



Beyond rationalization: Voting out of duty or expressing duty after voting?

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Abstract

It is a standard practice to include a *Duty* term in explanatory models of turnout. Yet the relationship between duty and voting is not that clear. Does duty really trigger voting or is it the reverse? To address this question, we present cross-lagged panel estimations of the impact of duty on turnout and of turnout on duty with two different datasets: a two-wave panel Canadian survey conducted in 2008 and 2009 and a four-wave Spanish panel conducted between 2010 and 2012. We find evidence that sense of civic duty is a true motivation that affects people's propensity to vote, even though duty may be reinforced by the act of voting.

Keywords

Civic duty, turnout, vote, causality, endogeneity

Introduction

From a purely utilitarian perspective, voting does not appear to be a 'rational' choice in a large electorate election. Given the extremely low probability that one's decision will be pivotal (Mueller, 2003; Owen and Grofman, 1984), the costs of voting (the time required not only to go to the polling station but also to obtain information in order to decide which party/candidate to support) are bound to outweigh the expected benefits. Yet most people vote, which is known as the paradox of voting (Fiorina, 1989; Grofman, 1993).

Why do so many people vote? One possible reason is that they feel it is a citizen's duty to vote in a democracy. People vote not because they calculate that the benefits outweigh the costs but because they consider that this is the 'right', 'ethical' thing to do. They believe that they have a moral obligation to vote. This belief that voting is a civic duty is known as the 'D term'.

Even if it is commonly assumed that the feeling that voting is a duty must be taken into account in the turnout decision, we know little about the exact nature of the link between this belief and

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voting. People may vote because they are driven by an inner sense of civic duty; however, they can also develop (or strengthen) their sense of civic duty after taking part in an election. Furthermore, if people say they feel dutiful because they recall having voted, and if they report low levels of duty because they abstained, then the D term would be a mere a posteriori rationalization of the act of voting (Barry, 1970; Matsusaka and Palda, 1999). Thus the following questions: Does the belief that voting is a civic duty really trigger electoral participation, is it the reverse or does the causality go both ways?

For the purpose of answering these questions, we review the theoretical debate regarding the nature of the relationship between civic duty and electoral behavior. Next, we argue that the best way to disentangle the link between attitudes and behavior is a longitudinal approach such as the one we use in this study. We then present our data and the estimation method chosen to disentangle the direction of causality. We use two different datasets: a two-wave panel survey conducted in 2008 and 2009 in the Canadian provinces of British Columbia and Quebec, and a four-wave Spanish panel conducted between 2010 and 2012. We model the relationship between voting and civic duty by means of cross-lagged structural equations. We find evidence of both processes, although the effect that goes from duty to voting is stronger than the other way around. We conclude that sense of civic duty is not purely a post-hoc rationalization of the act of voting; for some citizens it is a true motivation that affects their propensity to vote, even though in some cases citizens may align their views about voting with their past behavior or may experience a stronger sense of civic duty after voting.

Civic duty and voting: Ethical behavior or rationalization?

Downs (1957) argued that citizens vote only if the expected costs (C) do not exceed the expected benefits (B). The latter depend on the probability of one's vote to be pivotal (P), which is extremely low. Therefore, a rational citizen will soon find that $PB < C$, and will abstain as a consequence. However, many citizens keep voting, which has produced what has become known as the voter's paradox. Many scholars have tried to solve this paradox by suggesting that the costs of voting are negligible, that the benefits can be huge or that the P term needs to be replaced by a function including strategic considerations or conditional expected utility. Finally, a number of authors have made the case for a normative element, the 'D term' (Dowding, 2005).

The first reference to a normative foundation for the act of voting is found in Campbell et al.'s seminal work (1954), where it is suggested that sense of civic obligation leads to a high likelihood of showing up at the polling station on election day. Later on, Campbell et al. (1960: 105–106) point out again that turnout is much higher among those with a strong sense of duty than among those with none. In the same vein, Riker and Ordeshook (1968) show that duty (the 'D term') has a strong impact on the propensity to vote. Dennis relates civic duty to diffuse support for the regime, defining it as the citizen's feeling of obligation 'to contribute his own resources of time and effort even when particular elections are anticipated to be unfavorable or trivial to his own interests' (1970: 63). He finds high public endorsement of the duty to vote, consistent with the findings for other western countries, and a strong correlation between duty and turnout.

More recently, Verba et al. (1995: 115) report that civic gratifications, among them civic duty, are the most widespread motivation for voting. Blais (2000: 112) concludes that duty is the overriding motivation for about half of those who vote. Clarke et al. (2004: 259) find that the variable with the largest effect on turnout is what they call 'system benefits', which in fact corresponds to civic duty. Dalton finds a positive effect of citizens' duty on the propensity to vote, although not on other forms of participation, such as volunteerism, petitions or boycott (Dalton, 2008). Hence, the inclusion of an indicator of civic duty in explanatory models of turnout is a widespread practice.

Finally, recent experimental research shows that prompting citizens to think about voting as a duty indeed boosts turnout (Gerber et al., 2008).

The nature of the 'D term' is, at best, unclear. Some citizens may only feel they have a duty to vote if they think they are going to be decisive, whilst others claim that it is their duty to cast a vote because they want to contribute to a common good (Mueller, 2003). From the most critical approach, duty is just an artifact that makes voting an irrational matter of 'taste', making the contribution of rational choice theory rather meaningless (Barry, 1970). For some authors, duty is an expression of party affiliation (Fiorina, 1976) and/or some election-specific value (Aldrich, 1993). It may also have a patriotic or altruistic connotation (Usher, 2011). From a more restricted perspective, it is an expression of social identity for those citizens who believe that political outcomes (such as a high turnout rate) will positively affect members of their group (Fowler and Kam, 2007). It has been equated to expressive rationality (Engelen, 2006) and to intrinsic motivations to vote (Jones and Hudson, 2000). Its normative component has been related to system benefits and to personal convictions about what a good citizen should do.

