University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

2016

Revolutionary Leaders and Mass Killing

Nam Kyu Kim
University of Nebraska–Lincoln, namkyu@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/poliscifacpub

Part of the Comparative Politics Commons, Models and Methods Commons, and the Other Political Science Commons

Revolutionary Leaders and Mass Killing

Nam Kyu Kim

Department of Political Science, University of Nebraska–Lincoln,
511 Oldfather Hall, Lincoln, NE 68588, USA.
Email namkyu@unl.edu

Abstract

This article argues that revolutionary leaders are more willing to commit mass
killing than nonrevolutionary leaders. Revolutionary leaders are more ideolog-
ically committed to transforming society, more risk tolerant, and more likely to
view the use of violence as appropriate and effective. Furthermore, such leaders
tend to command highly disciplined and loyal organizations, built in the course
of revolutionary struggles, that can perpetrate mass killing. This study uses time
series cross-sectional data from 1955 to 2004 to demonstrate that revolutionary
leaders are more likely to initiate genocide or politicide than nonrevolutionary
leaders. The violent behaviors of revolutionary leaders are not limited to the im-
mediate postrevolutionary years but also occur later in their tenure. This demon-
strates that the association of revolutionary leaders and mass killing is not sim-
ply indicative of postrevolutionary instability. This article also provides evidence
for the importance of exclusionary ideologies in motivating revolutionary lead-
ers to inflict massive violence.

Keywords: human rights, domestic politics, political leadership, political survival

This article examines the relationship between revolutionary leaders and mass
killing. Previous studies have focused how the aftermath of domestic revolu-
tions opens up opportunities for new elites to seize control of the state (e.g., Fein
1993; Krain 1997; Melson 1992). Mass violence is considered to be a product of

1

the political upheaval that occurs during and shortly after a revolution. However, revolution not only produces the collapse of a state's political authority and heightened political instability but also elevates a type of leaders qualitatively different from the type that comes into power through other means. The questions of how different revolutionary leaders are from others and whether revolutionary leaders are more prone to employ mass violence than their nonrevolutionary counterparts have not received much systematic investigation in the political violence literature. This article attempts to determine whether revolutionary leaders have an impact on the likelihood of mass killing onsets distinct from revolutions as one-off events.

I argue that not only are leaders emerging from domestic revolutionary struggles apt to possess an enhanced willingness to engage in large-scale violence, but they are also likely to command highly disciplined and loyal organizations for doing so. Revolutionary leaders are, on average, more ideologically committed to a radical transformation of the existing social and political orders, more risk tolerant, and less violence averse than their nonrevolutionary counterparts. These personal attributes lower their perceived moral, political, and economic costs of inflicting large-scale violence on civilians and raise their perceived benefits of mass murders. Revolutionary leaders, thus, are more likely to have the "destroy them to save us" mentality (Semelin 2013, 48). Moreover, such leaders often develop a strong, cohesive, and loyal organization during their sustained armed struggles against state authorities. They can then deploy these apparatuses against groups the leaders perceive as oppositional.

To assess the effects of revolutionary leaders on mass killing, I conduct a series of statistical tests using the cross-national data set of revolutions and revolutionary leaders developed by Colgan (2012). Three main findings stand out. First, I find that revolutionary leaders are more likely than other types of leaders to commit mass atrocities. In contrast, leaders who seize power through extra-constitutional means other than revolutions do not significantly correlate with a greater risk of mass killing. These results confirm the distinct nature of revolutions that seek a rapid and radical transformation of society.

Second, I demonstrate that the association of revolutionary leaders and mass killing is not simply indicative of postrevolutionary instability. I find that a heightened risk of genocide or politicide is associated with not only the immediate period following the revolution but also the postrevolutionary period when revolutionary leaders have been in power for ten to twenty-five years. These results indicate that the violent behaviors of revolutionary leaders are not entirely attributable to the political turmoil surrounding revolutions but are also a factor of the leaders' personal attributes. Last, my analysis confirms the importance of exclusionary ideologies, as data show that only revolutionary leaders espousing exclusionary ideologies are significantly associated with a greater risk of mass killing.

This article relates to several distinct lines of research. First, this article contributes to the growing body of research on mass killing by presenting new evidence for the effects of revolutions and revolutionary leaders on mass killing onsets. Surprisingly, no quantitative studies I know of have directly examined

the relationship between revolutions and mass killing, although scholars have long considered revolutions an important factor in prompting leaders to perpetrate mass killing. For instance, Krain (1997) uses a measure of "extra-constitutional change" defined as "forced changes in the top government elite and/or its effective control of the nation's power structure in a given year." Revolutions are too distinctive to be lumped with other extra-constitutional changes in government, such as coups and rebellions, that make no effort to transform existing social and political orders. Harff's (2003) seminal study uses state-failure years, including revolutionary wars and adverse regime changes, as the unit of analysis rather than directly investigating the effect of revolutions on mass killing. This is in marked contrast with the accumulation of many empirical studies reporting the relationship between armed conflict and mass killing (e.g., Anderton and Carter 2015; Harff 2003; Krain 1997; Valentino, Huth, and Balch-Lindsay 2004; Wayman and Tago 2010).

Similarly, despite the increasing emphasis on individual leaders' ideals and strategic motivations, existing scholarship has also failed to examine the cross-national correlation between individual leaders and mass violence. This article is an attempt to fill that gap by providing rare cross-national evidence showing the importance of individual leaders in explaining mass violence. Accordingly, it complements the significant qualitative studies on leaders and their ideologies (e.g., Bellamy 2012; Mann 2005; Midlarsky 2011; Straus 2015; Valentino 2004; Weitz 2003).

Third, the findings of this study add to the literature on revolutionary regimes and leaders. Revolutionary governments are found to be more likely to deploy and use military force in pursuit of foreign policy objectives (Colgan 2013; Gurr 1988) as well as to possess superior war-making capabilities and perform more successfully in interstate wars (Carter, Bernhard, and Palmer 2012). This study shows that they also have a higher willingness and capacity for using violence against their citizens. Lastly, the results reported in this article add to the growing evidence that individual leaders' personal attributes affect states' policies (Colgan 2013; Horowitz and Stam 2014; Kennedy 2011)

Revolutionary Leaders and Mass Killings

Before discussing the relationship between revolutionary leaders and mass killing onsets, I first define what I mean by revolutionary leaders and mass killing. I follow Colgan's (2013) definition of revolutionary leaders: "individuals who personally helped transform the existing social, political, and economic relationships of the state by overthrowing or rejecting the principal existing institutions of society" (p. 658). This definition does not make violence an essential attribute of revolution, which is important to the research question this article asks. Nonviolent overthrow of communist regimes in Eastern Europe can be included in the concept of revolution. Meanwhile, revolutions are distinguishable from violent leadership turnovers, including coups, rebellions, and civil wars, which just rearrange the administrative apparatus or replace old elite with new elite

without transforming social or economic structures and practices (Walt 1992, 324). On the other hand, mass killing refers to "large-scale, sustained, intentional, systematic violence of state agents against civilians that results in mass deaths" (Kydd and Straus 2013, 2). The essential attribute of mass killing is its intentionality in the sense that the state makes a concerted attempt to kill its own civilians on a large scale. In this article, I use interchangeably the terms "mass killing," "mass atrocities," and "mass murder."

The current literature on mass killing emphasizes leaders' ideals and strategies rather than preexisting prejudices and deep divisions in the population (Straus 2007, 2015). Many scholars argue that massive violence against civilians, like other types of state repression, is the result of leaders' purposeful and strategic policies aimed at strengthening their hold on power and achieving their policy goals, albeit at an extraordinarily high cost in death and destruction (Colaresi and Carey 2008; Mann 2005; Midlarsky 2011; Straus 2015; Valentino 2004; Weitz 2003). This emphasis on leaders is in line with increasing tendencies to put leaders at the center of the analysis of foreign policies. Several scholars show that the beliefs and experience that leaders acquire before attaining office influence their foreign policy decisions (Colgan 2013; Kennedy 2011; Horowitz and Stam 2014). I follow this leader-centered approach in discussing the relationship between revolutionary leaders and mass killing.

What is it about revolutionary leaders that contributes to the risk of state-sponsored mass killing? My argument runs as follows: a leader's choices are determined by his or her subjective beliefs about the consequences of different choices. Revolutions select for a certain type of leaders; such leaders tend to have strong ideological commitments, be less risk averse, and possess previous experiences using violence successfully. Additionally, revolutionary leaders often command cohesive, high-disciplined, and loyal organizations that are able to commit large-scale atrocities. These characteristics raise their perceived benefits of using mass killings while lowering their perceived costs. Then, the room for bargaining and compromise between the revolutionary government and political opponents significantly shrinks, increasing the likelihood that revolutionary leaders will choose mass killing.

Revolutionary Leaders' Greater Willingness to Engage in Mass Killing

First, most revolutions tend to bring to power visionaries who tend to be ideologically or religiously driven and are determined to remake fundamentally their societies and states (Skocpol 1979; Stedman 1991; Walt 1992; Weitz 2003). Revolutionary leaders are likely to have antagonistic views of the status quo and to believe that their achievements represent a fundamental break from the past, regardless of what they seek to achieve. Such leaders pursue transformative goals while in power and harness the state to the task of implementing programs of radical social transformation (Bellamy 2012; Weitz 2003). The radical transformation of society produces large dissatisfied groups whom leaders may view as a serious threat to their goals (Harff and Gurr 1989; Valentino 2004).

Revolutionary leaders' ideologies can motivate, legitimate, and rationalize the use of mass atrocities against these groups by affecting how leaders perceive crises and define their goals (Bellamy 2012; Chirot and McCauley 2010; Harff and Gurr 1989; Leader Maynard 2014; Mann 2005; Melson 1992; Straus 2015; Valentino 2004; Weitz 2003). Ideological frameworks, often articulated by revolutionary leaders, both define new goals for the state and identify groups inimical to that goals. The new revolutionary government may dispense revolutionary justice to regime opponents and scapegoat them for social problems (Melson 1992; Weitz 2003; Walt 1992). For instance, the Bolsheviks categorized the Kulak, wealthy peasants, as the "enemy of the people" and attempted to destroy it as a class (Melson 1992; Weitz 2003). Extreme violence against political opponents is often easily justified by framing these victims as excluded from what Fein (1993) terms the "universe of obligation."[1] Revolutionary leaders, ideologically and philosophically committed to their programs, "display an incredible indifference to costs in order to achieve their ideological goals" (Stedman 1991, 12).

Moreover, opponents from within and outside the revolutionary regime can launch counterrevolutionary resistance movements against radical attempts to transform the society, when the regime is expected to threaten existing interests. Under these circumstances, the fear of reversion to an earlier subordinate period may help a revolutionary leader rationalize mass killing to ensure the survival of the movement (Midlarsky 2011). Mass violence not only crushes opponents in the short run but also preempts their ability to mount a long-term challenge as well as to crush (Straus 2015). For example, Nuon Chea, the second in command to Pol Pot in the Khmer Rouge regime, told an interviewer: "Our project was to transform the nature of society … Ours was a clean regime … That was our aim, but we failed because the enemy's spies attacked and sabotaged us from the start" (as cited in Straus 2015; Lemkin and Sambath 2009, 13:15–14:10). Clearly, fear that the revolutionary regime's achievements could be erased provided the rationale for the genocide in Cambodia. Robespierre, Stalin, and the young Turks also exemplify revolutionary leaders who were paranoid about the survival of their revolutions. The killings committed by communist regimes such as the Soviet Union, China, and Cambodia, referred to as "revolutionary mass murder" (Harff and Gurr 1989, 29) or "dispossessive mass killing" (Valentino 2004, 71), illustrate the type of mass killings prompted by this rationale.

Second, successful revolutionary leaders are, on average, more risk tolerant than nonrevolutionary leaders. Highly risk-averse individuals are unlikely to start a revolution and succeed as revolutionaries, since engaging in revolutionary activity is an extremely risk-tolerant choice (Colgan 2013, 662; Horowitz and Stam 2014, 536).[2] As Walt (1992, 334) writes, "[s]uccessful revolutions are rare, because even weak and corrupt states usually control far greater resources than do their internal opponents. … Indeed, it is perhaps more surprising that any ever succeed." Even after seizing power, revolutionary leaders need to defeat other rivals and counterrevolutionary movements in order to consolidate

power. Therefore, low risk aversion is a critical factor for successful revolutionary leaders, which implies that individuals who self-select into leadership positions in rebel groups are less risk averse.[3] Those who are more risk tolerant tend to attach higher utility to risky gambles and are more likely to overestimate the probability of gains and underestimate the probability of losses (Schneider and Lopes 1986). More risk-tolerant leaders are better able to succeed by taking advantage of political opportunities presented whereas highly risk-averse leaders limit their chances of success by not taking advantage of opportunities they could have exploited. Additionally, leaders who have previously experienced greater levels of risk and success are more likely to engage in high-risk behavior (Xue et al. 2010). Revolutionary leaders thus are more willing to take another high-risk gamble, the mass murder of civilians, than nonrevolutionary leaders.

Last, having prior successes as rebels can make revolutionary leaders predisposed to believe in the efficacy of violence as a strategy (Horowitz and Stam 2014, 537).[4] Revolutionary leaders often come to power through violence and face armed counterrevolutionary movements (Levitsky and Way 2013). These armed struggles produce leaders with successful experience in sustained violence. An individual's prior experiences serve as a heuristic to evaluate that person's choices (Jervis 1976). For example, leaders of the Bolshevik revolution, having experienced civil wars, did not hesitate to exercise state violence after seizing power (Weitz 2003). Similarly, Mao's prior experiences with internal and external conflicts, and his successes as a rebel leader, made him inclined to think that the use of violence would be an effective means to achieve his goals (Kennedy 2011). Consistent with this argument, Horowitz and Stam (2014) find that those leaders who come to power with prior rebel experience are more likely to initiate militarized disputes than leaders lacking any rebel experience. Using similar reasoning, Gurr (1988) argues that leaders who have secured and retained power through the use of violence are disposed to respond violently to future challenges.

Revolutionary Leaders' Greater Organizational Capacity for Mass Killing

Not only will revolutionary leaders be more willing to engage in mass killings, but they will also have at their disposal highly disciplined organizations that can commit large-scale campaigns of violence (Carter, Bernhard and Palmer 2012; Gurr 1988; Krain 2000; Levitsky and Way 2013). As Straus (2015, 76) emphasizes, mass violence requires the capacity to coordinate perpetrators, identify and access target civilian populations, and systematically inflict violence across time and territory. Many revolutionary leaders engage in violent conflict to overthrow the incumbent government and to defeat counterrevolutionary movements after seizing power. Levitsky and Way (2013, 12) argue that this period of sustained armed struggle provides revolutionary leaders with experience both in using violence as an instrument of change and control and in organizing effectively through, for example, strong ruling parties or expanded

security forces. Revolutionary leaders can use those same skills to commit civilian atrocities and to engage a coercive apparatus established during revolutionary movements as it continues to operate afterward.

