Online Appendix

Compulsory Voting and Dissatisfaction with Democracy

Shane P. Singh
Associate Professor
Department of International Affairs
University of Georgia
Athens, GA 30602
USA
singh@uga.edu

1. Countries Included and Summary Statistics

Table A1 lists the countries included in the analyses and provides information on which countries use compulsory voting and, if so, the level of compulsion. Table A2 provides summary statistics for each variable included in the analyses.

Table A1: Countries Included in the Cross-National Samples and Compulsory Rules

Country	Compulsory Voting in the Years Under Study?	Level of Compulsion	Year First Used	Americas-Barometer	Latino-barometer	CSES
Argentina[*#]	✓	2	1912	✓	✓	
Australia	✓	3	1925			✓
Austria		-				✓
Belarus		-				✓
Belgium	✓	3	1893			✓
Belize		-		✓		
Bolivia[*$]	✓	3	1929	✓	✓	
Brazil[*#]	✓	2	1932	✓	✓	✓
Bulgaria		-				✓
Canada		-				✓
Chile[+]	✓	3	1925	✓	✓	✓
Colombia		-		✓	✓	✓
Costa Rica	✓	1	1889	✓	✓	
Croatia		-				✓
Czech Republic		-				✓
Denmark		-				✓
Dominican Republic	✓	1	1966	✓	✓	
Ecuador[#@]	✓	3	1929	✓	✓	
El Salvador	✓	1	1883	✓	✓	
Estonia		-				✓
Finland		-				✓
France		-				✓
Germany		-				✓
Greece	✓	1	1926			✓
Guatemala	✓	1	1965	✓	✓	
Guyana		-		✓		
Haiti		-		✓		
Honduras	✓	2	1894	✓	✓	
Hungary		-				✓
Iceland		-				✓
Ireland		-				✓
Israel		-				✓
Italy		-				✓
Jamaica		-		✓		
Japan		-				✓
Latvia		-				✓
Mexico	✓	2	1857	✓	✓	✓
Netherlands		-				✓
New Zealand		-				✓
Nicaragua		-		✓	✓	
Norway		-				✓

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Country	Compulsory Voting in the Years Under Study?	Level of Compulsion	Year First Used	Americas-Barometer	Latino-barometer	CSES
Panama	✓	1	1928	✓	✓	
Paraguay	✓	2	1967	✓	✓	
Peru[*]	✓	3	1931	✓	✓	✓
Philippines		-				✓
Poland		-				✓
Portugal		-				✓
Romania		-				✓
Russia		-				✓
Slovakia		-				✓
Slovenia		-				✓
South Africa		-				✓
South Korea		-				✓
Spain		-				✓
Sweden		-				✓
Switzerland[&]		-				✓
Taiwan		-				✓
Thailand	✓	1	1997			✓
Turkey	✓	2	1982			✓
Ukraine		-				✓
United Kingdom		-				✓
United States		-				✓
Uruguay	✓	3	1918	✓	✓	✓
Venezuela		-		✓	✓	

Note: Information on compulsory voting laws is from Birch (2009), Malkopoulou (2015), Payne, Zovatto, and Díaz (2006), and the Institute for Democracy and Electoral Assistance.
[*]Voting is not compulsory for individuals over 70 years of age.
[#]Individuals aged 16 and 17 are enfranchised but not compelled to vote.
[$]Mandatory voting begins at age 21 for unmarried individuals and age 18 for married individuals.
[+]Compulsory voting for registered voters only. No compulsory voting beginning in 2012.
[@]Voting is not compulsory for individuals over 65 years of age.
[&]Compulsory voting in select cantons.

	Mean	Std. Dev.	Minimum	Maximum
AmericasBarometer				
Individual-Level				
Dissatisfaction with Democracy	2.463	0.725	1.000	4.000
Rejection of Democracy as Best System of Government	2.742	1.731	1.000	7.000
Approval of a Violent Overthrow	2.383	2.219	1.000	10.000
Belief that Authoritarian Government can be Better	0.129	0.335	0.000	1.000
Belief that the Country Needs an Autocrat	0.140	0.347	0.000	1.000
Age (10s)	3.813	1.515	1.600	9.900
College	0.090	0.287	0.000	1.000
Survey-Level				
Economic Development	7.353	3.517	1.002	14.320
Democratic Development	7.684	1.882	0.000	10.000
Corruption	6.606	1.254	2.700	8.600
Presidentialism	0.847	0.360	0.000	1.000
Majoritarian	0.105	0.307	0.000	1.000
Latinobarometer				
Individual-Level				
Dissatisfaction with Democracy	2.706	0.877	1.000	4.000
Rejection of Democracy as Best System of Government	1.970	0.768	1.000	4.000
Belief that Authoritarian Government can be Better	0.170	0.376	0.000	1.000
Belief that Democracy Does Not Solve Problems	0.386	0.487	0.000	1.000
Age (10s)	3.864	1.546	1.600	9.900
College	0.065	0.246	0.000	1.000
Survey-Level				
Economic Development	7.814	3.189	2.156	13.394
Democratic Development	7.881	1.813	-3.000	10.000
Corruption	6.462	1.423	2.500	8.300
CSES				
Individual-Level				
Dissatisfaction with Democracy	2.378	0.805	1.000	4.000
Voting Does Not Matter	2.129	1.243	1.000	5.000
Who's in Power Does Not Matter	2.198	1.282	1.000	5.000
Age (10s)	4.564	1.675	1.600	10.600
College	0.177	0.381	0.000	1.000
Survey-Level				
Economic Development	24.400	10.827	2.968	47.626
Democratic Development	9.204	1.938	-7.000	10.000
Corruption	3.507	2.312	0.000	8.000
Presidentialism	0.181	0.385	0.000	1.000
Majoritarian	0.138	0.345	0.000	1.000

2. What Causes Compulsory Voting?

In the main text, I argue that (dis)satisfaction with democracy results from the interaction of compulsory rules and individuals' attitudes toward the principles of democracy, and I find empirical support for this contention. However, if countries with dissatisfied publics adopt compulsory voting as a method of addressing dissatisfaction with democracy, there is a risk that my findings are an artifact of endogeneity, in that attitudes drive electoral rules rather than the reverse.

To guard against this possibility, in the latter portion of the main text, I use a natural experiment that leverages age thresholds within countries that employ compulsory voting to help substantiate the causal role of compulsory voting (see also Section 13 of this appendix). However, this experimental approach still leaves open the possibility that the relationships found in my initial cross-national analyses are an artifact of endogeneity. To demonstrate that this is not the case, below, I discuss the origins of compulsory voting in detail. This discussion makes it clear that compulsory voting has been adopted for a variety of reasons, and there is no systematic process by which countries with dissatisfied publics implement compulsory rules. Further, low turnout, which likely correlates with dissatisfaction, is not a precipitator of the adoption of compulsory voting—indeed, many countries that adopted compulsory rules did so before suffrage was made universal, and, in some cases, compulsory voting was adopted as states came into being.[1]

Compulsory voting has been adopted for a variety of reasons, including colonial ties, traditions, attempts to neutralize threats from political opponents, the efforts of authoritarian governments to enhance or signal regime legitimacy, and its use in neighboring countries (e.g. Birch 2009; Mackerras and McAllister 1999; Massicotte, Blais, and Yoshinaka

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[1] The states that adopted compulsory voting upon their creation are Bulgaria, Republic of the Congo, Cyprus, Gabon, Nauru, and Singapore (Birch 2009, 27). It is still used in Cyprus, Nauru, and Singapore.

2004; Norris 2004; Robson 1923; Stengers 2004). For example, in Switzerland, many of the cantons that took on compulsory voting as the country democratized had existing traditions of forced political participation, including requirements that members of cantonal assemblies wear swords to meetings (Robson 1923). In countries including Belgium and Thailand, many supporters of the introduction of compulsory voting saw it as a way to curb vote buying (see Birch 2009, chp. 2). Compulsory voting has also commonly been implemented along with other momentous voting reforms, such as the adoption of adult male suffrage, as in Belgium, Bulgaria, and the Netherlands (Birch 2009, 23; Luce 1930, 215-218) and the expansion of adult suffrage to women in New Zealand (John and DeBats 2014, Table 4).

As explained by Malkopoulou (2015, chp. 5), compulsory voting in Greece was, at least in part, implemented as a way to try and prevent opponents of the ruling parties from boycotting elections. Supporters of the introduction of compulsory voting in Greece also made frequent reference to their country's ancient democratic traditions and referenced the successful implementation of mandatory voting in other European countries. The introduction of compulsory voting in Greece also coincided with its adoption of proportional representation (Birch 2009, 23).

While Spain itself no longer makes voting compulsory, countries with Spanish heritage are relatively likely to mandate turnout (Massicotte et al. 2004, 38).[2] Compulsory voting was first introduced in El Salvador, Honduras, and Mexico (see Table A1), and from there it spread south (Birch 2009, 35). Like in other parts of the world, in most Latin American countries that mandate turnout, including Argentina, Brazil, Chile, Ecuador, the Dominican Republic, El Salvador, Honduras, Nicaragua, Mexico, Peru, and Uruguay,

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[2] Interestingly, many of the former Spanish colonies of Latin America implemented compulsory voting *before* Spain, which did so in 1907. While Portugal's constitution notes that compulsory voting is a civic duty, it has never made voting mandatory; Brazil implemented compulsory voting in 1932 (Birch 2009, 14, 37).

compulsory voting was adopted at the same time as universal suffrage (or universal male suffrage). This suggests that compulsory rules were not adopted in response to a particular societal need or political goal, but instead as part of a broader change toward a democratic form of government, as noted by Baeza (1998). Further, like in Greece, in Chile, El Salvador, and Peru, compulsory voting was implemented along with proportional representation (Birch 2009, 24-25).

Compulsory voting in Latin America is also historically tied to authoritarian government. Voting was made or kept mandatory by authoritarian regimes in Brazil, the Dominican Republic, El Salvador, Guatemala, Nicaragua, and Paraguay (Birch 2009, 25, 142; Ochoa 1987; Power and Roberts 1995). While elections under such regimes were not free and fair, higher participation via compulsory voting could give the impression of regime legitimacy (Norris 2004, 168).

These scattershot paths to the institution of compulsory voting suggest a lack of a systematic explanation for its adoption. Still, in a rigorous examination of the origins of compulsory voting, Helmke and Meguid (2010) find it to be the result of strategic considerations: governing parties adopt compulsory voting when they believe it will benefit them electorally. Such beliefs are not shown to relate to attitudes toward democracy in the public, but rather stem from parties' beliefs about their distribution of support in the electorate. These findings align with arguments that elected leaders seek electoral institutions that will put or keep them in power (e.g. Benoit and Hayden 2004; Colomer 2005; Leemann and Mares 2014). They also mesh with the findings of Bowler, Donovan, and Karp (2006), who, in a survey of politicians in Australia, Germany, the Netherlands, and New Zealand, find that politicians that came to power under compulsory (as in Australia) or voluntary (as in the other three countries) rules are most likely to favor the institutional status quo.

Some historical accounts support the contention that politics and party competition drive the adoption of compulsory voting. For example, many proponents of the adoption of compulsory voting in Belgium saw it as a way of preventing outsized influence of the working class, which held radical political views (Birch 2009, 30; Stengers 2004). Further, in the run-up to the adoption of compulsory voting in Australia, the incumbent Labor Party supported it as a method of ensuring that participation among their supporters would match that of those apt to vote for the rival Liberal-National Coalition. At the same time, the Coalition supported the introduction of compulsory voting as a way to alleviate expensive voter mobilization efforts (Mackerras and McAllister 1999, 232).[3]

In sum, countries that mandate turnout have arrived at compulsory voting through a variety of paths, and while, in some countries, its implementation was likely used by ruling parties in an attempt to enhance their positions over their rivals (e.g. Helmke and Meguid 2010), it has also come about due to historical traditions, colonial ties, spatial diffusion, broader democratic reforms, and the efforts of authoritarian regimes wishing to signal legitimacy. Most importantly for the purposes of this paper, the above investigation shows that there is no systematic process though which countries with dissatisfied publics implement compulsory rules. This casts doubt on the possibility that democratic (dis)satisfaction leads to compulsory voting, rather than the reverse process that I put forth in the main text.

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[3] As both political groups saw the adoption of compulsory voting as advantageous, the total length of the debate over the bill introducing it came in at under two and a half hours (Crisp 1950).

3. Description and Discussion of Control Variables

To help identify the causal effect of compulsory voting, I employ a host of individual- and survey-level control variables. At the individual level, I control for *Age* and *College* education, both of which have been shown to relate to democratic attitudes (e.g. Anderson et al. 2005; Anderson and Guillory 1997). Age is measured in tens of years, and I code education dichotomously to facilitate cross-country comparability; individuals with a university education are assigned a 1, and others are assigned a 0.

At the survey level, I control for *Economic Development*, *Democratic Development*, *Corruption*, *Presidentialism*, and whether or not a country had a *Majoritarian* electoral system. Economic development is measured as GDP per capita at the time of the survey, adjusted for purchasing power and reported in constant thousands of US dollars. Data are from the World Bank.[4] Democratic development is captured with the Polity IV Index,[5] which classifies countries according to Dahl's (1971) dimensions of contestation and inclusion. The index ranges from -10 to 10, with higher values indicating consolidated democracy.

Corruption is thought to degrade the bond between individuals and the political process (Rose, Mishler, and Haerpfer 1998; but see Wells and Krieckhaus 2006), and it is potentially related to compulsory voting (Birch 2009). To measure corruption, I use Transparency International's Corruption Perceptions Index.[6] The index ranges from 0 to 10, and I reverse the original coding so that higher values indicate more corruption.

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[4] Available at http://data.worldbank.org; for Argentina and Jamaica, information on gross domestic product was not available from the World Bank. Figures for these two countries were gathered from the CIA World Factbook, which is available at https://www.cia.gov/library/publications/the-world-factbook.

[5] Available at: http://www.systemicpeace.org. The Polity Index does not cover Belize. As such, following Persson and Tabellini (2003, 75-76), I use the average of the Freedom House's civil rights and political liberties scores to approximate Belize's score on the Polity Index. Freedom House scores are available at http://freedomhouse.org. Belize's Freedom House scores were rescaled to the Polity Index's range.

