TAKING CIVIC DUTY SERIOUSLY:  
POLITICAL THEORY AND VOTER TURNOUT

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Abstract

A sense of citizen duty is a powerful predictor of voter turnout, yet it has often been misunderstood or neglected entirely in empirical studies. By contrast, political theory has developed a rich literature on the obligations of democratic citizens. Using two recent panel studies in the United States and Canada, we show that a new statistical model based on political theorists’ analysis of duty handily outperforms conventional turnout specifications.
CIVIC DUTY AND VOTER TURNOUT

...doing such actions, not from inclination, but from duty (Kant 1997 [1785], 11).

Why do people vote? The customary political science answer is that people vote if they have a preference about the candidates or parties that they want to express. They abstain if they do not care. This “expressive” motivation has long been recognized. Merriam and Gosnell (1924, 159) quote with approval the views of a Chicago alderman in 1923, who argued that “indifference is undoubtedly the greatest cause of non-voting.” To the present day, political scientists and journalists commonly point to high or low turnout rates as measures of voters’ preference strength.

We argue in this paper that, although caring about the outcome of the election is important, another motivation, the desire to fulfill one’s civic duty, is equally consequential. When asked how important it is for the good citizen to always vote in elections, among Americans the mean score is 6.2 on a scale from 1 to 7, just slightly lower than obeying the laws and not evading taxes (Dalton 2008, 30). In the 2000 Annenberg election study (Annenberg 2010), 71% of Americans in the post-election survey agreed or strongly agreed that they felt guilty when they failed to vote. Even among those who reported that they had not voted, nearly half said they felt guilty. Blais (2000, 95) reports that more than 90% of respondents in two Canadian provinces agree with the statement that “it is the duty of every citizen to vote.” The percentage is 80% in Britain (Clarke et al. 2004, 251). These responses are not induced by the survey question. In open-ended interviews about why they vote, the great majority of respondents volunteer that they feel a strong duty to appear at the polls (Blais 2000, chap. 5).

This popular near-consensus is often backed by both secular and religious authorities. For example, the U.S. Citizenship and Immigration Services tell prospective new American citizens in their Citizenship Education and Naturalization Information document that “the right to vote is a duty as well as a privilege” (Dalton 2008, 28). In 29 democratic countries around the world, voting is compulsory; that is, citizens have a legal obligation to vote. In an additional eight countries, the constitution declares that voting is a civic duty (Birch 2009, 14, 35-36).

Christian thought has often taken the same view. The Florida Baptist Witness asked in advance of the 2006 midterm year primary election, “How many of you will sin on Sept. 5th by failing to vote?” (Smith 2006). In the largest Christian denomination, the idea that voting is both a right and a duty has been expressed by church authorities for a century, and in a 1965 papal encyclical, it became an official church position (Cranny 1952; Pope Paul VI 1965, paragraph 75).

From a philosophical point of view, the challenge of justifying a duty to vote is that one vote almost never makes a difference. How can one have a duty to perform an act that if not performed, would have no negative consequences for anyone (Broad 1916)? Kant (1997 [1785]) famously

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1 We thank Alan Patten, Robert George, and Charles Beitz for helping us navigate the political theory literature on political obligation and the duty to vote. Larry Bartels gave us the benefit of a careful reading of a very early version. The Princeton Department of Politics supplied research funds, as did the Social Sciences and Humanities Research Council of Canada. We also benefited from dedicated and professional research assistance by Simon St-Vincent, Jason Roy, and Nicholas Carnes.
thought that such duties exist; and a great many philosophical thinkers have agreed, though not always for the reasons Kant gave. Ewing (1953, 18-19) applies Kantian logic to justify an ethical obligation to vote. Meehl (1977), writing in the *American Political Science Review*, argued that voting makes sense only as an ethical act, and Alvin Goldman (2002) has constructed a sophisticated philosophical case for the causal responsibility of individual voters even in large electorates when their votes cannot affect the outcome. Lomasky and Brennan (1993, 175-189) derive duty from an argument that one has a moral obligation to express oneself on consequential public issues.  

Rawls seems not to have explicitly endorsed a duty to vote, but in its absence, it is difficult to make sense of his strictures that democratic citizens are ethically obligated to “do what they can to hold government officials” to public reason (Rawls 2005, 445), and other similar remarks (Rawls 1971, 221-234).

Other ethical approaches to turnout are consequentialist. Thus Parfit (1984, 73-75) arrives at voter duty on act utilitarian considerations: A very small probability of determining the outcome of an election might be sufficient on expected utility grounds if one is assessing the total welfare of all citizens. This argument does not generate duty, however; no one should vote in elections whose outcome is a foregone conclusion. By contrast, Harsanyi (1980) argued that rule utilitarianism makes for a more powerful argument. He sets up a cooperative game in which morally motivated individuals coordinate on a strategy choice that would be best if they all chose it. The result is quite close to Kant’s “What if everyone did that?”

In sum, the ethical norm that citizens have a duty to vote is both widely endorsed and widely adopted by citizens. But as with any social norm, some disagree, others don't care, and still others are ambivalent. The resulting ethical diversity in the citizenry is central to thinking about voter turnout, but it has received remarkably little attention.

**Sense of Civic Duty and the Study of Turnout**

The authors of the first full-fledged American National Election Study (ANES) in 1952 indicate that in their planning they had identified six major psychological variables which they thought would be most relevant voters’ choices, one of which was a civic duty to vote (Campbell et al. 1954, 86). Yet in the end they decided to focus on party, issues, and candidates. Civic duty, like political efficacy and group influence, is discussed only in an Appendix, where it is shown to be a powerful predictor of turnout, as it has continued to be (Lewis-Beck et al. 2008, 92-94). In the canonical *American Voter*, the same authors took a similar approach, demonstrating the statistical power of civic duty but allocating it just a few paragraphs (Campbell et al. 1960, 156). The treatment of duty in the Columbia school tradition was similar (Berelson et al. 1954, 31-32). The ANES soon dropped the set of duty questions from its biennial surveys, apparently for technical reasons related to the quality of the scale.

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2 Lomasky and Brennan (2000) retracts this argument. Mayo (1959) also rejects Kantian reasoning about voting, concluding that we should leave the poor apoliticals alone and not preach at them.

3 We consider the literature that examines turnout at the individual level. There is a separate stream of research that deals with aggregate variations in turnout across countries or over time. (For a review see Blais 2006.)

4 Only one item from the scale was asked after 1960, and then only some of the time, before it, too, was abandoned after 1992. Riker and Ordeshook (1968, 36) say that the scale was dropped because it was too strongly correlated with sense of political efficacy and because it was contaminated by a positive response set. Indeed, the vast majority of
Thus a sense of duty was recognized from the very beginning of survey research as a potentially important motivation for turnout. A few scholars, such as Blais (2000, 112) and Campbell (2006), have continued the tradition and extended the findings. Usually, though, ethical considerations have been downplayed in the behavioral and social-psychological tradition that has dominated the empirical study of voting. “Duty” has been treated as another just attitude, or omitted entirely. Measuring it has been difficult, too. It fell out of favor.

