

**Macro-Tolerance and Protest:  
Does a Culture of Political Intolerance Dampen Dissent?\***

**Christopher Claassen**

Lecturer in Politics  
School of Social and Political Sciences  
University of Glasgow  
Glasgow, G12 8QQ  
United Kingdom  
[christopher.claassen@glasgow.ac.uk](mailto:christopher.claassen@glasgow.ac.uk)

**James L. Gibson**

*Sidney W. Souers Professor of Government*  
Department of Political Science  
Washington University in St. Louis  
Campus Box 1063  
St. Louis, MO 63130-4899  
United States  
[jgibson@wustl.edu](mailto:jgibson@wustl.edu)

Fellow, Centre for Comparative and International Politics  
*Professor Extraordinary in Political Science*  
Stellenbosch University (South Africa)

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# **Macro-Tolerance and Protest: Does a Culture of Political Intolerance Dampen Dissent?**

## **ABSTRACT**

Political tolerance has long been regarded as one of the most important democratic values because a culture of intolerance is thought to produce conformity and a fear of dissent. Although widely endorsed, this claim has received little direct empirical support. Using the new method of multilevel regression with poststratification to measure state levels of tolerance, or macro-tolerance, and automated event data to measure state rates of protest, we test whether cultures of intolerance do indeed inhibit public expressions of dissent. Because cultures of intolerance are likely endogenous to prior levels of protest, we use an instrumental variable to estimate the causal effect of culture on political action. We find that macro-tolerance has a positive and substantial effect on rates of protest. Our findings have implications for normative theories of free speech, for scholarship on protest and political tolerance, and for the measurement of macro-opinion in the United States.

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**POLITICAL TOLERANCE** is widely recognized as one of the most important democratic values (e.g., Sullivan, Piereson, and Marcus 1982). At its heart, it is concerned with the belief that every adult citizen ought to be allowed to participate fully in the political process, regardless of the substance of his or her beliefs and opinions. Tolerant political cultures permit a wide range of ideas to be freely circulated and publicly expressed. Intolerant political cultures, in contrast, disapprove of the public expression of opinions that are judged to be objectionable. Scholars have long thought that this disapproval creates a fear of dissent and a creeping conformity, which, in turn, has adverse consequences for democratic politics (e.g., Gibson 1989; McClosky 1964; Prothro and Grigg 1960; Sullivan, Piereson, and Marcus 1982).

However, despite a voluminous literature, only a handful of studies has directly examined the question of whether political intolerance does indeed constrain the public expression of political beliefs. The primary purpose of this paper is to investigate this rarely tested hypothesis. Our overriding expectation is that an intolerant political culture discourages protest. This is a macro-level, not a micro-level conjecture: feeling free to express one's views and participate in the political process is a function of the level of intolerance in the geographic context in which one lives (e.g., Gibson 1995). Gibson (1989, 1992, 2008) has suggested that intolerance has this effect because it can create a spiral of silence (Noelle-Neumann 1984) in which individuals are reluctant to express their views because they fear a reaction from those around them. Damage to democratic deliberation can thus be dealt by ordinary citizens rather than (or in addition to) repressive governments. When intolerance dominates a political culture, even majorities can be cowed into political quiescence (as in the infamous "silent majority").

Our hypothesis implies a macro-level relationship, but tolerance is typically conceived of, and measured at, the micro-level, as an attribute of individuals. A secondary contribution of this

paper then is to develop a measure of state-level tolerance, or *macro-tolerance*, using existing survey datasets. In particular, we use the rapidly developing method of multilevel regression with poststratification (MRP), which has been shown to provide valid and reliable measures of state public opinion from national surveys, to score the political cultures of the American states.

But does tolerance actually cause protest? Unfortunately, we might expect that the level of macro-tolerance and the *rate of protest* in each state are both endogenous. While tolerance provides a supportive climate for dissent, high rates of protest may provoke an intolerant backlash (e.g., Gibson 1989). Consequently, we use an instrumental-variables approach to identify the causal effect of macro-tolerance. Our instrument is a state-level indicator of neuroticism, a personality trait. We argue that this measure is a valid instrument because it can be treated as exogenous to state rates of protest, conditional on levels of macro-tolerance. Just as personality dispositions are the bedrock of individual behavior (Mondak et al. 2010), macro-personality is, we contend, the bedrock for macro-tolerance and collective behavior.

The paper proceeds as follows. In the next section, we provide an account of why protest is crucial for the health of democracy, and the role that cultures of tolerance play in putting up with protest. The following section examines the extant empirical literature on the causes of protest, as well as the behavioral effects of intolerance. Then, we describe our measurement of macro-tolerance and the incidence of dissent, and provide evidence to validate these measures. We next conduct tests of our basic hypothesis before attempting to estimate the causal effects through instrumental variables analysis. Our evidence shows that macro-tolerance does indeed shape the rate at which citizens protest across the U.S. Moving from a below-average to an above-average level of macro-tolerance results in a whopping 51% increase in the rate of protest.

## **THEORY**

### **Tolerance, Dissent, and Democracy**

Democracy is characterized by the principle of majority rule. But it is also concerned with minority rights; in particular, the rights of expression and contestation (Dahl 1971). These rights require that opinions can be freely aired, in the aptly named “marketplace of ideas.” Such a marketplace of ideas strengthens democracy by facilitating citizen choice, encouraging deliberation and contestation (e.g., Ackerman and Fishkin 2004), and allowing all voices to be heard (Young 2000).

However, as the large literature on political tolerance has abundantly illustrated, many citizens – and perhaps even most – in a wide cross-section of societies, support limiting the rights of expression and contestation for certain unpopular groups (e.g., Duch and Gibson 1992; Gibson and Gouws 2003; Peffley and Rohrschneider 2003; Sullivan et al. 1993). Examples of such groups come easily to mind: neo-Nazis, the Ku Klux Klan, and radical Muslims in the present day (Gibson 2008), and Communists in the 1950s (Stouffer 1955). But more mundane groups also face opposition to the free expression of their points-of-view. For example, Gibson (2005) found that 48% of Americans are less than completely tolerant of atheists. And commentators (e.g., Lukianoff and Haidt 2015) have argued that college campuses have become intolerant of conservative political views, particularly on cultural or “moral” issues.

As Gibson (1989, 1992, 2008) points out, there are two mechanisms whereby intolerance may hinder collective action and protest. First, widespread intolerance toward a group may spur the government to pass legislation against that group and curtail its freedoms. This has happened many times in American history (see Goldstein 1978). But of arguably greater importance is the role played by the public climate of intolerance. Citizens’ beliefs about the degree of opposition

from others to their political views can shape whether they risk publicly expressing those beliefs. And to the extent that these views are left unexpressed, they appear to observers to be even less popular, creating what Noelle-Neumann (1984) aptly refers to as a “spiral of silence.” An intolerant political climate may thus create a spiral of silence whereby dissenting opinions are withheld from public expression. Moreover, as the logic of the spiral metaphor suggests, intolerance results in not only the unpopular and odious views being silenced, but also other minority and dissenting voices. In this paper, we are interested in testing the possible role played by political intolerance in curtailing dissent.

