

Fight the Youth: Youth Bulges and State Repression

Ragnhild Nordås Peace Research Institute Oslo (PRIO)
Christian Davenport University of Michigan

It is generally acknowledged that large youth cohorts or “youth bulges” make countries more susceptible to antistate political violence. Thus, we assume that governments are forewarned about the political demographic threat that a youth bulge represents to the status quo and will attempt to preempt behavioral challenges by engaging in repression. A statistical analysis of the relationship between youth bulges and state repression from 1976 to 2000 confirms our expectation. Controlling for factors known to be associated with coercive state action, we find that governments facing a youth bulge are more repressive than other states. This relationship holds when controlling for, and running interactions with, levels of actual protest behavior. Youth bulges and other elements that may matter for preemptive state strategies should therefore be included in future empirical models of state repression.

Political authorities know that youth are generally overrepresented in dissident and revolutionary activity and therefore regularly track younger citizens.¹ Yet the state repression literature has thus far overlooked the effects that large youth cohorts, so-called “youth bulges,” can have on the decision to repress. In this study, we hypothesize that governments will be more repressive when faced with a particularly large youth cohort as an active measure to avoid future behavioral challenges. We find support for this hypothesis in our empirical analyses.

Over the last 40 years, research on state repression has coalesced around a set of variables capturing political system type, economic development, and population

size (Abouharb and Cingranelli 2009; Carey 2009; Davenport 1995, 2007a, 2007b; Davenport and Armstrong 2004; Hafner-Burton 2005a, 2005b, 2008; Henderson 1993; Hibbs 1973; Krain 1997, 2005; Poe and Tate 1994; Richards 1999; Richards and Gelleny 2007; Wood 2008). These variables are consistently important for understanding repressive behavior across time, space, context, operationalization, and methodological strategy.²

Revisiting the core model of state repression, we contend that demography has been largely underdeveloped and that the existence of large youth cohorts is overlooked but critical for understanding relevant government behavior. Previously, researchers have focused on national population size, arguing that this indicates what level of

Ragnhild Nordås is Senior Researcher at the Peace Research Institute Oslo (PRIO), Hausmannsgate 7, NO-0186 Oslo, Norway (ragnhild@prio.no). Christian Davenport is Professor of Political Science, and Faculty Associate, Center for Political Studies, University of Michigan, 426 Thompson Street, Ann Arbor, MI 48104-2321 (christiandavenport@mac.com).

We thank the following people for comments and suggestions: Kraig Beyerlein, Henrik Urdal, Kristine Eck, Joakim Kreutz, Monica Nalepa, participants at the Peace and Conflict Workshop 2011 at the Kroc Institute for International Peace Studies, University of Notre Dame and five anonymous reviewers and the *AJPS* editors. Replication data are found in the *AJPS* Data Archive on Dataverse: <http://dvn.iq.harvard.edu/dvn/dv/ajps>.

¹This is clearly manifest in government ministries and programs throughout the world and over time that specialize in such behavior (e.g., Rwanda’s Ministry of Youth, Culture, and Sport; Tunisia’s Ministry of Youth, Sports, and Physical Education; and in Russia, the Coordinating Council of Patriots).

²Some have begun to explore intersections between these elements, revealing new ways that these variables matter (Davenport 2007a). Researchers have also attempted to add to the central core of explanatory factors but with variable success: for example, mixed or limited support has been found for a relationship between repression and the openness of international trade (Hafner-Burton 2005a), restrictive economic practices (Abouharb and Cingranelli 2009), the signing and ratification of international treaties (e.g., Hafner-Burton 2005b; Hathaway 2002; Simmons 2009), and naming and shaming (e.g., Hafner-Burton 2008). Throughout all of these analyses, however, the core variables stand robustly supported.

American Journal of Political Science, Vol. 00, No. 0, 2013, Pp. 1–15

social control is needed for political leaders to stay in power (e.g., Henderson 1993).³ Focusing on population size, existing literature assumes that larger populations present more of a control problem than smaller populations, and thus one should expect to find more repressive state action in more populous countries than in less populous ones. We propose, however, that governments not only pay attention to the total population size but that they also pay particular attention to those parts of the population that could pose a threat to their power, their interests, or their supporters. In this context, youth are often expected to be the most likely to challenge authority, and a youth bulge can therefore be particularly threatening to political authorities.

Examples of youth rebelliousness are abundant both in the contemporary world and from a historical perspective—from such well-known cases as the French Revolution to the Tiananmen Square protests in China.⁴ Most recently, this phenomenon was seen in the so-called “Arab Spring,” where the perception of “dangerous” youth dominated public discourse in most Middle Eastern countries. These regimes have ranked among the most repressive in the world, while propagating symbolic policies of liberalization and civil society development (Yom 2005). To the rulers in the region, the large number of youth represented a threat, and their fears were realized when, inspired by the uprising in Tunisia, masses of young people (in particular) took to the streets in a series of Arab nations.

The predictability of youth bulges and the probabilities of unrest and challenge that might arise from these directly affect regimes’ threat assessments and cost-benefit calculations of repression, and they may make the cost of repressive measures seem necessary to incumbents. Acknowledging the potential rebelliousness of youth, we maintain that governments will adjust their attempts to control society in accordance to the size of the youth cohorts.⁵ When these cohorts are large, authorities will employ greater amounts of repression to quell any emerging threats, signal to the relevant population that challenges will not be tolerated, and reduce the possibility that challenges spread to the most biographically

“available”⁶ parts of the population (e.g., Beyerlein and Hipp 2006; McAdam 1986; Nepstad and Smith 1999; Snow et al. 1980). As such, governments do not simply view populations as some undifferentiated mass, but rather they see a particular need for repression to stay in power when facing large youth cohorts. This reasoning is in line with the general orientation in the state repression literature that sees states as active agents in political violence. This active role is often neglected in the literature focusing on youth bulges and their participation in revolution, protest, and rebellion. The current study therefore bridges these two literatures and can contribute to advancing both.

Despite the many examples of an association between youth and rebellion, this is the first investigation of the relationship between youth bulges and state repression.⁷ From our research, we find strong support for the theoretical expectation that youth bulges matter for government repressive action. Confronted with a particularly large youth cohort, political authorities are more likely to repress—controlling for the standard political, economic, and demographic variables included in existing literature. Most importantly, this relationship is not simply a function of the level of ongoing protests. An implication of this finding is that youth cohort information should be included within future models of state repression and that scholars should account for how states proactively deal with potential challenges.

Below, we identify the guiding theoretical orientation and core explanatory factors for government repressive action and then make the case for including youth bulges among them. Following this, we discuss our data, methodological approach, and empirical findings. We conclude with a discussion of the implications of our work for research into state repression and political challenges as well as for public policy.