The pattern is similar in rational choice theorizing. In an influential article, Riker and Ordeshook (1968) argue that, from the viewpoint of conventional rational choice theory, the calculus of voting requires that personal benefits exceed personal costs. Thus if \( P \) is the probability of influencing the outcome, \( B \) is the benefit to the voter of doing so, and \( C \) is the cost of voting, then the benefit \( R = BP - C \). They note that any one voter is almost never pivotal, so that \( P \) is effectively zero. Hence \( R < 0 \), and no one should vote on instrumental grounds. A similar argument is made by Downs (1957, 36-50 and 260-276).

Yet millions of people vote in major elections in large countries. Even in union certification elections, where the number of voters is sometimes small enough to count on one’s fingers and thus individuals have a real chance to determine an outcome important to them, Farber (2009) nevertheless finds that 80% of the voters ignore their probability of being pivotal. Recognizing the problem, Riker and Ordeshook, like Downs before them, argue that the voting calculus must be amended by the addition of \( D \), a sense of citizen duty. Their results (Riker and Ordeshook 1968, Table 3) show that \( D \) has a very substantial impact on turnout.

As in the empirical literature, this early emphasis on duty soon attenuated. Ethical concerns fit only obliquely into the rational choice tradition, where self-interest looms large. Moreover, interpreted strictly within conventional rational choice theory, appealing to civic duty quickly leads to the criticism that the model accounts for voting by appealing to a preference for turning out at the polls, hardly an impressive explanatory achievement (Barry 1978, 15-16).6 A few rational choice theorists have appealed to an altruistic or ethical motivation to account for turnout, but it appears as a deus ex machina, and the postulated motivations rarely correspond to what philosophers and ordinary people mean by duty.7 Most theorists have set it aside. In consequence, citizen duty remains mysterious in this tradition, and turnout appears irrational: This is “the paradox that ate rational choice theory” (Grofman 1993).

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respondents chose the duty side on three of the four questions, though they had to disagree to generate a high duty score.

5 To some degree, too, behavioral social science has inherited from its positivist roots a tendency toward a skeptical or dismissive treatment of ethical motivations (Ayer 1952, chap. 6).

6 Additional concerns arise because Riker and Ordeshook indicate that “duty” could also encompass satisfaction from affirming allegiance to the political system, a partisan preference, or one’s political efficacy. The concept soon becomes too imprecise to be fruitful.

7 Thus Feddersen and Sandroni (2006) build a group-utilitarian model in which ethically motivated citizens do not vote if enough others are doing so. As Harsanyi (1980) noted, that is not duty. Indeed, from the earliest duty scales in the ANES, that kind of thinking has been used to measure the opposite of duty. Similarly, Feddersen et al. (2009) carry out laboratory experiments in which voters receive a payoff for choosing alternatives that maximize group welfare. Thus their incentives are those of Parfit (1984), discussed earlier, although the experiments were deliberately designed to permit max-min and other ethical interpretations as well. This is ethically motivated behavior for certain, but not duty. Similar remarks apply to Fowler (2006).
Thus both political behavior and formal theory have too often been conducted without reference to relevant political theory. Both traditions typically ignore or soft-pedal ethical motivations—the most common factor that citizens cite in explaining their own turnout behavior. Yet however much in disrepute, duty creeps back into analysts’ work, sometimes under another name. In Verba et al. (1995), the term appears neither in the index nor in the authors’ model of voting (Table 12.7, page 258). They report that civic gratifications are by far the most widespread motivations for voting. Their first example of civic motivation is “my duty as a citizen” (Table 4.1, page 115). Similarly, Clarke et al.’s (2004) analysis of turnout in the 2004 British election includes a variable, “system benefits,” which is in fact citizen duty. In their composite model (Table 8.9, page 259), it has the largest effect.

In spite of its remarkable power to assert itself even in uncongenial explanatory frameworks, civic duty has received too little theoretical attention in the empirical and rational choice literatures on turnout. Only political theory has developed an ongoing, extensive intellectual conversation about it. The usual compartmentalization of knowledge has prevented discussion of how duty should be modeled statistically in the light of philosophical thought about political duty and obligation. Taking a step toward rectifying this longstanding oversight is the purpose of this paper.

Modeling Civic Duty to Vote

For many people the turnout decision is unaffected by ethical considerations. For them, turnout is just an expressive choice, like rooting for their home team in front of the television. Ordinary continuous preference of this kind, with no moral content, is conveniently axiomatized in the theory of choice (Fishburn 1970).

Modeling the behavior of those for whom voting is a duty requires something more. Almost by definition, fulfilling a duty is not like maximizing gratification. One accepts a duty regardless of its onerous or unpleasant aspects. Nowell-Smith’s (1954, 210) well known treatment parallels Kant: “A moral obligation is, like a natural obligation, something which obliges me to act in a way that, but for the obligation, I would not have acted.” Thus carried out as a duty, the process of voting does not provide a “consumption benefit” in the usual sense of the term. The morally motivated voter feels that there is no real choice if she wants to do what is right. An appropriate statistical model of turnout must take into account both citizens with this kind of ethical motivation and those without it.

One option is to assume that duty is just one more additively separable term in the voter’s utility function. This approach leads to appending a duty variable to a turnout equation, as in Riker and Ordeshook (1968). This simple framework, while sensible enough as a starting point, does not accurately embody the concept of duty. The ethical and non-ethical value of an act need not be additive. In particular, the non-ethical appeal of an act is disregarded when the act is done out of

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8 It is measured through agree/disagree statements that “it is every citizen’s duty to vote in an election” and that “democracy only works properly if most people vote.”
9 Our claim is that many voters follow Kant in adopting a deontological notion of ethical imperatives. Whether they are mistaken in their meta-ethical ideas makes no difference to our argument, which is meant to capture statistically the range of citizen thinking, not to resolve the disagreements.
duty. As we shall demonstrate, standard explanatory factors behave differently for those voters show up at the polls for reasons of duty. Thus a different modeling strategy is needed.

The morally motivated citizen will compare levels of duty, choosing the option with the highest value. Only if duty considerations are tied among the alternatives, or absent altogether, will she consider the non-ethical attractiveness of the alternatives, selecting the one with the highest value. When a decisionmaker chooses in this fashion, selecting higher-ranked alternatives on the first dimension, then proceeding to the second dimension only if the first dimension is tied, the decision rule (and the corresponding utility function) is called lexicographic.\(^\text{10}\)

For statistical purposes we need survey measures of both duty and preference strength. This is particularly challenging for duty. Almost everybody knows that this norm is part of public discourse and that the politically correct response is to acknowledge every citizen’s duty to vote. Some people may deliver the socially appropriate response without having actually internalized the norm. The challenge, then, is to make it easy for people to admit that they do not have a sense of duty. Our approach is write a new duty question, offering a non-duty option that is as attractive and socially appropriate as possible. The question wordings for our measures of duty and strength of preference are given in Appendix 1.

