

Paper for presentation at the Elections, Public Opinion and Parties (EPOP) conference
at the University of Nottingham, September 2006.

How the effect of political knowledge on turnout differs in plurality electoral systems

Stephen D. Fisher, Laurence Lessard-Phillips, Sara Hobolt and John Curtice
Universities of Oxford and Strathclyde (Curtice), UK

Address for correspondence: stephen.fisher@sociology.ox.ac.uk

Work in Progress: Please do not cite or quote without permission

Abstract

There is reason to believe that when turnout is lower, it is voters who are less interested in and knowledgeable about politics who are particularly less likely to participate. A key question is therefore whether the use of proportional representation not only brings more voters to the polls, but is also more likely to bring less strongly motivated people to the ballot box. In addressing this question, we consider a number mechanisms through which the electoral system might change the relationship between political knowledge and turnout, including district competitiveness, mobilization efforts, satisfaction with democracy, feelings of efficacy, party polarization and the size of the party system. Although most of these factors have a role in explaining turnout variation in the Comparative Study of Electoral Systems (CSES) survey data, we find that those with low political knowledge are particularly unlikely to vote in plurality systems, and paradoxically this remains the case even after controlling for the effects of available intervening variables.

Introduction

Proportional Representation (PR) systems are associated with higher turnout than plurality electoral systems (Blais and Carty, 1990; Blais and Dobrzynska, 1998; Jackman, 1987; Jackman and Miller, 1995; Powell, 1986) and there are interesting substantive questions about how PR might produce higher turnout. For those who are concerned about the quality of representation and how this may be damaged by low turnout, such as Lijphart (1997), there are important issues about who is least likely to vote when turnout is lower. Since those who are most marginalized in society are least likely to vote (Lijphart, 1997; and evidence cited therein), it is sometimes assumed that as turnout has dropped in recent decades (Franklin, 2004; Blais, 2000), the problem is likely to be getting worse. The premise of this argument is that the problem of differential turnout is worse where turnout is lower. If this is right then the choice of a plurality electoral system over PR may not simply contribute to lower turnout, but also to greater differentials in turnout between different social groups that are detrimental to the quality of representation, and therefore the legitimacy of elections.

The consequences of low turnout and turnout change on the outcome of elections has been keenly debated (Lutz and Marsh, forthcoming), and it is unclear whether left-wing parties do in fact suffer when turnout is lower because the poorest and more marginalized groups become disproportionately less likely to vote (Fisher, forthcoming). Nonetheless there are interesting substantive questions about the relationship between levels of turnout and turnout differentials between social groups.

This paper focuses on the relationship between political knowledge and turnout, and how this may be affected by the electoral system, and specifically on whether plurality systems differ from others. There are a number of reasons why demands on political knowledge may be different in plurality systems, including the varying competitiveness of the district, levels of mobilization by politicians, the levels of satisfaction with democracy, and feelings of efficacy, the ideological similarity of political parties, and the number of parties there are to choose from. However, as we will discuss in the next section, for many of these factors there are arguments both for and against the view that they discourage turnout amongst low knowledge voters in plurality systems more than elsewhere.

While the focus of our discussion will be on political knowledge, in truth we do not and cannot distinguish between the roles of knowledge and interest, either theoretically or empirically. The theoretical arguments regarding the role of knowledge in turnout decisions have analogous and complementary counterparts for the role of interest in politics; the effects on and of each are likely to reinforce each other. Empirically, given the strong correlation between political interest and knowledge (MacDonald et al 1995, Bartle 2000, Smith 1989, Tilley et al 2004), and the absence of a measure of interest in politics in the data available to us, the measured effects of knowledge on turnout may in part reflect the effects of political interest. For these reasons we sometimes refer to role of political knowledge as if it were a proxy for interest in politics.

The next section reviews the reasons why the role of knowledge may be greater in plurality electoral systems, and reasons why the opposite may be the case. After discussing the data and methodology for the study, we test our hypotheses using CSES data and then conclude with a discussion of the implications of the results.

