

# Democracy and the Violation of Human Rights: A Statistical Analysis from 1976 to 1996

**Christian Davenport** University of Maryland  
**David A. Armstrong II** University of Maryland

*Most studies posit and identify a linear and negative relationship between democracy and the violation of human rights. Some research challenges this finding, however, suggesting that nonlinear influences exist. Within this article, we examine the structure of the relationship between democracy and repression during the time period from 1976 to 1996. To conduct our analysis, we utilize diverse statistical approaches which are particularly flexible in identifying influences that take a variety of functional forms (specifically LOESS and binary decomposition). Across measures and methodological techniques, we found that below a certain level, democracy has no impact on human rights violations, but above this level democracy influences repression in a negative and roughly linear manner. The implications of this research are discussed within the conclusion.*

Theorists, policy makers, NGOs, revolutionaries, and everyday citizens have long heralded political democracy as “a,” and perhaps even “the,” resolution to the problem of state repression (e.g., Dahl 1966; DeGre 1964; DeJouvenal 1945; Goldstein 1978; Rummel 1997; Russell 1993).<sup>1</sup> When democratic systems exist, it is generally expected that the authority’s willingness and capacity to violate human rights would be diminished. This pacifying influence is largely attributed to the fact that within these contexts the constraints on such activity are both numerous as well as mutually reinforcing. For example, in democracies political leaders who use repression against their citizens can be removed from office through the popular vote and, at the same time, these governments contain numerous institutional checks and balances on government activity—mechanisms which in-

crease the difficulty of taking coercive action because they facilitate (and even encourage) the resistance as well as retribution of other political actors against those responsible for this type of behavior.

For thirty years, quantitative research has supported this relationship. Repeatedly, democratic political systems have been found to decrease political bans, censorship, torture, disappearances, and mass killing, doing so in a linear fashion across diverse measurements, methodologies, time periods, countries, and contexts (e.g., Davenport 1995, 1999; Harff 2003; Henderson 1991; Hibbs 1973; Krain 1997; Mitchell and McCormick 1988; Poe and Tate 1994; Poe, Tate, and Keith 1999; Zanger 2000; Ziegenhagen 1986). From this work, one could conclude that with every step toward democracy, the likelihood of state-related civil peace is enhanced.<sup>2</sup> This stands as one

---

Christian Davenport is Associate Professor of Political Science at the University of Maryland and Director of the Radical Information Project, 3140 Tydings Hall, University of Maryland, College Park, Maryland 20742-7231 (cdavenport@gvpt.umd.edu; <http://www.cdavenport.com>). David A. Armstrong II is a doctoral candidate of Political Science at the University of Maryland, 3140 Tydings Hall, University of Maryland, College Park, Maryland 20742-7231 (darmstrong@gvpt.umd.edu).

The authors would like to thank Mark Lichbach, Mike Ward, William Jacoby, Will Moore, Simon Jackman, Harold Clarke, Scott Bennett, and three anonymous reviewers for their careful reading and helpful suggestions.

<sup>1</sup>Many individuals have put forward claims that democratic institutions and practices can alter the use of state repression by authorities. These individuals do not conflate the two terms (suggesting that democracy is defined, in part, by the use of repressive activity; e.g., Bollen 1980). Rather, they maintain a position where one of the principal ways to noncoercive governance is through the democratization of the political system. We accept this position as well.

<sup>2</sup>This phrase emerges from the rather extensive “Democratic Peace” literature in international relations (e.g., Oneal and Russett 1999; Rousseau et al. 1996). While this work references interstate conflict, a corollary argument has been made by numerous individuals with regard to the impact of democracy on civil war (e.g., Hegre et al. 2001) and state repression/human rights (e.g., Davenport 1999; Rummel 1997).

*American Journal of Political Science*, Vol. 48, No. 3, July 2004, Pp. 538–554

©2004 by the Midwest Political Science Association

ISSN 0092-5853

of the most consistent results within the area of domestic conflict (alternatively referred to as internal war or contentious politics).

When one carefully views the literature, however, it is clear that this is not the only relationship that one can find. For instance, some research identifies that human rights conditions are not only improved when full democracy exists but also when full autocracy is present—the inverted-U relationship of the “More Murder in the Middle” argument (Fein 1995; King 1998; Regan and Henderson 2002). Additionally, our reading of existing literature leads us to believe that there may also be some threshold of domestic democratic peace, below which there is no effect of democracy on repression, but above which a negative influence can be found. These alternative functional forms are important for while the former suggests that it is not merely movement up some scale of democracy that decreases state repression but the attainment of a specific value on this scale—on opposite sides of the spectrum, the latter suggests that placement on only part of this scale is worthy of attention. The differences in causal effect are crucial not only for those who wish to study the relationship between the two variables of interest but also for those who wish to decrease human rights violations.

What is the influence, if any, of democracy on repression? It is our contention that researchers have been systematically guided away from the appropriate answer to this question because they have been imposing and finding particular types of relationships. In order to properly answer this question we contend that one must consider the way that macro, contextual factors such as democracy influence political leaders. When this is done, then one can better ascertain the logic behind rigorously examining alternative influences. Indeed, as one reads the literature on the topic, it is clear that different levels of democracy likely elicit distinct effects on state repression to the extent that they represent substantively different patterns of authority (i.e., distinct combinations of political institutions and behavior). When warranted, researchers should allow for these possibilities within their investigations, evaluating alternative relationships in a competitive manner while also allowing rival influences to be found. This approach is undertaken in this research.

The study itself is composed of five parts. We begin (section one) by identifying what existing theory has to tell us about the effect of democracy on repression as well as what evidence has been brought to bear on the different hypotheses discussed within the literature. In the second section, a novel approach to investigate the relationship between the variables of interest is outlined. Specifically, we use two flexible analytical procedures, which do not

make any a priori assumptions about the nature of the influence being examined (namely LOESS and binary decomposition). Section three provides the operationalization for the different variables employed within the statistical analysis, and in the fourth section of the article, we confront our data with the techniques identified in section two. The resulting insights from this exploratory effort are used to estimate a more rigorous, parametric model that accounts for the time-series cross-sectional structure of the data utilized. From our analysis of 147 countries from 1976 to 1996, we find that while linear and quadratic relationships between democracy and state repression are statistically significant, a threshold model is better not only in the sense of predictive power versus efficiency, but also in providing much more accurate predictions of countries in the middle range of the democratic measures employed. The implications of these findings are quite far reaching, influencing existing theories of repression, public policy efforts designed to reduce human rights violations, and the study of complex relationships. All of these areas are addressed within the conclusion (section five).

## **Democracy, Domestic Peace, and the Puzzle of Functional Form**

According to the majority of scholarship in the field of domestic conflict, repression (i.e., coercive behavior employed by political authorities against individuals and groups within their territorial jurisdiction for the expressed purpose of controlling behavior and attitudes; Goldstein 1978) is likely to be used when: (1) authorities have the capacity to engage in this activity, (2) diverse political-economic factors compel such behavior, and (3) few or no political-economic factors hinder such action. Now, it is clear that authorities generally have the capacity to employ at least some level of repression any time they wish; by definition, these actors maintain the monopoly on the “legitimate” use of and means to use coercion.<sup>3</sup> In order to understand why repression is applied, therefore, it is necessary to focus upon the other two factors noted above.

What compels states to violate human rights? Within the literature, it is generally argued that political authorities increase their use of state repression when they are either trying to create or expand upon specific (political, economic, and cultural) practices and/or beliefs or when they are trying to defend these practices and/or beliefs

<sup>3</sup>While events like government collapse and engagement in interstate conflict may reduce or otherwise reallocate coercive capacity, in general states will retain some degree of this capacity.

from some challenge. Although several variables are associated with this category (e.g., the protection of trade-dependent relationships or exclusionary political ideologies), the most consistently analyzed and supported concerns political dissent (e.g., Davenport 1995; Francisco 1996; Hibbs 1973; Moore 1998; Ziegenhagen 1986). From existing research, it is found that when protest takes place, threatening existing leaders, policies, and structures, governments employ coercion. This behavior is applied in an effort to influence the course of the domestic challenge but also to signal to those within as well as outside the country that (despite threats) authorities still exert control over their territorial jurisdiction.

The explanatory factors that constrain state repression are easily identified as well. As discussed, authorities generally decrease their application of repressive behavior when they will suffer from some punishment for using this activity and/or when an alternative and more efficient strategy of social control is made available (Dallin and Breslauer 1970).<sup>4</sup> From existing research, only two explanatory factors are associated with this category: the level of economic development (which provides a material strategy for influencing citizens through inducements) and, by far the most consistently discussed, investigated, and supported constraint, the degree of democracy held by the political system. Although the reasons for the importance of this latter variable are generally undisputed, the functional form of the influence on repression has been the subject of some debate. Three alternatives are discussed below.