Our second need is for a statistical model that relates the unobservable underlying values of duty and preference strength to observables, and to do so in a way that preserves the lexicographic meaning of duty. Let \(\hat{d}_v\) be the citizen’s reported level of duty to vote. Let the corresponding true value be denoted \(d_v\), and set \(d_v = 1\) if duty is present, and 0 otherwise. Let \(w_v\) be the citizen’s expressive utility for voting net of the cost, and \(w_a\) be her value for abstaining. Set \(y_i = 1\) if the citizen chooses to vote, and 0 otherwise, and let \(x\) be a vector of covariates influencing expressive utilities and costs but not duty. Then we show in Appendix 2 that under an independence assumption about the probabilities, lexicographic utility for voting leads to the following:

\[
\Pr(y_i = 1 | \hat{d}_v, x) = 1 - \Pr(d_v = 0 | \hat{d}_v) \Pr(w_v < w_a | x)
\]

This equation says simply that the probability of voting is one minus the chance of having neither a sense of citizen duty nor a preference strong enough to overcome the costs of voting.

Now take both probabilities in the preceding equation to be probit specifications with linear arguments.\(^\text{11}\) That is, denoting by \(\Phi(\cdot)\) the standard normal (Gaussian) cumulative distribution function, suppose that \(\Pr(d_v = 1 | x) = \Phi(\alpha_d + \beta_d \hat{d}_v)\) and \(\Pr(w_v \geq w_a | x) = \Phi(\alpha_w + x\beta_a)\).

Then from Equation (3) and using the familiar property of the standard normal cdf that \(1 - \Phi(z) = \Phi(-z)\), we have:

\[
\Pr(y_i = 1 | x) = 1 - \left[1 - \Phi(\alpha_d + \beta_d \hat{d}_v)\right]\left[1 - \Phi(\alpha_w + x\beta_a)\right]
= 1 - \Phi(-\alpha_d - \beta_d \hat{d}_v - \alpha_w - x\beta_a)
\]

\(^\text{10}\)Lexicographic alphabetization of a set of words employs the same kind of rule. In the language of choice theory, this kind of choice rule is complete and transitive, but not continuous (see for example, Mas-Colell et al. 1995, 46-47).

\(^\text{11}\) Of course, logit analysis would work as well.
This is a nonlinear probit specification not previously used in voting studies, embodying an implicit interaction effect. As the respondent's reported duty \( \hat{d}_v \) rises, and if reported duty is positively related to actual probability of having citizen duty \((\beta_d > 0)\), then \( \Phi(-\alpha_d - \beta_d \hat{d}_v) \to \Phi(-\infty) = 0 \). Then the citizen will approach 100% probability of voting, and the marginal effect of the preference variables \( \mathbf{x} \) will be negligible. By contrast, if \( \hat{d}_w \) is small, the citizen has low citizen duty, and \( \Phi(-\alpha_d - \beta_d \hat{d}_w) \to 1 \). Then the equation will reduce to:

\[
\Pr(y_i = 1|\mathbf{x}) = 1 - \Phi(-\alpha_{d,w} - x\beta_a) = \Phi(\alpha_{d,w} + x\beta_a),
\]

which is a conventional probit model for turnout in which the duty variable has no effect and all other variables attain their full power. Thus without including an explicit interactive variable, the model incorporates the interaction effect one would expect when duty considerations influence turnout for some citizens, but are absent for others.

Note that this specification is only a bit different from the usual linear-in-variables probit models for turnout. In those conventional setups, both \( \hat{d}_v \) and \( \mathbf{x} \) would be entered linearly as explanatory factors, so that in the present notation we would have:

\[
\Pr(y_i = 1|\mathbf{x}) = \Phi(\alpha + \beta_d \hat{d}_v + x\beta_a) = 1 - \Phi(-\alpha - \beta_d \hat{d}_v - x\beta_a)
\]

In this conventional Equation (3), duty is just another additive variable, paralleling the approach of Riker and Ordeshook (1964). By contrast, the lexicographic approach to duty results in Equation (2), where duty and preference have their own individual effects, but they also interact. In that case, the larger duty becomes, the less the costs and non-ethical benefits of voting matter.

Some additional intuition into Equation (2) may be gained from the fact that \( 1 - \Phi(-z) \) is nearly linear in \( z \) for probabilities between 20% and 80%. Hence substitution into both probabilities in Equation (4) and multiplying out, we have that Equation (4) may be written approximately as:

\[
\Pr(y_i = 1|\mathbf{x}) \approx \delta + \gamma_d \hat{d}_v + x\gamma_w - (\hat{d}_v x)\gamma_{dw}
\]

for suitably defined scalar parameters \( \delta \) and \( \gamma_d \) and parameter vectors \( \gamma_w \) and \( \gamma_{dw} \). Using the linear approximation in the reverse direction, we may write:

\[
\Pr(y_i = 1|\mathbf{x}) \approx \Phi[\delta + \gamma_d \hat{d}_v + x\gamma_w - (\hat{d}_v x)\gamma_{dw}]
\]

In this approximation, the interactive effect of duty is displayed using a conventional interaction term. That is, the lexicographic approach to duty we have set out is very nearly equivalent to making turnout in a conventional probit equation depend on duty, other variables, plus interactions of duty with all the other variables. This contrasts with the conventional probit approach given in Equation (3), which contains no interaction term.
Equation (5) illustrates in an obvious way what the formal comparative statics of Equation (2) also demonstrate, namely that if duty is a moral imperative, then non-ethical considerations should matter less for those with a sense of duty. Conversely, for those to whom voting is not construed to be a moral obligation, the non-ethical factors will appear at full strength. Thus Knack (1994) finds that rain depresses the turnout of those with low sense of citizen duty, while the impact on those with high duty is statistically insignificant. This is just what our approach implies.

In this version of the paper, we begin by assessing the trivariate relationship between duty, preference strength, and turnout. In that case, Equation (5) reduces to a simple probit model with just three explanatory factors—duty, preference strength, and their interaction. Assessing that model is a necessary first step. We recognize, of course, that other covariates matter, and we perform various tests of their power. Models in the theoretically appealing nonlinear probit form of Equation (2) make a brief appearance here, too, and more extensive applications will appear in a subsequent draft.

**Duty and Preference in the 2008 American Presidential Election**

We begin the statistical evaluation of our argument with data from the U.S. presidential contest in 2008. YouGov/Polimetrix carried out a five-wave Internet panel survey of 1200 American citizens, beginning with a baseline survey in December of 2007, and ending with a post-election survey in November, 2008. Due to panel attrition and missing responses to individual survey items, the usable sample size for our analyses is typically about 900 respondents.

Like most Internet samples, this one is not representative of the U.S. population, and less educated people in particular are underrepresented. Furthermore, conditional on the covariates, the probability of selection of those who voted and those who did not is unequal, so that selection is endogenous. Hence weighting is required (Manski and McFadden 1981; for a readable overview, see Cameron and Trivedi 2005, 817-829). In all the results that follow, we use the YouGov weights, which are inversely proportional to the estimated probability of selection. Weighted mean turnout in the sample was 70%, not far above the 62% rate among eligible American citizens estimated from official vote counts and U.S. Census data (McDonald 2009).