Furthermore, the army and other security forces are ideologically disciplined and loyal to the regime, since they are either reconstructed by a radical purge or built from scratch after the revolutionary interregnum (Levitsky and Way 2013, 11). A revolutionary ideology may serve to mobilize perpetrators, providing them with ideological motivations and legitimations for perpetrating mass murders (Leader Maynard 2014). The close ties between the communist party and the military in Cuba, Vietnam, and China, or between the Khomeini regime and Iran's Revolutionary Guard, illustrate this point. This implies that revolutionary leaders are more likely to be united behind high-intensity repression and are less vulnerable to internal disobedience, emphasized in DeMeritt (2015). Furthermore, revolutionary leaders are thus less troubled by the dilemma faced by most autocrats that the repressive apparatus necessary to counter threats from those excluded from power can also be turned against the autocrats themselves (see Svolik 2012).

Hypotheses

When deciding whether to pursue systematic large-scale campaigns of violence, leaders must weigh the expected costs of committing mass killing against both the perceived probability of success and the anticipated benefits of escalating violence. That mass violence against domestic civilians is typically deliberate and instrumental does not mean that it comes at a low price. To the contrary, mass killing is extremely costly and risky. First, targeting large numbers of civilians causes immense moral opprobrium and increases opposition to the government. Second, a government will face international condemnation and sometimes punitive actions, such as economic sanctions and military interventions, for perpetrating the mass murder of civilians (Straus 2015, 49). In addition, leaders ordering mass killings always face the possibility that agents responsible for perpetrating the killing may refuse to follow orders—due either to moral constraints or to the fear of international prosecution or other forms of public retribution (DeMeritt 2015; Levitsky and Way 2013). As the examples of Serbia in 2000, Ukraine in 2004, and Egypt and Tunisia in 2011 show, internal disobedience undermines the government's coercive monopoly and capacity to engage in outright repression and can even contribute to regime collapse (Levitsky and Way 2013, 12). Fourth, in situations of armed conflict, mass killing can backfire because it can trigger revenge or divert scarce resources away from military campaigns against an opposing military (Straus 2015, 49). A policy of mass killing can also cause the incumbent to lose political support in the long run even if it is effective as a strategy of counterinsurgency (Valentino 2004, 68). Last, mass killings incur economic costs for leaders (Straus 2015, 50). Mass killing entails the destruction of physical infrastructure and human capital, creating huge refugee outflows. This large-scale disruption to the

economy can hurt growth potentials and revenue streams to the state. When leaders perceive these costs of escalating violence to be too high and the probability of success to be low, they will seek alternative policies.

However, because of their characteristics described above, revolutionary leaders are less likely to be restrained from employing mass violence by these costs. Under such a postrevolution regime, the room for bargaining and compromise between the revolutionary government and political opponents is significantly reduced. This is particularly true when the new revolutionary regime's efforts to implement radical change threaten to challenge existing societal interests and institutions and when the new leaders perceive political opponents as inherently dangerous for whatever reason. Regime opponents will prefer ongoing resistance and fighting as hard as they can to ending the conflict by cutting a deal. These violent resistances engender more threats to the revolutionary government and confirm the revolutionary leaders' perception of their opponents as a threat to their goals. When the ruling elites believe that the opponents cannot be persuaded to change their behavior, the perceived benefits of destroying them increases (Straus 2015). All of this incentivize revolutionary leaders to choose mass killing as a preemptive measure of self-protection. Hence, I argue that revolutionary leaders will be, on average, more likely to commit mass killing than nonrevolutionary leaders.

This holds true in comparison to other nonrevolutionary leaders, such as coup leaders, who come to power via nonconstitutional means. Coup leaders, often from the military or other elites within the state, rarely engage in sustained armed struggles during a coup attempt. Only a handful of men managed to overthrow the existing government as in Libya 1969 and in Ghana 1981. Military officers tend to avoid escalation into a fratricidal conflict that might damage the military's corporate interests and spiral into civil war (Singh 2014). This is why many coups tend to be bloodless and short. Moreover, coup leaders and perpetrators tend to be less driven by ideological goals and are less likely to seek a radical transformation of society. Hence, they will have a smaller incentive to commit large-scale campaigns of violence against civilians than do revolutionary leaders, and they cannot expect their subordinates to follow an order to massacre the opposition's military men and civilians.

However, not every revolutionary leader commits mass killing. A certain type of revolutionary leader may be both more willing to engage in genocide and politicide and more capable of doing so. Some revolutions, such as the "color" revolutions in the former Soviet republics, took place peacefully. If rebel experience in violent movements is important to leaders' willingness to use extreme violence against civilians, leaders of violent revolutions will be more prone to governmentsponsored mass killing than leaders of nonviolent revolutions. I thus differentiate between violent and nonviolent revolutions.

Second, an exclusionary ideology, defined as a belief system "that identifies some overriding purpose or principle that justifies efforts to restrict, persecute, or eliminate certain categories of people" (Harff 2003, 63), will be particularly important in motivating mass atrocities. Leaders committed to

exclusionary ideologies may perceive the aforementioned costs of mass killing to be worth paying in order to remove threats to both their survival and their political goals. Such leaders may also overestimate the likelihood of success and the ensuing benefits of mass killing. Supporting this claim, Harff shows that where the ruling elites advocate an exclusionary ideology, countries are more likely to have state failures leading to genocide or politicide than those with no such ideology. Additionally, Straus's (2015) analysis of sub-Saharan countries shows that where political elites articulate ideologies constructing the primary identity-based group and excluding certain groups (such as Rwanda and Sudan), severe crisis is most likely to escalate to genocide. On the other hand, where elites embraced pluralism and inclusiveness (such as the Ivory Coast, Mali, and Senegal), similar crises do not. This discussion leads to the following hypotheses:

> *Hypothesis 1:* Revolutionary leaders are more likely to execute mass killing than nonrevolutionary leaders, including those who seize power via violent means.

> *Hypothesis 1a:* Leaders of violent revolutions are more likely to execute mass killing than leaders of nonviolent revolutions.

> *Hypothesis 1b:* Revolutionary leaders who espouse exclusionary ideologies are more likely to initiate mass killing than revolutionary leaders who do not.

Political opportunities in the aftermath of a revolution might be solely responsible for the occurrence of mass killings perpetrated by revolutionary governments (see Krain 1997; Melson 1992). The collapse of a state's political authority and heightened political instability following the revolution creates a precondition more conducive to the use of mass killing. The need for power consolidation may be strongest in the wake of the revolution since the new government's survival is at risk. Figure 1 shows that about 40 percent of revolutionary leaders were ousted within the first five years in office, although this percentage is much lower compared to nonrevolutionary leaders (about 70 percent). The postrevolutionary situation may encourage revolutionary leaders to choose large-scale violence over other strategies. Mass murders committed by Idi Amin against Milton Obote's (the former president) supporters in Uganda, and those by the Khomeini regime against Mujahedeen, Kurds and Baha'is, occurred in the postrevolutionary period (Krain 2000).

However, I argue that not only postrevolutionary situations but also revolutionary leaders' characteristics and organizational capacities contribute to the enhanced risk of mass killing. To the extent that revolutionary leaders' characteristics and organizational capacities matter, a relationship between revolutionary leaders and mass killings should emerge after the end of the consolidation periods as well as during the consolidation periods. As Stalin's collectivization campaign in the 1930s and Mao's Cultural Revolution in the 1960s illustrate, revolutionary leaders may be disappointed by the disparity
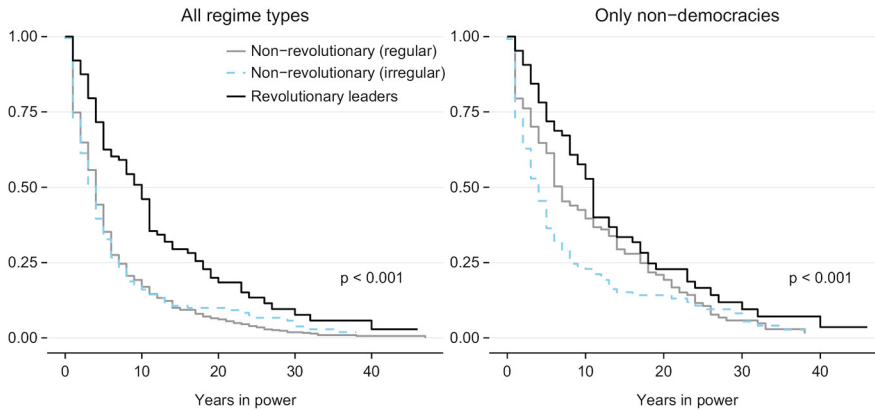
Figure 1. Kaplan–Meier survival estimates by leader type. The sample includes 1,175 leader durations and 164 countries during the period of 1945 to 2004. Nondemocracies are regimes that have a Polity2 score of 6 or lower.

between the postrevolutionary order and their revolutionary ideals and seek to revive radicalism and to implement a new set of revolutionary measures (Goldstone 2014, 32).

> *Hypothesis 2:*   Revolutionary leaders are more likely to execute mass killing than nonrevolutionary leaders even after the period of power consolidation.

Data and Method

Dependent Variable

The dependent variable of the analysis is the onset of state-sponsored mass killing coded as 1 in the first year of a mass killing and 0 otherwise. I focused on mass killing onsets rather than mass killing incidence, paying particular attention to conditions before the initiation of violence. This is because incidence reflects both the outbreak of new mass killing and the continuation of existing mass killing; thus, an estimated coefficient captures averages of the effect of a covariate on both the onset and the duration of mass killings.[5] To examine the effect on onset, I excluded country-years with ongoing mass killing from the sample.

To measure mass killing, I employed the widely used data set developed by the Political Instability Task Force (PITF), covering 1955 to 2012 (Marshall, Gurr, and Harff 2013).[6] This data set follows the definitions and guidelines of Harff (2003) to identify and code episodes of genocide and politicide. Harff (2003) defines genocide and politicide as "the promotion, execution, and/ or implied consent of sustained policies by governing elites or their agents—or in

the case of civil war, either of the contending authorities—that result in the deaths of a substantial portion of a communal group or politicized non-communal group". This definition emphasizes the intentionality of the killing and the threats to the survival of certain groups. Genocides are mass killings in which the victims are defined by association with a particular communal group. Contrarily, politicides are mass killings in which victims are defined primarily in terms of their hierarchical position or political opposition to the regime and dominant groups (Harff 2003, 58). I did not differentiate between genocides and politicides in coding mass killing since revolutionary leaders' personal attributes and organizational capacities are expected to increase the risk of both genocides and politicides.

Independent Variable

The key independent variable is a binary indicator, *Revolutionary Leader*, for whether the state leader came to power by leading a revolution as coded in a data set developed by Colgan (2012).[7] *Revolutionary Leader* equals 1 if the first generation of revolutionary leaders stay in power, and 0 otherwise.[8] For the cases where multiple leaders have led a revolution, the leadership is limited to its senior leaders. As Colgan explains, for example, both Lenin and Stalin, senior leaders of the Russian Revolution, are coded as Revolutionary Leaders, but Khrushchev, who fought in the Red Army as a young man, is not.

To identify a revolution, Colgan (2012) uses two criteria: an irregular transition and radical domestic change. An irregular transition refers to a leadership change that occurred through the use of armed force or widespread popular demonstrations that are either violent or nonviolent. The second criterion is that "the government must have implemented radical domestic changes for the purpose of transforming the organization of society, including its social, economic, and political institutions and practices" (Colgan 2012, 453). To measure radical domestic changes, Colgan examines seven possible areas of change: (1) the selection and power of the national executive, (2) the structure of property ownership, (3) the relationship between state and religion, (4) the official political ideology, (5) the official state name and symbols, (6) the institutionalized status of ethnicity and gender, and (7) the presence of a governing revolutionary council or committee. Colgan coded leaders as having implemented revolutionary policy changes if there were dramatic changes in policy in at least three of the seven categories.

This data set is useful for the analysis in this article for several reasons. I can identify revolutionary leaders as well as revolutions, which enables me to examine the effects of revolutionary leaders on mass killings as well as on revolutions as events. In particular, revolutionary leaders are a strict subset of all leaders who come to power as a result of irregular transitions or the use of force. This allows me to test Hypothesis 1, comparing revolutionary leaders and nonrevolutionary leaders who come to power through irregular means, called *Nonrevolutionary and Irregular Leader*. Last, the data set considered violence

a nonessential factor when coding revolutions, which is important to the study of violence.

To test additional hypotheses (Hypotheses 1a and 1b), I disaggregate revolutionary leaders. First, I distinguish between violent and nonviolent revolutionary leaders. I coded a revolutionary leader as violent when the leader used armed force against his own state before and during the revolution and the revolutionary process was violent. I coded other revolutionary leaders as nonviolent. I rely on Colgan's data set for the codings of the use of armed force and on Geddes, Wright, and Frantz's (2014) and Svolik's (2012) data sets for the codings of violent processes.[9] Next, in order to test Hypothesis 1b, I similarly differentiate revolutionary leaders with exclusionary ideologies from those without exclusionary ideologies. To identify exclusionary ideologies, I rest on the measure created by Barbara Harff and Ted Gurr and updated by Monty Marshall. The examples of exclusionary ideologies include strict variants of Marxism–Leninism, rigid anticommunist doctrines, doctrines of ethnic and ethnonationalist superiority or exclusivity, and states governed on the basis of Islamic Shari'a law that do not allow the expression of other religions (see Harff 2003, 63, for detailed descriptions).

In the sample of 162 countries from 1955 to 2004, there are eighty-five revolutionary leaders and 839 country-years coded as revolutionary leaders.[10] As Figure 2 illustrates, these observations account for 13 percent of 6,417 country-years included in the baseline sample, which is slightly lower than the percentage of irregular nonrevolutionary leaders (17 percent). Almost every country-year coded as revolutionary leaders scores lower than 7 on the Polity2 index. Moreover, 51 percent of revolutionary leaders are coded as espousing exclusionary ideologies while 50 percent of revolutionary leaders are coded as having gone through violent revolutions.