### All Steps Lead to Peace: A Linear Relationship

Conventional wisdom suggests that the influence of democracy on state repression is fairly straightforward. Within democratic regimes, repression is judged to be not only expensive to use, but also largely inappropriate and unnecessary. For example, within these political systems, citizens can remove offending officials through the vote,

<sup>4</sup>The existence of alternatives serves as a constraint in a somewhat different way than potential sanctions/punishments. It is believed that alternatives (e.g., material and normative forms of influence) create distinct approaches to governance as well as advocates for each style. Both can hinder the coercive strategies of government by offering a different way of looking at the problem of sociopolitical order and different means to get there. When alternatives exist, then coercion and those who advocate for its use are compelled to justify, persuade, and compete with the others, thereby hindering them (at least when viewed relative to the other contexts that do not require such actions). When alternatives and advocates do not exist, however, then coercion and its advocates have free reign (in this case, there is nothing else that can be done to establish, maintain, and extend practices and beliefs).

the actions of one government authority can be blocked or countered by another, and over time leaders as well as citizens can develop an understanding of how each is supposed to behave toward one another in a manner that is essentially nonviolent in nature (Rummel 1997).<sup>5</sup> In addition to this, the mechanism for societal control offered by democracy is typically believed to be more effective at influencing citizens and less costly to apply in both political and economic terms (Dallin and Breslauer 1970). Wishing to avoid sanction, continue in office, and generally accepting the “rules of the game,” democratic authorities are generally less inclined to violate human rights. Equally as important, with every step toward this type of political system, it is expected that understanding of these various issues (sanctions, the key to political survival, etc.) would improve and repressive behavior would be diminished.

This perspective is important for two reasons. First, it influences how we conceptualize the relationship between democracy and repression. Guided by this understanding, researchers have implicitly been led to expect that with any change in institutions and/or behavior (which increases the level of democracy present within a political system), the human rights situation would improve.<sup>6</sup> Second, it influences how we investigate as well as interpret the relationship itself. Explicitly searching for this causal linkage, modeled by including a measure of democratic level within estimated equations, empirical research has generally supported this view. In fact, the linear and negative impact of democracy on repression has been identified in every single statistical investigation conducted on the subject *that specified that this type of relationship existed* (e.g., Davenport 1995, 1999; Harff 2003; Henderson 1991; Hibbs 1973; Krain 1997; Mitchell and McCormick 1988;

<sup>5</sup>These factors increase the constraints on the leaders’ capacity to repress—similar in many respects to “veto points,” (e.g., Tsebelis 2000) but they exist throughout different aspects of the political system and society.

<sup>6</sup>It should be remembered that most thinking about the topic was originally tied to the desire to democratize authoritarian governments (e.g., Dahl 1966; DeJouvenal 1945; Rummel 1997; Russell 1993). Democratization strategies focused on these political systems because it was believed that the authorities within them were most likely to be faced with circumstances that compelled repressive activity: e.g., they were constantly threatened with domestic challenges (both perceived and actual), their economic situations were in need of development, and their coercive institutions were believed to be the least restrained and the most influential over political leaders (e.g., Friedrich and Brzezinski 1962). As a consequence, those concerned with reforming repressive state behavior focused on altering the conditions that facilitated this activity. In short, they paid attention to creating and building democracies, accomplished through the creation of specific organizations (e.g., political parties), institutional structures (e.g., restrictions on the executive) and behavior patterns (e.g., voting).

Poe and Tate 1994; Poe, Meernik, and Krueger 1998; Zanger 2000; Ziegenhagen 1986).<sup>7</sup> Wide support thus exists for a domestic democratic peace tied to state behavior.

### Some Steps Are Better Than Others: An Inverted-U Relationship

Other researchers (Fein 1995; King 1998; Regan and Henderson 2002) suggest that the impact of democracy on repression is more complex than the way it is portrayed above and that proper investigation of this influence requires a different estimation procedure, one where variables for democracy and its square are used within statistical models.<sup>8</sup> Called the “More Murder in the Middle” (MMM) argument, the authors of this work make two claims. First, they argue that the ends of the political spectrum (full democracy and full autocracy) are less important for understanding human rights violations than those governments that lie somewhere between these two extremes. Second, they maintain that the degree of

<sup>7</sup>It should be noted that most of this research was not particularly interested in the impact of democracy on human rights violations per se, embedding this relationship into a larger model where numerous explanatory variables were assessed at once. A few analyses, have been specifically interested in understanding the impact of democracy on state repression (e.g., Davenport 1996a, 1997, 1999; Poe and Keith Forthcoming; Richards 1999; Rummel 1997). Regardless of these differences, all identify the same linear, negative relationship. It must also be noted that while the conclusions drawn from this work are relatively straightforward, the definitions and operationalizations for repression and democracy vary significantly. For example, Henderson (1991) defines democracy as a process, based on legitimate channels, whereby demands are accommodated with minimal conflict. Henderson uses the Stohl and Lopez (1984) definition of repression as government-applied coercion or threat in order to weaken the resistance of nongovernmental opponents. Fein (1995) uses a maximalist definition of democracy as liberal democracy as well as a maximalist definition of human rights as freedom from genocide, murder, torture, terror, slavery, segregation, and apartheid and the ability to marry and develop a family. Zakaria (1997) defines democracy as free, fair, and open elections while his definition of human rights is based on the protection of an individual’s autonomy and dignity against coercion. Despite this minimal definition of democracy, Zakaria uses the maximalist Freedom House Political Liberties Index (Karatnycky 1999) as an operational measure for democracy and the Freedom House Civil Liberties Index as his measure of repression. McCormick and Mitchell (1997) have proposed a multidimensional indicator of human rights violations, one based on torture and killing and one based on imprisonment. They evaluate the relationship between these dimensions and democracy using the Vanhanen indicator. While Davenport (1995, 1996a,b, 1997) has tended to use a more conventional definition and measure of democracy—either the Polity or Banks measure; he uses yet another indicator for repression—Taylor and Jodice’s index of censorship and political restrictions.

<sup>8</sup>While neither piece spends that much time on the topic they do outline the basic parameters of the discussion undertaken here.

openness within the political system is less important for understanding repressive behavior than what some may call “systemic incoherence”: the presence of contradictory impulses that exist when elements of democracy and autocracy are combined (Eckstein and Gurr 1975; Gates et al. 2003; Lichbach 1984).

As the authors of MMM suggest, when political structures are uniformly “open” (e.g., where the vote is allowed and where the legislature can counter the mandates of the executive) or uniformly “closed” (e.g., where the vote is not allowed and where the legislature cannot interfere with the activities of the executive), it is believed that the political system is “coherent.” Within both of these situations, the institutional structure conveys clear and consistent messages to authorities about what is expected from them and what will (or will not) happen if they take diverse actions. For example, within the “open” context, authorities know that they cannot generally get away with applying repression against citizens without suffering some legal and/or political repercussions. Moreover, it is maintained that democratic authorities believe in negotiation and compromise as strategies of governance (e.g., Rummel 1997). In this case, repression is not likely to be used because relevant actors are aware of the constraints on their action; they adopt a fundamentally different approach to influence citizens, and the existing political system facilitates this more tolerant approach to leadership—providing clear cues and incentives for these actions and attitudes. In the “closed” context, authorities know that they can generally get away with applying repression against citizens. Here, there are no legal or institutional mechanisms for sanctioning authorities that apply this behavior and, indeed, most aspects of society are structured in a manner so as to insulate those responsible from all forms of accountability. At the same time, however, Fein (1995) suggests that autocratic political leaders also know that part of their claim to power is that while certain forms of political activity are eliminated (e.g., mass participation in the direction of the political system), others are extended (e.g., the protection of citizens from political coercion). To use repression in this context is thus to invite questions about the legitimacy of the regime as well as the amount of power actually held by those in government over those in society (Arendt 1973), questions which authorities within these political systems are not interested in raising.

In contrast, within a situation of systemic “incoherence” (e.g., when elections are allowed but legislatures cannot challenge or override the executive), it is argued that the institutional structure sends mixed messages to authorities, leaving leaders (as well as citizens) unclear

about exactly what can be done.<sup>9</sup> In this case, there are some legal and institutional mechanisms to sanction political leaders for inappropriate behavior, but these mechanisms are not comprehensive and, thus, the effective matrix of constraints on state activity, which is present in full democracies and autocracies, does not exist. As a result, government authorities are left relatively free to behave as they wish and generally sensing a high degree of instability within their control over the country (in part related to the mixed messages being sent and the incomplete nature of the checks and balances, etc.), authorities are likely to increase their use of repressive action in an effort to establish and maintain control over the population (Regan and Henderson 2002).

### Steps of Distinction: A Threshold of Democratic Pacification

Within all of the literature identified above, it is maintained that diverse structural characteristics influence the repressive activity of political authorities by influencing important aspects of the environment within which such decisions are made. But at what point is this influence likely to be seen? This is where opinions differ.

Most of the research on repression (particularly the linear argument discussed previously) leads us to believe that any and all improvements in the institutions and behaviors associated with democracy yield a pacifying influence on human rights violations. While we generally accept this position, we would add that it does not make much sense to talk about the legislature's ability to sanction political authorities if the people have no power to remove individuals from office. Similarly, it would be equally ineffective for citizens to have the power to remove the president through the vote in periodic elections without some other institutional constraints on the chief executive's behavior. Indeed, it seems to make the most sense to think about a combination or mutual reinforcement of democratic elements when one talks about the conditions under which government leaders will and will not use repressive activity.

From this perspective, until there is a particular combination of institutions and behavioral factors in place, authorities will not be compelled to respect human rights. Below the critical point, the constraints are not comprehensive or severe enough to deter repressive action nor

are the social control mechanisms well enough situated to provide viable alternatives for state repression. As these institutions and behavioral patterns gain strength beyond some threshold and the country's over-all level of democracy increases, however, the repressive behavior used by authorities should decrease. Above the critical point, constraints become too significant to ignore, and democracy functions as an acceptable substitute for influencing citizens.