Why Governments Repress

State repression is most often understood as the result of a cost-benefit analysis by political authorities. The main benefits are considered to be the sustained access to rents

³Some research has also considered whether particular religious groups or ethnic heterogeneity constitutes a problem but with less substantive and robust findings (de Soysa and Nordås 2007; Lee et al. 2004; Walker and Poe 2002).

⁴Of course, most youths do not rebel, but there is a clear overrepresentation of young people in rebellious activities.

⁵The age group of 15–24 years is considered “youth” by the United Nations and is commonly studied as the relevant population in research on youth bulges (see Urdal 2006).

⁶“Biographically available populations” refers to those with few personal constraints who increase the costs of movement participation—such as dependents and capital.

⁷However, it is consistent with other research where it is identified that governments consider the characteristics of selected target populations in determining if, and at what level, they will use repression (e.g., Davenport et al. 2011), as well as research that focuses on the political importance of youth bulges within situations of intrastate armed conflict (e.g., Cincotta et al. 2003; Mesquida and Wiener 1999; Urdal 2006).

following from the maintenance of political office and power. States, in other words, are assumed to be seeking a continuation of the status quo and political quiescence in the population (Davenport 2007b).⁸ Based on this fundamental interest, authorities will make assessments of the threats to their rule and the costs incurred as well as benefits gained by engaging in various policies to defeat challengers.

In the decision-making process, rulers have to assess the various tools at their disposal, ranging from draconian repression and infringing on physical integrity rights to more moderate repressive measures, granting symbolic concessions, or buying off possible opposition through private side payments and social benefits. The options for and costs of applying various measures for maintaining the status quo may vary between governments, depending on the skills and expertise of the repressive apparatus or the perceived threats which might vary in type and severity.⁹ The last is typically believed to be the most important (e.g., Davenport 1995; Hibbs 1973; Pierskalla 2010).

For example, if threats are perceived to be large and the costs associated with staying in power are substantial, then political authorities will consider it necessary to make large investments in measures to counter the threat. Overall, it is assumed that the larger or more significant the threat, the more likely the state will be to apply repressive measures, all else being equal. It is, however, necessary to also take into account how threats can be diffuse or specific, and how this might be important for understanding repressive action taken by the state. Related to this, recent work has suggested that the repression decision calculus is guided not only by the overarching structure of the political economy and the type and frequency of behavioral challenges put forward against it, but also by *who* precisely is challenging authorities (e.g., Davenport et al. 2011). In the Davenport et al. study, the ethnic or racial characteristics of perceived challengers are important for the degree of threat perceived and the likely repressive response from the state. This specification of the theoretical understanding of repression is important because it suggests that governments are not only mechanistically responding to dissent, terrorism, and insurgency but also to the identity of the perpetrators of this activity—and

that this factors into the calculus of the nature of the threat and the chosen response.

We propose that in order to properly specify the likely cost-benefit analysis behind states' decision to repress, states actively monitor and factor in the size of its youth cohorts and consider youth bulges a significant threat that can be costly to ignore. We also suggest that because youth bulges are relatively predictable, the possibility of preemptively acting to prevent problems escalating due to demographic pressures becomes viable as well as economical.

To date, existing research has been focused more on the costs of repression than upon the benefits.¹⁰ In looking for relevant cost factors, scholars have mostly examined how structural characteristics are related to state repression. For example, researchers find consistent support for an effect of political democracy (Davenport 2007; Davenport and Armstrong 2004; Hibbs 1973; Poe and Tate 1994). The cost of repression is believed to be higher in more democratic societies where citizens can hold leaders accountable for and sanction repressive behavior; similarly, the cost of coercion is lower in authoritarian regimes. The relationship between regime type and repression is empirically supported.

Some recent attention has been given to various external structural factors such as the influence of signing and ratifying international treaties (e.g., Hafner-Burton 2005b; Hathaway 2002), naming and shaming (e.g., Hafner-Burton 2008), and international trade (e.g., Hafner-Burton 2005a). These factors also impose costs on repressive leaders and therefore reduce the amount of repression they apply. Findings on these issues, however, have been mixed.¹¹

Common for the structural focus on costs to leaders is how governments tend to be viewed as reactive actors, responding to constraints imposed on them. We suggest that with respect to the effect of youth bulges, authorities can also be explicitly proactive. Given an emerging youth bulge, governments are unlikely to ignore an impending threat to the status quo and also unlikely to remain passive in this situation. Although they may implement various policies to deal with a large youth cohort, we

⁸Being the sole body with a "legitimate" monopoly on coercion can be interpreted as a benefit in itself, and other more specific benefits such as dependency or export profits as well as resource extraction were discussed in the 1970s and 1980s (e.g., Lopez and Stohl 1989; Pion-Berlin 1989), but these have been largely ignored since this time.

⁹There is likely to be a certain level of "bureaucratic inertia" in the policies of states and their repressive apparatus which may limit the frequency of updating information and decision-making processes.

¹⁰Little attention is given to the probability of success for these activities, but there is some sense of bureaucratic inertia within the selection through the inclusion of a lagged dependent variable. Similarly, little attention is given to alternative techniques of sociopolitical control, but this is usually addressed through the inclusion of political system type.

¹¹The first variable has not received much support or has only been found within democratic contexts; the second is supported but only for specific types of repression; the third has an influence but a limited one compared to domestic factors. Recent studies have, however, found that sanctions may prompt incumbent leaders to repress in order to secure their positions (Wood 2008).

propose that an increase in state repression should be expected. Below, we outline how youth bulges affect the cost-benefit analysis of states' decision to repress and, hence, why states may turn to repressive measures when faced with a youth bulge.

The Rebelliousness of Youth

Observations of a link between youth and political violence have a long legacy, and the evidence of such a link is extensive. Young people, particularly males, dominate insurgent armies, protests, images of terrorists and rioters, and are the most frequently associated with violent crime. This lends initial credibility to a youth-rebellion connection. Goldstone (1991, 2002) has argued that youth bulges have historically been associated with political crises and revolutions and that youth played a prominent role in political violence from the English Revolution to the revolutions of 1848. Although both England and France expanded their education systems as a measure to deal with the large youth cohorts, the flood of graduates could not be absorbed by the labor market and became a source of social instability and unrest (Goldstone 1991, 248). The work by Goldstone and others echoes a long-standing literature on the critical role of youth in radical political movements. It is thus well-known that youth play a prominent role in antiregime movements (Cohn and Markindes 1977; Lipset 1968).