The panel design is important, particularly to assess duty’s impact on turnout. Prior studies of duty have used cross-sections, with duty questions asked just before the election. That raises the concern that respondents intending to vote may tell interviewers that, of course, they are fulfilling their duty, while those intending to abstain may rationalize that no such duty exists (Blais 2000, 109, 112-113; Vavrek 2007). This might lead to inflated estimates of duty’s true effect.

In the case of the 2008 American panel, the duty question was first asked in January, 2008. Thus we have a measure of citizen duty taken ten months before the general election, and at least one

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12 A few weights in the American sample were very large, occasionally as much as 13 (with the mean weight being close to 1.0). With one exception discussed in the text, truncating all weights to be no larger than 3.0 had little effect on any of Tables 1-4 below, except that estimated turnout rose somewhat, typically raising the intercepts in the probit equations and somewhat reducing the estimated effect of duty and the interaction term. Each of the changes amounted to less than one standard error and thus was statistically indistinguishable from no change.
month before a meaningful primary or caucus occurred in all but a few small states. Many candidates in both parties were still in the race during January, Republicans were struggling to find an engaging candidate with broad backing, and Barack Obama was little known to most voters. Thus the problem of campaign intensity and candidate enthusiasm corrupting the duty measure is minimized. Moreover, the duty question was asked again in March after most primaries had occurred, and then again in October right before the general election. Thus we can compare our estimates with what we would have obtained if we had had only later measurements, where rationalization was more likely.

For our measure of preference, we use the respondent’s statement as to how much they cared about the outcome of the election. (See Appendix 1.) For this measure, we also have three measurements, one each in January, March, and October. However, a measure of preference must be taken close to the time of the vote, and so we use the October measurement.

We begin with Table 1, showing the joint distribution of duty in January and caring about the outcome in October. The 2008 American election was unusually interesting and drew attention from around the world. Its salience to the voters is reflected in the very high proportion in our sample (75%) who said they cared “a lot” about who wins the presidential election. The distribution is less skewed with respect to duty. Exactly 50% expressed a sense of duty (35% a strong sense), but the other 50% said that they construed voting as a matter of choice.

Table 1 also shows that duty and preference strength are rather strongly positively correlated with each other. The higher one’s sense of duty, the higher the propensity to care a lot about the outcome of the election. As a consequence, there are very few people with high levels of duty but weak preferences, and that limits certain inferences from this sample, a topic to which we return below.

***Table 1 about here***

Table 2 gives reported voter turnout in November as a function of duty in January and preference in October. The most striking feature of this table is that the effects of duty and preference are both dramatic. Either one alone is sufficient to raise the probability of voting from 16% to about 75%. Jointly, they raise the probability about fifteen points more, to more than 90%. These two factors are powerfully associated with turnout. Thus they are an attractive pair of items for estimating turnout, always the most challenging aspect of election forecasting.

***Table 2 about here***

The second notable feature of Table 2 is the interaction effect. Duty and preference do not affect turnout additively; their joint impact is only a bit larger than their separate effects. This is the classic sign of a negative interaction, and it is in accord with our understanding of duty: In the

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13 Only Iowa and Nevada (caucuses) plus New Hampshire and South Carolina (primaries) held January presidential nominating events for both political parties. Louisiana and Hawaii had caucuses for Republicans only.

14 To avoid too many near-empty cells, in both the U.S. and Canada crosstabs we have collapsed the bottom two categories of caring about the election and the middle two categories of duty. In the probit specifications below, however, we have kept the original categories, since they preserve more information and, as expected, provide a somewhat better fit.
presence of duty, preference matters less. This negative interaction is not a ceiling effect. It appears powerfully on a probit scale, too, as we now demonstrate.\(^{15}\)

Table 3 compares four specifications for the trivariate relationship of turnout, duty, and preference. The first is a conventional probit model for turnout based on preference strength only. The second adds duty with no interaction. The third is the nonlinear probit model of Equation (2), and the fourth is its close approximation, a linear probit model with an interaction term. These models allow tests of various counterfactuals, for example, that duty does not matter at all, or that it matters only linearly. All explanatory variables are scaled from 0 to 1 for ease of comparison.\(^ {16} \)

***Table 3 about here***

All these variables are strongly correlated, so that adding them to a model improves the fit only slightly. Nonetheless, the table shows that the third and fourth models, which take the concept of duty seriously, perform somewhat better. More importantly, they tell a different story from the first two columns, one in which Kantian duty matters. All the coefficients have exactly the sign expected, and their sizes are known with reasonable accuracy. In the interactive probit model, for example, the interaction term is the key test of our approach: It is statistically significant at the 10% level; the other two coefficients meet the 1% level.\(^ {17} \) The table also shows that the fit of the approximate probit model with an interaction from Equation (5) is statistically indistinguishable from that of the nonlinear probit model from Equation (2). If anything, the simpler interaction model fits a tiny bit better.\(^ {18} \) The nonlinear model is also more sensitive: Removing the 11 people with sampling weights greater than five reduces its standard error for duty and for the duty intercept each by a factor of three! Thus in what follows, we use the simpler and more flexible probit model with an interaction, saving more sophisticated analyses with Equation (2) for a later draft when we have more computational experience.

Table 4 reports various additional interactive probit specifications for the impact of duty and preference on the vote. For purposes of comparison, the first column repeats the estimate of Equation (5) from Table 3. The next two columns in Table 4 show what happens when duty is measured at a later time, or preference at an earlier time. Again the patterns of the coefficients remain the same, with the same negative interaction validated at conventional statistical levels. Measuring duty at election time inflates its coefficient somewhat, just as one would expect if rationalization is occurring. The estimated effect is too noisy for us to be sure how much inflation has occurred, but in any case it does illustrate the advantages of measuring duty more honestly at a

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\(^{15}\) We first verified the existence of a probit-scale interaction effect in a more robust way. If a sample is divided into subsamples with various levels of duty, and if preference and duty interact, then the probit coefficient of preference should fall across the subsamples as duty increases. The same is true for the effect of duty when the sample is subsetted by values of preference. In the cells with enough observations to give reliable estimates, both the American and Canadian samples met this condition. We also verified that when either duty or preference are zero, the effect of the other is linear, thus eliminating the hypothesis that their interaction effect is due to poor coding of their values.

\(^{16}\) The nonlinear probit estimates were carried out in STATA version 10, using the the weighted maximum likelihood routine \textit{ml} with the \textit{if} option. Convergence was unproblematic and very quick. Survey standard errors were estimated by the default, linearized Taylor series expansion. Jackknifed estimates were quite similar in the cases we tested.

\(^{17}\) We report conventional two-sided tests, although in the presence of our strong expectations about the signs of the coefficients, one-sided tests would be more appropriate. Thus nominal 10% significance is more sensibly regarded as 5% here.