This hypothesis has implications for how we conceptualize and measure our independent and dependent variables, macro-tolerance and protest. While (in)tolerance is traditionally understood as a micro-level variable, a property of individuals, the logic of the spiral of silence suggests that it works as a macro-level variable to shape political outcomes. It is the *culture of intolerance* surrounding those with dissenting opinions that matters for whether these opinions are expressed (Gibson 1995).

We similarly conceptualize protest at the macro-level, as incidents of collective political action. Following Barnes and Kaase (1979), we distinguish conventional, institutionalized behaviors relating to the electoral process – such a volunteering for a campaign, contacting a politician, or voting – from non-routine, “unconventional” forms of political action – such as demonstrations, strikes, vigils, marches, and boycotts. We define protest in this paper as unconventional political action. Although one may cast a “protest vote,” the act of voting is itself entirely orthodox and culturally appropriate. Unconventional political action is different. Not only is a protest a manifestation of disagreement over policy or procedure, these acts are themselves challenging, contentious, and public.

The theoretical linkage between tolerance and protest seems quite clear. Somewhat surprisingly, the vast literature on protest, which we review in the next section, ignores the potential role played by cultures of political intolerance.

### **The Determinants of Protest**

Early research on protest incidence and participation focused on the grievances that were thought to push individuals and groups into collective action. Commonly cited grievances included factors such as deprivation, both absolute (Massey and Denton 1993; Piven and Cloward 1979) and relative (Eisinger 1973; Gurr 1968), ethnic competition (Lieberson and Silverman 1965; Olzak 1992), and ideological disagreements (Gibson 1997; McAdam 1986).

Later researchers criticized these “push” factors. Grievances were thought to be ubiquitous, while participation in protest is relatively rare (Jenkins 1983). Indeed, a fairly common finding was that general grievances have no, or even negative, effects on protest (Spilerman 1979; Olzak and Shanahan 1996). The grievances that push individuals and groups to protest were thus relegated to a supporting role, with “pull” factors instead taking center stage (e.g., McCarthy and Zald 1977).

There are two main varieties of such pull factors. The first is the human, organizational, and financial resources available to mobilize individuals (e.g., McAdam 1982; McCarthy and Zald 1977; Verba, Schlozman, and Brady 1995). The emergence of the civil rights movement, for example, is linked with the growth of black churches and the black middle classes (McAdam 1982; Piven and Cloward 1977). The second is the opportunities and constraints for collective action that are provided by the wider political environment (e.g., Eisinger 1973; Kitschelt 1986). Highly competitive electoral contexts, for example, are thought to create openings for protest

because they provide incentives for elites to seek support wherever they may find it, including among protest movements (Costain 1992; Jenkins, Jacobs, and Agone 2003; Tilly 1978).

Our hypothesis that political tolerance plays a facilitating role with respect to protest would appear to fit naturally within this latter, “political process,” framework. However, scholars within this tradition have taken a fairly narrow view of the opportunities and constraints affecting collective action, focusing largely on institutional rules, state openness, and/or the balance of power between competing elites (McAdam 1996).

Some scholars have also argued that public attitudes toward the protest group are an important factor in shaping opportunities for protest (Lee 2002; McCammon et al. 2001). Yet these mass opinions are very specific, focused as they are on the protesting group. Our hypothesis, in contrast, proposes that dissent is shaped, in part, by a more general value orientation: the degree of public support for the participation of any and all groups in political life, which is to say, the level of political tolerance in the contexts in which groups seek to protest.

### **The Consequences of Political Tolerance**

The political tolerance literature is dominated by research into its conceptualization, measurement, and origins (for reviews, see Gibson 2006 and Sullivan and Hendriks 2009). Only a few scholars have examined its consequences. These effects may be conceptualized and measured at either the micro-level of individuals, or the macro-level of contexts. Although our hypothesis is cast at the macro-level, we begin by briefly reviewing research on the micro-level consequences of political tolerance.

Perhaps the first study to assess the behavioral consequences of political tolerance is that



of Gibson and Bingham (1985), who examined the controversy in Skokie, Illinois, over the efforts of American Nazis to hold a demonstration. These authors demonstrated that political intolerance has real behavioral consequences – in this instance, the behavior was withdrawal of support from the American Civil Liberties Union (ACLU), who represented the Nazis in their first amendment claim.

Marcus et al. (1995) also test the microlevel effects of intolerance, using an experiment to do so. They found that subjects who are manipulated to be intolerant are more willing to take part in political action than those manipulated to be tolerant. If anything, these results suggests that greater tolerance should *reduce* protest, the opposite of our hypothesis. However, the intentional measure of protest participation, the hypothetical nature of the situation, and the individual level of analysis mean that it is difficult to generalize these findings to the macro-level relationship between climates of intolerance and protest.

The consequences of political tolerance at the state level have been investigated by Gibson, in four papers. The first two of these examined the relationship between political tolerance and government repression. Gibson (1988) showed that government repression of Communists was not related to state levels of mass political tolerance, as measured using Stouffer's (1955) survey data (although it was linked to elite tolerance). Using a similar method, and the Nunn, Crockett, and Williams's (1974) survey data, Gibson (1989) found a correlation between state levels of political tolerance and government repression, but a *positive* correlation. *More* tolerant states were *more* likely to restrict campus protest during the Vietnam era. Gibson explained this surprising finding by arguing that tolerance appeared to increase the incidence of campus protest, which subsequently led to crackdowns by state governments.

The final pair of studies by Gibson (1992; 1995) investigated the effects of macro-tolerance on perceived political freedom. Gibson (1992) found that tolerance in the community where the respondents live is associated with perceptions of increased freedom of expression. Gibson (1995) showed that this increase in perceived freedom holds for black Americans even when tolerance is conceived to include tolerance of *racists*. These results are consistent with the “spiral of silence,” which we have argued results from a climate or culture of intolerance.

We seek to continue this line of investigation, although taking as our dependent variable the rate of protest across the states. In addition, Gibson’s (1992; 1995) results, although consistent with our hypothesis, hinge on small samples in the geographical areas of focus. Thus, before we can test whether macro-tolerance matters for protest, we have to measure political tolerance at the state level. This is the task of the next section.

## **MEASURING MACRO-TOLERANCE**

Measuring public opinion within the U.S. states is perhaps best accomplished using a bespoke survey, with a sample large enough to ensure sufficient respondents within each state. Recent survey projects that use this method, such as National Annenberg Election Survey (Romer et al. 2006) and the Cooperative Congressional Election Study (Vavreck and Rivers 2008), each interviewed more than *50 thousand* Americans. Such surveys may produce high quality data, but they are hugely expensive, require collaboration across many investigators, and consequently are rare. Nor have existing surveys of this design included measures of political tolerance.

