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Politically Unengaged, Distrusting, and Disaffected Individuals Drive the Link Between Compulsory Voting and Invalid Balloting*

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Invalid ballots are relatively common in countries with compulsory voting, yet there is no cross-national evidence as to who *is more likely to cast a blank or spoiled ballot where voting is forced. I argue that increased rates of blank and spoiled balloting where voting is obligatory result from the behavior of the politically unknowledgeable, uninterested, untrusting, and disaffected, who are incentivized to turn out to the polls where they can be sanctioned for abstention. To test this, I conduct an individual-level examination of the influence of compulsory voting on invalid balloting across countries. I find support for my expectations with analyses of survey data from several American democracies, many of which compel electoral participation.*

For more than a century, scholars and commentators alike have argued that compulsory electoral participation can help socialize individuals into the democratic system, leading them to acquire political knowledge and interest, political trust, and positive orientations toward democracy (see Broomall 1893; Nerincx 1901; Barthélemy 1912; Lijphart 1997, 10; Engelen 2007, 32; Lacroix 2007, 194; See 2007, 597). Additionally, numerous studies find that individuals who are uninformed about and uninterested in political matters, who are untrusting of democracy's primary actors and institutions, and who are negatively oriented toward the democratic system turn out to the polls at significantly higher rates when subject to compulsory voting (e.g., Irwin 1974; Carlin and Love 2015; Singh 2015), which suggests that compelled participation does indeed foster democratic engagement.

Yet, according to country-level, cross-national research, invalid balloting rates are higher where voting is mandatory (e.g., Reynolds and Steenbergen 2006; Power and Garand 2007; Uggla 2008). This is puzzling, given compulsory voting's purportedly positive effects on political engagement. Confronting this puzzle requires an individual-level explanation together with an examination of behavior under both compulsory and voluntary rules, which is missing from extant research. Recognizing that individuals need not be especially engaged or democratically oriented to show up at the polls where voting is mandatory, I theorize that compulsory voting causes the politically unknowledgeable and uninterested, the politically distrusting, and those disaffected with democracy to cast blank or spoiled ballots at relatively high rates. I further argue that, as a result of changing citizenship norms in the democratic world, political distrust and disaffection with democracy will have a particularly strong relationship with invalid balloting where voting is compulsory.

Using AmericasBarometer data, I find an array of support for my expectations with multilevel regression analyses and regression discontinuity (RD) analyses, which exploit the fact that five of the countries in my sample with compulsory voting make turnout voluntary for senior citizens. In the Online Appendix, I demonstrate the robustness of my findings to alternate

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conceptualizations of the dependent and independent variables, a different estimation technique, different model specifications, and a separate source of cross-national survey data from the Latinobarometer.

This study represents a novel theoretical and empirical treatment of the microfoundations of the link between compulsory voting and invalid balloting across countries. My findings suggest that compulsory voting is more likely to boost nonconformity via increased invalid balloting than to meaningfully socialize individuals into political engagement and pro-democracy orientations. In the conclusion, I consider the potential importance of my findings for debates over the utility and justifiability of compulsory voting and for countries that are considering a change in voting rules.

PREVIOUS RESEARCH ON BLANK AND SPOILED BALLOTING UNDER COMPULSORY VOTING

Invalid balloting under compulsory rules has been described as the "functional equivalent of abstention" under optional voting (Lavareda 1991, 40; see also Hirczy 1994). This is apparent with regard to the behavior of the politically uninformed and uninterested. In voluntary systems, such individuals turn out to vote at a relatively low rate (e.g., Blais and St-Vincent 2011; Bowler and Donovan 2013; Carreras and Castañeda-Angarita 2014), and in compulsory systems, where abstention entails a penalty, they are more likely to cast blank and spoiled ballots. For example, McAllister and Makkai (1993) find that recent immigrants, who tend to have relatively little political knowledge, are more likely to spoil their ballots under Australia's compulsory voting rule, and Power and Roberts (1995) find that illiteracy is positively related to invalid balloting in Brazil's compulsory voting system. Carlin (2006) finds that, under Chile's former compulsory rule, those with less political interest and younger voters were relatively likely to cast invalid ballots.

Political distrust and disaffection also affect turnout and invalid voting. As Prothro and Grigg note, "those with the most undemocratic principles are also those who are least likely to act" (1960, 294). Such "inaction" via electoral abstention is often used to express dissatisfaction or to advocate for reform (e.g., Grönlund and Setälä 2007). When individuals are compelled to the polls, abstention from voting becomes costly, and such sentiment may instead be conveyed with blank and spoiled ballots. Hirczy (1994), comparing voting behavior across Austrian provinces, finds that political disaffection manifested in an increased percentage of invalid ballots in the provinces with compulsory voting, while such an effect was not apparent where voting was voluntary.[1] In Belgium, which mandates voter participation, Hooghe, Marien and Pauwels (2011) find that individuals who are politically distrusting are more likely to cast blank or spoiled ballots. In Australia, Goot (1985, 203) mentions that blank and spoiled ballots have been used to protest both specific candidates and the institution of compulsory voting itself.

Such relationships are also found outside of the highly developed world. For example, Power and Roberts (1995) find that blank and spoiled balloting were most pronounced in Brazil's former military regime, which made voting obligatory, when its manipulation of the democratic process was particularly egregious. Carlin (2006) finds that, under Chile's former compulsory voting rule, those who were discontented with regime performance, democratic institutions, and political authorities were more likely to cast invalid ballots. In Bolivia's judicial elections, in which participation is compulsory, Driscoll and Nelson (2014) find that support for the ruling party and the president relates negatively to the probability of casting a blank or spoiled ballot,

[1] Hirczy's study considered elections through 1986. Compulsory voting has since been abandoned in Austria nationwide.

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while invalid balloting is more common in opposition strongholds. In Argentina's compulsory system, blank and spoiled ballots are so closely associated with voter disillusionment and distrust that they are colloquially referred to as *voto bronca*, or "angry votes" (Uggla 2008, 1141).

In sum, existing research establishes a robust link between invalid balloting rates and compulsory voting, and it suggests that this link is driven by the behavior of politically unengaged and democratically disaffected groups. However, it neither grounds this expectation in theory nor tests it in an appropriate empirical framework. Studies of invalid voting under compulsory rules conducted at the individual-level focus on a single country operating under a static electoral rule (e.g., McAllister and Makkai 1993; Carlin 2006; Hooghe, Marien and Pauwels 2011; Driscoll and Nelson 2014). At the same time, studies of invalid voting that do leverage spatial or temporal variation in compulsory voting only examine aggregate-level returns (e.g., Reynolds and Steenbergen 2006; Power and Garand 2007; Uggla 2008; Kouba and Lysek 2016),[2] which can at best provide an indirect test of individual-level mechanisms.

THEORY AND HYPOTHESES

In what follows, I advance and test a novel, individual-level theory, which considers how compulsory voting should induce invalid balloting among critical segments of the population—the politically unknowledgeable and uninterested, those who are untrusting of the democratic political system, and the democratically disaffected. My expectations contrast with the argument noted at the outset, which states that compulsory voting can socialize individuals into political engagement and pro-democracy orientations.