\(^{18}\) The same is true in the Canadian data discussed below (results not shown).
quieter time outside the campaign. The opposite effect occurs when preference is measured nearly a year in advance: Its estimated impact declines, as expected. But in each of these three specifications, the important effect of duty and preference strength, along with their negative interaction, is clearly in evidence. 19

***Table 4 about here***

Finally, the right-most column in Table 4 gives a rough-and-ready specification test of Equation (5). Here we add to the probit equation a list of variables often thought to influence turnout. Thus we can test whether the coefficients of duty and preference are artificially inflated in the initial columns of Table 3. As additional covariates, we use the most powerful, classic correlates of turnout, namely interest, party identification, age, age-squared, and education (Berelson et al. 1954, chap. 2; Campbell et al. 1960, chap. 5; Wolfinger and Rosenstone 1980, chaps. 2 and 3; Achen and Sinnott 2010, chap. 12). Because the 2008 election involved the first candidate of African-American descent, we also include a control for self-identification as black.

As the table shows, our theoretical expectations are met. The coefficients do not change very much even with crucial covariates controlled; if anything, they average a bit stronger. The power of duty and preference, along with their interaction, cannot be dismissed as due to customary confounds being omitted from the specification. (And if unmeasured confounds are the real causes, then they have very large effects that voters do not mention and that researchers have not noticed during the last century.) Moreover, in this and in many other specifications we tried, the impact of being African-American is relatively small, statistically insignificant, and has a negative sign in an election in which black turnout rose substantially, which gives evidence that our key variables are capturing its effect. The other variables have coefficients in the correct direction and of sensible sizes, but for reasons discussed above, we eschew detailed interpretation of them.

Interpretation of the interaction term requires a bit of care. In linear models, single regression coefficients represent estimated marginal impacts. In models with interactions, marginal effects depend on both the coefficient of the variable itself and on the coefficient of the interaction term. Figure 1 uses the column 1 estimates from Table 4 to show the forecasted relationship of preference to turnout (in the format recommended by Brambor et al. 2006). A respondent for whom duty and preference are both absent, for example, is forecast by column 1 to have only a 6% chance of voting, while someone at the top level of both duty and preference is predicted to turn out at a 92% rate. 20 Of course, similar figures could be constructed for the effects of duty given various values of preference. The important thing to note is the much lower response of the turnout probability to changes in preference when duty is high, just as political theory suggests. Again, this is not a ceiling effect: The plot is similar on a probit scale.

***Figure 1 about here***

19 To validate the interactive effect, we tried a variety of other probit specifications, including those with quadratic terms or with the interaction term raised to a power different from unity. We also fit constant elasticity of substitution specifications. There was no substantial or consistent evidence in favor of any other specification, whereas Equation (5) always performed well.

20 The wide error bounds at the upper left reflect the paucity of high-duty, low-care observations—see Table 1. Note also that Table 2’s grouping of categories means that its some of its entries are not directly comparable to Figure 1.
In sum, the 2008 American presidential turnout data confirm the interpretation of duty and the implied functional form that we have set out. However, two concerns remain. The first is that turnout in this exceptional election is very high in all categories of Duty and Preference except those in which one or both is at its lowest level. In this sample, it is statistically impossible to be sure, for example, whether increases in Preference matter when Duty takes on non-zero values. It would be helpful to study an election with more turnout variation across all categories of Preference and Duty.

Second, as we have noted, Preference and Duty in the American sample are measured with single survey responses, inducing measurement error. It would be valuable to have an election survey with multiple measures of each, so that a better estimate of their impact could be obtained (Lord and Novick 1968, chap. 4). We now turn to a survey of the 2008 Canadian federal election, in which these two issues can be addressed.

**Duty and Preference in the 2008 Canadian Federal Election**

A Canadian federal election took place in October 2008, one month before the American election. This contest was much less exciting than the American version, leading to the re-election of a minority Conservative government and producing a turnout of 59% (of those registered).

We use an Internet panel survey conducted by YouGov Polimetrix in the last week of the October 2008 Canadian federal election, the December 2008 Quebec provincial election, and the May 2009 British Columbia (BC) election, among a sample of eligible electors in the provinces of British Columbia and Quebec. The initial samples in each province were about 2,000 respondents, and about 1,000 of these respondents were re-interviewed during the following provincial election, at which time a post-election interview for the federal election was also conducted.21

Compared to the American data examined in the previous section, the Canadian study offers three main advantages. First, the samples are larger. Second, the variance in the main independent variables (especially preference) is more substantial. Third, we have multiple indicators for both duty and preference. However, there are two disadvantages. First, we do not have indicators of duty prior to the election campaign. Second, because these were campaign surveys, respondents were asked in the days preceding the election whether they intended to vote, but there was no immediate post-election follow-up to ask about actual voting. Respondents were re-interviewed and asked about their federal turnout only at the time of the Quebec and British Columbia provincial elections, two and six months later respectively.

The Canadian survey includes a question on sense of civic duty identical to the American version. As many as 45% of Canadian respondents report a strong sense of duty, which is more than the percentage observed in the U.S. The Canadian preference question is very similar to the American

---

21 Reported turnout is 86% (88% indicated that they were certain or likely to vote in the campaign survey). This is much higher than the official turnout, but the percentage is similar to reported turnout in the 2008 Canadian Election Study (88%). Note that, contrary to the American case, the Canadian data are not weighted on the basis of reported turnout. (None of the Canadian weights exceed 3.) However, there is no correlation between intention to vote as expressed in the first wave and panel attrition in the second wave of the survey.
version, asking how much the person cares which party will form the government after the election. Slightly less than half the respondents indicate that they care a lot, substantially fewer than in the U.S., where three-fourths gave that response. As in the U.S., those with a stronger sense of duty are inclined to have stronger preferences. But because the distribution of preference is more widely dispersed in Canada, we have more people with high levels of duty but weak preferences, and that contributes to better estimates of their separate effects.  

Table 5 reports three probit estimates of the effect of duty and preference on reported turnout. In the multiple-indicator case, preference is measured through an index combining seven survey items. The preference index is the mean of these seven scaled scores, so that it, too, has a potential range of 0 to 1. Similarly, duty is tapped through six questions. All six indicators were rescaled from zero to one. The duty index is the mean of these indicators.

***Table 5 about here***

The findings reported in Table 4 confirm our expectations. The implied effects are quite large. Column 1, for instance, implies that the respondents in the lowest categories of Duty and Preference have a 29% chance of voting, while those at the top levels of both Duty and Preference are predicted to turn out at a 98% rate. Reflecting the higher reported turnout in the Canadian sample, these percentages are greater than those implied by the corresponding column 1 in Table 4 for the American data. However, the coefficients are similar, with the Canadian values being just a bit smaller and not statistically significantly different from their American counterparts.

In Table 5, the coefficients associated with preference, duty, and their interaction get stronger when we use multiple indicators of these concepts, as they should when measurement error is lessened. Furthermore, the inclusion of control variables hardly affects the results. Finally, and most importantly, the negative interaction effect emerges in all the specifications, always significant at the .10 level and in most cases at .05 or better.