Another approach has been to aggregate existing survey data over an extended period of time to build a “mega-poll.” This method is used by Erikson, Wright, and McIver (1993) in their ground-breaking work on macro-public opinion. Similarly, Gibson (1988; 1989) disaggregated

the Stouffer and Nunn, Crockett, and Williams national surveys to create state-level measures of mass and elite political intolerance. Brace et al. (2002) followed suit in using aggregated General Social Survey data to measure nine opinion variables at the state level, including political tolerance.<sup>1</sup> Yet even after aggregating 24 years of survey data, Brace et al. (2002) find that only 41 states have samples of 100 or more. Of even greater concern is that only 38 states feature two or more primary sampling units (PSUs) over this entire time period. Consequently, it is not surprising that, as Lax and Phillips (2009) and Pacheco (2011) have shown, estimates produced using this method of aggregation are unreliable in small and very small states.

Faced with these limitations, scholars are increasingly turning to a method of model-based estimation known as multilevel regression with poststratification (MRP). Pioneered by Gelman and Little (1997) and Park, Gelman, and Bafumi (2004), MRP utilizes a multilevel model to predict average opinion for thousands of demographic-geographic categories (such as Hispanic, college-educated women, who are aged 18-29, and live in Colorado). These raw opinion estimates are then weighted by the population sizes of each demographic-geographic category, and aggregated by state to create a post-stratified estimate of opinion.

MRP has captured the imagination of political scientists. It allows scholars to use existing survey data, even with typically-sized samples of around 1,500 respondents, to reliably measure opinion within the states (Lax and Phillips 2009). Some have urged caution (Buttice and Highton 2013), but the method has been validated using a variety of external data, including election results (Park, Gelman, and Bafumi 2004; Warshaw and Rodden 2012) and large aggregated polls

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<sup>1</sup> We follow Lax and Phillips (2009) and Warshaw and Rodden (2012) in referring to this method as “disaggregation” when the sample of one poll is divided by the states; we refer to this as “aggregation” when multiple polls are added together before being divided by the states.

(Lax and Phillips 2009; Pacheco 2011). MRP is therefore the approach we use to measure state-level tolerance.

## **Survey Data**

Our survey data come from the Freedom and Tolerance Surveys (FATS), which were conducted every year between 2007 and 2011. Respondents were sampled from all 48 contiguous US states and the District of Columbia; because DC is not a state, these respondents ( $N = 5$ ) are excluded from the sample for further analysis. After further removing respondents who refused to provide information for key demographics ( $N = 103$ ), a sample of 3,994 remains.<sup>2</sup> Macro-tolerance, as a aspect of political culture, is not expected to vary much from year to year.<sup>3</sup> We thus combine the five annual surveys and use MRP to produce a single set of state estimates for the 48 contiguous states over period 2007-2011.

The MRP procedure requires cross-classifiable population data on the demographic and geographic variables of interest. The 5-year 2007-2011 sample of the American Community Survey (ACS) is ideal for our purpose as it covers the same time interval as the FATS samples, includes a fair number of demographic variables, and has a large sample of 15 million.<sup>4</sup>

MRP further requires a set of categorical demographic and geographic predictors that are identically-coded in both the sample and population data. There were six such variables available

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<sup>2</sup> It is commonplace to use listwise deletion of missing data in MRP analyses. See, for example, Ghitza and Gelman (2013) and Lax and Phillips (2009).

<sup>3</sup> A one-way ANOVA finds that survey year accounts for very little of the variance in micro-level political tolerance ( $F = .84$ ,  $df = 4$ ,  $p = .50$ ). See below for the measurement of micro-tolerance.

<sup>4</sup> Although not strictly population data, a sample of this size has a truly tiny margin of error of .02%, which analysts typically ignore when using MRP (e.g., Enns and Koch 2013; Ghitza and Gelman 2013).

in both the FATS and the ACS: (1) state (and thus also region), (2) gender, (3) race and ethnicity, (4) housing tenure, (5) age, and (6) level of education.

### **Measuring Political Tolerance at the Micro-Level**

MRP has thus far been applied to a fairly limited range of opinions: electoral preferences (Gelman and Little 1997; Ghitza and Gelman 2013; Park, Gelman, and Bafumi 2004), partisanship (Pacheco 2011), policy preferences (Lax and Phillips 2009; Warshaw and Rodden 2012), and policy “mood” or ideology (Caughey and Warshaw 2015; Enns and Koch 2013).

While electoral and policy preferences are typically measured with single dichotomous indicators (but see Enns 2016), multiple indicators are required to reliably and validly measure latent constructs such as tolerance. Before estimating macro-tolerance at the state level, we need to measure it at the individual level.

Gibson (2013) described three approaches to measuring political tolerance: the least-liked, fixed-group, and general civil liberties methods.<sup>5</sup> All three have been used to measure “the degree to which citizens will support the extension of civil liberties to all, including groups advocating highly disagreeable viewpoints and ideologies” (Gibson 2013, 46), which suggests that the three could be regarded as tapping a single latent construct of “general tolerance.” However, Gibson (2013) also finds that correlations between the three additive scales are modest, which casts doubt on this assumption.

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<sup>5</sup> Briefly, fixed-group measures of tolerance are those in which the questions refer to political groups selected by the researcher (e.g., Stouffer 1955). Least-liked measures allow the respondents themselves to identify the groups (e.g., Sullivan, Piereson, and Marcus 1982). Support for civil liberties refers to attitudes about whether certain types of activities, irrespective of the groups involved, ought to be allowed (e.g., giving certain types of inflammatory speeches; see Gibson and Bingham 1985; see also Davis 2007).

Our approach is something of a compromise between these positions. The fixed-group approach is ill-suited for measuring tolerance at the state-level because it asks about groups, such as “people who are against all churches and religion” and “religious fundamentalists,” with which respondents could well identify, or at least, feel sympathetic. Such groups would not satisfy the “objection precondition” required to validly measure political tolerance. The extent to which individuals identify with such groups, moreover, likely varies considerably by state. We therefore do not consider the fixed group approach further, and instead focus on the question of whether the least-liked and support for civil liberties items can be used together to validly and reliably measure general political tolerance.

To address this question, we fit a two-factor confirmatory factor analysis (CFA) measurement model, with one factor specified for the three least-liked items and the other for the five civil liberties items. These two factors are then modelled using a higher-order, general tolerance factor. In addition, because two of the survey items were asked in the “reverse” direction to the others, we allow the residual error for those two items to be correlated. The model fits the data well ( $\chi^2 = 134.10$ ,  $df = 17$ ,  $p < .001$ ; RMSEA = .042).<sup>6</sup> The two tolerance scales – least-liked and support for civil liberties – thus clearly appear to tap a latent construct of general political tolerance. We therefore proceed to estimate factor scores for general tolerance and use these individual-level data as our outcome variable in the MRP model.

