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Demography and democracy: the impact of youth cohort size on democratic stability in the world

Hannes Weber*

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The traditional explanations for the survival of democratic systems mostly include economic and cultural variables. Only rarely has attention been given to the age structure of a society. This article introduces a hypothesis involving the ‘youth bulge’ concept popular in conflict studies. It is hypothesized that democratic countries with proportionally large male youth cohorts are more likely to become dictatorships than societies with a smaller share of young men. A causal link between demography and democracy is assumed to exist because young men are the protagonists of virtually all violent political action as well as political extremism with a potential to threaten democracy. Strong evidence supporting the hypothesis is found using data for 110 countries in the period from 1972–2009.

Keywords: youth bulge; democratic stability; demography; transition; dictatorship; extremism

Introduction

In P.D. James’ dystopian novel The Children of Men, humanity suddenly loses its ability to reproduce.\(^1\) More than 25 years later, as a society without adolescents, England has become a dictatorship. Reality tells a different story: since the proportion of the population that are young adults has fallen due to lower birth rates and a higher life expectancy, Western Europe has witnessed an unprecedented period of peace and democratic stability. This article argues that there is a causal effect behind this coincidence. Democratic stability depends on a political system’s ability to balance interest and identity conflicts among social groups. It is argued that male adolescents have a higher propensity to intergroup hate and political extremism. Thus, the central hypothesis of this article is that the probability of a democratic breakdown rises with the amount of young men aged 15–29 within a society.

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This approach could be labelled as ‘political demography’, defined by Weiner as ‘the study of the size, composition, and distribution of population in relation to both government and politics’. So far, demographic factors have received little attention in the field of empirical research on democracy. Hence, Nazli Choucri criticizes that ‘one of the most serious limitations of contemporary political analyses lies in the too frequent separation of politics from its demographic context’. Some scholars have included demographic data in their analyses, but not as explanatory variables for regime type. Bollen and Jackman, for instance, use a country’s age structure as a predictor of economic inequality, but not as a determinant of democracy. In addition, one of the most prominent recent studies on democracy also focuses on demographic factors, but not as predictor variables. Przeworski and his colleagues call it ‘the most surprising finding in our entire study . . . that regimes matter more for the growth of population than for the growth of income. In the end, regimes have more to do with demography than with economics’. But this finding is interpreted as indicating a causal effect from regime type on birth rates rather than from age composition (affected by previous birth rates) on regime type: ‘The fact that population grows faster in dictatorships that follow democracies is astonishing, given the general trend for population growth to slow down with time.’

In his essay ‘Youth as a Force in the Modern World’, Moller relates the occurrence of political radicalism and revolutions to the size of youth cohorts. ‘The explosion of revolutionary, warlike, nationalist, and anti-imperialist (i.e. anti-French) activity toward the end of the eighteenth and in the early nineteenth century received its social fuel from the large youth cohorts of “Europe’s initial population explosion”’. Similarly, Commager assumed that:

It is instructive, for example, to compare the proportions of young adults in Germany over time. In 1933, the age group from 20–45 was the largest in German history, both in absolute and relative numbers. At this point of the demographic transition, high numbers of young adults, resulting from high birth rates between 1900 and 1914 (about five per woman) and decreased infant mortality, coincided both with low numbers of children due to low birth rates in the 1920s (about two per woman) and low numbers of adults as a result of the war and only recently improved life expectancy. These young men were the principal recruiting pool for the national socialist and communist paramilitary gangs; the Sturm Abteilung (SA) alone counted more than three million official members by 1934. In post-war Germany, no such surplus of young men was any longer available for anti-democratic movements. Not only the war, but – more effectively
and enduringly – the low birth rates since the 1920s caused the proportion of youth to decline steadily. In 1925, young men between 15 and 29 years of age made up around 20% of the total adult population. This proportion shrank to 13.3% in 1973 and 10.4% in 2008. Back then, the average German was 29 years old; today the average age is 42. By contrast, in neighbouring France, as early as 1921 only 14.3% of the adult population were young men aged 15–29 and this percentage further shrank to 13.9% in 1936. The UK falls in between with 16.5% according to the 1931 census; while Soviet Russia had an age distribution comparable to that of Weimar Germany with 21.5% young men aged 15–29 among all adults according to the pre-war census of 1939. This is not to say that demography alone accounted for the transition to dictatorship in Germany or other countries in inter-war Europe, but demography might have played a role that has until now been underestimated in the literature.

The occurrence of a youth bulge, indicated by a large number of young adults in relation to the total population, has become a popular predictor variable in conflict studies. Samuel P. Huntington, founder of the ‘Clash of Civilizations’ paradigm, stated in an interview after the attacks on 11 September 2001:

I don’t think Islam is any more violent than other religions ... But the key factor is the demographic factor. Generally speaking, the people who go out and kill other people are males between the ages of 16 and 30. During the 1960s, 1970s, and 1980s, there were high birthrates in the Muslim world, and this has given rise to a huge youth bulge.

This article seeks to introduce the demographic factor into the empirical research on democracy where, in contrast to the discipline of conflict studies, demography is usually not taken into consideration. The following section explains why a high proportion of young men is thought to have a negative impact on democratic stability. This central hypothesis is subsequently tested using data for 110 countries in the period from 1972 to 2009.

