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Political freedom, education, and value liberalization and deliberation: A cross-national analysis of the world values survey, 1981-2014

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ABSTRACT

Since World War II, value liberalization has been a worldwide trend, but more recently, there has been a resurgence of conservatism. Modernization and cultural theories have difficulty explaining the shift to liberal or illiberal values, but the political environment, an underestimated contextual factor, could shed light on the mechanisms driving it. This study used hierarchical linear modeling on all six waves of the World Values Survey data (1981–2014) to demonstrate that political freedom helps to explain the rise and fall of liberal attitudes when controlling for societal affluence, inequality, and cultural backgrounds. It finds that political freedom conditions the effects of education: although education is usually considered a liberalizing force, its effect is much weaker in non-free than free societies. The findings remind us of the importance of a free political environment for a robust democracy and point to the complex nature of educational effects, namely the ability of education to socialize people in liberal or illiberal directions depending on the political context and the regime's agenda.

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Introduction

Public opinion is a long-standing topic of discussion in the social sciences, as it has myriad implications for political and social life in such wide-ranging areas as voting (Dalton, 2009; Norris & Inglehart, 2019), social policies (Gerhards, 2010; Kwon & Hughes, 2018), trust of others and social capital (Welzel, 2018), contentious politics (Kensicki, 2001; Torcal, Rodon, & Hierro, 2016), and democratization (Welzel, 2018). Changes in public opinion, therefore, are a central concern of social scientists, as they will inevitably have social and political implications. Generally speaking, we have seen an overall trend towards value liberalization in the post-war world. The establishment of what Ronald Inglehart and his associates call a “broad syndrome of interrelated values” (Welzel & Inglehart, 2009, p. 216) has rendered people more participatory, secular, trusting, and tolerant – in a word, more liberal (Adamczyk, 2017; Andersen & Fetner, 2008; Solt, 2011; Treas, 2002). Elsewhere, Inglehart uses the term “emancipative values” to describe the contemporary increase in citizens’ overall support for democracy, human rights, civic participation, and self-expression (Inglehart & Welzel, 2010; Welzel, 2018). At the same time, and more worryingly, however, a counter-movement of “value deliberation” has been taking place, expressed in a global resurgence of conservatism, intolerance, xenophobia, and authoritarianism (Grasso, Farrall, Gray, Hay, & Jennings, 2019; Inglehart & Norris, 2017; Norris & Inglehart, 2019).

Two main perspectives have been used to explain the shift to liberal attitudes. Modernization theory argues that economic development and affluence encourage liberalism (Inglehart & Baker, 2000; Welzel, 2018). Meanwhile, cultural theorists believe cultural contexts create change

(Flanagan & Lee, 2003). However, modernization theory and cultural theory face challenges in new market economies and advanced industrial countries alike (Zhang & Brym, 2019). In the former, economic growth has failed to yield value liberalization and democratization; in the latter, the once liberalized attitudes have been shifting back to extremist conservatism in recent years (Koehler, 2016).

An untapped area of inquiry that could shed light on this phenomenon is the context of political freedom and its effect on attitude liberalization. Public opinion and democratization studies focus mainly on how political liberalism at the individual level is conducive to democratization and freedom (Fukuyama, 2006; Lipset, 1959; Saha, 2000; Welzel, 2018), not the other way around. This study took a new angle and argued that political freedom might influence a number of liberal attitudes. By doing so, it followed an increasing number of researchers who are paying attention to the joint effects of institutional and individual characteristics in shaping political beliefs and behaviors (Andersen & Fetner, 2008; Dalton, Van Sickle, & Weldon, 2010; Kwon & Hughes, 2018; Zhang & Brym, 2019). Adopting a cross-level perspective, it proposed that political freedom not only serves as the main effect but also moderates other individual-level predictors' effects on liberal attitudes. To probe its hypothesis, it analyzed data from all six waves of the World Values Survey (hereafter WVS) data (1981–2014), looking at the role of political freedom in attitude liberalization and asking whether it moderates other factors, notably education.

The study contributes to the literature in two ways. First, it posits political freedom as a contextual-level explanation of individual-level liberal attitudes, thereby complementing and adding to economic and cultural explanations. Second, it considers how political freedom could moderate the educational effects driving attitude change. Previous studies find education is positively associated with liberal attitudes (Campbell & Horowitz, 2016; Easterbrook, Kuppens, & Manstead, 2016; Ohlander, Batalova, & Treas, 2005; Treas, 2002; Weil, 1985; Zhang, Brym, & Andersen, 2017), but this study found that more education sometimes means less liberal attitudes, specifically in non-free societies. In other words, the educational effect is not universal, and this variation could be partially explained by the political environment. Importantly, the study warns us that in certain political environments, value deliberalization could occur through agencies of socialization, such as education systems.

Value liberalization: why political freedom matters

Since the Second World War, despite some fluctuations and exceptions, most societies have become more liberal in their attitudes to a broad range of topics (Inglehart & Baker, 2000; Welzel, 2018). Previous studies have identified a number of economic and cultural factors underlying this evolution (Flanagan & Lee, 2003; Huntington, 1993a; Inglehart & Welzel, 2010). As noted above, modernization theorists emphasize the role of economic development and argue that economic security frees individuals from worrying about basic needs and stimulates higher-level needs (Inglehart & Baker, 2000; Inglehart & Welzel, 2010; Welzel, 2018). Meanwhile, cultural theorists say cultural backgrounds set the basis for society's preferences and influence subsequent attitude shifts through path-dependent effects (Flanagan & Lee, 2003; Huntington, 1993a; Inglehart & Baker, 2000; Schwartz, 2006).

Modernization theory and cultural theory are equally plausible, but recent empirical analyses of many developing countries and emerging market economies challenge the validity of both. For example, contrary to the economic development theory, researchers have found China and Russia are not becoming more liberal despite rapid economic growth (Brym, 2016; Zhang, 2018). Furthermore, China's upper class is less liberal than its working-class (Zhang et al., 2017). Similarly, in Turkey, the new middle class benefitting from economic growth has not embraced democratization, aligning instead with the authoritarian regime (Sarfati, 2017). In short, modernization theory seems to fail to account for the resistance to attitude liberalization in those cases.

Cultural explanations face serious challenges from exceptional cases too. Unlike its Confucian neighbors (Japan, South Korea, Taiwan, Hong Kong), mainland China has not softened its attitudes to liberalism (Zhang et al., 2017; Zhao, 1998; Zheng, 2015). We see a similar gap between Russia and its Orthodox neighbors: while many Eastern European and former communist societies have successfully democratized and embraced a more liberal-democratic system, Putin's Russia is showing a resurgence of nationalism and authoritarianism (Brym, 2016; Makarychev & Medvedev, 2015; Shaykhtudinov, Konitzer, Pacek, & Zvonovskii, 2010). These outliers defy what cultural theory says about attitude shifts. The recent rise of extremist right-wing ideologies and politics in West Europe and North America has raised even more questions about existing explanations (Grasso et al., 2019; Norris & Inglehart, 2019). Although the revival of extremist conservatism could be partially explained by the grievances of rising inequality, unemployment, surging crime, and the refugee crisis in the West, these grievances do not completely explain the global trends in attitude deliberalization.