The goal of this paper is not to disentangle the true nature or causes of the Duty term, but rather to examine its relationship with voting. Among the scholars suggesting a normative foundation for the act of voting, most consider that when people express their belief that there is a duty to vote, this reflects adherence to a social norm (Blais, 2000; Coleman, 1990; Knack and Kropf, 1998; Mueller, 1989; Uhlaner, 1986). The assumption, which we adhere to for the purpose of this paper, is that those who subscribe to the norm will want to behave in a way that is congruent with the norm; hence, they will feel compelled to vote.

The causal link between the civic duty to vote and turnout is based on the theoretical assumption that attitudes precede and cause political behavior (Marsh, 1971: 453). Most political communication and political behavior researchers work with this assumption (Ajzen and Fishbein, 1980). Some evidence that duty is formed early and prior to voting is offered by Wolfinger and Rosenstone (1980), who found that a higher level of education leads to higher levels of civic duty. Personality also emerges as an antecedent of civic duty, with conscientiousness, agreeableness, openness and extraversion positively affecting the sense that voting is a duty (Weinschenk, 2014); this suggests that duty comes before voting in the causal chain. Campbell (2006) argues that feelings of duty towards voting are formed in childhood and within politically homogeneous communities able to enforce social norms about voting. From this point of view, the civic duty to vote is not different from most psychological orientations that develop as a consequence of early socialization processes, which make them stable over time (Easton et al., 1969). To the best of our knowledge, however, the assumptions that duty precedes turnout and that it is stable over time have never been tested.

Despite numerous examples conceiving civic duty as an antecedent of voting, a number of difficulties beset our understanding of the causal links between these two phenomena. Since civic duty is to be expected from a 'good citizen', respondents may report a sense of duty driven by a desire for social respectability. Even worse, sense of citizen duty may be a mere a posteriori rationalization of the act of voting (Matsusaka and Palda, 1999). That is, a respondent may say that voting is a duty because she voted in the previous election and that it is not a duty because she abstained. According to Dowding, 'habitual voters justify their voting in terms of civic duty since they cannot rationalise it any other way' (2005: 456). Similarly, Harder points out: 'the act of voting could increase feelings of civic duty (...); when people go to the polls they may later rationalize that it must have been because their vote was important' (2008: 5).

Rationalization is an internal process that can be defined as 'an active self-justifying intensification of belief' (Batson, 1975: 176) or as bringing one's attitudes in line with one's behavioral intentions (Finkel and Muller, 1998: 40). In other words, rationalizing may mean changing attitudes to align them with actual behavior, or generating them when they do not exist. In the first case,

respondents report 'consistent' attitudes after recalling behavior because 'inconsistencies among beliefs and attitudes are noxious to people, and they are inclined to eliminate such inconsistencies by changing, adding, or deleting the beliefs or attitudes responsible for the inconsistency' (Rahn et al., 1994: 586). This explanation is based on cognitive dissonance avoidance, which drives individuals to strive for internal consistency.

Alternatively, and according to Bem's self-perception theory (1967), when individuals do not have previous attitudes, they can produce a consistent answer when asked by observing their own behavior and inferring what attitudes must have caused it. People would report high levels of duty to vote if they recall having voted because this answer is in line with their past behavior. Since cause does not precede consequence, any causal inference about the impact of this attitude would be erroneous.

From another point of view, finding that the relationship between reported civic duty and reported electoral behavior goes from the latter to the former could reveal the presence of learning and reinforcement processes. As described by several works in political behavior, this is the case of trust (Delli Carpini et al., 2004), knowledge (Fishkin, 1995) or internal political efficacy (Clarke and Acock, 1989; Finkel, 1985; Leighley, 1991). To the best of our knowledge, no research has examined this reinforcement and learning process for voting and civic duty. There is, however, a literature on learning models of voting that describes the probability of engaging in an act in the future as a function of the positive or negative feedback received for this action in the past (e.g. voting for the winner increases the chances of voting in the next election, see Bendor et al., 2003; Kanazawa, 1998). It makes sense, for instance, to think of an individual with a moderate level of civic duty who, after voting, feels proud and experiences a stronger sense of civic duty.

This possible reciprocal relationship between turnout and the civic duty to vote means that the direction of causality between the attitude and the associated behavior is unclear (Raney and Berdahl, 2009). Our goal is to contribute to disentangling this intriguing relationship, and to ascertain to what extent this belief precedes voting or whether it is the reverse, that is, voting causes civic duty.

Data and methods

The main challenge of this research is to disentangle the direction of causality between an attitude and a behavior. Causal statements imply change in variables along a time axis, so in order to speak of causality 'there is a time ordering between causes and effects. The cause must precede the effect in time' (Blossfeld and Rohwer, 1997: 366). The requirement that the cause must precede the consequence in time can only be fulfilled, in a non-experimental design, with the use of panel data (Kenny, 1975).