**The theoretical argument**

The central hypothesis of this article is derived from three premises. The starting point of the argumentation is the premise that all societies, especially democratic ones, are characterized by social antagonisms. These cleavages can arise from differences in religion, language, ethnicity, culture, class, ideology, geography or other factors becoming sources for the emergence of social identities. A stable democracy, the second premise postulates, depends on the extent to which the interest and identity conflicts that always exist between social groups can be balanced by the political system. Democracy requires actors to respect the interests of other individuals and groups, including minorities, because the sovereign ‘demos’ consists of both majority and minority groups. Therefore, democracy is threatened by individuals or groups that
regard political opponents as enemies, reject any compromise with the other side and seek to impose their interests by force rather than by negotiation and argumentation – in short, by political extremists. Social identities, according to the third premise, are most salient during the adolescent years of a person’s life. According to Erik H. Erikson, young people, as a result of identity confusion, are more likely to over-identify with social groups they feel attached to ‘to the point of an apparently complete loss of individuality’, ‘stereotyping themselves, their ideals, and their enemies’. Even if they may be driven by ‘the instinctive wish to fight for a good cause’, this process can lead to intolerance and intergroup hate or can make young adults more vulnerable to demagogues than other age groups. Thus, the intensity of interest and identity conflicts within a society is assumed to rise with the share of young adults. This poses a potential threat to ‘the peaceful play of power’ in a democracy, as the absence or low level of political violence ‘can be viewed as a prerequisite for, and as an indicator of [a stable democratic regime]’. Deducing from these premises, the central hypothesis of this article is: the higher the proportion of young men in a democratic society, the higher the risk for democracy – ceteris paribus – to collapse in this country.

The most popular approaches to explain the disposition for extremism and political violence among young adults within the field of conflict studies are socio-economic and socio-biological approaches. The socio-economic approaches assume that the opportunity costs for political violence are lower for adolescents, because they are more frequently unmarried and not yet integrated into the job market. Moreover, in case of a large youth bulge, the proportion of vacant social positions in relation to the demand for attractive positions by adolescents is likely to be low, constituting a societal bottleneck. Hence, from this perspective, youth bulge effects interact with stagnant economic development: ‘The higher the proportion of youthful population, and the greater the unemployment, the greater are the possibilities of dissatisfactions, instabilities, and violence’. The socio-biological approach postulates a higher propensity to intergroup hate and political extremism among young men as a result of the latter’s alienation from the values of their parents. This process creates what Konrad Lorenz calls ‘physiological neophilia’ during adolescence, which is regarded as having the evolutionary function to adapt the pool of values and norms of a society to the changing environment. After adolescence, the adult readopts the parental value system in its essential structure, thus achieving Parsons’ ‘latent pattern maintenance’. However, during ‘the phase of “physiological neophilia”, the adolescent is obsessed by an overwhelming desire to join a peer group and, above all, to participate in its collective aggression’. A religious fundamentalist, for example, breaks with the exegetical tradition of his or her religion and interprets crucial parts of his holy scripture literally or in the way best suiting his or her political agenda. The propensity to embrace fundamentalist thoughts is probably highest during the phase of ‘identity confusion’ or ‘physiological neophilia’.
Research design and methodology

As Casper and Tufis have shown, the effect size of a predictor variable of democracy can differ considerably depending on the operationalization of the criterion variable. Thus, although popular indices of democracy such as Freedom House, Polity or Vanhanen show high correlations between each other, changing the dependent variable may lead to a formerly significant effect becoming insignificant, and vice versa. Furthermore, there are ongoing conceptual discussions on whether democracy is best measured as a continuous variable (as in the Vanhanen index), on an ordinal scale (as in Polity and Freedom House), dichotomously or trichotomously, allowing an intermediate category for semi-democracies. The intention of this article is neither to resolve this debate, nor to add another proposition for the definition and measurement of democracy to the already existing ones. Rather, following Casper’s and Tufis’ suggestion, the central hypothesis will be repeatedly tested using different operationalizations for the dependent variable. If all models provide evidence in favour of the hypothesis, it can be assumed that the discovered effect is no methodological artefact resulting from the peculiarities of the employed index of democracy.

The analyses will start with ‘regime type’ as the dependent variable using cross-section data from 2009. This design assesses whether countries with a high proportion of young men have a lower probability of being democratic. Further analyses will then be conducted with ‘regime change’ as the dependent variable: is the probability of a democratic breakdown higher in societies with a ‘youth bulge’? To answer this question, pooled time series data covering the period from 1972 (year of Freedom House’s first ratings) to 2009 are evaluated. A case of observation is defined by a country within a five-year period (for example, ‘Algeria 1980–1984’). This design has been preferred to a yearly measurement for methodological reasons: as the age structure of a population (as well as other variables, such as per capita gross domestic product (GDP)) is highly path dependent, there are no sudden changes from one year to another. By grouping the data into five-year periods and calculating mean values for the metric independent variables, the dependence of the cases of observation from each other is reduced.

The dependent variable ‘regime type’ is measured twice on an ordinal scale, using Polity and Freedom House data, and once with a dichotomous classification. For the latter, the variable is coded 1 for countries which have been classified as ‘free’ by Freedom House and 0 for the rest. ‘Regime change’ is measured employing a dichotomous and a trichotomous conception of democracy. The first analysis selects only full democracies (Freedom House classification ‘free’). The dependent variable is coded 1 if a country’s rating is changed to another category (‘partly free’ or ‘not free’) during the observed five-year period, indicating the collapse of a democracy. The second analysis allows the intermediate category of a semi-democracy (Freedom House classification ‘partly free’). Both full democracies and semi-democracies are selected, and the dependent variable is coded 1 if a country’s rating changes
from ‘free’ to ‘partly free’ or ‘not free’, or from ‘partly free’ to ‘not free’, indicating a transition towards autocracy.