This argument generally follows from discussion found within the broader literature on democracy. For example, directly in line with our hypothesis, Dahl (1966) openly discusses the point at which political institutions and behavior influence repressive behavior when he states that the

(c)osts of coercion rise . . . whenever elites and the general population of a country develop a sense of nationhood that includes the opposition; a distaste for violence; or, a commitment to a liberal ideology . . . (This is especially the case) once a system that permits peaceful party opposition is highly institutionalized and surrounded with legal protections (because in this context) the costs of destroying it are likely to be extremely high. For a government can destroy the opposition only by wrecking the constitutional system. At this *stage of evolution*, to destroy the opposition requires a revolution. And the costs of revolution (are generally unacceptable). (Dahl 1966, xvi, emphasis added)

The similarity between this work and the research we undertake is quite significant. As we argue, until a particular combination of constraints on political authority (what Dahl referred to as a "stage of evolution") is in place there is no decline of repression anticipated and, in fact, we expect this behavior would be used quite frequently. Once, however, a particular combination of democratic components exist and a threshold has been passed, then the context is completely different. In this latter situation, there are no contradictory structural characteristics and no mixed signals being sent to political leaders; rather, there are simply coherent authority patterns where the constraints are fully developed as well as mutually reinforced. Under these circumstances (and only these circumstances) is repression likely to be diminished in its use.

Differing from the other arguments identified above, which have been examined before, the threshold relationship suggested here has never been investigated. In part, this is attributed to the rather conventional understanding of how democracy influences repressive behavior; in

<sup>9</sup>Within Fein (1995), King (1998), and Regan and Henderson (2002), as well as other research (e.g., Hegre et al. 2001; Muller 1985), "mixed," "hybrid," or "transitional" regimes (found in the middle-range of some democracy scale) tend to apply a governing strategy that is coercive and heavy-handed over a strategy of tolerance and accommodation.

part, this is attributed to the fact that within the framework of existing estimation procedures it is not possible to find such an impact. We mention this limitation because earlier we made the claim that linear and quadratic influences were found because they were specifically investigated in a manner that allowed for them. In order properly to identify the influence of democracy on repression, however, it would seem to be the case that one would have to consider all plausible explanations at the same time. This is addressed below.

## Methodology

In the repression literature, the default way of estimating the relationship between democracy and repression is to assume that the influence takes some specific form and then that form is employed within a statistical equation.<sup>10</sup> A finding of significance is taken to be confirmation that the modeled relationship appropriately represents the underlying dynamic that exists between two variables. As noted above, however, scholars have “confirmed” at least two different effects of democracy on repression (linear and inverted-U influences) and others appear to be plausible (for example, our threshold model). Within this context, how should one examine causal effects?

In an effort to better understand the impact of democracy on repression, we suggest that one needs to employ a flexible exploratory technique that can detect diverse influences, using this information to guide other, more detailed, and comprehensive inquiries. For this exploratory investigation, we use LOESS and binary decomposition<sup>11</sup> to provide some insight into the nature of the relationship of interest.<sup>12</sup> Specifically, we use the information identified by these procedures to model any detected nonlinearities in a rigorous way, often in the linear model framework. This exploration and “linearization” allows maximum flexibility in identifying the relationship between variables on the one hand and maximum-

<sup>10</sup>Generally this is modeled using powers of the independent variable of interest. For example  $X^2$  or  $X^3$  would be placed in a model along with  $X$ .

<sup>11</sup>A previous version of this article also used Alternating Least Squares Optimal Scaling, ALSOS (see Jacoby 1991, 1998; Young, de Leeuw, and Takane 1976). Although it is not always the case, the insights gained from ALSOS were no different from results obtained with the much simpler techniques that remain in the manuscript, namely LOESS and Binary Decomposition.

<sup>12</sup>Unlike other studies, we are not prejudicing one hypothesis over others. The relationships identified by these techniques could discover any of the above-mentioned influences or something completely unexpected.

estimation efficiency and ease of interpretation on the other. Each technique is described below.

## LOESS

As designed, LOESS (or Local Regression), is a nonparametric technique that fits  $N$ -linear regressions to the data allowing the information itself to fully determine the shape of the relationship being examined (Cleveland, Devlin, and Grosse 1988; Fox 2000a,b). To generate estimates, LOESS moves sequentially through compiled information fitting a weighted least-squares regression with each observation as the central point of these models—the amount of data being used in each local regression specified by a smoothing parameter. While LOESS imposes the assumption of local linearity, the relationships identified can take any functional form. Indeed, one of the major strengths of LOESS is that it is an outstanding diagnostic tool, principally of a graphical nature. Since this procedure is nonparametric in nature, it is not necessary to specify the structure of the relationship a priori (like in OLS regression or any other parametric regression technique), and therefore it can uncover a wide variety of influences (e.g., linear relationships, inverted-Us, U-shapes, threshold effects, and so forth).

Despite these positive attributes, however, LOESS does have some limitations. For example, what the procedure provides in terms of graphical clarity, it loses in quantitative simplicity. OLS regression coefficients provide a simple numerical summary of the relationship but there is no such numerical analog in LOESS. This technique can uncover very complex influences that may need many parameters to be completely determined. As such, it is not as easy to consider the precise impact of changing levels of an independent variable on some dependent variable (e.g., assessing the impact of varying levels of democracy on repressive behavior). Furthermore, as LOESS is primarily a graphical technique, its utility is greatly decreased when dealing with more than two independent variables, something which would theoretically produce a plot with more than three dimensions.

## Binary Decomposition

Differing from LOESS, binary decomposition is a parametric technique that uses OLS regression to allow for a different effect of each level of an ordinal/nominal variable on some dependent variable (Wooldridge 2003). While a name such as “binary decomposition” is rarely attached to this procedure, it should be one familiar to anyone who has taken an introductory course in methodology.

Binary decomposition begins with creating a dichotomous (0, 1) variable for each level (value) of the explanatory factor in question. In a regression equation, all but one of these is incorporated and the regression coefficients are then computed (the excluded variable being the reference category). If the coefficients for each level of the original ordinal variable are all increasing or decreasing in roughly equal intervals, then one would conclude that the relevant explanatory factor is linearly related to the dependent variable. In this case, the interpretation of the given ordinal variable as being on a continuum has been validated and the measure can be used as an interval-level measure in regression analysis. In contrast, when the coefficients are neither uniformly increasing nor decreasing, nonlinearities are said to exist. Exactly what one does with this information varies. Upon finding nonlinear patterns, one may either: (1) try to model the nonlinearity—simplifying the relationship to some easily identifiable functional form or (2) retain the original binary decomposition equation in estimation.

Although flexible in identifying diverse relationships, there are some limitations with this technique. First, it may not be a particularly good method for final estimation because including  $m - 1$  binary variables (to represent a single  $m$ -category) decreases the efficiency of the model and may not gain much explanatory power; this is one of the many reasons why modeling the nonlinearity might be worthwhile (option 1 above). Furthermore, if there are some categories of the variable being decomposed that contain relatively few observations, the standard errors will likely be large for these dichotomous variables, resulting in a finding of statistical insignificance. In this context, reoperationalization and the collapsing of variables (values) might be necessary.

### Estimating a Parametric Model

In addition to the techniques identified above (which guide us in identifying the functional form of relevant influences), we draw upon existing literature on repressive behavior and employ a time-series cross-sectional regression with panel-corrected standard errors to more rigorously investigate relationships (Beck and Katz 1995). For our analysis, we use annual data from 147 countries over a period of 20 years. This type of investigation often results in the problems of heteroskedasticity and contemporaneous correlation across panels, which (if left uncorrected) could reduce the credibility of the standard error estimates. The Beck and Katz (1995) procedure has commonly been applied as a resolution to these problems. In line with these concerns, we also employ a lagged dependent variable in an effort to remove any serial correlation

in the errors that may exist.<sup>13</sup> Simultaneously, we use this measure to account for the fact that previous repressive behavior has consistently been found to influence later activities (Davenport 1995, 1996a; Poe and Tate 1994; Zanger 2000).

## Measurement and Operationalization State Repressive Activity

Researchers have been attempting to operationalize state repression for about 30 years. Clearly some efforts have been more successful than others and some are more readily available; both influence the current research effort. Within this article, we utilize a standards-based measure of human rights violation (e.g., Cingranelli and Richards 1999; Gibney and Dalton 1996; Henderson 1991; Poe and Tate 1994; Poe, Tate, and Keith 1999). There are essentially two reasons for this approach. First, the quality and availability of events-based data varies widely across the set of countries and years with which we are interested. Second, there are several databases relevant to the topic that are readily available, which cover large numbers of countries over relatively large periods of time.

Specifically, we employ Poe and Tate's (1994) five-point measure (originally known as the "Political Terror Scale").<sup>14</sup> This indicator provides information about the

<sup>13</sup>A Durbin-Watson test suggested the presence of serial correlation in the errors was removed with the inclusion of a lagged dependent variable. See Baltagi (1995, 94) for a discussion of the method. The analysis was performed with the add-on file *xtdw.ado* in STATA version 8.0 (Nunziata 2002).