Just after September 11, 2001, well-known commentator Fareed Zakaria suggested that the fact that the Arab world is going through a massive youth bulge could explain Islamic resurgence, and he drew parallels to the French Revolution and the 1979 revolution in Iran. According to Zakaria (2001), a large number of "restless young men" usually gives rise to a new politics of protest. Today, almost 70% of Iran's 68 million citizens are under the age of 30, and the vast majority of them are liberal and antiregime (Cohen 2006). The Iranian regime "seeks to prevent these political sentiments from exploding into full-scale revolution by imposing restrictions on civil liberties" (2006, 3) or, in other words, engaging in state repression. Huntington (1996) also points a finger at youth in general, and males in particular, as a problem, identifying them as a key ingredient within his clash of civilizations thesis. High birth rates in the Muslim world from the 1960s to the 1980s foreshadow the youth bulge which suggested to Huntington that the Muslim world would see increasing violence as these generations reached the ages of 16 to 30 years.¹²

¹²Interview in *The Observer*, Sunday, October 21, 2001.

Systematic empirical evidence has revealed a relationship between youth and political violence in various ways.¹³ For example, Mesquida and Wiener's (1999) path-breaking research finds that the ratio of men between the ages of 15 to 29 years, relative to those above 30 years of age, is associated with both the occurrence of conflict as well as the severity of the activity. Related to this, Urdal's (2006) work also finds that youth bulges significantly and substantively increase the possibility of internal armed conflict, terrorism, and rioting.

Given the robustness and substantive importance of these results, it is intriguing that no studies have investigated whether or how youth bulges may be associated with state repressive action. Indeed, this is particularly curious given that political leaders are more than aware of the rebellious potential in a youthful population.¹⁴ Therefore, the shadow of a contentious future suggested by a large number of political "at-risk" youth should lead states to attempt to protect the status quo through repressive means.¹⁵ This seems especially probable as demographic changes are relatively predictable and slow moving: knowing birth rates and infant mortality rates makes it possible to predict future youth bulges with reasonable accuracy.

We thus derive the following hypothesis concerning the direct relationship between youth bulges and state repression:

H1: Countries that experience youth bulges are likely to have higher levels of state repression than countries that do not experience youth bulges.

¹³The examples below refer to findings that youth bulges affect political outcomes. It is also possible that youth bulges are a result of certain political, economic, or developmental processes—that fertility and infant mortality levels are severely affected by (for example) armed conflict, extreme poverty and famine, or even harsh state repression. One can therefore hypothesize reinforcing effects between youth bulges and repression. The possible reversed effect of repression on youth bulges and the source of youth bulges are outside the scope of the current article, however. For our purposes, the critical element is the relative predictability of demographic cohorts for state authorities, since it takes nearly two decades for shocks in infant mortality and fertility to translate into large youth cohorts of 15–24-year-olds.

¹⁴For example, youth played a decisive role during Kyrgyzstan's Tulip Revolution (Khamidov 2006), in addition to the Rose and Orange Revolutions in Georgia as well as Ukraine in 2005. Out of concern for these examples, the same year the Russian Duma adopted a youth strategy reminiscent of the Soviet Communist Youth League that would include young people in labor brigades and an effort to instill state patriotism in them (Kuzio 2006). This echoes the many Ministries for Youth and Sports set up in countries such as Rwanda, Tunisia, and Egypt and by the Palestinian authorities.

¹⁵States can increase repression levels or choose not to decrease repression when they otherwise could have when faced with a youth bulge. Both paths lead to the same expectation of higher repression levels in countries facing a youth bulge.

Rather than respond to any and all youth bulges, it is possible that repression will become particularly likely beyond some “critical threshold”—i.e., the relationship between youth bulges and repression is nonlinear. Fuller and Pitts (1990), for instance, noted that unrest arises when the age cohort of 15–24 years reaches 20% of the total population, and the same critical threshold was later suggested by Huntington (1996).¹⁶ If states are attentive to the possible threshold effect of youth bulges on social unrest, they might turn to repressive action only when the youth bulge approaches the 20% mark or some other threshold. This leads to our second hypothesis:

H2: The relationship between youth bulges and repression is nonlinear, and states will increase repression levels when the percentage of 15–24-year-olds reaches a “critical level” of 20% of the total population.

We not only expect the direct effects outlined above, but we also expect two interactive influences to be important.

The first interaction concerns *political dissent and youth bulges*—repression when overt dissenting behavior is already underway. This acknowledges the fact that the perception of threat maintained by political officials does not simply involve overt manifestations of behavioral threat and the latent threat of youth bulges—viewed independently. Rather, authorities can be sensitive to the fact that, within contexts where youth bulges are present, situations of political unrest could quickly escalate out of hand. In other words, challenging activity might seem all the more threatening to political authorities in a context of large youth cohorts. Accordingly, we expect that when protest, rebellion, or insurgency is underway and youth bulges are present, political authorities should be even more inclined to engage in political repression. Based on this, we posit the following hypothesis:

H3: States will increase repression levels more in contexts of dissent than in contexts of no overt dissent, and this effect will be stronger the larger the youth bulge in the country.

The second interaction of interest concerns *political institutions and youth bulges*—fighting the youth with inclusion rather than repression. This hypothesis captures the fact that when faced with large youth cohorts, political authorities in democratic states do not have the same

incentives as more authoritarian regimes to rely upon repressive action to handle the situation. Democratic state authorities generally have stronger restrictions on executive power, such as institutional checks and balances on government activity, than do autocracies. Government coercive action can come with a particularly high premium in democratic states, as repressive leaders risk being ousted in elections (Davenport 2007). Instead, democratic regimes could attempt to minimize disruption by bringing the potential challengers back into the fold—for instance, by appealing specifically to young people during elections or channeling the youth into less disruptive activities (Earl 2003; Gamson 1975). Of course, the interest in including youth, and ability to do so, is also a function of organizational capacity. As such, authoritarian governments have less interest and less ability to channel the youth into peaceful participation, while full democracies may have both a stronger interest and greater capability.¹⁷ Democratic regimes are therefore likely to be more hesitant to use repressive activities to deal with a youth bulge. Based on this, we posit the last hypothesis:

H4: The relationship between youth bulges and state repression is stronger in nondemocratic states than in democracies.