Arguably, previous work underestimates how political freedom, as an important environmental factor, could be independently associated with the spread of liberal attitudes. Political freedom has wide-ranging implications for social mobility, the distribution of power and wealth, and the media's messages (Acemoglu, Verdier, & Robinson, 2004; Jowett & O'Donnell, 2014). Public opinion studies touch on political freedom but typically treat it as a consequence of liberal attitudes (Fukuyama, 2006; Lipset, 1959; Saha, 2000). For example, some researchers have analyzed the way political contexts affect public opinion on certain policies or issues, such as how political cleavages and voting systems affect policy preferences (Nir & McClurg, 2015), paying relatively less attention to political freedom as a factor affecting the attitude shift directly or indirectly.

Yet free and non-free societies may be fundamentally different in attitude formation. To be sure, freedom of speech is not absolute in relatively free societies; some minorities are comparatively voiceless, and some media messages dominate. Nonetheless, various ideologies and opinions are allowed to compete for support in the public sphere, fostering a relatively diverse and tolerant political culture. By the same token, there may be a more homogeneous and obedient political culture in non-free societies, and, if so, the agentic role of authoritarian regimes and ruling elites cannot be ignored. To retain power, authoritarian governments or dictators seek to control information and the mass media (Jiang, 2010; King, Pan, & Roberts, 2013). Voices advocating citizen participation, individual and collective autonomy, and political reform are muted; voices advocating respect for established authority and traditional values are encouraged. Instead of promoting tolerance, authoritarian regimes tend to incite nationalism and xenophobia, in part, to divert domestic discontent from their own actions (Solt, 2011; Weiss, 2014). They reward citizens handsomely for compliance and punish them harshly for disobedience (Acemoglu et al., 2004). Liberal attitudes, even those not directly concerning regime legitimacy or public life, such as freedom of abortion, international adoption (Makarychev & Medvedev, 2015), gender equality (Zheng, 2015), and sexual minority rights (Zhang & Brym, 2019), are discouraged, as those in power may consider them potentially dissident, or at least inclining to a mindset of individualism and disobedience.

To sum up, there are many reasons to expect a non-free political environment will discourage liberal attitudes. These considerations motivate the first hypothesis:

Hypothesis 1: A society's level of political freedom will be positively correlated with its liberal attitudes.

Political contexts, educational effects, and value change

As discussed above, a society's level of political freedom could make a difference in public opinion and attitude formation. In relatively free countries, people tend to be exposed to diverse opinions and lifestyles and to be able to speak, assemble, and engage openly in religious and ethnic practices

of their choosing. The political environment can also affect individuals' attitudes and preferences through two important socializing tools: mass media and the education system. Scholars from various disciplines have pointed to the interactions between the political environment and media (Avraham, 2002; Kensicki, 2001; Skoric, Zhu, & Pang, 2016) and, more relevant for present purposes, between political context and educational systems. As education is consistently found to be positively associated with liberal attitudes (Campbell & Horowitz, 2016; Easterbrook et al., 2016; Nir & McClurg, 2015; Ohlander et al., 2005; Treas, 2002; Weil, 1985), this suggests the possibility of an interaction between the level of political freedom and individual educational attainment.

Most modern governments have the capacity and possibly the motivation to influence education policies, school curricula, and investment in education and research (Jowett & O'Donnell, 2014). Researchers of nationalism and political culture emphasize that modern states strive to foster a collective mindset among their citizens (Anderson, 2006; Gellner, 1994). Gellner argues that the complexity of industrialized societies demands they create and maintain a common cultural infrastructure shared by their citizens. State-endorsed formal education may be such an infrastructure. Formal education institutionalizes the socialization of norms and consensus and is compulsory in most modern societies (Barber, 2012; Meyer, Ramirez, Frank, & Schofer, 2007).

All else the same, non-democratic regimes have relatively more capacity to exercise this type of influence than democratic ones because they monopolize state power. And, arguably, they are more motivated to exercise such influence since they must deal with an inherently higher level of underlying discontent than is typical in democratic regimes. In non-free societies, education is thus an especially important institution for legitimation, mass persuasion, and regime stability (Brady, 2009; Jiang, 2010; Saha, 2000; Weiss, 2014).

This possibility is backed up by examples of regime interference with curricula in a number of comparatively unfree societies. In the former Yugoslavia, for example, the personality cult surrounding Josip Broz Tito was evident in history textbooks glorifying his accomplishments and denigrating his opponents. Glaring biases were removed only after democratization (Pavasović Trošt, 2014). Similarly, in reaction to the 1989 Tiananmen Student Protests, post-1989 China initiated a "patriotic education campaign" to regain legitimacy (Brady, 2009; Zhao, 2004). A major component of the campaign was the manipulation of higher education curricula. Today, Chinese university students are required to take courses in political propaganda, including Marxism-Leninism, Maoism, and Deng Xiaoping Theory (Wang, 2008), and attitudes encouraging protests are strictly suppressed on Chinese campuses and in the media (King et al., 2013; Radio Free Asia, 2019). Liñán observes similar attempts by the current Russian regime: "There is a close relationship between the implementation of centralized (state) education systems and the construction of identities Textbooks have been, and still are, a very valuable vehicle for political propaganda" (2010, p. 270).

These examples suggest that societal-level political freedom not only influences individual-level liberal tendencies directly; it also interacts with the effect of education. Education has a positive effect on liberal attitudes (Weil, 1985), but in non-free societies, this effect might be less influential. Hence this paper's second hypothesis:

Hypothesis 2: Education's liberalizing effect on attitudes is greater in free societies than in non-free societies.

Data and method

WVS data, 1981–2014

Since the research hypotheses concern contextual effects, especially the role of political freedom, testing them requires cross-national data. This study drew on all six waves of the WVS, spanning the period 1981 to 2014. The WVS project provides individual-level data on demographic variables and

political attitudes and behavior. The six waves cover 99 societies. Since many societies were surveyed for multiple waves, the data contain 242 country by survey year (hereafter, “country-year”) observations. These societies vary widely in their stages of economic development, levels of inequality, cultural backgrounds, and political environments, thus offering an excellent opportunity to identify the effects of political freedom by controlling for other contextual factors.