Lending support to this socialization thesis, some studies find a link between compulsory voting and higher levels of political knowledge and engagement in the public (e.g., Gordon and Segura 1997; Berggren 2001). However, a preponderance of published work finds no such link or finds it to be weak (e.g., Loewen, Milner and Hicks 2008; Birch 2009, Chapter 4; Selb and Lachat 2009, 575, note 1; de Leon and Rizzi 2014; Sheppard 2015; Carreras 2016). This lack of support may come about because voters need not inform themselves about the issues of the day in order to avoid a sanction where voting is mandatory. Rather than creating an electorate that seeks out political information in order to meaningfully complete ballots out of sense of democratic duty, I argue that compulsory voting instead boosts the propensity of the least engaged and least democratically oriented people to lodge a blank or spoiled ballot. There are two mechanisms that undergird this behavior.

First, in order to avoid a sanction where voting is compulsory, politically ignorant, disinterested individuals will show up to the polls. However, there is no method for ensuring that they cast valid ballots, and they will not instinctively put deep thought into their votes. Instead, they will routinely cast blank and spoiled ballots because they lack the information necessary to make a meaningful choice or because they are not interested in the competing parties and candidates to the extent that they wish to choose one over the others. Where voting is voluntary, alternatively, such individuals will generally stay home, as doing so will not lead to a potential penalty.

Second, individuals who are distrusting of or discontented with the democratic system, who prefer to abstain, may become irritated where their participation is forced, and thereby become less willing to lodge a meaningful ballot. Individuals prefer to feel that their actions are

[2] In any case, only Kouba and Lysek (2016) make an attempt to use a macro-level variable to test a micro-level expectation in interaction with compulsory voting. They find that compulsory voting has a stronger effect on invalid balloting in elections with many competitors. They interpret this to mean that individuals in compulsory systems are more likely to cast invalid ballots when they do not believe their vote is efficacious.

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intrinsically motivated (deCharms 1968), and when they are forced into a behavior, their motivation to engage in that behavior drops (Deci 1975). Coercion and punishment are also associated with decreased cognitive engagement with one's environment, decreased belief in the legitimacy of the coercer and its authorities, and lower levels of interest in one's assigned tasks, and being forced into a behavior can damage one's sense of the social bond and enhance any existing belief that the governmental or legal system and its authorities are illegitimate (Scheff and Retzinger 1991; Sherman 1993; Tyler 2006). Henn and Oldfield (2016) and Singh (Forthcoming) show that electoral coercion, in particular, can harm attitudes toward the democratic system and deepen existing resentments. Thus, while individuals who distrust democratic processes and actors or are disillusioned with the democratic system may participate on election day to avoid a sanction where voting is compulsory, they will be inclined to signal their distrust or disillusionment by leaving their ballots blank or spoiling them in reaction to democratic coercion.

In contrast with the suggestion that compulsory voting creates a more informed and civically oriented electorate, my reasoning proposes that political ignorance, disinterest, distrust, and disaffection trigger invalid balloting where voting is mandatory. This dynamic will be most apparent in compulsory systems in which abstainers are likely to be punished and harshly penalized, as individuals are less likely to alter their behavior in response to unenforced compulsory rules. Indeed, extant research finds compulsory rules have the biggest effect on turnout where they are routinely enforced and stiffly sanctioned (e.g., Panagopoulos 2008; Singh 2011). This leads to the following observable implications, expressed below in hypothesis form:

HYPOTHESIS 1: Where voting is mandatory, blank and spoiled ballots are more likely. This will be especially apparent where compulsory rules are enforced and penalties for abstention are substantial.

HYPOTHESIS 2: Where voting is mandatory, blank and spoiled ballots are more likely, particularly among individuals who are uninterested in or ignorant of politics. This will be especially apparent where compulsory rules are enforced and penalties for abstention are substantial.

HYPOTHESIS 3: Where voting is mandatory, blank and spoiled ballots are more likely, particularly among individuals who are untrusting of key democratic institutions and actors. This will be especially apparent where compulsory rules are enforced and penalties for abstention are substantial.

HYPOTHESIS 4: Where voting is mandatory, blank and spoiled ballots are more likely, particularly among individuals who are negatively oriented toward democracy and its processes. This will be especially apparent where compulsory rules are enforced and penalties for abstention are substantial.

My unique individual-level treatment also allows me to consider whether ignorance and disinterest, political distrust, and negative orientations toward democracy have differing effects on the relationship between compulsory voting and invalid balloting. Recent work by Dalton and Welzel (2014a), who differentiate between "allegiant" and "assertive" citizens, provides some insight into this possibility. Allegiant citizens are politically trusting, deferential to authority, and supportive of democratic principles and practice. Conversely, assertive citizens

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are politically distrusting, are skeptical of authority, and, while they may support the principles of the democratic system, do not support democracy in practice. As initially observed by Almond and Verba (1980), political culture throughout the democratic world has become less allegiant and more assertive in recent decades (allegiant citizens are especially uncommon in modern democracies in Latin America and post-communist Europe (Dalton and Welzel 2014b, 295–7)).

Assertive citizens are drawn to activities that challenge elites (Jakobsen and Listhaug 2014). Invalid balloting is one such activity, and because assertive citizens are negatively predisposed toward authority, they should be especially prone to casting blank or spoiled ballots where their electoral participation is coerced. Further, while citizenship values are strongly linked to political trust and orientations toward democracy, they are largely orthogonal to political interest (e.g., Dalton and Shin 2014; Dalton and Welzel 2014c; Welzel and Alvarez 2014). This suggests that political ignorance and disinterest should do less to shape the link between compulsory voting and invalid balloting than political distrust and negative orientations toward democracy. In hypothesis form:

HYPOTHESIS 5: Political distrust and negative orientations toward democracy more strongly condition the relationship between compulsory voting and blank and spoiled balloting than political ignorance and disinterest.

DATA AND VARIABLE MEASUREMENT

I gather data from the AmericasBarometer,[3] which biennially surveys individuals across the Caribbean and North, Central, and South America. My sample includes surveys from the 21 countries in which the necessary questions, discussed below, were asked. The included countries are mostly, but not exclusively, Latin American.[4] These are listed in Table A1 of the Online Appendix.

My hypotheses suggest that compulsory voting's behavioral effects will be more forcefully realized where individuals can be confident that any decision to abstain will be met with a punishment. Therefore, following Fornos, Power and Garand (2004) and subsequent authors (e.g., Kostadinova and Power 2007; Power and Garand 2007; Uggla 2008; Dettrey and Schwindt-Bayer 2009; Kouba and Lysek 2016), I create 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 associated with the severity of the punishment for nonvoting (Singh 2011, 105).

The four categories are as follows:

VV: Countries with purely voluntary voting.
CV_{low}: Countries that mandate voting but do not employ sanctions for abstention.
CV_{med}: Countries that have legal sanctions for abstention but do not generally enforce them in practice.
CV_{high}: Countries that mandate turnout and enforce sanctions in practice.[5]

[3] Available at http://www.vanderbilt.edu/lapop/. I use the 2004–2012 Grand Merged File.