Of course, we acknowledge that repression is not the only way that governments could respond to the “problem of youth.” As an alternative or a supplement, states can also choose other means to respond, or they can use a combination of repression and other policies intended to quell opposition and to create quiescence (Moore 2000). For example, the fundamental basis for the expectation that youth cohorts are problematic is that the large cohorts will lead to stronger competition for finite resources (such as education, jobs, housing, etc.). Grievances that emerge from a lack of access to these resources can then spur a violent uprising, as the deprived see violence as a means to redress social and economic grievances, following the basic logic of a relative deprivation model of conflict (Gurr 1970). Anticipating this, authorities may try to appease large youth cohorts by introducing financial, educational, or other incentives to meet the grievances (e.g., Gamson 1975). This includes using higher education programs, job creation, or financial redistribution or establishing

¹⁶Neither source provides any theoretical justification for this particular threshold, and Fuller and Pitts (1990) admit that this “critical level” is rather arbitrary. For a measure of youth bulges developed by Urdal (2006) of youth relative to the total *adult* population, the equivalent threshold is at 34%.

¹⁷Still, in some instances, repression in response to certain forms of opposition might be deemed acceptable to the electorate even in democracies. For instance, repression was deemed acceptable during the McCarthy Red Scare (Gibson 1988), and it is sometimes tolerated more when it is directed toward particular minorities (e.g., Davenport et al. 2011). Repressive action in response to a *youth bulge* is, however, not likely to be considered acceptable in democracies, particularly as the threats to stability associated with a youth bulge are assumed but are perhaps not yet made manifest.

patriarchal networks and corruption to gain footholds and loyalties in important segments of the youth. Such approaches may simultaneously decrease the opportunity costs of joining a rebellion, as outside options for the youth worsen (Gates 2002). The focus of this study is, however, on repressive options.

Below, we discuss how we go about examining the propositions developed above.

Data and Research Design

To test the hypothesized relationship between youth bulges and state repression, we use a cross-sectional time-series research design, which is consistent with earlier research on both topics. The unit of analysis is the country year, and the dataset covers a maximum of 180 countries in the period 1976–2000.¹⁸

Dependent Variable: State Repression

To measure repressive behavior, we use the Political Terror Scale, or PTS (Gibney, Cornett, and Wood 2011; Gibney and Dalton 1996).¹⁹ This is the most commonly used measure of state repression in the studies we build upon (e.g., Davenport and Armstrong 2004; de Soysa and Nordås 2007; Hafner-Burton 2005a, 2005b; Poe and Tate 1994; Poe et al., 1999; Wood 2008).

As conceived, the PTS is a 5-point categorical indicator of state violations of physical integrity rights.²⁰ The scale is defined as follows:

- (1) if countries are under secure rule of law, then political imprisonment and torture are rare, and political murders are extremely rare;
- (2) if imprisonment for nonviolent political activities is limited, then torture and beating are exceptional and political murder rare;
- (3) if political imprisonment is extensive, then execution and political murder may be common, and detention for political views is acceptable;
- (4) if the practices of level 3 are expanded to a larger segment of the population, then murders and disappearances are common, but terror affects

primarily those who interest themselves in political practices and ideas; and

- (5) if terror has expanded to the whole population, and state authorities place no limits on the means or thoroughness with which they pursue personal or ideological goals.²¹

The PTS coding is based on two sources: the U.S. State Department and Amnesty International. The sources have slightly diverging coverage, and both have been criticized for possible biases. Specifically, it has been argued that State Department reporting reflects political considerations and the interests of the United States to protect itself from the criticism of its allies and countries in which the United States has an interest (Poe et al. 2001, 650). Similarly, Amnesty International has been criticized for being too uncritical in their reporting on socialist regimes (Wood 2008, 500). Particularly in the earlier years of reporting on human rights abuses (1970s and 1980s), there is a nonrandom divergence between the political terror score based on Amnesty International reports and the U.S. State Department's *Country Reports on Human Rights Practices* (Poe et al. 2001). To address these issues, we run models based on Amnesty International *PTS(A)* and the State Department *PTS(S)* separately.²² In our sample, the correlation between PTS (S) and PTS(A) is 0.79.²³

Main Explanatory Variable: Youth Bulges

Youth bulges are exceptionally large cohorts of individuals in the age group of 15 to 24. The mean proportion of this cohort in the sample is about 30% and varies between a low of 11.6% (Monaco in 1990) and a high of 45% (Cape Verde in 1985).

To evaluate Hypothesis 1, we use a measure of youth bulges from Urdal (2006) as our main explanatory variable. He defines a bulge as existing where one can find "large cohorts in the ages 15–24 relative to the total *adult* population" (Urdal 2006, 608; emphasis added), defined

¹⁸Due to listwise deletion, the multivariate models presented in the tables have a maximum N of 3,214, covering 154 countries.

¹⁹The scope of the data on state repression (Gibney, Cornett, and Wood 2011) and youth bulges (Urdal 2006) determines our temporal domain. (The data on state repression begin in 1976; the data on youth bulges end in 2000.)

²⁰"Physical integrity rights" are the rights to freedom from extrajudicial killing, disappearance, torture, and political imprisonment.

²¹An example of a score 5 would be Rwanda in 1994–95 and Cambodia in 1976–77. The lowest score (1) is, for example, found in Canada for most years.

²²For robustness tests, we also run models using combined measures based on both sources, the highest, lowest, and mean score, respectively. Histograms of the distributions of PTS scores based on Amnesty International and the U.S. State Department for our sample are found in the online supporting information.

²³For robustness, we have also run our models using the Cingranelli and Richards (CIRI; 2004) Human Rights Dataset infringements on physical integrity rights. The findings (not reported) confirm the results based on the PTS.

as persons 15 years old and above.²⁴ Earlier measures of youth bulges by such scholars as Huntington (1996), Goldstone (2002), Fearon and Laitin (2003), and Collier and Hoeffler (2004) all measured the size of youth cohorts or male youth cohorts relative to the *total* population. The latter could be problematic as it underestimates the problem of demographic “bottlenecks” in countries with continued high fertility (and hence high rates of young children).²⁵ We therefore utilize Urdal’s (2006) improved measure.²⁶

To evaluate Hypothesis 2 based on the assertion from both Huntington (1996) and Fuller and Pitts (1990) that there is a threshold effect whereby youth bulges become problematic for states only when they reach a certain “critical level,” we run models including a squared measure of youth bulges.²⁷

Controls

The main controls in this study are similar to those used in previous studies of state repression (e.g., Davenport and Armstrong 2004; Poe and Tate 1994): regime type, economic development, population size, ongoing armed civil conflict (intrastate), and levels of dissent. We also use different indicators for some of these dimensions for robustness checks. Each control variable is discussed briefly below.