For this purpose, we rely on two panel surveys from Canada and Spain. These are two very different countries in terms of the longevity of their democracy, since Canada is a well-established democracy while Spain is still young, its Constitution having been adopted in 1978. Both countries are also different with respect to their electoral system (plurality in Canada, proportionality in Spain), and party system (with higher fragmentation in Spain, where 13 parties obtained seats in the national assembly in 2011, while only 5 entered the Canadian House of Commons in 2008). Turnout rates in the national elections held between 2006 and 2011 were higher in Spain. At any rate, if the same patterns are found in both contexts, this would strengthen the robustness and external validity of our findings. We will first test our hypotheses with the Canadian data, and then replicate the analysis on the Spanish database.

Our first data source is an internet panel survey conducted by YouGov Polimetrix in the Canadian provinces of British Columbia and Quebec. The first wave of fieldwork was carried out one week before the Canadian federal election that was held in October 2008. The second wave

took place just before the provincial elections held in Quebec in December 2008 and in British Columbia in May 2009. Hence, a national general election was held between the two waves. The sampling frame was designed to match the demographic profile of both provinces. We have repeated measures (waves 1 and 2) of duty and turnout for 1268 Quebecers and 873 British Columbians.

The source for the Spanish data is also an internet panel survey that includes citizens up to 45 years old, as it was designed to detect and track attitudinal change, which is less likely in adulthood.¹ The study includes 2100 individuals in the first wave in November 2010, plus 600 freshly recruited individuals in the second wave, conducted in May 2011. The fieldwork for the third wave took place in November 2011, just one week before the national election held that year. It retained 1514 individuals from the original sample and 465 of the refreshment. The last wave (May 2012) retains 1322 individuals from the original sample and 395 from the refreshment pool. In order to better tap abstention, we kept in our database only those citizens who were eligible to vote in the two elections held within each country during the time span covered by the panel surveys. Hence, in our Canadian survey we only kept individuals who were 20 years old or more in 2008 (and thus had the right to vote in the 2006 election). For Spain, we dropped respondents under 21 years old in 2011 (those younger than 18 years old in 2008). The final total *N* is 2141 Canadians and 2569 Spaniards.

The first relevant variable is turnout in the national elections. For Canada, this refers to the federal elections held in 2006 and 2008; in Spain, the two elections at stake were held in 2008 and 2011. The Canadian respondents were asked in the first wave (October 2008) about their electoral behavior in the previous federal election, which took place in 2006. They were asked in the second wave whether they voted in the 2008 federal election, held between the two waves. Similarly, the third and fourth waves of the Spanish survey took place just before and after a general election (20 November 2011). This means that we have three measures of vote recall (waves 1, 2 and 3) that refer to a previous election (held in 2008) and one measure referring to the 2011 elections, a time structure very similar to the Canadian data. For both countries, turnout has been coded as a dichotomous variable: those who reported having voted are assigned the value 1 and those who did not – including those that said ‘they could not’ – the value 0.

Regarding the measure of the civic duty to vote, we have borrowed Blais and Achen’s (2010) wording. In order to minimize the social desirability problem, Blais and Achen proposed a question wording that offers a ‘positive’ option (‘voting is a choice’) to those who do not feel a duty to show up at the polling station. Both questionnaires included the same formulation of the duty to vote question with a slight difference: the question is framed in general terms for Spain, whereas in the Canadian survey it refers to different types of elections, for different levels of government: federal, provincial and local elections. As the risk of measurement error increases when attitudes are susceptible to social desirability biases (Liska, 1974), we are fortunate that our data include several indicators for civic duty, so we can obtain coefficients unbiased by random measurement error. This allows us to capture the latent construct of ‘civic duty to vote’. In order to take full advantage of the multiple indicators, our estimations include a measurement model using Confirmatory Factor Analysis (CFA).

CFA is a multivariate statistical technique used to test the relationship between a latent or unobserved factor and a series of observed variables or indicators (Brown, 2006). It is used to test whether the indicators of such latent construct are consistent with theoretical expectations, that is, whether the measurement model fits the data. The magnitude and significance of the factor loadings confirm or disconfirm such expectations, and several measurement model fit measures, such as the Root Mean Squared Error of Approximation (RMSEA) or the Comparative Fit Index (CFI), indicate to what extent the co-variation matrix produced by the model accurately reproduces that of the data.

We have different measurement models for the Duty to vote in Canada and Spain. In the Canadian case, the latent construct of ‘duty’ was estimated using the answers regarding duty at different levels of government, which corrects for measurement error potentially biasing our estimates for the relationship between duty and turnout.² In order to account for contextual effects –such as the presence of an election– affecting latent constructs, and also to take acquiescence bias into account (Saris and Aalberts, 2003), we have correlated the error terms of the duty indicators between waves.

The Spanish questionnaire included only a single indicator of duty per wave.³ Hence, we have estimated the latent construct ‘previous duty’ using the questions tapping the civic duty to vote included in waves 1–3. In this way we correct for measurement errors that may affect the unbiasedness of our estimates.⁴ Similarly, we have also estimated the latent construct ‘previous turnout 2008’ taking into account the questions on voting behavior in the 2008 general election, included in waves 1–3. In this fashion, we are able to overcome electoral behavior recall inconsistencies due to forgetfulness or cognitive bias, which are likely to increase as time and panel waves go by (van Elsas et al., 2013).

A last challenge is that our research question involves more than one endogenous variable: turnout and duty to vote. Single-equation models ignore the possibility of reciprocal causal relations among variables. This is why some scholars have used Structural Equation Modeling – SEM (Markus and Converse, 1979; Page and Jones, 1979). This approach has also been adopted for the sake of parsimony, since SEM allows for the estimation of two or more dependent variables, each measured by different indicators, with a minimum number of parameters to be estimated and reported.