The independent variable ‘age structure’ measures the proportion of young men in relation to the total adult (that is, potentially politically active) population. Therefore, the total number of men aged 15 to 29 is divided by the total population aged 15 or older. The data source is the *Demographic Yearbook*. Among the other independent variables, some of the most common predictors of democracy are taken into account. A country’s degree of modernization is measured by per capita GDP using data from the *The World Factbook* for the cross-section analyses and the *Total Economy Database* for the longitudinal analyses. This predictor variable has generated the largest body of research on any topic in comparative politics. As early as 1971, Dahl summarized that ‘there can no longer be any doubt that competitive politics and socio-economic level tend to run together’. A positive influence for socio-economic modernity has been found on the existence of democracy, the emergence of democracy, and democratic stability. Apart from level, economic growth has also been regarded as having a positive influence on democratic stability. For the cross-section analyses, cumulated GDP growth values from the last three years are being employed, while the longitudinal analyses include mean values for every five-year period. Furthermore, dummy variables for religious heritage and British colonial experience are included in the analyses. Similarly to Max Weber’s thesis on the influence of the Protestant ethic on capitalism, scholars have argued that the emphasis on individualism and the separation of church and state in Protestantism has a positive influence on the establishment and stability of democracy. Sometimes, Western Christianity (Protestantism and Catholicism) as a whole is regarded as a prerequisite of democracy, because only countries in this cultural area have witnessed the Renaissance, the Reformation, the Enlightenment, the French Revolution, and liberalism, while according to Huntington, other cultural areas, particularly Muslim countries, reject any distinction between the religious community and the political community, lowering the probability of democracy. A British colonial heritage, in contrast, is often regarded as raising the chances of a country being democratic, because the British colonialists more often installed democratic institutions in their dependencies than other colonial powers. Another important variable according to the theoretical argument is the level of unemployment. As even the comparison of unemployment rates within the Organization for Economic Cooperation and Development (OECD) has considerable limitations, it is questionable whether data covering the whole world are comparable and reliable. Similar problems arise when assessing the ethnic or linguistic background of the young men. What is included in census data varies heavily across countries; and in some countries, such as France, no data on race or ethnicity is being evaluated at all. Yet what would be desirable here are not only reliable data on race and ethnicity, but more specifically on race and ethnicity by age groups. One model in the following analyses includes unemployment and an index of ethno-linguistic
fractionalisation,\textsuperscript{56} but due to the low data reliability the results are not interpreted as being definite.

Following the aggregate level analyses, a section on the interaction between the micro and macro level will conclude the empirical part. Using data from the \textit{World Values Survey},\textsuperscript{57} this section explores the mechanism behind the correlation between demography and politics.

\textbf{Empirical results}

Tables 1 and 2 show the results of regression analyses with three different indicators of regime type as dependent variables. Each analysis starts with an ordinary model without age structure as an independent variable (Model 1), while Model 2 includes the proportion of young men as a predictor. In Table 1, Model 3 contains two additional variables: unemployment and ethno-linguistic fractionalization.

The data indicate a strong influence of age structure on regime type: the proportion of young men has a significant and negative effect on the probability that a country has democratic institutions, whether the latter is measured by the Polity index, the Freedom House index or a dichotomous conception based on Freedom House ratings. Moreover, the influence of socio-economic modernity, economic growth and an Islamic heritage are substantially weakened when a country’s age structure is considered. The effect of per capita GDP becomes insignificant in two out of the three accounts. GDP growth has initially a negative effect in Table 1, indicating lower rates of economic growth in democracies, but this effect vanishes when taking the proportion of young men into the calculations. Protestant and Catholic heritage, on the other hand, show strong and stable positive influences on democracy, with the effect sizes even rising slightly in the models with the demographic factor. The negative effect of Islam shrinks when the age structure is considered. A possible interpretation of this finding is that the huge youth bulges in Islamic countries partly explain the claimed negative correlation between Islam and democracy. Contrary to previous work,\textsuperscript{58} no effect can be found from British colonial experience on regime type. Unemployment and ethno-linguistic fractionalization have been tested in a separate model in Table 1 as they are considered as being less reliable. Both show no significant effect, but it cannot be determined whether this indicates that there is no connection between the observed factors or a statistical artefact due to distorted data has been produced. However, the general pattern is not substantially changed when these variables are included. Furthermore, threshold variables for total population size are included in Model 3. No effect can be found when the Polity index is used as dependent variable; however, small countries with a population of less than five million score significantly higher on the Freedom House scale. There is no linear relation between population size and regime type, though. Large countries and medium sized countries do not differ with regard to their level of ‘democraticness’.\textsuperscript{59}

An important aspect of these analyses is the question of collinearity. As rich countries tend to have lower birth rates, the proportion of young men is falling
Table 1. Predictors of regime type.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td></td>
<td>B (SE)</td>
<td>B (SE)</td>
</tr>
<tr>
<td>Proportion of males aged 15–29</td>
<td>0.739</td>
<td>0.145*</td>
</tr>
<tr>
<td></td>
<td>(0.136)</td>
<td>(0.141)</td>
</tr>
<tr>
<td>ln (GDP per capita)</td>
<td>0.739</td>
<td>0.145*</td>
</tr>
<tr>
<td></td>
<td>(0.351)</td>
<td>(0.462)</td>
</tr>
<tr>
<td>GDP growth (past 3 years)</td>
<td>−0.100</td>
<td>−0.169*</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>Religious heritage: Protestantism</td>
<td>4.586</td>
<td>0.232**</td>
</tr>
<tr>
<td></td>
<td>(1.541)</td>
<td>(1.499)</td>
</tr>
<tr>
<td>Religious heritage: Catholicism</td>
<td>3.590</td>
<td>0.262**</td>
</tr>
<tr>
<td></td>
<td>(1.095)</td>
<td>(1.096)</td>
</tr>
<tr>
<td>Religious heritage: Islam</td>
<td>−4.900</td>
<td>−0.325***</td>
</tr>
<tr>
<td></td>
<td>(1.169)</td>
<td>(1.322)</td>
</tr>
<tr>
<td>British colonial experience</td>
<td>−1.218</td>
<td>−0.084</td>
</tr>
<tr>
<td></td>
<td>(0.991)</td>
<td>(1.038)</td>
</tr>
<tr>
<td>Population: fewer than 5 million</td>
<td>1.305</td>
<td>0.093</td>
</tr>
<tr>
<td></td>
<td>(1.042)</td>
<td>(1.042)</td>
</tr>
<tr>
<td>Population: greater than 30 million</td>
<td>0.204</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td>(0.170)</td>
<td>(0.170)</td>
</tr>
<tr>
<td>Level of unemployment</td>
<td>−0.026</td>
<td>−0.056</td>
</tr>
<tr>
<td></td>
<td>(0.038)</td>
<td>(0.038)</td>
</tr>
<tr>
<td>Ethno-linguistic fractionalization</td>
<td>0.418</td>
<td>0.135</td>
</tr>
<tr>
<td></td>
<td>(0.217)</td>
<td>(0.217)</td>
</tr>
<tr>
<td>(Constant)</td>
<td>−0.833</td>
<td>14.021</td>
</tr>
<tr>
<td></td>
<td>(3.319)</td>
<td>(5.691)</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.42</td>
<td>0.45</td>
</tr>
<tr>
<td>$N$</td>
<td>138</td>
<td>138</td>
</tr>
</tbody>
</table>

Note: Linear regression analyses (OLS). The Dependent variable ‘Polity’ has been constructed subtracting Polity’s (Marshall and Jaggers, Polity IV Project) autocracy scale from the democracy scale. The dependent variable ‘Freedom House’ has been constructed adding Freedom House’s (Freedom House, Freedom in the World 1972–2009) indices of political rights and civil liberties. Religious heritage, British colonial experience, and the two population dummies are dichotomous variables. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Source: Own calculations.
Table 2. Predictors of regime type (dichotomous classification).