<sup>14</sup>Michael Stohl originally developed the measure used here. Regarding the indicator itself, (Poe, Tate, and Keith 1999, 297) state that, "(t)he application of the criteria to information about . . . the coding categories and their criteria are: '1'—Countries (within this category are) under a secure rule of law, people are not imprisoned for their views, torture is rare or exceptional (and) political murders are extremely infrequent." Examples include the US, Venezuela 1977 and 1981, and Senegal 1976–1981; '2' (Within this category) "(t)here is a limited amount of imprisonment for nonviolent political activity. However, few persons are affected, torture and beating are exceptional political murder is rare." Examples include Mexico 1976 and 1983 as well as Gambia 1982; '3' (Within this category) "(t)here is extensive political imprisonment, or a recent history of such imprisonment. Execution or other political murders and brutality may be common. Unlimited detention, with or without trial, for political views is accepted." Examples include Cuba 1976, Cameroon 1979, and Poland 1976–1977; '4'—(Within this category) "(t)he practices of (Level 3) are expanded to larger numbers. Murders, disappearances are a common part of life. In spite of its generality, on this level terror affects primarily those who interest themselves in politics or ideas." Examples include El Salvador 1978–1992 and Rwanda 1990–1991; and, '5'—(Within this category) "(t)he terrors of (Level 4) have been expanded to the whole

magnitude and severity of political imprisonment, execution, disappearances, and torture, yielding an ordered index of personal integrity abuse or political terror (for a more thorough discussion see Poe and Tate 1994 as well as Poe, Tate, and Keith 1999, 297). Covering 147 countries from 1976 to 1996, this measure is derived from a systematic coding of State Department and Amnesty International country reports. For the sake of brevity, we will report findings using the State Department indicator.<sup>15</sup>

### Political Democracy

In many respects, the operationalization of democracy is more contentious in nature than for state repression. The sheer number of individuals who have attempted measurement helps to explain this difference. By far the largest number of researchers have chosen a definition and indicator of democracy based on Dahl's (1971) conception of "polyarchy," which includes elements of competition (or contestation) and participation (or inclusion; e.g., Alvarez et al. 1996; Coppedge and Reinicke 1991; Marshall and Jaggers 2001; Vanhanen 2000). We proceed in a similar fashion, but our operationalization of democracy was guided by other concerns as well.

First, the biggest threat to measuring democracy in the study that we undertake is what Munck and Verkuilen (2002) refer to as "maximally" defining the concept. Maximal definitions conflate democracy with other concepts that would be used to explain democracy or that democracy would be used to explain. In contrast, minimalist definitions may not provide enough distinction between democracies and nondemocracies. Since we are looking at the relationship between human rights violations and democratic government, we need to make sure that we have a definition and measure that does not conflate the two and thus we chose to err on the side of minimalism, employing measures that concerned: (1) the structure within which participation and competition took place (i.e., democratic procedure) as well as (2) the amount of actual participation and competition that occurred (i.e., democratic behavior). Second, in an effort to gauge the robustness of the democratic-repression relationship, we also sought to use databases that en-

population. The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals." Examples include Haiti 1991, Sudan 1988, Rwanda 1994–1996, and China 1989.

<sup>15</sup>Amnesty International results are substantively similar. In the event that countries were missing from the State Department indicator, but existed in Amnesty International, we adopted the approach of Poe and Tate (1994) where the missing values of one source were replaced with other.

compassed a relatively long period of time and that included a large number of countries. Considering these factors, we use the Polity (version IV) structural measure of democracy developed by Gurr and associates (e.g., Gurr 1974; Gurr, Jaggers, and Moore 1990; Marshall et al. 2002) and the indicator of democratic behavior developed by Vanhanen (2000).<sup>16</sup> Each is discussed briefly below.

Within the literature, Polity stands as the best comparative indicator of procedural democracy in terms of its incorporation of structural constraints on political participation and contestation; it also stands as one of the most utilized comparative measure of democracy employed within the disciplines of political science and economics (e.g., Jaggers and Gurr 1995, 470; Ward 2002, 49). In terms of the measure's structure, Polity is an additive scale/index of a number of component variables dealing with: (1) executive recruitment (openness of and competition in), (2) executive constraints, and (3) the competitiveness of participation. The lowest value of this measure is "0" (e.g., Guatemala 1978–1984; Yugoslavia/Serbia 1977–1979; 1990) and the highest value is "10" (e.g., the United States; Hungary 1993–1996).

While the Polity measure is the most appropriate indicator for the structural characteristic of democracy, to address the behavioral dimension we augment our analysis with Vanhanen's data (2000).<sup>17</sup> The measure provided here has been used significantly less than Polity, but it does address an important aspect of democratic political systems that would otherwise be left unexplored. Specifically, this variable is composed of two elements: a measure of competition (the percent of seats in the legislature won by all but the plurality winner) and a measure

<sup>16</sup>We have made this selection amidst numerous options because the rigorous study of democracy requires an operationalization that fits tightly with the definition. Munck and Verkuilen (2002) provide a fairly comprehensive list of democracy indicators. Some of the most commonly used measure for democracy include Bollen's (1980) liberal democracy index, Freedom House's (Ryan 1994) and civil liberties index, and Gurr's (1974) Polity and Vanhanen's (2000) democracy index. These measures provide a reasonable starting point for our operationalization but the comparison also tends to justify our selection rather well. As Munck and Verkuilen (2002) identify, Freedom House employs a maximalist definition of democracy as it includes both political and civil rights along with other aspects of democracy. Actually we would contend that Bollen's liberal democracy index is more likely a measure of repression as it addresses state behavior relevant to political and civil liberties without considering the structure of the political system as well as other factors. Vanhanen's index of democracy explicitly focuses on contestation and participation. Finally, Polity deals with competition and participation but it concerns structural factors that facilitate/hinder such activity.

<sup>17</sup>The correlation between Polity's democracy variable and the Vanhanen index is 0.865.



of participation (the number of voters divided by the entire population).<sup>18</sup>

Most researchers have used a simple multiplicative combination of the two constructs (competition and participation). Vanhanen (2000, 256) himself does this, but remains agnostic on whether this is *the* correct way to combine the indicators, suggesting there are a number of reasonable ways to combine these indicators, including an additive approach. Poe and Tate (1994) also use a multiplicative index, but we feel that this may not be the most appropriate aggregation rule. Others, namely Scott Gates and colleagues, those responsible for the housing and distribution of the Vanhanen data, suggest that the multiplicative index is “biased in favor of extremely fragmented party systems in that political systems with many political parties are considered more democratic” (Gates et al. 2003, 13). Furthermore, they maintain that it is unclear what the metric or interpretation of the measure is when the two indicators are multiplied together. As a result, we choose the indicator suggested by Gates et al., based mostly on the participation measure.

Here, when competition is greater or equal to 30%, then the participation measure is left alone. When competition is less than 30%, however, participation is multiplied by  $\frac{\text{competition}}{30\%}$ , thus “down-weighting” participation in low-competition environments. Gates et al. then add one (1) to the measure to remove all zeros (changing the range of the variable to [1,101]) and take the natural logarithm of this variable, divided by the natural logarithm of 101. This generates a variable that has a theoretical range from zero (China 1977–1996) to one (Italy 1992–1995 with the maximum value of 0.916).<sup>19</sup>

## Contextual Influences

We mentioned earlier that numerous scholars have investigated the relationship between human rights violation and democracy while accounting for diverse political economic factors (e.g., Davenport 1995, 1996a,b, 1997; Fein 1995; Hibbs 1973; Poe and Tate 1994; Poe, Tate, and Keith 1999; Regan and Henderson 2002; Zanger 2000; Ziegenhagen 1986). The variables included within such

<sup>18</sup>Munck and Verkuilen (2002) suggest that Polity disregards the actual participation component of polyarchy (i.e., people going out into the street and to voting booths). We feel that Marshall et al. (2002) provide sufficient explanation and justification for this: as they state, Polity focuses on the structural constraints on participation rather than actual political participation. Use of Vanhanen directly addresses the weaknesses addressed by Munck and Verkuilen.

<sup>19</sup>In an earlier version of this article we employed an additive combination of the indicators and obtained substantively similar results. We chose this alternative operationalization on the suggestion of one helpful reviewer.

an investigation are now quite standard across researchers. In line with this work, we utilize the database and model developed by Poe and Tate (1994) and Poe, Tate, and Keith (1999); this research (along with Davenport 1995, 1996a,b, 1999 in the events-based tradition) has become the standard by which most analyses in this area are currently judged.

Within these studies, the impact of numerous variables on human rights violation are examined: civil war, international war, military control, log of population, log of per capita GNP, the lag of human rights violations, and (of course) democracy. In previous estimations, all show a statistically significant, linear impact on the level of state repression and in ways that are consistent with expectations. The basic model is as follows:<sup>20</sup>

$$\begin{aligned} \text{Personal Integrity Abuses}_{ij} &= \alpha + \beta_1 \text{Democracy}_{ij} \\ &+ \beta_2 \text{Personal Integrity Abuses}_{t-1j} \\ &+ \beta_3 \text{International War}_{tj} \\ &+ \beta_4 \text{Civil War}_{tj} + \beta_5 \text{Mil Control}_{tj} \\ &+ \beta_8 \ln(\text{Population}_{ij}) \\ &+ \beta_9 \ln(\text{GNP/capita}_{tj}) + \epsilon_{ij}. \end{aligned}$$