[4] The number of countries included in each wave in the 2004–2012 AmericasBarometer Grand Merged File varies. The question used to create the dependent variable (see below) is not asked in Canada and the United States, and it was not asked in the 2004 or 2006 survey waves. Results do not change substantively when I limit the sample to Latin American countries.

[5] 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

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Information on compulsory voting laws is from Payne, Zovatto and Díaz (2006) and the Institute for Democracy and Electoral Assistance.[6] Turnout is compulsory in 15 of the countries in my sample, and Table A1 in the Online Appendix indicates which countries employ compulsory voting and the degree to which sanctions for abstention are enforced.

I argue that the increased propensity to cast a blank or spoiled ballot in a compulsory system is most pronounced among individuals who are ignorant of or uninterested in political matters, those who are untrusting of democratic institutions and actors, and those who are negatively oriented toward the democratic system. The AmericasBarometer asks several questions that allow me to capture such attitudes and characteristics. To gauge Lack of Political Information and Interest, I use *misunderstanding of political issues, lack of political information*, and *lack of political interest*. To capture Political Distrust, I use *distrust of government, distrust of congress*, and *distrust of elections*. Finally, to gauge Negative Orientations toward Democracy, I use *belief that democracy does not matter, belief that leaders do not care*, and *dissatisfaction with democracy*. I provide detailed information on my measurement of these variables and full question wording in section 13 of the Online Appendix.

I use factor analysis to create scales of Lack of Political Information and Interest, Political Distrust, and Negative Orientations toward Democracy. Because the constituent variables are measured ordinally and dichotomously, I employed polychoric correlations in the creation of the matrices input into the factor analyses. In each factor analysis, the first factor accounted for over 85 percent of the common variance, and I use scores on these factors to create my scales. In section 2 of the Online Appendix, I consider each constituent variable separately, and this approach does not alter my substantive conclusions.

The dependent variable is a dichotomous indicator for whether one intends to cast a blank or spoiled ballot. The question wording is: "If the next election were to be held this week, what would you do?

- I would not vote
- I would vote for the candidate or party of current government
- I would vote for a candidate or party other than the current government
- I would vote but leave the ballot blank or spoiled."

I assigned individuals a 1 if they selected the last option and a 0 otherwise.[7] The proportion of individuals intending to cast a blank or spoiled ballot across countries is provided in Table A1 of the Online Appendix.

Answers to survey questions are imperfect proxies for true behavior. In section 6 of the Online Appendix, I review the potential consequences of the use of survey questions to gauge voting behavior, and I compare intended invalid balloting rates in my sample to official reports of invalid balloting. I also estimate models that use recalled votes in place of intended votes in the creation of my dependent variable. This does not alter substantive conclusions.

(F'note continued)
the analyses. (The exclusions for 16- and 17–years old 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 analysis. These exclusions did not affect substantive conclusions.

[6] Available at http://www.oldsite.idea.int/vt/compulsory_voting.cfm

[7] Though treating blank and spoiled ballots as distinct can be illuminating (e.g., Driscoll and Nelson 2014), the nature of the survey question asked across countries by the AmericasBarometer requires me to consider them jointly.

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CONTROL VARIABLES

There are, of course, individual-level factors that may modify the impact of compulsory voting on invalid balloting beyond those I identify in my hypotheses. If such variables are also correlated with political awareness and attitudes toward democracy, their omission could bias my findings. As such, I control for age and education, both of which are known to affect political knowledge and interest, political trust, and democratic orientations (e.g., Galston 2001; Karp, Banducci and Bowler 2003; Catterberg and Moreno 2006) and may also relate to blank and spoiled balloting (cf. McAllister and Makkai 1993; Power and Roberts 1995; Carlin 2006; Uggla 2008). Age is measured in tens of years, and, to facilitate cross-country comparison of diverse education systems, individuals with a university education are assigned a 1, and others are assigned a 0.[8] The resulting variables are called *age* and *college*. In section 7 of the Online Appendix, I introduce additional controls for political ideology and whether a respondent lives in an urban or rural area. Results are robust to these specifications.

At the macro-level, I control for *economic development*, *democratic development*, and *corruption*, each of which is potentially related to the propensity to cast a blank or spoiled ballot (e.g., Power and Garand 2007; Uggla 2008) and to political knowledge and interest, political trust, and orientations toward democracy (e.g., Knack and Keefer 1997; Catterberg and Moreno 2006). Economic development is measured as gross domestic product 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.[9] To measure democratic development, I use the Polity IV Index.[10] This ranges from −10 to 10, with higher values indicating consolidated democracy. Finally, to measure corruption, I use Transparency International's Corruption Perceptions Index,[11] which ranges from 0 to 10. I reverse the original coding so that higher values indicate more corruption.

All variables are summarized in Table A2 in the Online Appendix. The AmericasBarometer did not ask each of the questions that I use to measure the independent variables consistently across waves. As such, the number of individuals in the sample varies between 41,942 and 76,232 across the models, and the number of country-year surveys included in each model varies between 32 and 49.[12]

RESULTS FROM MULTILEVEL MODELS

Individuals (level 1) in the data set are clustered within survey country-years (level 2). I estimate multilevel logit models, which account for this tiered data structure and the dichotomously measured dependent variable. I fit a unique intercept to each country-year, and the coefficients on each key individual-level variable—those that capture disinterest and low information,

[8] In section 9 of the Online Appendix, I demonstrate that results are robust to the use of an ordinal measure of education.

[9] Available at http://data.worldbank.org; for Argentina and Jamaica, information on purchasing power parity adjusted per capita 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

[10] Available at http://www.systemicpeace.org

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

[12] In section 10 of the Online Appendix, I demonstrate that results are substantively the same when missing survey responses are multiply imputed.

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distrust, and disaffection—vary randomly across country-years. I estimate separate equations for each of these variables.[13] This gives

$$\text{Logit}\{\Pr(y_{ij})\} = \alpha_j + \mathbf{X}_{ij}\beta + \delta_j z_{ij}, \text{ where}$$

$$\alpha_j = \mathbf{W}_j\gamma + \zeta_j.$$

In this equation, i indexes each individual and j each country-year. y_{ij} is coded 1 if an individual casts a blank or spoiled ballot and 0 otherwise. The random variation around the country-year-specific mean is captured by ζ_j.[14,15] In each estimation, the key individual-level variable is captured with z_{ij}, and the effect of each is denoted δ_j, with the j subscript indicating that this effect varies randomly over country-years. $\mathbf{X}_{ij}$ contains the remaining individual-level variables, and $\mathbf{W}_j$ contains the country-year-level covariates. To account for possible correlation between the random effects and each key individual-level variable, the $\mathbf{W}_j$ matrix includes their country-year-specific means, $\bar{z}_j$. $\boldsymbol{\beta}$ is the coefficient vector associated with $\mathbf{X}_{ij}$ and $\boldsymbol{\gamma}$ the coefficient vector associated with $\mathbf{W}_j$.

