010	-0.74
	(0.45)
2011	-1.12^{*}
	(0.49)
2012	-0.17
	(0.46)
2013	0.37
	(0.48)
2014	-0.29
	(0.51)
$^{*}p < 0.05$	Excluded year: 2000

Table 5: Year Fixed Effects

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