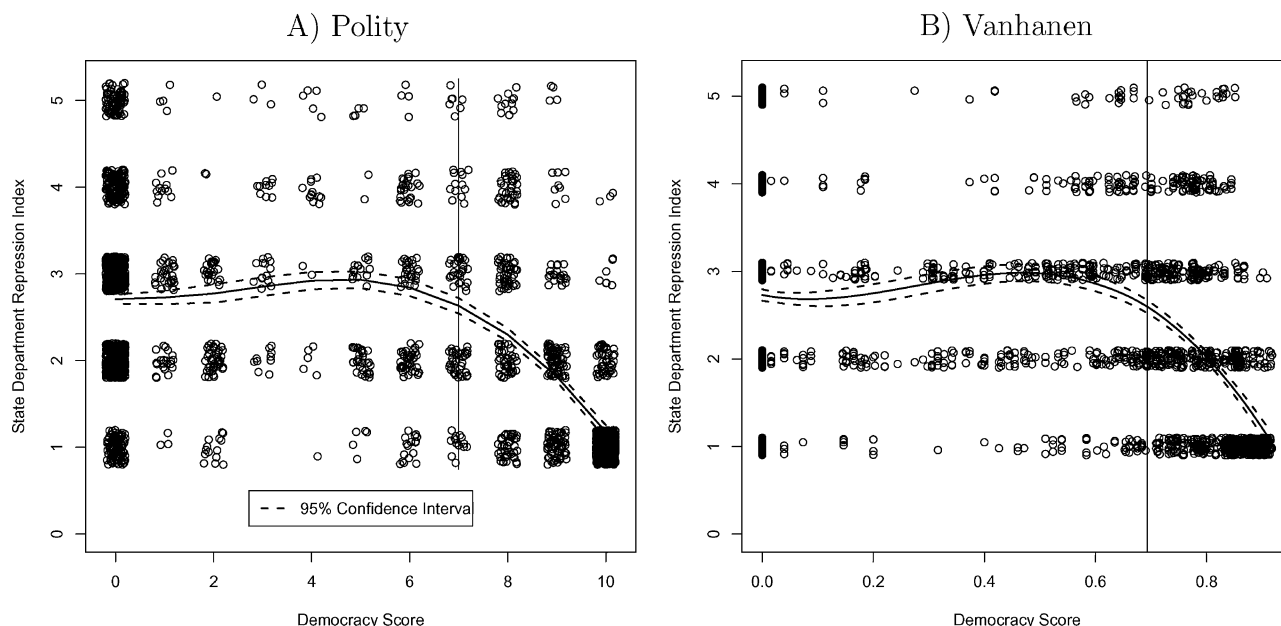
Directly comparable to the Poe and Tate effort, democracy, state repression (or “personal integrity abuse”), and the lag of this indicator are measured as stated above. Military Regimes are “those which had come to power, ‘as a consequence of a successful coup d’etat, led by the army, navy, or air force, that remained in power with a military person as the chief executive, for at least six months in a given year’” (Poe and Tate 1994, 858).<sup>21</sup> This is operationalized as a dichotomous variable. Measures for Population and GNP per capita were taken from Poe and Tate’s data as well. International and civil war experience are both binary variables coded by Small and Singer’s Correlates of War (COW) database (1982).<sup>22</sup>

<sup>20</sup>Since population growth as well as economic growth in the Poe and Tate models and British colonial influence and leftist government control in our models all failed to reach conventional levels of statistical significance, they were excluded from our analysis.

<sup>21</sup>Earlier readers of this manuscript suggested that military control and democracy were redundant measures, but they are not highly correlated ( $r = -0.39$ ). According to the data, there are military regimes in both low and middle levels of democracy, and there are nonmilitary regimes at all levels of democracy.

<sup>22</sup>It was suggested to us that state “capacity” (e.g., military capability) may be driving our findings. We tested this hypothesis and found no evidence that state capacity was related to state repression. As a consequence, we did not include this variable within estimated equations.

FIGURE 1 LOESS of Repression on Democracy<sup>a</sup>



<sup>a</sup>These graphs are jittered scatterplots of the two democracy measures (x-axes) and Human Rights Violations (y-axes). Jittering adds random noise to the points to allow the density of the points to be more clearly represented. The solid vertical lines represent the inflection point. The other lines represent the Local Regression of Human Rights Violations on Democracy with their corresponding 95% confidence intervals.

Finally, we address the issue of case selection. In many respects we feel that the 1976–1996 time period is ideal for the study of how democracy influences repression. If one was attempting to adequately investigate the impact of democracy on repressive behavior it is important to have a great deal of variation in political democracy across all values of the measures employed. The period of 1976–1996 provides such a distribution; indeed, there is a wider variety of system types during this time than perhaps any other. As this time period exists within what Huntington (1991) referred to as the “Third Wave,” which he argued maintained distinct characteristics relative to other waves, it is clearly the case that other periods would need to be analyzed in a manner similar to what we are doing here. Unfortunately, however, the data does not currently exist to allow such an investigation. We thus focus our efforts on what is available.

### A Question of Democratic Pacification

In this section, we apply the different methodologies identified above in order to examine the structure of the relationship between democracy and state repression. To

begin, LOESS<sup>23</sup> and binary decomposition are employed to investigate the possibility of nonlinear influences. Following this, the more rigorous time-series cross-sectional regression with panel-corrected standard errors is used to estimate democracy’s impact on repressive behavior while in the presence of the control variables discussed above.

### Exploratory Analyses

Figure 1A shows the relationship between democratic structure (the Polity indicator) and state repression as revealed by the LOESS procedure. From this figure, one can see that when no constraints are placed on the model the most accurate description for how democracy influences repression is the threshold hypothesis.<sup>24</sup> Results disclose

<sup>23</sup>LOESS graphs were produced in R version 1.7.1 with the loess command in the modreg library.

<sup>24</sup>Poe and Tate provided evidence through simulation that over time, the effect of increasing democracy had a nonlinear impact on repression. That is to say a one-unit, increase in democracy at time *t* has effects in the future, but these effects decrease as time passes. However, for Poe and Tate, in any given year, the expected change in repression due to a one-unit increase in democracy is the same regardless of the starting point. In this work we show that the effect of a one-unit increase in democracy is contingent on the starting point.

TABLE 1 Binary Decomposition Results

Variables	Democracy 0–10		Democ.	Trichotomy
	1	2	3	4
	Estimate	p-value	Estimate	p-value
Lag Repression	0.665***	0.000	0.671***	0.000
Democracy = 1	0.015	0.823	NA	NA
Democracy = 2	-0.077	0.244	NA	NA
Democracy = 3	0.098	0.297	NA	NA
Democracy = 4	0.241*	0.035	NA	NA
Democracy = 5	-0.009	0.905	NA	NA
Democracy = 6	-0.016	0.769	NA	NA
Democracy = 7	-0.053	0.373	NA	NA
Democracy = 8	-0.146**	0.003	NA	NA
Democracy = 9	-0.196***	0.000	NA	NA
Democracy = 10	-0.364***	0.000	NA	NA
Democracy Trichotomy = 1	NA	NA	-0.165***	0.000
Democracy Trichotomy = 2	NA	NA	-0.349***	0.000
International War	0.133*	0.018	0.130*	0.019
Civil War	0.553***	0.000	0.553***	0.000
Military Control	0.091**	0.003	0.094**	0.001
ln(Population)	0.056***	0.000	0.056***	0.000
ln(GNP/capita)	-0.027**	0.008	-0.028**	0.005
Constant	0.116	0.424	0.102	0.474

\* $p < 0.05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

that at lower and middle levels of democracy, there seems to be no systematic impact on human rights violations. After democracy reaches a critical level (at a Polity score of approximately 7—Haiti in 1990 or South Africa in the 1980s), however, the impact on repression appears to be negative and roughly linear. The vertical line in the figure represents the inflection point.

In an effort to gain further insight into the nature of this relationship, we perform a binary decomposition of the Polity indicator. This is provided within Table 1, columns 1 and 2.

From the analysis, we again observe the same relationship identified by LOESS. Specifically, an  $F$ -test reveals that at lower levels (1–7), democracy has no influence on human rights violations. Levels 1–7 in the Polity measure are statistically indistinguishable from each other ( $F[6,2458] = 1.35, p > F = 0.2317$ ) and the reference category of zero ( $F[7,2458] = 1.16, p > F = 0.3221$ ). Therefore, we can say that Polity democracy levels have the same effect on predicted levels of repression. At the same time, we are shown that a negative influence of democracy on repression begins at level 8 continuing through the end of the scale. As found, levels 8, 9, and 10 are significantly different from the reference category, with only one of

the three variables being significantly different from the others (level 10). The difference between levels 8 and 9 is not statistically significant ( $F[1,2458] = 0.65, p > F = 0.4205$ ) but the difference between levels 9 and 10 is discernible ( $F[1,2458] = 10.10, p > F = 0.0015$ ).<sup>25</sup> From this, we can conclude that there are essentially three different categories of democracy, each with a different impact on state repression: one that has no effect (values 0–7), an intermediate category with some negative impact on repressive behavior (values 8–9) and another category with a strong negative effect on state repression (value 10). This finding is interesting for it reveals that there are important differences between the political systems associated with the highest levels of the Polity measure, differences which are generally ignored within the literature.

These exploratory analyses of democratic institutions are significant because they have confirmed the same threshold effect. In line with our discussion about more rigorously investigating the influence of democracy on repression as well as providing the most efficient and parsimonious description of this relationship, we use the

<sup>25</sup>For a discussion of how an  $F$ -test is performed, see Gujarati (1995, 257–59).

information above to create a trichotomous variable (with levels representing the presence of low [0], intermediate [1], and high values of democracy [2]). This variable is included within another binary decomposition model.

When this indicator is used within an equation (Table 1, columns 3 and 4), it is found that both intermediate and high levels of democracy are statistically significant and negative in their influence on repression as well as statistically different from one another (with the greatest impact being identified with the highest value). These results suggest that the influence of the trichotomized democracy measure on repression is not only statistically significant but linear in nature.<sup>26</sup> Of course, it should not be forgotten that underlying this influence is the nonlinear threshold effect discussed above; collapsing values of the democratic measure assists us in simplifying and communicating statistical results but it should not cause us to lose sight of what the data revealed.