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>B (SE)</th>
<th>Exp (B)</th>
<th>B (SE)</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of males aged 15–29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second quartile</td>
<td>-0.334 (0.733)</td>
<td>0.716</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third quartile</td>
<td>-1.022 (0.910)</td>
<td>0.360</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth quartile</td>
<td>-2.560 (1.045)</td>
<td>0.077*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP per capita</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second quartile</td>
<td>0.811 (0.626)</td>
<td>2.249</td>
<td>0.371 (0.681)</td>
<td>1.450</td>
</tr>
<tr>
<td>Third quartile</td>
<td>2.112 (0.651)</td>
<td>8.269**</td>
<td>0.805 (0.820)</td>
<td>2.238</td>
</tr>
<tr>
<td>Fourth quartile</td>
<td>2.507 (0.716)</td>
<td>12.273***</td>
<td>1.234 (0.939)</td>
<td>3.434</td>
</tr>
<tr>
<td>GDP growth (past 3 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second quartile</td>
<td>0.412 (0.708)</td>
<td>1.510</td>
<td>0.606 (0.762)</td>
<td>1.833</td>
</tr>
<tr>
<td>Third quartile</td>
<td>0.164 (0.686)</td>
<td>1.178</td>
<td>0.351 (0.733)</td>
<td>1.420</td>
</tr>
<tr>
<td>Fourth quartile</td>
<td>-1.207 (0.676)</td>
<td>0.299</td>
<td>-0.786 (0.742)</td>
<td>0.456</td>
</tr>
<tr>
<td>Religious heritage: Protestantism</td>
<td>1.953 (0.790)</td>
<td>7.049*</td>
<td>2.709 (0.911)</td>
<td>15.015*</td>
</tr>
<tr>
<td>Religious heritage: Catholicism</td>
<td>1.554 (0.544)</td>
<td>4.728**</td>
<td>2.214 (0.658)</td>
<td>9.156*</td>
</tr>
<tr>
<td>Religious heritage: Islam</td>
<td>-2.094 (0.656)</td>
<td>0.123**</td>
<td>-1.310 (0.734)</td>
<td>0.270</td>
</tr>
<tr>
<td>British colonial heritage</td>
<td>-0.160 (0.520)</td>
<td>0.852</td>
<td>0.066 (0.580)</td>
<td>1.069</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-1.111 (0.823)</td>
<td>0.295</td>
<td>-0.057 (1.058)</td>
<td>0.961</td>
</tr>
<tr>
<td>Nagelkerke Pseudo-$R^2$</td>
<td>0.59</td>
<td></td>
<td>0.63</td>
<td></td>
</tr>
</tbody>
</table>

Nagelkerke Pseudo-$R^2$ 0.59 0.63

Note: Logistic regression analyses. The dependent variable is coded 1 for countries Freedom House (Freedom House, *Freedom in the World* 1972–2009) has classified as being ‘free’ and 0 for all other countries. *p < 0.05, **p < 0.01, ***p < 0.001.

Source: Own calculations.
with a country’s level of socio-economic modernity. But there are other determi-
nants of birth rate, including ‘changing opportunities for women, tax policies,
public policies toward child care, housing costs, inflation rates, and changing cul-
tural norms’. Countries like the United States, France, or Ireland currently have
significantly higher birth rates (around two per woman) than Poland, Spain or
Greece (around 1.4 per woman), although the latter’s GDP per capita is lower
than the former’s. According to Lutz and Qiang, the level of female education
has a bigger influence on birth rate than GDP per capita. Still, the proportion
of young men and GDP per capita correlate with $r = -0.64$ for the 1972–2009
dataset and $r = -0.45$ for the 2009 cross-section data. But the two variables’
common amounts of variance of about 40% for the longitudinal and 20% for the
cross-section data leave enough independent explanatory power for each one of
them. Consequently, the Variance Inflation Factor values are lower than three for
all predictor variables, legitimating the simultaneous usage of GDP and age struc-
ture as independent variables.

While Tables 1 and 2 present the results from cross-section analyses on ‘regime
type’, Tables 3 and 4 show the influence of the most important predictor variables
on ‘regime change’. The sample size, constrained by data availability, shrinks from
169 to 110 countries, but case numbers rise due to the extension in the time dimen-
sion (grouped into five-year periods covering the years from 1972 to 2009). The
analyses in Table 3 have been conducted selecting only full democracies (Freedom
House classification ‘free’), while the accounts presented in Table 4 include also
partial democracies (Freedom House classification ‘partly free’). There are 34
breakdowns of a democracy when the dichotomous conception is applied (out of
335 cases), and 81 for the trichotomous conception ($N = 625$). For the latter analy-
sis (Table 4), the metric independent variables have been split into quartiles. For the
smaller sample (Table 3), median splits have been created due to the small number
of cases in which the dependent variable has the value 1 in each quartile. Using
quartiles would not have altered the results fundamentally. However, it would
have caused the estimation to be highly unstable, relying on a very small
number of cases for each coefficient.