[6] Available at: http://transparency.org/policy_research/surveys_indices/cpi

Due to the concentration of compulsory regimes in the presidential countries of Latin America and the potential link between regime type and satisfaction with democracy (e.g. Ruiz-Rufino 2013), I include a dummy variable differentiating presidential systems, which are coded 1, from parliamentary and semi-presidential systems, which are coded 0. Finally, countries with compulsory voting are relatively unlikely to have majoritarian electoral rules, and, though the nature of the relationship is disputed, electoral systems are potentially linked to satisfaction with democracy (cf. Aarts and Thomassen 2008; Birch 2008; Blais and Loewen 2007). I thus control for the type of electoral system by coding countries that use single-member plurality or two-round systems (majoritarian systems) for lower house elections as 1 and assigning other countries a 0. All variables are summarized in Section 1 of this appendix.

4. Model Estimation Details

Owing to the tiered structure of the data and the four-category, ordinal dependent variable, I estimate multilevel ordered logit models,[7] which account for individuals (level 1) being clustered within survey country-years (level 2). An inspection of cumulative probability curves (see Long 1997, 141-142) reveals that the parallel regressions assumption is reasonable. In addition, threshold parameters are significantly different from one another in all models ($[\text{Prob} > \chi^2] < .001$ in all pairwise tests).

This approach also provides an estimate of ρ, which represents the proportion of variance arising due to unobserved country-year-level effects. ρ is defined as $\text{var}(\zeta_j)/[\text{var}(\zeta_j) + \text{var}(\varepsilon_{ij})]$, where ζ_j is the residual associated with country-year j and ε_{ij} is the residual associated with person i in country-year j. Due to the use of an ordered logistic link, $\text{var}(\varepsilon_{ij})$ is set at $\pi^2/3$.

While I allow the slopes on the independent variables of interest to vary non-randomly as a function of compulsory voting (e.g. Raudenbush and Bryk 2002, 28), I do not estimate random slopes on the individual-level independent variables due to the lack of a theoretical rationale for doing so and the extra demands that a fully random-slopes specification places on the data. Substantive conclusions do not change when I re-estimate the models with random slopes across country-years.

I also estimated three-level models that consider individuals to be clustered within surveys, which are in turn considered as clustered in countries. Substantive results are the same with a three-level approach, and results of the three-level models are provided in Section 5 of this appendix.

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[7] To reduce clutter and facilitate the creation of Figure 1 in the main text and the associated figures in this appendix, I estimate binary logistic models in which the dependent variable is the probability of being unsatisfied or very unsatisfied with democracy.

5. Results from Three-Level Models

Due to the tiered structure of the data and the four-category, ordinal dependent variable, I estimate multilevel ordered logit models. In the primary models (Models 1-5) of the main text, I considered individuals (level 1) to be clustered within survey country-years (level 2), while not explicitly modeling the clustering of surveys within countries. I made this decision because, with few surveys per country, and with just 22 countries in my AmericasBarometer sample, the data may not be rich enough to model the full three-level structure (cf. Arceneaux and Nickerson 2009; Stegmueller 2013).

Here I provide output from models in which, despite the potential inadvisability of doing so, I took into account all three levels of data. That is, I considered individuals (level 1) to be clustered within survey country-years (level 2), which themselves were considered to be clustered within countries (level 3). This approach provides estimates of $\rho_{\text{country-year}}$ and ρ_{country}, which represent the proportion of variance arising due to unobserved country-year-level effects and unobserved country-level effects, respectively.[8]

Results, which are provided in Models A1-A5 of Table A3, closely mirror those reported in Models 1-5 of Table 1 in the main text. First, compulsory voting is associated with higher levels of dissatisfaction with democracy, as shown in Model A1. Second, compulsory voting heightens the relationships between anti-democratic orientations and dissatisfaction with democracy, as evidenced by the positive and significant coefficients on the interaction terms in Models A2-A5. Finally, compulsory voting sharpens the relationship between anti-democratic attitudes and the propensity to be dissatisfied with democracy most forcefully where the compulsory rule is strongest, as the coefficients on interactions with

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[8] $\rho_{\text{country-year}}$ is defined as $\text{var}(\zeta_{jm})/[\text{var}(\varphi_m) + \text{var}(\zeta_{jm}) + \text{var}(\varepsilon_{ijm})]$ and ρ_{country} is defined as $\text{var}(\varphi_m)/[\text{var}(\varphi_m) + \text{var}(\zeta_{jm}) + \text{var}(\varepsilon_{ijm})]$, where φ_m is the residual associated with country m, ζ_{jm} is the residual associated with country-year jm, and ε_{ijm} is the residual associated with person i in country-year jm. With the use of an ordered logistic link, $\text{var}(\varepsilon_{ijm})$ is set to be $\pi^2/3$.

higher levels of compulsory voting tend to be progressively larger. Like in the main text, this pattern is observed in three of the four models: those in which the independent variable is attitudes toward democracy as the best form of government, the belief that authoritarian government can be better than democracy, and the belief that the country needs an autocrat. Where the anti-democratic attitude under consideration is approval of a violent overthrow of government, compulsion appears to only matter where rules are strictest—in countries that mandate turnout and enforce sanctions in practice.

Table A3: Dissatisfaction with Democracy, Anti-Democratic Attitudes, and Compulsory Voting – Three-Level Models

Anti-Democratic Attitude in Model:	-	Reject Democracy	Overthrow OK	Authoritarian Better	Autocrat Needed
Model	**A1**	**A2**	**A3**	**A4**	**A5**
Anti-Democratic Attitude		0.087	0.024	0.250	0.156
		(0.006)	(0.005)	(0.034)	(0.032)
Compulsory Voting					
CV_1	0.039	-0.294	0.010	-4.684	0.110
	(0.234)	(0.033)	(0.026)	(0.075)	(0.025)
CV_2	0.335	-0.290	0.275	-0.071	0.036
	(0.237)	(0.035)	(0.028)	(0.025)	(0.025)
CV_3	0.333	0.002	0.395	-5.344	-0.162
	(0.247)	(0.036)	(0.029)	(0.087)	(0.027)
Interactions with Compulsory Voting					
CV_1		0.054	0.016	0.033	0.070
		(0.009)	(0.007)	(0.048)	(0.045)
CV_2		0.067	-0.016	0.154	0.166
		(0.010)	(0.008)	(0.049)	(0.047)
CV_3		0.070	0.025	0.172	0.181
		(0.009)	(0.007)	(0.046)	(0.048)
Controls					
Age	-0.031	-0.022	-0.029	-0.026	-0.029
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
College	0.176	0.234	0.196	0.181	0.180
	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)
Economic Development	-0.043	-0.017	-0.003	0.020	-0.077
	(0.024)	(0.003)	(0.003)	(0.003)	(0.003)
Democratic Development	0.020	0.007	0.029	0.184	-0.015
	(0.043)	(0.004)	(0.005)	(0.005)	(0.005)
Corruption	0.171	0.136	0.259	0.097	0.106
	(0.073)	(0.008)	(0.008)	(0.008)	(0.011)
Presidentialism	-0.259	-0.124	-1.184	0.777	-0.217
	(0.375)	(0.036)	(0.037)	(0.038)	(0.041)
Majoritarian	0.094	0.346	1.907	0.561	3.682
	(0.372)	(0.039)	(0.052)	(0.035)	(0.095)
τ_1	-2.038	-2.200	-1.437	-3.241	-3.014
τ_2	0.971	0.825	1.574	-0.222	-0.001
τ_3	3.418	3.314	4.027	2.238	2.443
$\rho_{country-year}$	0.043	0.023	0.023	0.040	0.061
$\rho_{country}$	0.016	0.336	0.087	0.089	0.050
Individuals	119489	113600	117750	112117	110233
Country-Years	85	84	85	85	83
Countries	22	22	22	22	22
Prob > χ^2	<0.001	<0.001	<0.001	<0.001	<0.001

Note: Dependent variable is dissatisfaction with democracy. Results are from multilevel ordered logistic regressions. Standard errors in parentheses.

6. Compulsory Voting and Democratic Satisfaction: Latinobarometer

In the main text, I employ data from the AmericasBarometer to gauge the relationships among anti-democratic attitudes, dissatisfaction with democracy, and compulsory voting. The AmericasBarometer is well suited for testing my expectations in that it asks several questions about attitudes toward democracy consistently across its waves. Further, its sample of American countries provides a useful setting in which to test my expectations, as 15 of the countries it surveys mandate voter turnout.

The Latinobarometer[9] is also well suited for the testing of my expectations, as it has surveyed 18 Latin American countries[10] since 1995, generally conducting one survey per year in each country. My Latinobarometer sample includes surveys conducted through 2010. Further, the Latinobarometer covers each of the 15 countries in the AmericasBarometer sample that mandate voting (see Table A1). While the questions asked in the Latinobarometer that can be used to gauge anti-democratic attitudes are less encompassing than those in the AmericasBarometer, the Latinobarometer does usefully inquire about satisfaction with democracy. I measure anti-democratic attitudes in the Latinobarometer with the following three indicators:

Rejection of Democracy as the Best System of Government
Respondents were asked to indicate how much they agreed with the idea that democracy is the best form of government (strongly agree, agree, disagree or strongly disagree). I coded responses so that those who disagreed strongly are assigned a 4, those who disagreed are

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[9] Available at: http://www.latinobarometro.org
[10] The Latinobarometer also surveys Spain. Due to missing data and its unique status as a wealthy, entrenched democracy, I do not include Spain in my sample.

assigned a 3, those who agreed are assigned a 2, and those who strongly agreed are assigned a 1.

Belief that Authoritarian Government can be Better than Democracy

Choosing from a list of statements about democracy, some respondents indicated that an authoritarian government could, under certain circumstances, be preferable to a democratic one. These individuals are coded 1, and others are coded 0.

Democracy Does Not Solve the Country's Problems

Respondents were asked whether or not democracy can solve a country's problems. Those who indicated that it cannot were coded 1, while those who indicated it could are coded 0.

The dependent variable is, as in the main text, *Dissatisfaction with Democracy*. I gauge dissatisfaction with the following question:

"In general, would you say that you are very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in [country]?"

I assign a 1 to respondents who are very satisfied, a 2 to those who are fairly satisfied, a 3 to those who are not very satisfied, and a 4 to those who are not at all satisfied. As in the main text, factor analysis demonstrates that the dissatisfaction measure is not coterminous with the indicators of anti-democratic attitudes. Results of the factor analysis are provided in Section 8 of this appendix, and full question wording is provided in Section 10. The Latinobarometer did not ask the three questions I use to gauge anti-democratic attitudes in all waves, meaning the number of individuals and country-year surveys in the sample varies

across the models. The 18 countries surveyed by the Latinobarometer, identified in Table A1 of this appendix, are represented in each model.

I create a four-category variable to classify countries according to both the existence of a compulsory rule and the degree to which it is enforced. As in the main text, the four categories are:

VV: Countries with purely voluntary voting.

CV_1: Countries that statutorily mandate voting but do not employ sanctions for abstention.

CV_2: Countries that have legal sanctions for abstention but do not generally enforce them in practice.

CV_3: Countries that mandate turnout and enforce sanctions in practice.[11]

Information on compulsory voting laws is again from Payne et al. (2006) and the Institute for Democracy and Electoral Assistance.[12] Table A1 of this appendix indicates which countries in the Latinobarometer sample employ compulsory voting and the degree to which sanctions for abstention are enforced.

At the individual level, I control for *Age* and *College* education. As in the analyses of the AmericasBarometer data in the primary models, age is measured in tens of years, and individuals with a completed university education are assigned a 1, while others are assigned a 0. At the survey level, I control for *Economic Development*, *Democratic Development*, and *Corruption*.

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[11] In Argentina, Bolivia, Brazil, and Peru, voting is not compulsory for individuals over 70 years of age. In Ecuador, the cutoff age is 65. Further, individuals in Argentina, Brazil, and Ecuador aged 16 and 17 are enfranchised but not compelled to vote. Individuals in these age groups in these countries are thus excluded from the analyses. (The exclusions for 16 and 17 year-olds did not become law in Argentina until 2012 or in Ecuador until 2009.) Further, in Bolivia, mandatory voting begins at age 21, unless an individual is married, in which case the relevant age is 18. Bolivians aged 18-20 were excluded from the analyses. These exclusions have no effect on substantive conclusions.

[12] Available at: http://www.idea.int/vt

The survey-level variables are also measured the same as in the primary models. Economic development is measured as GDP per capita at the time of the survey, adjusted for purchasing power and reported in constant thousands of US dollars. Data are again from the World Bank. Democratic development is again captured with the Polity IV Index, which ranges from -10 to 10, with higher values indicating consolidated democracy. Corruption is measured using Transparency International's Corruption Perceptions Index, which ranges from 0 to 10 with higher values indicating more corruption.

As the countries covered by the Latinobarometer are all presidential, the dummy variable for presidentialism used in the main text is omitted from these models. Also, unlike in the main text, I do not include a control for majoritarian electoral systems in the analyses of the Latinobarometer data, as all of the countries in its Latin American sample use multimember districts and proportional electoral formulae to elect their lower houses.

I again estimate multilevel ordered logistic regression models. First, I estimate an additive model to test whether compulsory voting decreases dissatisfaction with democracy, especially where rules are routinely enforced. Second, I interact each anti-democratic attitude with the indicators of the strength of compulsory rules. If compulsory voting intensifies the relationship between anti-democratic attitudes and the propensity to be dissatisfied most forcefully where compulsory rules are strongest, the coefficients on interactions that include higher levels of compulsory voting should be progressively larger.

Results, which align with those from the models estimated with the AmericasBarometer data, are provided in Table A4 and Figure A1. First, the results of Model A6 indicate that compulsory voting is associated with higher levels of dissatisfaction with democracy, especially where rules are enforced. Second, echoing the findings of the main text, the results of Models A7-A9 indicate that compulsory voting exacerbates the link

between anti-democratic attitudes and dissatisfaction with democracy more forcefully where compulsory rules have more strength. Figure A1 plots the relationship between each covariate and the probability of being not very satisfied or not at all satisfied with democracy across the levels of compulsory voting. While the relative effects displayed in the figure do not align perfectly with those gleaned from the coefficient estimates provided in Table A4,[13] the general trend is a stronger conditioning impact of compulsory rules in countries where they have more force.