I also estimated three-level models that considered individuals to be clustered within survey country-years, which were further considered to be clustered in countries. With few surveys per country, and with just 21 countries in the sample, this approach may be imprudent (e.g., Stegmueller 2013). Further, because substantive results are the same with a three-level approach, and because the three-level models indicate that a preponderance of the unmodeled contextual variation exists at the country-year level, I proceed with a two-level setup. Results of the three-level models are provided in section 3 of the Online Appendix.

In Model 1 of Table 1 I test my first hypothesis, which, following previous research, predicts that the probability of casting a blank or spoiled ballot will be greater in countries with compulsory rules, especially where abstainers can be confident in receiving a sanction for their non-participation. To test the hypothesis, in addition to the control variables, I include dummy variables for the three categories of compulsory voting, excluding fully voluntary systems as the baseline category. The results largely support Hypothesis 1: blank and spoiled balloting is least common in countries with voluntary voting and unenforced compulsory voting (category CV_{low}). Where voting is compulsory and abstention is potentially sanctioned, blank and spoiled ballots are more common, especially if enforcement is strict (category CV_{high}). Using the results of Model 1, I plot the predicted probability[16] of casting a blank or spoiled ballot across each voting system in Figure 1. As illustrated in the figure, all else being equal, where voting is voluntary, this probability is about 0.04, and, in countries with the strongest compulsory rules, it is over 10 percentage points higher, at about 0.16.

[13] I do this because of marked collinearity, which is discussed further below. In my final model, I include all three scales in the same equation.

[14] The intercept variance, var(ζ_j), is calculated at the y-axis. Thus, the scale of any variable with a varying slope is consequential (e.g., Rabe-Hesketh and Skrondal 2005, 66). As I estimate random slopes on each key independent variable, z, I center them to have a mean of 0. (I transform these variables back to their original scales in the figures.) Thus, in each specification, var(ζ_j) is calculated at the mean of each key independent variable.

[15] Due to my use of a logit link, the variance of the random error for each individual, ϵ_{ij}, is $\pi^2/3$ by assumption.

[16] All predicted probabilities are calculated with the control variables held at their means. The relative effects displayed in the figures may not align perfectly with those gleaned from the coefficient estimates provided in Table 1. This is because the relative linear impact of a given variable on the *latent propensity* to cast a blank or spoiled ballot may differ from the relative nonlinear impact of that variable on the *probability* of doing so (see Berry, DeMeritt and Esarey 2010).

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TABLE 1 *Compulsory Voting, Blank and Spoiled Balloting, and Individual-Level Characteristics*

Conditioning Variable in Model	–	Lack of Information and Interest	Political Distrust	Negatively Oriented Toward Democracy	All Three
Model	Model 1	Model 2	Model 3	Model 4	Model 5
Lack of information and interest		0.194*			0.209
		(0.063)			(0.108)
Political distrust			0.002		–0.004
			(0.060)		(0.068)
Negatively oriented toward democracy				0.127	0.009
				(0.092)	(0.120)
Compulsory voting					
CV_{low}	–0.121	–0.087	–0.296*	0.285*	0.533
	(0.103)	(0.066)	(0.113)	(0.074)	(0.364)
CV_{med}	0.905*	0.536*	1.147*	1.112*	0.937*
	(0.066)	(0.065)	(0.089)	(0.074)	(0.381)
CV_{high}	1.540*	1.326*	1.887*	1.893*	2.259*
	(0.057)	(0.057)	(0.087)	(0.066)	(0.421)
Interactions with compulsory voting					
CV_{low} × lack of information and interest		0.130			0.133
		(0.079)			(0.128)
CV_{med} × lack of information and interest		0.043			0.006
		(0.077)			(0.123)
CV_{high} × lack of information and interest		0.248*			0.136
		(0.074)			(0.120)
CV_{low} × political distrust			0.104		0.071
			(0.072)		(0.081)
CV_{med} × political distrust			0.210*		0.204*
			(0.071)		(0.078)
CV_{high} × political distrust			0.274*		0.226*
			(0.068)		(0.077)
CV_{low} × negatively oriented toward democracy				0.003	–0.021
				(0.116)	(0.142)
CV_{med} × negatively oriented toward democracy				0.084	–0.037
				(0.113)	(0.138)
CV_{high} × negatively oriented toward democracy				0.266*	0.126
				(0.118)	(0.135)
Controls					
Age	–0.114*	–0.113*	–0.111*	–0.117*	–0.109*
	(0.009)	(0.010)	(0.012)	(0.011)	(0.013)
College	–0.063	0.110*	–0.080	–0.078	0.064
	(0.045)	(0.047)	(0.055)	(0.051)	(0.059)
Economic development	0.025*	0.083*	0.015	0.021*	0.049
	(0.008)	(0.008)	(0.009)	(0.007)	(0.042)
Democratic development	–0.035*	–0.105*	0.043	–0.005	0.023
	(0.013)	(0.013)	(0.022)	(0.016)	(0.129)
Corruption	0.041	–0.056*	0.117*	0.056*	0.180
	(0.021)	(0.019)	(0.037)	(0.025)	(0.193)
Country-year mean of lack of information and interest		1.054*			1.209
		0.123			(0.975)
Country-year mean of political distrust			–0.090		–0.798
			0.048		(0.512)
Country-year mean of negatively oriented toward democracy				0.200	1.463
				0.107	(1.278)

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TABLE 1 (*Continued*)

Conditioning Variable in Model	–	Lack of Information and Interest	Political Distrust	Negatively Oriented Toward Democracy	All Three
Model	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	−2.966*	−5.081*	−4.116*	−3.916*	−9.234*
	(0.256)	(0.376)	(0.378)	(0.318)	(3.371)
var(ζ_j)	0.502	0.463	0.773	0.709	0.352
var($\delta_{j,\text{ lack of information and interest}}$)		0.010			0.012
var($\delta_{j,\text{ political distrust}}$)			0.007		0.007
var($\delta_{j,\text{ negatively oriented toward Democracy}}$)				0.037	0.019
Individuals	76,232	72,352	47,625	56,717	41,942
Country-years	49	49	32	49	32
AIC	40,908.60	38,661.05	25,724.82	30,188.51	22,568.88
Probability $>\chi^2$	<0.001	<0.001	<0.001	<0.001	<0.001

Note: Dependent variable is intended blank or spoiled balloting. Results are from multilevel logistic regressions. Standard errors in parentheses.
AIC = Akaike information criterion.
*Significant at $p < .05$ (two-sided).

Hypotheses 2–4 predict that the effect of compulsory rules on an individual's propensity to cast a blank or spoiled ballot is moderated by his or her level of political awareness and interest, the degree to which he or she is politically trusting, and his or her orientations toward democracy, especially where compulsory voting laws are strictly enforced. To test for the existence of these conditional relationships, in Models 2–4 of Table 1, I interact each of the scales used to capture these three attributes with the dummy variables for the three categories of compulsory voting, again excluding fully voluntary systems as the baseline category.

The data support Hypotheses 2–4: in Models 2–4, the effect of compulsory voting on the probability of casting a blank or spoiled ballot tends to be stronger among the politically unaware and uninterested, the politically distrusting, and those with negative orientations toward democracy. Further, in line with the hypotheses' predictions, these amplificatory effects tend to be strongest where compulsory rules have "teeth."