### **The MRP Model**

MRP estimation begins with a multilevel model of individual opinion. Our model closely follows

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<sup>6</sup> Full CFA model results are reported in the Appendix.

from those proposed by Park, Gelman, and Bafumi (2004) and Lax and Phillips (2009). In particular, we model respondents' general political tolerance factor scores as a function of the six geographic and demographic categories of gender, housing tenure, race, age group, level of education, and state.<sup>7</sup>

The 48 state effects are further modeled at the state level. This model includes regional intercepts and two state-level covariates: the percentage of a state's residents who are evangelicals or Mormons (Lax and Phillips 2009) and the proportion who hold a high school diploma. Each has been linked with tolerance at the individual level (e.g., on religion, see Gibson 2010; on education, see Bobo and Licari 1989, and virtually all other studies of the etiology of intolerance).

This model is used to predict levels of political tolerance within each of the 16,000 demographic-geographic types. Each estimate is then weighted by the share of the state's population within that demographic-geographic type, before being aggregated by state to yield a post-stratified estimate of state-level political tolerance. Finally, the estimates are transformed to range from 0 to 1.

### **Validating the Estimates of Macro-Tolerance**

The values for each state are presented in Table 1. The most tolerant states according to our measure are in the West, particularly the mountain West and Pacific Northwest, while the least tolerant states are in the South. This geographic pattern of results is largely consistent with earlier estimates of macro-tolerance (Brace et al. 2002; Gibson 1988; 1989).<sup>8</sup>

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<sup>7</sup> Further details on the MRP model are available in the Appendix.

<sup>8</sup> State values for the various measures of tolerance are provided in the Appendix.

[PLACE TABLE 1 ABOUT HERE]

To validate our estimates of macro-tolerance, we correlate macro-tolerance with various sets of measures (see Table 2). First, as a test of *convergent* validity, we examine the correlations between our estimates of tolerance and these three earlier measures of state-level political tolerance. These correlations are reasonably strong. In particular, the state measures from Stouffer's 1954 survey, estimated and reported by Gibson (1988), correlate at .70 with our MRP estimates. Our estimates are also strongly related to those of Brace et al., who use 1974 to 1998 General Social Survey data ( $r = .77$ ). The correlation with the Gibson (1989) estimates, using Nunn, Crocket, and Williams' (1974) much smaller dataset is considerably weaker ( $r = .48$ ), although far from trivial. These correlations obtain despite the considerable measurement error that comes from disaggregating the various survey datasets, as well as the lengthy periods of time between the surveys. Taking these factors into consideration, it appears that the different data sources are in general agreement as to which states are more politically tolerant and which states are less so.

[PLACE TABLE 2 ABOUT HERE]

Second, as another test of convergent validity, we consider the association between our estimates and Elazar's (1966) three-category typology of American political cultures (see also Carman and Barker 2005; Lieske 1993; Sharkansky 1969). As Sharkansky (1969) argues, the moralistic culture emphasizes widespread and active political participation, with traditionalism reserving participation for the established elite, and individualism taking a more intermediate, expedient view. There is some conceptual overlap with political tolerance, which involves the degree to which the right to participate in public and political life is extended to all members of society. We should therefore expect a positive correlation between a dichotomous variable,



indicating whether Elazar coded a particular state as moralistic, and our estimates of macro-tolerance, and indeed, the point-biserial correlation is .85. We should further expect a negative correlation between political tolerance and an indicator for traditionalistic states, which we do in fact observe ( $r = -.88$ ). We do not expect individualistic states to be particularly high or low in macrotolerance, which is confirmed by the weak correlation of  $-.13$ . Finally, we would also expect a negative correlation between tolerance and Sharkansky's (1969) unidimensional recasting of Elazar's typology, which ranges from purely moralistic states at the low end to purely traditionalistic states at the high end, with individualistic states in the middle. The observed correlation is  $-.83$ .

These two sets of correlations show that our measures are indeed associated – often very strongly – with existing state-level measures of political tolerance and political culture. But as a final test of validity, we correlate our measures of macro-tolerance with state partisanship, ideological identification, and the 2008 election outcomes.<sup>9</sup> We use these as a test of *discriminant* validity because we do not expect tolerance to be closely related to these electoral variables. As Table 2 shows, there is indeed no correlation between state partisanship and tolerance ( $r = -.05$ ), and only modest correlations with election outcomes ( $r = .38$ ) and ideological identification ( $r = -.48$ ). It is thus clear that our measure of political tolerance is capturing an aspect of state political culture that is distinct from the red state versus blue state divide that animates much contemporary research in American political behavior.

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<sup>9</sup> Partisan and ideological identity are calculated using Gallup polling data, which were collected weekly over the period 2008-2011, with a total sample size of over 300,000 respondents.

## MEASURING STATE-LEVEL PROTEST

The analysis of collective action requires data on incidents of protests, demonstrations, sit-ins, boycotts, riots, etc. that occur in particular geographical areas over particular periods of time (see Olzak 1989). The method has traditionally been to read through newspapers covering the period of time in question, hand coding incidents of collective action (Earl et al. 2004). To reduce the cost of such laborious exercises, researchers have typically focused their efforts on a single newspaper source, usually *The New York Times* (Olzak 1989). For example, the Dynamics of Collective Action (DCA) – perhaps the most renowned of the hand-coded event datasets – collected data on incidents of collective action across the United States from 1960 to 1995 by reading every edition of the *New York Times* over that 35-year period (e.g. Earl, Soule, and McCarthy 2003).

The DCA dataset, and others like it, enabled a giant leap forward in the study of collective action. However, the validity of such event data has been criticized for its reliance on a single source. *The New York Times*, for example, has been shown to record a greater proportion of the collective action events occurring in New York state, and the East Coast more generally, than elsewhere in the country (Davenport 2010). Furthermore, human coders are prone to error: Hanna (2014) finds that even the DCA dataset misses some protests that were in fact reported in the edition of *The New York Times* in question.

In response to these concerns, as well as the costs of hand-coding years of newspapers, scholars have turned to automated, machine-coding of event data (for an introduction, see Schrodtt 2012 and the other papers in the 2012 special issue of *International Interactions*). Automated data are believed to be at least as accurate as human-coded events data, and far more comprehensive. Concluding from an early validation test, King and Lowe (2003, 636) note:

“there would now seem to be little contest between the machine and human coding methods.”

## **Measuring Protest Incidence Using GDELT**

We use data from one of these automated data collection projects, the Global Database on Language and Tone (GDELT), to measure the incidence of political dissent in the states.<sup>10</sup>

GDELT is a relatively new dataset that codes political events beginning in 1979 and continuing until the present day, using a corpus of news sources including *Agence France Presse*, *Associated Press*, *Google News*, *New York Times*, and *Xinhua*. Events are identified, parsed, and linked across news stories, with the type and location of action and the type and identities of actors recorded wherever possible (see Leetaru and Schrodtt 2013 for further details).

GDELT has attracted a fair amount of criticism in its short life, so we pause to address these concerns. First, commentators have claimed that GDELT includes data of unknown, perhaps quite poor, but certainly varying, coverage across non-Western countries (Hammond and Weidman 2014; Keeting 2013). Our focus on the United States, with its virtually saturated news coverage, means we avoid this problem altogether.