Control Variables

To control for potential confounding variables, I included a variety of control variables widely used in extant studies of mass killing. First, I controlled for two measures of internal and interstate armed conflict occurrences, taken from the Uppsala Conflict Data Program/Peace Research Institute, Oslo Armed Conflict Data set (Gleditsch et al. 2002). The most consistent finding in the empirical studies of mass killing is that governments are most likely to resort to mass killing when they are engaged in armed conflict (Harff 2003; Krain 1997). Additionally, the fact that most revolutions are accompanied by violence suggests the importance of controlling for armed conflict. Among seventy-six revolutions identified by Colgan (2012), for example, thirty-six revolutions occurred in the midst of internal conflict (when armed conflict occurred in the current or previous year). International conflict could also confound the estimate on revolutionary leaders. For example, Skocpol (1979) emphasizes the role of international conflict in triggering the emergence of revolutions and Midlarsky (2011) finds that socioeconomic loss caused by defeat in war makes a country prone to political extremism and genocide. The indicators of internal and interstate
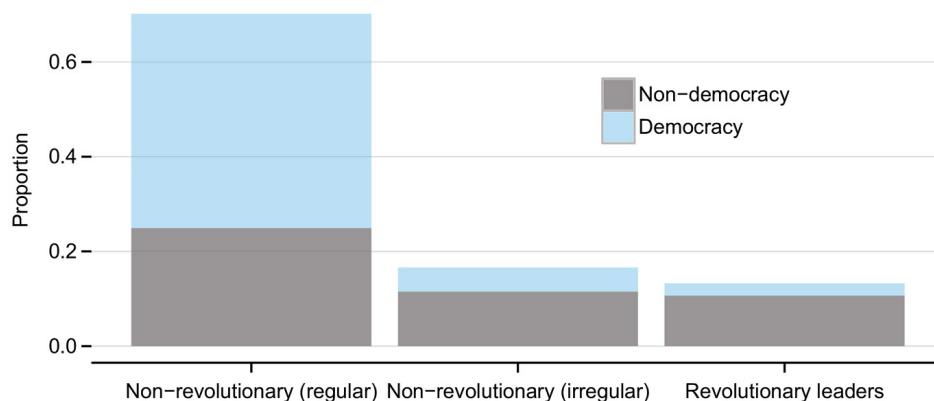
Figure 2. Proportion of leader types.

armed conflicts are coded as 1 for country-years with at least one corresponding conflict occurring in the previous year, and 0 otherwise.

Next, economic development could affect both revolutions and mass killing onsets. Low levels of economic development may be associated with a higher propensity toward revolutions, conflicts, and mass killings across countries. In a poor economy, the opportunity cost of participating in a conflict or revolution is small; thus, armed forces can be recruited cheaply (Collier and Hoeffler 2004). Alternatively, underdeveloped countries tend to have weak state capacities, lacking military, administrative, and bureaucratic infrastructures to effectively suppress insurgency (Fearon and Laitin 2003). Lastly, economic development increases the likelihood and extent to which mass violence disrupts an economy (Straus 2015). The level of economic development is negatively associated with the risk of mass killing. Therefore, I controlled for per capita income, obtained from Maddison (2003).

Some researchers argue that regime type is an important determinant of mass atrocities (Colaresi and Carey 2008; Harff 2003; Rummel 1995). Democratic institutions present ex ante and ex post constraints on leaders' decision-making power and enable leaders to credibly commit to the promises they make in negotiations with opposition groups. Consistent with the literature on civil conflict, however, other studies (Anderton and Carter 2015) find that partial democracies, often called anocracies, are most at risk of mass killing. An anocracy is a "regime that mixes democratic with autocratic features" (Fearon and Laitin 2003), characterized by weak institutions and governance. To capture a nonlinear effect of political regime, I include the Polity2 score (to which I add 10 to make it strictly nonnegative), drawn from the Polity IV data set (Marshall, Gurr, and Jaggers 2013), and its squared term. Finally, according to the argument regarding political opportunities, it is political change and instability, not regime type, that matter. Political instability opens the window of opportunity during which mass murders become more likely (Harff 2003; Krain

1997). Thus, I introduced a measure of political instability, which equals 1 if the regime has a Polity IV *Durable* score of less than 3.[11]

I also controlled for the following variables. The early scholars of genocide studies (e.g., Kuper 1982) argue that preexisting deep social divisions are structural causes of genocide, although current scholars challenge this claim. I thus included a measure of the ethnic fractionalization of the country taken from Fearon and Laitin (2003). I also included a dummy variable for the post–Cold War period (post-1990) to capture potential changes in the dynamics of mass violence. The change in strategic interests of major powers, and heightened interest in human rights after the end of the Cold War, may increase the price of killing civilians (Anderton and Carter 2015). I included an indicator for nonrevolutionary governments that came to power through irregular means, which I referred to as nonrevolutionary/irregular leaders. This group of leaders satisfies only one of the two requirements of revolutionary leaders: an irregular transition into power. Last, to control for potential duration dependence, I included a cubic polynomial of the number of years since the last mass killing onset.

Empirical Model

To test the connection between revolutionary leaders and mass killing onset, I analyze a cross-national data set of 162 countries from 1955 to 2004. I consider all country-years during the period covered for those countries for which data exist. The unit of analysis is the country-year. I fit the following model,

$$\Pr(y_{it} = 1 \mid y_{it-1} = 0, X_{it-1}) = \text{logit}^{-1}(\beta R_{it} + X_{it-1}\gamma)$$

where y_{it} is a binary variable indicating whether a genocide or politicide occurred in country i during year t. R_{it} is the variable of interest, and β describes the influence of revolutionary leaders on the probability of a mass killing onset. X_{it-1} is a vector of control variables. One potential problem is that the outbreak of mass killing outbreak is a rare event, occurring in less than 1 percent of country-years in the sample used in main specification. To reduce rare events bias, I also estimate a rare events logit model (King and Zeng 2001) and Firth's (1993) penalized likelihood logit model. The other challenge is to account for country-level unobserved heterogeneity. Thus, I additionally present results from both random effect and fixed effects models.[12] Given these estimation challenges, I consider and compare the results from several models.

To ensure that the results are not simply an artifact of the decision to include all country-years, I pursued three additional strategies. First, I follow Colaresi and Carey (2008) in restricting the sample to country-years experiencing ongoing state failure (851 country-years). This strategy is based on the facts that most mass killings occurred during episodes of political upheaval and that considerable heterogeneity exist among countries. The measure of state failure is obtained from the PITF (Marshall, Gurr, and Harff 2013).[13] Of the 839 country-years coded as *Revolutionary Leader*, 211 (25 percent) are coded as having

experienced state failure. This proportion is similar to that in *Nonrevolutionary and Irregular Leader* (21 percent) but higher than that in *Regular Leader* (11 percent). Second, I reestimated the main models with nondemocratic samples or irregular leader samples. Last, using a matching technique, I preprocessed the data to minimize any potential differences between the two groups before conducting the parametric analysis. Importantly, I obtained substantially similar results across different samples.

Results

Revolutionary Leaders Are More Likely to Commit Mass Killing

I begin with a descriptive examination of the relationship between revolutionary leaders and mass killing onset. To compare revolutionary leaders with other types of leaders, I distinguish among three types of leaders: (1) leaders who entered office through a regular process involving their country's established norms, procedures, and institutions; (2) nonrevolutionary leaders who come to power in an irregular manner such as coups and insurrections; and (3) revolutionary leaders. Figure 3 lists these three types of leaders and presents the rates of mass killing onset per year, averaged over all country-years (top) or state-failure years (bottom), across each category (depicted in dot lines). It also examines the bivariate relationship between leaders' tenures and the rate of mass killing onset per year using nonparametric locally weighted regression (lowess) plots, displayed in the black solid line.

First, the figure shows that mass killing onset rates are highest in country-years with revolutionary leaders, providing supporting evidence for Hypothesis 1. Mass killings broke out in country-years with revolutionary leaders at about two per 100 country-years, which is greater than a rate of 0.3 and 0.8 per 100 country-years for leaders who enter power regularly and for nonrevolutionary/irregular leaders.[14] Among the forty-one mass killing onsets between 1955 and 2004, eighteen (41 percent) were committed by revolutionary leaders that account for only 13 percent of 6,417 country-years. A very similar picture emerges when I considered only statefailure years in the bottom portion of Figure 3, although the overall chance of mass killing onset is substantially greater than when using all country-years.

Another important finding is that the risk of mass killing outbreak for revolutionary leaders is highest in the immediate wake of revolution, but begins to rise sharply again after the leader has been six years in office.[15] Consistent with my theory, this suggests that the association between revolutionary leaders and mass killing onset is not entirely attributable to the political upheaval in the immediate aftermath of the revolution, supporting Hypothesis 2. Contrarily, the effects of nonrevolutionary leaders' years in office are not statistically significant at the 5 percent level.

I explored whether these findings hold when controlling for potential confounders related to security threats to leaders, political opportunities for mass
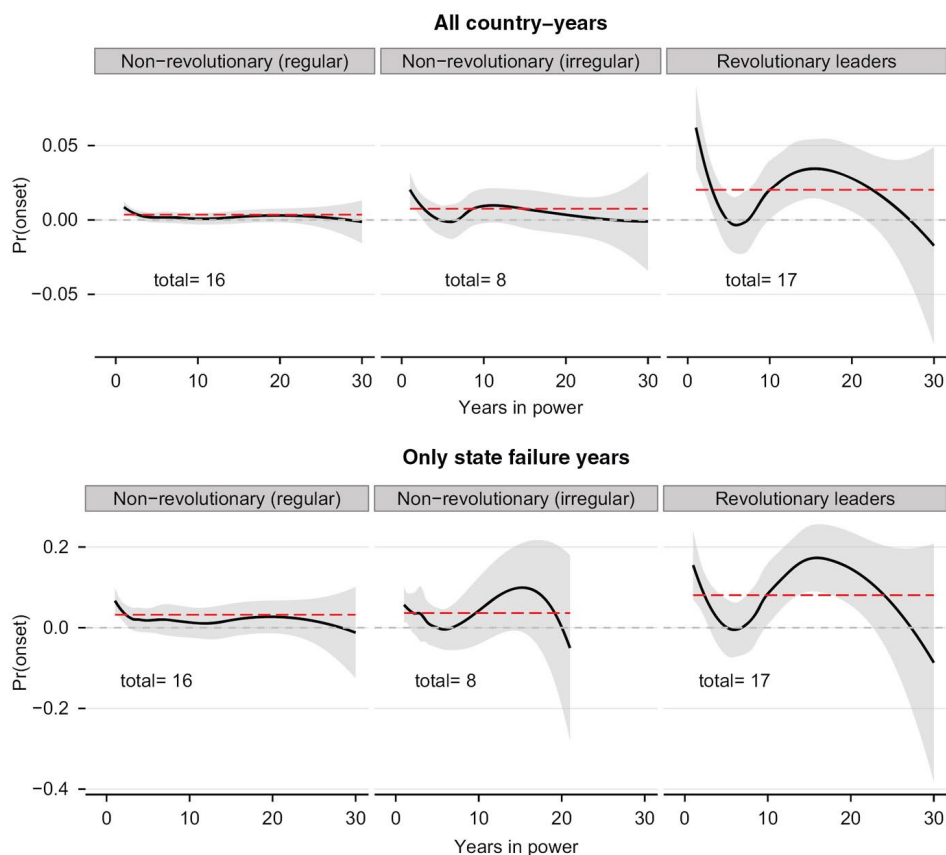
Figure 3. Years in power and mass killing onset. Lowess plot (solid line) with 95 percent confidence bands (shaded regions). Dashed lines display mean values.

murder, and preexisting socioeconomic conditions. Table 1 reports the primary empirical results in which the base category is leaders that come to power through regular means (including both democratic and autocratic ones). It reveals that revolutionary leaders are, as expected, more likely to initiate genocide or politicide than nonrevolutionary leaders. Two-tailed tests show that revolutionary leaders are statistically different from *irregular nonrevolutionary leaders* at the 5 percent level, which supports Hypothesis 1. This finding holds both without control variables (model 1) and with control variables (model 2). The introduction of the baseline controls, including several measures of existing conflict and political instability, only slightly decreases the magnitude of the coefficient on revolutionary leaders without affecting its statistical significance. I obtained consistent results when I reestimated the model of model 2 using a rare events logit estimator (model 3). Rare events bias does not appear to affect the logit estimates.[16]

Table 1. Revolutionary Leaders and Mass Killing Onset.

	All country-years					State-failure years	
	Logit (1)	Logit (2)	Rare Logit (3)	RE Logit (4)	FE Logit (5)	Logit (6)	Logit (7)
Revolutionary leader	1.59*** (0.37)	1.45*** (0.45)	1.42*** (0.45)	1.64*** (0.51)	1.98** (0.88)	1.04*** (0.36)	1.00** (0.47)
Nonrevolutionary and irregular	0.66 (0.43)	0.23 (0.58)	0.27 (0.58)	0.14 (0.59)	0.39 (0.92)	0.18 (0.45)	−0.01 (0.56)
Civil conflict		1.73*** (0.47)	1.71*** (0.47)	1.88*** (0.48)	1.50** (0.68)		0.42 (0.47)
Interstate conflict		1.96*** (0.51)	2.05*** (0.50)	1.89*** (0.73)	0.90 (0.92)		1.13** (0.45)
Polity 2		0.17 (0.12)	0.14 (0.12)	0.17 (0.17)	0.08 (0.27)		0.15 (0.13)
Polity 2 (squared)		−0.01* (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)		−0.02* (0.01)
Political instability		1.21*** (0.39)	1.20*** (0.39)	1.38*** (0.47)	2.46*** (0.74)		0.48 (0.45)
ln(GDPpc)		−0.09 (0.30)	−0.08 (0.30)	−0.21 (0.31)	−0.42 (0.87)		0.05 (0.28)
Ethnic fractionalization		0.36 (0.89)	0.35 (0.89)	0.37 (0.90)	24.95 (5,618.21)		0.22 (0.89)
Post–Cold War		−0.86 (0.61)	−0.79 (0.61)	−1.31* (0.72)	−3.90*** (1.09)		−1.00* (0.53)
Constant	−5.18*** (0.60)	−6.61*** (2.97)	−6.37** (2.97)	−7.07*** (2.64)		−3.81*** (0.28)	−4.53* (2.68)
Observations	6,417	5,814	5,814	5,814	851	929	816
Countries	162	148	148	148	24	97	87
Onsets	41	32	32	32	32	41	32
Log likelihood	−228.45	−154.79	−153.84	−59.62	154.53	−113.04	

Regular Leader is the baseline category. Model 3 estimates the rare events logit model, model 4 estimates the random effects logit model, and model 5 estimates the conditional logit fixed effects model; all other models employ a logit regression. Robust standard errors clustered at the country level are in parentheses (except in models 4 and 5). A cubic polynomia of years with no mass killing is included in all models but not reported to save space. GDPpc ¼ gross domestic product per capita; Rare = rare events; RE = random effects; FE = fixed effects.