Thus in both the U.S. and Canada, civic duty and strength of preference are powerful proximate predictors of the decision to vote or not to vote. Preferences matter much more for those with a

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22 We believe that these comparisons between the U.S. and Canada would survive weighting the two surveys comparably, but we cannot be certain. (See the previous footnote.) For that reason, we omit the equivalents of Tables 1 and 2 for the Canadian case, since the entries are not comparable.  
23 The first four are constructed on the basis of ratings given to each party and party leader on a scale of 0 to 10; the indicators correspond to the highest rating and the range in ratings (the difference between the highest and lowest scores). The last three consider how much the individual cares which party will form the government, who will win in her local constituency, and whether the governing party will be a majority or minority of the parliament. Each indicator was rescaled to a range of 0 to 1.  
24 The first three are the duty/choice questions, pertaining not only to federal but also to provincial and local elections. There are two agree/disagree statements about whether it is every citizen’s duty to vote in an election and whether the respondent would feel guilty if she did not vote, plus a question about how important it is for a good citizen to vote.  
25 The alphas for the two indices are respectively .77 and .88.  
26 We have also run separate probit regressions for Quebec and BC, using all combinations of reported turnout and pre-election vote intention, single and multiple indicators, and both the long and short specifications in Table 5. The smaller samples inflate standard errors. Nonetheless, in all eight such tests in each province, the estimated interaction coefficient is negative. It is statistically significant at .10 in six regressions out of eight in Quebec and five out of eight in BC.
weak sense of duty, as political theory suggests. Moreover, the surveys from the two countries nicely complement each other. The panel component of the American data helps mitigate potential rationalization, while the Canadian data demonstrate that with a larger sample and more reliable measures, the patterns are even clearer.

**Is Duty Causal?**

We have demonstrated that together, duty and preference are powerful predictors of turnout. Even if they had no causal power, their predictive success would make them valuable to survey practitioners. For forecasting purposes, causality is virtually irrelevant.

As we have seen, bias from omitted confounders seems very unlikely to be the cause of the apparent strength of these two variables. But other threats to causal interpretations remain. The least worrisome is the causal status of preference strength, which we regard as well established by extensive historical evidence in many countries. A more plausible threat to causal validity comes from rationalization of duty. As Kant (1997 [1785], 11) himself noted, “duty” can be a cover for self-interest, as when a merchant announces that he treats his customers well out of a sense of duty. For democratic citizens, the threat of hypocrisy about duty comes from a desire for social respectability. This concern is strengthened because our results thus far use reported rather than validated turnout, raising the concern that duty predicts only the former. We have used the panel design of the American study to argue that the rationalization effect, while real, is far from eliminating the strength of civic duty in predicting turnout, even when duty is measured nearly a year before the election. But additional evidence would be welcome, particularly with validated turnout.

As an additional check on the robustness of the findings, therefore, we first examined the 1956-1960 and 1972-1976 ANES panel studies. In those surveys, there are 436 individuals who voted in one of the two presidential years in the panel but not the other. For each election, we also know whether they agreed or disagree with the statement that “if a person doesn’t care how an election comes out he shouldn’t vote it.” Thus one can assess whether a sense of civic duty was more common in the year that the respondent voted, suggesting that “duty” might be another form of intention to vote. To the contrary, however, responses to the question were quite stable. Pro-duty responses were only four percentage points more likely in years when the respondent voted. This makes it difficult to claim that duty is being driven by turnout rather than vice-versa.

We also studied the 1980, 1984, and 1988 ANES surveys, the sole presidential years in which thoroughgoing vote validation was attempted for all respondents. (These surveys were done face to face with high response rates, thus avoiding many of the criticisms of Internet samples.) Both the ANES civic duty and preference questions are dichotomous, so that measurement error intrudes and estimates are noisy. Nonetheless, with validated vote as the dependent variable, duty, preference, and their interaction were correctly signed and conventionally significant even with year dummies, and nearly so with controls for age, education, interest, and partisanship. Interestingly, there is no relationship between civic duty (or preference, for that matter) and the propensity to over-report voting. Younger and better educated respondents are more prone to over-report, but not those who construe voting as a moral obligation.

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27 Interestingly, there is no relationship between civic duty (or preference, for that matter) and the propensity to over-report voting. Younger and better educated respondents are more prone to over-report, but not those who construe voting as a moral obligation.
sample using the dichotomous duty and preference variables with reported vote arrived at very similar findings.\textsuperscript{28}

Unimpeachable causal claims are impossible in studying the effect of duty on turnout. In our view, no conceivable lab or field experiment would change that: Manipulating internal moral states is too difficult.\textsuperscript{29} We suggest only that the combination of everyday political experience plus the evidence from qualitative interviews, from panel studies, and from the inability of standard powerful covariates to dent the statistical relationships—all that leaves the critic with a high mountain to climb.

\textbf{Conclusion}

We have shown that some people construe voting in ethical terms, and that those who do so are more likely to vote and also less inclined to pay attention to non-ethical considerations. Some citizens are Kantians when they approach elections, and being Kantian makes a difference. A statistical model of turnout that gets the political theory right does considerably better than our conventional specifications. At a minimum, analysts need to include measures of duty, preference strength, and their interaction in statistical models of turnout.

If we are right that due attention must be given to the diversity in ethical orientations, then the implications are more than purely statistical. We must also address the measurement of civic duty. We have proposed a new measure here, and we believe that the results are encouraging. But our statistical results show that the measure remains noisy. More research will be required to better validate it. In particular, we need to better distinguish those who pay lip service to a social norm from those who genuinely think in ethical terms, to sort out the ‘true’ and the ‘false’ Kantians. There is much else to do to improve our other measurements, too.

Even at this stage, however, we believe that these results suggest an important lesson for contemporary political science. Over the last half-century, political theory and empirical political science have come to occupy the “separate tables” that Gabriel Almond warned us of. Intense conversations about deliberative democracy on the one side, and about the informational limits and time constraints of ordinary citizens on the other, are conducted in near-total disregard of each other, for example. What we have tried to show here is that those subfield barriers have harmed our understanding of one of the longest-studied topics in empirical social science, namely the decision to vote. Managing scholars’ growing subfield specialization without losing the great strength of political science—our intellectual range—is an important topic for the discipline’s future.

\textsuperscript{28} These data cover seven elections: 1960, and then 1972 to 1992 inclusive. General interest in politics is not available for the 1952 and 1956 elections.

\textsuperscript{29} Manipulating citizens’ sense that the neighbors are watching is different (Gerber \textit{et al.} 2008).
Appendix 1

The question wording for duty:

Different people feel differently about voting. For some, voting is a DUTY. They feel that they should vote in every election however they feel about the candidates and parties.

For others, voting is a CHOICE. They feel free to vote or not to vote in an election depending on how they feel about the candidates and parties. [The order of these two statements was varied randomly.]

For you personally, voting is FIRST AND FOREMOST a:

1. Duty
2. Choice
9. Not sure

[If respondent chose “Duty”] How strongly do you feel personally that voting is a duty?