As an example, the bottom panel of Figure A1 depicts the change in the probability of being not very satisfied or not at all satisfied with democracy associated with a change from believing that democracy can solve a country's problems (coded 0) to believing that it cannot (coded 1), conditional on the voting rule. In fully voluntary voting systems, the associated effect is relatively weak, at 11 percentage points. In countries that mandate voting but do not employ sanctions for abstention (category CV_1), the effect is 13 percentage points. And, in countries that have legal sanctions for abstention but do not generally enforce them in practice (category CV_2), and countries that mandate turnout and enforce sanctions in practice (category CV_3), the predicted effects are 16 and 17 percentage points, respectively. The rejection of democracy as a problem solver has the greatest effect on dissatisfaction with democracy where abstention is not just illegal, but is also likely to result in a sanction.

In summary, as with the models estimated with the AmericasBarometer data in the main text, the models estimated with the Latinobarometer data indicate that the degree to which compulsory voting exacerbates the link between anti-democratic attitudes and

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[13] The relative linear impact of a given anti-democratic attitude on the *latent propensity* to be dissatisfied with democracy across the levels of compulsory voting may differ from the relative nonlinear impact of a given anti-democratic attitude on the *probability* of being not very satisfied or not at all satisfied with democracy across the levels of compulsory voting (see Berry, DeMeritt, and Esarey 2010).

dissatisfaction with democracy is heightened where compulsory rules are stronger. Unenforced compulsory voting can also, to a lesser extent, intensify this link. Forced voting heightens the tendency of those with negative orientations toward the democratic system to question the legitimacy of the democratic process, its institutions, and its authorities—to be dissatisfied with democracy.

Table A4: Dissatisfaction with Democracy, Anti-Democratic Attitudes, and Compulsory Voting - Latinobarometer

Anti-Democratic Attitude in Model:	-	Reject Democracy	Auth. Better	Not Solve
Model	**A6**	**A7**	**A8**	**A9**
Anti-Democratic Attitude		0.418	0.045	0.499
		(0.015)	(0.029)	(0.035)
Compulsory Voting				
CV_1	0.103	-0.076	-0.032	-0.196
	(0.015)	(0.047)	(0.021)	(0.035)
CV_2	0.622	-0.033	0.328	0.463
	(0.015)	(0.043)	(0.018)	(0.030)
CV_3	0.222	0.039	0.411	-0.305
	(0.017)	(0.045)	(0.022)	(0.031)
Interactions with Compulsory Voting				
CV_1		0.058	0.101	0.037
		(0.020)	(0.037)	(0.044)
CV_2		0.156	0.427	0.150
		(0.019)	(0.035)	(0.042)
CV_3		0.097	0.348	0.122
		(0.019)	(0.036)	(0.042)
Controls				
Age	-0.013	-0.011	-0.017	-0.018
	(0.003)	(0.003)	(0.003)	(0.004)
College	-0.003	0.116	0.019	0.116
	(0.016)	(0.020)	(0.017)	(0.027)
Economic Development	-0.089	-0.047	-0.003	-0.040
	(0.002)	(0.003)	(0.002)	(0.003)
Democratic Development	0.020	0.025	-0.016	0.049
	(0.003)	(0.004)	(0.003)	(0.005)
Corruption	0.087	0.118	0.075	0.178
	(0.005)	(0.007)	(0.006)	(0.008)
τ_1	-1.928	-1.032	-2.129	-1.016
τ_2	-0.037	0.959	-0.221	0.899
τ_3	2.080	3.156	1.938	3.100
ρ	0.044	0.035	0.048	0.048
Individuals	206095	155808	194571	82814
Country-Years	203	160	203	89
Prob > χ^2	<0.001	<0.001	<0.001	<0.001

Note: Dependent variable is dissatisfaction with democracy. Results are from multilevel ordered logistic regressions. Standard errors in parentheses.
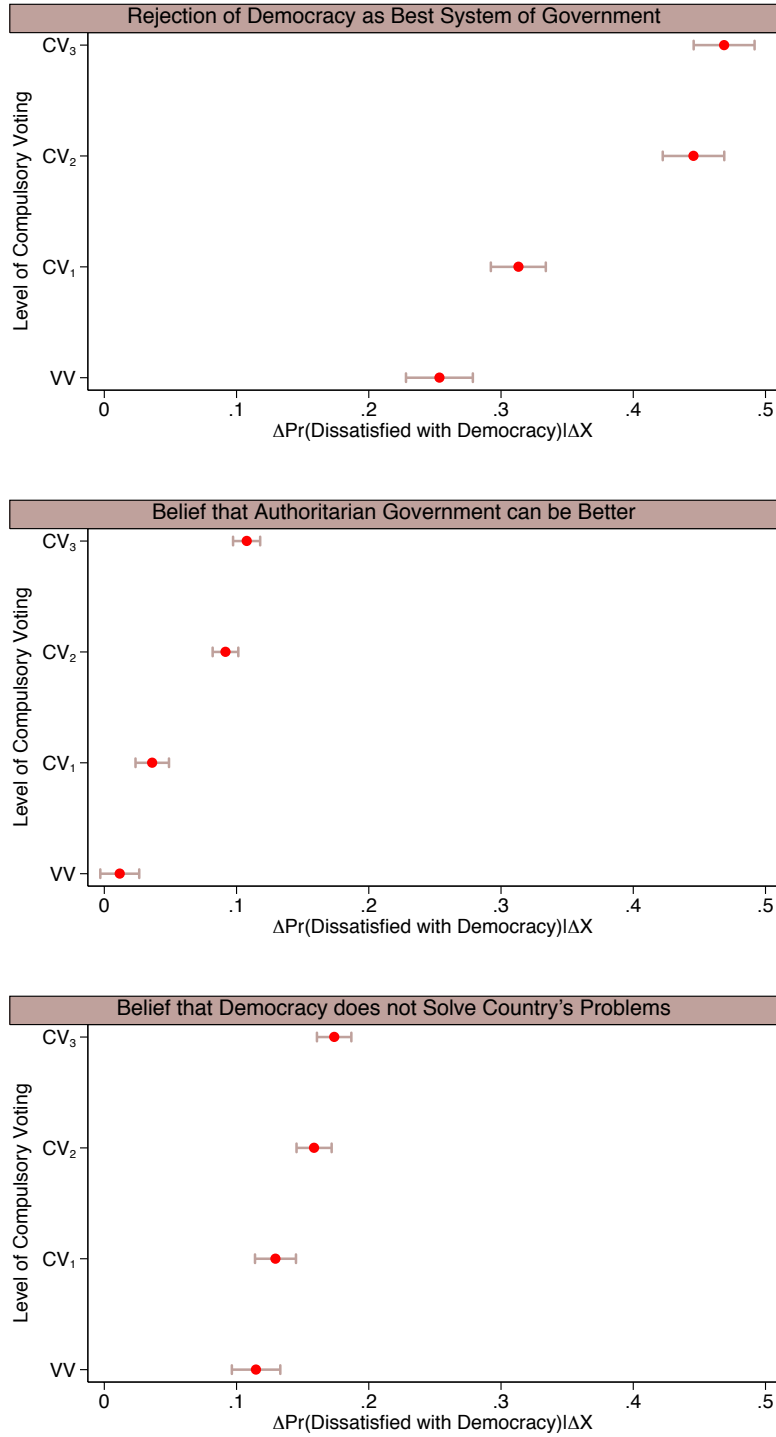
Figure A1: The Effect of Anti-Democratic Attitudes on Dissatisfaction with Democracy according to the Level of Compulsory Voting

Note: Each circle represents the effect of a change in the range of the relevant independent variable on the probability of being not very satisfied or not at all satisfied with democracy. Horizontal brackets represent 95% confidence intervals.

7. Compulsory Voting and Democratic Satisfaction: Comparative Study of Electoral Systems

In the main text, I employ data from the AmericasBarometer to gauge the relationships among anti-democratic attitudes, dissatisfaction with democracy, and compulsory voting. The AmericasBarometer is well suited for testing my expectations in that it asks several questions about attitudes toward democracy consistently across its waves. Further, its sample of American countries provides a useful setting in which to test my expectations, as 15 of the countries it surveys mandate voter turnout. In Section 6 of this appendix, I supplement the AmericasBarometer analyses with data from the Latinobarometer, which includes the same 15 countries and three others in Latin America, and substantive results are the same across the two data sources.

The Comparative Study of Electoral Systems (CSES)[14] post-election questionnaire has been administered in every region of the world, and it consistently inquires about satisfaction with democracy. Further, many of the countries covered by the CSES mandate voting, as indicated in Table A1 of this appendix. Consequently, it is useful for further probing the relationship between dissatisfaction with democracy and compulsory voting. Data on each of my variables of interest are available in over 110 CSES surveys conducted between 1996 and 2011 across 48 countries (see Table A1).

While the AmericasBarometer and the Latinobarometer ask a variety of questions about democratic principles, the CSES's slate of questions is more limited in this regard. And, rather than focusing on democratic principles, the CSES questions capture attitudes toward democratic procedure and the substantive outcomes of democracy, meaning they are not as well suited for identifying the "anti-democrats" discussed in the main text as those in the AmericasBarometer and Latinobarometer. Still, individuals who see little utility in

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[14] Available at: http://www.cses.org

democratic procedure and outcomes are also less likely to see the democratic system as legitimate, and, as per the theoretical development in the main text, the consequences of such orientations for dissatisfaction with democracy should be most pronounced where individuals are forced to participate in the democratic system.

In particular, the CSES asks whether respondents believe that one's vote matters to the democratic process and whether they believe that democracy adequately performs its representation function. Responses are measured as follows:

Voting Does Not Matter

Respondents were asked to rate whether voting makes a difference on a scale of 1 to 5. I code individuals so that higher values indicate a belief that voting does not make a difference.

Who's in Power Does Not Matter

Respondents were asked to rate whether who is in power makes a difference on a scale of 1 to 5. I code individuals so that higher values indicate a belief that who is in power does not make a difference.

The dependent variable is, as in the main text, *Dissatisfaction with Democracy*. I gauge dissatisfaction with the following question:

"In general, would you say that you are very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in [country]?"

I assign a 1 to respondents who are very satisfied, a 2 to those who are fairly satisfied, a 3 to those who are not very satisfied, and a 4 to those who are not at all satisfied.

As in the main text, factor analysis demonstrates that the dissatisfaction measure is not coterminous with the other indicators of attitudes toward democracy. Results of the factor analysis are provided in Section 8 of this appendix. Full question wording is provided in Section 10. The questions about the utility of voting and who is in power are not asked in each CSES survey, meaning the number of individuals and country-year surveys in the sample varies across the models. The 48 countries included in the CSES sample, identified in Table A1 of this appendix, are represented in each model.

To measure compulsory voting across the countries in the CSES sample, I use the same scheme employed in the main text. I first create a binary variable, coded 1 for countries with any type of compulsory voting and 0 for countries with purely voluntary voting. I then create a four-category variable that classifies countries according to both the existence of a compulsory rule and the degree to which it is enforced.

The four categories are:

VV: Countries with purely voluntary voting.

CV_1: Countries that statutorily mandate voting but do not employ sanctions for abstention.

CV_2: Countries that have legal sanctions for abstention but do not generally enforce them in practice.

CV_3: Countries that mandate turnout and enforce sanctions in practice.[15]

Information on compulsory voting laws is again from Payne et al. (2006) and the Institute for Democracy and Electoral Assistance.[16] Table A1 of this appendix indicates which

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[15] In Brazil and Peru, voting is not compulsory for individuals over 70 years of age, and in Brazil individuals aged 16 and 17 are enfranchised but not compelled to vote. Individuals in these age groups in Brazil and Peru were thus excluded from the analyses where information on age was available. Further, as the 1999 and 2003 Swiss election surveys are included in the CSES sample, I exclude individuals living in the cantons of Appenzell Innerrhoden, Glarus, Nidwalden, Obwalden, Schaffhausen, Tessin, and Uri, which employed compulsory voting in these years (see Funk 2007). As cantonal identifiers are not provided in the CSES for the 2007 Swiss survey, I exclude it from the sample. Substantive results are insensitive to these decisions.

countries in the CSES sample employ compulsory voting and the degree to which sanctions for abstention are enforced.

The control variables are the same as in the analyses of the AmericasBarometer data in the primary models. At the individual level, I control for *Age* and *College* education. As in the main text, age is measured in tens of years, and individuals with a completed university education are assigned a 1, while others are assigned a 0. At the survey level, I control for *Economic Development*, *Democratic Development*, *Corruption*, *Presidentialism*, and whether or not a country had a *Majoritarian* electoral system.

The macro-level variables are also measured the same as in the primary models. Economic development is measured as GDP per capita at the time of the survey, adjusted for purchasing power and reported in constant thousands of US dollars. Data are from the World Bank. Democratic development is captured with the Polity IV Index, which ranges from -10 to 10, with higher values indicating consolidated democracy. Corruption is measured using Transparency International's Corruption Perceptions Index, which ranges from 0 to 10 with higher values indicating more corruption. Presidential systems are coded 1, while parliamentary and semi-presidential systems are coded 0. Finally, to gauge the electoral system, I code countries that elect their lower houses exclusively from single-member districts as 1, and I assign other countries a 0.

Like in the main text, I first estimate an additive multilevel ordered logistic regression model to test whether dissatisfaction with democracy is lower where voting is mandatory, especially where rules are routinely enforced. I then interact the attitudinal independent variables with the indicators of compulsory voting strength. If the relationship between negative orientations toward democracy and the propensity to be dissatisfied with democracy

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[16] Available at: http://www.idea.int/vt

strengthens in countries along with the strength of the compulsory voting law, the coefficients on the interactions with higher levels of compulsion should be relatively large.

Model A10 assesses the additive relationship between compulsory voting and dissatisfaction with democracy, and Models A11 and A12 employ the interactions between the attitudinal variables and the indicators of compulsory voting strength. First, in line with the analyses of the AmericasBarometer and Latinobarometer data, the results of Model A10 demonstrate that compulsory voting is associated with increased dissatisfaction with democracy where rules are strongest. However, unique to the CSES data, there is evidence that dissatisfaction is actually lower in countries with compulsory voting and weak or middling levels of enforcement. This finding aligns with Birch's (2009, 112-115) analyses of CSES election studies.

