Few have questioned how democracies as a group differ within and among themselves. The most important study in this area of inquiry is Powell's (1982) *Contemporary Democracies*. Unfortunately, some of his results may be both inefficient and biased due to the use of what we now understand to be an inappropriate method. This study applies more appropriate event count models to Powell's data in hopes of gaining new insights into the relationship between political violence and elements of democracy. Evidence to support Collective Action explanations of political violence was found. Strong support for the argument that presidencies can be detrimental to the state and that representational electoral systems and constitutions, especially consociational constitutions, outperform majoritarian systems was also supported. Environmental factors are important, but constitutional variables, discounted to some degree by Powell, were also found to have extremely important and significant effects on the degrees of violence in democracies.

CONTEMPORARY DEMOCRACIES REVISITED
Democracy, Political Violence, and Event Count Models

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The connection between democracy and political violence has seen increasing investigation in recent years. Much of the literature has focused on external conflict and what Jack Levy (1989) calls the "Iron Law of Democracies"—the finding that, for the most part, democracies do not fight each other. Nevertheless, many authors have shown that democracies are just as war prone as other types of states when engaging in conflict with nondemocracies (Bremer, 1992). Recently, studies have begun to exam-

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ine the performance of democracies versus nondemocracies in the arena of internal conflict, focusing on such varied topics as sanctions (Gupta, Singh, & Sprague, 1993), repression (Henderson, 1991), ethnopolitical conflict (Gurr, 1994), state terrorism (Poe & Tate, 1994), civil wars (Krain & Myers, 1997), and genocide (Krain, 1997). But few have questioned how democracies as a group differ within and among themselves.

The most important study in this area of inquiry is G. Bingham Powell's (1982) book, *Contemporary Democracies*. Powell systematically examines how different types of democracies fare regarding participation, stability, and political violence. In the process, Powell examines environmental, constitutional, electoral, party system, and performance factors in 29 democracies in an attempt to determine which types provide the most order for society. Few studies of this nature have been as comprehensive in their scope or have produced as many key results. Unfortunately, some of these results may be both inefficient and biased due to the use of what we now understand to be an inappropriate method. The recent introduction into the political science literature of event count models (King, 1988, 1989a, 1989b) provides a new opportunity to retest Powell's findings with a more sophisticated, and more appropriate, method. This study will apply event count models to Powell's data with the hope of gaining new insights into the relationship between political violence and the various types of democracies.

POLITICAL VIOLENCE AND DEMOCRACIES

Powell's (1982) book was a groundbreaking work. Many theories concerning how democracies affected or were affected by political violence had been posited, but no one had yet brought them together in a systematic, cross-national, longitudinal study. Powell did just that, looking at how numerous factors, varying from population size to constitution type, affected the number of riots and political deaths (among other things) in a given democracy.

Powell (1982) finds that the most important factor influencing high rates of riots is population size. High levels of voter turnout, executive durability, and legislative fractionalization play a role in decreasing the number of riots in democracies. Population size and ethnic heterogeneity play major roles in escalating the number of political deaths, whereas economic development counters this trend to a large extent. In addition, although barely significant, Powell finds that majoritarian electoral laws and presidential executives

increase the number of deaths, whereas consociational practices and other such representational institutions work best to reduce them. In sum, Powell finds that there is a "tendency for the representational constitutions, with their parliamentary executives and multimember districts, to perform better in maintaining political order" (p. 72). Stability of government and stability in society are therefore at odds because Powell also finds that majoritarian governments and presidential executives are strong determinants of governmental stability. His conclusion is that, although constitutional and performance variables best explain governmental stability, "environmental advantages dominate the explanation of levels of violence" (p. 72).

Since Powell's work was published in 1982, there has been a revolution of sorts in the examination of democratic institutions. Major strides have been made in the areas of electoral system studies (e.g., Lijphart, 1994; Taagapera & Shugart, 1989), comparative executive/legislative systems (Linz, 1994; Shugart & Carey, 1993; Stepan & Skach, 1993), and the role of other nonenvironmental factors in affecting how democracies work. This burst of "new institutionalism" (March & Olsen, 1984) has led to greater insights into how democracies work (and do not work). Another major influence on this area of research has been the importance of democratic constitution building in the post–cold war era. New democracies with little previous experience in liberal politics needed guidance. The focus centered on creating efficient, stable democracies that could withstand the inevitable birth and growing pains that come with liberalization.

The rise of the importance of the political violence question has also been, in part, a result of these recent events. New democracies must cope with disorder at every turn. Separatism, ethnic conflict, and xenophobia are on the rise, even within democratic nations. And yet little is known about how democracies can be set up to avoid such problems.

Lijphart (1977) has provided one answer: consociationalism. Lijphart (1994) has also recently addressed the Powell (1982) study with a variant of his own. The results confirmed that consociationalism is indeed better able to control political violence, as are representational electoral systems. But his study suffers from problems of validity and comparability, ranging from a temporal difference to a different (smaller) set of cases. Beyond the Lijphart response, little, if any, movement has been made to follow up on Powell's question: What types of democracies work best at reducing or controlling political violence? To understand the factors involved in democracies specifically, the following must first be asked: What causes or prevents political violence in general?

FACTORS AFFECTING POLITICAL VIOLENCE

A country's economic, social, and political environment has been found to affect rates of political violence. For example, Henderson (1993), Moaddel (1994), and Poe and Tate (1994) all find that large populations lead to greater repression and political violence. The population's standard of living is another key factor. High levels of economic development consistently decrease violence levels (Henderson, 1991), whereas medium levels of modernization contribute to a lack of political order (Huntington, 1968). Some find that economic growth also has indirect effects on violence through income inequality (Moaddel, 1994). Most scholars agree that economic inequality is an important factor. The Relative Deprivation (Davies, 1969; Gurr, 1970), Political Process/Resource Mobilization (Oberschall, 1973; Tilly, 1978), and Rational Choice (Lichbach, 1989) schools of thought all acknowledge inequality's role in creating grievances necessary for mass mobilization and collective action.