The results of Models 2–4 are illustrated in Figure 2. Each circle in the figure represents the probability of casting a blank or spoiled ballot in each category of compulsory voting and in voluntary systems. It is clear that the effect of compulsory rules on one's probability of casting a blank or spoiled ballot is strongly conditioned by individual-level characteristics. On the one hand, for those who are politically aware and interested, those who are politically trusting, and those who are positively oriented toward democracy, living in a country with compulsory voting does relatively little to boost the probability of blanking or spoiling one's ballot. On the other hand, for individuals who are politically unaware and uninterested, those who are politically untrusting, and those who are negatively oriented toward democracy, living in a country with a compulsory voting law can sharply increase the probability of casting a blank or spoiled ballot, especially if the compulsory rule is enforced and penalties for abstention are substantial. This militates against the idea that compulsory voting can spur political knowledge and interest, political trust, and positive orientations toward democracy.

Hypothesis 5 puts forth that political distrust and negative attitudes toward democracy should more strongly condition the relationship between compulsory voting and blank and spoiled balloting than political ignorance and disinterest. However, working against the hypothesis,

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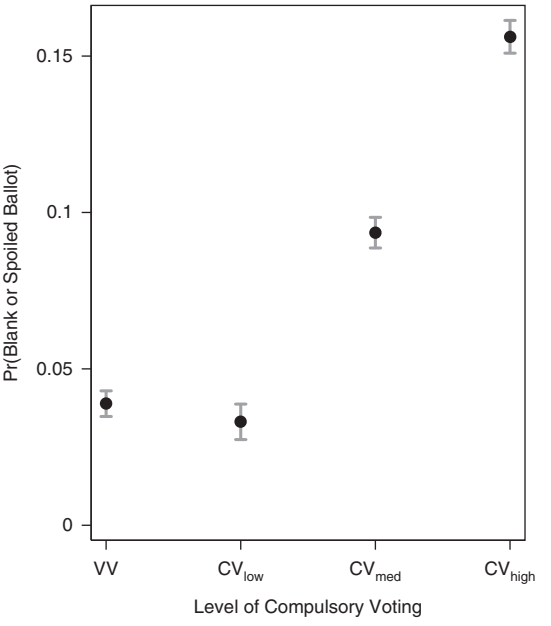


Fig. 1. Blank and spoiled balloting in voluntary and compulsory voting systems
Note: Vertical brackets represent 95 percent confidence intervals. Results are from Model 1 of Table 1.

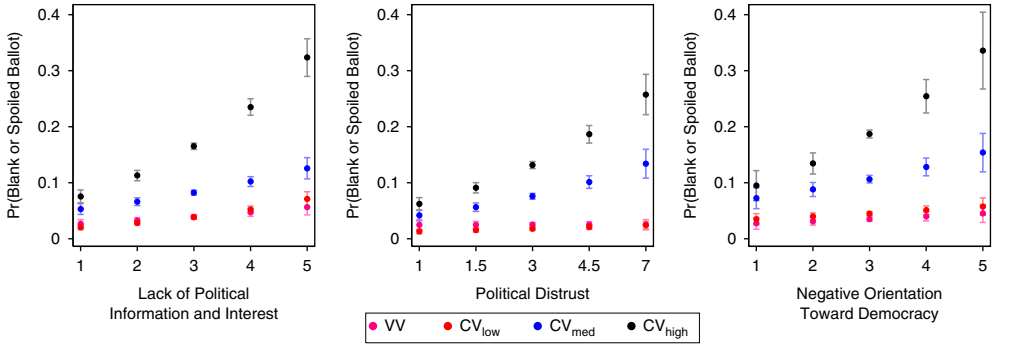


Fig. 2. Conditional effects of voting rules on blank and spoiled balloting
Note: Vertical brackets represent 95 percent confidence intervals. Results are from Models 2–4 of Table 1.

Figure 2 shows that all three scales play a similar role in conditioning this relationship.[17] To conduct a fuller test of Hypothesis 5, I estimate the effects of all three scales simultaneously in Model 5 of Table 1. Interpreting the results requires a bit of caution, as the scales are highly collinear,[18] and the adverse effects of collinearity are extensive in multilevel models (Kreft and Leeuw 1998, 105; Shieh and Fouladi 2003).

[17] Note that the analyses presented in section 2 of the Online Appendix suggest that only two of the three components that make up the Lack of Political Information and Interest scale work to strengthen the link between compulsory voting and invalid balloting.

[18] The variance inflation factors are 6.92, 8.45, and 8.02 for Lack of Political Information and Interest, Political Distrust, and Negative Orientations toward Democracy, respectively.

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When all three scales are entered into the model, results show that political distrust heightens the link between blank and spoiled balloting and both moderate and strong compulsory rules, while none of the coefficients on the interactions involving lack of political information and interest or negative orientations toward democracy reaches statistical significance. Still, I find no evidence that the moderating impact of political distrust is substantively greater than that of political ignorance and disinterest.[19] Further, while political distrust proves important to the link between blank and spoiled balloting and compulsory rules, the effects of negative orientations toward democracy unexpectedly wash out. Thus, Model 5 provides very limited support for Hypothesis 5.[20]

ANALYSES LEVERAGING AGE THRESHOLDS IN COMPULSORY SYSTEMS

It is difficult to identify causality with cross-national analyses of survey responses. To gain additional empirical leverage, I make use of compulsory voting age thresholds, which are employed in five of the countries in my sample. Specifically, Argentina, Bolivia, Brazil, and Peru make voting voluntary for individuals aged 70 and over, while, in Ecuador, voting is voluntary for those 65 and above. These arbitrary cutoffs, which quasi-randomly assign individuals to compulsory and voluntary voting conditions, provide a nice setting for RD analyses.[21]

RD models estimate a function on either side of a value and subsequently estimate the difference between the two functions at this value (see e.g., Imbens and Lemieux 2008; Lee 2008). I use a sharp RD design, which allows me estimate the effect of a binary treatment (compulsory voting) strictly determined by the value of a predictor (age). I estimate local polynomial regressions among observations nearby each side of the compulsory voting age cutoff.

I illustrate the results of the analyses in Figure 3, in which I take the "Politically Informed and Interested," the "Politically Trusting," and the "Positively Oriented Toward Democracy" to be those below the 25th percentile of each scale, and I take the "Politically Ignorant and Disinterested," the "Politically Distrusting," and the "Negatively Oriented Toward Democracy"

[19] I calculated the difference in the effect of a change from voluntary voting to the highest level of compulsory voting on invalid balloting at the minimum value of the Political Distrust scale and at the maximum of the Political Distrust scale. I then calculated the difference in the effect of a change from voluntary voting to the highest level of compulsory voting at the minimum value of the Lack of Political Information scale and at the maximum of the Lack of Political Information scale. The difference in these differences was not statistically significant ($p = 0.39$, two-sided).