To analyze the contextual-level effects, the study merged contextual-level data from authoritative secondary sources with the individual-level WVS data. To deal with concerns about missing information, it excluded country-year observations with incomplete data on one or more key country-level variables, i.e., GDP per capita, Gini, or Freedom House Index, as these data should not be imputed. This procedure left 88 countries with 225 valid country-year observations. The 88 countries and their levels of political freedom are displayed in [Figure 1](#). As the figure shows, the societies cover a wide range of cases, ranging from less free societies like China and Iran to free societies such as Finland and Norway.

Though the contextual level data were now complete, there was missing information at the individual level. The study generated multiple imputations ($N = 5$) using the chained equation method¹ to minimize this problem. After data cleaning and multiple imputation procedures, around 90% of the original data were retained in the final regression analyses. There was still a small amount of missing data for certain dependent variables, but this was negligible.² Statistical estimates were based on pooled data from the imputed datasets.

Contextual-level information

Previous studies find the level of economic development (Inglehart & Baker, 2000), inequality (Andersen & Fetner, 2008), and culture zone (Flanagan & Lee, 2003; Huntington, 1993a; Zhang & Brym, 2019) are significantly associated with liberalism, so this study controlled for these contextual variables at the level of country-year. For each country-year observation, it collected the following information: GDP per capita, Gini coefficient, and Freedom House Index for that society in the corresponding year. This research design, together with the multi-level modeling, was able to capture both the continuity and the changes within a country over time.³

GDP per capita served as the measure of economic development, with purchasing power parity figures converted into 2005 US dollars (World Bank, 2015). The study modeled the logged term of GDP to respond to the skewness of the original distribution. The Gini coefficient of inequality came from the Standardized World Income Inequality Database (Solt, 2009), which is based on household disposable income (post-tax, post-transfer), using data from the Luxembourg Income Study. The Gini coefficients of the selected countries ranged from 17.6 to 60.8, covering a wide range of societies from very equal to highly unequal. Culture zone was a set of dummy variables that took into account the constructed cultural traditions and dominant religions suggested by Huntington (1993a) and Schwartz (2006): (1) Western/West Europe and North America (the reference group), (2) Catholic/Latin America, (3) Orthodox/East Europe and Russia, (4) Islamic/Middle East and North Africa, (5) Sub-Saharan Africa, (6) Indian/South Asia, and (7) Confucian/East and South East Asia.

¹Multiple imputation was executed with the R statistical package *Amelia II* (Honaker, King, & Blackwell, 2011). The *Amelia II* package employs EMB (expectation maximization with bootstrapping) methods in estimation. The literature disagrees on the optimal number of imputations. Hershberger and Fisher (2003) believe five multiple imputations are not enough, and more (potentially hundreds) is ideal. Yet Von Hippel (2005) argues that using five to ten is more than sufficient and does not cause considerable loss in precision. The study adopted $m = 5$ as the final number for multiple imputations. More ($m = 10, 20$) were tested, but the differences in their estimates were trivial.

²After multiple imputations, there was no missing information for the individual-level predictors, such as age, gender, marital status, occupation, and educational attainment. However, there was some missing information for the dependent variables and national-level statistics, and these data should not be imputed. Fortunately, the missing rate was not high for the dependent variables. More details on the numbers of observations and descriptive statistics are in [Table 2](#).

³For instance, the UK was surveyed in 1998 and 2005. In 1998, the UK had a GDP per capita of 33344.01 dollars (measured in constant 2005 US dollars), a Gini coefficient of 34.36%, and a Freedom House Index of 1.5. In 2005, the three numbers were 39934.78 dollars, 34.88%, and 1.0, respectively.

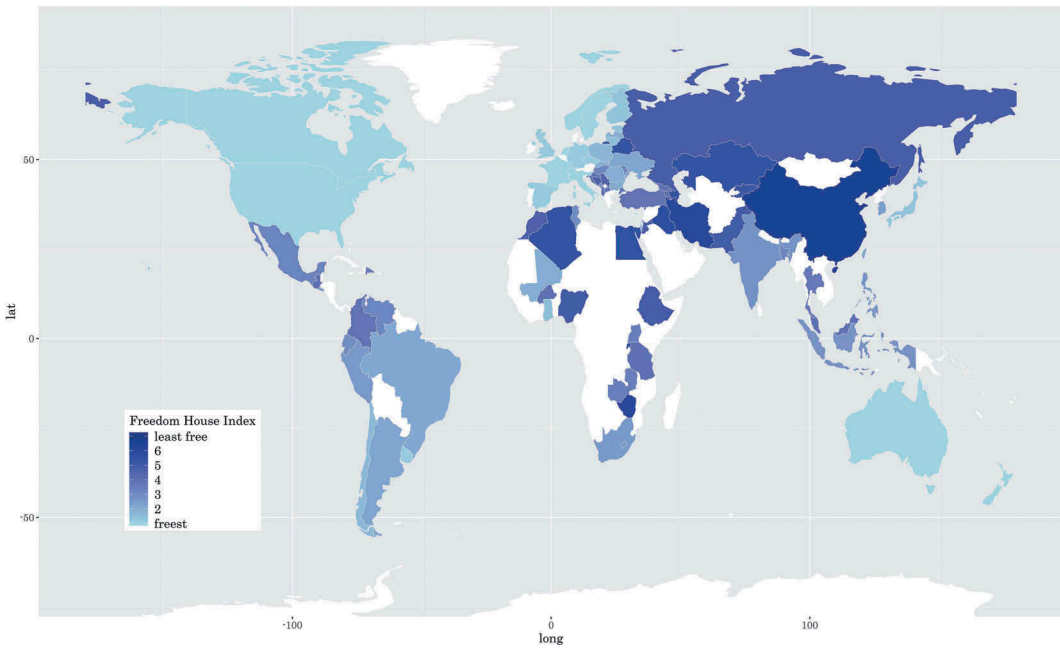


Figure 1. Political freedom in the 88 WVS-surveyed societies (data from freedom house, average values used for cases surveyed in multiple waves).

The focal predictor at the contextual level was political freedom as provided by Freedom House (2014). Freedom House investigates many aspects of the political environment in each society of interest, such as free and fair elections, competitive party systems with real opposition, freedom of association and speech, and so on. After collecting the relevant information, Freedom House generates two indicators for freedom in a society, one for civil liberties and the other for political rights. This study took the average of the two indicators and treated the mean value as the Freedom House Index (hereafter FHI). The FHI ranged from 7 (least free) to 1 (most free), with intervals at a distance of 0.5 points,⁴ and was used here as a continuous measure.

Dependent variables

The following four items were selected from WVS to measure liberal attitudes: attitudes to abortion, to homosexuality, to gender equality in the job market, and to collective action. Attitudes to abortion (Asal, Brown, & Figueroa, 2008), homosexuality (Adamczyk, 2017; Andersen & Fetner, 2008; Gerhards, 2010; Ohlander et al., 2005; Zhang & Brym, 2019), gender equality (Bolzendahl & Myers, 2004; Kaufman, Bernhardt, & Goldscheider, 2017; Schoon, Cheng, Gale, Batty, & Deary, 2010; Van Egmond, Baxter, Buchler, & Western, 2010), and social movements (Bernburg, 2015; Brym, Godbout, Hoffbauer, Menard, & Zhang, 2014; Dalton et al., 2010) are common foci for public opinion researchers.