Theory and hypotheses

The key question that we examine in this paper is whether the strength of the relationship between knowledge and turnout is different in plurality systems. The mechanisms that result in lower turnout in plurality systems have a differential impact on the less knowledgeable/interested and as a result not only produce a lower level of turnout in general but a stronger relationship between turnout and knowledge/interest. Conversely, there are features of plurality systems that would seem to make voting easier and thereby improve turnout among those with less knowledge. We discuss the reasons why plurality systems might particularly reduce turnout amongst low knowledge voters before considering arguments to the contrary.

The case for a stronger relationship between knowledge and turnout in plurality systems

There are four principal reasons why political knowledge may have a stronger effect on turnout in plurality systems: there may be less incentive to vote, less mobilisation by parties, weaker feelings of efficacy and less satisfaction with democracy, and the parties may be less polarized. The first three of these could reasonably be expected as a result of the prevalence of uncompetitive districts in plurality systems, while the fourth could be the product of the tendency towards two-party systems in plurality systems. Most importantly, there are reasons to expect all of these mechanisms to reduce turnout most among people who are least knowledgeable and interested in politics. Political knowledge acts as a resource and makes the process of voting easier (Verba et al., 1995). So anything that makes the process of voting more complicated is likely to have an especially strong negative effect on the least knowledgeable. We expand on the hypothesized mechanisms in turn.

First, the chances of affecting the outcome are small in all mass elections, but in plurality systems there is noticeably less incentive to vote as it becomes clearer who is going to be elected, whereas under proportional representation it is never clear who will be allocated the final seat in any particular district. For people who have little knowledge or interest in politics, it is likely to be particularly disheartening to vote in an uncompetitive election.

Second, the direct incentives for electors to vote in marginal contests in plurality systems have corresponding implications for parties and candidates as to how much and where they put their mobilization efforts. Most candidates in plurality systems are either in safe seats or need to appeal to a relatively small section of swing voters in their districts to be elected, and in both cases there is little incentive to provide broad appeal (Carey and Shugart, 1995). Those who find voting more difficult might need more encouragement to vote, and efforts by politicians to contact people might have more impact on low knowledge people than among those who would otherwise be inclined to vote anyway. If this is true, and mobilization is lower in plurality systems, then it will be low knowledge people in those systems that will be much more likely to abstain.

Third, because of the predominance of safe districts, plurality systems might well produce lower levels of satisfaction with democracy and system efficacy - a term used to refer to a set of attitudes, orientations and evaluations towards and of the democratic system, including perceptions of fairness of the system of representation, thinking that elected representatives are in touch with what voters think, and belief in the ability of elections to make a difference to who governs and what government does (Bromley and Curtice, 2002). People who are satisfied with the way democracy works in their country and feel that voting makes a difference are more likely to vote. Other things being equal, electoral systems that are seen as fair and are thought to allow citizens to control government are likely to engender higher turnout (Birch, 2005). While some, including Blais and Carty (1990) argue that proportionality *per se* increases feelings of efficacy, others consider the supposed responsiveness of majoritarian systems to be an advantage. Curtice and Shively (2000, Tables 5 and 6) show that, after controlling for mobilization and other effects, electors are more likely to believe that politicians “know what people think” and report satisfaction with

democracy in countries with PR, suggesting that people appreciate the fairness of proportional systems. Meanwhile, system efficacy may also be boosted by mobilization. Curtice and Shively (2000, Table 5) show that those who report having had contact with an elected representative in the last year were more likely to believe that representatives knew what people think. So if plurality systems have lower levels of mobilization, this could contribute to lower system efficacy. All of these possible pathways can be expected to have a particular impact on people with low levels of political knowledge should they, as we might suppose, be more inclined to be cynical about the political system in general. So not only might we find that in countries with plurality systems efficacy and satisfaction with democracy are particularly low amongst people with low knowledge.