* p < .1
** p < .05
*** p < .01

I also accounted for time-invariant heterogeneity between countries by employing a random effects logit model (model 4) and a conditional fixed effects logit estimator (model 5). I find the estimates on revolutionary leaders to be positive and statistically different from zero. Therefore, the conclusion I draw from the pooled logit models is robust in allowing for cross-country heterogeneity in the baseline hazard rate. These results show that the estimated effects of revolutionary leaders on mass killing onsets are not an artifact of the estimation method.

In contrast to the example of revolutionary leaders, little evidence suggests that nonrevolutionary leaders who entered office through irregular transition are more likely than regular leaders to commit mass killing. Their estimated coefficients are positive but statistically insignificant and much smaller in magnitude than those of revolutionary leaders. In addition, when I excluded revolutionary leaders from the analysis, the coefficients on irregular nonrevolutionary leaders became negative. This result demonstrates the importance of differentiating between revolutions and coups.

The estimates reported up to this point are based on the full sample. In line with Harff (2003) and Colaresi and Carey (2008), models 6 and 7 examine the statefailure sample. Even when conditional on episodes of acute political instability, the relationship between revolutionary leaders and genocide/politicide onset is statistically significant. I also reestimated the main models by excluding democracies (Table A7 of the online Appendix). These estimates are qualitatively identical to the estimates, based on the global sample, of Table 1. The same is true when I focused on country-years in which the country is ruled by a leader who came to power in an irregular fashion (Table A8). Accordingly, the results of Table 1 are robust to the choice of sample.

For ease of interpretation, Figure 4 displays the estimates of the substantive effects of revolutionary leaders. I used model 2 of Table 1 to calculate predicted probabilities of genocide/politicide outbreak. I adopted the observed value approach, setting all the other covariates to the values observed for each observation, and obtained average effects. Revolutionary leaders are more than four times as likely to initiate genocide or politcide as nonrevolutionary leaders (1.3 percent vs. 0.3 percent). This effect is comparable with the effects of important situational factors, ongoing civil conflict (producing a 5.6-fold increase from 0.3 percent to 1.7 percent), and interstate conflict (producing a sixfold increase from 0.5 percent to 3 percent). When I restrict my analysis to nondemocratic country-years or irregular leaders, the change from nonrevolutionary to revolutionary leaders is associated with about a fivefold or threefold increase in the annual probability of mass killing onset. Lastly, when I use the model from model 7, based on state-failure years, I found that revolutionary leaders have similar effects (2.8 percent vs. 6.8 percent).

Next, I differentiate subtypes of revolutionary leaders to test Hypotheses 1a and 1b. Models 1 and 3 of Table 2 substitute two indicators of violent and nonviolent revolutionary leaders for revolutionary leaders. The violent revolutionary variable is positive and statistically significant, while the nonviolent revolutionary is not significant although it is also positive. Only violent
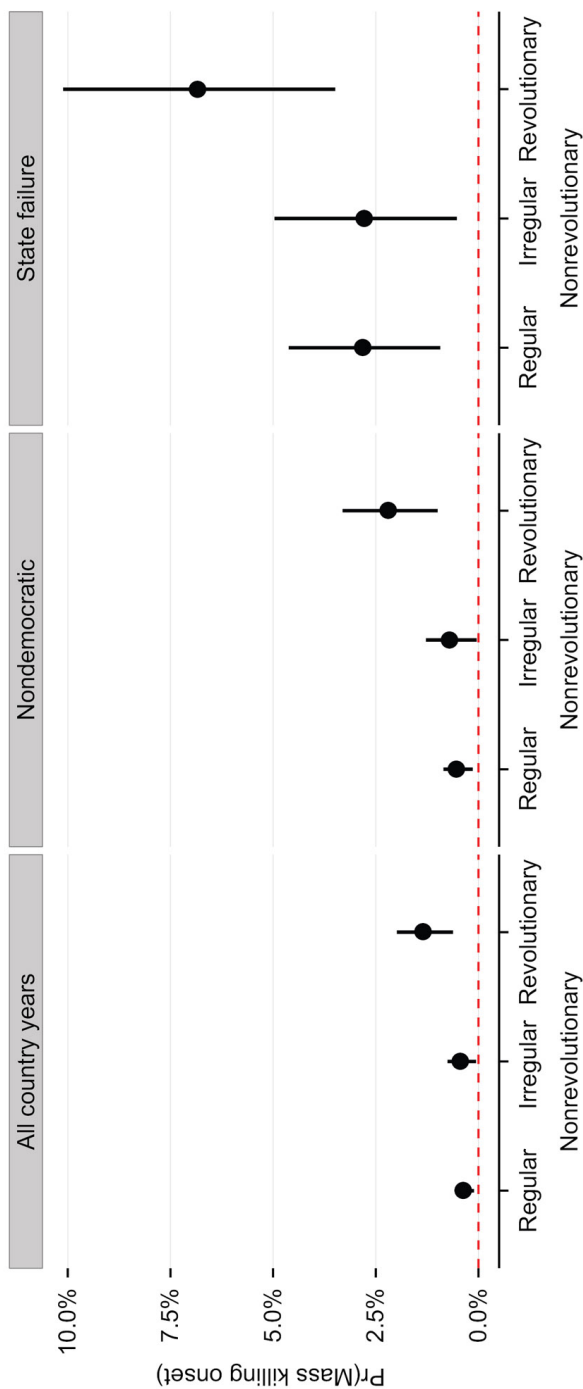
Figure 4. Predicted probabilities of mass killing and revolutionary leaders. Dots display the point estimates, and vertical line segments associated with dots show the 95 percent confidence intervals.

revolutionary leaders are more likely than nonrevolutionary leaders to commit mass violence, confirming the importance of violent struggles against the state in prompting revolutionary leaders' decision to perpetrate mass killing. This finding is similar to the findings of Carter, Bernhard, and Palmer (2012) that the positive effect of social revolutions on military capacity and interstate war outcomes did not extend to the peaceful revolutions that followed the collapse of the Soviet Union, although the difference between violent and nonviolent revolutionary leaders is not statistically significant at conventional levels.

Models 2 and 4 examine whether exclusionary ideologies are critical to the effects of revolutionary leaders on the risk of mass violence. Consistent with Harff (2003), the results show that revolutionary leaders with exclusionary ideologies are more likely than revolutionary leaders with no exclusive ideologies and nonrevolutionary leaders to commit mass violence. The difference between the two groups of revolutionary leaders is statistically significant (*p*-values of .026). Consistent with Harff (2003), this indicates the importance of ideology and religion in explaining revolutionary leaders' propensity to use mass violence.

Revolutionary Leaders versus Revolution and Postrevolutionary Instability

To test Hypothesis 2, I further investigate whether the temporal pattern found in Figure 3 emerges when I take into account several factors related to mass killing. To this end, I introduced dummy variables for seven, nonoverlapping, five-year periods around the revolution, $\{R_0, \dots, R_6\}$, to model 2 of Table 1. R_0 is set equal to 1 for the five years before the revolution, the next six dummy variables, $R_1, \dots, R_6$, are set equal to 1 in each five years under a revolutionary government, and R_7 captures the remaining period (greater than or equal to thirty). Each dummy equals 0 in all years other than those specified. The baseline period includes the nonrevolutionary years.

Figure 5, summarizing the estimation results, shows that the effects of revolutionary leaders do not die out as leaders' time in office increases.[17] Except R_2 and R_6, all postrevolutionary periods are positively correlated with a greater risk of mass killing onset. Moreover, the estimated coefficient of the first five postrevolutionary years R_1 is not greater in magnitude than those of these later postrevolutionary periods. I found similar results when I used different time windows, three-year or ten-year periods (Tables A11 and A12), or when I added a binary indicator of revolutions as one-off events, along with a one-year lead and lag, to the baseline specification (Table A13). These results strongly demonstrate that the relationships I have found are unlikely to be driven only by heightened political instability and tenure insecurity after a revolution. Revolutionary leaders have an impact on the likelihood of mass killing onsets distinct from revolutions as oneoff events.
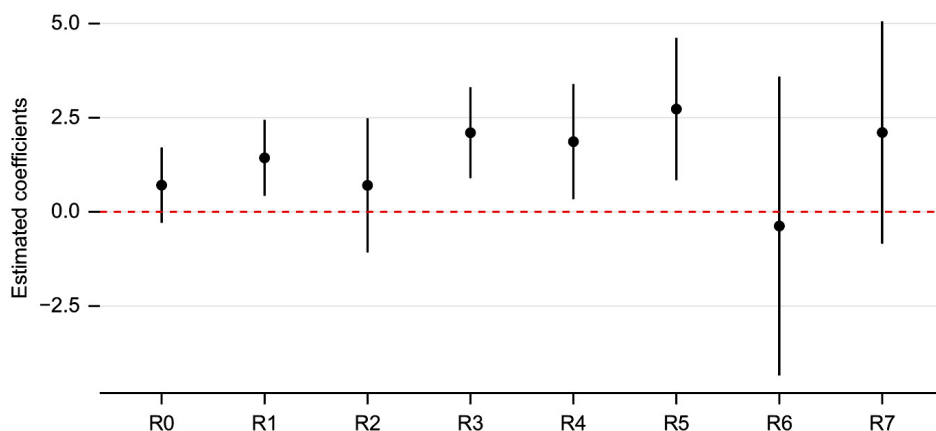
Figure 5. Partitioning revolutionary leaders by time periods. Dots display the coefficient estimates of different time periods, and horizontal line segments display the 95 percent confidence intervals.

Supplementary Analyses

To gain more insight on the mechanisms behind estimates, I conducted supplementary analyses. I examined whether war is a necessary condition for revolutionary leaders' mass killing. It is known that mass killing occurs during wars (Melson 1992; Midlarsky 2011; Straus 2015; Weitz 2003), and some scholars argue that mass killings happen only during periods of intense political upheaval. For example, Melson (1992) argues that war is a necessary condition for genocide. When domestic groups are linked to the foreign enemy of the regime in wartime, their chances of becoming targets of mass killing considerably increase. However, I found no evidence that the effects of revolutionary leaders on mass killing outbreaks are conditional on internal and interstate war (Tables A15 and A16). The systematic relationship between revolutionary leaders and mass killing onsets holds regardless of internal and interstate war's existence.

Next, I subjected my results to additional robustness checks. Due to space considerations, I briefly discuss the results of these robustness checks and report them in the Online Appendix. First, I used multiple imputation to ensure that the results presented above are not dependent on listwise deletion of observations with missing values. Listwise deletion reduces the number of observations by 9 percent but substantially decreases the number of mass killing onsets from forty-one to thirty-two. If the missing observations on economic and political control variables are also correlated with the presence of a revolutionary leader, the listwise deletion would bias my estimates.[18] Thus, I multiply imputed the missing data on the control variables using the Amelia II program (Honaker, King, and Blackwell 2011) and reestimated the models of Tables 1

Table 2. Exploring the Role of Violence and Ideology.

	All country-years		State-failure years	
	(1)	(2)	(3)	(4)
Violent revolutionary	1.74*** (0.48)		1.08** (0.52)	
Nonviolent revolutionary	0.91 (0.74)		0.82 (0.83)	
Revolutionary, exclusive ideology		2.01*** (0.53)		1.62*** (0.55)
Revolutionary, no exclusive ideology		0.61 (0.51)		0.15 (0.43)
Nonrevolutionary and irregular	0.21 (0.58)	0.19 (0.59)	−0.02 (0.57)	−0.00 (0.57)
Civil conflict	1.64*** (0.49)	1.75*** (0.48)	0.40 (0.46)	0.44 (0.48)
Interstate conflict	1.94*** (0.48)	1.87*** (0.51)	1.09** (0.46)	0.98* (0.50)
Polity 2	0.18 (0.12)	0.19 (0.13)	0.15 (0.13)	0.22 (0.15)
Polity 2 (squared)	−0.01* (0.01)	−0.01* (0.01)	−0.02* (0.01)	−0.02** (0.01)
Political instability	1.26*** (0.40)	1.28*** (0.42)	0.51 (0.47)	0.44 (0.52)
ln(GDPpc)	−0.14 (0.32)	−0.16 (0.28)	0.04 (0.29)	−0.02 (0.26)
Ethnic fractionalization	0.12 (0.98)	0.45 (0.88)	0.15 (0.97)	0.27 (0.91)
Post–Cold War	−0.97 (0.65)	−0.79 (0.59)	−1.00* (0.54)	−0.96* (0.54)
Constant	−6.16** (3.11)	−6.31** (2.79)	−4.44 (2.72)	−4.28* (2.47)
Observations	5,814	5,814	816	816
Countries	148	148	87	87
Onsets	32	32	32	32
Log likelihood	−153.84	−151.80	−112.97	−110.14

Regular Leader is the baseline category. Robust standard errors clustered at the country level are in parentheses. GDPpc = gross domestic product per capita.
* $p < .1$
** $p < .05$
*** $p < .01$

and 2 using multiply imputed data. Tables A3 and A4 of online Appendix indicate that the results substantively remain unchanged.

Second, I repeated my analysis using a matching method that creates a comparison group among the control units that is as similar as possible to the set of revolutionary leaders. The country-years of revolutionary leaders are likely to be very different from the country-years of nonrevolutionary leaders, and the estimated effects of revolutionary leaders may depend on the linear extrapolations from the data. To address this concern, I first preprocessed the data using the coarsened exact matching method (Iacus, King, and Porro 2012) and then reestimated the parametric logit model on the matched data set to control for remaining differences between the two groups. I matched on the baseline set of control variables used in Table 1. Table A10 shows that the connection between

revolutionary leaders and mass killing is robust to the use of matched samples. The same is true when I used multiply imputed data.

Last, I estimated models including additional control variables, a measure of executive constraints from the Polity IV data, autocratic regime types from Geddes, Wright, and Frantz (2014), and a measure of oil wealth dependence. I find that revolutionary leaders' propensity to engage in mass killing is not driven by institutional configurations under revolutionary governments or an economic factor. I further examined whether the estimates I have reported are sensitive to adding or deleting other control variables. Using the program developed by Young and Holsteen (2015), I estimated all possible combinations of controls (2,048 models) and store all of the estimates on revolutionary leaders. Figure A1 displays the distribution of all the estimates of revolutionary leaders. In every model, the estimated coefficient remains positive, ranging from 1.1 to 2.3, and statistically significant at the 5 percent level. This demonstrates that the main results are strongly robust to different model specifications.