Still others see connections between income inequality, economic modernization, and ethnic cleavages (Bonacich, 1972; Hechter, 1975; Olzak, 1986). Ethnic conflict, not uncommon in democracies, has recently been cited as a major contributor to domestic unrest. Gurr (1993, 1994) highlights the role of ethnopolitical conflict in many of today's most conflictual areas. Tarrow (1989a, 1989b, 1994) and Snow and Benford (1992) see ethnicity as an issue frame that can be used to mobilize masses for collective action. Nagel (1986) finds that when governments make ethnicity an issue, it will become a cleavage along which previously unmobilized citizens will mobilize.

It is clear that a whole range of environmental factors affect levels of political violence in countries of all regime types. Thus, it is not surprising that Powell (1982) found them to be of optimal importance in studying violence in democracies. Yet, political violence is also born of institutions.

Rational Choice, Political Process Models, and Resource Mobilization theories of political violence all focus on the rationality of group action within an institutional context. They share the understanding that collective action is rational and considered a normal, rather than unusual, political act (Olson, 1971; Tilly, 1978). These Collective Action explanations (Lichbach, 1994) are often used to examine situations in which either compromise or conflict can arise. Connections between individuals, movements, and power brokers within the polity can lead to compromise (McCarthy & Zald, 1977; Oberschall, 1973). Conflicting pressures, however, can lead to clashes and collective action. Although social networks play a key role in these mobilization models, they can only be activated by interaction with the polity's power structure. For example, violence may occur when institutional avenues to

redress grievances are shut off. In addition, challengers attempting to penetrate the power structure to gain access to the state's resources find both opportunities for and constrains on such action within the institutional structure (Gamson, 1975; Tarrow, 1994; Tilly, 1978).

Although grievances do play an important role in Collective Action explanations, they are considered less important than personal and/or group calculations of utility based on resources and political opportunity. Relative Deprivation explanations, however, privilege grievances over other factors in explaining political violence (Gurr, 1970). Although empirical examinations of these propositions have been fraught with problems (Gurney & Tierney, 1982), the importance of grievances in the processes of political mobilization and violence is still a hotly debated issue.

Cross-national studies have also been useful in teasing out the factors that affect political violence. Although the debate about institutions within democracies has barely addressed the question of order and violence, many people have studied what causes or inhibits political violence across the range of regime types. Most people agree that democracies do a better job at controlling political violence than do nondemocracies (Henderson, 1991). Indeed, a nation's abandonment of democracy has been shown to be one of the major contributing factors to increases in government-sanctioned political violence (Poe & Tate, 1994, pp. 861-862).

Repression itself is a key factor in understanding political violence. That is, violence can beget violence (Lichbach, 1987) and repression can lead to rebellion and protest (Davis & Ward, 1990). Although repression can quell protest in the short run, it has been found in some cases to have a long-run positive effect on protest activity (Rasler, 1996). In democratic states in particular, government sanctions provoke a higher level of protest demonstrations (Gupta et al., 1993). Repression yields higher levels of disorder. Repression of an unmobilized populace can provoke them to mobilize against the government.[1] Thus, repression does not always create order; rather, it can spiral into further disorder. In some cases, repression can initiate or further exacerbate a cycle of protest (Tarrow, 1989b, 1994).

The literature on participation has also addressed the issue of violence in democracies. Gamson (1975) argues that "low levels of diffuse support, when combined with high political efficacy, may motivate discontented citizens to participate in or otherwise endorse elite- or regime-challenging activities"

1. This is true of most cases but does not apply to the most severe cases of repression—genocides or politicides. Such cases are often tantamount to one-sided civil wars, in which the state or state-sponsored actor represses and kills but the victim cannot or does not retaliate. For a more complete treatment on this subject, see Harff and Gurr (1988) and Chalk and Jonassohn (1990).

(cited in Craig, 1980, p. 193). Performance of the institutions of a democracy may account for discontented citizens, political efficacy, or diffuse support. Even conventional participation may have an effect on violence. Huntington (1968) and Dahl (1971) argue that too much participation is not healthy for a democracy and may lead to disorder.

Of course, disorder and political violence come from above as well as from below. Governments with the ability to repress or even kill with impunity are more deadly. As Rummel (1992) said, paraphrasing Lord Acton, "power kills, and absolute power kills absolutely" (p. 1). Nondemocracies are better able to either justify such action or to be immune from consequences stemming from it. But within democracies, certain institutions provide more opportunities to use such powers than others.

Thus, institutional factors must be considered in examining the nature of political violence in democracies. Powell (1982) examined all of the above factors (and more), mostly finding results that confirm these more general theories of political violence. But the recent introduction of event count models (discussed below) calls those findings into question. Thus, many of the specifics regarding what factors affect violence in democracies, and to what degree they do so, remain up for debate and reexamination.

At this point, it should be made clear that this article is not criticizing Powell's choice of method at the time when the study was written. On the contrary, Powell used methods that were considered appropriate, and even sophisticated, for the time. Rather, this study attempts to apply current state-of-the-art methods to a previously productive project in an attempt to reaffirm, disprove, or revise its conclusions.

EVENT COUNT MODELS

Powell tests the effects of many different variables on the level of riots and the number of political deaths in a given country. The measures of his dependent variables are counts of events. At the time, the appropriate method appeared to be multiple regression analysis, which Powell employed. In the late 1980s, however, Gary King (1988, 1989a, 1989b) introduced more appropriate methods for analyzing counts of events, revolutionizing the way in which political scientists do such research. The importance of these methods is not just that they are more precise. Rather, they are neither biased nor inefficient.