Fourth, plurality electoral systems are famously likely to favour two-party systems (Duverger, 1954), and within two-party systems, if the salient ideological space is approximately uni-dimensional, then the two parties will have incentives to move towards the median voter position (Downs, 1957). In so far as the major parties in plurality systems do converge, people will have less reason to bother voting. Moreover, it is likely that the most knowledgeable will be more likely to identify differences between the parties, and the least knowledgeable will therefore be the least likely to vote.

In addition to these substantive reasons there is one further, perhaps purely methodological, reason why the turnout gap between those of high and low knowledge might be greater in plurality systems, and that is because turnout is lower there. In his analysis of turnout in the US in comparative perspective, Powell (1986) shows that, in general, the turnout gaps on age, education, political efficacy, and interest in politics, are all very low in countries with compulsory voting, much higher in US and Switzerland (where there is very low turnout), and somewhere in between in the other countries in his study (Canada, Britain, Finland, West Germany, Italy and the Netherlands). Franklin (2004) argues more forcefully that turnout differentials are likely to be bigger when turnout is lower simply as a matter of mathematics (see also Electoral Commission 2006). When turnout is extremely high there simply isn't room for big turnout differentials because practically everyone has been mobilized. Since turnout is typically higher in more proportional systems (Blais and Carty, 1990; Blais and Dobrzynska, 1998; Jackman, 1987; Jackman and Miller, 1995; Powell, 1986), turnout differentials between people with high and low knowledge (or indeed between any other groups) will correspondingly be lower. But this argument depends on measuring the turnout differential between two groups as the difference in the proportions voting, when turnout differences could instead be gauged by calculating an odds ratio, for which there is no *a priori* expectation that differences between groups will be wider when turnout is lower. Conclusions about whether lower turnout leads to bigger differences between groups in society will depend heavily on how those differences are measured. While the implications of turnout differentials for the quality of representation might best be viewed with differences of proportions, the toughest tests of our causal hypotheses will need to be based on odds ratios.

The case for a weaker relationship between knowledge and turnout in plurality systems

There are, however, reasons why plurality systems might diminish the turnout gap between people with different levels of political knowledge: the most knowledgeable could be the most sensitive to district marginality in plurality systems; candidates in plurality systems may have more incentives to build up personal reputations and mobilize voters, thereby weakening the link between turnout and knowledge; and plurality systems are simpler and have fewer political parties, making choice easier for low knowledge people. Again, we will discuss the arguments in turn.

First, in a plurality system those with more political knowledge should be more likely to know whether their district is safe or marginal, and therefore the disincentive to vote in safe seats will be strongest for the most knowledgeable, weakening the association between knowledge and turnout in plurality systems. If we follow the logic of this argument, the most knowledgeable should realize the pointlessness of voting in all mass elections (Downs, 1957) and so turnout should be lower among the more knowledgeable everywhere. This is rarely if ever true, but this does not preclude the possibility that there are effects of strategic incentives at the margin, and that those with most knowledge are more sensitive to them. If this is right, then the relationship between turnout and knowledge could be weaker in plurality systems as those with high knowledge (while still voting at greater rates than those with low knowledge) become less inclined to vote in safe plurality seats.

Second, contrary to the view that mobilization efforts are likely to be low in plurality systems simply because of the prevalence of safe seats, Curtice and Shively (2000) have argued that the level of mobilization depends on the extent to which politicians running for election have incentives to build a positive reputation amongst the electorate in their district, as opposed to a reputation among the party members that control the nomination process. They hypothesize that with single member districts all voters in the district are important to the candidates; with multi-member districts with closed lists, it is more important for candidates to keep in with the party than be personally popular in the district; and with multi-member districts, with either open lists or STV, candidates have incentives to appeal to some but not all voters. Furthermore, they show that contact with elected representatives is greater in systems with single member districts (including some mixed systems) than closed list PR systems, while contact levels where there are open-list multimember districts lie somewhere in between.. To the extent that plurality systems do engender higher levels of mobilization, this could, as argued above, not only reduce the impact of political knowledge on turnout directly, but also because this mobilization may increase the level of system efficacy among the least knowledgeable in plurality systems.