Conclusion

This article argues that leaders emerging from successful revolutionary movements are both more willing to pursue and more capable of pursuing large-scale violence against unarmed civilians. My empirical analysis supports my expectations, demonstrating that there are substantial differences in the behavioral tendencies of political leaders to initiate mass violence. I find that revolutionary leaders are more likely to commit genocide or politicide than nonrevolutionary leaders, including those who gain power via irregular means, such as coups, assassinations, and civil wars short of revolutions.

My argument and findings have implications. First, this article challenges previous research on revolutions and mass killing, most of which focuses on revolutions as events. Consistent with previous research, I find that the risk of genocide or politicide is high in the immediate postrevolutionary period when regime change occurs. However, I also find that even after their hold on power stabilizes, revolutionary leaders are still more likely to commit genocide or politicide. The connection between revolutionary leaders and mass killing remains consistent even while controlling for several measures of political crises. The results suggest that the relationship between revolutionary leaders and mass killing is not simply attributable to political upheaval. Besides opening up political opportunities for new leaders to eliminate their political opponents, revolutions bring to power leaders who are more apt to commit large-scale violence against civilians in order to legitimize and strengthen their own power.

Second, this article provides evidence consistent with the existing emphasis on the importance of individual leaders and their ideologies in explaining mass murder (Bellamy 2012; Fein 1993; Harff 2003; Semelin 2013; Straus 2015; Weitz 2003). Political leaders matter since large-scale, sustained, and

systematic violence against civilians, in most cases, requires the engagement of national government. Ideologies determine how leaders perceive threats and how they define their goals. My analysis confirms that exclusionary ideologies, those that "justify efforts to restrict, persecute, or eliminate certain categories of people" (Harff 2003), are critical to explaining revolutionary leaders' propensity to commit mass atrocities against unarmed citizens.

Third, future work should seek to directly test each hypothesized mechanism postulated in this article. As mentioned, exclusionary ideologies play an important role in the connection between revolutionary leaders and mass killing. I also find weak evidence that leaders of violent revolutions are more likely to commit mass killing than leaders of nonviolent revolutions. However, the relative weight of the causal mechanisms I advance remains subject to further exploration.[19] I still need to determine the degree to which revolutionary leaders' propensity for mass killing is influenced by their particular individual characteristics versus the organizational capacities they usually bring with them. Moreover, my findings cannot provide a definite conclusion about the relative significance of the ideological ambitions of the revolutionary leaders versus their past experience of violence or attitudes toward risk and violence. Although all the hypothesized mechanisms can operate simultaneously, it will be important to differentiate the relative weight of each mechanism linking revolutionary leaders to mass killing.

Last, future work could identify the conditions under which revolutionary leaders are more likely to choose mass killing as a political strategy. Straus (2015) argues that scholars have paid little attention to when and why ruling elites would view the perpetration of mass killing as highly costly. The factors that discourage revolutionary leaders from employing violence should be explored, given that most leaders do not choose mass killing. Meanwhile, understanding why violence escalates is still important to determining the relationship between revolutionary leaders and mass violence. I find little evidence that revolutionary leaders are more likely to choose mass killing when they are faced with internal or interstate conflicts. This seems to suggest the need to focus on leaders' perceived threats rather than on material conditions in wartime (Straus 2015). Future research could utilize, instead of actual militarized conflicts, the measure of strategic rivalries, defined as interstate rivalries in which states view "each other as competitors, the source of actual or latent threats that pose some probability of becoming militarized, and enemies" (Thompson 2001, 560).

Supplemental Material follows the **References** and is attached to the html cover page in this repository.

Notes

1. Bellamy (2012) calls this ideology "selective extermination" according to which the protection of civilian immunity applies only to certain groups of civilians.

2. Colgan contends that a greater risk tolerance, along with revisionist preferences, makes revolutionary leaders more belligerent internationally.

3. Former rebels who occupy the office of the national executive tend to have had leadership positions in rebel organizations (Horowitz and Stam 2014, 536). They are thus more likely to actively select themselves into revolutionary movements rather than to be coerced into participation.

4. Leaders' attitudes toward violence are significantly shaped by whether they regard violence as not only efficacious but legitimate, ideologically as discussed above or morally as argued in Fiske and Rai (2014).

5. However, I find significant effects of revolutionary leaders on the incidence of mass killing as well as its onset (see Supplementary Table A6).

6. Quite a few studies examining genocide and politicide have used this data set (e.g., Anderton and Carter 2015; Colaresi and Carey 2008; Harff 2003; Goldsmith et al. 2013).

7. If a leadership change occurred in the same year but after the mass killing started, I categorized the leader type at the start of the mass killing as the same leader type from the previous year.

8. According to Colgan (2012), "a leader has the same coding for each year that he is continuously in office. A leader who leaves office and then returns to it later can have a different coding" (p. 452).

9. Colgan (2012) measures whether the individual leader "used armed force against his own state at any time prior to coming to office as an integral part of coming to national influence, and ultimately, state leadership" (p. 453). He only considers the use of force directly instrumental to the outcome of the transition. The Svolik data set codes whether a leader's entry into office involved violence while the Geddes et al. data set measures whether deaths occurred during the actions directly related to the overthrow of the government. For my study, I coded the revolutionary process as violent when either condition was present.

10. Due to data limitations for some control variables, seventy-six leaders and 748 countryyears coded as revolutionary leaders are included in the models with control variables.

11. The durable variable measures the number of years since the last regime change, defined by a three-point change in the Polity score over a period of three years or less.

12. A conditional fixed effects logit regression, analyzing only within-country variations, drops countries from the analysis that experience no mass killing. This restriction

on the sample may induce selection bias. Nevertheless, I present the result from the conditional logit model for comparison with other estimators.

13. State failures are defined as all revolutionary wars, ethnic civil wars, adverse regime transitions, and genocides or politicides.

14. The same is true when I excluded democratic leaders.

15. One may question why a similar temporal pattern in the risk of mass killing onset is found for irregular nonrevolutionary leaders when I focus on state-failure years. A close examination of the data reveals that this is simply because in the sample of state-failure years, there are very few observations of irregular nonrevolutionary leaders that stayed long in power. For example, there are only ten observations of such leaders after nine years given that there are 221 country-years of irregular nonrevolutionary leaders. Meanwhile, two of the eight mass killing onsets, caused by irregular nonrevolutionary leaders, occur at the year 10 or 11 while the other six occur within the first three years. Taken together, the risk of mass killing outbreak significantly rises after five years due to the two onsets of mass killing in ten country-years. However, the relationship between leader tenure and mass killing risk is similar in the full and state-failure samples of revolutionary leaders. In contrast to irregular nonrevolutionary cases, there are sixty-eight observations of revolutionary leaders (32 percent of the 221 country-years) after nine years and nine of the seventeen mass killing onsets occurred between ten and twenty years in power.

16. Table A4 of online Appendix presents estimates using Firth's penalized likelihood. Results remained similar.

17. I estimated the Firth's penalized likelihood method since coefficients on $R1$, $R6$, and $R7$ cannot be estimated due to complete separation problem. The use of logit models produced similar estimates on other periods.

18. I thank an anonymous reviewer for calling my attention to this important point.

19. I thank an anonymous reviewer for suggesting this.

References

Anderton, Charles H., and John R. Carter. 2015. "A New Look at Weak State Conditions and Genocide Risk." *Peace Economics, Peace Science and Public Policy* 21 (1): 1-36.

Bellamy, Alex J. 2012. *Massacres and Morality: Mass Atrocities in an Age of Civilian Immunity*. Oxford, UK: Oxford University Press.

Carter, Jeff, Michael Bernhard, and Glenn Palmer. 2012. "Social Revolution, the State, and War: How Revolutions Affect War-making Capacity and Interstate War Outcomes." *Journal of Conflict Resolution* 56 (3): 439-66.

Chirot, Daniel, and Clark McCauley. 2010. *Why Not Kill Them All? The Logic and Prevention of Mass Political Murder*. Princeton, NJ: Princeton University Press.

Colaresi, Michael, and Sabine C. Carey. 2008. "To Kill or to Protect Security Forces, Domestic Institutions, and Genocide." *Journal of Conflict Resolution* 52 (1): 39-67.

Colgan, Jeff D. 2012. "Measuring Revolution." *Conflict Management and Peace Science* 29 (4): 444-67.

Colgan, Jeff D. 2013. "Domestic Revolutionary Leaders and International Conflict." *World Politics* 65 (4): 656-90.

Collier, Paul, and Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56 (4): 563-95.

DeMeritt, Jacqueline H. R. 2015. "Delegating Death: Military Intervention and Government Killing." *Journal of Conflict Resolution* 59 (3): 428-54.

Fearon, James D., and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *The American Political Science Review* 97 (1): 75-90.

Fein, Helen. 1993. "Accounting for Genocide after 1945: Theories and Some Findings." *International Journal on Minority and Group Rights* 1 (2): 79-106.

Firth, David. 1993. "Bias Reduction of Maximum Likelihood Estimates." *Biometrika* 80 (1): 27-38.

Fiske, Alan Page, and Tage Shakti Rai. 2014. *Virtuous Violence: Hurting and Killing to Create, Sustain, End, and Honor Social Relationships*. Cambridge, MA: Cambridge University Press.

Geddes, Barbara, Joseph Wright, and Erica Frantz. 2014. "Autocratic Breakdown and Regime Transitions: A New Data Set." *Perspectives on Politics* 12 (02): 313-31.

Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Håvard Strand. 2002. "Armed Conflict 1946–2001: A New Dataset." *Journal of Peace Research* 39 (5): 615-37.

Goldsmith, Benjamin E., Charles R. Butcher, Dimitri Semenovich, and Arcot Sowmya. 2013. "Forecasting the Onset of Genocide and Politicide: Annual Out-of-sample Forecasts on a Global Dataset, 1988–2003." *Journal of Peace Research* 50 (4): 437-52.

Goldstone, Jack A. 2014. *Revolutions: A Very Short Introduction*. Oxford, UK: Oxford University Press.

Gurr, Ted Robert. 1988. "War, Revolution, and the Growth of the Coercive State." *Comparative Political Studies* 21 (1): 45-65.

Harff, Barbara. 2003. "No Lessons Learned from the Holocaust? Assessing Risks of Genocide and Political Mass Murder since 1955." *American Political Science Review* 97 (01): 57-73.

Harff, Barbara, and Ted Robert Gurr. 1989. "Victims of the State: Genocides, Politicides and Group Repression since 1945." *International Review of Victimology* 1 (1): 23-41.

Honaker, James, Gary King, and Matthew Blackwell. 2011. "Amelia II: A Program for Missing Data." *Journal of Statistical Software* 45 (7): 1-47.

Horowitz, Michael C., and Allan C. Stam. 2014. "How Prior Military Experience Influences the Future Militarized Behavior of Leaders." *International Organization* 68: 527-59.

Iacus, Stefano M., Gary King, and Giuseppe Porro. 2012. "Causal Inference without Balance Checking: Coarsened Exact Matching." *Political Analysis* 20 (1): 1-24.

Jervis, Robert. 1976. *Perception and Misperception in International Politics*. Vol. 49. Princeton, NJ: Princeton University Press.

Kennedy, Andrew. 2011. *The International Ambitions of Mao and Nehru: National Efficacy Beliefs and the Making of Foreign Policy*. Cambridge, MA: Cambridge University Press.

King, Gary, and Langche Zeng. 2001. "Explaining Rare Events in International Relations." *International Organization* 55 (3): 693-715.

Krain, Matthew. 1997. "State-sponsored Mass Murder: The Onset and Severity of Genocides and Politicides." *Journal of Conflict Resolution* 41:331-60.

Krain, Matthew. 2000. *Repression and Accommodation in Post-revolutionary States*. New York: St. Martin's Press.

Kuper, Leo. 1982. *Genocide: Its Political Use in the Twentieth Century*. New Haven, CT: Yale University Press.

Kydd, Andrew H., and Scott Straus. 2013. "The Road to Hell? Third-party Intervention to Prevent Atrocities." *American Journal of Political Science* 57 (3): 673-84.

Leader Maynard, Jonathan. 2014. "Rethinking the Role of Ideology in Mass Atrocities." *Terrorism and Political Violence* 26 (5): 821-41.

Lemkin, Rob, and Thet Sambath. 2009. *Enemies of the People*. Oxford: Old Street Films. Video Documentary.

Levitsky, Steven, and Lucan Way. 2013. "The Durability of Revolutionary Regimes." *Journal of Democracy* 24 (3): 5-7.

Maddison, Angus. 2003. *Development Centre Studies the World Economy Historical Statistics: Historical Statistics*. Paris, France: OECD Publishing.

Mann, Michael. 2005. *The Dark Side of Democracy: Explaining Ethnic Cleansing*. Cambridge, UK: Cambridge University Press.

Marshall, Monty G., Ted R. Gurr, and Barbara Harff. 2013. "PITF—State Failure Problem Set: Internal Wars and Failures of Governance, 1955–2012." *Dataset and Coding Guidelines*. Accessed July 20, 2014. http://www.systemicpeace.org/inscrdata.html.

Marshall, Monty G., Tedd R. Gurr, and Keith Jaggers. 2013. "Polity IV Project: Political Regime Characteristics and Transitions, 1800–2012." *Dataset Users' Manual*. Center for Systemic Peace. Accessed July 20, 2014. http://www.systemicpeace.org/polity/polity4.htm.

Melson, Robert. 1992. *Revolution and Genocide: On the Origins of the Armenian Genocide and the Holocaust*. Chicago: University of Chicago Press.

Midlarsky, Manus I. 2011. *Origins of Political Extremism: Mass Violence in the Twentieth Century and Beyond*. Cambridge, UK: Cambridge University Press.

Rummel, Rudolph J. 1995. "Democracy, Power, Genocide, and Mass Murder." *Journal of Conflict Resolution* 39 (1): 3-26.

Schneider, Sandra L., and Lola L. Lopes. 1986. "Reflection in Preferences under Risk: Who and When May Suggest Why." *Journal of Experimental Psychology: Human Perception and Performance* 12 (4): 535-48.

Semelin, Jacques. 2013. *Purify and Destroy: The Political Uses of Massacre and Genocide*. New York, NY: Columbia University Press.

Singh, Naunihal. 2014. *Seizing Power: The Strategic Logic of Military Coups*. Baltimore, MD: JHU Press.