They also have good availability in the WVS dataset. All the variables employed here were surveyed in all six waves of WVS; other variables of possible interest were either not measured or were measured differently in one or more waves. As these items concern different aspects of liberal attitudes, using them allowed the hypotheses to be tested from different angles, thus allaying concerns about tautology, social desirability biases, or cultural biases. For instance, in some cultures,

⁴The coding by Freedom House needs some attention in the interpretation of results, as it uses smaller values to represent more freedom and larger values to represent less freedom. However, the study did not change the direction of coding to respect the original coding and to ensure consistency with other studies using the same dataset.

respondents could give false answers to questions on their attitudes to homosexuality or abortion, or in non-democracies, people might give deceptive responses when asked their political opinions. However, this study's choice to analyze multiple attitude items should alleviate these concerns. If the findings emerging from multiple items share the same pattern, they could partially alleviate our concerns of respondents' biases, contextual variations, and circular reasoning. Therefore, the discovered pattern could be seen as more convincing and robust.

In terms of the measurement and question wording, the selected variables show consistency across countries and surveys. In the WVS, questions on attitudes to abortion and homosexuality are worded similarly. Interviewers ask the respondents, "Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card." The respondents are expected to rate how much they see the relevant behavior as justifiable on a 1–10 scale, where 1 represents "never justifiable" and 10 "always justifiable." For gender equality, however, respondents are asked, "Do you agree or disagree with the following statements: When jobs are scarce, men should have more right to a job than women". To follow the previous coding and ensure comparability, the study recoded their answers as follows: "agree" was 1, "disagree" was 10, and "neither agree nor disagree" was 5.5.⁵

A series of questions in the WVS measure support for collective action. The questions ask whether respondents have "actually done," "might do," or "would never, under any circumstances, do" any of the following: (1) sign a petition; (2) join in a boycott; (3) attend a lawful demonstration; (4) join an unofficial strike; (5) occupy a building or factory. The study assigned a score of 1 to each "will never do" response and a score of 10 to each "have done" answer; "might do" received a midpoint score of 5.5. Based on the five items, the principal component analysis identified only one eigenvalue greater than 1, suggesting the scale was unidimensional. Cronbach's alpha for the five items was 0.75, indicating they were internally consistent.⁶ Thus, they can be considered as having high face validity. They also had good predictive validity: they correlated highly and in the expected direction with measures of other dimensions of liberalism, including questions tapping tolerance of minority groups, attitudes to freedom of speech, and so on.

The study constructed a 1–10 scale by taking the average value of all five items, with 1 the least supportive of collective action and 10 the most supportive. This comprehensive measure allowed the assessment of the degree to which respondents supported freedom of expression and assembly by inclination and action, something recognized as a key aspect of liberalism (Flanagan & Lee, 2003; Inglehart & Baker, 2000; Inglehart & Welzel, 2010). Table 1 displays the dependent variables and shows their details in the WVS data, question wordings, value codings, and means and standard deviations.

After the four dependent variables were properly constructed, the next step was to examine how they were associated with political freedom at the aggregate level. Figure 2 shows the scatterplots for each item and political freedom. The x-axes in the figure are the same for all, i.e., the Freedom House Index ranging from the least free (FHI = 7) to the most free (FHI = 1). The y-axes are the four dependent variables. The study calculated the average values for each country-year observation. All four scatterplots show a positive correlation between political freedom and liberal attitudes, thus offering support for Hypothesis 1 that national freedom and individual support for liberal attitudes are related.

⁵For this variable, a multi-level multinomial logistic regression model would be more appropriate. However, to simply the discussion and table presentation, the study treated it like the other three dependent variables. When fitted with both types of models, the main findings, especially the interaction effects addressed by this study, were consistent. Details of codes and results can be requested from the author.

⁶To ensure comparability across countries, the study calculated Cronbach's alpha for the scale of each country-year (Alemán & Woods, 2016). Of the 225 country-year observations, 178 (79.1 percent) had alpha values at or above the conventional 0.7 cut-off point (Nunnally, 1978). Another 45 country-year observations had alpha values between 0.6 and 0.69. Only two cases (0.9 percent of country-years) – Venezuela in 2001 and Tanzania in 2000 – had alphas below 0.6. The study retained the country-year observations with a low Cronbach's alpha for the following reasons: first, they represented a small proportion of the observations; second, a comparison of the regression modelling results before and after the removal of cases revealed only trivial differences; third, psychometricians consider 0.6 a permissible cut-off for scales with fewer than ten items and items with fewer than seven response options if the scales are valid and theoretically justified, as was the case here (Loewenthal, 2001).

Table 1. Items and recoding of dependent variables from WVS data (1 = least liberal, 10 = most liberal).

Variable	Question Wording	Items	Value Coding	Mean (SD)	
DV1 Justifiable: Abortion	Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card.	F120	Rate on a 1–10 scale: Always Justifiable = 10 Never Justifiable = 1	3.42 (2.86)	
DV2 Justifiable: Homosexuality		F118	Rate on a 1–10 scale: Always Justifiable = 10 Never Justifiable = 1	3.12 (2.99)	
DV3 Gender Equality In Hiring	Do you agree or disagree with the following statements: When jobs are scarce, men should have more right to a job than women	C001	Disagree = 10 Neither = 5.5 Agree = 1	5.67 (4.09)	
DV4 Willingness to Support Collective Action	Now I'd like you to look at this card. I'm going to read out some different forms of political action that people can take, and I'd like you to tell me, for each one, whether you have done any of these things, whether you might do it or would never, under any circumstances, do it.	E025: Petition	Have done = 10 Might do = 5.5 Would never do = 1	3.04 (2.89)	Averaged Index 3.52 (2.46)
		E026: Boycott	Have done = 10 Might do = 5.5 Would never do = 1	4.80 (3.63)	
		E027: Demonstration	Have done = 10 Might do = 5.5 Would never do = 1	3.90 (3.27)	
		E028: Strike	Have done = 10 Might do = 5.5 Would never do = 1	2.48 (2.63)	
		E029: Occupy Buildings/ Factories	Have done = 10 Might do = 5.5 Would never do = 1	1.71 (1.86)	

Individual-level variables

On the individual level, studies show that age, gender, marital status, and occupation are significant predictors of liberalism (Andersen & Fetner, 2008; Bolzendahl & Myers, 2004; Treas, 2002; Zhang, 2018; Zhang et al., 2017). Therefore, these served as the study's control variables. Gender was a dummy variable (female = 0, male = 1); age range was 18 to 99 years; marital status was collapsed into three categories: single/never married (the reference group), married/cohabiting, and widowed/separated/divorced. The variable of occupation had eight categories: (1) unemployed (the reference group); (2) student; (3) retired; (4) unskilled manual labor; (5) skilled manual labor; (6) non-manual office worker; (7) professional; (8) manager/owner. For all the categorical variables, the first category was used as the reference, and dummy variables were created for the rest.

