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ABSTRACT

This article assesses the risk factors of genocide. Drawing upon previous research on genocide and the United Nations' Atrocity Prevention Framework, it employs an event history analysis of over 150 countries between 1955 and 2005. While existing frameworks emphasize general upheaval, this article disaggregates the type of upheaval, finding that economic upheaval—such as resource scarcity or population pressure—does not influence the odds of genocide. Instead, political upheaval that enables a repressive leader to come to power (including coups, assassinations, civil wars and successful revolutions) and political upheaval that directly threatens those in power (including coup attempts, campaigns against the state, unsuccessful revolutions and civil wars that do not coincide with regime change) have the strongest influence on the onset of genocide. These findings are consistent with previous findings that emphasize political upheaval and threat but specify numerous indicators of these broad phenomena. This article also highlights the role of discrimination and exclusion, although it casts doubt on many other risk factors included in recent case studies and in the United Nations' Atrocity Prevention Framework.

Introduction

After millions were killed during the Holocaust, the international community vowed to prevent genocide from recurring. 'Never again' became a common refrain, and the United Nations established a convention against genocide. Despite the criminalization of genocide and this global vow to prevent it, genocide *has* happened again. More people were killed in genocide over the course of the last century than in all homicides, manslaughters and related crimes,¹ and many of those deaths occurred in the past fifty years.

To understand why this violence occurs, social scientists have employed quantitative methodologies to assess the conditions that influence the onset of genocide.² I first explore this scholarship, drawing upon new case studies, global risk assessments and literature on state repression to outline hypotheses regarding the onset of state-led genocide. In doing so, I pay particular attention to the factors included in the United Nations Office of the Special Adviser on the Prevention of Genocide's Framework for Atrocity Crimes, which guides UN atrocity forecasting. I then employ an event history analysis to examine the global risk factors of genocide between 1955 and 2005.

This analysis highlights the role of societal upheaval and threats to the political elite. Disaggregating these concepts, I find that civil wars, revolutions, assassinations and coups are strongly associated with the onset of genocide. This finding aligns with much research suggesting that political upheaval that results in an unconventional regime change is a core risk factor of genocide.³ I also find that civil wars that do not result in regime change, unsuccessful revolutions, failed coups and the presence of non-state resistance campaigns are each associated with higher odds of genocide, illustrating that new, repressive leaders do not fully explain the effect of political upheaval. Instead, I turn to research linking threats to the state and violence⁴ and illustrate *which* threats are particularly prominent.

Genocide, the state and risk factors

A long line of scholarship on genocide has established that the state is key to understanding the onset of genocidal violence. Though the international legal definition of genocide does not restrict the violence to state action, many genocides that occurred over the last century were committed with active (or at least tacit) state involvement, and states have historically used genocide as a form of repression.⁵

Due to the importance of the state and its actors, scholars have theorized that state-level conditions influence the possibility that genocide could occur within a country. This research generally falls into two categories: (1) analyses of risk/priming factors,⁶ or situations that influence *whether* genocide is likely to occur, and (2) analyses of triggering factors, or events that influence *when* genocide occurs, such as the Rwandan president's plane crash on the eve of the 1994 genocide. Both factors are essential to understanding the occurrence of genocide, and they can be conceptualized as two linked processes.⁷

This article focuses on the first category—broad risk factors of state-led genocide. As the first step in the process of violence, risk factors are necessary for early warning systems. Despite their importance, however, only a handful of studies have systematically addressed risk factors using quantitative methods, which are beneficial (if not necessary) because the number of genocides that have taken place exceeds the number plausible for in-depth case studies. This work dates back to the early 1990s, when Fein⁸ used bivariate analysis to disprove the then-common idea that genocide is more prevalent in ethnically diverse countries⁹ and concluded that genocides are instead more likely in countries that (1) previously experienced genocide, (2) had authoritarian governments, (3) implemented discrimination and (4) experienced other upheaval, like war. Krain¹⁰ extended this study by employing multivariate analysis to confirm Fein's conclusion that ethnic heterogeneity is not associated with genocide. He further found that war and autocratic governments are significant risk factors of genocide and emphasized how civil war in particular creates a precarious opening in the political opportunity structure. Almost a decade later, Harff¹¹ drew upon her earlier work¹² to employ a case-control method to explore why certain instances of regime collapse led to genocide between 1955 and 1997. She arrived at a six-factor model that assessed the 'conditional probability that a genocide will begin one year' after state failure.¹³ This model included four risk factors aligned with Fein's findings (prior genocide, autocracies, exclusionary ideologies and upheaval) and two additional ones: contention regarding the ethnicity of those in power and low trade

openness. In 2012, Harff further updated the model to include state-led discrimination, thus adding a seventh factor to the model.¹⁴

Harff's seminal 2003 study remains a core model for risk factors of state-led genocide. Although other models exist, the Harff model also directly informs the framework that the United Nations Office of the Special Adviser on the Prevention of Genocide (OSAPG) uses to identify countries at risk of genocide.¹⁵ Among the main risk factors the OSAPG framework considers,¹⁶ six are in line with Harff's model. This framework also extends the Harff model to include indicators of each risk factor. For example, although the Harff model includes general upheaval as a risk factor, the OSAPG framework considers numerous forms of upheaval, such as civil wars, resource scarcity or economic downturns.

The analysis conducted in this article thus builds upon the Harff model by testing and incorporating the factors in the OSAPG framework as well as risk factors suggested by more recent case studies of genocide. I aim to integrate risk factors included in these models with theory. Specifically, the aforementioned models and related research indicate that state structure and capacity, ideology and exclusion, upheaval and threat, and international controls influence the onset of genocide. I now turn to hypotheses regarding each of these, highlighting factors established in the literature as well as more recent theories of genocide and political violence.

State structure and capacity

As models of risk factors have long noted, democracies likely have lower odds of genocide because they retain a system of checks and balances.¹⁷ Leaders in democracies may also be less likely to execute violence against citizens due to constraints on their power, and democratic institutions are generally believed to increase the costs of state repression.¹⁸ Autocracies, or systems of government where unrestrained power is concentrated in a few hands, are consequently presumed to have comparatively higher odds of genocide, which is reflected in both the Harff model and the OSAPG framework.

While democracies have lower odds of genocide, transitions to democracy may have a different effect. In fact, partial democracies are often more unstable than full democracies or even full autocracies.¹⁹ In line with this, Mann²⁰ argues that countries undergoing democratic transition are actually more likely than non-transitioning countries to commit mass murder.²¹ This is because democratizing countries must define 'the nation', which can create a basis for exclusion. Beyond Mann's study, however, the potential for partial democracies to serve as a risk factor of genocide has rarely been explored.

Beyond the form of government, disaggregating elements of the regime type may yield more precise risk factors as well.²² Democracies are distinguished by popular participation, competitive executive recruitment and controls on the executive power, while autocracies are distinguished by the absence of these three elements. Absence of controls on the executive may be particularly linked to genocide,²³ as an unchecked executive may more readily turn to violence.