Third, PR systems, and especially mixed electoral systems, are more complex than first-past-the-post. There are many features of non-plurality electoral systems that can help bewilder voters, including having to choose between parties each with long lists of candidates, maybe having to choose a candidate within a list, maybe having to choose whether or not to choose a candidate within a list, maybe having to rank the candidates within a list or across lists, maybe having more than one vote, maybe having more than one ballot paper with different sets of parties and candidates on

each. There is also the question of what happens to that vote, and figuring out the way that votes are counted in PR and mixed electoral systems can even confuse political scientists from time to time. Plurality rule is easy to understand and makes it easy to vote, so there is a case to say that PR, and more especially mixed electoral systems, are more demanding on political knowledge, and might be a greater discouragement for people with low political knowledge.

Fourth, more political knowledge is required to choose between a greater number of parties, and so the tendency for PR systems to have larger party systems (Lijphart 1994, Cox 1997) could strengthen the link from political knowledge to turnout in those systems (Jusko and Shively 2005). Controlling for characteristics of the system, turnout tends to be lower where there are more parties (Jackman 1987, Blais and Carty 1990, Jackman and Miller 1995, Brockington 2004). Three main explanations for this phenomenon have been provided: with more parties the competition for government is more opaque, which should be observable via lower levels of feelings of efficacy; similarly, Brockington (2004) argues that with there are more oversized (above minimum-winning) coalitions where there are more parties and this discourages electors from voting; and Cox (1999, p.404) argues that in a more crowded field, parties may switch their efforts from mobilization to persuasion. In so far as they are true, all three of these hypothesised mechanisms suggest that the gap between people with low and high knowledge will widen as the party system grows.

Complicating factors

There are other features of electoral systems that may influence the relationship between knowledge and turnout, other than proportionality. The opportunity to vote for a candidate is something that voters might like (Farrell and McAllister, forthcoming; Curtice and Shively, 2000), and perhaps particularly by those with low levels of political knowledge, since it may be easier to identify who you like than to choose between policy platforms. If so, the effect of knowledge on turnout should be weaker where there is an element of candidate selection.

Elections are also complicated by the structure of institutions. The direct election of an executive president, federalism and bicameralism are associated with lower turnout (Jackman, 1987; Jackman and Miller, 1995; Franklin, 1999). In unitary parliamentary systems, a general election can change the shape of both the legislature and executive, whereas with a separation of executive and legislature, federalism, or bicameralism, whoever is elected to any particular office will not have much power to change things (e.g. Franklin 1999). The complexity of the political institution, and the decisiveness and competitiveness of an election may make voting harder for people with less political knowledge; but alternatively, it may be mainly those with the most knowledge who understand how the institutional structure complicates things, and who thus are more likely to regard an election as unimportant. So these factors could influence the strength of the knowledge turnout relationship in either direction.

Our analysis of turnout will have to control for country level factors affecting turnout that are not functions of the electoral system. These include the level of welfare spending (Hobolt and Klemmensen, 2006), economic inequality (Anderson and Beramendi, 2005) the maturity of the democracy (Bielasiak, 2002; Fornos et al., 2004). Crepez (1990) argues that turnout differences can be largely explained by the

presence of postmaterialist parties and the degree of polarization in the party system, both of which boost turnout. But as Lane and Erson (1990) point out, the Crepaz analysis rests primarily on variation within countries, and not on the more substantial and more interesting stable variance between countries. Since our analysis is effectively cross-sectional and not longitudinal we shall concentrate primarily on factors that can more reliably explain cross-national variation rather than those that primarily influence change over time.