We have the limitation that our panel data for Canada only cover two sampling moments. The literature recommends at least three time points to have enough statistical power to account for attitudinal change (Venter et al., 2002). We choose a research design appropriate for a two-wave panel, which is a cross-lagged panel model. This is a method that tests spuriousness by comparing cross-lagged correlations and regression coefficients (Burkholder and Harlow, 2003). It allows us to estimate the strength of the causal effect of X on Y and the reverse. Both variables are regressed at the same time on both their own lagged score and the lagged score of the other variable measured in the past (t_{-1}), producing auto-regressive and cross-lagged regression coefficients. While the first coefficient gives us a clue about the stability of the phenomenon at stake, the cross-lagged regression parameters tell us how much variation in a phenomenon measured in t_{-1} predicts variation in the other variable between t_{-1} and t_1 , that is, between panel waves.

The possible outputs when estimating these models are several: if none of the cross-lagged coefficients are statistically significant, we can discard any causal relationship between X and Y . If all of the cross-lagged coefficients are significant, this points to reciprocal effects; if only one cross-lagged coefficient is statistically significant, this points to a unidirectional relationship. Control variables are not essential as these models do not focus on the prediction or explanation of a phenomenon, but on the relationship between two variables whose causal link is unclear. Nevertheless, the inclusion of a lagged dependent variable accounts to some extent for the effects of unobserved time-constant variables (Berrington et al., 2006). Correlating the error terms of the endogenous variables also takes into account that other factors may be at work. Cross-lagged panel models have been used in the political behavior literature for examining questions of reciprocal causality (Campbell et al., 1960; Campbell and Kenny, 1999; Finkel, 1995; Hooghe and Quintelier, 2013; Marsh and Yeung, 1997), or more specifically, to disentangle the relationship between an attitude and a behavior with short panel data (Lenz, 2009).⁵

The first model to be estimated is presented in Figure 1. In the upper part of the figure the measurement model for civic duty is displayed. Besides duty indicators, the model involves four

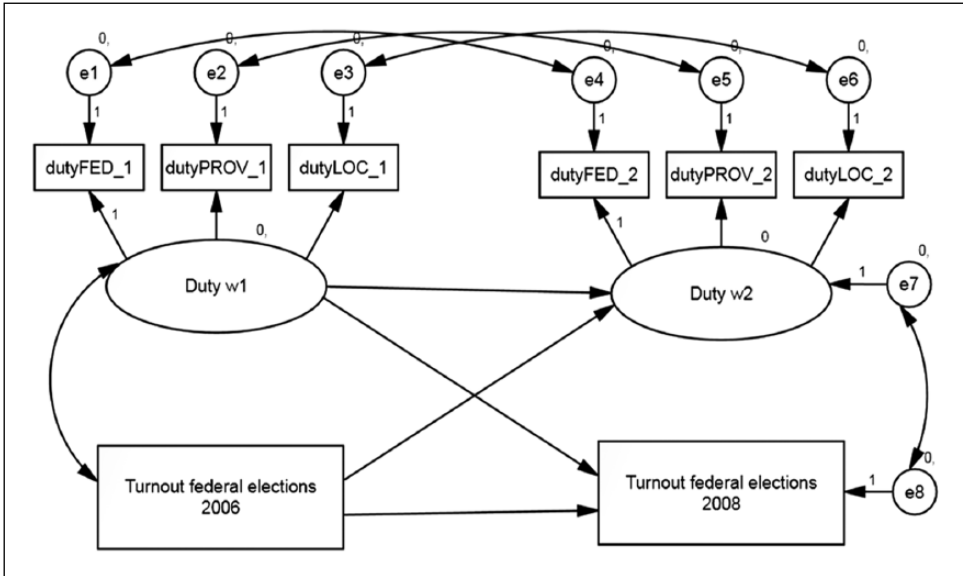


Figure 1. Cross-lagged estimation model for duty and turnout: Canada.

variables, two attitudes and two behaviors, measured at two points in time represented by the left (wave 1) and the right (wave 2) sides of the graph. The two variables measured in October 2008 (time 1) are exogenous and thus correlated as is the standard in SEM. The two variables measured in time 2 are endogenous, and both receive the effect of duty and reported turnout measured at time 1. The error terms of these variables are correlated since other variables (including contextual covariates) may be affecting both of them.

The cross-lagged auto-regressive model has been replicated with the Spanish data, extracting the information necessary to estimate the two latent variables from the first three waves of the panel survey. Only the communalities of the indicators are therefore taken into account, which means that we get rid of the bias associated with random measurement error for both constructs. Hence, the only coefficients that will tap the stability of both phenomena will be those linking the latent constructs with the indicators of duty and turnout measured in the last wave of the panel. The diagonal arrows specify the two coefficients of greatest interest in this model (see Figure 2). The one going from 'previous duty' to turnout in the 2011 elections points to a causal effect from the attitude to subsequent behavior. The one linking turnout in the 2008 general election to duty measured in wave 4 taps a reverse causality phenomenon in which the individual produces an answer to be in line with past behavior, or experiences a genuine change in her beliefs about voting, after having participated (or abstained). Note again that an election took place between waves 3 and 4, and therefore it makes sense to assume that previous duty is affecting behavior in that particular election, and not before. Finally, this model estimates the effects of rationalization or learning and duty-driven turnout controlling for the lags of duty and turnout. The two models displayed in Figures 1 and 2 are to be estimated using maximum likelihood, which makes use of all available data points in the presence of missing data (Little and Rubin, 1987).