The results of the longitudinal analyses, as presented in Tables 3 and 4, provide
strong evidence in favour of this study’s central hypothesis. The probability of the
collapse of a democracy is five to seven times higher in countries with a proportion
of young men above average, if all other factors are held constant. The results of
Table 4 suggest a nonlinear relationship between the two variables, because for
the fourth quartile the effect size is not bigger than for the third quartile. Thus,
the relationship is better interpreted as having a threshold above which the possi-
bility of a transition towards dictatorship is much higher than below this level.
According to the data, this threshold should be approximately at the median,
which is 19.9%. Within the observed period of time, full or partial democracies
with a share of young men exceeding 19.9% of the total adult population have a
probability of 23.1% of becoming a dictatorship within the next five years,
whereas this probability is 4.6% for democracies with less young men. If the
sample is restricted only to full democracies, these probabilities are 30.0% for countries above and 3.5% for countries below the threshold. Even after controlling for economic and religious factors, the odds ratio is still about seven.

Again, the impact of socio-economic modernity is substantially weakened if demography is controlled for. Full and partial democracies in the highest quartile of the GDP distribution are still significantly less prone to become autocracies after the age structure is considered, but the odds ratio value shrinks from 11.5 to about 4. GDP growth has a significant influence on democratic stability in so far as the lowest quartile raises the probability of a democratic breakdown, while there are no differences between the other three quartiles. Thus, if a country experiences zero growth or a shrinking economy (a cumulated growth of GDP per capita of less than 0.5% in a five-year period), the probability of a transition towards dictatorship is

Table 3. Predictors of regime change (only full democracies selected).

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of males aged 15–29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above median</td>
<td>−1.940</td>
<td>0.419</td>
<td>0.665</td>
<td>−0.531</td>
<td>0.403</td>
<td>0.665</td>
</tr>
<tr>
<td>GDP per capita</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above median</td>
<td>−2.042</td>
<td>0.833</td>
<td>0.130</td>
<td>−2.013</td>
<td>0.840</td>
<td>0.134</td>
</tr>
<tr>
<td>GDP growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above median</td>
<td>−0.233</td>
<td>0.496</td>
<td>0.792</td>
<td>−0.754</td>
<td>0.543</td>
<td>0.470</td>
</tr>
<tr>
<td>Religious heritage: Protestantism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholicism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious heritage: Islam</td>
<td>0.064</td>
<td>0.696</td>
<td>0.792</td>
<td>−0.136</td>
<td>0.731</td>
<td>0.873</td>
</tr>
<tr>
<td>British colonial experience</td>
<td>0.307</td>
<td>0.469</td>
<td>1.360</td>
<td>0.045</td>
<td>0.494</td>
<td>1.046</td>
</tr>
<tr>
<td>(Constant)</td>
<td>−0.612</td>
<td>0.538</td>
<td>0.542</td>
<td>−1.974</td>
<td>0.729</td>
<td>0.139</td>
</tr>
<tr>
<td>Nagelkerke Pseudo-R²</td>
<td>0.24</td>
<td></td>
<td>0.30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Logistic regression analyses. Only full democracies (Freedom House classification ‘free’) selected. Cases are countries in five-year period (1972–2009). The dependent variable is coded 1 for countries witnessing a democratic breakdown (indicated by a change of the Freedom House classification within the observed period) and 0 for stable democracies. *p < 0.05, **p < 0.01, ***p < 0.001.

Source: Own calculations.
### Table 4. Predictors of regime change (extended sample with full and partial democracies).

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>(SE)</td>
<td>Exp</td>
<td>(B)</td>
<td>B</td>
<td>(SE)</td>
<td>Exp</td>
<td>(B)</td>
</tr>
<tr>
<td><strong>Proportion of males aged 15–29</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second quartile</td>
<td>0.953</td>
<td>(0.633)</td>
<td>2.593</td>
<td>(0.645)</td>
<td>1.183</td>
<td>(0.645)</td>
<td>3.263</td>
<td>(0.677)</td>
</tr>
<tr>
<td>Third quartile</td>
<td>1.921</td>
<td>(0.651)</td>
<td>6.826**</td>
<td>(0.665)</td>
<td>2.063</td>
<td>(0.665)</td>
<td>7.871**</td>
<td>(0.677)</td>
</tr>
<tr>
<td>Fourth quartile</td>
<td>1.777</td>
<td>(0.649)</td>
<td>5.914**</td>
<td>(0.677)</td>
<td>2.146</td>
<td>(0.677)</td>
<td>8.553**</td>
<td>(0.677)</td>
</tr>
<tr>
<td><strong>GDP per capita</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second quartile</td>
<td>−0.109</td>
<td>(0.308)</td>
<td>0.897</td>
<td>(0.323)</td>
<td>0.098</td>
<td>(0.323)</td>
<td>1.103</td>
<td></td>
</tr>
<tr>
<td>Third quartile</td>
<td>−0.892</td>
<td>(0.379)</td>
<td>0.410*</td>
<td>(0.431)</td>
<td>−0.223</td>
<td>(0.431)</td>
<td>0.800</td>
<td></td>
</tr>
<tr>
<td>Fourth quartile</td>
<td>−2.450</td>
<td>(0.646)</td>
<td>0.086***</td>
<td>(0.705)</td>
<td>−1.296</td>
<td>(0.705)</td>
<td>0.274</td>
<td></td>
</tr>
<tr>
<td><strong>GDP growth</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second quartile</td>
<td>−0.951</td>
<td>(0.352)</td>
<td>0.387**</td>
<td>(0.370)</td>
<td>−0.994</td>
<td>(0.370)</td>
<td>0.274**</td>
<td></td>
</tr>
<tr>
<td>Third quartile</td>
<td>−0.966</td>
<td>(0.345)</td>
<td>0.381**</td>
<td>(0.384)</td>
<td>−0.801</td>
<td>(0.384)</td>
<td>0.449*</td>
<td></td>
</tr>
<tr>
<td>Fourth quartile</td>
<td>−1.133</td>
<td>(0.358)</td>
<td>0.322**</td>
<td>(0.393)</td>
<td>−0.882</td>
<td>(0.393)</td>
<td>0.414*</td>
<td></td>
</tr>
<tr>
<td>Religious heritage: Protestantism</td>
<td>−.0550</td>
<td>(0.593)</td>
<td>0.577</td>
<td>(0.617)</td>
<td>−0.521</td>
<td>(0.617)</td>
<td>0.748</td>
<td></td>
</tr>
<tr>
<td>Religious heritage: Catholicism</td>
<td>−0.002</td>
<td>(0.350)</td>
<td>0.998</td>
<td>(0.388)</td>
<td>−0.290</td>
<td>(0.388)</td>
<td>0.594</td>
<td></td>
</tr>
<tr>
<td>Religious heritage: Islam</td>
<td>0.404</td>
<td>(0.345)</td>
<td>1.497</td>
<td>(0.318)</td>
<td>0.014</td>
<td>(0.318)</td>
<td>1.014</td>
<td></td>
</tr>
</tbody>
</table>
British colonial experience