[20] I conduct a range of alternate and supplemental analyses, which, in the interest of space, are documented in the Online Appendix. Section 2 of the Online Appendix shows that the models hold when the Lack of Political Information and Interest, Political Distrust, and Negative Orientations toward Democracy scales are disaggregated. Section 3 demonstrates that results are robust to a three-level multilevel modeling setup. Sections 4 and 5 show that results are insensitive to the exclusion of abstainers or a dependent variable that considers abstainers and invalid balloters separately. Section 6 shows that results are very similar when I use recalled votes in place of intended votes in the creation of my dependent variable. Section 7 demonstrates that results are robust to additional controls for political ideology and whether one lives in an urban or rural area. Section 8 shows that results are unchanged when respondents living in Ecuador, which has low turnout compared with other countries classified as having a strict compulsory voting rule, are excluded from the sample. Section 9 shows that results are robust to an ordinal, rather than dichotomous, measure of education. Section 10 demonstrates that results are substantively unchanged when missing survey responses are multiply imputed. Section 12 shows that my hypotheses find additional support when tested with data from the Latinobarometer.

[21] The thresholds do not correspond to the ages at which individuals become eligible for government pensions. See Section 11 of the Online Appendix for details.

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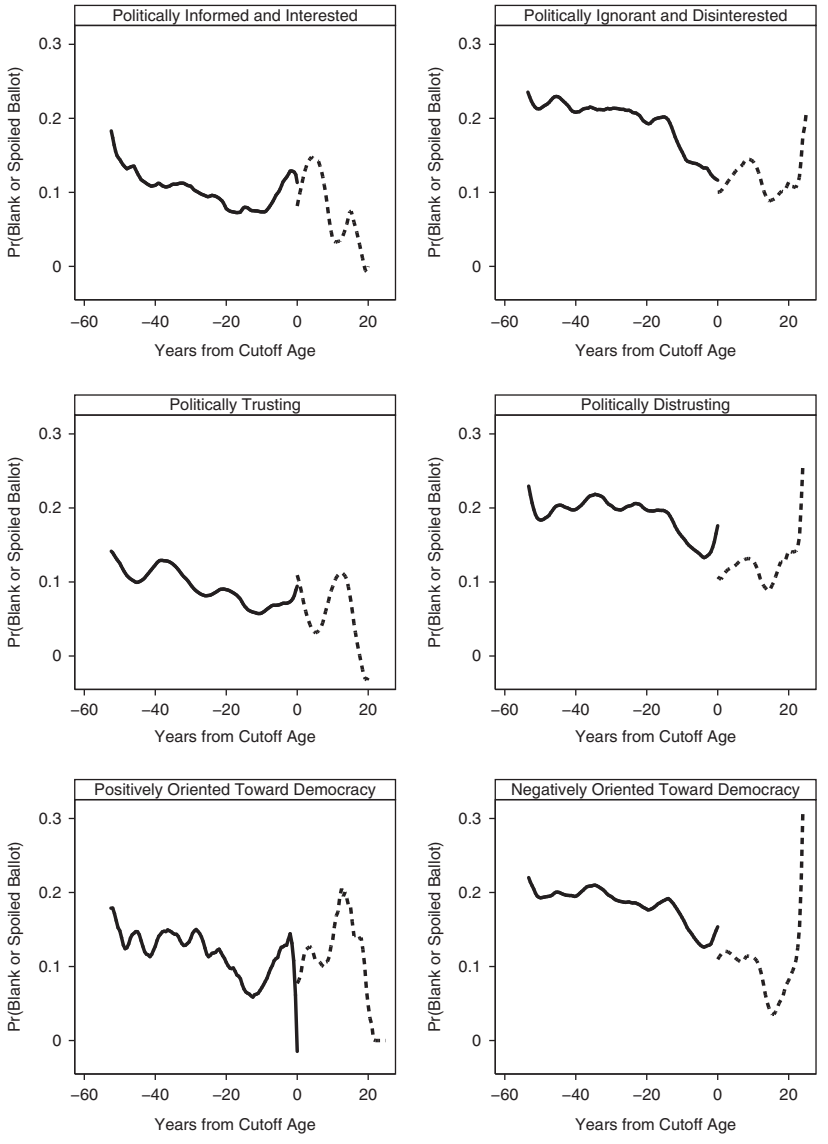


Fig. 3. Blank and spoiled balloting above and below compulsory voting age thresholds
Note: Plots contain smoothed polynomials estimated on both side of the age cutoffs. The cutoff age is 70 in Argentina, Bolivia, Brazil, and Peru and 65 in Ecuador.

to be those above the 75th percentile of each scale. The bottom two rows of the figure demonstrate that, among those who are politically distrusting and those who are negatively oriented toward democracy, blank and spoiled balloting is more likely among individuals who are forced to vote; as individuals in these groups cross the cutoff age and are therefore no longer required to vote, their propensity to cast a blank or spoiled ballot declines. The effects are −6.91 percentage points for the politically distrusting and −4.39 percentage points for those who are negatively oriented toward democracy, as illustrated in the middle-right

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and bottom-right panels, respectively.[22] For the politically trusting and those who are positively oriented toward democracy, these negative effects are not present, as illustrated in the middle-left and bottom-left panels, respectively. This aligns with the expectations of Hypotheses 3 and 4.

The RD results do not indicate that the relationship between mandated turnout and blank and spoiled balloting is conditioned by political information and interest, as illustrated in the top row of the figure. While this contradicts Hypothesis 2, it is supportive of Hypothesis 5, which puts forth that political distrust and negative orientations toward democracy do more to condition the relationship between compulsory rules and invalid balloting than political ignorance and disinterest. In section 11 of the Online Appendix, I present details of the RD analyses. Further, a series of null results associated with placebo age cutoffs suggest that the discontinuities observed in Figure 3 are a genuine result of a shift from a compulsory voting rule to a voluntary rule, rather than an artifact of the aging process.

CONCLUSION

About ten years ago, Blais noted that "we know nothing about the microfoundations of compulsory voting" (2006, 113). Today, still relatively little is known about how individual-level factors interact with compulsory rules to shape outcomes. In an effort to begin filling this knowledge gap, this study examines the influence of compulsory voting on blank and spoiled balloting across both individuals and countries.

I first find that, relative to voluntary voting, compulsory voting increases the incidence of blank and spoiled ballots, especially where sanctions for abstention are routinely enforced. I then demonstrate *who* is responsible for such an increase—compulsory voting's positive relationship with the propensity to cast a blank or spoiled ballot is largely due to the behavior of individuals who are politically unaware and uninterested, individuals who are negatively oriented toward the democratic process, and, especially, individuals who are untrusting of democratic actors and institutions.