Count models are based on the assumption that events have a particular distribution. In addition, the variance of the dependent variable equals the

expected value of the dependent variable × the degree to which the events are independent, such that $V(Y_i) = \lambda_i\sigma^2$, assuming that $\lambda_i > 0$ and $\sigma^2 > 0$, with σ^2 being an extra parameter measuring the degree of independence of the events (King, 1989a, p. 126). Complete independence among events makes $\sigma^2 = 1$, thereby making the variance equal to the mean. The simplest event count model, the Poisson regression model, assumes complete independence among events and therefore does not allow σ^2 to deviate from 1. Correlated events create situations of either overdispersion ($\sigma^2 > 1$) or underdispersion ($\sigma^2 < 1$), which can be accounted for by more complex count models, such as the negative binomial or zero modified count models (Liao, 1994; Long, 1997). In general, count models using the Poisson distribution or modifications thereof can more accurately account for the way in which events are distributed (King, 1988).

Ordinary least squares (OLS) regression does not account for the unique properties inherent in counts of events, such as their inability to take on negative integer values. For example, one cannot observe negative riots or deaths. Yet, OLS assumes that negative numbers are part of the normal distribution of events in a linear relationship. In addition,

> [OLS] makes the unrealistic assumption that the difference between zero and one event occurring in a particular time interval is the same as the difference between, say, 20 and 21 events. Thus the true relationship is not linear, and a linear approximation would not in most cases even be a reasonable working assumption. (King, 1988, p. 846)

This last point can be illustrated using data from this study. Take, for example, a portion of the protest cycle in Italy in the late 1960s, studied in detail by Tarrow (1989a). In 1967, Italy did not experience a single death from political violence. Italy appears to have been relatively orderly based on that criterion. In 1968, at the first peak of conflictual activity within the cycle of protest (Tarrow, 1989a), Italy experienced 2 political deaths. The very fact that within a year a death or two has occurred as a result of political violence alerts one to the fact that the society is experiencing some high levels of disorder, a huge change from the previous year's condition. Much had to happen to enable a crossing of the threshold from 0 to 1 death. By 1969, that figure had jumped to 20 deaths. Here, the fact that Italy experienced 20 as opposed to 18 or 19 deaths explains little about the magnitude of disorder in the society. Once the restrictions of order have been lifted and disorderly events become either that common or that deadly (or both), an extra death or two is more likely. The difference between 19 and 20 deaths is a much easier threshold to cross than that between 0 and 1 death. Thus, the answers that one

gets using OLS on event counts are biased because OLS assumes a linear relationship and uniform effects.

OLS also does not take into account the correct functional form and the pattern of distribution of the errors for event count models. It does not account for "the heteroskedasticity [or] the particular asymmetric form of the heteroskedasticity . . . of the disturbances" (King, 1988, p. 846). In other words, OLS does not use all of the available information when estimating a model with counts of events because the error terms are correlated with the independent variables. Therefore, it is inefficient.

Modifications to the dependent variable in OLS regression, such as taking the log or adding a small constant, have been shown to bias the estimates (King, 1988). Indeed, Powell (1982) suggests that taking the log of the dependent variable yields results similar to his original model, which he truncates to the 90th percentile to keep outliers from biasing the results (p. 51). None of the modifications suggested by Powell would enable his study to circumvent the problems inherent with running an OLS regression on a dependent variable of counts of events. Thus, the more appropriate count model should be employed.

Count models are mere modifications of the basic regression model, using maximum likelihood estimators and accounting for both distribution and a continuous underlying process (King, 1989b, p. 128). Events such as riots or deaths by political violence are, for the most part, not independent of each other and thus have a distribution unlike that of an OLS regression's dependent variable. The choice of model is dependent on the type of dispersion of the correlated dependent variable. One should look to theory to decide whether overdispersion or underdispersion occurs. Unfortunately, theories of riots and political deaths do not help much. Contradictory signals are sent by competing, heavily supported theories.

For instance, riots and/or political deaths may be contagious. Hurdle models of collective behavior can be generalized beyond the level of the individual to describe how one riot may lead to another after the first has been initiated. Up until that point, riots may be nonexistent. Once order is breached, a tidal flood of mobilization occurs. Similar arguments can be made for the dispersion of political deaths. Once one person is killed, either retaliation escalates disorder or nonretaliation creates an environment of permissiveness (Jacobsen, 1973). Repression can yield repression (Davis & Ward, 1990), thereby creating a spiraling cycle of violence once the initial hurdle of the first repressive acts is breached. Thus, perhaps it might be prudent to use a hurdle model to account for underdispersion. This would estimate two models—one for the relationship before the hurdle is breached

and one for after the first event occurs. (For an example of a hurdle model, see King, 1989b, pp. 130-136.)

Alternatively, one might posit that political violence is a normal part of political life. As such, it should occur with more regularity than one might think and should not be contingent on the breach of an absolute threshold or hurdle (Tarrow, 1994; Tilly, 1978, 1993). Some societies might even find that during a protest cycle, riots and deaths from political violence are more than plentiful (Tarrow, 1989a, 1989b, 1994). Indeed, many of the nations that Powell (1982) examines experienced particularly strong cycles of protest in the time periods of examination—including the United States (Snow & Benford, 1992), Italy (Tarrow, 1989a), and Germany (Koopmans, 1993). It would be difficult to make the argument that during these periods we should expect underdispersion. In fact, one would expect overdispersion of riots and deaths in democracies in the period of Powell's study.

Because at least two alternatives have equally compelling arguments, the best possible choice is a model that relaxes the assumption of a Poisson distribution, thereby taking into account all possible dispersions. King's generalized event count (GEC) model does just that. The GEC model estimates an ancillary parameter (γ), which takes into account the nature of the events' dispersion and incorporates the dispersion into the stochastic component of the model. This type of model is slightly more difficult to estimate because of the addition of the extra parameter, but the resulting coefficients are unaffected by dispersion. GEC models, if used when appropriate, are more precise than many other Poisson distribution models. (For a more complete treatment see King, 1989a, 1989b.)