Finally, some scholars propose that states must possess a certain amount of capacity to commit genocide. For instance, the OSAPG framework suggests that the capacity to commit atrocity crimes—including financial capacity—should be taken into account when assessing the possibility of genocide. Harff found that economic development was not linked to the onset of genocide, however, while Anderton and Carter²⁴ found

that states with lower economic development actually had higher odds of genocide. This suggests that while some economic capacity may be necessary to commit genocide, genocide may be less likely in states with high economic development, though it also indicates an inconsistency in findings that is worth testing. Still others argue that other kinds of capacity are more consequential for the onset of genocide. Specifically, the OSAPG framework indicates that *military* capacity may be particularly important, as states typically use their own armed forces to commit the violence.²⁵

Thus, in line with the Harff model, I suggest that:

H1: Democracies have lower odds of genocide.

Beyond this, the OSAPG framework and recent literature suggest that:

H2: Transitional democracies have higher odds of genocide.

H3: Controls on the executive are associated with lower odds of genocide.

H4: Economic capacity is associated with lower odds of genocide.

H5: High military capacity is associated with higher odds of genocide.

Ideology and exclusion

Genocide involves the intent to destroy members of a group, and it is well established that ideologies that classify and exclude these group members are often present before genocide begins.²⁶ Such ideologies result in the exclusion of individuals from the ‘universe of obligation’,²⁷ which can influence criminal behaviour against group members. More broadly, these ideologies can be used to persecute people who are defined as antithetical to a stated purpose, such as national success.²⁸

Although many ideologies may influence the onset of genocide, state-led ideologies are included in both the Harff model and the OSAPG framework. These ideologies can identify a purpose for the state and deem certain groups antithetical to that purpose, as was the case during the Khmer Rouge’s societal ‘purification’ efforts or Nazi Germany’s pursuit of an exclusively Aryan nation. In fact, Straus²⁹ shows that sub-Saharan countries where elite ideologies excluded segments of the population—such as Rwanda and Sudan—saw genocide when the country experienced upheaval, while those whose leaders emphasized pluralism and inclusiveness—such as the Ivory Coast and Mali—did not.

These ideologies often surface in societal power relations. Accordingly, Harff³⁰ found that ethnic-based exclusion from political power is associated with genocide, highlighting contention surrounding elite ethnicity. The (updated) Harff model and the OSAPG framework both also consider political and/or economic discrimination and prior genocide as risk factors of genocide, in line with theories that suggest prior human rights violations are predictive of future human rights violations.³¹

Finally, many recent case studies have linked the ideological, political and economic exclusion of segments of the population to colonialism.³² While I cannot analyse genocides that were committed by colonial powers,³³ the lasting effects of colonialism may influence genocide through colonizers’ attempts to classify populations, as was seen in Belgian colonialists’ creation of racialized identities in Rwanda.³⁴ Furthermore, Lange

and Dawson's³⁵ analysis of 160 countries illustrated that a history of colonial rule is associated with subsequent violence, which may be extended to genocide.

In line with the Harff model and the OSAPG framework, I consequently anticipate that:

H6: Exclusionary ideologies are associated with higher odds of genocide.

H7: Contention surrounding elite ethnicity is associated with higher odds of genocide.

H8: Discrimination is associated with higher odds of genocide.

H9: Prior genocide is associated with higher odds of genocide.

Additionally, I anticipate that:

H10: Previous colonialization is associated with higher odds of genocide.

Upheaval and threat

Beyond state structure and exclusion, Fein,³⁶ Krain³⁷ and Harff³⁸ found that societal upheaval—pioneered by Harff and broadly conceived as violence, unrest or strain—can shock systems and influence leaders' decisions to turn to genocide. Although Harff's model aggregates upheaval into one measure meant to capture abrupt changes in the political community,³⁹ the OSAPG framework considers civil wars, resource scarcity, natural disasters and other forms of upheaval as separate indicators. In order to better understand the complex relationships between forms of violence and assess which upheavals have stronger effects on the onset of genocide, I test numerous factors that place strain on the political structure and/or economic structure of a country. This is well in line with literature on state repression that suggests that states turn to repression when they experience threat.⁴⁰ In fact, state repression may be particularly prominent after threats that directly target leaders and their regime,⁴¹ complementing the genocide scholarship that highlights threat to political elites.⁴²

Previous work has suggested a link between civil wars and genocide, as leaders may respond to perceived political threats with uneven violence against civilians.⁴³ Civil wars may also be associated with openings in the political opportunity structure⁴⁴ as well as increased militarization.⁴⁵ Furthermore, the state is already inwardly violent against 'enemy' citizens during a civil war, which may create an environment that facilitates genocidal violence.⁴⁶

International war may also be associated with increased militarization and openings in political opportunity structures, and elevated fear and uncertainty during any type of conflict may influence repression.⁴⁷ Even sharing borders with violent countries may affect the stability of a country.⁴⁸ While neighbouring violence is not as likely to create an opening in the political opportunity structure, it could lead to fears of spillover violence and increase militarization and refugee flows, which may influence genocide. In fact, international war and neighbouring violence are included in the OSAPG framework, but their influence on genocide has rarely been systematically tested in scholarly analyses.

Other forms of violence may influence genocide for related reasons. Revolutions could be linked to genocide because revolutionaries seek to construct a new society and may exclude those who do not align with their vision. Melson⁴⁹ argues that revolutions could also create conditions that allow a genocidal regime to come to power, and

coups and assassinations could facilitate the rise of a repressive leader through similar mechanisms.⁵⁰ These arguments fall in line with Krain's⁵¹ theory linking openings in the political opportunity structure to potentially repressive leaders. While many of these theories suggest extra-constitutional regime change is core to genocide, I also explore the influence of situations that do not result in regime change. In other words, revolutions, coups and campaigns against the state also challenge the government and may influence perceptions of threat, especially when they do *not* succeed in regime change. Thus, while these processes may not result in an abrupt change in the political community,⁵² *perceptions* of weakness by the political elites may influence genocide,⁵³ suggesting that threat, in the form of challenges and/or political fissures, may be consequential. I thus explore both successful and unsuccessful revolutions and civil wars, in addition to coup attempts, the presence of campaigns against the state and riots. Many of these forms of violence have not been tested independently,⁵⁴ and none are included in the OSAPG framework.

In a different vein, economic crises have been cited as risk factors of genocide in numerous studies.⁵⁵ Many scholars and practitioners have relatedly argued that resource scarcity and competition influence genocide both by straining existing systems and causing unrest among citizens. The loss of arable land and resources is commonly noted as a factor that contributed to the genocide in Darfur,⁵⁶ for example, and the OSAPG framework includes natural disasters as a risk factor. Population change and high population density may similarly influence strain on a country's resources and thus may influence the onset of genocide.⁵⁷ Yet, despite the growing prominence of theories that link economic crisis and resource scarcity to genocide—and the inclusion of economic crises, resource scarcity and natural disasters in the OSAPG framework—quantitative studies of genocide have typically not tested these relationships.

The OSAPG framework also suggests that resource abundance may influence conflict, particularly when there are disputes over resources. This aligns with research on the association between diamonds,⁵⁸ oil⁵⁹ and conflict. Several studies have also found positive relationships between natural resources and mass killing in Africa⁶⁰ and globally,⁶¹ though the specific relationship between resource abundance and genocide has not been tested.