Those in favor of compulsory voting may hail these results as evidence that politically unsophisticated, untrusting, or disaffected individuals make use of their "out" where their presence at the ballot box is forced, and they thus need not contribute to the social choice when they lack the desire or skills to do so. For their part, opponents of mandatory voting may instead argue that the relatively high rate of blank and spoiled balloting among politically unaware, uninterested, untrusting, and disillusioned individuals where participation is obligatory is evidence that compulsory voting does not socialize such individuals into embracing civic values and seeking out political knowledge, a dynamic the institution's proponents have championed as one of its beneficial effects for over a century (see Broomall 1893; Nerincx 1901; Barthélemy 1912; Lijphart 1997, 10; Engelen 2007, 32; Lacroix 2007, 194; See 2007, 597). Seen from another angle, these results suggest that, even where compulsory voting boosts participation, leaders may feel free to behave unscrupulously when they perceive that the electorate is unlikely to observe such behavior and punish it at the next election. In the words of Carlin and Love (2015, 57), where "those weakly invested in politics" do not cast meaningful ballots under compulsory voting, "the potential for moral hazard among elites" will increase.

In addition to an increase in turnout, the results of this paper suggest that constitutional designers in democracies considering the adoption of compulsory voting should expect a rise in blank and

[22] With random effects for countries included, these effects are estimated as −7.82 and −3.44 percentage points, respectively.

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spoiled ballots. This will largely result from the balloting behavior of the politically unknowledgeable, uninterested, untrusting, and disaffected. Policymakers interested in boosting turnout might willingly accept this pattern, as it is not, in and of itself, detrimental to democracy. Of course, a system that incentivized both attendance at the polls and well-reasoned ballots would do more to improve the democratic process. Future research may consider what such a system might look like.

REFERENCES

Almond, Gabriel Abraham, and Sidney Verba. (eds). 1980. *The Civic Culture Revisited*. Boston, MA: Little Brown.

Barthélemy, Joseph. 1912. *L' Organisation Du Suffrage Et L'expérience Belge*. Paris: M. Giard & É. Brière.

Berggren, Heidi M. 2001. 'Institutional Context and Reduction of the Resource Bias in Political Sophistication'. *Political Research Quarterly* 54(3):531–52.

Berry, William D., Jacqueline H. R. DeMeritt, and Justin Esarey. 2010. 'Testing for Interaction in Binary Logit and Probit Models: Is a Product Term Essential?' *American Journal of Political Science* 54(1):248–66.

Birch, Sarah. 2009. *Full Participation: A Comparative Study of Compulsory Voting*. Manchester: Manchester University Press.

Blais, André. 2006. 'What Affects Voter Turnout?' *Annual Review of Political Science* 9:111–25.

Blais, André, and Simon Labbé St-Vincent. 2011. 'Personality Traits, Political Attitudes and the Propensity to Vote'. *European Journal of Political Research* 50(3):395–417.

Bowler, Shaun, and Todd Donovan. 2013. 'Civic Duty and Turnout in the UK Referendum on AV: What Shapes the Duty to Vote?' *Electoral Studies* 32(2):265–73.

Broomall, John M. 1893. 'Compulsory Voting'. *Annals of the American Academy of Political and Social Science* 3:93–97.

Carlin, Ryan E. 2006. 'The Decline of Citizen Participation in Electoral Politics in Post-Authoritarian Chile'. *Democratization* 13(4):632–51.

Carlin, Ryan E., and Gregory J. Love. 2015. 'Who is the Latin American Voter?' In Ryan E. Carlin, Matthew M. Singer and Elizabeth J. Zechmeister (eds), *The Latin American Voter: Pursuing Representation and Accountability in Challenging Contexts*, 31–59. Ann Arbor, MI: University of Michigan Press.

Carreras, Miguel. 2016. 'Compulsory Voting and Political Engagement (Beyond the Ballot Box): A Multilevel Analysis'. *Electoral Studies* 43(1):158–68.

Carreras, Miguel, and Néstor Castañeda-Angarita. 2014. 'Who Votes in Latin America? A Test of Three Theoretical Perspectives'. *Comparative Political Studies* 47(8):1079–104.

Catterberg, Gabriela, and Alejandro Moreno. 2006. 'The Individual Bases of Political Trust: Trends in New and Established Democracies'. *International Journal of Public Opinion Research* 18(1):31–48.

Dalton, Russell J., and Christian Welzel. (eds). 2014a. *The Civic Culture Transformed: From Allegiant to Assertive Citizens*. New York: Cambridge University Press.

Dalton, Russell J., and Christian Welzel. 2014b. 'From Allegiant to Assertive Citizens'. In R. J. Dalton and C. Welzel (eds), *The Civic Culture Transformed: From Allegiant to Assertive Citizens*, 282–306. New York: Cambridge University Press.

Dalton, Russell J., and Christian Welzel. 2014c. 'Political Culture and Value Change'. In R. J. Dalton and C. Welzel (eds), *The Civic Culture Transformed: From Allegiant to Assertive Citizens*, 2–34. New York: Cambridge University Press.

Dalton, Russell J., and Doh Chull Shin. 2014. 'Reassessing the *Civic Culture* Model'. In R. J. Dalton and C. Welzel (eds), *The Civic Culture Transformed: From Allegiant to Assertive Citizens*, 91–115. New York: Cambridge University Press.

deCharms, Richard. 1968. *Personal Causation: The Internal Affective Determinants of Behavior*. Hillsdale, MI: Lawrance Erlbaum.

Deci, Edward L. 1975. *Intrinsic Motivation*. New York: Plenum Press.

https://doi.org/10.1017/psrm.2017.11 Published online by Cambridge University Press

de Leon, Fernanda Leite Lopez, and Renata Rizzi. 2014. 'A Test for the Rational Ignorance Hypothesis: Evidence From a Natural Experiment in Brazil'. *American Economic Journal: Economic Policy* 6(4):380–98.

Dettrey, Bryan J., and Leslie A. Schwindt-Bayer. 2009. 'Voter Turnout in Presidential Democracies'. *Comparative Political Studies* 42(10):1317–338.

Driscoll, Amanda, and Michael J. Nelson. 2014. 'Ignorance or Opposition? Blank and Spoiled Votes in Low-Information, Highly Politicized Environments'. *Political Research Quarterly* 67(3):547–61.

Engelen, Bart. 2007. 'Why Compulsory Voting Can Enhance Democracy'. *Acta Politica* 42(1):23–39.

Fornos, Carolina A., Timothy J. Power, and James C. Garand. 2004. 'Explaining Voter Turnout in Latin America, 1980 to 2000'. *Comparative Political Studies* 37(8):909–40.

Galston, William A. 2001. 'Political Knowledge, Political Engagement, and Civic Education'. *Annual Review of Political Science* 4(1):217–34.

Goot, Murray. 1985. 'Electoral Systems'. In D. Aitkin (ed.), *Surveys of Australian Political Science*, 179–264. Sydney: George Allen & Unwin for the Academy of the Social Sciences in Australia.

Gordon, Stacy B., and Gary M. Segura. 1997. 'Cross-National Variation in the Political Sophistication of Individuals: Capability or Choice?' *Journal of Politics* 59(1):126–47.

Grönlund, Kimmo, and Maija Setälä. 2007. 'Political Trust, Satisfaction and Voter Turnout'. *Comparative European Politics* 5(4):400–22.

Henn, Matt, and Ben Oldfield. 2016. 'Cajoling or Coercing: Would Electoral Engineering Resolve the Young Citizen-State Disconnect?' *Journal of Youth Studies* 19(9):1259–280.