The focal predictor at the individual level was educational attainment. Education levels were recoded into five categories: (1) no or little formal education (the reference group); (2) elementary school completed; (3) middle school completed; (4) high school completed; (5) college degree and above. In several countries, education was coded as years of formal education. For those countries, the study recoded years of education as follows: 0–5 (no or little education), 6–8 (elementary school completed), 9–11 years (middle school completed), 12–14 years (high school completed), 15 years+ (college/university/higher levels).

See Table 2 for a summary of all independent and dependent variables.

Modeling and robustness checks

The study used multilevel models also known as hierarchical linear models (HLM) to analyze both the individual- and contextual-level effects and to predict respondents' support for the liberal

Table 2. Summary of individual and contextual variables (imputed data).

Variables	N	Percentage or Mean(SD)
Independent Variables		
Individual-Level		
<i>Male (Female = 0)</i>	166099	48.25%
<i>Age (18–99)</i>	344255	40.80 (16.17)
<i>Marital Status</i>		
Never Married (= 0)	86383	25.09%
Married or Cohabiting	219161	63.66%
Divorced, Separated or Widowed	38698	11.24%
<i>Job</i>		
Not Employed (= 0)	78691	22.86%
Student	29964	8.70%
Retired	24726	7.18%
Unskilled Manual Worker	40022	11.63%
Skilled Manual Worker	56957	16.55%
Non-Manual Office Worker	34846	10.12%
Professional	31770	9.23%
Managerial/Owner	47266	13.73%
<i>Level of Education</i>		
None/Little (= 0)	45174	13.12%
Elementary	70846	20.58%
Middle School	89306	25.94%
High School	84422	24.52%
College or Above	54494	15.83%
Contextual-Level (by country-year)		
<i>GDP per capita (in constant 2005 USD)</i>	225	10803.56 (13905.42)
<i>Gini Coefficient (0–100)</i>	225	38.45 (9.56)
<i>Culture Zone</i>		
Western/West Europe North America (= 0)	41	18.22%
Catholic/Latin American	54	24.00%
Orthodox/East Europe and Russia	34	15.11%
Islamic/Middle East North Africa	36	16.00%
African	21	9.33%
Indian/South Asia	7	3.11%
Confucian/East Asia	32	14.22%
<i>Freedom House Index</i>	225	3.13 (1.77)
Dependent Variables (1–10, 10 = most supportive)		
Support for Free Abortion	299563	3.42 (2.86)
Support for Homosexuality	287490	3.12 (2.99)
Support for Gender Equality in Employment	298237	5.67 (4.09)
Support for Collective Action	296951	3.52 (2.46)

attitudes discussed above. In all models, individuals (Level 1) were nested in country-year (Level 2), and country-year was nested in countries (Level 3). All models included the fixed effects of individual-level predictors and the intercepts of the waves. They also included random terms for country intercepts and country-year intercepts to allow across-context variations at both Level 2 and Level 3. More importantly, all models had a random term for education across contexts, allowing the effect of education to vary across country-year.

This three-level modeling design can be formally specified as follows: let Y_{ijk} be the outcome variable for the Level 1 unit i ($i = 1, \dots, I$), which stands for an individual who lives in a country-year context, or Level 2 unit j ($j = 1, \dots, J$). The Level 2 units are clustered under the Level 3 units, the country observations k ($k = 1, \dots, K$). Then, the outcome variable Y_{ijk} , in this case, the support for liberal attitude, can be expressed as:

$$Y_{ijk} = \beta_{0jk} + \delta X_{ijk} + e_{ijk} \quad (1)$$

The Level 2 model is a decomposition of β_{0jk} , which can be stated as:

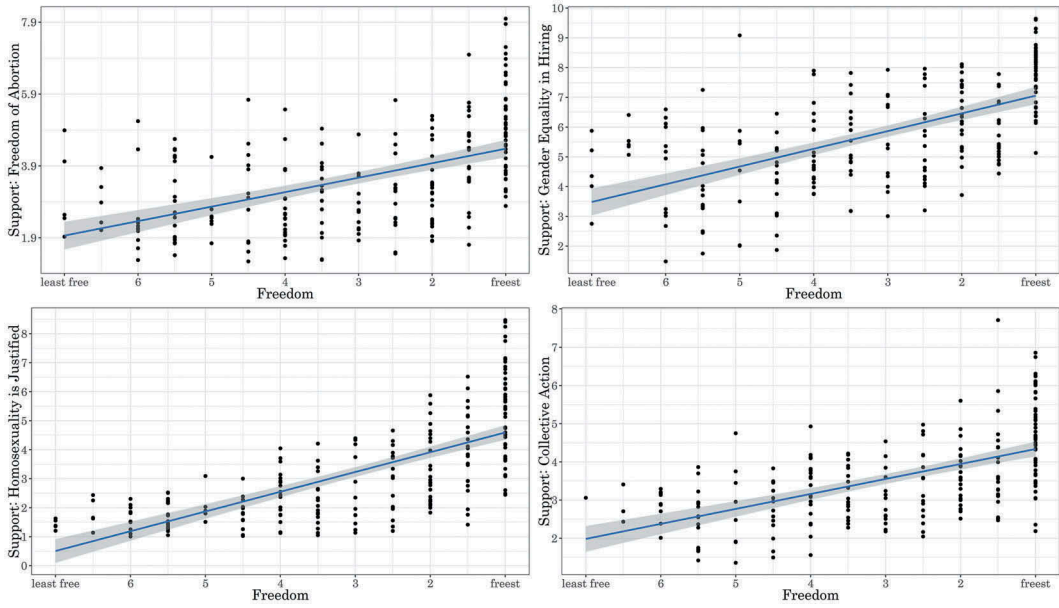


Figure 2. Scatterplots of freedom and liberal attitudes at the aggregate level.

$$\beta_{0jk} = \beta_{0k} + e_{jk} \quad (2)$$

where β_{0k} represents the random intercept denoting the overall group mean in the k th unit in Level 3, i.e., the countries. β_{0k} can be further decomposed to obtain the following Level 3 model:

$$\beta_{0k} = \beta_0 + e_k \quad (3)$$

where β_0 is the overall control group means, and e_k is the corresponding residual, assumed to be independent of X_{ijk} and other residuals.