A last test of causality will be conducted using these very same data and a completely different methodological approach. The effects of previous duty on turnout in the last election of each country will be estimated only among those young enough to have participated in these elections for the first

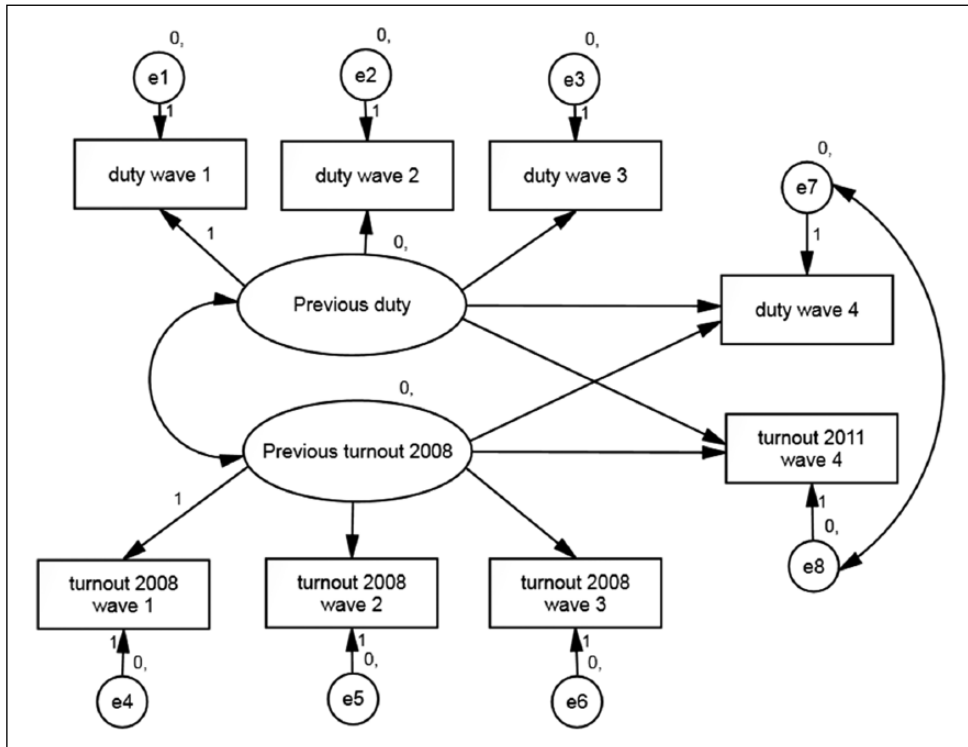


Figure 2. Cross-lagged estimation model for duty and turnout: Spain.

time, which are Canadians under 20 years old in 2008 and Spaniards under 21 years old in 2011 (32 and 83 individuals, respectively, who were excluded from the previous analyses). These subsamples of younger citizens had their first opportunity to participate in an election between panel waves; hence their reported duty in t_{-1} (wave 1 for Canada, wave 3 in the case of Spain) necessarily precedes their reported vote in t_1 , the survey immediately following their first general election.

In the next section we present the empirical evidence. We show the results of estimating the cross-lagged models displayed in Figures 1 and 2. Finally, we will test a simple logistic regression that estimates the predictive power of duty on the electoral behavior of our youngest respondents.

Results

The crucial piece of evidence for testing the direction of causality is provided by estimating the cross-lagged longitudinal models.⁶ Note that some of the equations involved in these analyses are equivalent to a Granger causality test.⁷ As noted, these estimations have the virtue of considering several dependent variables at the same time, controlling for lags and measurement error when more than an indicator is available for a particular construct. The results for the first estimation with the Canadian data are displayed in Figure 3 and Table 1, including factor loadings that stem from the measurement model (CFA) and regression coefficients that read as classic ordinary least squares (OLS) regression coefficients.⁸

The high factor loadings for the two latent 'duty' constructs suggest that civic duty is accurately measured. However, the regression weights are the most revealing estimates. All of them are

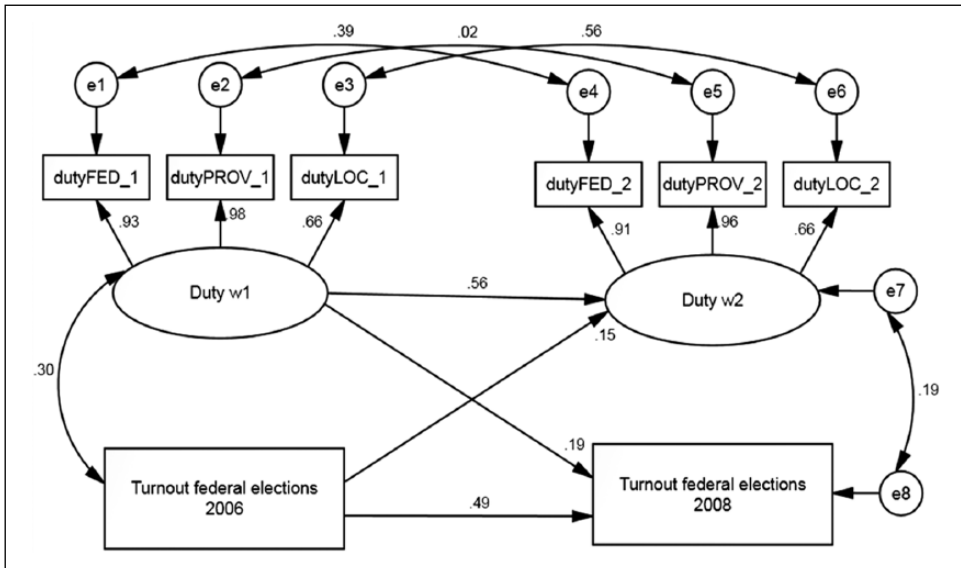


Figure 3. Results of the cross-lagged estimation: Standardized coefficients, Canada.