Thus, while the Harff model includes one aggregate measure of upheaval, I examine how numerous forms of upheaval influence the onset of genocide through strain on the political and economic systems of a country, testing many indicators included in the OSAPG framework and suggested by recent studies. I include these factors in two hypotheses for simplicity, anticipating that:

H11: Political pressure (civil wars, international wars, violence in bordering countries, coups, coup attempts, revolutions, campaigns against the state, assassinations, riots) is associated with higher odds of genocide.

H12: Economic pressure (economic crises, resource scarcity, population pressure, natural disasters, resource abundance) is associated with higher odds of genocide.

International controls

Lastly, interactions between states may provide social controls in the highly globalized context of the twentieth and twenty-first centuries. First, trade promotes engagement in the international system, and it may also influence the adoption of global norms

against violence.⁶² In line with this, the Harff model and the OSAPG framework suggest that economic interdependency decreases the odds of genocide.

States are also connected through membership in international governmental organizations (IGOs), though Harff⁶³ found that IGOs were not associated with genocide. They are, nonetheless, included in the OSAPG framework alongside citizens' membership in international *nongovernment* organizations (INGOs). These civil society organizations have been linked to respect for human rights in much world polity scholarship,⁶⁴ though their relationship to genocide has not been tested. The OSAPG framework relatedly assesses cooperation with international human rights mechanisms. To test this, I assess ratification of relevant human rights treaties—one of the core mechanisms of human rights and the only mechanism prevalent throughout the entire period studied. I examine the Genocide Convention—which is one of the nine core human rights treaties and was created to deter genocide following the Holocaust—as well as the International Covenant on Civil and Political Rights, which protects the right to life.

In line with the Harff model, I thus anticipate that:

H13: Global economic interconnectedness is associated with lower odds of genocide.

I also anticipate that:

H14: Global political interconnectedness is associated with lower odds of genocide. This includes (1) membership in IGOs, (2) membership in INGOs and (3) ratification of relevant human rights treaties.

Measures and methods

To assess the risk factors of genocide, I analyse data from 153 countries between 1955 and 2005. The 1950s represented a new era in international law with the adoption of the Genocide Convention as well as other treaties, and I stop the analysis in 2005 due to the availability of several independent variables, such as data on discrimination. I include as many existing countries as possible; those excluded are small countries with few data.⁶⁵ My dataset thus contains 5,958 country-years, which is the unit of analysis.

Dependent variable

The dependent variable is the occurrence of genocide. In line with Krain's⁶⁶ and Harff's⁶⁷ studies, I employ the designation of cases of genocide created by Harff and the Political Instability Task Force (PITF). Their coding involved the following criteria:

- (1) States or authorities must commit the killings or demonstrate complicity;
- (2) Evidence must show intent on the part of the authorities;⁶⁸
- (3) The victims must be members of an identifiable group; and
- (4) Actions committed must pose a threat to the survival of group members (though there is no minimum threshold of deaths).

Events that meet these criteria are included in [Appendix A](#).⁶⁹ Since Harff⁷⁰ published the results of her study using these cases, the PITF has added an additional case of genocide—Nigeria in 1967—that is included in this analysis.

As seen in criterion 1, these data restrict genocide to events where the state was a perpetrator or complicit in the violence. Other actors could feasibly perpetrate genocide, though the state or its authorities have been actively or tacitly involved in most genocides, making state-influenced violence a meaningful form of genocide to examine. Further, the legal definition cites members of national, racial, ethnic or religious groups as victims of genocide, but this dataset includes political groups as well (criterion 3). Multiple scholars have urged this inclusion,⁷¹ as it is virtually impossible to separate the racial, ethnic, national or religious from the political.⁷² Thus, politicides where groups are defined primarily in terms of their opposition to the dominant regime are included.⁷³ Finally, countries are censored while they experience genocide but re-enter the risk set after each episode of genocide comes to an end, which allows for the possibility of multiple genocides within the same country (N=40 genocides, see [Appendix A](#)). Timing for each episode of genocide was also obtained from Harff and the Political Instability Task Force.⁷⁴

Independent variables

I obtained data from a variety of sources, as seen in [Table 1](#).⁷⁵ Data on state structure are from the Polity IV Project,⁷⁶ which conceptualizes democracies as having procedures through which citizens can express preferences about policies and leaders, institutionalized constraints on the executive's power, and the guarantee of civil liberties to all citizens. I include a scale that ranges from -10 (full autocracy) to 10 (full democracy) to test regime type, and I include a measure of countries with a 1–5⁷⁷ on the scale to assess partial democracies. To test constraints on the executive, I created a dichotomous variable from Polity IV's seven-point scale of executive control, where a 1 on that scale is equal to unlimited authority and all else is set to 0.⁷⁸ Additionally, I include GDP per capita to measure economic capacity⁷⁹ and rely upon the Correlates of War Project's data⁸⁰ on military expenditure to measure military capacity.⁸¹

Turning to ideology and exclusion, an exclusionary ideology is operationalized as a belief system articulated by governing elite that 'identifies some overriding purpose or principle that is used to restrict, persecute, or eliminate categories of people'.⁸² It was coded by Harff for the PITF until 2000 and has since been updated by Marshall, whose team of coders also checked the reliability of previous years and updated them considerably. Contention surrounding elite ethnicity, also coded by Harff for the PITF until 2000 and updated by Marshall, assesses whether the ethnic or religious identity of presidents, prime ministers, or members of a cabinet or military junta is a recurring issue of contention.⁸³

To operationalize discriminatory actions against members of the population, I rely upon data from the Minorities at Risk Project.⁸⁴ These data include two scales of economic and political discrimination against groups within a country. Both scales range from 0 to 4, with 4 signalling policies that substantially restrict a group's political participation or economic opportunities as compared to other groups. Here, I operationalize these scales together as a single dichotomous variable and assign a country-year a 1 if there is a 4 on *both* scales for at least one group.⁸⁵

To operationalize colonialism, I include a measure of the percentage of years between 1816 and independence that a country was a colony, an imperial dependency or part of a land-based empire. Following Wimmer and Feinstein,⁸⁶ I chose 1816 as the cut-off point because the 1800s saw unprecedented pursuit of colonial territory. The date also directly

Table 1. Dependent and independent variables.