A second criticism of GDELT, and one that is relevant to our analysis, is the degree to which the data contain misclassification errors. Raw GDELT event counts are thought to include a large number of false positives. The underlying program either misinterprets the language in some news reports, thus falsely counting an event where none existed,<sup>11</sup> or it fails to link separate news reports of a single event together, thus counting one event more than once (Leetaru and

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<sup>10</sup> In recent years, several events data collection projects have emerged, but only GDELT includes historical (i.e., pre-2014) data on political dissent and protest in the United States.

<sup>11</sup> Ward et al. (2013) provide the illustration of international trade or currency “wars” that might be counted as conflict events.

Schrodt 2013). This propensity towards false positives appears to have increased over time (Ward et al. 2013).

A few researchers have evaluated such concerns by comparing GDELT counts of protests to data obtained from other sources. Hanna (2014), for example, compares the monthly incidence of protests in the United States between the years 1979 and 1995 as measured by GDELT and the DCA project, finding that the two time-series are uncorrelated ( $r = -.11$ ). Ward et al. (2013), on the other hand, find that GDELT counts of daily protests in Egypt during the months of November 2011 and November 2012 are strongly and positively correlated ( $r = .84$ ) with counts obtained from the Integrated Crisis Early Warning System (ICEWS), another automated event-coding dataset. These two tests both examine the longitudinal accuracy of GDELT protest data, but they arrive at very different conclusions.

Our research design and data needs, are, however, cross-sectional. We have reason to suspect that GDELT provides better cross-sectional measures of protest incidence than it does longitudinal measures, because the increasing false positive rate might be expected to occur in all cross-sectional units under investigation. To verify these intuitions, we conducted our own validation exercise of GDELT measures of cross-state levels of protest. Our approach follows that of Hanna (2014) in comparing GDELT and DCA data. It differs in that we are interested in cross-sectional, not longitudinal correlations. Specifically, we compare the total incidence of protest for each of the 48 contiguous states obtained from GDELT with those obtained from the DCA dataset. The timeframe is the years 1979 to 1995, both inclusive, which is the period that GDELT and DCA overlap. Even using the raw GDELT counts of protest, we find that the Spearman's rank-order correlation with the annual counts of protest as measured by the DCA

dataset is a substantial .83.<sup>12</sup> This is a very encouraging finding given the different sources of data and slightly different definitions of collective action used in each.

Although the raw GDELT measures perform well in cross-sectional comparisons with the DCA from 1979 to 1995, the problem of false positives appears to have become more pronounced in recent years. For example, according to our raw GDELT measures of protest incidence, there were around 2,500 protests in New York state annually over the 2007 to 2011 period in which we are interested. The DCA data – which are gathered from the *New York Times*, and thus ought to be reasonably accurate for New York state – report the average annual incidence of protest in this state between 1955 and 1995 to be 206, less than one tenth the incidence measured by GDELT.

We therefore adopt the advice of Yonamine (2013) and filter the raw GDELT data in various ways to remove false positives. We remove would-be protest events that (1) are not mentioned in the first paragraph of a news report, are (2) mentioned in only one news report, and (3) specify a protagonist that is coded as government, media, or international. We also aggregate events by day-state combinations such that there is, at most, one protest counted per day and state. These “highly filtered” annual incidences of protest form our main outcome variable.<sup>13</sup>

The data are reported in Table 1 (above). Total incidence over these five years ranges from 86, for North Dakota, to around 1,382 for California (with the respective annual incidences being 17 and 276). Clearly, incidence is a function of the population of a state. It is necessary in such situations to adjust for the increasing opportunities for protest that come from larger

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<sup>12</sup> See the Appendix for further details.

<sup>13</sup> We replicate our analyses using a secondary measure of protest incidence obtained by applying only the first three of these four filters.

populations by modelling the rate of protest rather than the raw incidence (e.g., Gelman and Hill 2007).<sup>14</sup> We report the rate of protest in the third column in Table 1.

Our outcome variable is the incidence of protest across the US states over the period 2007 to 2011. As Table 1 (above) indicated, the incidence of protest is heavily influenced by the opportunity for protest. It is thus necessary to adjust for the varying population sizes of the states. There are two ways to do so. The first is to use a count model, with the log of the state population as an offset variable.<sup>15</sup> Another option is to model the rate directly by moving the log of the state population to the left-hand side of the equation, as a denominator, and using a linear model. A linear model is reasonable here because our cross-state counts of incidence are large, typically in the hundreds, which means that the logged rates of dissent are roughly normally distributed. The linear model is additionally convenient because it also allows us to move seamlessly to the two-stage-least squares estimates we later introduce. We therefore use linear models in the ensuing analysis, with negative binomial models included in the Appendix for comparison. Our findings are not dependent upon any of the available modelling strategies.

## **TESTING THE EFFECT OF MACRO-TOLERANCE ON PROTEST**

We turn now to the primary contribution of this paper: testing the effects of macro-tolerance on the rate and incidence of dissent in the American states. Our analysis begins with several regression models. With limited degrees of freedom and protest possibly being endogenous, we

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<sup>14</sup> We define the rate of protest in this paper as the natural log of the quotient of incidence of protest and state population in 100,000s. See below for further details.

<sup>15</sup> The logarithmic transformation is used because it is the canonical link function in count regression models. Further details on this issue, and model specification more generally, are provided in the Appendix.

then turn to an instrumental variables approach to determine if there is causal effect of culture tolerance on protest.

### **The Association Between Rates of Protest and Macro-Tolerance**

We begin by examining the bivariate relationship between macro-tolerance and the rates of protest in the states. This is illustrated by means of a scatterplot, shown in Figure 1. As the figure makes plain, the data reveal a positive and moderately strong relationship between macro-tolerance and protest ( $r = .51$ ): protests are more likely to take place in states with tolerant political cultures.

To address the question of whether this correlation persists once we adjust for other known determinants of protest, we specify several basic OLS models, as shown in Table 3.<sup>16</sup> These purpose of these models is not necessarily to estimate the causal effect of macro-tolerance on protest, but is rather to examine the robustness of the correlation between macro-tolerance and protest when adjusting for the effects of other covariates.<sup>17</sup>

[PLACE FIGURE 1 ABOUT HERE]

Because organizational resources and political opportunities are thought to be more important in determining protest than grievances, we focus on including measures of the former.

In any case, rates of general protest, of the sort we examine, are unlikely to have a single

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<sup>16</sup> All explanatory variables are standardized to range from 0 to 1. Because Figure 1 offers reason to suspect that the error variance increases with levels of macro-tolerance, we use heteroskedastic-consistent standard errors in all linear models used in this paper.