Decade dummy: 1980s
Decade dummy: 1990s
Decade dummy: 2000s

Nagelkerke Pseudo-$R^2$

-0.100 (0.303)
-0.333 (0.314)
-0.763 (0.372)

Source: Own calculations.

Note: Logistic regression analyses. Full and partial democracies (Freedom House classification 'free' or 'partly free', or 'not free') selected. Cases are countries in five-year period (1972–2009). The dependent variable is coded 1 for countries witnessing a transition towards dictatorship (indicated by a change of the Freedom House classification from 'free' to 'partly free' or 'not free', or from 'partly free' to 'not free', within the observed period) and 0 for all other countries. Model fit: $-2LL = 410.77$ ($\chi^2 = 71.27$, df = 10, $p = 0.000$) for Model 1; $-2LL = 398.97$ ($\chi^2 = 83.07$, df = 13, $p = 0.000$) for Model 2; $-2LL = 382.96$ ($\chi^2 = 99.08$, df = 16, $p = 0.000$) for Model 3.

$\times p < 0.05$, $\times x p < 0.01$, $\times x x p < 0.001$.
three times higher than for little, moderate, or fast growing economies. Catholic and Islamic heritage have no significant influence on democratic stability. A Protestant heritage significantly increases the stability of full democracies, while it shows no significant effect when the sample is extended to include also partial democracies.

There are of course other variables which might have an influence. For instance, democratic stability could vary with the number of parties or the type of executive government (one party vs. coalition). The data from Lijphart’s (1999) study have been added to the time series data to control for Lijphart’s ‘executive-parties’ dimension. But within the observed period of time and in the restricted sample (Lijphart studied only full democracies, mostly in developed countries), only six transitions to authoritarianism (out of \( N = 224 \)) can be observed. Thus, a logistic regression analysis with many predictor variables would not make sense. Still, interestingly enough, Lijphart’s index as well as GDP per capita would not produce a significant effect, while the youth bulge variable would. It appears that no matter what sample is selected, how the dependent variable is defined or what other variables are controlled for, the proportion of young men always has a negative and significant effect on democracy.

Exploring the link between individual and aggregate level

The preceding sections have documented the negative aggregate level relationship between the proportion of young men within a society and the prospects of democracy in this country. Some explorations on how demography might translate into politics conclude the empirical part of this article.

In the theoretical section, it has been argued that a high proportion of young men threatens democratic stability because male adolescents have a higher propensity to intergroup hate and political violence. There is much empirical evidence for this assumption. Table 5 provides further evidence from the World Values Survey: while male adolescents aged 15–29 do not differ from the rest of society regarding their principal support for democracy, they express a significantly greater approval of extremist attitudes and readiness to violence and sacrifice, even when education and income levels are held constant. Young men justify political assassinations almost twice as often and support personal violence as a form of political action more than three times as often as the rest of the population.

However, young men need not necessarily be themselves the leading protagonists of a democratic breakdown, for example, the military leaders commanding a coup d’etat. As Inglehart and Welzel have convincingly argued, ‘aggregate level relationships are not necessarily reproduced at the individual level’. The assumption that unemployment helped the Nazi party gain votes in Weimar Germany, for example, cannot be falsified by the micro-level observation that unemployed Germans did not show a higher tendency to vote for the National Socialist German Workers’ Party (Nationalsozialistische Deutsche Arbeiterpartei, NSDAP) than employees. Rather, ‘rising unemployment rates created a climate of anxiety that affected all social groups, whether employed or not, increasing their readiness
to vote for the Nazis’. Similarly, a high proportion of young men in a country’s population could allow their views to dominate the public opinion, increasing the public support for an authoritarian political system, while the autocrats need not be adolescents themselves. As another possibility, a government could react with authoritarian methods to insurgent or terrorist activities carried out by mainly young men.

While Table 5 indicated a micro-level relationship between age and approval of political violence, Table 6 shows that there is also an independent effect from the size of the country’s male youth cohort on the individual respondent’s probability to accept political violence. This result supports the hypothesis that the age composition of a country influences the public opinion with regard to political violence. Not only are the young men themselves more likely to approve of political violence, but if they are more numerous, this probability further rises for the young men themselves (Model 2) as well as the population as a whole (Model 1). The analysis presented in Table 6 controls for individual wealth and education as well as country level GDP. Respondents living in rich countries show a higher probability to disapprove of political violence, but the strongest predictor is the country’s youth bulge. Gender is also controlled for, showing that being male increases the approval of political violence, but being in the age group of 15–29 years also has an independent effect, further raising the probability of supporting political violence. It is interesting to note that if only the young men are selected,

### Table 5. Young males and anti-democratic attitudes (logistic regression coefficients).

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Impact of being male aged 15–29</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Having a democratic political system is bad</td>
<td>-0.020</td>
</tr>
<tr>
<td>Having a strong leader is good</td>
<td>0.053***</td>
</tr>
<tr>
<td>Democracy is not compatible with Islam</td>
<td>0.242*</td>
</tr>
<tr>
<td>Political extremism</td>
<td>0.227***</td>
</tr>
<tr>
<td>Disagree: using violence for political goals is not justified</td>
<td>0.228***</td>
</tr>
<tr>
<td>Have done or would do: personal violence as a form of political action</td>
<td>1.259***</td>
</tr>
<tr>
<td>Political assassinations are justifiable</td>
<td>0.615***</td>
</tr>
<tr>
<td>Ready risking life for country, freedom, justice or religion</td>
<td>0.221***</td>
</tr>
</tbody>
</table>