Dependent Variable	Description	No Genocide	Genocide	Range	Source
Genocide	0 = No genocide 1 = Genocide	124 countries (5,918 years)	29 countries (40 years)	0 to 1	PITF
Independent Variables	Description	Mean (No Genocide)	Mean (Genocide)	Range	Source
<i>State Structure & Capacity</i>					
Democracy	–10 (full autocracy) to 10 (full democracy)	0.22	–4.73	–10 to 10	Polity IV
Partial Democracy	0 = –10 to 0 & 6 to 10 1 = 1 to 5 on scale	0.09	0.08	0 to 1	Polity IV
Executive Control	0 = 2–7 on executive constraint scale 1 = 1 on executive constraint scale (unlimited authority)	0.22	0.45	0 to 1	Polity IV
GDP per capita	GDP divided by population (logged)	7.56	6.24	4.22 to 11.25	James et al. (2012)
Military Expenditure	In thousands of US dollars (current year and logged)	12.07	12.16	0 to 24.82	Correlates of War
<i>Ideology & Exclusion</i>					
Exclusionary Ideology	0 = No exclusionary ideology 1 = Exclusionary ideology	0.22	0.58	0 to 1	Harff/PITF/Center for Systemic Peace
Ruling Elite Ethnicity	0 = Elite ethnicity is not recurring source of conflict 1 = Elite ethnicity is recurring source of conflict	0.40	0.88	0 to 1	Harff/PITF/Center for Systemic Peace
Discrimination	0 = 0–3 on political and economic discrimination scales 1 = At least one group in country receives a 4 on political discrimination scale and at least one group receives a 4 on economic discrimination scale	0.15	0.58	0 to 1	Minorities at Risk
Prior Genocide	0 = No prior episode of genocide occurred in country in time period analysed 1 = Prior episode of genocide occurred	0.09	0.35	0 to 1	PITF

(Continued)

Table 1. Continued.

Independent Variables	Description	Mean (No Genocide)	Mean (Genocide)	Range	Source
Colonial Past	Proportion of years under imperial rule since 1816	0.47	0.58	0 to 1	Wimmer et al. (2009)
<i>Upheaval & Threat</i>					
Civil War	0 = No civil war 1 = Civil war (1,000 battle deaths)	0.04	0.45	0 to 1	PRIO
International War	0 = No international war 1 = International war	0.02	0.05	0 to 1	MEPV
Bordering Violence	0 = No violence in border country 1 = Violence in 1+ border country	0.51	0.65	0 to 1	MEPV
Attempted Coup	0 = No attempted coup 1 = Coup attempted by political elite	0.03	0.20	0 to 1	Polity IV Coups d'Etat
Successful Coup	0 = No coup 1 = Coup in which new elite remain in power at least one month	0.02	0.13	0 to 1	Polity IV Coups d'Etat
Revolution	0 = No revolution 1 = Revolution (all coups or attempted coups excluded in order to measure only popular revolutions)	0.12	0.48	0 to 1	Banks (2008)
Campaign against State	0 = No campaign 1 = Campaign (and no regime change)	0.13	0.60	0 to 1	NAVCO
Assassination	0 = No assassination 1 = Assassination	0.01	0.08	0 to 1	Polity IV
Riots	0 = No riots with 100 or more participants 1 = At least one riot with 100 or more participants	0.18	0.30	0 to 1	Banks (2008)
Economic Crisis	0 = No 10% drop in GDP 1 = 10% or greater drop in GDP	0.03	0.13	0 to 1	Constructed with data from James et al. (2012)
Agricultural Area	Area of land (1,000 Ha) that is arable, permanent crop or permanent pasture (logged)	0.85	1.21	0.00 to 4.04	FAO
Population Change	$\text{Population}_{\text{year}} - \text{Population}_{\text{year}-1} / \text{population}_{\text{year}-1}$	2.05	1.32	-95.89 to 56.86	World Bank/Penn Tables
Population Density	Midyear population divided by land (km ²) (logged)	3.68	3.71	0.21 to 8.73	World Bank/Penn Tables

Table 1. Continued.

Independent Variables	Description	Mean (No Genocide)	Mean (Genocide)	Range	Source
Natural Disaster	0 = No disaster 1 = At least one disaster (10+ killed, 100+ injured, declared state of emergency, call for international help)	0.46	0.43	0 to 1	Int. Disaster Database (CRED)
Oil Production	Hundreds of thousands of metric tons (logged)	1.86	2.24	0 to 8.73	Ross (2006)
Diamond Deposits	0 = Country has less than ten deposits 1 = Country has ten or more deposits	0.15	0.20	0 to 1	PRI0
Trade Openness	Exports + imports/GDP	65.60	47.18	1.53 to 442.47	Penn World Table
INGOs	Number of international nongovernmental organizations to which any citizen belongs (logged)	5.68	4.99	0 to 8.34	Yearbook of Int. Assoc.
IGOs	Number of international governmental organizations to which country belongs (logged)	3.65	3.28	0 to 4.65	Yearbook of Int. Assoc.
Genocide Convention	0 = Not ratified Genocide Convention 1 = Ratified	0.63	0.55	0 to 1	United Nations
ICCPR	0 = Not ratified ICCPR 1 = Ratified	0.42	0.30	0 to 1	United Nations
Time	Years at risk of genocide	22.15	13.08	1 to 51	

follows the Congress of Vienna, which redrew the map of Europe. Finally, prior genocide is operationalized by a dichotomous indicator of whether a prior episode of genocide occurred in the country during the time period analysed.⁸⁷

Each measure of political upheaval is dichotomous. Data on civil wars are obtained from the Uppsala Conflict Data Program (UCDP) and Peace Research Institute Oslo (PRIO) Armed Conflict Database, which defines civil wars as having an annual battle death count of at least 1,000 people.⁸⁸ Data on international wars are from the Major Episodes of Political Violence (MEPV) database.⁸⁹ I obtain data on coups and assassinations from the Polity IV Coups d'Etat dataset,⁹⁰ which allows me to examine successful coups and attempted coups. Data on riots and revolutions are obtained from Banks.⁹¹ While Banks operationalizes riots by the number of riots with over 100 participants, I recode this as a dichotomous variable following Rost,⁹² though I also include the count variable in an additional model (Appendix B).⁹³ Additionally, as Banks defines a revolution as any illegal or forced change in the top government elite, any attempt at such a change or any successful or unsuccessful armed rebellion, I exclude coups and coup attempts from this measure so it more accurately reflects popular revolution.⁹⁴ Data on campaigns against the state are from the NAVCO dataset.⁹⁵ I restrict campaigns against the state to those that did not succeed in a regime change in a given country-year,⁹⁶ and I include both violent and nonviolent movements because they had the same effect separately. As detailed below, I also explore measures of civil wars and revolutions that did not coincide with regime change in order to assess whether the mechanism behind these factors involves the rise of a repressive leader through unconventional channels or threat to a current regime (Appendix B).

I include a ten per cent drop in GDP to measure an economic crisis and the amount of agricultural area⁹⁷ in a country to assess the influence of resource scarcity. Data on natural disasters are from the Center for Research on the Epidemiology of Disasters,⁹⁸ and I also test measures of population growth and population density from the World Bank⁹⁹ and the Penn World Table.¹⁰⁰ Data on diamonds come from PRIO,¹⁰¹ while data on oil are from Ross.¹⁰²

Lastly, trade openness is operationalized as exports plus imports divided by GDP.¹⁰³ Data on IGOs and INGOs are obtained from the *Yearbook of International Organizations*.¹⁰⁴ To operationalize human rights treaties, I assess ratification of the two core human rights treaties that are most directly related to genocide. This includes an annual measure of whether a country had ratified the Genocide Convention and an annual measure of whether a country had ratified the International Covenant on Civil and Political Rights (ICCPR), which includes the right to life.¹⁰⁵

Analysis

I employ a discrete-time hazard model to assess the risk factors of genocide. This model draws upon the hazard, or the instantaneous propensity that an event will occur. Unlike many models, hazard models analyse the effect of time and allow for time-varying predictors and censoring. The specific discrete-time logistic regression model¹⁰⁶ is:

$$\log \left[\frac{P_{it}}{(1 - P_{it})} \right] = \alpha_t + \beta_1 X_{it1} + \dots + \beta_k X_{itk}$$

In this model, P_{it} represents the probability that country i experiences a genocide at time t ; β signifies the effect of the independent variables; $X_1 \dots X_k$ denote k time-varying explanatory variables; and α represents a set of constants corresponding to each discrete-time unit of one country-year. I cluster standard errors by country identifier to adjust for correlated errors within countries over time. I use listwise deletion for missing country-years and linear interpolation when appropriate, though I ran all models without interpolated data to ensure consistent effects. Notably, I also lag the dependent variable one year. In this sense, independent variables from 1955 would, for example, be examined for their effect on the onset of genocide in 1956.