Table 1. The cross-lagged longitudinal model: Unstandardized coefficients, Canada.

Independent variable	Dependent variable	Estimate	S.E.	P
Turnout federal elections 2006 (wave 1)	Duty (wave 2)	.6	.075	.000
Duty (wave 1)	Duty (wave 2)	.55	.020	.000
Duty (wave 1)	Duty federal elections (wave 1)	1.0		–
Duty (wave 1)	Duty provincial elections (wave 1)	1.06	.013	.000
Duty (wave 1)	Duty local elections (wave 1)	.74	.017	.000
Duty (wave 2)	Duty federal elections (wave 2)	1.0		–
Duty (wave 2)	Duty provincial elections (wave 2)	1.06	.016	.000
Duty (wave 2)	Duty local elections (wave 2)	.74	.018	.000
Duty (wave 1)	Turnout federal elections 2008 (wave 2)	.05	.005	.000
Turnout federal elections 2006 (wave 1)	Turnout federal elections 2008 (wave 2)	.52	.021	.000
Sample size: 2141	Number of distinct sample moments: 44		CFI: .999	
	Number of distinct parameters to be estimated: 31		RMSEA: .026	
	Degrees of freedom (36 – 22): 13		Chi-square = 31,31	
			P-value = .003	

CFI: Comparative Fit Index; RMSEA: Root Mean Squared Error of Approximation.

significant and positive and since these are standardized coefficients, they can be compared and read in terms of how many standard deviations the dependent variable will change with an increase of one standard deviation in the independent variables. Stability is high, as the effect of the lags on duty and

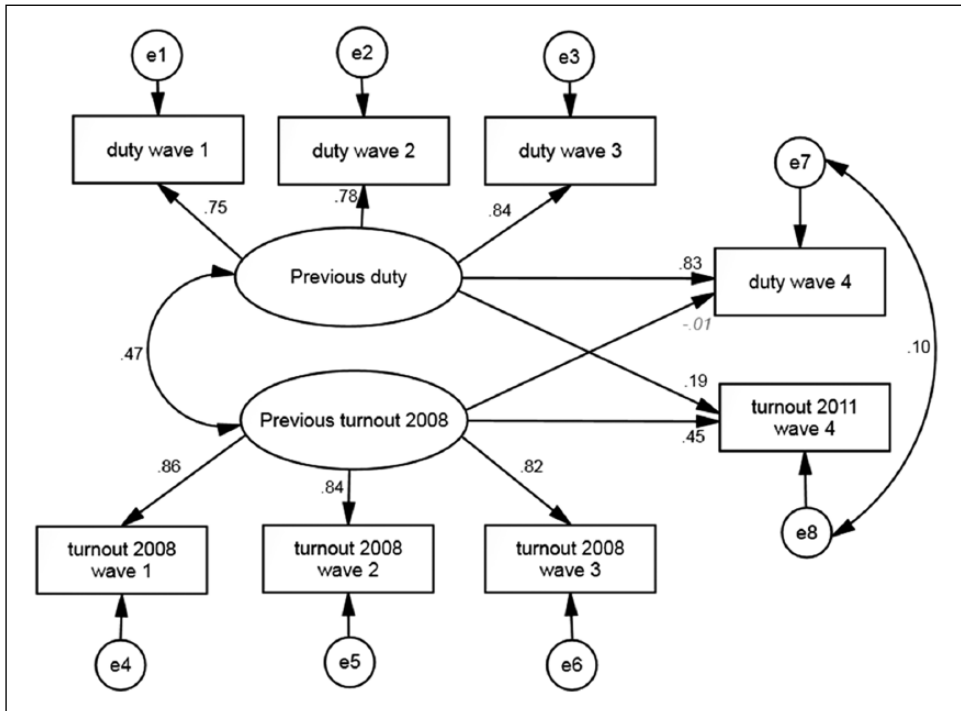


Figure 4. Results of the cross-lagged estimation: standardized coefficients, Spain. Gray, italic parameters indicate non-significant estimates.

Table 2. The cross-lagged longitudinal model estimates: Unstandardized coefficients, Spain.

Independent variable	Dependent variable	Estimate	S.E.	P
Previous turnout 2008	Duty (t4)	-.03	.078	.000
Previous turnout 2008	Turnout 2008 (wave 1)	1.0		–
Previous turnout 2008	Turnout 2008 (wave 2)	1.03	.025	.000
Previous turnout 2008	Turnout 2008 (wave 3)	.98	.026	.000
Previous Duty	Duty wave 1	1.0		–
Previous Duty	Duty wave 2	1.05	.033	.000
Previous Duty	Duty wave 3	1.13	.034	.000
Previous Duty	Duty wave 4	1.13	.039	.000
Previous turnout 2008	Turnout 2011 (wave 4)	.51	.031	.000
Previous Duty	Turnout 2011 (wave 4)	.08	.012	.000
Sample size: 2569	Number of distinct sample moments: 44		CFI: .985	
	Number of distinct parameters to be estimated: 28		RMSEA: .05	
	Degrees of freedom (44 – 38): 16		Chi-square = 118.4	
			P-value=.000	

CFI: Comparative Fit Index; RMSEA: Root Mean Squared Error of Approximation.

turnout measured in wave 2 shows. Nevertheless, what stand out are the cross-lagged coefficients. The rationalization hypothesis finds empirical support in the standardized coefficient of .15, but there is also clear support for the hypothesis that duty causes turnout (.19). Since both coefficients are significant, we cannot reject our two hypotheses, but we can conclude that the causal effect from civic duty to vote is at least as strong – if not stronger – as the rationalization effect. Table 1 displays the unstandardized coefficients for the same model. All the coefficients for the measurement model are significant. The most interesting coefficients are the first and the next to last, estimating a rationalization and a duty causal effect, respectively. Both of them are significant and positive.