Second, in line with the findings gleaned from the AmericasBarometer and Latinobarometer, the results of Models A11 and A12 indicate that compulsory voting amplifies the link between negative orientations toward democracy and dissatisfaction with democracy most forcefully where compulsory rules have more strength. Further, the relationships between the attitudinal covariates and dissatisfaction are unexpectedly weakest in countries that statutorily mandate voting but do not employ sanctions for abstention (category CV_1).

Figure A2 plots the relationship between each attitudinal covariate and the probability of being not very satisfied or not at all satisfied with democracy across the levels of compulsory voting.[17] As expected, seeing voting or who holds office as useless is more

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[17] The relative effects displayed in Figure A2 not align perfectly with those gleaned from the coefficient estimates provided in Table A5. The relative linear impact of a given anti-democratic attitude on the *latent propensity* to be dissatisfied with democracy across the levels of compulsory voting may differ from the relative nonlinear impact of a given anti-democratic attitude on the *probability* of being not very satisfied or not at all satisfied with democracy across the levels of compulsory voting (see Berry et al. 2010).

strongly associated with being not very satisfied or not at all satisfied with democracy in countries where abstainers face sanctions for their nonparticipation.

As an example, the top panel of Figure A2 depicts the change in the probability of being not very satisfied or not at all satisfied with democracy associated with a change in one's belief that voting makes no difference, from its minimum value (1) to its maximum value (5), conditional on the voting rule. In fully voluntary voting systems, the associated effect is 16 percentage points. In countries that mandate voting but do not employ sanctions for abstention (category CV_1), the effect is unexpectedly just 6 percentage points. In countries that have legal sanctions for abstention but do not generally enforce them in practice (category CV_2), and countries that mandate turnout and enforce sanctions in practice (category CV_3), the predicted effects are 17 and 19 percentage points, respectively. Thus, as expected, the belief that voting is inconsequential has the greatest effect on dissatisfaction with democracy where abstention is not just illegal, but is also likely to result in a sanction.

In summary, the models estimated with the AmericasBarometer data in the main text, the models estimated with the Latinobarometer data in Section 6 of this appendix, and the models estimated with the CSES data reported here all indicate that forced voting heightens the tendency of those with negative orientations toward the democratic system to question the legitimacy of the democratic process, its institutions, and its authorities—to be dissatisfied with democracy. Further, each analysis suggests that the degree to which compulsory voting exacerbates the link between anti-democratic attitudes and dissatisfaction with democracy is heightened where one will likely be punished for his or her failure to vote.

Table A5: Dissatisfaction with Democracy, Anti-Democratic Attitudes, and Compulsory Voting - CSES

Anti-Democratic Attitude in Model:	-	Vote not Matter	Power not Matter
Model	**A10**	**A11**	**A12**
Anti-Democratic Attitude		0.177	0.137
		(0.004)	(0.004)
Compulsory Voting			
CV_1	-0.792	-0.827	-0.700
	(0.035)	(0.070)	(0.074)
CV_2	-0.349	-0.083	-0.240
	(0.023)	(0.035)	(0.035)
CV_3	0.066	-0.492	-0.516
	(0.017)	(0.036)	(0.036)
Interactions with Compulsory Voting			
CV_1		-0.117	-0.124
		(0.024)	(0.024)
CV_2		0.069	0.060
		(0.014)	(0.013)
CV_3		0.049	0.047
		(0.013)	(0.013)
Controls			
Age	0.002	0.002	0.003
	(0.003)	(0.003)	(0.003)
College	-0.190	-0.144	-0.159
	(0.012)	(0.013)	(0.013)
Economic Development	-0.023	-0.020	-0.010
	(0.001)	(0.001)	(0.001)
Democratic Development	0.131	0.050	0.114
	(0.003)	(0.003)	(0.004)
Corruption	0.240	0.228	0.192
	(0.004)	(0.005)	(0.004)
Presidentialism	-0.317	-0.388	-0.416
	(0.017)	(0.018)	(0.019)
Majoritarian	-0.311	-0.105	-0.315
	(0.015)	(0.016)	(0.016)
τ_1	-1.130	-1.067	-1.300
τ_2	1.759	1.869	1.629
τ_3	3.740	3.868	3.628
ρ	0.049	0.058	0.055
Individuals	171978	159396	163710
Country-Years	115	111	113
Prob > χ^2	<0.001	<0.001	<0.001

Note: Dependent variable is dissatisfaction with democracy. Results are from multilevel ordered logistic regressions. Standard errors in parentheses.
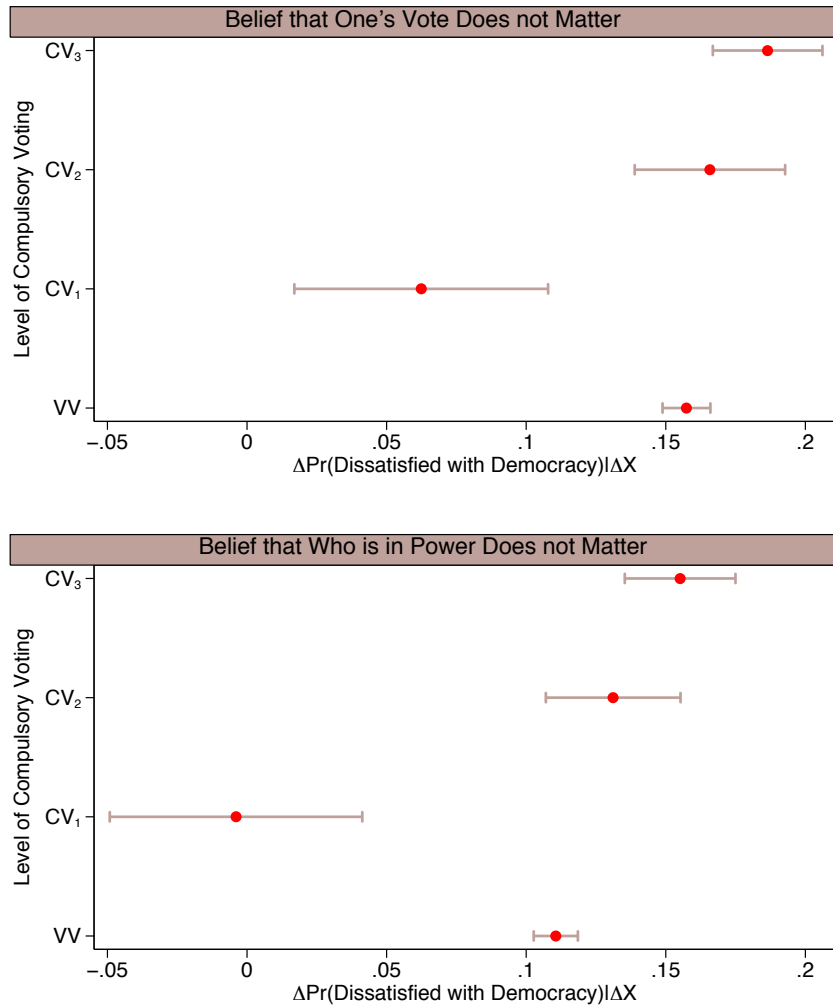
Figure A2: The Effect of Anti-Democratic Attitudes on Dissatisfaction with Democracy according to the Level of Compulsory Voting

Note: Each circle represents the effect of a change in the range of the relevant independent variable on the probability of being not very satisfied or not at all satisfied with democracy. Horizontal brackets represent 95% confidence intervals.

8. Factor Analyses of Democratic Attitudes

Though satisfaction with democracy correlates with a variety of democratic orientations (e.g. Klingemann 1999; Kornberg and Clarke 1994), it is generally thought to be a conceptually and empirically distinct attitude (e.g. Anderson and Guillory 1997; Clarke and Kornberg 1992; Fuchs 1993; Kornberg and Clarke 1992). Still, due to the vigorous debate about the meaning and independence of the satisfaction measure (cf. Anderson 2001; Canache, Mondak, and Seligson 2001; Linde and Ekman 2003), I employ factor analysis to empirically assess the distinctiveness of satisfaction with democracy and the anti-democratic attitudes identified above.

Below I provide numerical and graphical results of exploratory factor analyses of the dissatisfaction with democracy and anti-democratic attitudes variables gathered from the AmericasBarometer, the Latinobarometer, and the Comparative Study of Electoral Systems. Numerical results are provided in Table A6 and graphical results are shown in Figure A3, in which I plot each variable's loading on the first two factors. Because many of the variables are not measured continuously, I employ tetrachoric and polychoric correlations in the creation of the correlation matrices input into the factor analyses. The tables and figures demonstrate that dissatisfaction with democracy does not cluster with any of the anti-democratic orientations in any of the three data sources. For example, in the AmericasBarometer data, 88 percent of the variance in dissatisfaction with democracy is not shared with the other variables.[18] Thus, in line with previous research (e.g. Anderson and Guillory 1997; Clarke and Kornberg 1992; Fuchs 1993; Fuchs, Guidorossi, and Svensson 1995; Kornberg and Clarke 1992; Thomassen 1995), I understand and treat satisfaction with democracy as empirically distinct from the other attitudes.

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[18] The estimated uniqueness of dissatisfaction with democracy is 0.882, which is the highest of any variable in the factor analysis of the AmericasBarometer data.

Table A6: Exploratory Factor Analyses

	Loading on First Factor	Loading on Second Factor	Uniqueness
AmericasBarometer			
Dissatisfaction with Democracy	0.227	0.046	0.882
Rejection of Democracy as Best System of Government	0.495	0.141	0.715
Approval of a Violent Overthrow	0.310	0.266	0.821
Belief that Authoritarian Government can be Better	0.533	-0.243	0.655
Belief that the Country Needs an Autocrat	0.615	-0.054	0.585
Proportion of Common Variance due to First Factor		0.785	
Proportion of Common Variance due to Second Factor		0.115	
n		100228	
Latinobarometer			
Dissatisfaction with Democracy	0.413	0.216	0.782
Rejection of Democracy as Best System of Government	0.592	0.038	0.638
Belief that Authoritarian Government can be Better	0.495	-0.198	0.716
Belief that Democracy Does Not Solve Problems	0.575	-0.025	0.659
Proportion of Common Variance due to First Factor		0.910	
Proportion of Common Variance due to Second Factor		0.073	
n		59888	
CSES			
Dissatisfaction with Democracy	0.141	0.224	0.930
Voting Does Not Matter	0.766	0.077	0.407
Who's in Power Does Not Matter	0.736	-0.123	0.444
Proportion of Common Variance due to First Factor		0.942	
Proportion of Common Variance due to Second Factor		0.059	
n		157047	

Note: Results are from unrotated exploratory factor analyses.

AmericasBarometer

- Approval of Violent Overthrow
- Rejection of Democracy as Best
- Dissatisfaction with Democracy
- Belief that Country needs an Autocrat
- Belief that Authoritarianism can be Better

Loading on First Factor / Loading on Second Factor

Latinobarometer

- Dissatisfaction with Democracy
- Rejection of Democracy as Best
- Belief that Democracy Does Not Solve Problems
- Belief that Authoritarianism can be Better

Loading on First Factor / Loading on Second Factor

CSES

- Dissatisfaction with Democracy
- Belief that Voting Does Not Matter
- Belief that Who's in Power Does Not Matter

Loading on First Factor / Loading on Second Factor

Figure A3: Orientations toward Democracy in Two-Dimensional Space

Note: This plot maps the loadings of the observed variables on the first and second factors recovered in exploratory factor analyses.

9. **Results with a Dichotomous Indicator of Compulsory Voting**

As I argue in the main text, the character of enforcement and sanctions should shape the effects of compulsory rules. I thus employ a four-category variable to classify countries according to both the existence of a compulsory rule and the degree to which sanctions are enforced—which itself is strongly related to the severity of punishments for abstention (Singh 2011, 105). Further, some work demonstrates that, despite the increased legal force associated with each subsequent compulsory voting category, their relative effects on behavior can deviate from ordinality (cf. Birch 2009; Power 2009; Singh 2015), and a dichotomous measurement approach would not be able to capture such deviations.

Nevertheless, to ensure that my findings are not entirely driven by the classification of compulsory voting I use in the primary models, I re-estimate the primary models from the main text, Models 1-5 of Table 1, using a dichotomous indicator for the presence of compulsory voting in place of the four-category indicator. Results are provided in Models A13-A17 of Table A7. First, Model A13 shows that compulsory voting, as compared to voluntary voting, is associated with a higher propensity to be dissatisfied with democracy. Second, Models A14-A17 show that the relationship between anti-democratic attitudes and dissatisfaction with democracy sharpens in countries with compulsory voting. The coefficients on the interaction terms are positive and quite a bit larger than their associated standard errors in all four interactive models. Figure A4 further illustrates that the link between anti-democratic attitudes and dissatisfaction with democracy is, on average, stronger in compulsory systems than in voluntary systems.