First, it is a well-established finding in the literature that democracy is positively related to respect for personal integrity rights (e.g., Bueno de Mesquita et al. 2005; Davenport 1995, 2007a; Hibbs 1973) and hence lower levels of state repression. Using the Polity database (Marshall and Jaggers 2005), Davenport and Armstrong (2004) established that there is an important threshold effect for when democracy matters for curbing repression: on and below a specific high value of democracy (7 on the Polity measure), there is no impact; above this value, there is

a strong and negative influence in two distinct phases (one exerted at levels 8 and 9 as well as one exerted at level 10). Based on this, we follow the convention from Davenport and Armstrong (2004) and include a dummy for Polity scores 8–9 and a dummy for a Polity score of 10. These dummies have been found to be significantly different from the Polity scores below 8 in predicting repression and also statistically significantly different from each other (Davenport and Armstrong 2004).

Other structural characteristics of states have also been found to predict repression, such as population size and development (e.g., Mitchell and McCormick 1998). We therefore control for total population size (natural log) and development measured by GDP per capita using data from Penn World Tables, both measures from Urdal (2006).

Previous studies have found that ongoing conflict activity may increase the risk that leaders will repress their citizens (Davenport and Armstrong 2004; Landman 2005; Poe 2004). We therefore include a dummy variable for ongoing intrastate armed conflict, using the Uppsala and PRIO Armed Conflict dataset (Gleditsch et al. 2002). A related finding is that dissent could increase repressive action (Davenport 1995; Hibbs 1973). Hence, we control for the annual number of antigovernment protests, riots, or strikes involving more than 100 persons from Banks (2002) following Wood (2008). This measure varies between 0 and 46 in our sample.²⁸

In a data structure like the one used here, there is likely no independence between all observations, and we should expect that previous repression levels within a country matter for currently observed levels. Several studies find that a lagged dependent variable (LDV) of repression is highly significant (Davenport 2007a; Poe 2004), and we therefore run statistical models with LDVs, indicating the level of repression in the previous year (LDV = 2, LDV = 3, LDV = 4, LDV = 5).²⁹

²⁴Defining people in the age range of 15–24 is the conventional cutoff for youth in the literature.

²⁵However, as a robustness test, we also use this alternative measure of youth bulges as the population in the 15–24 age bracket relative to the *total population* (including the 0–14-year-olds) in some models, as was done by Urdal (2006).

²⁶The distribution on the measure of youth bulges is presented in the online supporting information.

²⁷The squared measure can reveal whether there is a nonlinear relationship. We use a centered measure of youth bulges to reduce potential collinearity problems when the youth bulges measure and the squared measure are included in the same model. For robustness, we also used a dummy variable for those cases on or above the 20% level, as well as measures using youth bulges to the total population. Results remain the same.

²⁸Various additional measures have been tested for robustness but are not included due to space limitations and for reasons of parsimony and sample size (see the online supporting information). These measures include infant mortality rate (IMR) to indicate development (Achvarina et al. 2009; Urdal 2006); regime type measured by the Polity scale (e.g., Davenport 1999; Hafner-Burton 2005b; Saideman et al. 2002); ongoing international war (Gleditsch et al. 2002; Landman 2005; Poe et al. 1999; Richards et al. 2001); a dummy variable for oil wealth from Fearon and Laitin (2003), de Soysa and Nordås (2007), and de Soysa and Binningsbø (2005); religious population sizes (following de Soysa and Nordås 2007); and a dummy for the Cold War. We also tested the effect of trade and sanctions (Hafner-Burton 2005b; Wood 2008). Our main finding remains consistent across specifications.

²⁹For robustness, we have run models using a series of lagged binary indicators of past repression (–1, –2, –3, and –4 years) and

Model Estimation

Following de Soysa and Nordås (2007) as well as others, we use an ordered probit model, as our dependent variables are categorical and ordered and close to normally distributed.³⁰ Acknowledging that there might be problems of highly correlated errors within panels, each model is run with the Huber-White corrected robust standard errors clustered on countries.

We control for temporal patterns by including year dummies. One reason for this is that human rights data may be affected over time by the increased sophistication of the technologies of detection as well as other time-dependent biases (Poe, Vasquez, and Carey 2001). Year dummies can also take care of other unobserved factors, such as the end of the Cold War or global policy shifts that may affect human rights through the process of diffusion of norms and increased activism across the globe (Keck and Sikkink 1998; Simmons and Elkins 2004).³¹

Results

Essentially, we are interested in answering two questions regarding youth bulges and their direct influence on state repression and two questions about possible interactive effects between youth bulges as well as regime type and dissent. Each will be discussed below.

Are States That Face a Larger Youth Bulge More Repressive?

To test Hypothesis 1, we include as our main explanatory variable the measure of youth bulges, indicating the share of 15–24-year-olds to the total adult population (15 years and older),³² and we use two separate dependent variables (DVs) for state repression. These dependent variables are

the lagged dependent variable as an ordinal scale to control for autocorrelation. The results remain consistent.

³⁰Previous studies have run regular OLS regressions, which might introduce larger biases. However, although ordered probit has become the standard estimation technique for these types of models, this may also raise problems with consistency across categories. Running tests for this, we find that consistency is better at the lower end of the PTS scale than from level 4 to level 5 (highest level of state repression). However, as the majority of the observations are in the lower categories, this does not represent a significant shortcoming (see the online supporting information for more information).

³¹Our results are also robust when year dummies are not included.

³²This measure complies with the UN's definition of youth and is the standard age cohort used in literature on youth bulges (see, e.g., Urdal 2006).