It has long been argued that younger voters are less likely to vote, albeit that the degree to which this is the case also depends on the different socialization experiences of each generation. We thus control for age group. In addition, we also control for further individual-level explanatory variables commonly found to be correlated with turnout, including educational attainment; gender; marital status; union membership, as a basis of political mobilization (Gray and Caul, 2000); political participation; and socio-economic status (Verba et al., 1995). Although we are aware that there are frequently differences between ethnic, religious and linguistic groups, the data on these characteristics in the CSES project are too sparse and difficult to analyze adequately for a comparative of this kind.

To summarize our expectations regarding our key research question: political knowledge might have either a stronger or weaker effect on turnout in plurality systems than elsewhere, depending on a few key intervening variables. If we find that turnout is lower in plurality systems because of uncompetitive districts, less mobilisation by parties, lower feelings of efficacy and satisfaction with the system of democracy, and smaller ideological differences between the parties, then it is likely that the effect of knowledge on turnout is stronger in plurality systems. However if we find that in plurality systems it is the most knowledgeable are the most sensitive to district marginality, mobilization is more common and choice is easier due to fewer political parties, then the effect of knowledge in plurality systems may well be weaker than elsewhere.

Our analysis will also consider the possibility that the effect of knowledge on turnout varies between countries because of the complexity of the political institutions, the competitiveness of the election, the decisiveness of the election and the average level of turnout at the national level. In order to test these hypotheses we need to model turnout, which allows us to consider some supplementary hypotheses. Turnout should be higher where the political institutions are more unified, i.e. in unicameral, non-federal parliamentary systems where the executive depends on the legislature; where there is compulsory voting; in proportional representation systems; in electoral systems where voters have a choice between candidates; in more competitive elections, and in more marginal districts within plurality systems; where there are fewer parties to choose from; where there are more politicians per person; among those who have been contacted by a political party; among those who feel efficacious and are satisfied with the operation of democracy in their country; among those who have a strong preference for their preferred party compared with the party they like least; among those who are more politically active; among older and married people; and among the more knowledgeable, educated and higher class people.

Data and Methods

We use data from the Comparative Study of Electoral Systems (CSES, www.cses.org), weighted to respect the sample, population and political weights provided by the data collectors, and where necessary the data is further weighted so that the proportions of voters and non-voters matches that observed at the election according to official figures. The data are then further weighted so that each election has the same effective sample size, and therefore provides an equal contribution to the analysis.

Details of the variables in the analysis are given in Appendix 1, but we discuss our key explanatory variable (political knowledge) here.

There are two broad approaches to measuring political knowledge. The first focuses on knowledge of party policy positions, which has the primary virtue of being relevant to turnout and vote choice. Gordon and Segura (1997) argue that the accuracy of placement of one's preferred party on a left-right 10 point scale, as judged by proximity to the mean placement of that party by other Eurobarometer respondents, is a relevant and comparable measure of political sophistication across countries. But there are problems with this approach: party placement on ideological scales is sensitive to self-placement and party preference (Evans and Andersen, 2004); in some instances, such as when there has been a dramatic shift in a party's policy platform like that of the British Labour party between 1992 and 1997, those who are most knowledgeable may correctly be out of line with the average placement of the party (Heath et al., 2002); and also the meaning of the terms left and right are different in different countries (e.g. Knutsen, 1995) and differ between people within countries. Together these problems cast serious doubt on the validity, reliability, and comparability of the party placement approach to measuring political knowledge.

The second approach is to directly measure knowledge of the political system. The CSES surveys each include three general knowledge questions for which respondents indicate whether they think a given statement about the political system in their country is true or false. There are two main problems with using these questions: they are not likely to be equally hard in different countries, and so they cannot be used to judge differences in knowledge between countries; and the knowledge they test, such as the number of MPs or the structure of government institutions, is of dubious relevance for turnout and vote choice decisions. However, these questions should be relatively good at providing a way of measuring an aspect of political knowledge within countries, and it is likely to be highly positively correlated with any more immediately relevant aspects of political knowledge. To emphasize that we are measuring relative political knowledge within countries, we standardize (i.e. rescale to zero mean and unit variance) the knowledge score (0, 1, 2 or 3 questions correct) for each survey. This implies that we cannot test hypotheses regarding the effect of electoral systems on the average level or variance of political knowledge across countries.