Hirczy, Wolfgang. 1994. 'The Impact of Mandatory Voting Laws on Turnout: A Quasi-Experimental Approach'. *Electoral Studies* 13(1):64–76.

Hooghe, Marc, Sofie Marien, and Teun Pauwels. 2011. 'Where Do Distrusting Voters Turn if There is No Viable Exit or Voice Option? The Impact of Political Trust on Electoral Behaviour in the Belgian Regional Elections of June 2009'. *Government and Opposition* 46(2):245–73.

Imbens, Guido W., and Thomas Lemieux. 2008. 'Regression Discontinuity Designs: A Guide to Practice'. *Journal of Econometrics* 142(2):615–35.

Irwin, Galen. 1974. 'Compulsory Voting Legislation: Impact on Voter Turnout in the Netherlands'. *Comparative Political Studies* 7(3):292–315.

Jakobsen, Tor Georg, and Ola Listhaug. 2014. 'Social Change and the Politics of Protest'. In R. J. Dalton and C. Welzel (eds), *The Civic Culture Transformed: From Allegiant to Assertive Citizens*, 213–39. New York: Cambridge University Press.

Karp, Jeffrey A., Susan A. Banducci, and Shaun Bowler. 2003. 'To Know It is to Love It?: Satisfaction With Democracy in the European Union'. *Comparative Political Studies* 36(3):271–92.

Knack, Stephen, and Philip Keefer. 1997. 'Does Social Capital Have an Economic Payoff? A Cross-Country Investigation'. *Quarterly Journal of Economics* 112(4):1251–288.

Kostadinova, Tatiana, and Timothy J. Power. 2007. 'Does Democratization Depress Participation? Voter Turnout in the Latin American and Eastern European Transitional Democracies'. *Political Research Quarterly* 60(3):363–77.

Kouba, Karel, and Jakub Lysek. 2016. 'Institutional Determinants of Invalid Voting in Post-Communist Europe and Latin America'. *Electoral Studies* 41(1):92–104.

Kreft, Ita, and Jan de Leeuw. 1998. *Introducing Multilevel Modeling*. London: Sage.

Lacroix, Justine. 2007. 'A Liberal Defence of Compulsory Voting'. *Politics* 27(3):190–95.

Lavareda, José Antônio. 1991. *A Democracia Nas Urnas: O Processo Partidário Eleitoral Brasileiro (1945–1964)*. Rio de Janeiro: Rio Fundo Editora.

Lee, David S. 2008. 'Randomized Experiments From Non-Random Selection in US House Elections'. *Journal of Econometrics* 142(2):675–97.

Lijphart, Arend. 1997. 'Unequal Participation: Democracy's Unresolved Dilemma'. *American Political Science Review* 91(1):1–14.

Loewen, Peter John, Henry Milner, and Bruce M. Hicks. 2008. 'Does Compulsory Voting Lead to More Informed and Engaged Citizens? An Experimental Test'. *Canadian Journal of Political Science* 41(3):655–72.

https://doi.org/10.1017/psrm.2017.11 Published online by Cambridge University Press

McAllister, Ian, and Toni Makkai. 1993. 'Institutions, Society or Protest? Explaining Invalid Votes in Australian Elections'. *Electoral Studies* 12(1):23–40.

Nerincx, Alfred. 1901. 'Compulsory Voting in Belgium'. *Annals of the American Academy of Political and Social Science* 18:87–90.

Panagopoulos, Costas. 2008. 'The Calculus of Voting in Compulsory Voting Systems'. *Political Behavior* 30(4):455–67.

Payne, J. Mark, Daniel Zovatto, and Mercedes Mateo Díaz. 2006. *La Política Importa: Democracia Y Desarrollo En América Latina*. Washington, DC: Inter-American Development Bank and International Institute for Democracy and Electoral Assistance.

Power, Timothy J., and James C. Garand. 2007. 'Determinants of Invalid Voting in Latin America'. *Electoral Studies* 26(2):432–44.

Power, Timothy J., and J. Timmons Roberts. 1995. 'Compulsory Voting, Invalid Ballots, and Abstention in Brazil'. *Political Research Quarterly* 48(4):795–826.

Prothro, James W., and Charles M. Grigg. 1960. 'Fundamental Principles of Democracy: Bases of Agreement and Disagreement'. *Journal of Politics* 22(2):276–94.

Rabe-Hesketh, Sophia, and Anders Skrondal. 2005. *Multilevel and Longitudinal Modeling Using Stata*. College Station, TX: Stata Press.

Reynolds, Andrew, and Marco Steenbergen. 2006. 'How the World Votes: The Political Consequences of Ballot Design, Innovation and Manipulation'. *Electoral Studies* 25(3):570–98.

Scheff, Thomas J., and Suzanne M. Retzinger. 1991. *Emotions and Violence: Shame and Rage in Destructive Conflicts*. Lexington, MA: Lexington Books.

See, Mark. 2007. 'The Case for Compulsory Voting in the United States'. *Harvard Law Review* 121(2):591–612.

Selb, Peter, and Romain Lachat. 2009. 'The More, the Better? Counterfactual Evidence on the Effect of Compulsory Voting on the Consistency of Party Choice'. *European Journal of Political Research* 48(5):573–97.

Sheppard, Jill. 2015. 'Compulsory Voting and Political Knowledge: Testing a "Compelled Engagement" Hypothesis'. *Electoral Studies* 40(1):300–07.

Sherman, Lawrence W. 1993. 'Defiance, Deterrence, and Irrelevance: A Theory of the Criminal Sanction'. *Journal of Research in Crime and Delinquency* 30(4):445–73.

Shieh, Yann-Yann, and Rachel T. Fouladi. 2003. 'The Effect of Multicollinearity on Multilevel Modeling Parameter Estimates and Standard Errors'. *Educational and Psychological Measurement* 63(6):951–85.

Singh, Shane P. 2011. 'How Compelling is Compulsory Voting? A Multilevel Analysis of Turnout'. *Political Behavior* 33(1):95–111.

Singh, Shane P. 2015. 'Compulsory Voting and the Turnout Decision Calculus'. *Political Studies* 63(3):548–68.

Singh, Shane P. Forthcoming. 'Compulsory Voting and Dissatisfaction With Democracy.' *British Journal of Political Science*. https://doi.org/10.1017/S0007123416000041

Stegmueller, Daniel. 2013. 'How Many Countries for Multilevel Modeling? A Comparison of Frequentist and Bayesian Approaches'. *American Journal of Political Science* 57(3):748–61.

Tyler, Tom R. 2006. *Why People Obey the Law*. Princeton, NJ: Princeton University Press.

Uggla, Fredrik. 2008. 'Incompetence, Alienation, or Calculation? Explaining Levels of Invalid Ballots and Extra-Parliamentary Votes'. *Comparative Political Studies* 41(8):1141–164.

Welzel, Christian, and Alejandro Moreno Alvarez. 2014. 'Enlightening People: The Spark of Emancipative Values'. In R. J. Dalton and C. Welzel (eds), *The Civic Culture Transformed: From Allegiant to Assertive Citizens*, 59–88. New York: Cambridge University Press.

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