TABLE 1 Ordered Probit: Youth Bulges and State Repression, 1976–2000

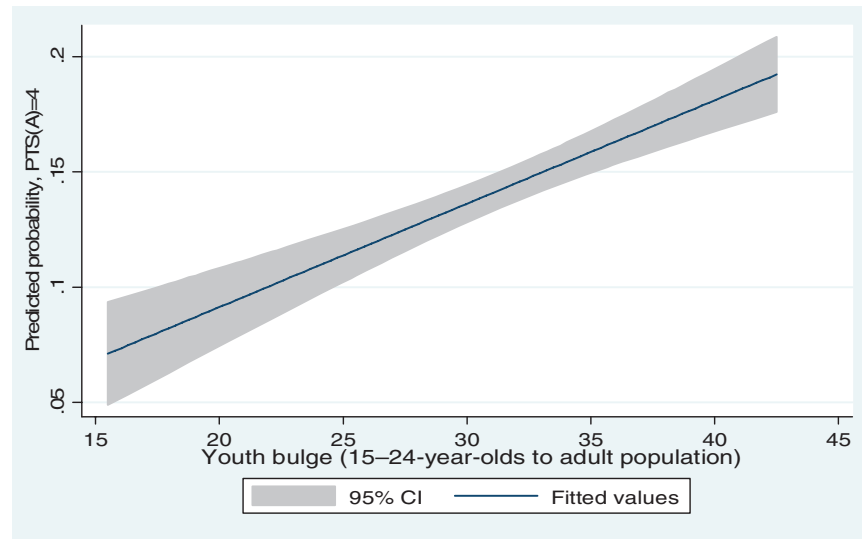
	(1) PTS(A)	(2) PTS(S)	(3) PTS(A)	(4) PTS(S)
Youth bulge	0.028*** (0.006)	0.018*** (0.006)		
Youth bulge, centered			0.024*** (0.007)	0.014** (0.007)
Youth bulge, sq			−0.001* (0.001)	−0.001 (0.001)
Polity 8–9 (dummy)	−0.211** (0.086)	−0.371*** (0.090)	−0.232*** (0.088)	−0.387*** (0.089)
Polity 10 (dummy)	−0.960*** (0.139)	−1.125*** (0.173)	−0.920*** (0.140)	−1.096*** (0.173)
Dissent	0.013* (0.007)	0.022*** (0.008)	0.013* (0.007)	0.021*** (0.008)
Civil conflict	0.778*** (0.080)	0.884*** (0.077)	0.772*** (0.080)	0.876*** (0.076)
GDP per capita, ln	0.041 (0.043)	−0.059 (0.040)	0.040 (0.043)	−0.061 (0.041)
Population, ln	0.083*** (0.022)	0.079*** (0.021)	0.086*** (0.021)	0.081*** (0.021)
LDV = 2	1.228*** (0.163)	1.562*** (0.117)	1.221*** (0.166)	1.552*** (0.114)
LDV = 3	2.286*** (0.190)	2.698*** (0.141)	2.274*** (0.193)	2.688*** (0.138)
LDV = 4	3.333*** (0.204)	3.839*** (0.166)	3.318*** (0.206)	3.827*** (0.163)
LDV = 5	4.449*** (0.225)	5.120*** (0.212)	4.439*** (0.227)	5.113*** (0.210)
Pseudo R ²	0.387	0.487	0.388	0.487
Log ps likelihood	−2327.044	−2367.247	−2325.153	−2365.563
Wald Chi ²	1503.46	1692.70	1548.86	1695.06
Countries	153	154	153	154
N	2,586	3,093	2,586	3,093

Note: Robust standard errors in parentheses. Huber-White clustering on country. All models run with year dummies (not reported). LDV indicates lagged dependent variable. ***p < 0.01, **p < 0.05, *p < 0.1.

the 5-point Political Terror Scale based on Amnesty International, PTS(A), and the Political Terror Scale based on the U.S. State Department reports, PTS(S). Initial bivariate regressions of youth bulges on the repression measures (not reported) confirm the expectation that there is a strong, statistically significant relationship.

Table 1 presents multivariate ordered probit (oprobit) analyses of youth bulges and state repression measured two different ways: PTS(S) and PTS(A). The models are reported with a lagged dependent variable, i.e., the level of repression in the previous year (repression_{t-1}),

Graph 1 Youth Bulges and the Predicted Probability of $PTS(A) = 4$



with robust standard errors clustered on country, and year dummies (not reported).

Based on our theoretical discussion, we expect a higher youth bulge to be associated with higher state repression (Hypothesis 1). Models 1 and 2 provide strong support for this hypothesis, as youth bulges are indeed positively and significantly related to higher levels of repressive behavior.

From the results, it is clear that the effect of having a large youth bulge is substantive. Based on Model 2 in Table 1, we run a predicted probability of reaching a level 4 on the $PTS(A)$ repression variable for a nondemocratic government with no ongoing civil war and the rest of the variables in the model held at their mean. We chose to focus on reaching level 4 because this is the point at which large segments of the politically active population are affected by severe repression, such as political imprisonment and political murder.³³ The baseline probability of reaching this level of state repression is 5.7% at the 25th percentile level of youth bulges (23.9), whereas at the 90th percentile (36.9), the probability is increased to 11.2%, a near doubling. Graph 1 illustrates the increase in the predicted probability of $PTS = 4$ at different levels of youth bulges based on Model 1 in Table 1.

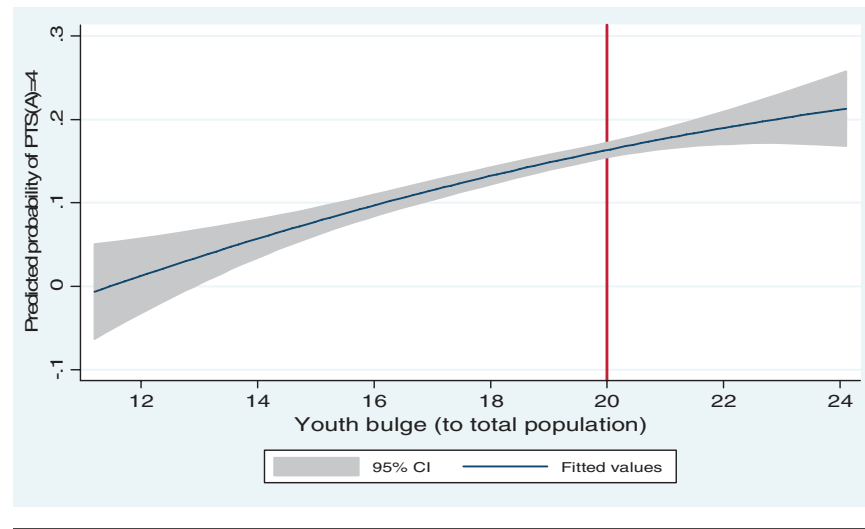
Among the findings, the control variables perform largely as expected. In line with previous studies (Davenport and Armstrong 2004), the highest levels of

democracy (Polity = 10 and Polity at levels 8 and 9) are associated with significantly lower levels of repression relative to Polity scores ≤ 7 as a reference category. More populous states consistently engage in higher levels of repressive behavior, as found by de Soysa and Nordås (2007). We find that states are more likely to repress citizens when there is an ongoing intrastate conflict in the country. This variable is a statistically and substantively important predictor of government coercion. We also find a consistently positive and significant relationship between the level of dissent activity and repressive behavior. Population size is a consistent predictor of repression levels, with increasing repression associated with larger populations. Additionally, the level of repression in the previous year is a strong predictor of repression in the current year. Our expectation that richer countries (in terms of higher GDP per capita) are likely to have lower levels of state repression is not consistently substantiated by the models in Table 1 (a finding that is reflected in earlier work). This may be partially accounted for by the association between youth bulges and level of development (correlation of 0.698). However, running a likelihood ratio test of Model 1 with and without youth bulges shows that the addition of the youth bulge measure contributes significantly to improved model fit.