In line with our earlier discussion, we address the question of model selection in relation to not only the linear model, but also the quadratic (“More Murder in the Middle”) model—each “confirmed” within previous research. For this, we rely upon the Bayesian Information Criterion (BIC) as discussed within Raftery (1995, 139).<sup>27</sup>

When the BIC is considered, we find that the democracy trichotomy model is the best of the three.<sup>28</sup> Specifically, when the BIC for the trichotomized democratic model is compared against the linear democratic model, the difference is 26.414. As discussed by Raftery (1995), this value suggests “very strong” support for the former over the latter. Similarly, when the trichotomized democratic model is compared against the quadratic (“More Murder in the Middle”) model, the difference in BIC is 8.003, suggesting “strong” support for the former over the latter. The threshold of democratic pacification is thus superior to both the linear and quadratic functional forms.

<sup>26</sup>Additional evidence of linearity can be found. If the relationship between the trichotomized measure of democracy and repression was linear, we would expect the effect of a two on the newly constructed democracy score to be twice as big as the effect of a one. We ran a binary decomposition model creating binary variables for levels 1 and 2 on the trichotomized democracy measure. An F-test shows that there is a high probability that the coefficient on democracy at value 2 is twice the size of the coefficient for democracy at value 1 ( $F[1,2466] = 0.07, p > F = 0.7917$ ).

<sup>27</sup>BIC is a function of the log-likelihood, therefore it has no inherent meaning by itself; however, it does provide a measure of comparison for nonnested models. The guidelines for evaluating these comparisons are clearly set forth in Raftery (1995).

<sup>28</sup>The linear and quadratic Polity models were both estimated, but since we are not particularly concerned with direct coefficient comparisons here, the regression results are not presented. These are available from the authors upon request.

Until this point, we have only concerned ourselves with the institutional measure of democracy. We now undertake a similar investigation of democratic behavior with the Vanhanen indicator (2000), which concerned the behavioral dimension of electoral competition and participation.

Observing LOESS estimates for the Vanhanen democracy index in Figure 1B, one can see that there is (again) clear evidence of a nonlinear influence of behavior associated with democracy on human rights violation. Interestingly, the relationship exhibits a threshold effect comparable to that identified with the Polity measure. Here, we find that below a certain value (at 0.693<sup>29</sup> - Mexico from 1982–1993), there is no impact of democracy on repressive behavior, but above this level the impact is negative (and roughly linear). This critical value is (again) identified with a vertical line in the figure.

From our research, we find that there are important differences between the two indicators of democracy. In the structural measure, roughly 67% of the cases lie below the threshold while the number is only 57% for the behavioral measure. One can conclude from this that while the highest levels of democratic institutionalization must be reached before repression is diminished, the level of democratic participation that must be attained before this decrease is much lower as a function of the variables range. We discuss the implications of this later.

Attempting to efficiently and parsimoniously model this relationship in a manner comparable to the Polity measure, we create two new variables for inclusion along with the Vanhanen index, hereafter known as the “binary/interaction model”: (1) a dichotomous variable where a one indicates that the index is greater than 0.693 and (2) an interaction term between the binary variable and the index. Use of these indicators allows those values below the critical point to have a separate slope from those above this value.

Again, using the BIC, we find that the binary/interaction model performs better than either the Vanhanen linear or quadratic models.<sup>30</sup> The Bayesian Information Criterion difference of 13.434 suggests “very strong” support for the binary/interaction model relative to the linear one. Similarly, the BIC difference between

<sup>29</sup>This cut-point was identified first by the graph as it is clear that at some point between 0.5 and 0.7, the trend changes from no relationship to a negative one. A program was written that tried binary/interaction terms for 100 evenly spaced points between 0.5 and 0.7. The value of the cut-point chosen is the one that produced a model with the lowest residual sum of squares.

<sup>30</sup>The Vanhanen linear and quadratic models were both estimated, but (again) since we are not particularly concerned with direct coefficient comparisons here the regression results are not presented. These are also available upon request from the authors.

TABLE 2 TSCS Regressions with Panel Corrected Standard Errors

Variables	Polity IV		Vanhanen	
	1 Estimate	2 p-value	3 Estimate	4 p-value
Lag Repression	0.632***	0.000	0.690***	0.000
Democracy Trichotomy	-0.200***	0.000	NA	NA
Vanhanen Index	NA	NA	-0.065	0.291
Vanhanen (>0.693)	NA	NA	1.355***	0.000
Vanhanen Interaction	NA	NA	-1.808***	0.000
International War	0.178**	0.007	0.128*	0.036
Civil War	0.604***	0.000	0.520***	0.000
Military Control	0.089**	0.008	0.102**	0.003
ln(Population)	0.062***	0.000	0.057***	0.000
ln(GNP/capita)	-0.030**	0.007	-0.031**	0.007
Constant	0.103	0.432	0.063	0.629

\*p < 0.05, \*\*p < .01, \*\*\*p < .001.

the binary/interaction model and the Vanhanen quadratic model is 7.117, suggesting “strong” support for the former over the latter. The democratic threshold is again found to be superior to other functional forms.

### Parametric Examination and Discussion

The prior analyses were appropriate in an exploratory manner as we attempted to understand the basic structure of the democracy-repression relationship. The investigation did not however take into account the problems of heteroskedasticity and contemporaneous correlation across panels that often plague time-series cross-sectional (TSCS) data. In an effort to address these issues, we employ a TSCS regression in order to properly estimate the impact of democracy on human rights violations, while simultaneously taking account the spatial and temporal difficulties with such an examination. This is achieved with the PCSE procedure detailed in Beck and Katz (1995).<sup>31</sup>

The first measure of democracy we examine is the trichotomized Polity indicator (Table 2, columns 1 and 2). As found, all of the variables within the model are statistically significant at the 0.01 level and all coefficients are in the expected direction.<sup>32</sup> Although generally consistent with the findings of Poe and Tate (1994) and Poe, Tate,

<sup>31</sup>This procedure was implemented in STATA version 8 with the `xtpcse, pairwise-command`.

<sup>32</sup>Our model and that of Poe and Tate (1994) and Poe, Tate, and Keith (1999) differ slightly as a function of different sample sizes and the particular cases making up that individual samples, but they are substantively similar.

and Keith (1999), and others, there are, however, some nontrivial differences between the two efforts.<sup>33</sup>

Within our analysis, we find that the effect of economic standing (-0.030) is twice as large as that reported by Poe and Tate (-0.016). Economic development is thus more effective at reducing repression than is suggested within earlier research. Even more important for our work, we also find that the impact of democracy moving from the lowest level to the highest level is -0.25 in their model while it is -0.4 in ours; in short, the coefficient for democracy times its range in our study is 60% larger than the Poe and Tate model (nearly half a point in the five-point scale). This is important because it means that by imposing a simple influence on what is inherently a more complex relationship, Poe and Tate simultaneously underestimate the ability of higher-level democratic institutionalization to decrease repressive activity while overestimating the ability of intermediary levels of democracy to decrease state repression. Consider two examples.

As Paraguay moved from an authoritarian regime to one “knocking on the door” of democracy in 1992 (from 0 to 7 on the Polity Democracy scale), Poe and Tate would predict a decrease in repressive behavior of 0.175 (about 5%). In contrast, our model would not predict any significant decrease in repression as a result of this move. Indeed, we would predict a change in Paraguayan repressive activity only after democracy increased to (at least) level 8 of the Polity scale—something never achieved during the time-period under investigation. Additionally, as

<sup>33</sup>Poe and Tate (1994) used Freedom House and Vanhanen for democracy measures, neither of which can be directly compared to Polity, so we will discuss our results relative to those found in their 1999 article, which employed the latter measure.

Hungary transitioned from a nondemocracy to a full democracy in the late 1980's and early 1990's, our model predicts a decrease in repressive activity of 0.4 (about 10%) while the Poe and Tate model would predict a decrease of 0.06 (only 1.5%).

Analyzing our second aspect of democracy (using the three behavioral measures created from the Vanhanen database), the results of the TSCS regression are presented in the third and fourth columns of Table 2. Again, while generally similar to earlier research (in terms of statistical significance and causal direction), we find some nontrivial differences between this and other efforts.

Within a model like the one presented by Poe and Tate, results disclose a pacifying effect of  $-0.181$  on human rights violation for Vanhanen's democracy measure.<sup>34</sup> This translates into a maximum effect of democracy (maximum value  $\times$  coefficient) of  $-0.18$  (about 4.5%). In contrast, we find a maximal effect of  $-0.38$  from the interactive variable (about 9.5%). Is this difference really important? An example would again be illustrative.

From 1989 to 1991, Iran had a democracy score of roughly 0.57 on the Vanhanen index. With these values, our model would predict that human rights violations in Iran would only be about 0.037 units lower (roughly 1%) than a country with no participation and no competition. Poe and Tate's model however would predict that human rights violations in Iran would be 0.10 units lower (about 2.5%) than a country with a score of 0; the effect of democratic behavior in the Poe and Tate model is thus two-and-a-half times as large as ours (and significant) in the middle range of democratic behavior, when the LOESS graph (Figure 1B) clearly shows that there should be no significant difference between countries in this range (around 0.693) and 0.<sup>35</sup> Furthermore, Poe and Tate's model shows that from 1991 to 1996, when Iran's democracy score moved from 0.565 to 0.773, the expected decrease in repression would be only about 0.04 units. In contrast, our binary/interaction model exhibits an expected decrease in repression of 0.06 units over the same time period. Here, the effect of democratic behavior in our model is 50% larger than the one in the Poe and Tate model at the higher end of the Vanhanen measure.

These differences may seem trivial in certain respects, but there are two points that are worthy of mention. First,

<sup>34</sup>Poe and Tate used a multiplicative combination of competition and participation. We reestimate their model using our measure and make comparisons based on this model, which is substantively similar to the model presented in their work and which we believe is more closely related to their underlying theoretical argument and maintained within other literature.