Table A7: Dissatisfaction with Democracy, Anti-Democratic Attitudes, and Compulsory Voting – Models with a Dichotomous Indicator of Compulsory Voting

Anti-Democratic Attitude in Model:	-	Reject Democracy	Overthrow OK	Authoritarian Better	Autocrat Needed
Model	**A13**	**A14**	**A15**	**A16**	**A17**
Anti-Democratic Attitude		0.090	0.020	0.241	0.152
		(0.006)	(0.005)	(0.034)	(0.032)
Compulsory Voting	0.139	0.119	0.181	0.038	-0.040
	(0.004)	(0.028)	(0.031)	(0.022)	(0.021)
Interaction with Compulsory Voting		0.059	0.016	0.124	0.144
		(0.007)	(0.006)	(0.039)	(0.038)
Controls					
Age	-0.032	-0.022	-0.030	-0.026	-0.027
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
College	0.192	0.225	0.192	0.180	0.184
	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)
Economic Development	-0.096	-0.013	-0.030	0.006	-0.031
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Democratic Development	0.004	0.089	0.007	-0.013	-0.014
	(0.004)	(0.005)	(0.006)	(0.006)	(0.004)
Corruption	0.150	0.175	0.228	0.136	0.148
	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)
Presidentialism	-0.140	-0.256	-0.294	-0.175	-0.368
	(0.032)	(0.033)	(0.037)	(0.036)	(0.035)
Majoritarian	0.102	-0.414	0.215	-0.102	0.230
	(0.033)	(0.035)	(0.035)	(0.036)	(0.035)
τ_1	-2.680	-0.940	-1.791	-2.161	-2.512
τ_2	0.323	2.088	1.222	0.853	0.502
τ_3	2.759	4.575	3.670	3.317	2.946
ρ	0.035	0.031	0.041	0.036	0.041
Individuals	119489	113600	117750	112117	110233
Country-Years	85	84	85	85	83
Prob > χ^2	<0.001	<0.001	<0.001	<0.001	<0.001

Note: Dependent variable is dissatisfaction with democracy. Results are from multilevel ordered logistic regressions. Standard errors in parentheses.
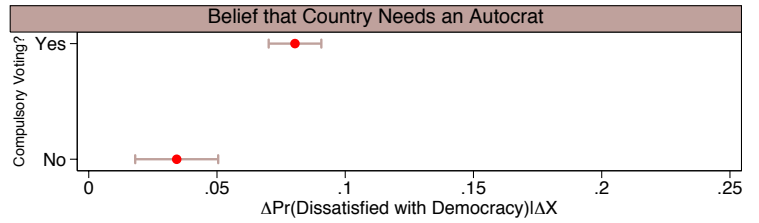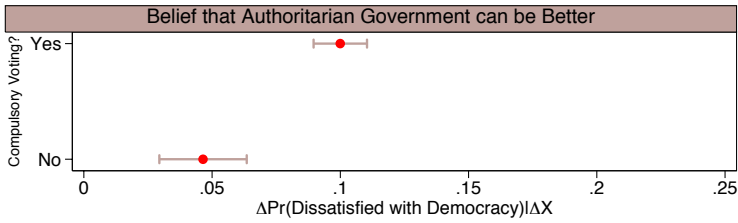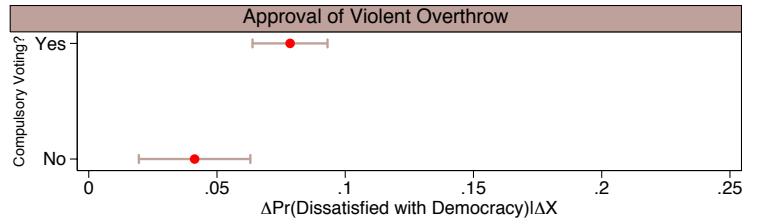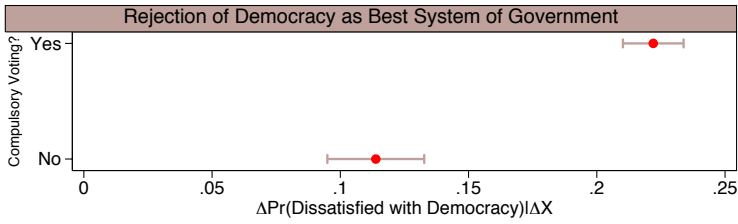
Figure A4: The Effect of Anti-Democratic Attitudes on Dissatisfaction with Democracy, Dichotomous Indicator of Compulsory Voting

Note: Each circle represents the effect of a change in the range of the relevant independent variable on the probability of being unsatisfied or very unsatisfied with democracy. Horizontal brackets represent 95% confidence intervals.

10. Anti-Democratic Attitudes and Dissatisfaction with Democracy among Voters and Abstainers in Compulsory and Voluntary Systems

I argue in the main text that both the coercion and the punishment present in compulsory voting systems serve to heighten the link between anti-democratic attitudes and dissatisfaction with democracy. Thus, this exacerbating effect of compulsory rules should be present among anti-democrats who vote (and were potentially coerced) and among those who abstained despite the legal obligation to vote (and were potentially punished). In other words, the relationships among compulsory voting, anti-democratic attitudes, and dissatisfaction with democracy should not be conditional on one's participation in elections.

To test this expectation, I add an indicator for voter turnout to the models displayed in Table 1 of the main text. This is measured dichotomously, using individuals' responses to the question, "Did you vote in the last presidential election?"[19] In each model, I include a three-way interaction between the anti-democratic attitude variable, each category of compulsory voting, and the dummy variable for participation. I also include the constitutive bivariate interactions between turnout and each category of compulsory voting and turnout and each anti-democratic attitude.

Figure A5 demonstrates that patterns are similar among voters and abstainers; the link between anti-democratic attitudes and dissatisfaction with democracy is generally stronger in compulsory systems, and it tends to be strongest where compulsory laws have the most force. In some instances, the link between anti-democratic attitudes and dissatisfaction is stronger among voters, and in others it is stronger among abstainers. In nearly all cases, these differences are not statistically different from zero. Thus, there is no evidence that compulsory voting's magnifying impact on the relationship between anti-

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[19] Responses to this question are not available in the 2004 survey of Bolivia and the 2010 survey of Peru, meaning these country-years are not present in the sample used in the estimation of the models discussed here.

democratic attitudes and dissatisfaction with democracy is conditional on one's electoral participation.
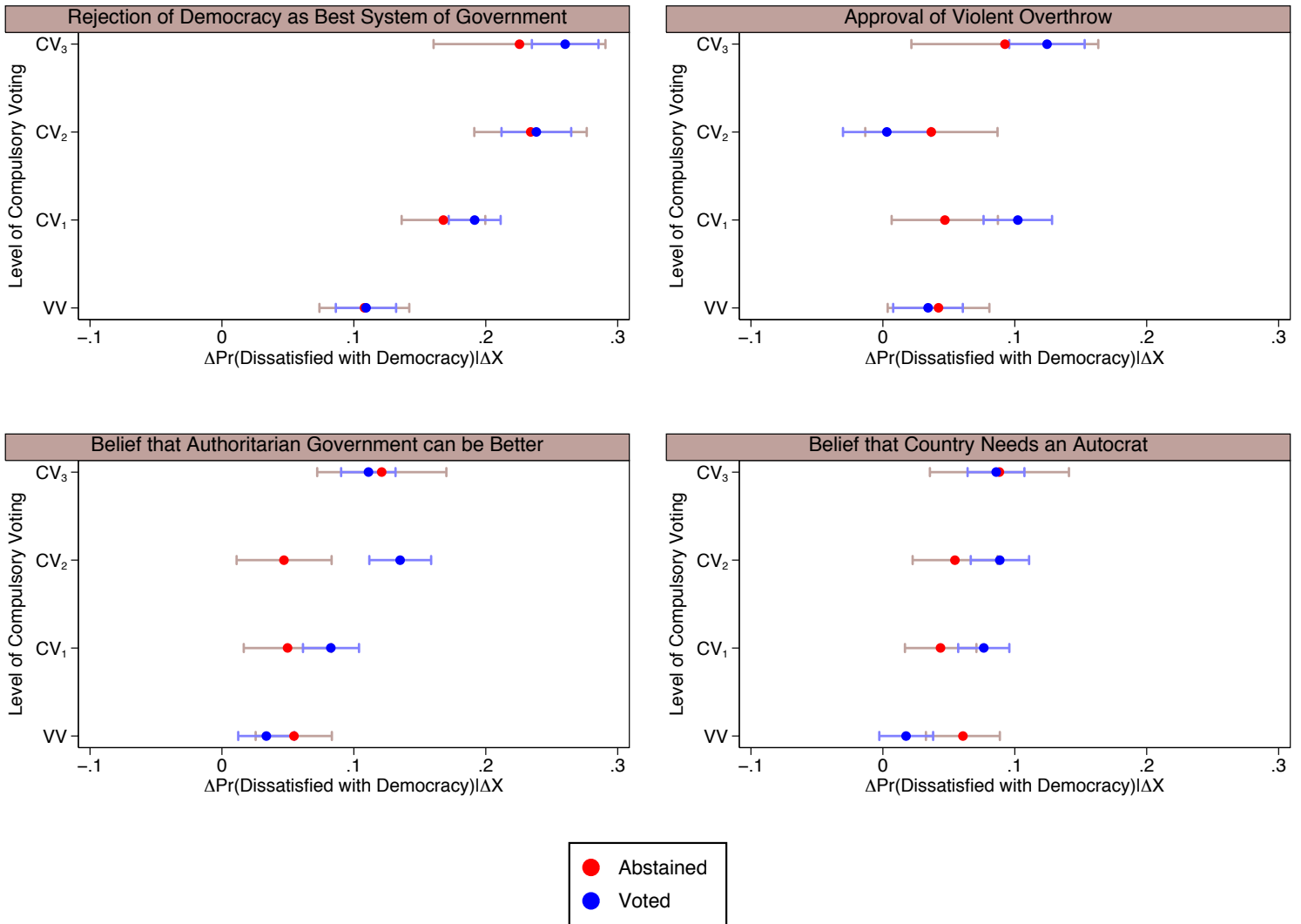
Figure A5: The Effect of Anti-Democratic Attitudes on Dissatisfaction with Democracy according to the Level of Compulsory Voting and Voter Participation

Note: Each circle represents the effect of a change in the range of the relevant independent variable on the probability of being unsatisfied or very unsatisfied with democracy. Horizontal brackets represent 95% confidence intervals.

11. Compulsory Voting and Democratic Satisfaction in the Public

In Figure 1 of the main text, I plot the effect of each anti-democratic attitude on the probability of being unsatisfied or very unsatisfied with democracy across each category of the compulsory voting scale. Here, in Figures A6 and A7, I instead plot the predicted probability of dissatisfaction with democracy over the range of each relevant independent variable.

First, in Figure A6, I plot the predicted probability of being unsatisfied or very unsatisfied with democracy across the range of each anti-democratic attitude variable in countries with voluntary voting (category VV) and in countries with the highest level of compulsory voting (category CV_3). Results demonstrate that the extent to which the satisfaction gaps engendered by compulsory voting influence a country's overall level of dissatisfaction with democracy depends on that country's ratio of democrats to anti-democrats. For those with pro-democratic attitudes, who fall toward the left-hand side of the *x*-axes, there is little difference in dissatisfaction across compulsory and voluntary systems. Alternatively, for those with anti-democratic attitudes, who fall toward the right-hand side of the *x*-axes, the predicted difference in dissatisfaction across compulsory and voluntary systems is relatively large; as compared to those in voluntary systems, anti-democrats in compulsory systems are quite dissatisfied with democracy.

Thus, if a country has a low proportion of people with anti-democratic orientations, compulsory voting does little to boost the overall dissatisfaction level, relative to that of a similar country with voluntary rules. Alternatively, if the proportion of anti-democrats is high, compulsory voting heightens a country's level of dissatisfaction with democracy, relative to that of a similar country with voluntary rules. Put differently, compulsory voting

most forcefully decreases the overall belief in the legitimacy of the democratic where publics are negatively oriented toward democracy.

In Figure A6, to reduce clutter, I only included two of the four voting categories of compulsory voting in Figure 2—voluntary voting (category VV) and the highest level of compulsory voting (category CV_3). Figure A7 includes all four categories of compulsory voting. While the appearance of the figure is messier than that of Figure A6, it provides a more nuanced depiction of the results.

The overall pattern gleaned from Figure A7 is the same as that discernible in Figure A6. For those with pro-democratic attitudes, who fall toward the left-hand side of the *x*-axes, there is relatively little difference in dissatisfaction across compulsory and voluntary systems. Alternatively, for those with anti-democratic attitudes, who fall toward the right-hand side of the *x*-axes, the predicted difference in dissatisfaction across compulsory and voluntary systems is larger; relative to those in voluntary systems, anti-democrats in compulsory systems are quite dissatisfied with democracy. This is generally true for all levels of compulsory voting, and it is always true for the highest level of compulsory voting.
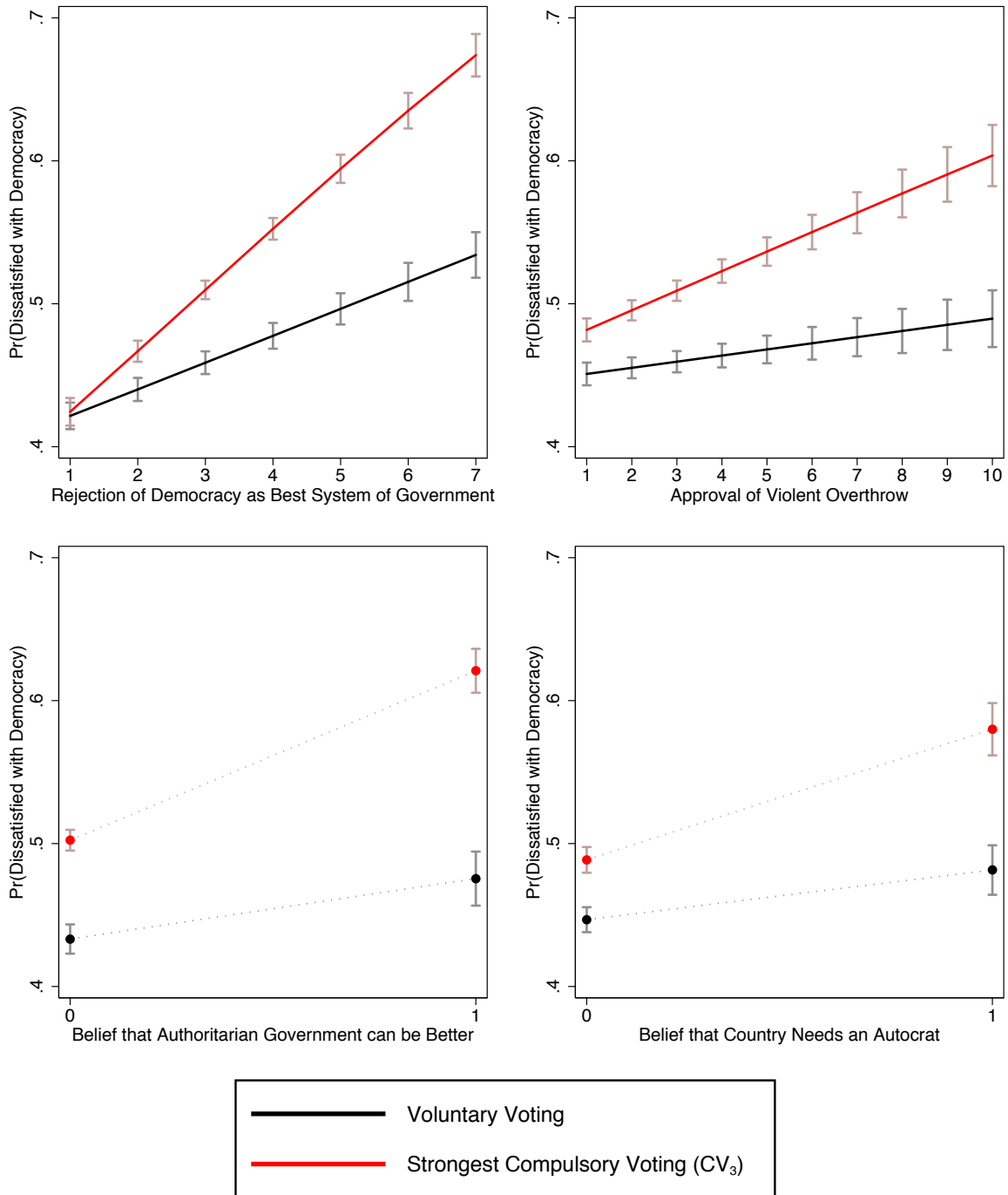
Figure A6: The Relationship between Dissatisfaction with Democracy and Anti-Democratic Attitudes according to the Level of Compulsory Voting