Thus, this study is best served by first replicating Powell's (1982) original study using his data and methods and then by estimating the same basic models using event counts (more specifically, GEC). The variables used in this study are defined in Table 1. Twelve independent variables are employed, drawn from Powell's original study. Each is operationalized as per Powell, and the data is extracted directly from the book. The dependent variables used in replicating Powell's study are similarly extracted from the tables that Powell provided. The dependent variables for the count model, however, needed to be compiled differently. Powell provides an average number of riots or deaths from political violence for years when the country was a democracy. But count models need counts of events. Taylor and Hudson (1972) provide yearly data for these variables for 1967, whereas Taylor and Jodice (1983) provide annual data from 1968 to 1976. Thus, the dependent variable for the count model is the number of riots or deaths by country for each year.

Table 1
Operationalization of Variables

Variable	Operationalization
Powell's dependent variables	
Riots	Average riots per year (1967-1976), only for years when country was a democracy. Range: 0-56.8. Outliers truncated at 90th percentile (11.7 riots/year).
Political deaths	Average deaths resulting from political violence per year (1967-1976), only for years when country was a democracy. Range: 0-332.7. Outliers truncated at 90th percentile (160 deaths/year).
Event count dependent variables	
Riots	Total riots each year (1967-1976), only for years when country was a democracy. Range: 0-53.
Political deaths	Total deaths resulting from political violence each year (1967-1976), only for years when country was a democracy. Range: 0-5,096.
Independent variables	
Population size	Log of 1965 population (in millions). Range: 0.34-6.19.
Economic development	Log of 1972 gross national product per capita. Range: 4.70-8.63.
Ethnic heterogeneity	Using population divisions by both ethnic and linguistic groups. The percentage fractionalized a given society along ethnic and linguistic cleavage lines (based on Taylor & Hudson, 1972; $F = 1–[\Sigma^{N}_{1}P–(P–1)] \times 100$, where N = number of groups, P = group population). Range: 2%-89%.
Income inequality	Income share of top 20% of the population. Range: 39%-65%.
Presidential executive	1 = presidential system, 0 = other.
Executive durability	Average durability (months) of the chief executive. Range: 7-36.
Representational constitution	1 = presidential; 2 = majoritarian; 3 = Germany, Ireland, Japan; 4 = parliamentary representational.
Consociational practices	1 = nonconsociations, 2 = semiconsociations, 3 = consociations.
Majority electoral laws	1 = proportional representation; 2 = Germany, Ireland, Japan; 3 = single member districts.
Extremist vote	Percentage of vote received by extremist parties in national legislative elections from 1967-1976. Range: 0%-30%. See Powell (1982, p. 233) for definition of *extremist party*.
Legislative fractionalization	Using average party fractionalization of legislative seats following the elections, $F = 1–(\Sigma^{N}_{1}T^{2}) \times 100$, where N = number of parties and T = party's decimal share of vote in the legislature. Range: 45%-84%.
Voting turnout	Average voter turnout (percentage of citizens of eligible age). Range: 53%-94%.

Source: Powell (1982), Taylor and Hudson (1972), Taylor and Jodice (1983).

RESULTS

First, it should be noted that although perfect replication was not achieved, this study was able to replicate Powell's results almost completely. The values of the coefficients were extremely close (if not identical) in all cases, and the signs and significances were perfectly replicated.[2] Powell reported his results in the form of standardized coefficients to better enable across-variable comparisons of effects. Thus, in replicating his study, this study also employed fully standardized coefficients, or the use of both standardized independent and dependent variables (Long, 1997, p. 17). For this study, the author also reran Powell's models using unstandardized coefficients. Unstandardized coefficients allow easier interpretation of individual effects of variables. For this reason, the OLS results reported in this study consist of unstandardized coefficients.[3]

The full results of both the OLS models and the GEC models appear in Tables 2 and 3. It should be noted here that although levels of significance can be compared across types of models (OLS vs. GEC), coefficients cannot. Coefficients for the GEC models presented in Tables 2 and 3 represent changes in the odds ratio rather than unit changes.

Count model coefficients can be multiplied by the mean of the dependent variable to facilitate a more intuitive interpretation. According to the derivative interpretation suggested by King (1989b, p. 123), each independent variable's effect on the count of the dependent variable of interest equals its coefficient estimate $\times$ the sample mean of that dependent variable.[4] Once adjusted, the GEC coefficients describe the marginal effect of the independent variable in question on the dependent variable, with all other variables held constant at their means. Tables 4 and 5 provide these adjusted GEC coefficients, showing only the relevant coefficients for both models (all but the constant term, β_0; the extra parameter estimated by the GEC model, γ; and the descriptive statistics). However, GEC and OLS coefficients still cannot be directly compared, even given the use of the derivative interpretation. OLS coefficients tell us the unit change of a given variable at all points along the

(Text continues on page 154)

2. The few differences that did occur were relatively minor ones, and the overall story told by the two sets of results are identical. Thus, they do not affect the overall conclusions of this study.

3. The standardized coefficients are not presented due to space considerations. They are available from the author on request.

4. This is known as a derivative interpretation. For excellent examples of GEC parameter interpretation, see King (1989a, p. 130; 1989b, p. 131).