Countries enter the risk set in 1955 or the year they gained independence (if post-1955). Ideally, countries would be included before independence, but pre-independence data are virtually nonexistent for many indicators. Thus, time is measured as a count of the years since a country enters the risk set (or since the last episode of genocide ended), though [Appendix B](#) also includes a dichotomous measure indicating the Cold War, as some may suggest period effects.¹⁰⁷

Results are presented in odds ratios; coefficients larger than 1 are associated with increased odds of genocide, while coefficients smaller than 1 are associated with decreased odds of genocide. Since odds ratios reflect the degree of unobserved heterogeneity in the model, I estimated the models standardizing on y^* and found that all effects remain similar across models.¹⁰⁸ Due to the small number of genocides, I also ran rare events logit models,¹⁰⁹ and the significance and direction of all results remained.

To further assess the results, I also examined in-sample and out-of-sample forecasts. Ward, Greenhill and Bakke¹¹⁰ suggest that many large-N studies of conflict have produced statistically significant results but fare poorly when it comes to prediction. Thus, following Ward, Greenhill and Bakke,¹¹¹ I assessed the models' predictive power using the area under the receiver operating characteristic (ROC) curve, which is known as the area under the curve (AUC) and has an optimal value of 1. The AUC of the full model presented below (Model 4) is .9482.¹¹² This is comparable to the AUC score reported in Rost¹¹³ and significantly higher than those reported by common models of civil war onset; for instance, the AUC scores for Fearon and Laitin¹¹⁴ and Collier and Hoeffler¹¹⁵ are .761 and .860, respectively.¹¹⁶ Out-of-sample forecasts perform similarly well. K-fold cross-validation¹¹⁷ tests revealed that the average out-of-sample AUC (for five folds across ten iterations) is .95232. For comparison, the out-of-sample AUC in Rost¹¹⁸ is .8976, while the out-of-sample AUC in Ulfelder's¹¹⁹ recent forecasting efforts was approximately .8—lending much support to the models presented below.

The onset of genocide

[Table 2](#) illustrates five discrete-time logistic regression models of the risk factors of genocide. Model 1 includes variables associated with state structure and capacity. Model 2 introduces measures of ideology and exclusion. Model 3 adds variables associated with upheaval and threat, and Model 4 adds international controls. Model 4 is the most complete model and explains almost forty per cent of the variance in the onset of genocide (McFadden's R^2 , per Allison).¹²⁰ Finally, as Model 4 includes many predictors, Model 5 includes the full model but excludes numerous factors that did not significantly improve the fit of the model.

Table 2. Discrete-time hazard model predicting genocide, 1955–2005.

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5
Years at Risk	0.956** (0.922–0.991)	0.964* (0.929–1.001)	0.976 (0.942–1.011)	0.977 (0.940–1.015)	0.963** (0.933–0.994)
<i>State Structure & Capacity</i>					
Democracy Scale	0.970 (0.904–1.041)	0.996 (0.935–1.062)	0.978 (0.874–1.094)	0.976 (0.873–1.092)	
Partial Democracy	1.391 (0.420–4.605)	1.204 (0.342–4.245)	0.946 (0.275–3.255)	0.931 (0.276–3.141)	
Executive Control	2.081* (0.917–4.720)	2.143* (0.913–5.034)	2.712** (1.205–6.104)	2.511** (1.084–5.817)	2.889*** (1.473–5.667)
GDP per capita (log)	0.515*** (0.402–0.658)	0.625*** (0.483–0.810)	0.920 (0.548–1.547)	0.968 (0.563–1.665)	
Military Expenditure (log)	1.294*** (1.172–1.429)	1.183*** (1.044–1.340)	0.957 (0.743–1.233)	0.977 (0.750–1.271)	
<i>Ideology & Exclusion</i>					
Exclusionary Ideology		1.564 (0.749–3.267)	2.208** (1.027–4.746)	2.061* (0.937–4.531)	2.195** (1.196–4.028)
Salient Elite Ethnicity		3.968*** (1.470–10.710)	3.104** (1.269–7.596)	3.236** (1.305–8.022)	3.627*** (1.476–8.914)
Discrimination		2.819** (1.263–6.289)	2.963*** (1.481–5.927)	3.042*** (1.538–6.017)	2.914*** (1.491–5.697)
Prior Genocide			1.968 (0.877–4.416)	1.956* (0.887–4.315)	1.701 (0.807–3.583)
Colonial Past			2.364 (0.611–9.151)	2.212 (0.533–9.172)	
<i>Upheaval & Threat</i>					
Civil War			4.125*** (1.612–10.556)	4.053*** (1.613–10.184)	4.007*** (1.910–8.407)
Revolution			3.134** (1.230–7.985)	3.048** (1.150–8.081)	3.026** (1.170–7.824)
International War			1.389 (0.322–5.993)	1.317 (0.223–7.760)	
Attempted Coup			8.411*** (3.359–21.059)	8.145*** (3.120–21.265)	9.082*** (3.551–23.228)
Successful Coup			4.344** (1.261–14.961)	4.484** (1.254–16.029)	4.851*** (1.656–14.214)
Campaign against State			4.487*** (1.799–11.191)	4.774*** (1.749–13.033)	4.686*** (1.958–11.218)
Assassination			3.725** (1.104–12.570)	3.464* (0.952–12.602)	3.586** (1.140–11.279)
Riots			1.389 (0.514–3.757)	1.516 (0.535–4.294)	
Border Violence			0.711 (0.363–1.394)	0.681 (0.345–1.344)	
Economic Crisis			1.672 (0.584–4.788)	1.633 (0.570–4.679)	
Population Change			0.945*** (0.910–0.980)	0.944*** (0.909–0.981)	0.942*** (0.908–0.976)
Population Density (log)			1.007 (0.760–1.335)	1.016 (0.757–1.362)	
Agricultural Area (log)			1.248 (0.733–2.126)	1.286 (0.715–2.315)	
Natural Disaster			0.731 (0.312–1.716)	0.740 (0.313–1.746)	
Oil Production (log)			0.986 (0.855–1.138)	0.986 (0.852–1.141)	
Diamond Mines			0.951 (0.344–2.629)	0.968 (0.337–2.782)	

(Continued)

Table 2. Continued.