Table 3 shows the numbers of observations for each model. There were 87 to 88 countries for the various models at Level 3; at Level 2, there were 212 to 218 country-year observations depending on how complete the data were for each case. Within each country-year observation, around 1,000 individual respondents were surveyed, meeting the requirements for 30 minimum observations at higher levels demanded by multilevel modeling for robust estimation (Bryan & Jenkins, 2015; Stegmüller, 2013).

The statistical models were motivated by the study's hypotheses. For all four dependent variables, the study used the following sequence. The first model tested whether political freedom was a positive predictor of liberal attitudes, as Hypothesis 1 predicted. The next model tested Hypothesis 2 by including the interaction of freedom and education. The final model included all contextual effects. By adding GDP per capita, the Gini coefficient, and culture zone, it was possible to see whether the previous models held up when political freedom was controlled. Modeling results are displayed in Table 3. Due to space constraints, the table only displays the results from the four final models for all the dependent variables (Models 1–4).

To ensure the robustness of the analysis, the study took the following steps. First, multicollinearity could be a concern, as a few variables were correlated (e.g., GDP per capita and Freedom House Index). Therefore, the study checked the variance inflation factor (VIF) and GVIF, as advised by Fox and Monette (1992). No high VIF or GVIF was detected in the diagnosis.⁷ Second, as the WVS data contain

⁷Details and codes available upon request.

Table 3. Estimates of hierarchical linear models predicting support for liberal attitudes based on WVS data (1981–2014).

	Model 1 Free Abortion	Model 2 Tolerance of Homosexuality	Model 3 Gender Equality In Hiring	Model 4 Protests
Intercept	4.77***	0.71	4.59***	2.27*
Individual-level predictors				
<i>Age in years (18–99)</i>	–0.01***	–0.02***	–0.02***	–0.01***
<i>Male (Female = 0)</i>	–0.01	–0.31***	–1.04***	0.36***
<i>Marital Status (Single = 0)</i>				
Married/cohabiting	–0.04**	–0.16***	–0.27***	–0.02
Divorced/separated/widowed	0.08***	–0.05**	–0.12***	–0.06***
<i>Occupation (Unemployed = 0)</i>				
Student	0.10***	0.16***	0.36***	0.23***
Retired	–0.03	–0.01	0.19***	0.02
Unskilled manual	0.05**	0.09***	0.15***	0.14***
Skilled manual	0.13***	0.16***	0.24***	0.25***
Non-manual office	0.24***	0.33***	0.40***	0.33***
Professional	0.28***	0.37***	0.64***	0.48***
Manager/owner	0.24***	0.25***	0.39***	0.26***
<i>Levels of education (None = 0)</i>				
Elementary school completed	0.33***	0.42***	0.57***	0.43***
Secondary school completed	0.75***	0.89***	1.22***	0.91***
High school completed	1.06***	1.46***	1.60***	1.36***
College or above	1.42***	2.14***	2.04***	1.95***
Contextual-level predictors				
Freedom House index	–0.01	–0.06	0.05	–0.00
GDP per capita (logged)	0.17	0.49***	0.34**	0.22**
Gini coefficient	–0.05***	0.00	–0.01	–0.01
<i>Culture Zones (Protestant/West Europe and North America as reference)</i>				
Catholic/Latin America	–0.83**	–0.71*	–0.31	–0.74**
Orthodox/Eastern Europe & Russia	–0.33	–1.23***	–1.01*	–1.04***
Islamic/Middle East & North Africa	–1.28***	–1.55***	–2.84***	–1.20***
African	–0.60	–0.80	–0.24	0.07
India and South Asia	–0.46	–0.91	–2.08*	0.13
Confucian/East Asia	–0.82*	–1.21**	–2.10***	–1.22***
Freedom * education interactions				
Elementary school completed	–0.06***	–0.11***	–0.09***	–0.06***
Secondary school completed	–0.12***	–0.21***	–0.16***	–0.12***
High school completed	–0.17***	–0.32***	–0.20***	–0.18***
College and above	–0.19***	–0.42***	–0.20***	–0.21***
Random Components				
Level 3: Country intercept	0.39	0.45	0.72	0.19
Level 2: Country-year intercept	0.30	0.47	0.70	0.34
<i>Educational level</i>				
Elementary school completed	0.03	0.09	0.01	0.07
Middle school completed	0.14	0.22	0.23	0.17
High school completed	0.21	0.53	0.45	0.36
College and above	0.38	0.88	0.61	0.50
Num. Groups: Country	88	88	87	87
Num. Groups: Country-Survey Year	218	214	212	214
Num. Observations	299563	287490	298237	296951
AIC	1397529.13	1322522.64	1606827.49	1287229.04
BIC	1398017.20	1323008.81	1607315.35	1287716.70
Log Likelihood	–698718.57	–661215.32	–803367.75	–643568.52

*p < 0.05, **p < 0.01, ***p < 0.001.

a relatively large number of respondents, the significance of some findings may be exaggerated (Lin, Lucas, & Shmueli, 2013). To ensure the estimated coefficients, confidence intervals, and significance levels were robust at smaller sample sizes, the study applied the bootstrap resampling method to the original dataset (5% resample of original data, N = 1000). No evidence countered the main findings. Third, the study tested the models using alternative measurements of political freedom, such as Polity IV project's Combined Polity Score (Marshall, Gurr, & Jaggers, 2017), to replace the Freedom House Index. Similar patterns appeared, boosting confidence in the findings.

Results

Table 3 displays the estimates from all four models, and Figure 3 visualizes the effects of the focal term, i.e., the interaction between freedom and education for each item. Model 1 predicts whether and how much the respondent believes abortion is justifiable. The model shows older, married, lower-class, and less-educated populations have more negative attitudes to abortion than younger, unmarried professionals and better-educated people, something also noted in previous empirical work. Males and females do not show a significant difference in attitudes to abortion. At the aggregate level, GDP per capita does not show a significant effect, but the Gini coefficient is negatively associated with acceptance of abortion. Each extra point of increase in the Gini leads to a drop in acceptance of abortion by 0.05 on a 1–10 scale. The difference in acceptance in a relatively equal society (assuming Gini = 25, e.g., Finland 2005, Japan 1990) vs. an unequal society (Gini = 45, e.g., Mexico 2005, Philippines 1996) is approximately 1 point. In other words, inequality is associated with intolerance of abortion. Culture zones matter greatly for attitudes to abortion. Compared to West Europe and North America, the Catholic world ($-0.83, p < .01$), Islamic world ($-1.28, p < .001$), and Confucian societies ($-0.82, p < .05$) all feel negatively about abortion.