Table 2
Powell and Generalized Event Count (GEC) Models of Democracy and Riots, 1967-1976

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variable	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC
Constant (β)	–1.35	–4.40***	.44	–.69	–1.66	–.24	4.59	2.25	14.16**	3.20**	195.32***	5.25
	(–.11)	(–3.13)	(.11)	(–3.06)	(–.37)	(–.18)	(1.16)	(2.64)	(2.27)	(2.32)	(3.57)	(.21)
Gamma (γ)	—	2.68***	—	2.66***	—	2.62***	—	2.56***	—	2.56***	—	6.17***
		(17.45)		(15.64)		(15.00)		(16.23)		(16.26)		(4.42)
Population size	1.91***	.64***	1.95***	.64***	1.95***	.65***	1.71***	.48***	1.56***	.44***	1.75***	.47**
(logged)	(4.20)	(9.97)	(5.14)	(6.45)	(4.82)	(10.25)	(4.81)	(7.98)	(4.41)	(6.57)	(4.72)	(1.55)
Economic development	–.22	.24***	–.38	.02	–.24	–.09	—	—	—	—	—	—
(logged)	(–.25)	(2.64)	(–.77)	(.09)	(–.46)	(–.63)						
Ethnic heterogeneity	.00	.00	–.51	–.00	–1.69	–.01***	—	—	—	—	—	—
	(.05)	(.73)	(–.22)	(–.95)	(–.58)	(–2.41)						
Income inequality	.01	.04***	—	—	—	—	—	—	—	—	—	—
	(.11)	(2.75)										
Presidential executive	—	—	—	—	1.59*	.82***	—	—	—	—	—	—
					(1.30)	(4.49)						
Majoritarian electoral laws	—	—	—	—	.55	.16*	—	—	—	—	—	—
					(.76)	(1.07)						
Extremist vote	—	—	—	—	—	—	.79	.03***	.06	.03***	.07	.09**
							(1.21)	(2.24)	(.88)	(2.06)	(.95)	(1.44)

Legislative fractionalization	—	—	—	—	—	—	–.11** (–1.84)	–.04*** (–3.38)	–.11** (–1.87)	–.04*** (–3.13)	–.10* (–1.38)	–.09** (–1.71)
Voting turnout	—	—	—	—	—	—	—	—	–.08* (–1.64)	–.01* (–.97)	—	—
Executive durability	—	—	—	—	—	—	—	—	–.10* (–1.49)	–.01 (–.41)	—	—
Consociational practices	—	—	—	—	—	—	—	—	—	—	–.34 (–.46)	–2.75*** (–3.54)
R^2	.57	—	.59	—	.62	—	.63	—	.69	—	.64	—
Adjusted R^2	.48	—	.54	—	.52	—	.59	—	.62	—	.57	—
Mean log-likelihood	—	7.53188	—	6.33429	—	6.63992	—	6.08196	—	6.08397	—	6.10615
N	23	230	27	270	26	260	27	270	27	270	27	270

Note: Dependent variables' extreme values in Powell's models are truncated back to the 90th percentile to prevent extreme outliers from biasing the results of the models; *t* scores in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

Table 3
Powell and Generalized Event Count (GEC) Models of Democracy and Political Deaths, 1967-1976

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variable	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC
Constant (β)	286.61***	1.17***	199.27***	4.47***	173.65***	4.64***	199.10***	5.48***	123.49*	6.36*	195.32***	5.25
	(1.72)	(5.15)	(3.65)	(3926.60)	(2.48)	(301.18)	(3.43)	(67.88)	(1.34)	(60.00)	(3.57)	(0.21)
Gamma (γ)	—	6.22***	—	6.22***	—	6.22***	—	6.19***	—	6.23***	—	6.17***
		(36.25)		(1006.22)		(36.25)		(28.68)		(66.41)		(4.42)
Population size	8.32*	.41	9.48**	.48***	8.76*	.51***	9.38*	.50***	11.20**	.58***	8.54***	.47**
(logged)	(1.34)	(.70)	(1.80)	(71.03)	(1.57)	(18.80)	(1.67)	(13.08)	(1.87)	(3.69)	(1.60)	(1.55)
Economic development	–32.21***	–.08	–28.45***	–.30***	–27.31***	–.37***	–26.76***	–.31***	–30.42***	–.32***	–26.14***	–.27
(logged)	(–2.66)	(–.19)	(–4.15)	(–38.00)	(–3.69)	(–9.47)	(–3.54)	(–6.16)	(–3.62)	(–2.70)	(–3.63)	(–.10)
Ethnic heterogeneity	.54	.01***	.58**	–.00	.32	–.00	.55	–.01***	.58*	–.01***	.74**	.01
	(1.12)	(4.65)	(1.80)	(–.48)	(.78)	(–.31)	(1.50)	(–7.42)	(1.53)	(–12.37)	(2.07)	(.09)
Income inequality	–1.09	.04***	—	—	—	—	—	—	—	—	—	—
	(–.66)	(28.02)										
Presidential executive	—	—	—	—	6.52	.95***	—	—	—	—	—	—
					(.39)	(130.68)						
Majoritarian electoral laws	—	—	—	—	13.50*	–.06	—	—	—	—	—	—
					(1.35)	(–.16)						
Voting turnout	—	—	—	—	—	—	—	—	1.04	.02***	—	—
									(1.01)	(12.50)		

Executive durability	—	—	—	—	—	—	—	—	.67 (.56)	–.05* (–1.12)	—	—
Representational constitution	—	—	—	—	—	—	–4.31 (–.66)	–.39*** (–2.46)	–5.16 (–.57)	–.72*** (–4.16)	—	—
Consociational practices	—	—	—	—	—	—	—	—	—	—	–10.88 (–1.04)	–1.15 (–.54)
R^2	.63	—	.63	—	.66	—	.64	—	.66	—	.65	—
Adjusted R^2	.55	—	.59	—	.57	—	.57	—	.55	—	.58	—
Mean log-likelihood	—	330.684	—	283.376	—	293.919	—	293.911	—	305.148	—	283.416
N	23	230	27	270	26	260	27	270	27	270	27	270

Note: Dependent variables' extreme values in Powell's models are truncated back to the 90th percentile to prevent extreme outliers from biasing the results of the models; *t* scores in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

regression line. GEC coefficients (as presented) explain unit changes only when all variables are held at the mean. In fact, because the functional form is not linear, the unit changes differ at different points along the curve. In other words, the coefficients yield different unit changes at different values of the other variables. Despite this limitation, direct comparison can be made at the point in each model where the other variables are held at their mean for both models. In addition, significances can be compared.