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5
<i>International Controls</i>					
Trade Openness				0.999 (0.988–1.009)	
INGOs (log)				0.848 (0.581–1.238)	
Genocide Convention				0.981 (0.347–2.770)	
ICCPR				1.354 (0.573–3.197)	
Constant	0.043*** (0.006–0.338)	0.007*** (0.001–0.074)	0.001*** (0.000–0.024)	0.001*** (0.000–0.033)	0.000*** (0.000–0.001)
Country-years	5,958	5,958	5,958	5,958	5,958
Countries	153	153	153	153	153
McFadden's R^2	0.125	0.187	0.360	0.362	0.348

Note: Results in odds ratios and genocide lagged by one year. Standard errors clustered by country identifier.

*** $p < 0.01$.

** $p < 0.05$.

* $p < 0.1$.

Turning first to state structure and capacity, the effect of democracy is not significant, which is contrary to the Harff model and the OSAPG framework. I also tested a threshold effect above 7 on the Polity scale¹²¹ as well as an indicator of factionalism from Polity IV¹²² (but neither yielded significant results [see Appendix B]). Contrary to Mann's argument, partial democracies are likewise not associated with higher odds of genocide. That said, Mann's focus on defining the people to be included in the state may point to nation-building more generally—a process that all nation-states undertake in their effort to define and create boundaries (by definition exclusionary) around the nation. This argument may thus speak to the *longue durée* of history, though this is subject to future examination.¹²³

While democracies and partial democracies are not significantly associated with the onset of genocide, constraints on the executive are. Specifically, countries where the executive has unlimited authority have 2.5 times higher odds of genocide than other countries (Model 4). As this effect is partially captured in the democracy scale, Model 5 further provides additional support for this relationship, which is in line with work that emphasizes controls on the executive and the concentration of power over general regime type.¹²⁴

Measures of state capacity, including GDP¹²⁵ and military expenditures, do not significantly influence the odds of genocide. This suggests that state structure and state capacity may be comparatively less vital to understanding general risk factors of genocide, with the exception of controls on the executive.

There is much evidence that ideology and exclusion influence the onset of genocide, however. Countries with contention over elite ethnicities have over three times higher odds of experiencing genocide than countries where the ethnic or religious identity of high-ranking officials was not a source of disputes over power. Furthermore, political and economic discrimination is associated with higher odds of genocide. Exclusionary ideologies are likewise associated with higher odds of genocide, though only at the .1 level (Model 4), as the effect of these ideologies is likely reflected in discriminatory

practices captured in the measure of political and economic discrimination. In fact, as seen in [Appendix B](#), the effect of exclusionary ideologies is significant at the .01 level when discrimination is not included in the model. This nevertheless suggests that discriminatory *practices* may be better predictors of genocide than discriminatory *ideologies*, though they are arguably linked. It is also noteworthy that, in most models, prior genocides are not associated with the onset of genocide—which is contrary to the Harff model and the OSAPG framework—though Model 4 indicates some instability in this effect.

Turning to upheaval, several forms of political upheaval influence the onset of genocide. In line with previous research,¹²⁶ civil wars have a large effect on the onset of genocide. This is true for all civil wars as well as for civil wars that did not coincide with regime change ([Appendix B](#)).¹²⁷ Thus, civil wars are likely consequential because they can bring new leaders to power and also because they can signal threat. In line with this, campaigns against the state significantly increase the odds of genocide by a factor of 4.8 (Model 4). As this measure does not include campaigns that successfully overthrew a government, this adds further support to the argument that threat to the government is particularly important to understanding the onset of genocide.

Revolutions are likewise associated with higher odds of genocide. This includes all revolutions ([Table 2](#)), though as with civil war, the effect holds when this is restricted to revolutions that did not coincide with regime change ([Appendix B](#)), again illustrating that the rise of a repressive leader cannot fully explain the effect of revolutions and related upheaval. [Table 2](#) also differentiates between coups and coup attempts, and countries that saw an attempted coup had significantly higher odds of genocide the following year, providing additional support to the salience of threat. Successful coups are also significant, in line with theories that suggest that coups pave the way for repressive leaders to come to power. Similarly, assassinations are associated with higher odds of genocide, again likely due to the ability of repressive leaders to enter power in unconventional ways. Riots, however, are not significantly associated with the onset of genocide, though the number of riots is significantly associated with the onset of genocide in a more restricted model ([Appendix B](#)).¹²⁸

When the state is faced with civil wars, coups, revolutions, campaigns against it or assassinations, it is typically an inwardly violent actor, creating a structure that could facilitate genocide. By contrast, a government typically protects its citizens during international wars. Because of this, and likely because war has become increasingly intrastate, international wars are not associated with the odds of genocide in [Table 2](#). Violence in neighbouring countries is also not significantly associated with the odds of genocide.

The significance of civil wars (with and without regime change), coups, coup attempts, successful revolutions, unsuccessful revolutions, assassinations and campaigns against the state reveal the importance of disaggregating the type of upheaval for early warning systems. Yet, while these upheavals are each associated with higher odds of genocide, economic crises, population pressure, resource scarcity or resource abundance are not (Model 4).¹²⁹ This casts doubt on measures of economic upheaval and suggests that genocide is much more likely when a government is directly threatened.

Lastly, international controls do not decrease the odds of genocide. Citizens' membership in INGOs is not significantly associated with the onset of genocide, nor is state membership in IGOs (excluded due to its very high correlation with INGO membership). Trade openness also does not have a significant effect. This may reflect the presence of trade

embargos, which are placed on some countries wherein human rights violations are common. Nonetheless, while Harff¹³⁰ found that low trade openness was one of the strongest predictors of genocide, it is not the case in these models (see also Rost¹³¹ and updates to the Harff model on GPANet.org).

Discussion: re-examining risk factors

Taken together, these models illustrate the role of political upheaval¹³² and, importantly, operationalize distinct forms of upheaval. As Krain¹³³ and Melson¹³⁴ argue, some political upheavals—including successful revolutions, civil wars, coups and assassinations—likely pave the way for repressive leaders to come to power. Beyond this, recent work¹³⁵ has found that exclusionary ideologies are most likely to be created after an unconventional regime change (most notably a coup or revolution). Such transitions are often accompanied by ideologically charged narratives that attempt to justify the unconventional grab of power and, in many cases, correct a perceived problem.

My findings also operationalize distinct forms of threats to the political elites. Coup attempts, unsuccessful revolutions, campaigns against the state and civil wars that do not result in regime change are each associated with higher odds of genocide. This illustrates the importance of threat to those in power and suggests that such threat should be an important part of models of risk factors, falling in line with genocide scholarship that emphasizes the role of threat to political elites.¹³⁶ As Davenport¹³⁷ notes, the idea that political authorities respond to behaviour that threatens the political system with state repression can be found in centuries of political philosophy and has, more recently, received much support across many studies of state repression.

Yet, strains that typically do not directly threaten political elites are not significantly associated with the onset of genocide. This includes forms of upheaval that are more economic in nature—including economic crises, high population growth or density, resource scarcity and natural disasters. The OSAPG framework considers many of these economic factors, and they have increasingly been cited as risk factors of genocide. Nonetheless, this analysis suggests that they may not be as useful in general risk assessment models.