<sup>17</sup> Neither is it our task to test alternative theories of protest incidence. To do so would require a larger dataset featuring incidence of dissent measured at a more granular level, and over a larger period of time. While GDELT allows for such an expanded dataset, our constraint is with the measure of macro-tolerance, our main explanatory variable of interest.

common source of grievance. We therefore include a set of four variables measuring the organizational resources and political opportunities available for protest, and which consequently can be expected to shape the rate of protest. First, because the density of social and community organizations is likely to facilitate protest (McAdam 1982; Piven and Cloward 1977), we include a measure of *voluntary organizations per person* (in 2009). Second, efficacious people are more likely to protest than those who believe they can have no influence on politics, so we control for *levels of education* (Verba, Scholzman, and Brady 1995). Third, higher levels of *income inequality* can be expected to reduce protest, by diverting resources away from the average citizen and by increasing elite opposition to mass mobilization (Dahl 2006, 85-87; Solt 2008; 2015). We measure state inequality using the average Gini coefficient from 2007 to 2011. Finally, the degree of *electoral competition* stimulates potential alliances between representatives and protestors, which we measure using the number of competitive state house races in the 2009 to 2011 electoral cycle (Costain 1992; Jenkins, Jacobs, and Agone 2003; Tilly 1978). In addition, we control for the *percent of state residents who are conservative*, *percent religious conservative*, and *percent black* because of the important roles that these variables play in state politics and political culture (e.g., Gibson 2010; Hero and Tolbert 1996).

[PLACE TABLE 3 ABOUT HERE]

The first model in Table 3 confirms the positive and significant association between macro-tolerance and rates of protest. The second model adds four additional indicators of protest determinants, as well as the three control variables. Two of these covariates have significant effects, and both as expected. The prevalence of voluntary organizations in a state is positively associated with rates of protest, while the level of inequality is negatively related to protest. Neither the level of education nor the competitiveness of state house elections shows a



significant relationship with rates of protest. The most important finding from these models, however, is that macro-tolerance retains a positive and significant effect in all models. Having controlled for some potential correlates of protest and state politics, we are entitled to conclude that the correlation between macro-tolerance and protest is not obviously spurious.<sup>18</sup>

Nevertheless, there is still ample reason to doubt whether these results reflect a causal effect of macro-tolerance on protest. With only 48 observations, we have limited degrees of freedom to include additional control variables. Moreover, following Gibson (1989), we suspect that tolerance may be endogenous to levels of protest: while intolerance may dampen the expression of dissent, the incidence of protest, particularly if aggressive or violent, may dampen tolerance. In such cases, control variables are of little analytical use.

### **Instrumental Variable Analysis**

To test the hypothesis that macro-tolerance has a causal effect on dissent, we move beyond a simple regression framework and turn to the method of two-stage least squares (2SLS). This method requires that we find an instrumental variable for macro-tolerance. A valid instrumental variable should affect the explanatory variable, according to some existing theory or evidence, but not affect the outcome variable, except through its possible effects on the explanatory variable. If such an instrumental variable can be found, it can be used to estimate the causal effect of the explanatory variable on the outcome variable. We propose that macro-level

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<sup>18</sup> This result holds when we use another, more lightly-filtered measure of protest from GDELT, and when we use negative binomial rather than linear models.

*neuroticism* provides a valid instrument for macro-tolerance.<sup>19</sup>

Neuroticism (versus emotional stability) is one of the major dimensions of personality variation according to the Five-Factor Model (FFM; McCrae and Costa 2003), which is now the dominant personality taxonomy in both psychology (Digman 1990) and political science (e.g., Gerber et al. 2010a; Gerber et al. 2011; Mondak and Halperin 2008). The FFM posits that personality varies according to five basic dimensions: (1) extraversion versus introversion, (2) agreeableness versus antagonism, (3) conscientiousness versus lack of direction, (4) neuroticism versus emotional stability, and (5) openness versus closedness to novel experiences. There is a burgeoning literature on measuring the aggregate FFM personalities of geographic regions, including the American states (e.g., McCrae et al. 2005; Mondak and Canache 2014; Rentfrow, Gosling, and Potter 2008). We obtain our measures of state-level neuroticism from Rentfrow, Gosling, and Potter (2008), who used a large online survey to collect personality measures on over 600,000 individuals living in the United States between 2000 and 2004 (see also Mondak and Canache 2014).

In adopting macro-level neuroticism as an instrument for macro-tolerance, we are mindful of the two main criteria for valid instruments: a non-zero and substantial association between the instrument and the endogenous independent variable, and the ignorability of the instrument with respect to the dependent variable, conditional on the endogenous independent variable (Sovey and Green 2011). We explain below why we think both of these conditions hold.

The first condition requires that neuroticism have an effect on political tolerance. The

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<sup>19</sup> We also devoted some time to searching for an instrumental variable for protest, so as to identify the effect of the reverse causal pathway, but concluded that no sufficiently valid instrument could be found.

literature is replete with studies showing that variables such as psychological insecurity (Sullivan, Piereson, and Marcus 1982), self-esteem (Sniderman 1975), and threat perceptions (Gibson and Gouws 2003) are determinants of tolerance. While these variables differ in important ways, all are clearly related to neuroticism, which, according to the FFM, includes anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability as components, or “facets” (McCrae and Costa 2003). Indeed, Marcus et al. (1995, 168-172) finds that neuroticism is the only personality trait to have direct effects on tolerance, with openness and extraversion having indirect effects. We therefore conclude that it is reasonable to posit that neuroticism is associated with political tolerance, at least at the individual level.

We further expect that macro-level neuroticism will be linked with macro-level tolerance. Fortunately, this requirement can be empirically verified. The first column of Table 4, which reports the first stage equation from our 2SLS analysis, shows that the effect of neuroticism on our measure of state level tolerance is negative – as we would expect – significant, and substantively large. More importantly, the *F*-test for the strength of the instrument is well above the threshold of ten recommended by Sovey and Green (2011). Indeed, it is by far the most important personality predictor of state-level tolerance.

[PLACE TABLE 4 ABOUT HERE]

The second criterion for a valid instrument – the ignorability condition – requires that our instrument, neuroticism, be exogenous to the dependent variable of rates of dissent conditional on levels of political tolerance. Is it reasonable to assume, in other words, that neuroticism might influence protest *exclusively* through the pathway of decreased tolerance?

At the micro-level, neuroticism has been linked with a reduced likelihood of individual political participation, including both electoral turnout and campaign activities such as donations,

volunteering, and wearing candidate buttons (Gerber et al. 2010b; Mondak and Halperin 2008; Mondak et al. 2010). It has, however, been repeatedly shown to have little to no relationship with collective political behaviors such as rally attendance or protest participation (Gallego and Oberski 2012; Ha, Kim, and Jo 2013; Mondak and Halperin 2008; Mondak et al. 2010; Opp and Brandstätter 2010). And although there is no existing research on state-level personality and political participation, state-level neuroticism has been shown to have a negligible relationship with participation in social networks (Rentfrow et al. 2008). There is therefore no established reason to believe that state-level neuroticism has any causal effect on rates of protest other than via the pathway running through political tolerance – the pathway we hypothesize.