It is interesting to note that the Gamma parameters (γ) for all models in Tables 2 and 3 are significant. From this, it can be inferred that the data is not, in fact, Poisson distributed. The choice of a more generalized model, with flexibility regarding dispersion over the more rigid Poisson estimation technique, is justified.

RIOTS

Table 2 shows results from examinations of all models with riots as their dependent variable. Model 1 (in Table 2) provides the first such test, as laid out in Powell (1982, p. 51). Model 1 examines the effect of environmental variables on the number of riots in democracies. Powell appears to have been correct in his assessment that population size is the most important environmental variable in helping to explain increases in riots. The GEC model confirms his results on both population size and ethnic heterogeneity. Although Powell finds that income inequality is not significant, the GEC model finds it very significant ($p < .01$). However, this effect is very small. For instance, an increase in income inequality of 50% would only result in an increase of one riot more per year, all other things held constant. Powell's model dismisses income inequality as unimportant. The GEC model acknowledges a significant, if minimal, role for inequality. As seen in Table 4 (in which GEC coefficients from Table 2 are multiplied by the mean of the dependent variable to facilitate meaningful interpretation and comparison), one unit marginal change in income inequality is associated with an average increase of only 0.02 riots, all else held constant.

Most interesting in Model 1 (in Tables 2 and 4) is the difference in coefficients for the economic development variable. Powell sees economic development as insignificant in the direction of decreasing the number of riots. The GEC model finds that economic development plays a very significant ($p < .01$) role in increasing riot activity. The increase in the actual number of riots would be minimal, however, when one considers that the variable is logged. Still, it is significantly more than the decrease predicted by the Powell model.

Table 4
Comparison of Powell Model Coefficients and Derivative Interpretation of Generalized Event Count (GEC) Coefficients: Democracy and Riots

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variable	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC
Population size	1.91***	2.89***	1.95***	2.89***	1.95***	2.93***	1.71***	2.17***	1.56***	1.98***	1.75***	2.62**
(logged)	(4.20)	(9.97)	(5.14)	(6.45)	(4.82)	(10.25)	(4.81)	(7.98)	(4.41)	(6.57)	(4.72)	(1.55)
Economic development	–.22	1.08***	–.38	.09	–.24	–.41	—	—	—	—	—	—
(logged)	(–.25)	(2.64)	(–.77)	(.09)	(–.46)	(–.63)						
Ethnic heterogeneity	.00	.01	–.51	–2.12	–1.69	–5.68***	—	—	—	—	—	—
	(.05)	(.73)	(–.22)	(–.95)	(–.58)	(–2.41)						
Income inequality	.01	.02***	—	—	—	—	—	—	—	—	—	—
	(.11)	(2.75)										
Presidential executive	—	—	—	—	1.59*	3.70***	—	—	—	—	—	—
					(1.30)	(4.49)						
Majoritarian electoral laws	—	—	—	—	.55	.72*	—	—	—	—	—	—
					(.76)	(1.07)						
Extremist vote	—	—	—	—	—	—	.79	.14***	.06	.14***	.07	.09**
							(1.21)	(2.24)	(.88)	(2.06)	(.95)	(1.44)
Legislative fractionalization	—	—	—	—	—	—	–.11**	–.18***	–.11**	–.18***	–.10*	–.09**
							(–1.84)	(–3.38)	(–1.87)	(–3.13)	(–1.38)	(–1.71)
Voting turnout	—	—	—	—	—	—	—	—	–.08*	–.04*	—	—
									(–1.64)	(–.97)		
Executive durability	—	—	—	—	—	—	—	—	–.10*	–.05	—	—
									(–1.49)	(–.41)		
Consociational practices	—	—	—	—	—	—	—	—	—	—	–.34	–2.75***
											(–.46)	(–3.54)

Note: Dependent variables' extreme values in Powell's models are truncated back to the 90th percentile to prevent extreme outliers from biasing the results of the models. Constants (β) and Gammas (γ) are not listed here but can be found in model comparisons in Table 2; *t* scores in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

Table 5
Comparison of Powell Model Coefficients and Derivative Interpretation of Generalized Event Count (GEC) Coefficients: Democracy and Political Deaths

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variable	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC	Powell	GEC
Population size	8.32*	16.34	9.48**	19.12***	8.76*	20.32***	9.38*	19.92***	11.20**	23.11***	8.54***	18.73**
(logged)	(1.34)	(.70)	(1.80)	(71.03)	(1.57)	(18.80)	(1.67)	(13.08)	(1.87)	(3.69)	(1.60)	(1.55)
Economic development	–32.21***	–3.19	–28.45***	–11.95***	–27.31***	–14.74***	–26.76***	–12.35***	–30.42***	–12.75***	–26.14***	–10.76
(logged)	(–2.66)	(–.19)	(–4.15)	(–38.00)	(–3.69)	(–9.47)	(–3.54)	(–6.16)	(–3.62)	(–2.70)	(–3.63)	(–.10)
Ethnic heterogeneity	.54	.34***	.58**	–.03	.32	–.04	.55*	–.22***	.58*	–.34***	.74**	.46
	(1.12)	(4.65)	(1.80)	(–.48)	(.78)	(–.31)	(1.50)	(–7.42)	(1.53)	(–12.37)	(2.07)	(.09)
Income inequality	–1.09	1.40***	—	—	—	—	—	—	—	—	—	—
	(–.66)	(28.02)										
Presidential executive	—	—	—	—	6.52	37.85***	—	—	—	—	—	—
					(.39)	(130.68)						
Majoritarian electoral laws	—	—	—	—	13.50*	–2.39	—	—	—	—	—	—
					(1.35)	(–.16)						
Voting turnout	—	—	—	—	—	—	—	—	1.04	.73***	—	—
									(1.01)	(12.50)		
Executive durability	—	—	—	—	—	—	—	—	.67	–1.99*	—	—
									(.56)	(–1.12)		
Representational constitution	—	—	—	—	—	—	–4.31	–15.54***	–5.16	–28.69***	—	—
							(–.66)	(–2.46)	(–.57)	(–4.16)		
Consociational practices	—	—	—	—	—	—	—	—	—	—	–10.88	–45.82
											(–1.04)	(–.54)