<sup>35</sup>The predicted change in our model is statistically indistinguishable from zero, while the change for the Poe and Tate model is significant.

as we are discussing torture, disappearances, and mass killing, any movement that exists within the dependent variable is significant. Second, according to our research, it is clear that earlier investigations have been overly optimistic about the influence of incremental change at the lower levels of the democracy measure (which in the Iran case is fairly steady through the late 1980s). However, our research suggests that there would be no indication of coercive pacification until critical values had been passed—something not achieved within the Iranian case until 1992. The substantive implications of our research are thus extremely important.

## Conclusion

This study examines the influence of democracy on state repression, considering data from 147 countries during the 1976 to 1996 time period. From our analyses, we find that the relationship between these two variables differs significantly from what had been identified within previous research. Across databases and methodological approaches, our statistical investigation leads us to conclude that there is a threshold of domestic democratic peace. Below certain values, the level of democracy has no discernable impact on human rights violations, but after a threshold has been passed (varying in accordance to which measure one is considering), democracy decreases state repression. These results are significant because they directly challenge 30 years worth of empirical research. These results are also significant because they have implications for our understanding of why repressive behavior is employed, which policies decrease human rights violations, and what should be done to investigate complex relationships between political phenomenon. Each is addressed below.

What does the present analysis tell us about theories of state repression? The results from this study better inform us about the conditions under which political leaders decrease repressive behavior and essentially how difficult it is to alter the state's reliance upon this activity. From our research, one could conclude that authorities do not perceive any constraints on repression or alternatives to social control until the highest levels of democracy have been achieved; up to this point authorities are not deterred nor dissuaded from violating human rights. After this threshold of democratic institutionalization and behavior has been passed, however, then the constraints on authorities become greater, the alternatives become clearer, and the likelihood of repression is decreased. The level of democracy thus retains its importance for theory as identified within most of the literature relevant

to the topic, but only at the very end of the democratic continuum.<sup>36</sup>

What does this analysis tell us about public policy efforts directed toward the improvement of human rights conditions? Following from the discussion above, our results suggest that the adoption of some democratic elements will not automatically decrease repressive activity, something implied within the majority of research within the area as well as within the statements of policy makers and NGOs the world over. Indeed, our empirical findings lead us to conclude that only those regimes which fully develop institutional practices and mass political behavior consistent with democratic principles will yield any pacifying effect on state repression. Anything below this threshold will not have any impact; in sum, there are no partial democratic solutions to the problem of human rights violation.

Now, this said, we realize that our findings may only be of limited assistance to policy makers, activists, funding organizations, and everyday citizens. At present, most statistical analyses (including this one) implicitly make the claim that there is no single attribute of democracy that can be developed which will have an impact on repressive behavior. This position is inferred from the use of aggregate indices—measures that combine multiple characteristics/dimensions of democracy together into one summary score. The practice of aggregation used within this work is important for this means that only when multiple components of the political system move together is an impact on repressive behavior expected. Two implications of this point are clear. First, those interested in assessing the impact of democracy on repression must consider the overall characteristics of the regime, in total. Second, those interested in reforming repressive behavior must simultaneously alter numerous dimensions of authority before they can expect any influence.

This position is not the only one that exists. Following the lead of many policy makers, NGOs, and some academicians (e.g., Davenport 1996a, Forthcoming; Poe and Keith Forthcoming; Richards 1999), it may be possible that specific components of democracy are responsible for changing state repressive practices. Exactly which parts (or subtypes<sup>37</sup>) of democracy should be considered (e.g., executive constraints, voting practices, consti-

tutional structure, and electoral participation)? Are non-linear influences found here as well? These are interesting and important questions, but ones that exceed the scope of the present research effort.

Yet another concern for policy makers, activists, funding organizations, and scholars not well addressed within this research is the likelihood and effectiveness of changing democratic behavior and/or institutional structure. Our results show that more countries experience an expected decline in state repression from increases in behavior (98 countries, 1112 country-years) than from a strengthening of institutions (67 countries, 858 country-years). While this suggests that focusing on altering the former would be more effective a remedy in reducing state coercive behavior than focusing on the latter, it does nothing to answer the more important question which concerns the ease with which behavior or institutional structure could be modified. How best are democratic behavior and institutions built? Can/should democratic behavior be imposed from the outside or does it need to be indigenously developed? Can/should institutions be imposed from the outside or does it need to be indigenously developed? A discussion of these topics exceed the parameters of the present research effort, but similar to the issues raised above, it is clearly the case that more discussion is necessary.

Finally, what does our analysis tell us about investigating relationships and methodology? Our research has highlighted some useful and straightforward but underutilized tools for uncovering complex influences between variables. While this is certainly an admirable objective, our goal was actually somewhat more ambitious. Fundamentally, we wanted to encourage researchers and others interested in understanding sociopolitical phenomenon to fully analyze the structure of relationships before specifying a parametric model aimed at explaining the impact of one variable on another. It is clear that many models will “fit” data (in that they will have nonzero explanatory power measured in either significant coefficients or fit statistics). The goal of the modeling exercise, however, should be to increase our knowledge about relationships. This is done through thoughtful and extensive exploratory analysis.

We should be especially sensitive to alternative influences within subfields that are still developing, such as the area of domestic conflict discussed here. Indeed, it was shown within this research that by being fixated on a particular methodological technique, the subfield

<sup>36</sup>Mansfield and Snyder (1995) and later Gleditsch and Ward (1997) consider this possibility within the context of interstate conflict. Here as well one finds no detailed explanation as to why this should be the case. In terms of the latter study, it does offer an empirical justification; executive constraints historically are shown to account for the greatest amount of variance in the democracy measure used.

<sup>37</sup>Our discussion here was very much influenced by the work of Collier and Levitsky (1997) who directed us to consider the numerous ways of understanding definitions and measures of democracy. Specifically, their discussion of “diminished subtypes” (i.e., incom-

plete forms of democracy that lead one to focus on a few defining characteristics) was particularly useful. We would maintain that when one subdivides Dahl’s dimensions, then they are essentially discussing “diminished subtypes” in the Collier and Levitsky (1997) sense.

essentially foreclosed the possibility of discovering relationships which more accurately described what was taking place. An approach like the one adopted here may provide a way out of this quandary, guiding research, policy, and advocacy well into the future. Indeed, if our work has any influence at all, we would hope that it encourages those interested in understanding sociopolitical phenomenon to explore the possibilities that exist within our fields of study more flexibly and rigorously. In many respects, we seek to invert Hawthorn's observation that "possibilities haunt the human sciences" (1991, xi) and suggest that it is now time for the human sciences to haunt the possibilities that exist within our areas of research (at least for a while). Following this, we can better assess exactly what such efforts yield for improving our analyses and comprehension of the topics we are investigating.