However, the validity of neuroticism as an instrument may still be threatened if it is correlated with other determinants of rates of protest. A particular concern is with other aggregate personality traits, because, although the five dimensions of the FFM are conceived as conceptually independent, they are not necessarily empirically orthogonal. Openness to experience, moreover, has been shown to correlate, at the individual level, with protest participation (Ha, Kim, and Jo 2013). To mitigate any possibility that our instrument is rendered non-ignorable through such indirect effects, we will therefore include measures of the other four personality dimensions in the instrumental variable equations.

Table 4, second column, shows the results of the second-stage of the 2SLS model. The 2SLS estimate of the effect of political tolerance on rate of protest is of reduced magnitude when compared to the OLS estimates in Table 3 and the third column of Table 4, but remains positive, large, and statistically significant. To the extent that macro-level neuroticism is a valid instrument for macro-tolerance, this effect can be interpreted as an estimate of the causal effect of contextual levels of tolerance on the rate of protest.

This effect is not only significant, but is substantively large as well. The model predicts that an increase in tolerance from one standard deviation below the mean (approximately as tolerant as Georgia) to one standard deviation above (as tolerant as Vermont) would result in a substantial 51% increase in the rate of protest. We should be cautious about mapping these predicted effects back to incidence, given our concerns that our measures of protest may be inflated. However, caveats aside, were a state with average levels of protest incidence, such as Colorado or Connecticut, to show such a boost in political tolerance, our model and data predict an additional 38 annual incidents of protest. The causal relationship between tolerance and protest, we conclude, is formidable.

## **DISCUSSION AND CONCLUDING COMMENTS**

This paper has addressed the hypothesis that a culture of political intolerance constrains the public expression of political views. In particular, we test the causal linkage between levels of macro-tolerance and rates of protest in the states. To do so, we first develop new measures of both macro-tolerance and rates of protest. Regarding the former, we extend the recently-developed method of multilevel regression and poststratification to the measurement of state political culture. We show that our measure is correlated both with existing estimates of state political culture as well as previous, albeit limited, measures of macro-tolerance. An important byproduct of our research is the provision of this index of macro-tolerance for other researchers.

With valid measures in hand, we test the effect of macro-tolerance on rates of protest. The correlation between these variables is reasonably strong and robust across a number of different model specifications. We suspect, however, that rates of protest may shape political tolerance, as well as the reverse, or indeed, that both variables may be shaped by some third,

unobserved factor. We therefore turn to two-stage-least-squares to test whether macro-tolerance has a causal effect on rates of protest, using state levels of neuroticism as our instrument. Although reduced in magnitude from our OLS results, the 2SLS model points toward macro-tolerance having a significant and substantial causal effect on rates of protest.

We have tested our hypotheses at the macro-level under the theory that cultural values can constrain individual-level behavior. We are quite attracted to the theory of the spiral of silence as a micro-theory, but, obviously, our research has not directly investigated that theory. There are no doubt a variety of individual-level differences in how people respond to cultural norms and constraints; our focus on aggregate rates of protest cannot take these differences into account. We have tried to carefully tailor our conclusions to our macro-level analysis, although we certainly recognize that many important micro-level quandaries remain.

We also fully recognize the limits resulting from thinking about a dynamic longitudinal process in cross-sectional terms. Both political tolerance and protest levels change over time, often in interconnected and fairly complicated ways. Gibson's (1989) cross-sectional research gave a hint about this interaction, as in his suggestion that tolerance made campus-level protests possible, but that campus-level protests stimulated the passage of repressive legislation by political elites. Cross-sectionally, political tolerance was associated with political repression, even if there is obviously more to the causal story. Many scholars, it seems, understand their processes to be dynamic even if their data are not. We have shown that a culture of political tolerance generates more protest activity, but there is undoubtedly more to be said were we to try to understand how the relationships evolve over time.

Our understanding of protest is also under-theorized as to institutional influences, as in its silence about the role of law and courts. All states are governed, of course, by the federal first

amendment, but not all state judges embrace those freedoms with equal vigor. Even today, states differ in their promulgation of hate-speech laws, laws that are often used to limit the rights of political dissidents (e.g., Gibson and Bingham 1985). In the same vein, protests do not take place in states; they take place in local communities, and, throughout American history, local communities have passed countless ordinances making protest more or (usually) less difficult. We contend that we have expanded the model of protest activity to include political culture influences; the model could certainly stand further additional enlargement.

Our findings have implications, we think, for debates around civil liberties such as the freedoms of speech and assembly, which have leapt back onto the agenda in the United States and other long-standing democracies. In particular, concerns about everyday speech and behavior that might be interpreted as prejudiced, “blasphemous,” or politically extreme, have strengthened the argument *against* the freedoms of speech and assembly, or at least for limiting these freedoms. While our evidence does not suggest where exactly these limitations should lie, if at all, they do bolster the argument *for* putting up with a variety of unwelcomed speech.

The case for civil liberties rests upon a normative claim that the free circulation of ideas, no matter how undesirable, is necessary for ensuring the vitality of democracy. The line from the freedoms of speech and assembly to democratic vitality runs through the value of political tolerance.<sup>20</sup> Lack of tolerance – limiting the rights of those who hold unsavory political opinions to press their points-of-view – not only stifles these unpopular voices, but risks creating a broader spiral of silence in which all minority and dissenting views are quieted. We come back

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<sup>20</sup> Gibson and Gouws (2003) acknowledge that at the very extreme, increases in tolerance may be harmful to democracy (i.e., the relationship between tolerance and democracy is not entirely linear). As a practical matter, they also argue, this is of little consequence because we have never observed a polity characterized by extreme levels of political tolerance.

to Gibson's (1995) findings: blacks perceive greater political freedom as available to them in communities in which there is *greater tolerance of racist speech*. Gibson points out that blacks, of course, do not want to be subjected to racist taunts. But where racist speech is tolerated, so too are other "weird" or "extreme" views, making for tolerant cultural values that wind up setting everyone free. In the absence of a culture of political tolerance, a culture of conformity and submission may easily emerge.

We offer the first evidence since Gibson (1992, 1995) that a tolerant political culture does indeed facilitate openness and democratic debate. In particular, our results show that state-level political tolerance is associated with greater levels of protest. The level of protest expressed in a polity may not correspond in a linear fashion with the vitality of its democracy, but protest is undoubtedly a necessary condition for a healthy democracy. It is the ability for citizens to freely gather, march, protest, and express their opinions outside of routinized (and often controlled) political channels that separates democracy from the various authoritarian facsimiles in circulation today.