Skocpol, Theda. 1979. *States and Social Revolutions: A Comparative Analysis of France, Russia and China*. Cambridge, UK: Cambridge University Press.

Stedman, Stephen John. 1991. *Peacemaking in Civil War: International Mediation in Zimbabwe, 1974-1980*. Boulder, CO: L. Rienner Publishers.

Straus, Scott. 2007. "Second-generation Comparative Research on Genocide." *World Politics* 59 (03): 476-501.

Straus, Scott. 2015. *Making and Unmaking Nations: War, Leadership, and Genocide in Modern Africa*. Ithaca, NY: Cornell University Press.

Svolik, Milan W. 2012. *The Politics of Authoritarian Rule*. Cambridge, UK: Cambridge University Press.

Thompson, William R. 2001. "Identifying Rivals and Rivalries in World Politics." *International Studies Quarterly* 45 (4): 557-86.

Valentino, Benjamin A. 2004. *Final Solutions: Mass Killing and Genocide in the 20th Century*. Ithaca, NY: Cornell University Press.

Valentino, Benjamin A., Paul Huth, and Dylan Balch-Lindsay. 2004. ""Draining the Sea": Mass Killing and Guerrilla Warfare." *International Organization* 58 (02): 375-407.

Walt, Stephen M. 1992. "Revolution and War." *World Politics* 44 (03): 321-68.

Wayman, Frank W., and Atsushi Tago. 2010. "Explaining the Onset of Mass Killing, 1949–87." *Journal of Peace Research* 47 (1): 3-13.

Weitz, Eric D. 2003. *A Century of Genocide: Utopias of Race and Nation*. Princeton, NJ: Princeton University Press.

Xue, Gui, Zhonglin Lu, Irwin P. Levin, and Antoine Bechara. 2010. "The Impact of Prior Risk Experiences on Subsequent Risky Decision-making: The Role of the Insula." *Neuroimage* 50 (2): 709-16.

Young, Cristobal, and Katherine Holsteen. 2015. "Model Uncertainty and Robustness: A Computational Framework for Multi-model Analysis." *Sociological Methods and Research*. doi:10.1177/0049124115610347

Supporting Appendix

to the paper

Revolutionary Leaders and Mass Killing

(not for publication)

This document presents the results of statistical models that I conducted but, due to space constraints, were not able to report in the paper.

- Figure A1 displays the distribution of estimated coefficients on *Revolutionary Leader* in 2,048 models that are all possible combinations of control variables. The estimated coefficient remains positive, ranging from 1.1 to 2.3, and statistically significant at the 5% level.

- Table A1 provides summary statistics on variables used in the analysis.

- Table A2 examines the bivariate relationship between revolutionary leaders and mass killing onsets or incidence. The patterns shown in Table A2 support the finding illustrated in Figure ?? of the main text. More mass killings have occurred under revolutionary governments than under non-revolutionary governments.

- Tables A3 and A4 re-estimate Tables 1 and 2 in the main text using a multiply imputed dataset that includes all mass killing onsets from 1955 to 2004.

- Table A5 implements the Firth's penalized likelihood method to reduce rare events bias. Results remain similar.

- Table A6 examines the incidence of genocide and politicide rather than the onset of genocide and politicide. Revolutionary leaders are associated with a greater risk of mass killing, regardless of whether I look at the onset or incidence of mass killing.

- Tables A7 and A8 re-produce the models 1 to 5 of Table ?? with the subsample of autocratic country-years and with that of country-years having irregular leaders. Table ?? of the main text considers the entire sample of country years or the subsample of state failure country years. The results of Tables A7 and A8 are consistent with those reported in Table ??.

- Table A9 presents the balance statistics before and after the coarsened exact matching. Table A10 estimates the model 2 of Table 1 using matched datasets.

- Table A11 examines whether the effects of revolutionary leaders are driven by political instability in the aftermath of the revolution. As in Figure ?? in the main text, I add $\{R_0, \ldots, R_7\}$ to the baseline model specifications of Table ??. Figure ?? displays only the results of Model 2 in Table ??. Additionally, Table A12 uses four dummies for non-overlapping ten-year post-revolutionary periods instead of five-years periods, while Table A13 uses 10 dummies for three-year post-revolutionary periods. Regardless of how to split revolutionary leaders into several time periods, results show that the heightened risk of mass killing does not simply fade away as leaders' time in office increases.

- Table A14 adds a binary indicator of revolutions as events to the baseline specification of Table ??. After the indicator of revolution picks up the effect of political turmoil in the midst of revolution, the relationship between revolutionary leaders and genocide/politicide outbreak remains positive and significant.

- Tables A15 and A16 examine whether the effect of revolutionary leaders is conditional on internal or interstate wars. Table A15 includes an interaction term between revolutionary leaders and civil conflict, and Table A16 adds an interaction term between revolutionary leaders and interstate war to the baseline specification. Both interaction terms are not statistically significant at conventional levels. These results suggest that the effects of revolutionary leaders on mass killing outbreak are not conditional on internal and interstate war.

- Tables A17 through A19 control for additional variables. Table A17 adds a measure of executive constraints, emphasized in Colaresi and Carey (1008), to the baseline specification of Table ??; Table A18 includes various types of authoritarian regimes taken from Geddes et al. (2014); and Table A19 adds a measure of oil income, discussed in Straus (2015). I obtain the measure of executive constraints taken from the Polity IV data and the measure of oil income from Ross (2012). Ross operationalizes oil income per capita as the value of a country's oil and gas production in constant 2000 dollars, divided by its midyear population, and its natural logarithm is used for my analyses since it is highly skewed. Across different specifications, the estimated coefficients of revolutionary leaders remain positive and statistically different from zero.
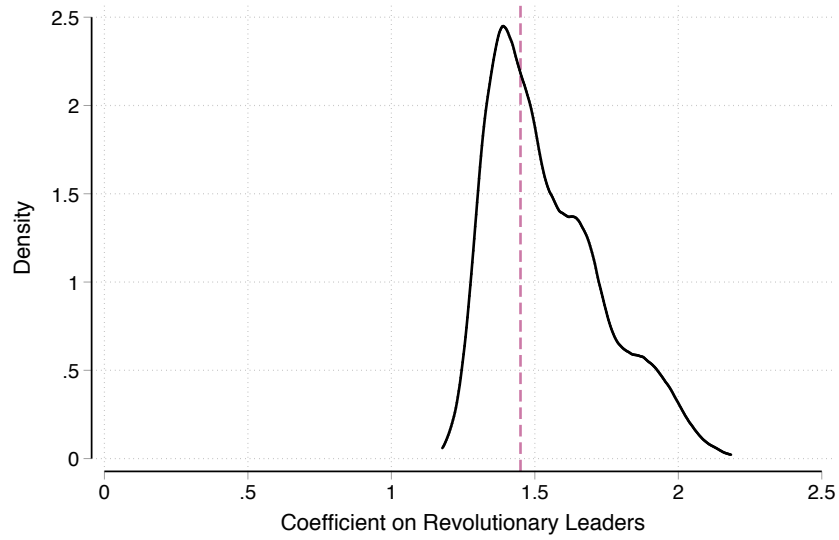
Figure A1. Distribution of estimates on revolutionary leaders. This figure depicts the distribution of the estimates on revolutionary leaders from 2,048 models that are unique combinations of 11 control variables. Vertical line indicates the estimate of *Revolutionary leaders* as reported in Model 2 of Table 1.

Table A1. Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Median
Revolutionary Leader	5814	.13	.33	0	1	0
Non-revolutionary&Irregular	5814	.16	.37	0	1	0
Violent revolutionary	5814	.07	.25	0	1	0
Non-violent revolutionary	5814	.06	.24	0	1	0
Seeking ideology/religion changes	5805	.04	.19	0	1	0
Seeking no changes	5805	.87	.33	0	1	1
Civil Conflict	5814	.13	.34	0	1	0
Interstate Conflict	5814	.02	.13	0	1	0
Polity 2	5814	9.91	7.54	0	20	8
Political Instability	5814	.18	.38	0	1	0
ln(GDPpc)	5814	7.96	1.05	5.33	10.34	7.95
Ethnic Fractionalization	5814	.46	.27	0	.95	.49
Post-Cold War	5814	.33	.47	0	1	0
ln(Oil Income)	5578	2.39	2.84	0	11.22	.85
Executive constraints	5814	1.27	15.14	-88	7	3
State Failure	5814	.14	.35	0	1	0
Peace years	5814	24.44	14.35	0	49	24
Peace years 2	5814	803.17	731.95	0	2401	576
Peace years 3	5814	29796.97	34365.77	0	117649	13824

Table A2. Revolutionary Leaders and Mass Killing

	Mass killing onset		
	Non-revolutionary	Revolutionary	Total
0	5,670	822	6,492
	(99.6%)	(98.0%)	(99.4%)
1	24	17	41
	(0.4%)	(2.0%)	(0.6%)
Total	5,694	839	6,533
	Mass killing incidence		
	Non-revolutionary	Revolutionary	Total
0	5,670	822	6,492
	(97.2%)	(88.7%)	(96.0%)
1	162	105	267
	(2.8%)	(11.3%)	(4.0%)
Total	5,832	927	6,759

Table A3. Reestimating Table 1 using multiply imputed data

	All country-years					State failure years	
	Logit	Logit	ReLogit	RE Logit	FE Logit	Logit	Logit
Revolutionary Leader	1.41***	1.22***	1.20***	1.41***	1.76**	1.04***	0.78*
	(0.34)	(0.43)	(0.43)	(0.48)	(0.87)	(0.36)	(0.45)
Nonrevolutionary & Irregular		0.13	0.18	0.02	0.07	0.18	-0.06
		(0.53)	(0.53)	(0.56)	(0.91)	(0.45)	(0.51)
Civil Conflict		1.59***	1.57***	1.84***	1.50**		0.34
		(0.42)	(0.42)	(0.47)	(0.70)		(0.43)
Interstate conflict		1.76***	1.86***	1.63**	0.86		1.28***
		(0.56)	(0.56)	(0.73)	(0.90)		(0.45)
Polity 2		0.24**	0.21*	0.25	0.09		0.22*
		(0.11)	(0.11)	(0.16)	(0.27)		(0.12)
Polity 2 (squared)		-0.02**	-0.01**	-0.02*	-0.01		-0.02**
		(0.01)	(0.01)	(0.01)	(0.01)		(0.01)
Political Instability		1.33***	1.31***	1.52***	2.63***		0.63
		(0.35)	(0.35)	(0.45)	(0.70)		(0.44)
ln(GDPpc)		-0.11	-0.11	-0.22	-0.44		-0.00
		(0.27)	(0.27)	(0.30)	(0.80)		(0.26)
Ethnic Fractionalization		0.37	0.36	0.37	3.87		0.25
		(0.87)	(0.87)	(0.92)	(32.26)		(0.87)
Post-Cold War		-0.95	-0.87	-1.49**	-4.37***		-1.11**
		(0.59)	(0.59)	(0.71)	(1.13)		(0.52)
Constant	-4.99***	-6.66**	-6.42**	-7.46***		-3.81	-4.35*
	(0.56)	(2.71)	(2.71)	(2.61)		(0.28)	(2.42)
Observations	6417	6266	6266	6266	964	929	901
Countries	162	162	162	162	162	162	162
Onsets	41	41	41	41	41	41	41

Note: Regular leader is the baseline category. Model 3 estimates the rare-events logit model, Model 4 a random effects logit model, and Model 5 a conditional logit fixed effects model; all other models employ a logit regression. Robust standard errors clustered at the country level are in parentheses (except in Models 4 and 5). A cubic polynomial of years since the last mass killing (Models 1 through 5) or state failure years (Models 6 and 7) is included in all models but not reported to save space.

Table A4. Reestimating Table 2 using multiply imputed data

	All country-years		State failure years	
	(1)	(2)	(3)	(4)
Violent revolutionary	1.58***		0.88*	
	(0.45)		(0.48)	
Nonviolent revolutionary	0.58		0.55	
	(0.73)		(0.81)	
Revolutionary, Exclusive Ideology		1.87***		1.42***
		(0.49)		(0.52)
Revolutionary, No Exclusive Ideology		0.31		-0.09
		(0.53)		(0.46)
Nonrevolutionary & Irregular	0.12	0.11	-0.06	-0.05
	(0.53)	(0.54)	(0.51)	(0.52)
Civil Conflict	1.46***	1.60***	0.32	0.36
	(0.45)	(0.43)	(0.43)	(0.44)
Interstate conflict	1.75***	1.70***	1.25***	1.16**
	(0.52)	(0.55)	(0.45)	(0.50)
Polity 2	0.26**	0.27**	0.22*	0.27*
	(0.12)	(0.12)	(0.12)	(0.14)
Polity 2 (squared)	-0.02**	-0.02**	-0.02**	-0.02**
	(0.01)	(0.01)	(0.01)	(0.01)
Political Instability	1.37***	1.42***	0.67	0.67
	(0.36)	(0.38)	(0.46)	(0.51)
ln(GDPpc)	-0.17	-0.19	-0.01	-0.09
	(0.30)	(0.26)	(0.26)	(0.24)
Ethnic Fractionalization	0.10	0.45	0.16	0.32
	(0.95)	(0.86)	(0.94)	(0.89)
Post-Cold War	-1.03	-0.94*	-1.10**	-1.11**
	(0.64)	(0.56)	(0.52)	(0.51)
Constant	-6.10**	-6.34**	-4.23*	-4.00*
	(2.88)	(2.60)	(2.45)	(2.26)
Observations	6266	6266	901	901
Countries	162	162	162	162
Onsets	41	41	41	41

Note: Robust standard errors clustered at the country level are in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A5. Penalized maximum likelihood logit estimates.