Note: Dependent variables' extreme values in Powell's models are truncated back to the 90th percentile to prevent extreme outliers from biasing the results of the models. Constants (β) and Gammas (γ) are not listed here but can be found in model comparisons in Table 3; *t* scores in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

Model 2 (in Tables 2 and 4) confirms that this result is not a statistical artifact. Even when income inequality (often highly correlated with economic development) is removed from the equation, the GEC model continues to predict that economic development's effect will be to increase rioting. However, the effects are no longer significant, implying a strong connection between the income-inequality and economic-development variables. Interestingly, when constitutional variables are controlled for (see Model 3 in Tables 2 and 4), economic development has a negative effect on riots in the GEC model.

Models 2 and 3 (in Tables 2 and 4) also reaffirm the strong relationship found by both Powell and the GEC model between population size and riots, even when controlling for constitutional variables. The biggest change from Model 1's (in Tables 2 and 4) results can be seen in the ethnic heterogeneity variable. Removing income inequality from the equation makes the effects of ethnic heterogeneity negative and larger, but still insignificant, in Model 2 (in Tables 2 and 4). However, the addition of constitutional variables in Model 3 (in Tables 2 and 4) makes ethnic heterogeneity a significant ($p < .01$), negative influence on the number of riots in the GEC model. Powell's model does not find this more subtle relationship.[5] In addition, whereas Powell sees presidential executives as only slightly significant ($p < .10$) increasing riots, the GEC model sees it playing a more significant role ($p < .01$).

Models 4 and 5 (in Tables 2 and 4) find yet another reaffirmation of the population size-riots relationship, regardless of controls for party or performance variables. Party variables are also unaffected by the addition of performance variables, showing both the former's robustness and the weakness of the latter's negative effects on riots.

The most interesting difference between Powell's models and the GEC in Models 4, 5, and 6 (in Tables 2 and 4) are the significances of the coefficients for extremist party vote. Although Powell finds stronger effects in one model, the variable is not significant in any of his three models. The event count model finds significant, consistent effects across all three models. Models 4 and 5 (in Table 4) demonstrate that using GEC estimation, one finds that a

5. I resist fully interpreting the results regarding the ethnic heterogeneity variable due to my great reservations regarding the validity of this measure. Elsewhere, I have argued that researchers have misused this variable as an indicator of ethnic fractionalization when, in fact, it is a measure of ethnolinguistic fractionalization (Krain, 1997). The measure drastically misinterprets ethnic cleavages in many countries, especially for those in Africa and, more important to this study, for those in Latin America. I have elsewhere created a similar index measuring only ethnic fractionalization (Krain, 1997). Preliminary tests using this variable in the context of this study, instead of Powell's (1982), have shown that significantly different results are present when factoring out linguistic cleavages. However, because of the need within this study to replicate Powell's work, I must use the ethnic fractionalization measure employed by Powell.

1% point increase in votes for extremist parties yields 0.14 additional riots per year, all else held constant. Thus, although support for extremist parties is important in the process, its effects are relatively small.

This result is remarkably similar to that previously found for income inequality. Both variables have roles in creating grievance structures that play a part in mobilization. Their strong significances suggest the importance of grievances in the process of activating mass mobilization. Their small effects suggest that grievances, although important, play a smaller role in this process than other factors. Indeed, this is precisely the argument put forward by the Collective Action (Rational Choice + Political Process/Resource Mobilization) strain of the political violence literature. Although grievances are important, access to resources (i.e., population, capital) and political opportunity play much larger roles in the overall mobilization process. Indeed, population size, economic development, and institutional factors have all had larger effects than grievance-centered variables. These results lend further credence to the growing body of evidence supporting Collective Action explanations rather than their Relative Deprivation counterparts.

Model 6 (in Tables 2 and 4) adds a consociational-practices variable to Model 4 (in Tables 2 and 4). Controlling for consociational practices slightly decreases significance ($p < .05$) and effects of the party system variables. But the biggest effect is seen in the actual consociational variable. Although Powell sees little effect and no significance resulting from consociational practices, the GEC model picks up a very significant ($p < .01$), strongly negative effect on riots. Lijphart's (1994) results appear to be verified here.

POLITICAL DEATHS

Table 4 shows results from examinations of models with political deaths as their dependent variable. Model 1 (in Table 4) examines the effects of environmental variables on deaths by political violence. The differences found using the GEC model, as opposed to the OLS regression, appear most obvious here. Although Powell finds population size and economic development to be the only significant variables, the GEC finds the reverse to be true. Event count models find that ethnic heterogeneity and income inequality are extremely significant ($p < .01$) in increasing deaths by political violence but that population size and economic development are not significant.