The last relevant piece of information in this table refers to the fit of the model. A significant chi-square is not generally good news for the model fit but it is also known that when structural equation models are run with a sample over 400 observations, the chi-square is almost always statistically significant. Moreover, the stronger the correlations between the variables included in the model, the higher the chances that this statistic is significant (Kenny and McCoach, 2003). We should thus look for alternative measures of fit. One of the most common alternatives to chi-square is the RMSEA, which ideally should be lower than 0.05 to be considered a ‘good’ model, or, at least, lower than 0.08 to be considered acceptable (MacCallum et al., 1996). In our case, the RMSEA is 0.026, which indicates that the model fits accurately the data. The same conclusion can be drawn from the value of the CFI, which is close to 1 and therefore indicates a very good fit of the model.⁹

Figure 4 and Table 2 display the standardized and unstandardized estimates for the cross-lagged model with the Spanish data. All the regression coefficients are significant except for one: the one from previous turnout to duty measured at time 4. This suggests that there is no rationalization in the last two waves of the panel.¹⁰ It is also interesting to note that duty to vote is remarkably stable. Last, but not least, we find a positive, significant effect of previous duty to vote on subsequent electoral behavior. This supports the claim that the act of voting is a product of a pre-existing sense of duty. We found a similar pattern in Canada, which strengthens the robustness of our results. Finally, and just as for Canada, the model fit statistics point to a good reproduction of the co-variation matrix. RMSEA is 0.05 and CFI is close enough to 1 to indicate a good model fit.

A last robustness check on the predictive power of duty, performed only among those who had their first chance to vote in the Canadian 2008 election and the Spanish 2011 election, is displayed in Table 3. The first model for each country estimates the effect of lagged duty to vote on the reported electoral behavior, that is, whether or not they voted in the general election. What we see is a positive and significant effect of previously reported duty on their first reported electoral behavior. Unlike previous estimations, we have included here sex and education as controls, and we see that the effect of previous duty stands when controlling for these factors. This indicates that a pre-existing sense that voting is or is not a duty shapes individuals’ decision to vote or abstain in their first election. More precisely, the predicted probability of voting for a young Canadian with a low level of duty (value 1, hence dutiful but not very much) keeping the values of the other covariates as they are – is 54%. If we move to the maximum level of duty, this probability increases to 70%. In Spain, the predicted probability of having voted in the 2011 election (wave 4) for a youngster with a low level of duty in the previous wave – and at given values for gender and education – is 57%. If he or she very strongly feels a duty to vote, then the likelihood of voting increases to 82%.

Conclusion and discussion

A large body of literature has shown that benefits and costs cannot fully account for the decision to vote or abstain, and that some form of expressive benefits or moral obligations should be added to the equation. Thus, most models include a ‘Duty’ term that improves their explanatory power. Yet there is still a lot to learn about this ‘D’ term. Citizens can develop or reinforce their sense of civic

Table 3. Logistic estimation of turnout among those who were eligible to vote for the first time.

	Canada		Spain	
Duty t_{-1}	1.3** (.61)	1.3** (.57)	.67*** (.21)	.66** (.23)
Sex (male)		.09 (.85)		-.75 (.52)
Education		.34 (.35)		.21 (.21)
Constant	-2.9 (1.6)	-4.9 (2.7)	-.43 (.38)	-1.0 (1.02)
Pseudo R^2	.18	.21	.1	.13
N	32	32	83	83

*** $p < .001$; ** $p < .05$. Standard errors in parentheses.

Duty t_{-1} (values from 0, choice, to 3, duty very strongly) is measured in wave 3 for Spain and wave 1 for Canada (only considering federal elections). The dependent variable is turnout in the last election, which is the 2008 election in Canada and the 2011 election in Spain. The analyses are restricted to the third and fourth waves for the Spanish case. Education is a 10-category variable from 'no schooling' to 'complete MA or PhD'.

duty after an election. Furthermore, civic duty may be a mere rationalization of past voting behavior, and then duty would not have any real causal effect on turnout. Against this critical view, a more classical, 'cultural' explanation stands out, characterized by the belief that attitudes are the product of socialization. According to this perspective, the civic duty norm is internalized (or not) at some point in early stages of life and translates into predispositions for or against voting in elections. Our study puts these perspectives to empirical test.

The only way to address the issue of endogeneity, outside experiments, is to use longitudinal data. This allows us to put some order in the sequence of events, guaranteeing that the cause precedes the consequence. For this purpose, we have used a two-wave panel survey conducted in 2008 and 2009 in two Canadian provinces and a four-wave survey conducted between 2010 and 2012 in Spain. The two surveys are different in terms of their time structure (two versus four waves) and also because the Canadian survey established a difference between the levels of government that was absent in the Spanish case, and of course the two surveys were conducted in two countries that differ considerably in terms of political culture and institutions. Despite all these differences, the findings are similar in the two countries. The distribution of duty is similar and also appears to be similarly stable over time.