For the focal variables, political freedom, and individual educational attainment, higher educational attainment means higher level of acceptance of abortion, as also found in previous work (Asal et al., 2008). The interaction effects between freedom and education are associated. Note: FHI is coded in such a way that higher numbers mean less freedom, from 1 (most free) to 7 (least free). Interestingly, although education is generally considered to be a liberalizing force, it is less so in non-free societies. Furthermore, the moderating effect is even more salient among those with higher education: the effect size steadily increases, starting from no education to elementary school (-0.06 ,

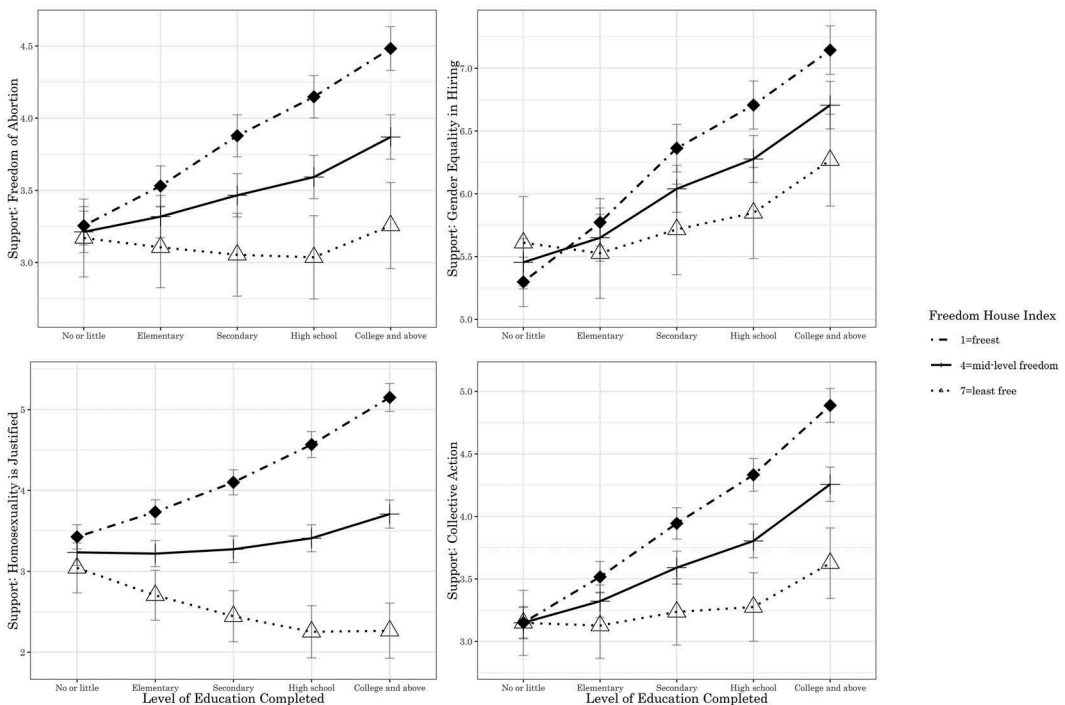


Figure 3. Interaction effect of political freedom and education on liberal attitudes.

Note: Fitted values are from final models. All variables except education and freedom are set to typical values (mean values for quantitative variables and proportions for categorical variables).

$p < .001$) and moving up through the levels, from middle school ($-0.12, p < .001$) to high school ($-0.17, p < .001$) and university ($-0.19, p < .001$). The interaction can be seen in [Figure 3](#)'s first plot (upper left), as well. The dash-dot line connecting the black squares stands for the predicted values for free societies; the regular line in the middle stands for mid-level freedom; the triangles connected by the dotted line represent the non-free societies. As the figure shows, in the free world, education brings the acceptance level up from 3.25 (no or little education) to 4.5 (college and above); the effect is weaker for mid-level freedom, and it is the weakest for non-free societies, where those who go to college do not differ from those with no education.

Model 2 predicts tolerance of homosexuality. Most findings are similar to those in Model 1 for abortion: older, married, and unemployed people are more conservative. One noticeable difference at the individual level is gender, which is no longer indifferent. Males are, on average, 0.31 points lower than females in their tolerance of homosexuality. Another difference appears for GDP per capita. A higher GDP per capita is significantly associated with a higher level of tolerance. For example, logged GDP per capita ranges from 5.25 to 11.14 (difference = 5.89), representing an original value ranging from 190 USD to 69,095 USD. A 1-unit increase in the logged term is associated with an increase in liberalism of 0.49 points on a 1–10 scale. That is, controlling for other variables, the richest society is approximately 2.89 ($0.49 * 5.89$) points higher on tolerance of homosexuality on a 1–10 scale. The findings for culture zones are similar to previous findings as well: Catholic, Orthodox, Islamic, and Confucian societies are more conservative than Protestant ones. African and South Asian societies show no significant differences from the reference group.

For the focal effect of the interaction between political freedom and education, Model 2 tells a more impressive story. As [Table 3](#) shows, Model 2's interaction effects are greater than those found in Model 1, as also shown in [Figure 3](#) (lower left). Education still plays a liberalizing role in free countries, but in the non-free countries, represented by the triangles on the dotted line, more education results in less tolerance of homosexuality. At least in this regard, education plays a deliberalizing role in non-free societies, contradicting those who claim education liberalizes people across contexts (Andersen & Fetner, 2008; Easterbrook et al., 2016; Meyer et al., 2007; Nir & McClurg, 2015).

Model 3 examines people's attitudes to gender equality in the job market. By and large, males are more conservative than females. Seniors, the married, the lower classes, and the less educated are more conservative as well. GDP per capita is positively related to a gender-equal inclination. In this case, the role of culture is slightly different: the Catholic world no longer shows significantly lower support than the Protestant world. However, Orthodox, Islamic, Confucian, and South Asian societies are not big fans of gender equality in employment. Again, there is an interaction effect, and the pattern shown in [Figure 3](#) (upper right) is consistent with that found in Model 1 and Model 2.

Finally, Model 4 shows support for collective action. On this item, males are more supportive than females, which could be interpreted as males' higher engagement in politics (Verba, Burns, & Scholzman, 1997) and gendered political socialization (Sherkat & Blocker, 1994). Other predictors are somewhat similar to previous findings: youth, more education, and better jobs are associated with more support for collective action. National affluence encourages support of collective action, but certain culture zones like Latin America, Eastern Europe, the Middle East, and East Asia show a reluctance to support protests. [Figure 3](#) (bottom right) shows an interaction effect, as well.

Overall, the results point to a consistent pattern: political freedom conditions the effect of education on liberal attitudes. Only in free societies does education have a strong liberalizing impact on individuals.

Conclusion and discussion

The major contribution of this study is its systematic investigation of how political freedom matters in attitude change. Many studies have examined how economic and cultural contexts affect liberal attitudes, but the political environment is less thoroughly studied. This study's analysis of cross-national WVS data suggests political freedom is an important contextual variable closely related to attitude shift. First,

political freedom, as a main effect, is associated with liberal attitudes in and of itself. Second, as a moderator, political freedom conditions individual-level attitude changes, especially the educational effects.