We ran Model 1 using different control variables as a robustness test (see the online supporting information). When this is done, the youth bulge measure is robust across the alternative specifications. For example, the results for youth bulges remain highly significant (at the 1%

³³Level 3 means the state repression is less generalized across the population, and we therefore chose level 4 for this illustration as it is a more clearly differentiated value on the ordinal scale.

Graph 2 Youth Bulges (to *Total Population*) and the Predicted Probability of PTS(A) = 4



level) if we exchange GDP per capita with infant mortality rates (IMR) or use the Polity scale³⁴ as an alternative measure of democracy, in line with earlier studies (e.g., Davenport 1999; Hafner-Burton 2005a, 2005b; Saideman et al. 2002). Other variables have also been introduced without changing the results.³⁵ The results are also robust to additional controls for temporal patterns.³⁶ We tested the alternative measure of youth bulges (measured as 15–24-year-olds relative to the *total* population). Regardless of what is done, the main finding still holds. In sum, therefore, based on Models 1 and 2 above and various robustness tests, we have a strong indication that the relationship between youth bulges and repression is in line with Hypothesis 1: *youth bulges are associated with higher state repressive action.*

Are There Threshold Effects of Youth Bulges?

This question builds on the proposition from Huntington and others that the “critical level [for youth rebellion] is

³⁴The Polity scale indicator of regime type (from Polity IV) from –10 (full autocracy) to 10 (full democracy) is also statistically significant (at the 1% level) and in the expected direction.

³⁵For example, one could include a dummy for ongoing international war, the share of the population belonging to various religions (de Soysa and Nordås 2007), or the level of trade (Wood 2008).

³⁶Additional controls include, for example, a dummy for the Cold War instead of year dummies, using a series of lagged binary indicators of past repression (–1, –2, –3, and –4 years) to control for autocorrelation instead of the lagged dependent variable dummies (from Wood 2008), and removing year dummies.

the point at which youths make up 20% or more of the [total] population” (1996, 259ff). In line with this argument, when societies cross the threshold, we should expect violence as well as state repression as an attempt to preemptively meet the demographic threat. To test whether there is a threshold effect, we run models with a centered and a squared measure of youth bulges in order to explore any nonlinear relationships (Models 3 and 4, Table 1).³⁷ We also test a dummy for youth bulges above the “critical threshold” of 20% (not reported).

When this is done, we find that Models 3 and 4 do not yield significant support for the hypothesis about a nonlinear effect of youth bulges on state repression, and the coefficient for the squared terms of youth bulges is even negative.³⁸ The coefficient for the squared term of youth bulges in Model 3 is weakly statistically significant in the opposite of the expected direction. Graph 2 shows the predicted probability of reaching level 4 on the PTS scale at various levels of youth bulge to the total population by using the controls in Model 3 and holding the other variables at their mean and civil conflict as well as democracy at zero.

³⁷The youth bulges measure is here based on the adult population, as recommended by Urdal (2006). As the argument in the literature underlying the hypothesis is based on a conception of youth bulges relative to the total population, we also test measures based on this. The findings remain unchanged.

³⁸Testing a dummy variable for a youth bulge at 20% of the total population or above is significant, but this again captures the linear effect. The findings are similar when we use the measure of youth bulges suggested by Urdal (2006) and when we use the alternative threshold of 34% based on Urdal’s youth bulges measure (models not reported).

Graph 2 illustrates that there does not seem to be a threshold effect at a youth bulge of 20% of the total population or more (or at any other percentage), as the graph does not show an increase on or around 20%. The relationship between youth bulges on repressive state behavior seems to be linear, with a leveling off at the high end.

Are There Interaction Effects with Dissent and Regime Type?

Hypotheses 3 and 4 proposed that there might be interaction effects to consider. First, we argued that the response by governments to youth bulges might be conditional on the actual level of behavioral challenge they are experiencing. Second, we argued that different regime types might respond to youth bulges in different ways, specifically that democracies may be more reluctant to use repression when faced with a youth bulge than what authoritarian regimes would be.

Model 1 in Table 2 shows the results for an interaction between dissent and youth bulges. Here, we coded a dummy variable for whether there were dissident events in the country year (1) or not (0). When the interaction term is not included in the model, this variable is positive and a significant (at the 1% level) predictor of state repression. The inclusion of the interactive term renders the dummy for dissent negative and insignificant, while the interaction is positive but only marginally statistically significant (at the 10% level). As an alternative test of Hypothesis 3, we also ran an interaction with ongoing civil conflict. We find no significant interaction effects. These findings give very limited support for Hypothesis 3 that states will increase repression more in contexts of manifest dissent than contexts of no overt dissent; in addition, this effect will be stronger the larger the youth bulge in the country happens to be. The relationship between youth bulges and repressive action does not seem conditional on actual displays of dissent, which indicates that preemptive repression may indeed be at play.

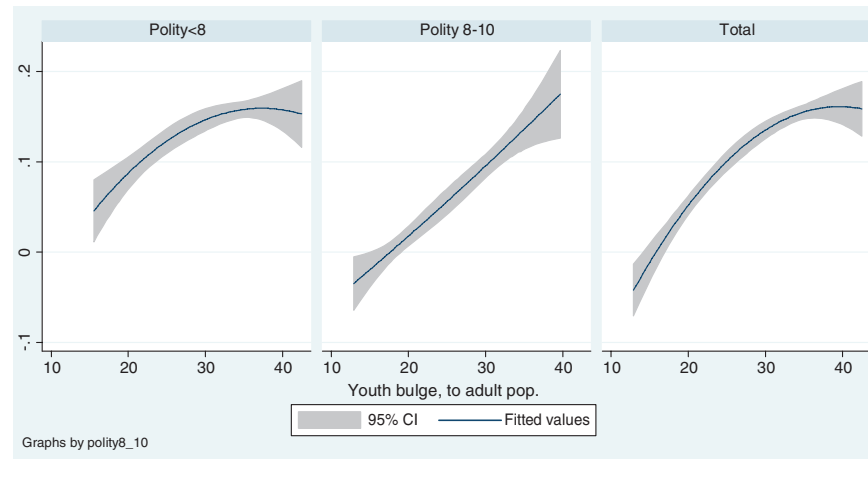
Turning to the hypothesized interaction between regime type and youth bulges on state repression (Hypothesis 4), Models 2 and 3 in Table 2 show the interaction effects based on a dummy of democracy (Polity scale score 8–10; Model 2) and the full Polity scale (Model 3). Both analyses show that when we introduce the interaction terms, the effect of democracy (Polity) remains unchanged and the youth bulge measure remains positive and highly significant, while the interaction terms are positive and significant. This indicates an interaction effect of regime type and youth bulges. Graphing this relationship (Graph 3, below), holding intrastate conflict