	All country-years		State failure years	
	(1)	(2)	(3)	(4)
Revolutionary Leader	1.59***	1.42***	1.24***	0.95**
	(0.35)	(0.43)	(0.36)	(0.43)
Non-revolutionary & Irregular	0.69	0.27	0.43	0.03
	(0.42)	(0.53)	(0.43)	(0.53)
Civil Conflict		1.71***		0.40
		(0.41)		(0.45)
Interstate Conflict		2.04***		1.16
		(0.63)		(0.72)
Polity 2		0.14		0.12
		(0.15)		(0.16)
Polity 2 (squared)		-0.01		-0.01
		(0.01)		(0.01)
Political Instability		1.20***		0.47
		(0.41)		(0.44)
ln(GDPpc)		-0.08		0.05
		(0.26)		(0.26)
Ethnic Fractionalization		0.35		0.20
		(0.71)		(0.77)
Post-Cold War		-0.79		-0.90*
		(0.57)		(0.51)
Constant	-5.12***	-6.39***	-4.36***	-4.26*
	(0.53)	(2.24)	(0.31)	(2.23)
Observations	6417	5814	6417	816

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A6. Revolutionary Leaders and Mass Killing Incidence

	All country-years					State failure years	
	Logit	Logit	Rare ReLogit	RE RE Logit	FE FE Logit	Logit	Logit
Revolutionary Leader	0.91***	1.17***	1.15***	1.21***	0.92*	0.86**	0.91**
	(0.32)	(0.39)	(0.39)	(0.37)	(0.51)	(0.35)	(0.43)
Non-revolutionary & Irregular	0.49*	0.36	0.37	0.35	0.27	0.34	0.12
	(0.27)	(0.29)	(0.29)	(0.39)	(0.49)	(0.31)	(0.33)
Lagged incidence	6.52***	6.34***	6.10***	6.32***	5.94***	6.12***	6.17***
	(0.54)	(0.75)	(0.74)	(0.79)	(0.92)	(0.34)	(0.45)
Civil Conflict		1.53***	1.52***	1.59***	1.20***		0.54
		(0.32)	(0.31)	(0.34)	(0.42)		(0.39)
Interstate Conflict		1.25**	1.30**	1.26*	0.87		0.76*
		(0.63)	(0.63)	(0.68)	(0.66)		(0.45)
Polity 2		0.23**	0.22**	0.24*	0.11		0.08
		(0.09)	(0.09)	(0.12)	(0.16)		(0.11)
Polity 2 (squared)		-0.01***	-0.01**	-0.01**	-0.01		-0.01
		(0.01)	(0.01)	(0.01)	(0.01)		(0.01)
Political Instability		0.72**	0.70**	0.76**	0.97***		0.43
		(0.33)	(0.33)	(0.33)	(0.37)		(0.38)
ln(GDPpc)		-0.12	-0.12	-0.09	0.26		0.25
		(0.17)	(0.17)	(0.20)	(0.59)		(0.24)
Ethnic Fractionalization		0.61	0.59	0.60	57.41		1.11
		(0.51)	(0.51)	(0.63)	(2833.67)		(0.74)
Post-Cold War		-1.64***	-1.60***	-1.79***	-2.31***		-1.75***
		(0.36)	(0.35)	(0.46)	(0.45)		(0.44)
Constant	-5.12***	-6.08***	-5.88***	-6.58***		-3.84***	-6.26***
	(0.57)	(1.95)	(1.95)	(1.91)		(0.23)	(2.21)
Observations	6673	6016	6016	6016	1049	1171	1029
Countries	163	150	150	150	24	98	90
Onsets	267	229	229	229	226	267	229
Log-Likelihood	-328.60	-242.29		-241.87	-142.58	-207.61	-156.64

Note: Column 4 estimates a random effects logit model; Column 5 estimates a conditional logit fixed effects model; all other models use a logit model. Robust standard errors clustered at the country level are in parentheses (except in Columns 4); * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A7. Revolutionary Leaders and Mass Killing Onset For Autocratic Country-years

	Autocratic country years				
	Logit	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.46*** (0.46)	1.60*** (0.43)	1.51*** (0.42)	2.18*** (0.77)	4.64** (1.86)
Non-revolutionary & Irregular	0.52 (0.54)	0.30 (0.62)	0.31 (0.61)	0.46 (0.82)	4.13** (1.80)
Civil Conflict		2.20*** (0.65)	2.15*** (0.65)	2.67*** (0.69)	2.43** (1.10)
Interstate Conflict		2.15*** (0.47)	2.21*** (0.47)	2.22*** (0.84)	2.35* (1.21)
Polity 2		0.43** (0.21)	0.38* (0.21)	0.43 (0.26)	0.57 (0.41)
Polity 2 (squared)		-0.02 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.03 (0.02)
Political Instability		0.84 (0.58)	0.87 (0.58)	1.21* (0.67)	5.38*** (1.68)
ln(GDPpc)		-0.08 (0.43)	-0.06 (0.42)	-0.19 (0.42)	-2.69* (1.55)
Ethnic Fractionalization		0.55 (1.20)	0.49 (1.19)	0.65 (1.25)	10.90 (9355.46)
Post-Cold War		-0.36 (0.78)	-0.24 (0.77)	-0.45 (0.91)	-3.04* (1.56)
Constant	-6.19*** (0.74)	-8.80** (3.88)	-8.31** (3.86)	-11.34*** (4.02)	
Observations	2860	2562	2562	2562	404
Countries	114	104	104	104	17
Onsets	28	24	24	24	24
Log-Likelihood	-146.66	-104.09		-102.29	-29.06

 Note: Column 4 estimates the rare-events logit model; Column 5 estimates a random effects logit model; Column 6 estimates a conditional logit fixed effects model; all other models use a logit model. Robust standard errors clustered at the country level are in parentheses (except in Columns 4); * p < 0.1, ** p < 0.05, *** p < 0.01. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A8. Revolutionary Leaders and Mass Killing Onset For Irregular Leaders

	Irregular country years				
	Logit	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	0.98**	1.25**	1.16**	1.73**	3.89**
	(0.44)	(0.55)	(0.54)	(0.74)	(1.89)
Civil Conflict		1.77***	1.73***	2.13***	4.15**
		(0.59)	(0.59)	(0.70)	(1.67)
Interstate Conflict		1.65***	1.76***	1.57	1.24
		(0.50)	(0.49)	(0.99)	(1.48)
Polity 2		-0.13	-0.20	-0.20	0.21
		(0.22)	(0.22)	(0.27)	(0.44)
Polity 2 (squared)		0.00	0.01	0.00	-0.01
		(0.02)	(0.02)	(0.02)	(0.03)
Political Instability		1.25***	1.23***	1.58**	8.24***
		(0.44)	(0.44)	(0.62)	(2.88)
ln(GDPpc)		0.04	0.04	-0.13	7.28**
		(0.40)	(0.40)	(0.45)	(3.12)
Ethnic Fractionalization		0.82	0.77	1.04	4.51
		(1.22)	(1.21)	(1.33)	(8982.46)
Post-Cold War		-1.04	-0.90	-1.57	-4.74**
		(0.85)	(0.85)	(0.98)	(1.93)
Constant	-5.57***	-7.55*	-6.98*	-9.02**	
	(0.87)	(4.12)	(4.09)	(3.92)	
Observations	1903	1681	1681	1681	380
Countries	96	85	85	85	18
Onsets	25	22	22	22	22
Log-Likelihood	-126.15	-98.44		-97.59	-21.78

Note: Column 3 estimates the rare-events logit model; Column 4 estimates a random effects logit model; Column 5 estimates a conditional logit fixed effects model; all other models use a logit model. Robust standard errors clustered at the country level are in parentheses (except in Columns 4); * p < 0.1, ** p < 0.05, *** p < 0.01. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A9. Imbalance Statistics

Variable	Before matching		After CEM	
	L1 distance	Diff-in-Means	L1 distance	Diff-in-Means
Civil Conflict	0.04	0.04	$4.1 \cdot 10^{-15}$	$1.1 \cdot 10^{-15}$
Interstate Conflict	0.02	0.02	$1.4 \cdot 10^{-15}$	$1.5 \cdot 10^{-15}$
Polity 2	0.44	-6.12	0.22	0.04
Polity 2 (squared)	0.41	-136.87	0.07	-5.47
Political Instability	0.06	0.06	$4.8 \cdot 10^{-15}$	$1.9 \cdot 10^{-15}$
ln(GDPpc)	0.36	-0.78	0.11	-0.01
Ethnic Fractionalization	0.22	0.06	0.15	0.01
Post-Cold War	0.07	-0.07	$5.5 \cdot 10^{-15}$	$1.4 \cdot 10^{-15}$

Table A10. On Matched Sample

	Listwise deletion	Multiple imputation
	(1)	(2)
Revolutionary Leader	1.98**	1.57**
	(0.88)	(0.73)
Irregular/Nonrevolutionary	1.28	1.09
	(0.93)	(0.90)
Civil Conflict	1.93*	1.66***
	(1.02)	(0.63)
Interstate conflict	1.38	1.61
	(1.12)	(1.03)
Polity 2	-0.06	0.02
	(0.38)	(0.30)
Polity 2 (squared)	-0.00	-0.00
	(0.03)	(0.02)
Political Instability	1.32**	1.78***
	(0.61)	(0.49)
ln(GDPpc)	0.28	0.17
	(0.75)	(0.69)
Ethnic Fractionalization	1.29	1.62
	(1.30)	(1.34)
Post-Cold War	-1.24	-1.54
	(0.97)	(0.99)
Constant	-10.71*	-10.05*
	(6.50)	(5.79)
Observations	3079	3406
Log-Likelihood	-132.10	.

 Note: Robust standard errors clustered at the country level are in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A11. Dividing Revolutionary Leaders by Time Period

	Logit	Logit	ReLogit	RE Logit	FE Logit
5 years before revolution	1.03**	0.66	0.71	0.81	0.87
	(0.40)	(0.48)	(0.48)	(0.59)	(1.00)
First 5 revolutionary years	1.93***	1.44***	1.42***	1.71***	2.74**
	(0.44)	(0.51)	(0.48)	(0.61)	(1.12)
Second 5 revolutionary years	0.16	0.38		0.56	-1.43
	(1.13)	(1.19)		(1.13)	(3.10)
Third 5 revolutionary years	1.90***	2.09***	2.09***	2.39***	2.94**
	(0.60)	(0.74)	(0.72)	(0.74)	(1.18)
Fourth 5 revolutionary years	2.15***	1.77**	1.88**	2.07**	2.22
	(0.64)	(0.88)	(0.88)	(0.94)	(1.57)
Fifth 5 revolutionary years	1.55	2.51**	2.82***	2.92**	4.03**
	(1.12)	(1.09)	(1.08)	(1.27)	(1.83)
Non-revolutionary & Irregular	0.62	0.19	0.22	0.11	0.49
	(0.44)	(0.59)	(0.57)	(0.60)	(0.91)
Civil Conflict		1.65***	1.62***	1.83***	1.69**
		(0.51)	(0.50)	(0.49)	(0.74)
Interstate Conflict		1.91***	1.99***	1.87**	1.25
		(0.50)	(0.50)	(0.76)	(1.00)
Polity 2		0.16	0.14	0.15	0.05
		(0.12)	(0.12)	(0.17)	(0.29)
Polity 2 (squared)		-0.01	-0.01	-0.01	-0.00
		(0.01)	(0.01)	(0.01)	(0.02)
Political Instability		1.33***	1.30***	1.51***	2.38***
		(0.44)	(0.44)	(0.51)	(0.74)
ln(GDPpc)		-0.06	-0.06	-0.19	-0.40
		(0.29)	(0.29)	(0.32)	(0.92)
Ethnic Fractionalization		0.32	0.32	0.35	39.22
		(0.90)	(0.90)	(0.94)	(8612.27)
Post-Cold War		-0.69	-0.62	-1.09	-3.37***
		(0.59)	(0.58)	(0.72)	(1.13)
Sixth 5 revolutionary years					-0.04
					(3682.41)
30 or greater revolutionary years					-11.08
					(2802.38)
Constant	-5.35***	-6.89**	-6.55**	-7.41***	
	(0.65)	(2.99)	(2.87)	(2.75)	
Observations	6331	5729	5814	5729	851
Countries	162	148	148	148	24
Onsets	41	32	32	32	32
Log-Likelihood	-222.21	-151.60		-150.40	-55.52

Note: Robust standard errors clustered at the country level are in parentheses (except in Columns 4); * p < 0.1, ** p < 0.05, *** p < 0.01. The full set of baseline controls is included in all models but not reported to save space. Several periods are dropped in Columns 1 to 3, because they perfectly predict the absence of mass killing.

Table A12. Using Ten-year Periods

	Logit	Logit	ReLogit	RE Logit	FE Logit
First 10 revolutionary years	1.50***	1.17**	1.17**	1.37**	1.74*
	(0.45)	(0.53)	(0.52)	(0.57)	(0.93)
Second 10 revolutionary years	1.99***	2.02***	2.01***	2.25***	2.55**
	(0.48)	(0.66)	(0.66)	(0.66)	(1.05)
Third 10 revolutionary years	1.04	1.84*	2.23**	2.10*	3.25**
	(1.02)	(1.07)	(1.07)	(1.22)	(1.58)
Non-revolutionary & Irregular	0.66	0.20	0.25	0.11	0.39
	(0.43)	(0.58)	(0.58)	(0.59)	(0.93)
Civil Conflict		1.73***	1.71***	1.90***	1.66**
		(0.48)	(0.48)	(0.49)	(0.73)
Interstate Conflict		1.82***	1.90***	1.77**	0.89
		(0.52)	(0.52)	(0.75)	(0.95)
Polity 2		0.17	0.14	0.18	0.14
		(0.12)	(0.12)	(0.17)	(0.28)
Polity 2 (squared)		-0.01	-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)	(0.02)
Political Instability		1.40***	1.37***	1.55***	2.52***
		(0.45)	(0.44)	(0.49)	(0.75)
ln(GDPpc)		-0.10	-0.09	-0.22	-0.31
		(0.30)	(0.30)	(0.32)	(0.89)
Ethnic Fractionalization		0.33	0.32	0.35	33.56
		(0.90)	(0.90)	(0.91)	(8683.58)
Post-Cold War		-0.90	-0.82	-1.38*	-4.02***
		(0.61)	(0.61)	(0.74)	(1.08)
Fourth 10 revolutionary years					-12.62
					(5617.43)
Constant	-5.21***	-6.60**	-6.35**	-7.06***	
	(0.62)	(3.03)	(3.02)	(2.67)	
Observations	6371	5768	5814	5768	851
Countries	162	148	148	148	24
Onsets	41	32	32	32	32
Log-Likelihood	-227.08	-153.58		-152.60	-58.76

Note: Robust standard errors clustered at the country level are in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A13. Using Three-year Periods