## References

- Alvarez, Michael, Jose Cheibub, Fernando Limongi, and Adam Przeworski. 1996. "Classifying Political Regimes." *Studies in Comparative International Development* 31(2):1–37.
- Arendt, Hannah. 1973. *The Origins of Totalitarianism*. Harcourt Brace Jovanovich.
- Baltagi, B. H. 1995. *Econometric Analysis of Panel Data*. New York: Wiley.
- Beck, Nathaniel, and Jonathan Katz. 1995. "What to do (and not to do) with Time-Series Cross-Section Data." *American Political Science Review* 89(3):634–47.
- Bollen, Kenneth. 1980. "Issues in the Comparative Measurement of Political Democracy." *American Sociological Review* 45(2):370–90.
- Cingranelli, David L., and David L. Richards. 1999. "Measuring the Level, Pattern and Sequence of Government Respect for Physical Integrity Rights." *International Studies Quarterly* 43(2):407–18.
- Cleveland, W. S., S. J. Devlin, and E. Grosse. 1988. "Regression by Local Fitting: Methods, Properties and Computational Algorithms." *Journal of Econometrics* 37:87–114.
- Collier, David, and Steven Levitsky. 1997. "Research Note: Democracy with Adjectives: Conceptual Research in Comparative Politics." *World Politics* 41(3):430–51.
- Coppedge, Michael, and Wolfgang H. Reinicke. 1991. Measuring Polyarchy. In *On Measuring Democracy: Its Consequences and Concomitants*, ed. Alex Inkeles. New Brunswick: Transaction Publishers, pp. 47–68.
- Dahl, Robert. 1966. *Political Opposition in Western Democracies*. New Haven: Yale University Press.
- Dahl, Robert. 1971. *Polyarchy: Participation and Opposition*. New Haven: Yale University Press.
- Dallin, Alexander, and George Breslauer. 1970. *Political Terror in Communist Systems*. Stanford: Stanford University Press.
- Davenport, Christian. 1995. "Multi-Dimensional Threat Perception and State Repression: An Inquiry Into Why States Apply Negative Sanctions." *American Journal of Political Science* 39(3):683–713.
- Davenport, Christian. 1996a. "'Constitutional Promises' and Repressive Reality: A Cross-National Time-Series Investigation of Why Political and Civil Liberties are Suppressed." *Journal of Politics* 58(3):627–54.
- Davenport, Christian. 1996b. "The Weight of the Past: Exploring Lagged Determinants of Political Repression." *Political Research Quarterly* 49(2):377–403.
- Davenport, Christian. 1997. "From Ballots to Bullets: An Empirical Assessment of How National Elections Influence State Uses of Political Repression." *Electoral Studies* 16(4):517–40.
- Davenport, Christian. 1999. "Human Rights and the Democratic Proposition." *Journal of Conflict Resolution* 43(1):92–116.
- Davenport, Christian. Forthcoming. "The Promise of Democratic Pacification." *International Studies Quarterly*.
- DeGre, Gerard. 1964. "Freedom and Social Structure." *American Sociological Review* 11:529–36.
- DeJouvenal, Bertrand. 1945. *On Power: Its Nature and the History of Its Growth*. Boston: Beacon Press.
- Eokstein, Harry, and Ted Robert Gurr. 1975. *Patterns of Authority: A Structural Basis for Political Inquiry*. New York: Wiley-Interscience.
- Fein, Helen. 1995. "More Murder in the Middle: Life-Integrity Violations and Democracy in the World." *Human Rights Quarterly* 17:170–91.
- Fox, John. 2000a. *Multiple and Generalized Nonparametric Regression*. Thousand Oaks: Sage.
- Fox, John. 2000b. *Nonparametric Simple Regression*. Thousand Oaks: Sage.
- Francisco, Ron. 1996. "Coercion and Protest: An Empirical Test in Two Democratic States." *American Journal of Political Science* 40(4):1179–1204.
- Friedrich, C. J., and Z. Brzezinski. 1962. *Totalitarian Dictatorship and Autocracy*. Cambridge: Harvard University Press.
- Gates, Scott, Havard Heger, Mark P. Jones, and Havard Strand. 2003. "Institutional Inconsistency and Political Instability: The Duration of Politics." Unpublished manuscript, Prio Institute.
- Gibney, Mark, and Matthew Dalton. 1996. The Political Terror Scale. In *Human Rights and Developing Countries*, ed. David L. Cingranelli. Greenwich: JAI, 21–40.
- Gleditsch, Kristian, and Michael Ward. 1997. "Double Take: A Re-Examination of Democracy and Autocracy in Modern Politics." *Journal of Conflict Resolution* 41:361–82.
- Goldstein, Robert J. 1978. *Political Repression in Modern America*. Cambridge: Schenkman Publishing Company.
- Gujarati, Damodar. 1995. *Basic Econometrics*. New York: McGraw-Hill.
- Gurr, Ted. 1974. "Persistence and Change in Political Systems 1800–1971." *American Political Science Review* 68:1482–504.
- Gurr, Ted, Keith Jagers, and Will H. Moore. 1990. "The Transformation of the Western State: Indicators of Democracy, Autocracy and State Power Since 1800." *Studies in Comparative International Development* 25(1):73–108.
- Harff, Barbara. 2003. "No Lessons Learned from the Holocaust: Assessing Risks of Genocide and Political Mass Murder Since 1955." *American Political Science Review* 97(1):57–74.
- Hawthorn, Geoffrey. 1991. *Plausible Worlds: Possibility and Understanding in History and the Social Sciences*. New York: Cambridge University Press.



- Hegre, Havard, Tanja Ellingsen, Scott Gates, and Nils Peter Gleditsch. 2001. "Toward a Democratic Civil Peace? Democracy, Political Change and Civil War, 1916-1992." *American Political Science Review* 95:33-48.
- Henderson, Conway. 1991. "Conditions Affecting the Use of Political Repression." *Journal of Conflict Resolution* 35:120-42.
- Hibbs, Douglas. 1973. *Mass Political Violence*. New York: Wiley.
- Huntington, Samuel. 1991. *The Third Wave: Democratization in the Late Twentieth Century*. Oklahoma: University of Oklahoma Press.
- Jacoby, William G. 1991. *Data Theory and Dimensional Analysis*. Thousand Oaks: Sage.
- Jacoby, William G. 1998. "Levels of Measurement and Political Research: An Optimistic View." *American Journal of Political Science* 43(1):271-301.
- Jagers, Keith, and Ted Gurr. 1995. "Transitions to Democracy: Tracking the Third Wave with Polity III Indicators of Democracy and Autocracy." *Journal of Peace Research* 32(4):469-82.
- Karatnycky, Adrian, ed. 1999. *Freedom in the World: The Annual Survey of Political Rights and Civil Liberties, 1998-1999*. New Brunswick: Transaction Publishers.
- King, John. 1998. "Repression, Domestic Threat, and Interactions in Argentina and Chile." *Journal of Political and Military Sociology* 26(2):1-27.
- Krain, Matthew. 1997. "State-Sponsored Mass Murder: A Study of the Onset and Severity of Genocides and Politicides." *Journal of Conflict Resolution* 41(3):331-60.
- Lichbach, Mark. 1984. *Regime Change and the Coherence of European Governments*. University of Denver.
- Mansfield, Edward, and Jack Snyder. 1995. "Democratization and the Danger of War." *International Security* 20(1):5-38.
- Marshall, Monty, and Keith Jagers. 2001. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-1999. Data Users Manual*. Available at <http://www.cidcm.umd.edu/inscr/polity/polreg.htm>.
- Marshall, Monty, Ted Gurr, Christian Davenport, and Keith Jagers. 2002. "Polity IV, 1800-1999: Comments on Munck and Verkuilen." *Comparative Political Studies* 35(1):40-45.
- McCormick, James M., and Neil J. Mitchell. 1997. "Human Rights Violations, Umbrella Concepts and Empirical Analysis." *World Politics* 49:510-25.
- Mitchell, Neil J., and James M. McCormick. 1988. "Economic and Political Explanations of Human Rights Violations." *World Politics* 40:476-98.
- Moore, Will H. 1998. "A Repression and Dissent: Substitution, Context and Timing." *American Journal of Political Science* 45(3):851-73.
- Muller, Edward N. 1985. "Income Inequality, Regime Repressiveness, and Political Violence." *American Sociological Review* 50:47-61.
- Munck, Gerardo, and Jay Verkuilen. 2002. "Conceptualizing and Measuring Democracy: Evaluating Alternative Indices." *Comparative Political Studies* 35(1):5-35.
- Nunziata, Luca. 2002. "xtldw.ado: a Stata command for Durbin Watson statistic in fixed effects panel data models." Available at <http://www.nuff.ox.ac.uk/users/nunziata/publications.htm>, Version 2.0 15/11/02.
- Oneal, John R., and Bruce Russett. 1999. "The Kantian Peace: The Pacific Benefits of Democracy, Interdependence, and International Organizations, 1885-1992." *World Politics* 52(1):1-37.
- Poe, Steven, and C. Neal Tate. 1994. "Repression of Personal Integrity Rights in the 1980's: A Global Analysis." *American Political Science Review* 88:853-72.
- Poe, Steven, and Linda Camp Keith. Forthcoming. "Are Constitutional State of Emergency Clauses Effective: An Empirical Solution." *International Studies Quarterly*.
- Poe, Steven, James Meernik, and Eric Krueger. 1998. "Testing Models of State Behavior: United States Foreign Policy During and After the Cold War." *Journal of Politics* 60:33-85.
- Poe, Steven, C. Neal Tate, and Linda Camp Keith. 1999. "Repression of the Human Right to Personal Integrity Revisited: A Global, Cross-National Study Covering the Years 1976-1993." *International Studies Quarterly* 43:291-313.
- Raftery, Adrian E. 1995. "Bayesian Model Selection in Social Research." *Sociological Methodology* 25:111-64.
- Regan, Patric, and Errol Henderson. 2002. "Democracy, Threats and Political Repression in Developing Countries: Are Democracies Internally Less Violent?" *Third World Quarterly* 23(1):119-36.
- Richards, David. 1999. "Perilous Proxy: Human Rights and the Presence of National Elections." *Social Science Quarterly* 80(4):648-66.
- Rousseau, David L., Christopher Gelpi, Dan Reiter, and Paul K. Huth. 1996. "Assessing the Dyadic Nature of the Democratic Peace, 1918-88." *American Political Science Review* 90(3):512-33.
- Rummel, Rudolph J. 1997. *Power Kills*. New Brunswick: Transaction Publishers.
- Russell, Bertrand. 1993. *Power*. New York: Routledge.
- Ryan, Joseph E. 1994. "Survey Methodology." *Freedom Review* 25(1):9-13.
- Small, Melvin, and J. David Singer. 1982. *Resort to Arms, International and Civil Wars, 1816-1980*. Beverly Hills: Sage.
- Stohl, Michael, and George Lopez, eds. 1984. *The State as Terrorist: The Dynamics of Government Violence and Repression*. Westport: Greenwood Press.
- Tsebelis, George. 2000. "Veto Players and Institutional Analysis." *Governance* 13(4):141-74.
- Vanhanen, Tatu. 2000. "A New Dataset for Measuring Democracy, 1810-1998." *Journal of Peace Research* 37(2):251-65.
- Ward, Michael. 2002. "Green Binders in Cyberspace: A Modest Proposal." *Comparative Political Studies* 13(1):46-51.
- Wooldridge, Jeffrey M. 2003. *Introductory Econometrics: A Modern Approach*. 2nd ed. Thompson/South-Western.
- Young, Forrest W., Jan de Leeuw, and Yoshio Takane. 1976. "Regression with Qualitative and Quantitative Variables: An Alternating Least Squares Method with Optimal Scaling Features." *Psychometrika* 41:505-29.
- Zakaria, Fareed. 1997. "The Rise of Illiberal Democracy." *Foreign Affairs* 76:22-43.
- Zanger, Sabine C. 2000. "A Global Analysis of the Effect of Political Regime Changes on Life Integrity Violations, 1977-1993." *Journal of Peace Research* 37(2):213-33.
- Ziegenhagen, Eduard. 1986. *The Regulation of Political Conflict*. New York: Praeger.