Numerous other factors included in the OSAPG framework and the Harff model were not significantly associated with the odds of genocide. These include the type of government, economic capacity, military expenditure, trade openness, resource abundance, membership in international organizations, ratification of treaties, bordering violence and international war—suggesting that these factors should be further scrutinized before inclusion in general risk assessment models.

Of course, this study is not without limitations. While a number of other studies examine mass atrocities committed against civilians,¹³⁸ this article focuses on *state-led* atrocities, as a different set of risk factors is likely needed to examine atrocities initiated by other actors. Additionally, assessments of risk factors speak to factors that are *likely* to increase the odds of genocide, though unobserved factors and historical particularities also influence the possibility that genocide may occur. As such, local conditions and culturally specific factors should also be taken into account in risk assessments.¹³⁹ Furthermore, analysing units smaller than one year would be preferred, though such data do not exist on some of the indicators examined. Additionally, though I found certain strains are not associated

with the odds of genocide, I am unable to assess *perceptions* of those strains, which may differ from measures used here. Lastly, the small number of cases should be kept in mind while interpreting results; while the genocides I analysed could be considered a census, there is fortunately a relatively small number.

Conclusion

This article has assessed the risk factors of genocide with the aim of better understanding when and why genocides occur. I drew upon recent case studies and two closely related risk assessment models: (1) the Harff model¹⁴⁰ and (2) the United Nations Office of the Special Adviser on the Prevention of Genocide (2014) atrocity framework. As many factors in the OSAPG framework had not been tested quantitatively, and as new theories have yet to be incorporated into either model in published work, I employ an event history analysis of 153 countries between 1955 and 2005.

My findings highlight the influence of societal upheaval and threats to the political elite. Disaggregating forms of upheaval, I find that civil wars, revolutions, assassinations and coups are strongly associated with the onset of genocide, lending credence to the idea that unconventional regime change influences genocide. I also find, however, that civil wars that do not result in regime change, unsuccessful revolutions, attempted coups and the presence of campaigns against the state are each associated with higher odds of genocide, illustrating that theoretical and policy-oriented assessments of genocide should also highlight the role of threat to the state when considering risk factors of genocide. Finally, I illustrate that numerous factors included in the OSAPG framework should be further examined, such as economic and population crises, economic abundance, violence in neighbouring countries and international controls. As the full model presented in this article yields an AUC on out-of-sample forecasts of over .95, this model will prove useful for future forecasting efforts.

Notes

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16. The six in line with the Harff model include (1) societal upheaval, (2) previous genocides and related violations, (3) autocratic regimes/state structures that do not protect citizens, (4) an exclusionary ideology that classifies/excludes people and similar evidence of motivations, (5) tensions surrounding the ethnicity of rulers/intergroup tensions and (6) international mitigating factors. The seventh factor is state capacity. There are also three escalatory factors, including signs of the intent to destroy, preparation for genocide and triggers, though I do not consider these. I also do not analyse *each* indicator but rather focus on those that are measurable.
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69. Political Instability Task Force (PITF), PITF problem set codebook, 2009.
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71. Fein, *Genocide*, p. 11; Harff, 'No lessons learned from the Holocaust?'; Kuper, *Genocide*, p. 139.
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75. I also explored measures of ethnolinguistic fractionalization, refugee flows and terrorist attacks. Including these variables did not significantly change the results. Further, military

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 113. Rost, 'Will it happen again?'.
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128. The count variable is missing data on four situations that are coded as genocide, meaning that this model includes thirty-six genocides instead of forty.
129. Additionally, including population and population squared in the model did not yield significant results or improve the fit of the model.
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Appendix A. Genocides, 1955–2005

Country	Onset	Country	Onset
Afghanistan	1978	Indonesia	1965, 1975
Algeria	1962	Iran	1981
Angola	1975, 1998	Iraq	1963, 1988
Argentina	1976	Nigeria	1967
Bosnia	1992	Pakistan	1971
Burma (Myanmar)	1978	Pakistan (post partition)	1973
Burundi	1965, 1988, 1993	Philippines	1972
Cambodia	1975	Rwanda	1963, 1994
Chile	1973	Somalia	1988
China	1959, 1966	Sri Lanka	1989
Congo-Kinshasa	1964, 1977	Sudan	1956, 1983, 2003
El Salvador	1980	Syria	1981
Equatorial Guinea	1969	Uganda	1971, 1980
Ethiopia	1976	Yugoslavia	1998
Guatemala	1978		

Adapted from the PITF. South Vietnam (1965) is excluded due to missing data.

Appendix B. Additional discrete-time hazard models predicting genocide, 1955–2005

Results in odds ratios and genocide lagged by one year

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Predictors	Cold War Dummy	Democracy Threshold	Factionalism	Discrimination Excluded	Civil War No Regime Change	Revolution No Regime Change	Riot Count Variable
Years at Risk	0.982 (0.940–1.026)	0.976 (0.940–1.013)	0.977 (0.941–1.014)	0.978 (0.943–1.015)	0.979 (0.942–1.017)	0.978 (0.941–1.016)	0.980 (0.942–1.021)
<i>State Structure & Capacity</i>							
Democracy Scale	0.992 (0.889–1.107)			0.983 (0.880–1.099)	0.978 (0.876–1.092)	0.978 (0.873–1.096)	0.929 (0.822–1.050)
Partial Democracy	0.906 (0.280–2.936)	0.825 (0.195–3.495)	0.882 (0.230–3.378)	1.400 (0.417–4.701)	1.000 (0.297–3.359)	0.983 (0.297–3.252)	1.195 (0.392–3.643)
Democracy Threshold (7–10)		0.900 (0.153–5.286)					
Factionalism			0.890 (0.305–2.603)				
Executive Control	2.380* (0.973–5.822)	2.764** (1.237–6.175)	2.782** (1.237–6.282)	2.748** (1.226–6.158)	2.293* (0.961–5.470)	2.531** (1.065–6.014)	2.199 (0.839–5.762)
GDP per capita (log)	0.904 (0.532–1.534)	0.949 (0.558–1.615)	0.945 (0.577–1.546)	0.910 (0.547–1.512)	0.909 (0.542–1.522)	0.962 (0.558–1.660)	1.091 (0.642–1.852)
Military Expenditure (log)	0.991 (0.753–1.304)	0.984 (0.755–1.284)	0.980 (0.737–1.303)	0.961 (0.731–1.264)	0.990 (0.763–1.284)	0.990 (0.750–1.268)	1.027 (0.729–1.446)
<i>Ideology & Exclusion</i>							
Exclusionary Ideology	1.979* (0.920–4.258)	2.187** (1.053–4.542)	2.206** (1.054–4.619)	2.793*** (1.324–5.892)	2.063* (0.919–4.632)	2.024* (0.921–4.448)	1.566 (0.594–4.128)
Salient Elite Ethnicity	3.571*** (1.492–8.544)	3.239** (1.297–8.086)	3.256*** (1.329–7.981)	3.686*** (1.478–9.194)	3.509*** (1.427–8.625)	3.216** (1.297–7.973)	4.346*** (1.736–10.878)
Discrimination	2.908*** (1.439–5.875)	3.011*** (1.528–5.933)	3.020*** (1.536–5.936)		3.001*** (1.497–6.013)	3.029*** (1.527–6.008)	2.610*** (1.291–5.275)
Prior Genocide	2.344* (0.996–5.517)	1.941 (0.869–4.336)	1.956* (0.887–4.312)	1.864 (0.861–4.036)	1.901 (0.841–4.298)	1.966* (0.887–4.359)	1.968 (0.812–4.771)
Colonial Past	2.120 (0.506–8.878)	2.173 (0.512–9.211)	2.178 (0.494–9.603)	1.994 (0.414–9.613)	2.159 (0.536–8.702)	2.248 (0.533–9.478)	1.217 (0.316–4.692)
<i>Upheaval & Threat</i>							
Civil War	3.971*** (1.505–10.480)	4.046*** (1.606–10.192)	4.070*** (1.634–10.136)	4.309*** (1.693–10.969)		4.090*** (1.632–10.255)	5.705*** (2.153–15.112)
Civil War Without Regime Change					3.134** (1.130–8.694)		
Revolution	3.766*** (1.460–9.714)	3.054** (1.143–8.160)	3.101** (1.198–8.025)	2.968** (1.105–7.975)	3.312** (1.232–8.903)		2.423* (0.857–6.852)
Revolution Without Regime Change						3.625** (1.327–9.900)	
International War	0.925 (0.145–5.910)	1.294 (0.224–7.470)	1.309 (0.234–7.319)	1.449 (0.233–9.029)	1.416 (0.238–8.422)	1.486 (0.259–8.539)	1.367 (0.175–10.654)