Two cross-lagged panel models estimated the effects of the latent construct 'civic duty' –thus, controlling for measurement error – on electoral behavior in posterior elections. The estimates of the structural equation models are similar in the two countries. Hence, there is strong evidence of a causal effect from civic duty to subsequent turnout in both Canada and Spain. Our logit estimations restricted to the youngest citizens for whom the 2008 Canadian and 2011 Spanish election was their first opportunity to cast a vote point in the same direction. Duty to vote measured a wave before their first election that has a positive and significant effect on the decision to vote or abstain.

Yet our findings differ in one respect. The results for Canada are more ambiguous, revealing that the act of voting in turn increases the propensity to construe voting as a duty. In other words, there is evidence of some rationalization or learning process in Canada but not in Spain. It is possible that measurement errors are more efficiently corrected by tapping civic duty at different points in time (as was the case in Spain) than by asking about sense of duty for different types of elections. However, these results also suggest that further research should examine the contextual factors that encourage or discourage rationalization.

Whether there is rationalization or not may well depend on where sense of duty comes from. It is thus crucial to understand the reasons that make people believe that it is their duty to vote, and especially to unravel the cognitive and emotional bases of that belief. Do people feel that they ought to vote because they recognize that democracy works better if most people vote or is duty an emotional reaction that leads to pride (when voting) or guilt (when abstaining)? Clearly our study cannot address these fundamental questions.

Whatever the case, a clear lesson we draw is about the necessity of using panel data to unravel the 'true' impact of civic duty on turnout. Because of the presence of the public norm that it is every citizen's duty to vote in democratic elections, we cannot rule out the possibility that people pay lip service to the norm even if they have not internalized it, especially if they have voted.

In short, our findings clearly show that civic duty is not mere rationalization. In both Canada and Spain, those who feel that they have a moral obligation to vote are subsequently prone to act consistently with their ethical views. We can conclude therefore that there is evidence about the effects of sense of duty on the decision to vote in elections. The bottom line is that how one construes voting does matter. The D term should be included in explanatory models of the decision to vote or not to vote in elections. The next logical step is to examine the sources of duty. Future research should investigate how and why some citizens believe that voting is a civic duty while others think that it is a matter of personal choice.

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Notes

1. The sample was built from invited survey firm (Millward Brown) panelists. A comparison of this panel survey with a representative survey reveals that in wave 1 there are 14 percentage points more respondents with a college degree. This may lead to some overestimation of the overall levels of duty to vote, but we do not think this compromises our estimates.
2. Individuals were asked the aforementioned Blais and Achen question on duty three times, with respect to the federal, provincial and local elections. For every government level for which they answered 'duty', individuals were then asked 'How strongly do you feel personally that voting is a duty?'. We then coded duty to vote for every government level so as choice = 0, duty not very strongly = 1, duty somewhat strongly = 2, duty very strongly = 3.
3. In this case, the Achen and Blais indicator on duty to vote did not refer to an election in particular, but to elections in general. As for Canada, the indicators take the values 0–3, where 0 equals 'choice' and 3 equals 'duty, very strongly'.
4. Other alternatives for latent variables measured using a single indicator include fixing each error variance to one and specifying those errors to be uncorrelated across waves (Wiley and Wiley 1970, 1974), or allowing correlated errors. We discarded these options after realizing that (a) they yield similar results to ours despite their greater complexity and (b) they yield poor model fit measures. Other solutions, such as latent growth linear and curvilinear models, were tested with similar outputs. Yet the results were inadmissible due to negative variances.
5. Gastil and Xenos (2010) also deal with reciprocal causality between political engagement and civic attitudes using a two-wave panel and SEM, but they do not control for lagged attitudes or behaviors, and their study is confined to one particular setting (King County).
6. All descriptive statistics are available on request. Sense of civic duty in Canada is relatively strong for both federal and provincial elections (about 36–38% of respondents expressing strong duty) and it is weaker with respect to local elections. Less than 30% of Spaniards feel a very strong duty to vote. Both

countries exhibit a general pattern of stability, although Canada seems more stable and the proximity of an election seems to slightly arouse civic duty in Spain.

7. A set of 'variables, X, is said to Granger-cause another set, y, if adding past values of x in a regression equation for predicting y, which already includes all past values of y as regressors, improves the predictive power of the equation in the sense that it reduces the mean squared forecast error' Buiter, 1984: 161).
8. In Figure 4, the factor loadings are located above the arrows that go from the latent 'duty' construct to each of the duty indicators, while in Table 3 they correspond to the rows where arrows go from duty to its indicators. The first regression coefficient is the one linking Duty (wave 1) to Duty (wave 2), that is, the result of regressing Duty 2 on Duty 1, controlling for all the other relationships included in the model. There are three more regression coefficients resulting from regressing Turnout 2008 on Turnout 2005, Duty (wave 2) on Turnout 2006 and Turnout 2008 on Duty (wave 1).
9. An additional check of the robustness of this model – not shown here – is a multi-group analysis for Quebec and British Columbia. The results – available on request – showed almost identical results for both samples. In both cases our two competing hypotheses find empirical support, and the fit model indicators were equally satisfactory.
10. Several alternative models were estimated, including some without latent constructs. None of them yielded significant estimates for rationalization between waves 3 and 4, which confirms the robustness of our results.

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