Note: Vertical brackets represent 95% confidence intervals.
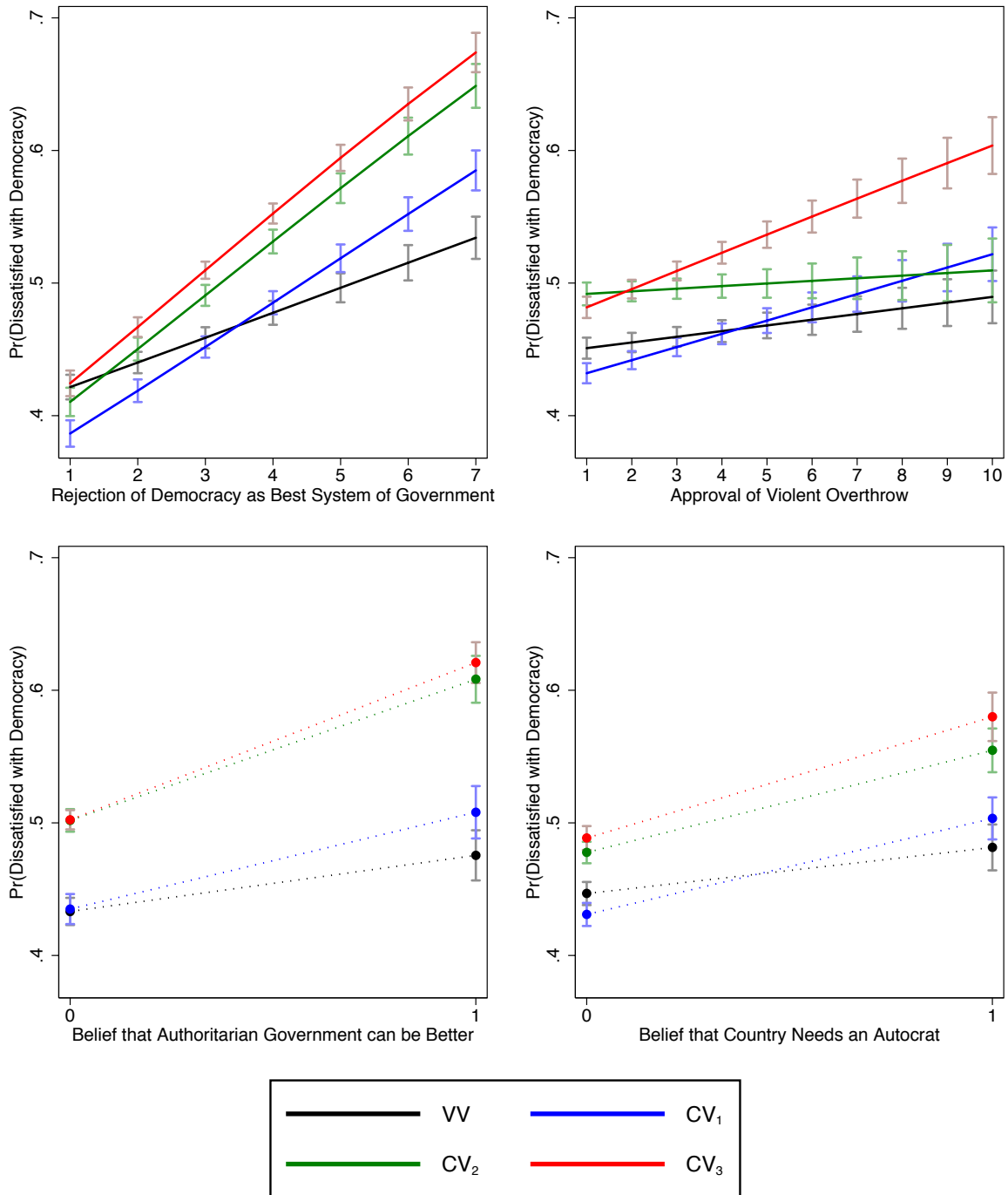
Figure A7: The Relationship between Dissatisfaction with Democracy and Anti-Democratic Attitudes according to the Level of Compulsory Voting

Note: Vertical brackets represent 95% confidence intervals.

12. Abstention and Age in Countries with Age-Contingent Compulsory Voting, Non-Age-Contingent Compulsory Voting, and Voluntary Voting

In Argentina, Bolivia, Brazil, and Peru, voting is not compulsory for individuals over 70 years of age, and, in Ecuador, the cutoff age is 65. I make use of these cutoffs in the natural experiment outlined in the main text and in Section 13 of this appendix.

In Argentina, 85 percent of individuals are aware of the country's age cutoff (Jaitman 2013, 82), which suggests that the conditional application of the law is recognized in the public. To further explore how these cutoffs affect turnout, in Figure A8, I plot local polynomial regressions of the relationship between age and an individual's likelihood of abstention[20] across the five countries with compulsory voting cutoff ages. It is apparent from the figure that there is an upward trend in the likelihood of abstention at advanced ages. Matching analyses echo the patterns shown in the figure: in Argentina, Bolivia, Brazil, Ecuador, and Peru, the increase in the expected probability of abstention associated with being just above the age cutoff, as compared to being just below it, is about eight percentage points.[21]

In Figure A9, I plot local polynomial regressions of the relationship between age and an individual's likelihood of abstention in countries with compulsory voting and no age cutoffs and in countries with voluntary voting. As is clear from the figure, the trends observed in the countries with compulsory voting cutoff ages are not apparent in countries where the requirement to vote, or lack thereof, exists independent of age. While there are slight increases in the probability of abstention at very advanced ages in Guyana, Nicaragua,

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[20] The AmericasBarometer asks respondents whether they would vote if an election were to be held in the current week.

[21] I used nearest neighbor propensity score matching to compare individuals in five-year windows just above and below the age cutoffs. The average effect of being "treated" with compulsory voting on the probability of abstention is -0.078 (the associated standard error is 0.023). Logistic regression-based propensity scores were calculated as a function of gender, college education, and income deciles. Results are similar when slightly wider and narrower windows are used.

and Panama, these increases are much less pronounced that those depicted in Argentina,
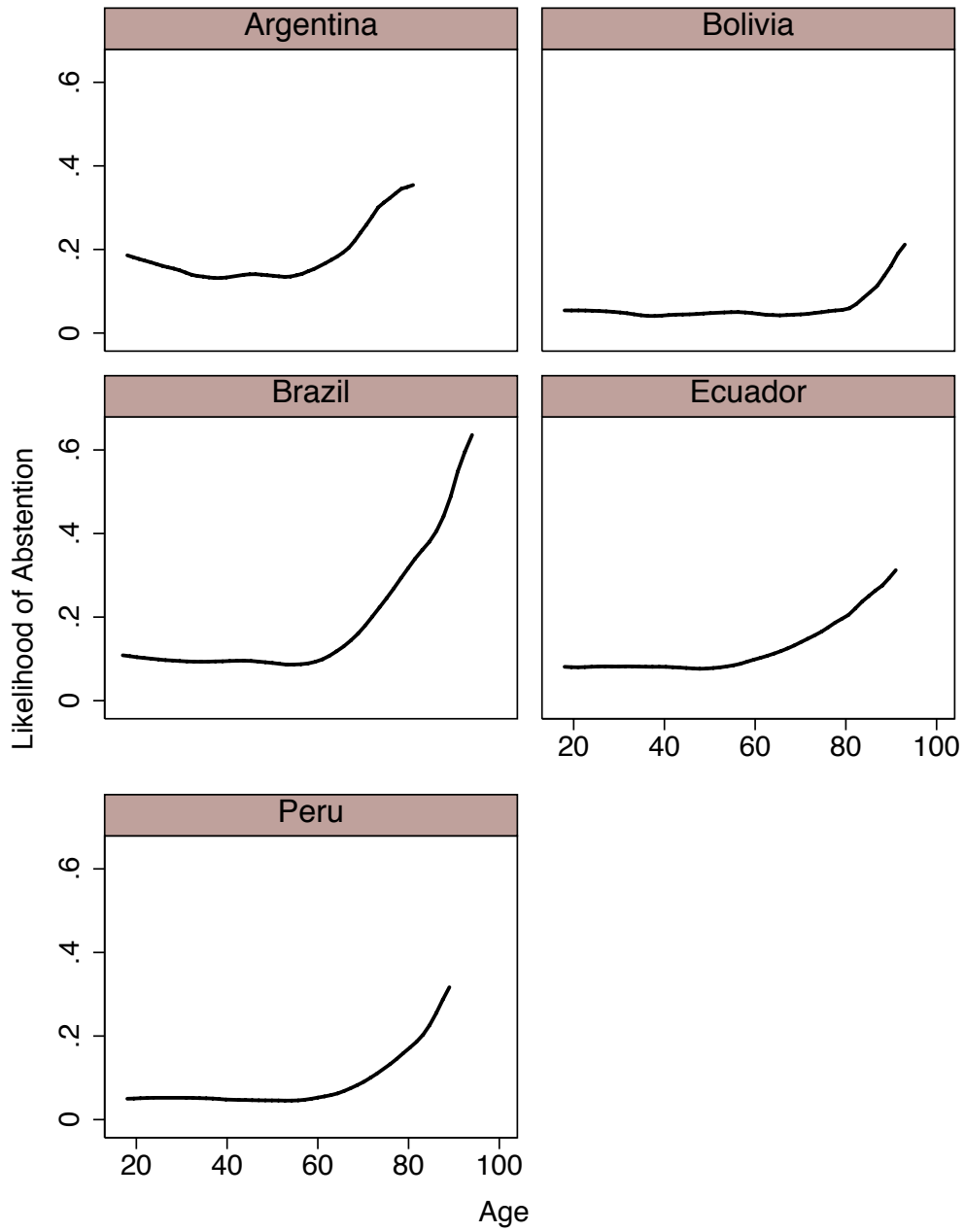
Bolivia, Brazil, Ecuador, and Peru in Figure A8.

Figure A8: Predicted Abstention and Age in Countries with Age-Contingent Compulsory Voting

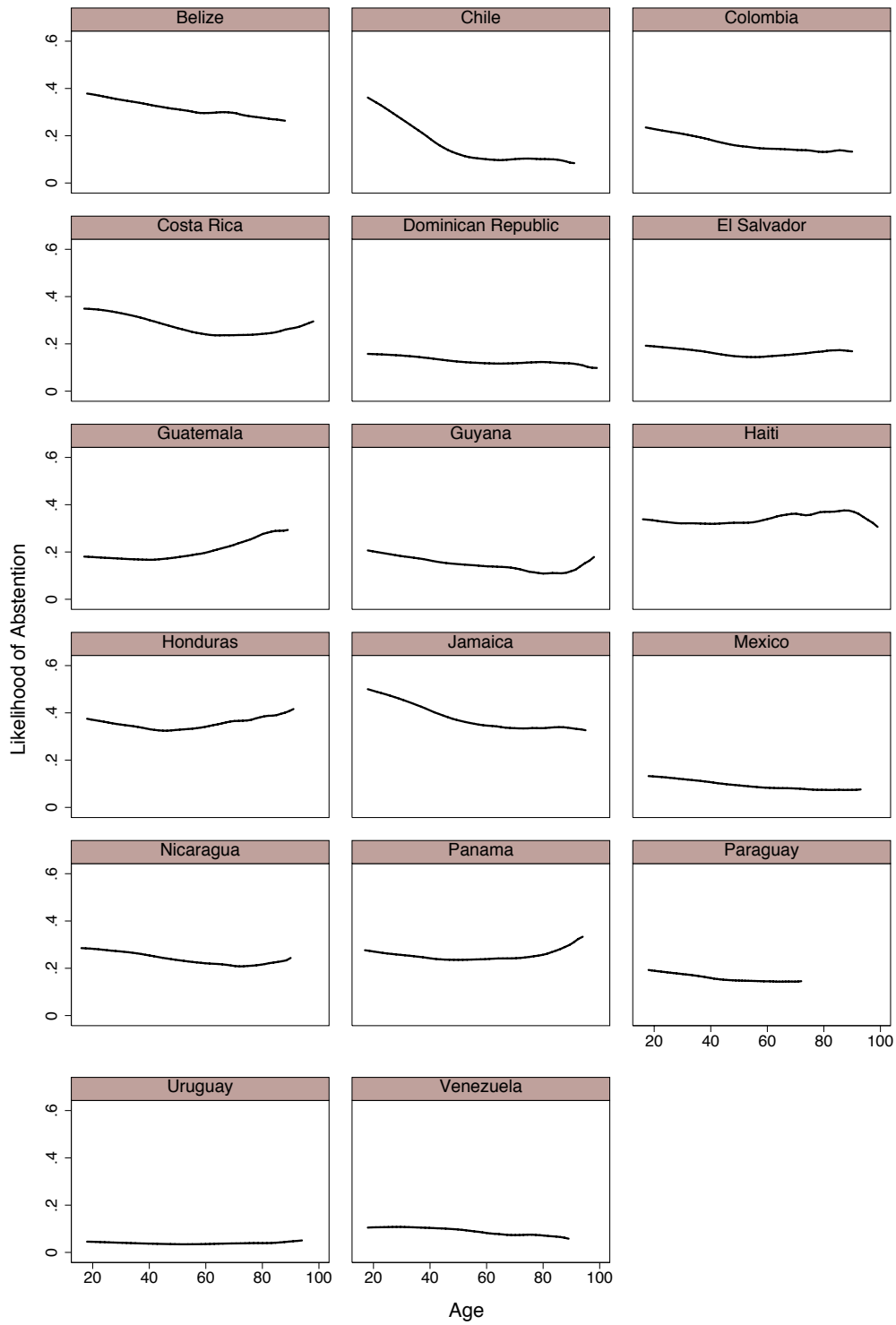Note: Plots contain smoothed local polynomial regressions.