Case selection

Following Blais and Dobrzynska (1998) and others, we restrict our analysis to countries that scored either 1 or 2 on the Freedom House political rights scale

(www.freedomhouse.org). The research questions and theory apply to legislative elections and not presidential ones; we therefore exclude those surveys of presidential elections only. Although compulsory voting does not ensure complete turnout (Hirczy 1994, Franklin 1999, Electoral Commission 2006), we exclude Belgium and Australia because, with turnout over 90%, it will be difficult to measure turnout differentials accurately, and there are good reasons to expect the magnitude of any differential to depend on a different processes to those relevant in other countries. Surveys which did not include questions for either turnout or knowledge are excluded. Other than these restrictions we use as many cases as are available.

Most of our analyses are based both on the CSES module 1 data, collected between 1996 and 2000, and module 2 data collected between 2001 and 2006. However, because one of the key variables in our analysis (contact from elected representatives) is available only in the module 2 data our most complex model is based on the following module 2 surveys only: Brazil 2002, Canada 2004, Czech Republic 2002, Finland 2003, Britain 2005 (for which we have two surveys, a YouGov internet panel and a British Social Attitudes post-interview self-completion questionnaire), Germany 2002, Hungary 2002, Ireland 2002, Iceland 2003, Japan 2004, Korea 2004, Mexico 2003, the Netherlands 2002, Norway 2001, New Zealand 2002, the Philippines 2004, Poland 2001, Portugal 2002 and 2005, Spain 2004, Sweden 2002, Switzerland 2003, Taiwan 2001, and the USA 2004. Note that of these countries, Britain, Canada, the Philippines and the USA are the only countries that use a plurality electoral system.

Method

We employ two main approaches. The first is to analyse the set of individual survey-by-survey estimates of the effect of knowledge on turnout, an approach sometimes known as the two-step procedure (Jusko and Shivey, 2005). Since regression coefficients are estimates of unknown parameters, modelling these estimates as if they were observed without error is clearly problematic. It is no defence to point out that the vast majority of social research fails to account for measurement error on the dependent variable, but we note that Lewis and Linzer (2005) suggest that accounting for the estimation error in the regression coefficient may not make much difference to the inferences. The main purpose of analysing the election-by-election coefficients of knowledge on turnout is not to draw strong and final conclusions, but to provide the reader with some understanding of the variation and the main patterns. For a more rigorous test of interactions between political knowledge and system level factors on turnout, we then proceed to individual level analysis, and employ multilevel logistic regression models (Snijders and Bosker, 1999). These multilevel models do not take account of the weights discussed above, but the results have been replicated with weights using logistic regression with standard errors adjusted to take account of clustering by country.

Analysis

Table 1 shows that that not only is turnout lower in plurality systems, but the gap between those with high and low knowledge is greater. While those who are most knowledgeable have similar turnout rates regardless of system, those who have least knowledge are disproportionately less likely to vote in plurality systems.

Table 1
Turnout by standardized knowledge in plurality and non-plurality countries

Standardized Knowledge	% Voting	
	Non-Plurality	Plurality
Less than -1	54	38
-1 to 0	67	54
0 to 1	72	68
More than 1	81	78
Overall (N)	68 (58900)	60 (14390)

Although the relationship between knowledge and turnout is not always statistically significant (exceptions are Philippines 2004, Israel 1996, and Spain 1999 and 2000), it appears to be monotone increasing in all the CSES surveys. However, there is considerable variation between countries in the turnout gap for knowledge, as Figure 1 shows. Plurality countries tend to have relatively large turnout gaps between those of above and below average political knowledge, as witnessed by Britain 2005, Canada, and the USA appearing towards the top of Figure 1. However, Britain in 1997 was only average in this respect, while the Philippines stands out as a clear exception to the rule that the turnout gap according to knowledge is stronger in plurality countries.