**Note:** Logistic regression analysis for each dependent variable controlling for education and income levels. All items dichotomized. *p < 0.05, **p < 0.001. aAsked in 79 countries in Wave 3 (1994–1999) and 4 (1999–2004). bAsked in Wave 4 in Algeria and Pakistan only. cCoded 1 if respondent positions himself on values 1 or 10 on a political scale from 1 (left) to 10 (right), asked in 76 countries during at least one of the four waves. dAsked in Wave 3 in 48 countries. eAsked in Wave 1 (1981–1984) in the following countries: B, CA, DK, F, ICE, IRL, I, MT, NL, N, E, S, UK, USA, GER. fAsked in 44 countries at least once in either Wave 1, 2 (1989–1993) or 4. For a detailed overview of countries that were included in each wave, please refer to the World Values Survey Association’s website at http://www.worldvaluessurvey.org.

the country’s youth percentage is the only significant predictor variable, while wealth or education has no influence. A plausible interpretation of this finding is that the more numerous the young men are, the more they influence themselves in their attitudes rather than being influenced by the older generation.

To summarize, the empirical analyses conducted in this section provide three main findings: first, young men aged 15–29 are more likely to show extremist attitudes regarded as incompatible with democracy than the rest of the population. Thus, if they become more numerous, the country’s average support for extremism and violence automatically rises with the sheer number of the protagonists with a higher propensity to political radicalism. Second, a large share of young men in a country’s population further increases the probability that these young men express extremist attitudes, indicating a self-enhancing socialization effect. A possible interpretation could be that in a country with an older median age, the public opinion is formed mainly by older people and the relatively few young men are more likely to adapt to this more moderate opinion. This, by contrast, might not be the case in a country whose demographics are dominated by young men. Third, and most interesting, the older men and women are also more likely to support political violence if the male adolescents are more numerous. These

Table 6. Young males and approval of political violence (multi-level analyses).

<table>
<thead>
<tr>
<th></th>
<th>Sample: all</th>
<th>Sample: only young men</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>Exp (B)</td>
</tr>
<tr>
<td><strong>Micro-level variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young men aged 15–29</td>
<td>0.113</td>
<td>1.120***</td>
</tr>
<tr>
<td></td>
<td>(0.033)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>Gender: male</td>
<td>0.109</td>
<td>1.115***</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>Education level above median</td>
<td>−0.048</td>
<td>0.953</td>
</tr>
<tr>
<td></td>
<td>(0.027)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>Income level above median</td>
<td>−0.041</td>
<td>0.960</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.025)</td>
</tr>
<tr>
<td><strong>Macro-level variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youth bulge in country above average</td>
<td>0.181</td>
<td>1.198***</td>
</tr>
<tr>
<td></td>
<td>(0.008)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>GDP per capita in country above average</td>
<td>−0.143</td>
<td>0.867***</td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
<td>(0.026)</td>
</tr>
</tbody>
</table>

*Note: Logistic regression analyses (maximum likelihood). Dependent variable: ‘Using violence for political goals is not justified’, coded 1 for respondents who disagree. Item asked in Wave 3 of the World Values Survey (1994–1999) in 48 countries. N = 52,776 (all) and 10,044 (if only young men are selected). Demographic data for countries have been calculated using data from UN, Demographic Yearbook 1999, GDP figures have been obtained from the Conference Board, Total Economy Database. All variables dichotomized. ***p < 0.001.
results could help to explain why the aggregate level relationship between demo-
graphy and politics exists, yet more work is needed to explore the causal mecha-

nism. For example, the analyses presented here could not decide whether the socio-
conomic or rather the socio-biological approach presented in the theoretical
section (or both or none of them) is correct in explaining the young men’s
higher propensity to political violence.

Conclusions
The central hypothesis of this study assumed a negative impact from large pro-
portions of young men on democratic stability. The empirical findings strongly
support this hypothesis. Young men are more likely to support political violence
and the larger their relative number, the higher the probability for the rest of the popu-
lation to adopt the same attitude. Moreover, the size of the male youth cohort has a
strong and significant effect on both ‘regime type’ and ‘regime change’, tested
with different operationalizations of the dependent variables, raising the probability
doctorship or a democratic breakdown respectively. Some reflections on possible
consequences and further research will conclude this study.

Although the data provide clear evidence in support of the hypothesis, this
article could only provide a first account on the subject. Further work is needed
to test the hypothesis for different periods of time or with other methodological
approaches. In addition, more work on the causal mechanism behind the relation-
ship as well as the elaboration of a more integrated theory is obviously needed.

From the perspective of the results presented in this study, major current geo-
political issues, like the democratization of the Middle East, are threatened by the
ongoing population growth in many parts of the world. Although average birth
rates have fallen over the past 20 years, the total fertility rate is still greater than
six in countries like Afghanistan, Yemen, Somalia, or Uganda. Furthermore, lowering the fertility rate does not affect the number of young men until 15–30 years
later. Thus, although birth rates in countries like Syria have fallen from four to
about three children per woman during the last decade, the proportion of young
men has risen from 22.5% in 1990 to 23.4% in 2008. With respect to the uprisings
in the Arab world in 2011, the prospects for a stable democracy are thus assumed to
be better in Tunisia, where the share of young men (19.5%) is slightly below the
world median, than in Algeria (22.3%), Bahrain (22.3%), Egypt (22.6%), Libya
(23.6%), or Syria. An exceptionally large youth bulge (24.9%) may furthermore,
together with other factors, contribute to low chances of democratic stability in
Iraq. However, with rising levels of economic development and education, birth
rates in the world are expected to further sink in the next decades. Thus, while
other threats will persist, it is possible that the youth factor will not threaten demo-
cratic stability in most parts of the world in the second half of the twenty-first
century anymore. Until then, however, it will probably be salient especially in
Africa, the Middle East, and South Asia. It is important to underline that there is
no monocausal relationship in the social world and demography alone does not
determine the political regime type of a country. Countries with large youth bulges can have stable democracies and vice versa, but the results of this study show that the probability is lower, all other observed variables being constant.