Figure A9: Predicted Abstention and Age in Countries with Non-Age-Contingent Compulsory Voting and Voluntary Voting

Note: Plots contain smoothed local polynomial regressions.

13. Regression Discontinuity Details and Placebo Tests

In the main text, I estimate relationships between democratic attitudes and dissatisfaction across individuals subject to and free from compulsory rules using sharp regression discontinuity (RD) models. I make use of the fact that five Latin American countries do not enforce their compulsory rules for senior citizens: in Argentina, Bolivia, Brazil, and Peru, voting is not compulsory for individuals over 70 years of age, and in Ecuador the cutoff age is 65. Specifically, I estimate local polynomial regressions among individuals older and younger than the age cutoffs using software written by Nichols (2007, 530-531), and I estimate the difference between the two functions at the cutoff value to determine the effect of compulsory voting (see, e.g., Imbens and Lemieux 2008; Lee 2008). Bandwidth was selected with reference to the choice rule recommended by Imbens and Kalyanaraman (2012).[22]

Importantly, the age thresholds for mandatory voting do not correspond with the ages at which individuals gain eligibility for government pensions. In Argentina, the pension age is 65 for men and 60 for women. In Brazil, it is also 65 for men and 60 for women, unless the individual is a rural worker, in which case the pension age is 60 for men and 55 for women. In Bolivia, the pension age was 65 for men and 60 for women, though this was lowered to 58 for both genders in 2011—and to 55 for women with three or more children. In Ecuador, the pension age is 60, but one can receive a pension at any age if he or she has been a contributor for 480 months. In Peru, the pension age is 55 for men if they have worked 30 years and 50 for women if they have worked 20 years.

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[22] To boost the number of observations maintained in the RD analyses, in the models presented here and in the main text, I use a bandwidth window double the size of the "optimal" bandwidth suggested by Imbens and Kalyanaraman (2012). Results do not systematically differ as bandwidth size increases beyond Imbens and Kalyanaraman's optimum, and results are substantively the same with the use of their optimal bandwidth window.

While RD designs allow the predictor (in this case, age) to be associated with the outcome (in this case, dissatisfaction with democracy), they assume that nature of this association is constant on either side of the cutoff value of the predictor variable. In the present case, this assumption implies that aging one year from any particular starting value in the observed range of ages should not lead to a sharp change in the propensity to be dissatisfied unless the one-year age increase in question is associated with the removal of the legal requirement to vote.

To probe the accuracy of this assumption in my data, and to ensure that my results are not simply an artifact of the aging process, I conduct "placebo tests." In these tests, the age cutoffs, while nearby the true compulsory voting age cutoffs, are theoretically meaningless. As such, the requirement to vote, or lack thereof, is constant nearby the thresholds employed in the placebo tests. In the top panels of Figure A10, I take the placebo compulsory voting cutoff to be 10 years below the actual cutoff age, meaning all respondents nearby the threshold are subject to compulsory rules. In the bottom panels of the figure, I take the placebo compulsory voting cutoff to be 10 years above the actual cutoff age, meaning no respondents near the threshold are subject to compulsory rules. The discontinuities are smaller than their associated standard errors in each of the four panels of Figure A10, which suggest that the discontinuity identified in the main text using the true age thresholds is indeed a product of those thresholds and not the aging process.
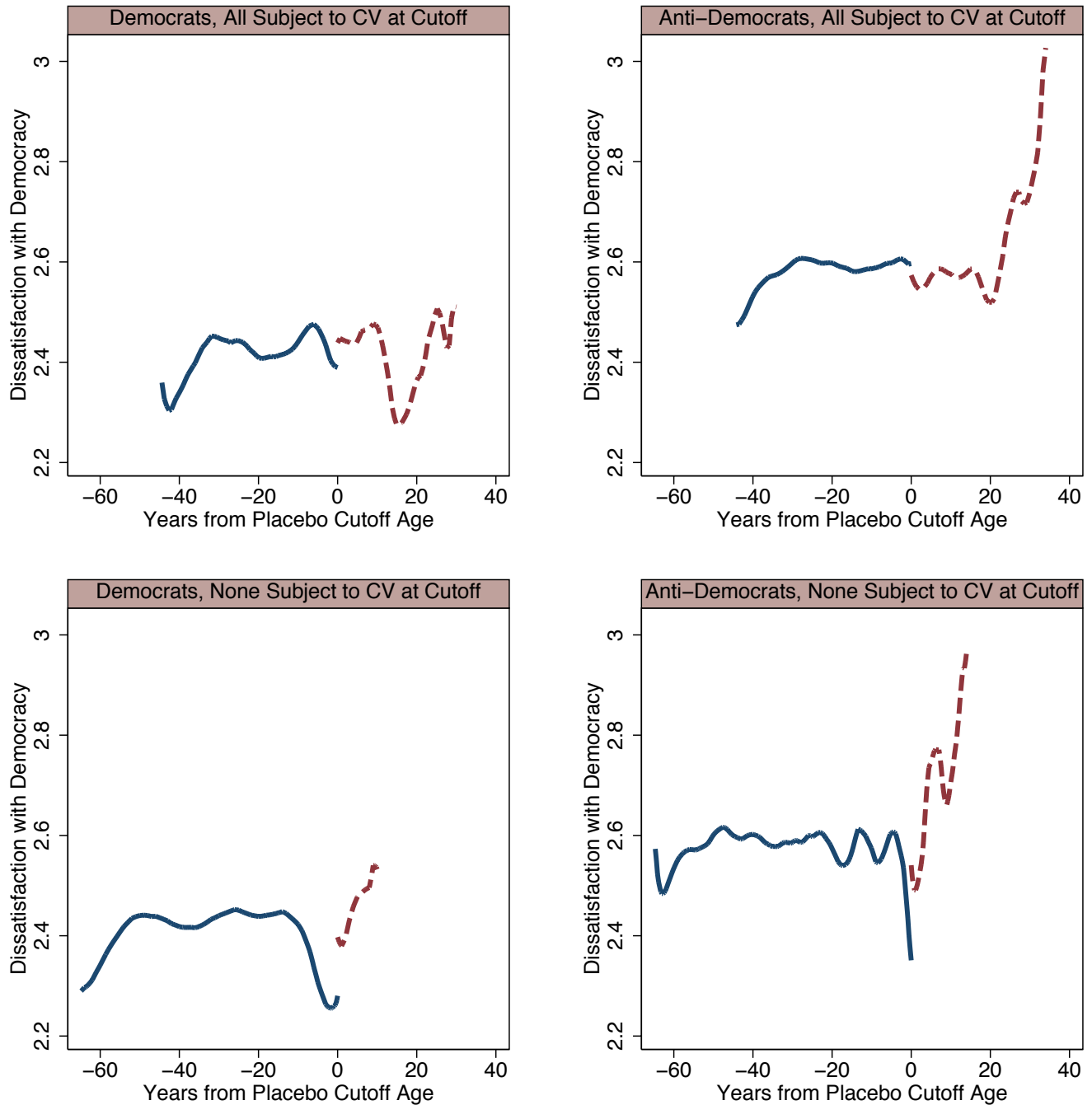
Figure A10: Age, Dissatisfaction with Democracy, and Democratic Attitudes Above and Below Placebo Age Thresholds

Note: Plots contain smoothed local polynomial regressions estimated on both sides of the placebo cutoffs. In the top panels, the placebo cutoff is 10 years below the actual cutoff age, meaning all respondents near the threshold are subject to compulsory voting. In the bottom panels, the placebo cutoff is 10 years above the actual cutoff age, meaning no respondents near the threshold are subject to compulsory voting.

14. Question Wording

Below I list the (translated) question wording used to create the survey-based variables included in the analyses.

AmericasBarometer

Dissatisfaction with Democracy

"In general, would you say you are very satisfied, satisfied, unsatisfied, or very unsatisfied with the way democracy works in [country]?" I assign a 1 to respondents who are very satisfied, a 2 to those who are satisfied, a 3 to those who are unsatisfied, and a 4 to those who are very unsatisfied.

Rejection of Democracy as the Best System of Government

"Democracy may have problems, but it is better than any other form of government. To what extent do you agree or disagree with this statement?" Respondents stated their agreement on a scale from 1 to 7, and I have coded higher values to indicate disagreement.

Approval of a Violent Overthrow

"People are participating in a group that wants to violently overthrow an elected government. Do you approve or disapprove?" Respondents stated their approval on a scale from 1 to 10, and I have coded higher values to indicate approval.

Belief that Authoritarian Government can be Better than Democracy

"Which of the following three statements do you most agree with?

- For people like me, it does not matter whether a government is democratic or undemocratic.

- Democracy is preferable to any other form of government.

- In some circumstances, an authoritarian government can be preferable to a democratic one."

Respondents who selected the third option are coded 1, and those who selected the others are coded 0.

Belief that the Country Needs an Autocrat

"Some people say that we need a strong leader who does not have to be elected by popular vote. Others say that even if things do not work with electoral democracy, the popular vote is always best. What do you think?

- We need a strong leader who does not have to be elected, or

- Electoral democracy is best."

Respondents who selected the first option are coded 1, and those who selected the others are coded 0.

Latinobarometer

Dissatisfaction with Democracy

"In general, would you say that you are very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in [country]?" I assign a 1 to respondents who are very satisfied, a 2 to those who are fairly satisfied, a 3 to those who are not very satisfied, and a 4 to those who are not at all satisfied.

Rejection of Democracy as the Best System of Government

"Democracy may have problems, but it is the best system of government. Do you strongly agree, agree, disagree or strongly disagree?" Responses are coded from 1 to 4, and I have coded higher values to indicate disagreement.

Belief that Authoritarian Government can be Better than Democracy

"Which of the following three statements do you most agree with?

- To people like me, it doesn't matter whether we have a democratic government or a non-democratic government.

- Democracy is preferable to any other form of government.

- In certain situations, an authoritarian government can be preferable to a democratic one."

Respondents who selected the third option are coded 1, and those who selected the others are coded 0.

Democracy Does Not Solve the Country's Problems

"Some people say that democracy solves problems that we have in [country]. Other people say that democracy does not solve the problems. Which statement is closest to your views?"

- Democracy solves problems that we have in [country].

- Democracy does not solve problems."

Respondents who selected the second option are coded 1, and those who selected the others are coded 0.

Comparative Study of Electoral Systems

Dissatisfaction with Democracy

"In general, would you say that you are very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in [country]?" I assign a 1 to respondents who are very satisfied, a 2 to those who are fairly satisfied, a 3 to those who are not very satisfied, and a 4 to those who are not at all satisfied.

Voting Does Not Matter

"Some people say that no matter who people vote for, it won't make any difference to what happens. Others say that who people vote for can make a difference to what happens. Using the scale on this card, (where 1 means that voting won't make a difference to what happens and 5 means that voting can make a difference), where would you place yourself?" I reverse the scale so that higher values indicate the belief that voting does not make a difference.

Who's in Power Does Not Matter

"Some people say it makes a difference who is in power. Others say that it doesn't make a difference who is in power. Using the scale on this card, (where 1 means that it makes a difference who is in power and 5 means that it doesn't make a difference who is in power), where would you place yourself?" I maintain the original scale so that higher values indicate the belief that who is in power does not make a difference.

15. Expanded Introduction, Literature Review, and Theory

In the main text of the paper, I present the introductory material, literature review, theoretical logic, and conclusion in an abbreviated form in the interest of space. Below, I provide an expanded version of each.

Introduction

Countries have adopted compulsory voting for a variety of reasons (cf. Birch 2009; Mackerras and McAllister 1999; Massicotte et al. 2004; Norris 2004; Robson 1923; Stengers 2004). Not least among these is a desire to enhance the legitimacy of the democratic regime, whether real or perceived, through elevated turnout (Birch 2009, 27-35; Malkopoulou 2015). Further, compulsory voting is often seen as a mechanism for engendering civic attitudes through individuals' repeated electoral participation (cf. Brennan and Hill 2014, chp. 6; Engelen 2007; Hill 2002; Lijphart 1997; See 2007). This logic suggests that individuals in countries with compulsory voting are relatively unlikely to doubt the legitimacy of the democratic system, its institutions, and its authorities.

This logic, however, accounts for neither the consequences of coercion and punishment nor heterogeneity in predispositions toward the democratic process. Many individuals in democracies hold negative orientations toward the democratic system to which they are subject. These individuals are also less convinced of the legitimacy of democratic institutions and principles and generally prefer not to vote. Where turnout is voluntary, they have a cost-free option of abstaining from elections—the key feature of the democratic process. However, where abstention is illegal, such individuals may feel coerced to participate. Further, those who resist compulsion will often receive a punishment.

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Research from several fields highlights the attitudinal and behavioral consequences of coercion and punishment. Both mechanisms induce desired behaviors, but they also have undesirable second-order effects, including weakened beliefs about the legitimacy of the coercer and its authorities. To this end, a volume of research shows that compulsory voting has the desired effect of increasing turnout (e.g. Birch 2009; Blais 2006; Geys 2006; Tingsten 1937), even where baseline participation levels are low (e.g. Franklin 1999; Hirczy 1994; Lijphart 1997, 9), but it is not yet clear how compulsion shapes attitudes in the public.

I theorize that the relationship between one's orientation toward democracy and his or her judgments about democratic legitimacy is conditioned by compulsory voting. Governmental coercion to vote—and associated punishments for nonvoting—will exacerbate the tendency of individuals who hold negative orientations toward democracy to question the legitimacy of the democratic system, its institutions, and its authorities. Empirically, this suggests that such negatively oriented individuals, who I term "anti-democrats," will be especially dissatisfied with democracy[23] where voting is compulsory. Equivalently, the gap in democratic satisfaction between anti-democrats and their more "democratic" counterparts will be largest where voting is compulsory.