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**Table 1.** Levels of Macro-Tolerance and Protest in the States, 2007-2011

State	Macro-tolerance	Incidence of protest	Rate of protest	State	Macro-tolerance	Incidence of protest	Rate of protest
Mississippi	.00	241	2.09	Wisconsin	.56	343	1.80
Arkansas	.06	183	1.84	Pennsylvania	.56	659	1.65
Alabama	.07	335	1.95	Kansas	.57	272	2.25
Texas	.08	922	1.30	New Mexico	.57	209	2.32
Louisiana	.13	321	1.96	Iowa	.58	307	2.31
Kentucky	.13	221	1.63	Nebraska	.58	172	2.24
Tennessee	.15	312	1.59	New Jersey	.60	442	1.61
Oklahoma	.18	360	2.26	California	.60	1382	1.31
South Carolina	.19	364	2.06	North Dakota	.62	86	2.55
West Virginia	.22	186	2.31	Nevada	.65	445	2.80
Georgia	.22	366	1.33	Maine	.69	211	2.77
North Carolina	.25	451	1.55	Minnesota	.69	375	1.96
Florida	.29	808	1.46	Connecticut	.69	360	2.31
Missouri	.40	251	1.43	Arizona	.72	501	2.06
Indiana	.40	579	2.19	Utah	.73	296	2.37
Virginia	.45	526	1.88	Massachusetts	.75	833	2.54
Delaware	.45	141	2.75	Idaho	.79	486	3.43
Illinois	.48	786	1.81	New Hampshire	.80	254	2.96
Ohio	.48	504	1.47	Vermont	.81	151	3.18
New York	.51	1301	1.90	Oregon	.92	362	2.25
Michigan	.52	467	1.55	Wyoming	.96	100	2.88
Rhode Island	.54	180	2.84	Washington	.96	479	1.96
Maryland	.54	559	2.27	Montana	.98	172	2.86
South Dakota	.54	101	2.52	Colorado	1.00	358	1.96

Macro-tolerance: MRP estimates of state levels of political tolerance from 2007–2011. Incidence of protest: total number of protests per state over the 2007–2011 period. Rate of protest:  $\log(\text{incidence} / \text{state population in } 100,000\text{s})$ . States are sorted from low (0) to high (1) macro-tolerance.

**Table 2.** Convergent and Discriminant Validity of Macro-Tolerance Estimates

Variable	Correlation	<i>N</i>
Existing measures of macro-tolerance		
Brace et al. (2002) [1978-1998 data]	.77	43
Gibson (1989) [1973 data]	.48	35
Gibson (1988) [1954 data]	.70	36
Elazar's political culture typology		
Traditional states (1966)	-.88 <sup>†</sup>	48
Individual states	-.13 <sup>†</sup>	48
Moralistic states	.85 <sup>†</sup>	48
Sharkansky scale (1969)	-.83	48
Electoral preferences		
Obama vote share [2008 data]	.38	48
Percent Republican [2008-2011 data; Gallup]	-.05	48
Percent Conservative [2008-2011 data; Gallup]	-.48	48

<sup>†</sup> Biserial correlations, otherwise Pearson's correlations.

**Table 3.** OLS Regression Models of State Rates of Protest, 2007-2011

	Model 1	Model 2	Model 3
Intercept	1.62*** (.12)	2.19*** (.59)	2.14*** (.50)
Macro-tolerance	.99*** (.23)	.99* (.48)	1.02* (.47)
Voluntary organizations per capita		.94** (.34)	.94** (.33)
Percent with high school diploma		-.81 (.56)	-.84 (.56)
Income inequality		-1.14* (.50)	-1.13* (.49)
State house two-party electoral competition		-.05 (.32)	
Percent religious conservative		.17 (.38)	.21 (.39)
Percent black		.29 (.76)	.36 (.65)
Percent Conservative		-.03 (.37)	-.04 (.36)
Adjusted R <sup>2</sup>	.25	.37	.39
Residual standard error	.45	.42	.41
N	48	47	48

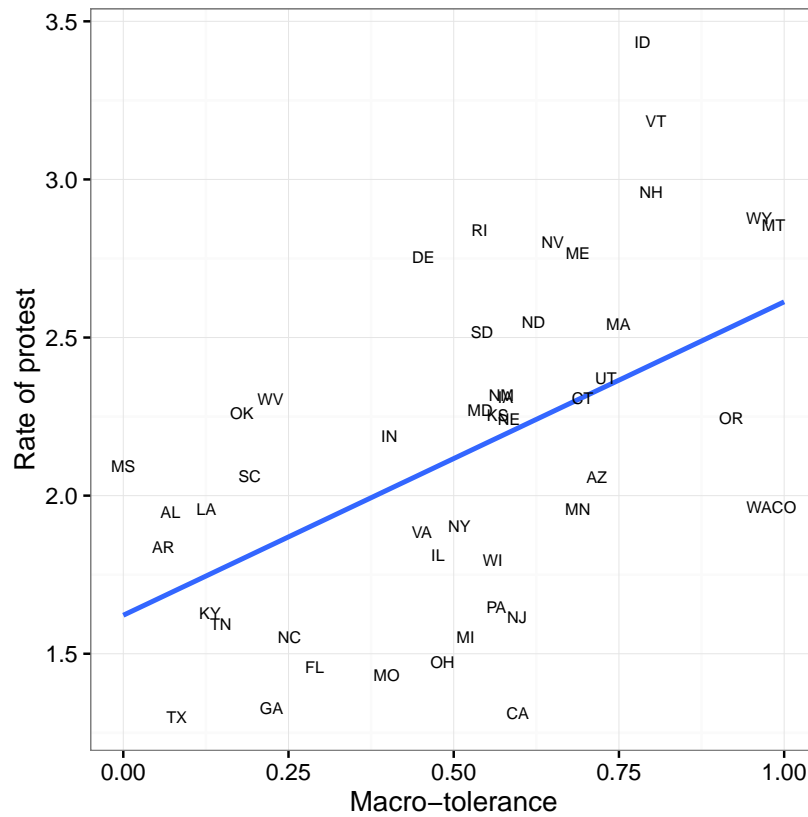
\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ . OLS regression coefficients with heteroskedastic-consistent standard errors in parentheses. Outcome variable is log(incidence of protest / state population in 100,000s). No measure of two party electoral competition is possible for Nebraska, which has a non-partisan state house, so Nebraska is not included in Model 2.

**Table 4.** 2SLS and OLS Models of State Rates of Protest, 2007-2011

	2SLS		OLS
	Stage 1	Stage 2	
Intercept	1.16*** (.23)	3.33*** (.47)	3.25*** (.45)
Macro-tolerance		.77* (.34)	.94*** (.20)
Neuroticism	-.92*** (.11)		
Extraversion	-.03 (.17)	-1.11* (.43)	-1.12* (.42)
Agreeableness	-.10 (.16)	-.31 (.35)	-.29 (.36)
Conscientiousness	-.62** (.19)	-.16 (.33)	-.12 (.30)
Openness	.25 (.19)	-1.32** (.42)	-1.36** (.43)
Adjusted R <sup>2</sup>	.53	.41	.42
Residual standard error	.19	.40	.40
F-test for strength of IV	36.30***		

$N = 48$ . \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ . OLS / 2SLS coefficients with heteroskedastic-consistent standard errors in parentheses. Outcome variable is log(incidence of protest / state population in 100,000s).

**Figure 1.** Bivariate Association Between Macro-Tolerance and Rate of Protest



N = 48. Line indicates least squares fit. Higher levels of macro-tolerance indicate greater political tolerance.  
Rate of protest =  $\log(\text{incidence of Protest} / \text{state population in } 100,000\text{s})$ .