Some researchers have formulated policy recommendations such as better education for women in order to lower birth rates. In addition, more emigration opportunities have been demanded because migration ‘works as a safety valve’, and ‘almost half of Arab youth expressed a desire to emigrate’. However, lowering youth bulges by emigration is not a lasting solution as it does not alter the root causes. Furthermore, the quantitative dimensions have to be considered. In order to reduce the proportion of young adults in Africa and Asia by 1%, about 50 million young men would have to emigrate – which is about the number of young men living in the European Union today. In addition, these emigration waves would have to be repeated periodically because large cohorts of children keep emerging in these parts of the world.

Notes
1. James, Children of Men.
5. Przeworski et al., Democracy and Development, 217.
6. Ibid., 221.
8. Ibid., 241.
11. These calculations are based on Statistisches Reichsamt, Statistisches Jahrbuch für das Deutsche Reich, Band 1928. This figure was already shrinking during the ‘Third Reich’ due to the low birth rates after the war, causing Hitler to implement pro-natal policies.
12. According to the 1921 census, see INSEE, Données sur la démographie, la population et l’enseignement primaire sur la période 1800–1925.
13. This and the following numbers on the UK and Soviet Russia are based on the data in United Nations, Demographic Yearbook 1949–1950. I am grateful to the first anonymous reviewer of this journal for suggesting to add other European countries’ demographic data to compare them with Weimar Germany’s, as well as for other helpful comments.
17. Tajfel, Social Identity and Intergroup Relations.
19. The terms ‘adolescent’ and ‘young adult’ are being used synonymously for reasons of simplicity to describe ‘the years from the late teens through the twenties’ (Arnett,
'Emerging Adulthood', 469), what Arnett calls 'emerging adulthood', although these terms are being used to define distinct groups in psychology.

20. See Erikson, Identity: Youth and Crisis; Lorenz, Civilized Man’s Eight Deadly Sins; Arnett, ‘Emerging Adulthood’.


22. Lorenz, Civilized Man’s Eight Deadly Sins, 68.


25. Although there have been recorded cases of female suicide bombers and other incidents indicating that not only men are capable of committing violent political actions, men constitute by far the majority. Therefore the analysis concentrates on young men as protagonists of political violence and insurgency.


29. Lorenz, Civilized Man’s Eight Deadly Sins, 68.


31. Lorenz, Civilized Man’s Eight Deadly Sins, 74.

32. Casper and Tufis, ‘Correlation versus Interchangeability’.


34. See, for example, Przeworski et al., Democracy and Development.

35. See, for example, Epstein et al., ‘Democratic Transitions’.


37. The analyses in this article focus on democratic stability rather than on the transition towards democracy. This decision has been made because it is assumed that a formal democracy can be installed in any kind of country (for example, by a internal revolution or foreign intervention), but the more interesting thing to study is whether a democracy, having been established for whatever reasons, remains stable or not under the given conditions.

38. The first period (1972–1974) is shorter.


42. CIA, The World Factbook.

43. Conference Board, Total Economy Database.

44. Przeworski et al., Democracy and Development, 78–9.

45. Dahl, Polyarchy, 64.


47. See, for example, Huntington, The Third Wave; Feng and Zak, ‘The Determinants of Democratic Transitions’; Boix and Stokes, ‘Endogenous Democratization’; Epstein et al., ‘Democratic Transitions’.


49. For example, Przeworski et al., Democracy and Development, 112.

50. For example, Lipset, ‘Conditions for Democracy’, 399.
51. Huntington, ‘Democracy’s Third Wave’, 140.
52. Ibid., 145.
54. See, for example, Sorrentino, ‘International Unemployment Rates’.
55. Source is CIA, The World Factbook.
56. Data come from Roeder, Ethnolinguistic Fractionalization Indices.
58. For example, Hadenius, ‘The Duration of Democracy’.
59. This pattern does not change if the second threshold is altered to 20, 50, or 80 million.
60. Weiner and Teitelbaum, Political Demography, Demographic Engineering, 7.
61. Lutz and Qiang, ‘Determinants of Human Population Growth’.
62. Some tests have been conducted in order to control for heteroscedasticity and non-stationarity of the pooled data. A likelihood ratio test indicated no structural break in the data, that is, the set of coefficients does not differ significantly as a function of time. The dataset was divided into an earlier (1970s and 1980s) and a later (1990s and 2000s) period of time. The (ending) -2LL value for the logistic regression (including all predictor variables as in Table 4 except the decade dummies) performed with sample 1 (1970s and 1980s) was 222.77, while the -2LL value for sample 2 was 160.28. The sum of these values differs from the -2LL value of the pooled data by 15.93, which is below the critical $\chi^2$ value of 22.36 for df = 13 and $p = 0.05$. In addition, (although not applying ordinary least squares (OLS)) a Goldfeld–Quandt test has been conducted manually to examine possible heteroscedasticity. The mean square residual error was calculated for each of the two samples (0.099091 and 0.097745) and according to an F-test (df = 348 for the numerator and df = 264 for the denominator) the null hypothesis cannot be rejected ($F = 1.01377, p = 0.456$), indicating homoscedasticity. I am grateful to the second anonymous reviewer of this journal for suggesting to perform these tests, among other helpful comments.
63. Lijphart, Patterns of Democracy.
64. Binary logistic regression analysis, with three predictor variables: per capita GDP, Lijphart’s executive-parties index, and proportion of young males aged 15 to 29 (all dichotomized with a median split) in a sample ($N = 224$) of the 36 democracies studied by Lijphart (Patterns of Democracy) with the same dependent variable, observed period of time, etc. as in Table 3. While executive-parties index and per capita GDP produce no significant effects, the demographic variable does with $B = 3.704$ (SE = 1.438); $p < 0.01$; odds ratio value $= 40.613$. The analysis is only a little reliable as the number of cases for which the dependent variable is coded ‘1’ is six.
65. See, for example, Steinberg, Brooks, and Remtulla, ‘Youth Hate Crimes’.
67. Ibid., 63.

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