Income inequality presents the most interesting individual coefficient change. Unlike the others, income inequality also switches signs between models. The GEC model's finding that an increase in levels of income inequality increases the number of political deaths is consistent with theories of political violence. Income inequality has strong indirect effects on the other

variables as well. Model 2 (in Tables 3 and 5) demonstrates that once income inequality is removed from the equation, population size and economic development become significant (as Powell had initially predicted). Therefore, it might be assumed that the effect of income inequality is too subtle for the OLS regression to pick up. These strong direct and indirect effects exhibited by income inequality add further fuel to the argument that income inequality is a destabilizing factor in many societies (including democracies) and can create situations of increased violence. This subtle dual relationship would have been missed, however, had one only used Powell's OLS regression on these models.

Model 3 (in Tables 3 and 5) demonstrates the significance ($p < .01$) of the presidential executive variable, as well as its deadly impact. Powell's model says that presidential executives have an insignificant effect on deaths by political violence. Table 5 demonstrates that the GEC model predicts that if a country has a president, it will have approximately 38 additional deaths by political violence each year, holding all else constant. This may be due to the greater ability of one person to wield power, the increased frequency with which presidents employ repression as a tactic to quell violence, or even the presence in the study of many Latin American presidential democracies with histories of conflict. Nevertheless, the results tend to lend support to Linz's (1994) argument that presidencies are more violence-prone than parliamentary systems. Although Shugart and Carey (1993) assert that presidencies perform well in other areas, it appears that they do not perform well in maintaining order or reducing the bloodiness of rule. In addition, few hybrid presidencies (president-parliamentary democracies or parliamentary presidencies), which Shugart and Carey argue should perform better than the pure forms, are actual cases in this study. Perhaps hybrids are less dangerous. But for the moment, in an admittedly false dichotomy between presidencies and parliamentary executives, parliaments appear to be associated with lower levels of political violence, all else held constant.[6]

Models 2 and 3 (in Tables 3 and 5) also reaffirm economic development's role as a reducer of political violence. The results for economic development's effects on riots were mixed at best. However, the results for political deaths, regardless of the model used, emphasize a large and significant ($p < .01$) negative effect of economic development, all else held constant. That having

6. Hybrid presidencies became more common after the time period covered in this study. A better test of the Shugart and Carey (1993) argument would move beyond the time frame covered in this study and use a more nuanced presidential executive variable, which would allow for the presence of, as well as different types of, hybrid presidencies. Although an interesting question, this is beyond the scope of this study. Because of the need within this study to replicate Powell's (1982) work, I use the presidential executive variable employed by Powell.

been said, it is important to note again that when income inequality is controlled for, this result disappears (see Model 1). Thus, a highly developed democracy with a wider distribution of wealth fares much better in decreasing the number of political deaths than does a highly developed democracy with high levels of income inequality.

Model 4 (in Tables 3 and 5) demonstrates another clear set of differences between Powell's models and the GEC models. Representational constitutions are highly significant ($p < .01$) and have large negative effects on the number of political deaths when examined using GEC models. But Powell does not find either significance or large negative effects. As Model 4 (in Table 5) shows, a representational parliamentary system should experience 31 fewer riots per year than a majoritarian system, all else held constant, according to the GEC model. Once performance measures are controlled for in Model 5 (in Tables 3 and 5), the effect of representational constitutions nearly doubles. The same representational parliamentary system should experience about 58 fewer riots than a majoritarian system once performance is taken into account.

Ethnic heterogeneity, although difficult to interpret in its present operationalized form, does change significantly from Powell's model to the GEC model. Not only does significance increase, but the signs change as well. The GEC model shows that ethnic heterogeneity decreases, rather than increases, the number of political deaths, although the magnitude of the effect is small.

Executive durability experiences similar changes across models. Whereas Powell expects increases in durability of the executive to increase the number of deaths by political violence, the GEC model finds that durability actually decreases deaths. An extra year's worth of executive durability results in 24 fewer deaths by political violence within that time frame, all else held constant. Furthermore, whereas Powell finds no significance, the GEC finds marginal significance ($p < .10$).

Model 5 (in Tables 3 and 5) also finds marginal support for the hypothesis that increased turnout can be detrimental to democracies. Although Powell finds that voter turnout is not significant, the event count model finds that it is highly significant ($p < .01$). According to results presented for Model 5 in Table 5, for every additional percentage increase in voter turnout, the number of political deaths increases by 0.73, all else held constant. The effect is small but present.

Finally, Models 4 and 5 (in Tables 3 and 5) serve to further reinforce the notion that population size and economic development play key (and opposing) roles in determining the number of political deaths in a given year. To some extent, the same can be said for Model 6 (in Tables 3 and 5). The difference lies in the fact that when consociational practices are controlled

for, the effect of economic development becomes insignificant. Although consociational practices are not significant in and of themselves, they obviously have some negative effect on the number of deaths by political violence.

CONCLUSION

This study has shown that the use of event count models, when appropriate, can produce significantly different results than other less appropriate models. The results found that using the generalized event count models on Powell's data have implications for the way we study and understand political violence, both in democracies and in general.

Evidence to support Collective-Action explanations of political violence was found. Support for the argument that presidencies can be detrimental to the state was also found. In addition, the notion that representational electoral systems and constitutions, especially consociational constitutions, in some ways outperform majoritarian systems was also supported. Powell's conclusion that environmental factors are the key to explaining a democracy's propensity for violence, with constitutional variables having small, barely significant effects, can be rejected in part. Environmental factors are important, but constitutional variables also have extremely important and significant effects on the degrees of violence in democracies.

For the most part, political violence in democracies is not so different from political violence elsewhere. Population size, inequality, regime and executive type, and the nature of representation of views of the citizenry all play important roles. Grievance-related variables affect levels of violence but not to the extent that resource- and institution-related variables do. Democracies, like all countries of the world, are the sum of their parts. The ultimate implication of this lies in the fact that although people may not be able to change the environment in which a democracy functions, they have the power to change the institutions with which they are governed. In this way, levels of political violence are not deterministic. There is hope yet of finding a solution to the problem of balancing democracy and order.

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