TABLE 2 State Repression, Youth Bulges, and Interactions with Dissent and Regime Type, 1976–2000

	(1) PTS(A)	(2) PTS(A)	(3) PTS(A)
Youth bulge	0.023*** (0.007)	0.023*** (0.006)	0.038*** (0.006)
Dissent, dummy	-0.179 (0.239)		
Dissent, dummy*	0.014* (0.008)		
Youth bulge			
Polity (8–10), dummy		-1.755*** (0.327)	
Polity (8–10)* Youth bulge		0.048*** (0.011)	
Polity, scale			-0.127*** (0.021)
Polity, scale* Youth bulge			0.004*** (0.001)
Polity = 8/9	-0.244*** (0.087)		
Polity = 10	-0.988*** (0.135)		
Dissent, count		0.014** (0.007)	0.014* (0.008)
Civil conflict	0.793*** (0.080)	0.775*** (0.083)	0.788*** (0.082)
GDP per capita, ln	0.027 (0.042)	0.035 (0.044)	0.027 (0.045)
Population, ln	0.072*** (0.022)	0.090*** (0.022)	0.094*** (0.021)
LDV = 2	1.217*** (0.163)	1.308*** (0.176)	1.321*** (0.174)
LDV = 3	2.273*** (0.190)	2.356*** (0.199)	2.362*** (0.197)
LDV = 4	3.309*** (0.204)	3.399*** (0.212)	3.405*** (0.208)
LDV = 5	4.429*** (0.225)	4.521*** (0.233)	4.521*** (0.230)
Pseudo R ²	0.390	0.385	0.385
Wald Chi ²	1616.92	1414.28	1458.17
Log P LL	-2316.336	-2335.414	-2333.808
Countries	153	153	153
N	2,586	2,586	2,586

Note: Robust standard errors in parentheses. Huber-White clustering on country. All models run with year dummies (not reported). LDV indicates lagged dependent variable. ***p < 0.01, **p < 0.05, *p < 0.1.

Graph 3 Repression, Youth Bulges (to Total Population), and Regime Type



at zero and all other variables at their mean reveals that the predicted probability of PTS level 4 increases monotonically for nondemocracies (Polity score below 8), but within democratic governments, the response is delayed (i.e., the youth bulge must be at a higher level before repression increases).

This can be interpreted as giving support to the notion that democracies have mechanisms and incentive structures that dampen the repressive impulse of political authorities. Although not eliminating the effect of youth bulges on repressive behavior (the effect of youth bulges on state repression is also positive and significant for democracies), democratic regimes are only likely to respond with coercion at relatively higher levels of youth bulges. Although the effect of youth cohorts seems to operate across regime types, the findings within Table 2 still lend some support to Hypothesis 4 that the relationship between youth bulges and state repression is stronger in nondemocratic states than in democracies.

Conclusion

There is a long-standing awareness that youth bulges can affect revolutions, protest, and rebellion. However, in existing literature, the state is generally conceptualized as a passive actor. In the study of political repression, the topic of demography in general has been underdeveloped, and the issue of youth bulges in particular is largely ignored. The current study has been directed toward filling this gap. Within this article, we conceptualize the state as being quite active, seeing youth bulges as an imminent threat to the status quo too costly to ignore. In line with

this view, we hypothesize that political authorities faced with a youth bulge are, all else equal, more likely to apply repressive measures against their populations than states with a less threatening population-age structure. We also propose that governments will focus their attention on youth bulges because youth are more likely than other age groups to rebel. A youth bulge should therefore signal to authorities that sociopolitical control may be needed to maintain order.

Employing a statistical analysis of the relationship between youth bulges and repression from 1976 to 2000, we find strong support for our main hypothesis. When faced with a large group of youth between the ages of 15 and 24, governments are more likely to engage in repressive action (e.g., diverse rights restrictions as well as arrests, disappearances, and violence). This relationship is found across regime types and both in contexts of overt dissent or not. The effect is also largely linear, which contradicts the proposition by Huntington (1996) and others that there is a threshold effect at which youth bulges start to matter. Finally, we find that the relationship between youth bulges and state repression is direct. It is not only an artifact of particular regime types; it is also not found solely in interaction with actual levels of dissent.

With these results, our study has important implications for future research. First, based on the current findings, subsequent work should consider demographic factors more seriously when trying to explain repression, and youth bulges should be included in future models. Second, future research should continue to explore diverse ways that youth cohorts might interact with other variables and disaggregate governments' decision-making processes. For example, authorities may be more

repressive in their response to protest before and during a youth bulge in order to prevent behavioral diffusion across the bulge. Last, and perhaps most important, this research indicates that the commonly seen implicit assumption in the state repression literature of political authorities as being passive actors is probably inaccurate. Indeed, our findings suggest that states proactively set repression levels to hedge against a perceived threat that has not yet materialized in terms of behavioral challenges (protest). This is indicative that future research should continue to more explicitly model states as proactive.

While attentive to the strengths and potential directions of our work, we are also attentive to the limitations. For example, it would be useful for us to identify government efforts to identify and track youth cohorts. We are aware of a few that seem to support our argument (e.g., the Ministry of Youth, Culture and Sport in Rwanda right after the genocide and civil war; the events in many Middle Eastern and North African countries such as Algeria, Egypt, and Tunisia; and the extensive interest in African American males throughout U.S. history), but it would be useful to identify a wider range of cases. It is also possible that certain state policies affect demographic trends in ways that may, down the line, affect the likelihood of youth bulges (e.g., policies of female literacy and improved sanitation). As discussed briefly in the theoretical discussion, governments may also choose to try to deal with the “problem of youth” by attempting nonrepressive measures. Studying the array of strategies (and their intersections), from accommodation to repressive action, could be an important extension of the current research. Education, job and sports programs, and similar ways to occupy youth, as well as government incentives for property ownership and early child rearing, may be attempted by authorities in their efforts to appease the youth and address the potential youth bulge problem. Such dynamics of state strategies during a youth bulge are a promising avenue for future research. Indeed, there are likely numerous ways that governments fight the youth, and for us to better understand the topic, it would be useful to identify as well as track these different strategies.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

Figure SI: Histograms of main dependent variables in analyses

Table 1: Alternative Controls: IMR, Polity Scale, International War, and Cold War

Table 2: Alternative Controls 2: Oil, Religion, Trade, and Sanctions

Table 3: Youth Bulges and State Repression, 1976–2000. Dependent Variable: Cingranelli and Richards (2004) Infringements on Physical Integrity Rights Scale (0–8)