1. Very strongly
2. Somewhat strongly
3. Not very strongly

The idea is to offer respondents two “positive” views of voting, a “duty” and a “non duty” one, which corresponds to the widely shared assumption that people should not be forced to vote, that freedom and choice should be cherished in a democracy. It is, of course, possible for people to construe voting as both a choice and a duty, hence the “first and foremost” phrase. We left a “not sure” option, which was chosen by very few respondents.

We also believe that the forced choice format is most appropriate here. Most traditional duty questions are agree/disagree statements, the type of questions that have been shown to be plagued with acquiescence bias (Schuman and Presser 1996, chapter 8).

For preference strength, we ask respondents how much they personally care who wins:

How much do you personally care who wins the presidential election this fall? [U.S.]
How much do you personally care which party will form the government after the election? [Canada]

with four response categories: not at all, a little, somewhat, and a lot. This is quite similar to the ANES question that was used by Riker and Ordeshook (1968) as their indicator of the Benefit term. This kind of question has the virtue of simplicity, and it avoids the notorious incompatibilities among respondents in their use of thermometer ratings of candidates (Brady 1985).

30 The main difference is that the ANES question has only two response categories: care a good deal and don’t care very much.
Appendix 2

We suppose that a choice set \( A = \{v, a\} \) contains two alternatives \( v \) ("vote") and \( a \) ("abstain"). Each alternative has both a duty dimension whose values are denoted by \( d \) (which might be zero), and also a non—ethical dimension with values denoted by \( w \). Thus \( v = (d_v, w_v) \in \mathbb{R}^2 \) and similarly \( a = (d_a, w_a) \). Since deontological duty is inherently dichotomous (either present or absent), we set the value of fulfilling the duty to vote equal to one, and its absence to zero. Thus \( d_v \in \{0,1\} \). We further assume that there is no ethical duty to abstain, so that abstention carries no duty considerations: \( d_a = 0 \).

Then we suppose that the citizen votes if either (1) she feels a duty to vote, or (2) she perceives no duty considerations in either voting or abstaining, but the non—ethical value of voting is as good or better than that of abstaining. Formally, \( v \) is chosen over \( a \) if either of the following two conditions hold: \( v \geq a \) if (1) \( d_v > d_a \) or (2) \( d_v = d_a \) and \( w_v \geq w_a \). This is identical to the formal definition of lexicographic preferences for two—dimensional alternatives. In the present case, these conditions reduce to: \( v \geq a \) if (1) \( d_v = 1 \) or (2) \( d_v = 0 \) and \( w_v \geq w_a \).

We suppose that none of the values on the underlying dimensions, \( d_v, w_v, d_a, \) or \( w_a \), is directly observed. Instead, the analyst observes covariates imperfectly related to these underlying dimensions of preference. The covariates might include \( \hat{d}_v \), a respondent's estimate of whether she has a sense of duty to vote, as well as \( x \), a row vector of other variables affecting the respondent's non—ethical, expressive benefits of participating in the election. A citizen's stated sense of duty \( \hat{d}_v \) will be only partly accurate, since it may be contaminated by social desirability bias, by failures to understand what " duty" means, and by other response and coding errors. Hence it is related only imperfectly to the actual sense of duty experienced by the citizen on election day, and in what follows we model that relationship probabilistically.

From the analyst's point of view (conditional on the information set \( \{\hat{d}_v, x\} \)), the probability that a citizen votes on grounds of duty is \( \Pr(d_v > d_a | \hat{d}_v, x) = \Pr(d_v = 1 | \hat{d}_v, x) \). Similarly, the probability that the citizen votes motivated only by preference is \( \Pr(d_v = d_a \& w_v \geq w_a | \hat{d}_v, x) = \Pr(d_v = 0 \& w_v \geq w_a | \hat{d}_v, x) \). Otherwise the citizen abstains.

Now denote the choice made by citizen \( i \) by \( y_i \), a binary variable with value 1 if the citizen votes, and 0 otherwise. Assume that \( \hat{d}_v \) is observed and related only to the probability of having a sense of duty, while the covariates in \( x \) are observed and related only to the probability of having a preference. The probability that the citizen votes conditional on \( \hat{d}_v \) and \( x \) is then the conditional probability that she votes because of duty, plus the conditional probability that in spite of having no sense of duty, she votes because of her preference:

\[
\Pr(y_i = 1 | \hat{d}_v, x) = \Pr(d_v = 1 | \hat{d}_v) + \Pr(d_v = 0 \& w_v \geq w_a | \hat{d}_v, x)
\]  

The assumption that \( d_a = 0 \) may fail. Even those with a sense of citizen duty may not get to the polls on days when their child is in the hospital after an automobile accident. Then the duty of abstaining to care for an ill child supersedes the duty of voting. This point is theoretically important but not of practical importance, since seriously ethically conflicted individuals constitute a vanishingly small fraction of respondents.
Now assume initially that the probability that a citizen has a sense of duty conditional on $\hat{d}_v$ is independent of the probability conditional on $x$ that she has a preference in the election. Roughly speaking, this means that duty measure $\hat{d}_v$ and the list of covariates $x$ are sufficiently good that the remaining effects of unmeasured factors influencing the true sense of duty are unrelated to the remaining effects of unmeasured factors influencing preference:

$$\Pr(d_v = 0 \ & \ w_v \geq w_a | \hat{d}_v, x) = \Pr(d_v = 0 | \hat{d}_v) \ \Pr(w_v \geq w_a | x)$$ (7)

Then with obvious substitutions, Equation (6) may be written as:

$$\Pr(y_i = 1 | \hat{d}_v, x) = 1 - \Pr(d_v = 0 | \hat{d}_v)[1 - \Pr(w_v \geq w_a | x)]$$
$$= 1 - \Pr(d_v = 0 | \hat{d}_v) \Pr(w_v \leq w_a | x)$$ (8)

This is the equation used to derive the statistical specification discussed in the text.

Note finally that if the conditional independence assumption in Equation (7) is dropped, it can no longer be written as the product of two probabilities. Then the statistical model in the text, Equation (2) with the product of two probit terms, would be replaced by a bivariate standard normal cdf $\Phi(z_1, z_2, \rho)$, where the correlation parameter $\rho$ gives the correlation between the unobserved components of duty and preference. The model then becomes:

$$\Pr(y_i = 1 | \hat{d}_v, x) = 1 - \Phi(-\alpha_d - \beta_d \hat{d}_v, -\alpha_w - \beta_w x, \rho)$$ (9)

Now it is hard to see why $\rho$ should be substantial in turnout equations: It is the correlation of response errors about the citizen’s duty with the disturbance term in the equation relating covariates to expressive utility. There is no reason to think that they are related. Indeed, our exploration of this model in our American data led to tiny estimates of $\rho$, almost exactly zero. In our empirical results, therefore, we have adhered to the independence assumption.
Table 1: Duty and Preference Distribution in the 2008 American Sample (weighted percent of the total sample)

<table>
<thead>
<tr>
<th>Preference</th>
<th>Duty none</th>
<th>Duty weak, some</th>
<th>Duty strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>little, weak</td>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>somewhat</td>
<td>10</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>a lot</td>
<td>31</td>
<td>13</td>
<td>31</td>
</tr>
</tbody>
</table>

unweighted N = 978

Table 2: Percent Turnout by Duty and Preference in the 2008 U.S. Presidential Election (weighted)