These findings have several important implications for the sociology of education, public opinion studies, and research on democratization. For one thing, they draw attention to the importance of political freedom, or more generally speaking, political context, in influencing public opinion. Although previous theories provide useful perspectives, no single theory can fully explain the cross-national variations in liberal attitudes. For example, both modernization theory and cultural theory fail to adequately deal with some new market economies, where despite economic success, people are reluctant to embrace liberalism. In this sense, the theories need to be qualified. This study sheds light on the reluctance: the economy and culture may no longer be obstacles to liberal attitudes, but the political environment could be.

The findings have methodological implications as well: many previous works are limited in their case selection. Focusing solely on free societies may prevent scholars from seeing how things work when there is a lack of freedom. Benefitting from its wide coverage of more than 80 countries and over 200 country-year observations, this study provides a more thorough answer to the variations in attitude changes. More work remains to be done, of course, and future comparative analyses should broaden the scope of examination.

The study also explains deliberalization, something modernization theory cannot do. The finding of the impact of political freedom partially explains why both developed and developing countries are shifting towards a less liberal and tolerant political culture. At the aggregate level, shifts in the regime and leadership could hurt political freedom and this, in turn, could generate a political environment hostile to liberal attitudes; at the individual level, a regime's intentions could be realized through education's socializing process and foster intolerance in a younger generation. This is a timely alert, given the resurgence of right-wing extremism in West Europe and North America.

The finding that unfree political contexts hinder the liberalizing effect of education suggests the importance of political change before attitude change. The apparent success of the "third wave" of democratization (Huntington, 1993b) encouraged the optimistic, if not naïve, belief that the democratic world should welcome non-democracies such as Russia and China into the World Trade Organization, nurture their affluence, and expect liberal democracy to follow in due course. This belief has motivated Western countries, international organizations, and corporations not to push too hard on the human rights front (Menon, 2015; Ratuva, 2014). However, this study challenges the view that economic affluence, education, the free market, and exposure to diverse opinions and lifestyles are sufficient to foster the attitude and behavioral basis required for liberal democracy (Glaeser, Ponzetto, & Shleifer, 2007; Inglehart & Welzel, 2010; Lipset, 1959). Although these factors correlate positively with democratization, political context also makes a difference.

Some regimes may energetically resist political reform and social change. As de Mesquita and Downs note, "Although development theorists are right in assuming that increases in per capita income lead to increases in popular demand for political power, they have consistently underestimated the ability of oppressive governments to thwart those demands" (2005, p. 78). Similarly, education will not inexorably bring about liberalization. Political reform is needed to maximize the liberalizing effect of education and lay the foundation for liberal democracy. Furthermore, only with actual political participation can liberal attitudes be reinforced (Quintelier & Van Deth, 2014); democracies provide people with opportunities for participation, while non-democracies try their best to ensure the opposite (King et al., 2013). In the long run, then, different political contexts may generate different mind-sets. This possibility suggests the importance of institutional context to liberal attitudes (Zhang & Brym, 2019) and challenges modernization theory's optimistic assumption that we can expect a rising middle class to demand democracy (Fukuyama, 2006).

Admittedly, the study has some limitations. One problem of the WVS data is that they are based on longitudinal cross-sectional surveys instead of panel data. As a result, it is difficult to argue for causal links, and there may be concerns about the direction of the proposed mechanisms. After all, as previous scholars have argued, liberal individuals, liberal educational systems, and liberal regimes

have a reciprocal influence (Meyer et al., 2007). A second possible limitation is that the study proposes a “top-down” mechanism: from the regime to educational systems and then to individuals (Zhao, 1998). A “bottom-up” mechanism is equally reasonable: liberal citizens may establish a democratic government and demand a more liberal educational system (Welzel, 2018). In other words, the study has found an association, but there is a possibility of endogeneity and spuriousness if it argues for causality.

The researchers acknowledge these limitations and ask future scholars to examine the topic more closely, using better data and methods. At the present time, however, this may be difficult. Although panel data are increasingly available, they are usually within a single society or a few societies that are geographically adjacent. These samples are often similar in economic, cultural, and political contexts; therefore, they cannot provide enough information for comparative analysis when the research goal is to reveal contextual effects. In this sense, using the WVS dataset with its a longitudinal and cross-sectional data was a trade-off: the study prioritized the need for a wide range of societies over the need to search for causality. Future scholars equipped with better data sources could do things differently.

The present paper argues for a “top-down” mechanism that political contexts influence individual values through educational systems. However, the author acknowledged that the reverse causal link of a “bottom-up” mechanism is possible as well. The risk of reciprocal causation is another limitation in this paper. However, in the twentieth century, there were quite a few cases that are in favor of the top-down mechanism instead of the counter argument. These are mostly political divisions resulting from military conflicts, invasions, and occupations, especially during the Cold War. To some extent, these political divisions can be considered “natural experiments” and examining them can partially alleviate the concerns of endogeneity. Cases include the divisions between Taiwan and mainland China, North and South Korea, South and North Vietnam in the 1950–1960s, West and East Germany, and so on. Before the political divide, these societies were similar in their economic, cultural, and political environments; at the individual level, people were not that different. However, after the division, the once similar individuals took different paths simply because they lived on opposite sides of a border – a border that was often arbitrarily decided by international superpowers. In these cases, changes in political freedom preceded the educational reforms and individual attitude shifts. A “top-down” mechanism emerged, whereby once similar people were gradually channeled into diverging routes.

To argue for a “top-down” mechanism is not to refute the “bottom-up” mechanism addressed by scholars like Christian Welzel (2018); both are valid and important. Whereas Welzel and other modernization theorists focus on how liberal values bring democracy, this paper notices how non-democracies prevent value liberalization from happening. The “top-down” and “bottom-up” mechanisms complement each other. On the one hand, authoritarian governments engage in propaganda and mass education because they believe liberalized people will seek democracy; this showcases the “bottom-up” mechanism. On the other hand, this study helps explain why democratization has not yet taken place in many countries: their regimes carry out purposeful efforts to prevent this. Institutional change is required for value change; this is a “top-down” mechanism.

Finally, this study is timely. Scholars are noting a trend towards value de-liberalization (Zhang, 2018; Zhang & Brym, 2019) and democracy deconsolidation in established democracies (Foa, 2018). If this trend persists, we might see a cycle of positive feedback, where illiberal tendencies within both the political system and individuals reinforce each other (Crawford, 2014). We need to be aware of this danger and take action if our goal is a tolerant, inclusive and liberal world that values gender equality, the rights of sexual minorities, and freedom of expression.

Highlights

- Political freedom is associated with liberal attitudes;
- Political freedom moderates education’s ostensibly liberalizing effect on attitudes;
- Reduced political freedom and regimes’ agentic control of education systems could lead to value deliberalization.

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