(Continued)

Appendix B. Continued.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Predictors	Cold War Dummy	Democracy Threshold	Factionalism	Discrimination Excluded	Civil War No Regime Change	Revolution No Regime Change	Riot Count Variable
Attempted Coup	8.797*** (3.266–23.697)	8.150*** (3.122–21.275)	8.184*** (3.124–21.442)	6.174*** (2.328–16.372)	8.297*** (3.204–21.488)	8.244*** (3.203–21.221)	7.162*** (2.493–20.580)
Successful Coup	4.601** (1.237–17.123)	4.446** (1.246–15.862)	4.482** (1.250–16.068)	3.645** (1.031–12.879)	5.096** (1.284–20.231)	4.330** (1.218–15.399)	3.773* (0.828–17.187)
Campaign against State	4.301*** (1.585–11.673)	4.739*** (1.766–12.719)	4.754*** (1.756–12.871)	4.644*** (1.853–11.637)	4.563*** (1.483–14.038)	4.096** (1.388–12.086)	4.565*** (1.498–13.917)
Assassination	3.131* (0.805–12.174)	3.468* (0.958–12.547)	3.475* (0.965–12.509)	3.838** (1.112–13.250)	3.914* (0.981–15.627)	3.586* (0.965–13.320)	4.105* (0.978–17.228)
Riots (dichotomous)	1.517 (0.504–4.567)	1.506 (0.532–4.264)	1.496 (0.534–4.187)	1.648 (0.607–4.472)	1.586 (0.549–4.575)	1.539 (0.533–4.444)	
Riots (count)							1.125*** (1.035–1.223)
Border Violence	0.741 (0.361–1.522)	0.682 (0.345–1.346)	0.680 (0.343–1.348)	0.706 (0.349–1.428)	0.669 (0.335–1.336)	0.688 (0.349–1.354)	0.713 (0.348–1.459)
Economic Crisis	1.767 (0.650–4.803)	1.646 (0.578–4.686)	1.675 (0.572–4.903)	1.664 (0.589–4.701)	1.826 (0.669–4.984)	1.696 (0.596–4.830)	1.414 (0.381–5.252)
Population Change	0.943*** (0.906–0.982)	0.944*** (0.909–0.980)	0.943*** (0.907–0.980)	0.951** (0.914–0.989)	0.946*** (0.911–0.982)	0.945*** (0.910–0.981)	0.941*** (0.906–0.977)
Population Density (log)	1.018 (0.764–1.355)	1.004 (0.734–1.371)	1.003 (0.754–1.334)	1.024 (0.751–1.396)	0.998 (0.741–1.344)	0.998 (0.757–1.363)	1.018 (0.720–1.437)
Agricultural Area (log)	1.225 (0.631–2.379)	1.277 (0.714–2.285)	1.271 (0.692–2.332)	1.172 (0.654–2.101)	1.314 (0.732–2.360)	1.287 (0.721–2.298)	1.041 (0.567–1.913)
Natural Disaster	0.846 (0.368–1.945)	0.739 (0.311–1.754)	0.739 (0.311–1.757)	0.778 (0.323–1.870)	0.754 (0.324–1.753)	0.747 (0.314–1.778)	0.824 (0.354–1.918)
Oil Production (log)	1.018 (0.872–1.188)	0.990 (0.854–1.147)	0.995 (0.860–1.150)	1.026 (0.886–1.187)	0.986 (0.846–1.150)	0.986 (0.857–1.150)	0.992 (0.849–1.159)
Diamond Mines	0.888 (0.327–2.416)	0.967 (0.338–2.767)	0.962 (0.320–2.895)	1.052 (0.318–3.482)	0.914 (0.329–2.536)	0.962 (0.339–2.729)	1.187 (0.420–3.358)
<i>International Controls</i>							
Trade Openness	1.000 (0.991–1.009)	0.999 (0.988–1.010)	0.999 (0.988–1.010)	0.996 (0.986–1.006)	0.998 (0.988–1.010)	0.999 (0.988–1.009)	0.998 (0.987–1.008)
INGO (log)	0.866 (0.578–1.300)	0.847 (0.579–1.239)	0.845 (0.580–1.230)	0.894 (0.624–1.279)	0.786 (0.517–1.197)	0.848 (0.581–1.236)	0.823 (0.548–1.237)
Genocide Convention	0.876 (0.297–2.582)	0.963 (0.343–2.709)	0.953 (0.340–2.672)	0.895 (0.328–2.440)	1.387 (0.466–4.124)	1.387 (0.354–2.672)	0.891 (0.285–2.786)
ICCPR	2.066 (0.861–4.953)	1.320 (0.556–3.133)	1.337 (0.558–3.204)	1.291 (0.524–3.182)	1.707 (0.724–4.023)	1.329 (0.570–3.100)	1.400 (0.569–3.445)
Cold War Ongoing	3.410** (1.224–9.499)						
Constant	0.000*** (0.000–0.012)	0.001*** (0.000–0.030)	0.001*** (0.000–0.028)	0.001*** (0.000–0.033)	0.001*** (0.000–0.078)	0.001*** (0.000–0.036)	0.000*** (0.000–0.008)
Country-years	5,958	5,958	5,958	5,958	5,958	5,958	5,845

Note: Standard errors clustered by country identifier.

*** $p < 0.01$.

** $p < 0.05$.

* $p < 0.1$.