To test my expectations, I initially gather survey data from the AmericasBarometer, which covers a set of countries in which compulsory voting is widely employed. I first find that compulsory voting does not increase overall satisfaction with democracy; instead, it is associated with higher levels of *dissatisfaction*. I then demonstrate that the relationship between anti-democratic attitudes and dissatisfaction intensifies where voting is compulsory; anti-democrats are especially dissatisfied with democracy where their participation is forced. I also test my expectations with surveys of Latin American publics from the

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[23] There are debates over the meaning and measurement of satisfaction with democracy and its validity as an indicator of democratic legitimacy. I discuss my measurement strategy in detail below.

Latinobarometer and with a broader cross-national set of surveys from the Comparative Study of Electoral Systems. Results from these tests are substantively similar.

Recognizing that it is inherently difficulty to identify a causal effect with analyses of cross-national surveys, I also conduct a natural experiment. A group of Latin American countries with compulsory voting does not force participation among senior citizens. Exploiting these age thresholds, I use regression discontinuity analyses to compare individuals just below the cutoff age to those just above it. The two groups should be the same in expectation, save their "exposure" to a compulsory voting law. These analyses provide further evidence that being forced to vote enhances the positive relationship between anti-democratic attitudes and dissatisfaction with democracy.

This paper suggests that satisfaction with democracy cannot be legislated with compulsory voting rules. Instead, where voting is compulsory, there tend to be large "satisfaction gaps" in the population; individuals with negative orientations toward democracy are especially likely to question the legitimacy of its processes, its institutions, and its authorities where voting is compelled. This can lead to a decrease in the overall level of satisfaction with democracy. I discuss the normative implications of these findings in the conclusion, where I suggest that, while this paper reveals an important potential downside of compulsory voting, it is not clear that this downside outweighs the institution's potential benefits.

Compulsory Voting as a Precipitator of Satisfaction with Democracy

While attitudes toward democracy are classically considered to precede the decision to vote (e.g. Almond and Verba 1963), many contend that political participation can itself structure the formation of democratic attitudes. Specifically, participation can invoke positive attitudes

toward democracy by bringing about self-actualization and gratification (e.g. Inglehart 1990; Schlozman, Verba, and Brady 1995) and a deeper engagement with the democratic system (Ikeda, Kobayashi, and Hoshimoto 2008). Further, individuals are wont to alter their attitudes to bring them into alignment with previous behaviors (Markus 1986), which suggests that voters will develop pro-democracy orientations to "justify" their own participation.

Empirical support for the argument that democratic participation precedes pro-democracy orientations abounds (e.g. Finkel 1987; Finkel 1985; Ikeda et al. 2008; Quintelier 2013; Quintelier and van Deth 2014), and participation can enhance attitudes toward democracy even when it is externally induced. As Bratton, Mattes, and Gyimah-Boadi (2005, 310) put it, "Mobilized participation is not bereft of benefits." This reflects the judgment of Tocqueville (2000 [1835]), who observed that institutionalized social contracts lead citizens to adopt and embrace civic attitudes.

Indeed, in debates over the introduction of compulsory voting, supporters routinely advised that forced participation would engender a more democratically engaged populace and enhance the perceived legitimacy of the democratic process (Barthélemy 1912; Birch 2009, 27-35; Broomall 1893; Malkopoulou 2015; Nerincx 1901; Robson 1923). These arguments suggest that publics in countries that mandate turnout will express a higher level of satisfaction with democracy, as demonstrated by Birch (2009, 112-115). Further, this pattern should be most apparent where abstention is likely to be sanctioned and penalties for abstention are strong, as the effect of compulsory rules on turnout tends to be greatest where they are harsh and enforced (e.g. Blais, Massicotte, and Dobrzynska 2003; Carreras and Castañeda-Angarita 2014; Fornos, Power, and Garand 2004; Panagopoulos 2008; Power 2009; Singh 2011). And, all else being equal, this pattern should manifest independent of

realized turnout, as compulsion inflates baseline participation rates (e.g. Hirczy 1994; Lijphart 1997, 9). Following from this, I advance the following preliminary hypothesis:

> *H₁*: Individuals are less likely to be dissatisfied with democracy in countries with compulsory voting, especially where it is routinely enforced and penalties for abstention are substantial.

Compulsory Voting and the Effects of Coercion and Punishment

In Hirschman's (1970) "exit, voice, and loyalty" model, those who are disaffected may abstain from elections, thereby "exiting" the political system. Such abstention, while not necessarily a complete exit from democracy, is a straightforward behavioral way of expressing unfavorable attitudes toward the system. Yet, as Hirschman notes, "institutional design can be of considerable importance for the balance of exit and voice" (86), and, where voting is compulsory, the exit option becomes relatively unattractive in that it can entail a sanction. Thus, disaffected individuals may choose the "voice" option in an attempt to "change, rather than to escape from, an objectionable state of affairs" (30). Research showing that individuals are especially likely to select anti-system or outsider parties where compelled to vote (e.g. Bélanger 2004; Carreras 2012) supports this contention.

Still, many individuals will see little utility in the voice option. As Prothro and Grigg (1960, 294) note, "fortunately for the democratic system, those with the most undemocratic principles are also those who are least likely to act." In Hirschman's (1970) language, those with negative orientations toward democracy have weak "loyalty" to the democratic system. For these individuals, the voice option is overshadowed by this "disloyalty" and is unattractive relative to the exit option (Hirschman 1970, chp. 7; Magalhães 2005, 976). Thus,

when those with negative orientations toward the democratic system do vote in countries with compulsory voting, it is largely because of legal coercion.[24]

Coercion can foster or enhance negative attitudes and behaviors by degrading one's sense of agency. Individuals prefer to feel that their actions are a result of their own accord (deCharms 1968); when one is coerced into a behavior, intrinsic motivation to engage in that behavior declines (Deci 1975). A variety of educational and psychological studies demonstrate that, as compared to intrinsic motivation, external coercion is associated with lower levels of cognitive engagement with one's environment, a decreased belief in the legitimacy of the coercer and its authorities, and decreased interest in one's assigned tasks. These effects have been demonstrated in several settings, including schools, places of employment, and athletic events (see Deci and Ryan 2000).

Elections research suggests that these effects are also produced by the coercion present in countries with compulsory voting. Weitz-Shapiro and Winters (2011), for example, argue that the act of voting can increase one's life satisfaction by increasing his or her sense of autonomy and empowerment, yet they find that such a link is absent where voting is coerced. Further, vote choices are more weakly related to political preferences where voting is mandatory than where it is voluntary (Selb and Lachat 2009). This suggests that interest and engagement in politics is lower among those compelled to the polls. Indeed, Lundell (2012) shows that mandatory voting decreases non-electoral civic participation, potentially by weakening engagement with the political system. And, while individuals might be expected to gather more political information in order to cast an informed vote where participation is forced (e.g. Lijphart 1997), thus increasing their level of engagement with the

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[24] Further, non-electoral "voice" through protests, letter writing, and other avenues is also an unattractive option for such individuals, who consider such methods to be especially "cumbrous" (Hirschman 1970, 17).

democratic system, empirical support for such a dynamic is weak (e.g. Ballinger 2006; Birch 2009; Loewen, Milner, and Hicks 2008; Sheppard 2015; but see Shineman 2012).[25]

Sidman (1989) explains that the effects of coercion on attitudes and behavior are conditional on orientations toward the overarching system—the attitudinal and behavioral effects of acting against one's will are most pronounced among those who are negatively oriented toward the coercer.[26] This suggests that, if the coercion present in compulsory systems sours beliefs about the legitimacy of the democratic system, this effect should be most pronounced among those who are negatively predisposed toward democracy and thereby likely to prefer abstention. And, of course, coercion will be most strongly felt where penalties for abstention are most likely to be enforced.

Those who choose to abstain in spite of the requirement to vote will not necessarily experience the effects of coercion. Yet, depending on the nature of the compulsory rule, abstainers will often receive a penalty for their nonparticipation. Penalties for abstention, like coercion, will intensify the consequences of negative orientations toward the democratic system, especially when the punishments are strong and thereby likely to meaningfully afflict the abstainer. In addition, as with coercion, the emotional effects of punishment are most pronounced when individuals have negative orientations toward the punisher or society in general. For such individuals, sanctions are most likely to degrade the strength of the social bond and create or enhance beliefs that the governmental or legal system and its authorities are illegitimate (Scheff and Retzinger 1991; Sherman 2003; Sherman 1993; Tyler 2006).

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[25] Additionally, studies conducted in countries with compulsory rules routinely indicate that many voters would stay home if voting were voluntary (e.g. Hooghe and Pelleriaux 1998; but see Jackman 1999), which presents a challenge to the claim that compulsory voting engenders democratic engagement in the public. Further, Maldonado (2014) finds that, in Ecuador and Peru, those who are less engaged in politics are most likely to support the abolition of compulsory voting.

[26] Research on mandatory community service provides evidence reflective of such a pattern; individuals who are conscripted into community service that would not have served voluntarily do not become more civically engaged and become *less* likely to serve again (Henderson, Brown, and Pancer 2012; Stukas, Snyder, and Clary 1999).

Those who are weakly attached to the democratic system are the "disloyal" individuals that Hirschman (1970, chp. 7) identifies as most likely to prefer "exit" to "voice," and thereby abstain from voting. When such individuals do vote in compulsory systems, it is principally due to legal coercion. And, when they abstain in such systems, they will often receive a sanction. Such coercion and punishment delegitimize the coercer, especially in the minds of those who are negatively oriented toward the overarching system. Thus, where voting is compulsory, the consequences of negative orientations toward democracy for the belief in the illegitimacy of the democratic system, its institutions, and its authorities will be enhanced.

Compulsory Voting, Anti-Democratic Attitudes, and Dissatisfaction with Democracy

Dahl (1971) conceptualizes democracy in terms of contestation and inclusion. A fully democratic country—a "polyarchy" in Dahl's terminology—allows for contestation through the freedom of assembly, the freedom of speech, the freedom to form political parties, and free and fair elections, and it does not bar any group from inclusion in the democratic process. Many individuals support some of these tenets while rejecting others (Schedler and Sarsfield 2007). Carlin and Singer (2011, 1509), in a sample of Latin American citizens, find that a full 82 percent of respondents do not support each of Dahl's principles.

I refer to attitudes that run counter to democratic principles as anti-democratic,[27] and I expect that individuals with anti-democratic attitudes are less likely to believe in the legitimacy of the democratic system. That is, one who is more anti-democratic will be less likely to express satisfaction with democracy. Of course, as extant research establishes that

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[27] Orientations toward democracy exist on a spectrum, and my use of the term "anti-democratic" should not be taken to imply that an individual who possesses attitudes that run counter to some democratic principles is, by definition, against all aspects of democracy.

anti-democratic attitudes relate negatively to democratic satisfaction (e.g. Canache et al. 2001; Klingemann 1999; Kornberg and Clarke 1994; Sarsfield and Echegaray 2006), this expectation is not especially novel.

Yet the coercion and punishment present under compulsory voting will exacerbate the consequences of negative orientations toward the democratic system, which will strengthen the link between anti-democratic attitudes and dissatisfaction with democracy. Individuals who are predisposed against the democratic system generally prefer not to take part in elections. Thus, these anti-democrats will further question the legitimacy of democratic authorities, institutions, and processes where their participation in the system is coerced. And, because both coercion and punishment exacerbate negative orientations toward democracy, this pattern will be present among anti-democrats who vote and among those who abstain, thus subjecting themselves to punishment. As discussed above, these patterns should be most prominent where voting is not just legally required, but where penalties for abstention are likely to be applied and where penalties for abstention are of significant consequence.

A straightforward, observable implication results from this reasoning, expressed in hypothesis form as follows:

H_2: Where voting is compulsory, anti-democrats will be particularly dissatisfied with democracy, especially where compulsory voting laws are routinely enforced and penalties for abstention are substantial.[28]

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[28] Equivalently, gaps in the level of satisfaction with democracy between individuals with pro- and anti-democratic attitudes will be largest in countries where voting is compulsory, especially where the laws are routinely enforced.

Conclusion

Increased turnout in a compulsory system can obscure the attitudinal divide that it accompanies (see also Franklin 1999). Robson (1923, 577), while mulling the prospect of compulsory voting, worried that it could be regarded "as an act of petty tyranny" and "cause widespread irritation" among the politically apathetic. In the United Kingdom, the Liberal Democrats oppose mandatory voting because it "would cause further alienation from the political process" (Tami and Watson 2000, 11). The results of this paper provide empirical support for this rationale, showing that those who are alienated, "anti-democrats," are especially likely to question the legitimacy of the democratic system where their voting is forced. Where such individuals make up a sizeable portion of the population, this can lead to a decrease in the overall level of satisfaction with democracy.[29]

These findings can enrich ongoing deliberations over the value of compulsory voting (cf. Brennan and Hill 2014; Engelen 2007; Hill 2010; Lever 2010; Saunders 2012). Indeed, the normative implications of this paper's findings are provocative: Compulsory voting harms satisfaction among those who are most likely to challenge the system, whether tacitly or via protest, revolt, or revolution. This implies that, in extreme scenarios, compulsory voting can hasten transitions away from democracy. A kneejerk reaction to this is a prescription to abolish compulsory voting where it is used, or to caution against it where it is being considered, particularly in countries in which political disaffection is widespread.

Still, many actions in democracies are mandatory, including jury duty, paying taxes, and primary education. While such obligations likely induce further negativity toward the regime among the disaffected, few would argue that democratic countries would be better off if they abolished trial by peers, taxation, and public education. Likewise, it is not yet clear

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[29] For more on this, see Section 11 of this appendix.

that the benefits of compulsory voting—such as higher turnout and increased equality of both political participation and economic outcomes (cf. Carey and Horiuchi 2014; Chong and Olivera 2008; Lijphart 1997; Singh 2015)—are offset by the dissatisfaction it can foment. In established democracies, at least, it is unlikely that such negativity will mature into revolutionary challenges. Further, by increasing rates of participation among those who are negatively oriented toward the democratic system, as well as amplifying dissatisfaction with the way democracy works among these same individuals, compulsory voting could enhance deliberation over a country's democratic institutions and, in turn, spur useful political reforms.

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