<table>
<thead>
<tr>
<th>Preference</th>
<th>Duty none</th>
<th>Duty weak, some</th>
<th>Duty strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>little, weak</td>
<td>16</td>
<td>16</td>
<td>81</td>
</tr>
<tr>
<td>somewhat</td>
<td>49</td>
<td>91</td>
<td>90</td>
</tr>
<tr>
<td>a lot</td>
<td>73</td>
<td>84</td>
<td>92</td>
</tr>
</tbody>
</table>

unweighted N = 897

Table 3: Alternate Models of Turnout in the 2008 U.S. Presidential Election (weighted)

Coefficients with standard errors in parentheses

<table>
<thead>
<tr>
<th>Model</th>
<th>probit</th>
<th>probit</th>
<th>Eq. (2)</th>
<th>probit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference</td>
<td>2.26***</td>
<td>1.91***</td>
<td>2.16***</td>
<td>2.19***</td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
<td>(0.30)</td>
<td>(0.36)</td>
<td>(0.38)</td>
</tr>
<tr>
<td>Duty</td>
<td>.89***</td>
<td>3.14*</td>
<td>2.05***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.25)</td>
<td>(1.67)</td>
<td>(0.64)</td>
<td></td>
</tr>
<tr>
<td>PrefxDuty</td>
<td></td>
<td></td>
<td>-1.29*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.76)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-1.28***</td>
<td>-1.31***</td>
<td>-1.54***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.25)</td>
<td>(.24)</td>
<td>(.29)</td>
<td></td>
</tr>
<tr>
<td>From Eq. 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pref. Const.</td>
<td></td>
<td></td>
<td>-1.50***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(.30)</td>
<td></td>
</tr>
<tr>
<td>Duty Const.</td>
<td></td>
<td></td>
<td>-2.53</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.66)</td>
<td></td>
</tr>
<tr>
<td>log pseudo-likelihood</td>
<td>-412.8</td>
<td>-384.1</td>
<td>-382.16</td>
<td>-381.28</td>
</tr>
</tbody>
</table>

***significant at .01 **significant at .05 *significant at .10. Preference is measured in October and duty in January, both 2008. Unweighted N for all specifications is 897.
How much do you care who wins? (October response)

Fig 1. U.S. 2008 Turnout Forecasts and 95% Error Bounds

Upper forecast: Duty = 1. Lower forecast: Duty = 0

from Table 3 column 1
Table 4: Probit Models of Turnout in the 2008 U.S. Presidential Election (weighted)

<table>
<thead>
<tr>
<th></th>
<th>Pref Oct Duty Jan b/se</th>
<th>Pref Oct Duty Oct b/se</th>
<th>Pref Jan Duty Jan b/se</th>
<th>Pref &amp; Interest Oct Duty Jan; PID str Dec 07 b/se</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference</td>
<td>2.19***</td>
<td>2.18***</td>
<td>1.80***</td>
<td>1.95***</td>
</tr>
<tr>
<td></td>
<td>(0.38)</td>
<td>(0.38)</td>
<td>(0.34)</td>
<td>(0.43)</td>
</tr>
<tr>
<td>Duty</td>
<td>2.05***</td>
<td>3.71***</td>
<td>3.03***</td>
<td>2.41***</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
<td>(0.71)</td>
<td>(1.10)</td>
<td>(0.76)</td>
</tr>
<tr>
<td>PrefxDuty</td>
<td>-1.29*</td>
<td>-2.57***</td>
<td>-2.44**</td>
<td>-1.83**</td>
</tr>
<tr>
<td></td>
<td>(0.76)</td>
<td>(0.84)</td>
<td>(1.17)</td>
<td>(0.86)</td>
</tr>
<tr>
<td>Age</td>
<td>3.96**</td>
<td></td>
<td></td>
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<td></td>
<td>(1.85)</td>
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<td></td>
</tr>
<tr>
<td>Age²</td>
<td>-4.13*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>1.32***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.47)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>0.45*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PID strength</td>
<td>0.89***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.32)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>constant</td>
<td>-1.54***</td>
<td>-1.77***</td>
<td>-1.24***</td>
<td>-3.34**</td>
</tr>
<tr>
<td></td>
<td>(.29)</td>
<td>(.30)</td>
<td>(.26)</td>
<td>(0.53)</td>
</tr>
<tr>
<td>unweighted N</td>
<td>897</td>
<td>896</td>
<td>1049</td>
<td>839</td>
</tr>
</tbody>
</table>

***significant at .01  **significant at .05  *significant at .10
Table 5: Probit Models of Reported Turnout in the 2008 Canadian Election (B.C. and Quebec)
S.I. = single indicators of preference and duty. M.I. = multiple indicators.

<table>
<thead>
<tr>
<th></th>
<th>S.I. vote</th>
<th>S.I. vote</th>
<th>M.I. vote</th>
</tr>
</thead>
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<tr>
<td>Preference</td>
<td>1.90***</td>
<td>1.57***</td>
<td>2.28***</td>
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<td></td>
<td>(0.20)</td>
<td>(0.23)</td>
<td>(0.45)</td>
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<tr>
<td>Duty</td>
<td>1.54***</td>
<td>1.45***</td>
<td>2.61***</td>
</tr>
<tr>
<td></td>
<td>(0.30)</td>
<td>(0.29)</td>
<td>(0.46)</td>
</tr>
<tr>
<td>Pref x Duty</td>
<td>-.90**</td>
<td>-0.79**</td>
<td>-1.36*</td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td>(0.38)</td>
<td>(0.71)</td>
</tr>
<tr>
<td>Age</td>
<td>2.59*</td>
<td>1.81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.45)</td>
<td>(1.53)</td>
<td></td>
</tr>
<tr>
<td>Age²</td>
<td>-1.21</td>
<td>-0.49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.71)</td>
<td>(1.84)</td>
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<td>Education</td>
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<td>0.60***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.22)</td>
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</tr>
<tr>
<td>Interest</td>
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<td>0.13</td>
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</tr>
<tr>
<td></td>
<td>(0.21)</td>
<td>(0.22)</td>
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<tr>
<td>PID strength</td>
<td>0.18</td>
<td>0.02</td>
<td></td>
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<tr>
<td></td>
<td>(0.15)</td>
<td>(0.16)</td>
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<tr>
<td>Cut 1 /cons.</td>
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<td>-1.51***</td>
<td>-2.05***</td>
</tr>
<tr>
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<td>(.13)</td>
<td>(0.26)</td>
<td>(0.30)</td>
</tr>
</tbody>
</table>

**unweighted N** | 1978 | 1963 | 1944

***significant at .01 **significant at .05 *significant at .10
References


Berry, William D., Matt Golder, and Daniel Milton. 2009. The Importance of Fully Testing Conditional Theories Positing Interaction. Political Science Department, Florida State University: Manuscript.