	Logit	Logit	ReLogit	RE Logit	FE Logit
3 years before revolution	1.04**	0.50	0.64	0.56	-0.01
	(0.53)	(0.55)	(0.55)	(0.71)	(1.06)
1st 3 revolutionary years	2.39***	1.77***	1.89***	2.03***	2.64**
	(0.44)	(0.51)	(0.49)	(0.62)	(1.13)
4th 3 revolutionary years	1.44*	1.67*	1.98**	1.88**	1.16
	(0.85)	(0.89)	(0.88)	(0.88)	(1.36)
5th 3 revolutionary years	2.29***	2.40***	2.60***	2.70***	3.20**
	(0.72)	(0.87)	(0.86)	(0.82)	(1.43)
6th 3 revolutionary years	2.02***	1.44	1.97*	1.72	2.20
	(0.75)	(1.15)	(1.14)	(1.16)	(1.56)
7th 3 revolutionary years	2.70***	2.78***	3.00***	3.07***	3.31*
	(0.78)	(0.81)	(0.81)	(1.02)	(1.76)
Non-revolutionary & Irregular	0.63	0.21	0.39	0.12	0.38
	(0.44)	(0.58)	(0.57)	(0.59)	(0.91)
Civil Conflict		1.67***	1.62***	1.87***	1.79**
		(0.49)	(0.49)	(0.50)	(0.74)
Interstate Conflict		1.70***	1.76***	1.68**	0.90
		(0.51)	(0.52)	(0.80)	(1.02)
Polity 2		0.19	0.15	0.17	0.10
		(0.12)	(0.13)	(0.18)	(0.29)
Polity 2 (squared)		-0.01*	-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)	(0.02)
Political Instability		1.20***	1.19***	1.37***	2.35***
		(0.46)	(0.46)	(0.52)	(0.79)
ln(GDPpc)		-0.10	-0.08	-0.22	-0.22
		(0.29)	(0.29)	(0.32)	(0.88)
Ethnic Fractionalization		0.23	0.26	0.29	47.72
		(0.90)	(0.91)	(0.93)	(17665.58)
Post-Cold War		-0.77	-0.72	-1.19	-3.84***
		(0.59)	(0.59)	(0.74)	(1.15)
2nd 3 revolutionary years					-13.73
					(1878.73)
3rd 3 revolutionary years					-14.04
					(1860.92)
8th 3 revolutionary years					-13.87
					(9753.95)
9th 3 revolutionary years					-13.66
					(8121.67)
30 or greater revolutionary years					-12.79
					(5817.30)
Constant	-5.29***	-6.40**	-6.44**	-6.86**	
	(0.64)	(2.85)	(2.83)	(2.72)	
Observations	6065	5503	5814	5503	851
Countries					
Onsets					
Log-Likelihood	-215.91	-146.73		-145.56	-53.63

 Note: Robust standard errors clustered at the country level are in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A14. Adding Revolution as One-off Event

	Logit	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.73***	1.26**	1.24**	1.46***	1.72*
	(0.51)	(0.52)	(0.52)	(0.56)	(0.96)
Revolution	1.72***	1.34*	1.38**	1.43**	1.28
	(0.60)	(0.70)	(0.70)	(0.72)	(0.90)
Revolution (t-1)	1.01	0.11	0.31	0.08	0.41
	(0.83)	(0.95)	(0.95)	(0.89)	(1.08)
Revolution (t+1)	2.41***	1.80***	1.87***	1.93***	1.45
	(0.57)	(0.62)	(0.62)	(0.73)	(0.96)
Non-revolutionary & Irregular	0.81	0.21	0.26	0.15	0.42
	(0.54)	(0.59)	(0.59)	(0.59)	(0.89)
Civil Conflict		1.74***	1.70***	1.97***	1.56**
		(0.48)	(0.48)	(0.49)	(0.68)
Interstate Conflict		2.05***	2.13***	2.04***	1.17
		(0.55)	(0.55)	(0.74)	(0.94)
Polity 2		0.19*	0.17	0.18	0.08
		(0.12)	(0.12)	(0.17)	(0.27)
Polity 2 (squared)		-0.01**	-0.01*	-0.01	-0.01
		(0.01)	(0.01)	(0.01)	(0.01)
Political Instability		1.02**	1.01**	1.21**	2.14***
		(0.40)	(0.40)	(0.49)	(0.75)
ln(GDPpc)		-0.06	-0.06	-0.18	-0.41
		(0.29)	(0.29)	(0.32)	(0.93)
Ethnic Fractionalization		0.40	0.39	0.41	26.83
		(0.93)	(0.92)	(0.92)	(13791.88)
Post-Cold War		-0.78	-0.71	-1.15	-3.45***
		(0.65)	(0.65)	(0.71)	(1.11)
Constant	-5.92***	-6.85**	-6.59**	-7.37***	
	(0.67)	(2.89)	(2.88)	(2.70)	
Observations	5668	5668	5668	5668	830
Countries	148	148	148	148	24
Onsets	32	32	32	32	32
Log-Likelihood	-170.26	-150.46		-149.29	-57.48

Note: Robust standard errors clustered at the country level are in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A15. Interacting Revolutionary Leaders with Civil Conflict

	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.78***	1.71***	1.86***	1.85**
	(0.55)	(0.55)	(0.60)	(0.90)
Civil Conflict	2.07***	2.02***	2.12***	1.23
	(0.59)	(0.58)	(0.59)	(0.81)
Revolutionary leader× Conflict	-0.73	-0.66	-0.57	0.69
	(0.76)	(0.76)	(0.81)	(1.14)
Non-revolutionary & Irregular	0.18	0.23	0.11	0.46
	(0.60)	(0.60)	(0.59)	(0.92)
Interstate Conflict	1.93***	2.02***	1.88**	0.92
	(0.50)	(0.50)	(0.73)	(0.91)
Polity 2	0.17	0.14	0.18	0.05
	(0.12)	(0.12)	(0.17)	(0.27)
Polity 2 (squared)	-0.01*	-0.01	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Political Instability	1.22***	1.20***	1.38***	2.51***
	(0.41)	(0.41)	(0.47)	(0.74)
ln(GDPpc)	-0.09	-0.08	-0.20	-0.46
	(0.29)	(0.29)	(0.31)	(0.87)
Ethnic Fractionalization	0.40	0.40	0.39	29.34
	(0.86)	(0.86)	(0.89)	(12276.89)
Post-Cold War	-0.82	-0.75	-1.27*	-3.88***
	(0.60)	(0.60)	(0.73)	(1.08)
Constant	-6.74**	-6.47**	-7.10***	
	(2.94)	(2.93)	(2.62)	
Observations	5814	5814	5814	851
Log-Likelihood	-154.31		-153.59	-59.44

Robust standard errors clustered at the country level are in parentheses (except in Columns 3); * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The full set of baseline controls is included in all models but not reported to save space.

Table A16. Interacting Revolutionary Leaders with Interstate Conflict

	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.39***	1.37***	1.58***	1.90**
	(0.46)	(0.46)	(0.52)	(0.90)
Interstate Conflict	1.62	2.05**	1.52	0.55
	(1.05)	(1.04)	(1.13)	(1.28)
Revolutionary Leader× Conflict	0.58	0.26	0.67	0.66
	(1.23)	(1.22)	(1.40)	(1.54)
Non-revolutionary & Irregular	0.22	0.26	0.12	0.38
	(0.58)	(0.58)	(0.59)	(0.92)
Civil Conflict	1.72***	1.70***	1.88***	1.52**
	(0.47)	(0.47)	(0.48)	(0.69)
Polity 2	0.17	0.14	0.18	0.10
	(0.12)	(0.12)	(0.17)	(0.28)
Polity 2 (squared)	-0.01*	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.02)
Political Instability	1.22***	1.20***	1.38***	2.40***
	(0.40)	(0.40)	(0.47)	(0.75)
ln(GDPpc)	-0.09	-0.09	-0.21	-0.37
	(0.30)	(0.29)	(0.31)	(0.87)
Ethnic Fractionalization	0.36	0.35	0.37	25.85
	(0.89)	(0.89)	(0.91)	(5399.07)
Post-Cold War	-0.85	-0.78	-1.31*	-3.89***
	(0.62)	(0.61)	(0.72)	(1.08)
Constant	-6.54**	-6.30**	-7.02***	
	(2.99)	(2.98)	(2.65)	
Observations	5814	5814	5814	851
Log-Likelihood	-154.69		-153.72	-59.52

Robust standard errors clustered at the country level are in parentheses (except in Columns 3); * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The full set of baseline controls is included in all models but not reported to save space.

Table A17. Controlling for Executive Constraints

	Logit	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.84***	1.54***	1.49***	2.09***	4.84***
	(0.47)	(0.51)	(0.50)	(0.76)	(1.76)
Executive constraints	-0.17**	-0.22	-0.20	-0.29	-1.62*
	(0.09)	(0.22)	(0.22)	(0.34)	(0.86)
Non-revolutionary & Irregular	0.90*	0.48	0.50	0.46	3.52**
	(0.49)	(0.56)	(0.55)	(0.72)	(1.49)
Civil Conflict		1.94***	1.91***	2.31***	2.04**
		(0.51)	(0.50)	(0.61)	(0.99)
Interstate Conflict		2.14***	2.22***	2.20***	3.03**
		(0.49)	(0.48)	(0.82)	(1.29)
Polity 2		0.21	0.19	0.25	1.09**
		(0.14)	(0.14)	(0.22)	(0.52)
Polity 2 (squared)		-0.01	-0.01	-0.01	-0.03
		(0.01)	(0.01)	(0.01)	(0.02)
Political Instability		1.10***	1.08**	1.55***	4.46***
		(0.42)	(0.42)	(0.58)	(1.31)
ln(GDPpc)		-0.20	-0.19	-0.49	-1.55
		(0.35)	(0.35)	(0.47)	(1.62)
Ethnic Fractionalization		0.52	0.49	0.82	-6.11
		(0.92)	(0.91)	(1.30)	(6851.76)
Post-Cold War		-0.96	-0.86	-1.66*	-5.85***
		(0.74)	(0.74)	(0.89)	(1.77)
Constant	-6.06***	-6.42*	-6.14*	-7.83**	
	(0.83)	(3.37)	(3.36)	(3.64)	
Observations	6079	5638	5638	5638	695
Countries	161	148	148	148	21
Onsets	30	27	27	27	27
Log-Likelihood	-167.22	-131.01		-129.51	-34.30

Note: Robust standard errors clustered at the country level are in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A18. Controlling for Geddes's Authoritarian Regime Types

	Logit	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.14**	1.26***	1.22***	1.50***	1.79*
	(0.47)	(0.44)	(0.44)	(0.55)	(1.02)
Party-based Autocracy	0.77	1.25	1.06	1.34	0.99
	(0.61)	(1.02)	(1.01)	(0.91)	(1.37)
Personalist Autocracy	1.00	1.08	0.91	0.97	0.34
	(0.66)	(1.04)	(1.04)	(0.98)	(1.44)
Military Autocracy	0.95	0.97	0.83	0.98	0.23
	(0.75)	(1.04)	(1.04)	(0.99)	(1.13)
Monarch Autocracy	-0.25	0.46	0.72	0.63	0.51
	(0.99)	(0.90)	(0.90)	(1.40)	(1.91)
Non-revolutionary & Irregular	0.37	0.12	0.16	0.06	0.25
	(0.50)	(0.61)	(0.60)	(0.62)	(1.00)
Civil Conflict		1.77***	1.75***	1.94***	1.52**
		(0.48)	(0.48)	(0.49)	(0.71)
Interstate Conflict		1.98***	2.08***	1.90***	0.88
		(0.50)	(0.50)	(0.74)	(0.93)
Polity 2		0.13	0.11	0.13	0.07
		(0.14)	(0.14)	(0.18)	(0.28)
Polity 2 (squared)		-0.01	-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)	(0.02)
Political Instability		1.32***	1.30***	1.50***	2.39***
		(0.39)	(0.39)	(0.48)	(0.76)
ln(GDPpc)		-0.07	-0.06	-0.19	-0.47
		(0.31)	(0.31)	(0.32)	(0.91)
Ethnic Fractionalization		0.41	0.40	0.48	22.75
		(0.85)	(0.85)	(0.93)	(7689.26)
Post-Cold War		-0.93	-0.86	-1.37*	-3.86***
		(0.63)	(0.63)	(0.73)	(1.12)
Constant	-5.53***	-7.68**	-7.22**	-8.25***	
	(0.84)	(3.55)	(3.53)	(2.89)	
Observations	5979	5668	5668	5668	850
Countries	150	144	144	144	24
Onsets	40	32	32	32	32
Log-Likelihood	-219.49	-153.25		-152.33	-59.26

Note: Robust standard errors clustered at the country level are in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Table A19. Controlling for Oil Income

	Logit	Logit	ReLogit	RE Logit	FE Logit
Revolutionary Leader	1.45***	1.37***	1.33***	1.58***	2.20**
	(0.36)	(0.43)	(0.43)	(0.52)	(0.93)
ln(Oil Income)	0.02	0.24***	0.23***	0.27**	0.26
	(0.06)	(0.08)	(0.08)	(0.12)	(0.29)
Non-revolutionary & Irregular		0.11	0.16	0.06	0.35
		(0.56)	(0.56)	(0.59)	(0.92)
Civil Conflict		1.65***	1.62***	1.83***	1.47**
		(0.48)	(0.48)	(0.50)	(0.70)
Interstate Conflict		1.64***	1.72***	1.62**	0.85
		(0.48)	(0.48)	(0.73)	(0.93)
Polity 2		0.22*	0.19	0.22	0.12
		(0.12)	(0.12)	(0.17)	(0.28)
Polity 2 (squared)		-0.01*	-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)	(0.02)
Political Instability		1.27***	1.25***	1.41***	2.59***
		(0.42)	(0.42)	(0.49)	(0.77)
ln(GDPpc)		-0.62*	-0.59*	-0.76*	-0.65
		(0.33)	(0.33)	(0.40)	(0.94)
Ethnic Fractionalization		0.07	0.07	-0.00	24.06
		(0.89)	(0.89)	(0.90)	(6095.43)
Post-Cold War		-1.25**	-1.15*	-1.65**	-3.92***
		(0.63)	(0.63)	(0.76)	(1.09)
Constant	-4.88***	-3.20	-3.02	-3.36	
	(0.61)	(2.94)	(2.93)	(2.94)	
Observations	6062	5578	5578	5578	821
Countries	159	148	148	148	24
Onsets	39	32	32	32	32
Log-Likelihood	-216.45	-150.88		-150.27	-59.20

Note: Robust standard errors clustered at the country level are in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. A cubic polynomial of years with no mass killing for each country is included in all models but not reported to save space.

Appendix References

Geddes, Barbara, Joseph Wright, and Erica Frantz. 2014. "Autocratic Breakdown and Regime Transitions: A New Data Set." *Perspectives on Politics* 12(02): 313–331.

Ross, Michael L. 2012. *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations.* Princeton University Press.

Straus, Scott. 2015. *Making and unmaking nations: War, leadership, and genocide in modern Africa.* Cornell University Press.