Figure 1
Turnout gap between above and below average political knowledge against turnout

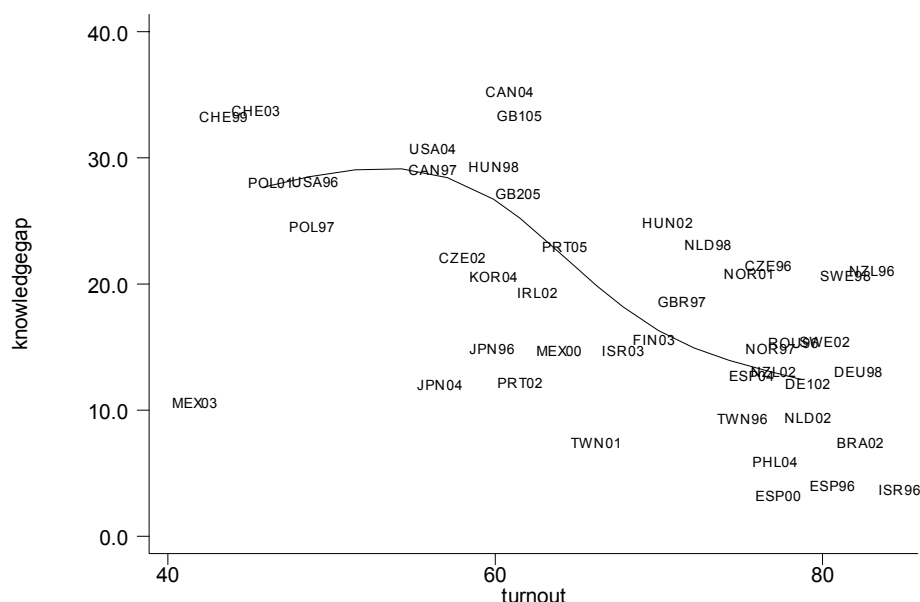


Figure 1 also shows that as turnout increases the percentage point gap between those with above and below average knowledge declines. However, if we calculate the effect of knowledge on the log odds of voting there ceases to be statistically significant evidence that the knowledge gap depends on the level of turnout. There is an insignificant correlation of -0.24 between turnout and the coefficient from a

logistic regression model of turnout on standardized political knowledge score across CSES surveys. Naturally, the odds ratio measure of association between knowledge and turnout is highly correlated (0.86) with the percentage point gap in turnout between people with above and below average levels of political knowledge. As a result of this the between country differences in the effect of knowledge on turnout are unlikely to depend heavily on whether we consider the difference in proportions or the odds ratio as a measure of association, but since the latter is not trivially correlated with the level of turnout it will be more substantively interesting and it is that which we concentrate on.

Regression analysis of the survey-by-survey log odds ratios measuring the effect of knowledge on turnout suggests that the difference between plurality and other systems does not reach statistical significance ($p=0.122$), unless the Philippines are excluded. However, this is not to say there is no substantive difference in practical terms. The turnout gap between people of above and below average political knowledge is 7 percentage points greater in plurality systems than elsewhere even after controlling for the level of education in the country, and this is statistically significant in an OLS regression.

A simple logistic regression at the individual level with random effects for each survey shows that the impact of standardized knowledge on turnout is statistically significantly stronger in plurality systems. This is not simply a function of lower turnout in plurality systems; the introduction of an interaction between knowledge and national-level turnout is not significant.

As Table 2 shows, the interaction between knowledge and plurality on turnout is robust to controlling for all the individual variables detailed in Appendix 1 that are available for both CSES modules, and all of the key intermediary variables through which plurality systems may change the way knowledge affects turnout, (except for contact by elected representatives, which is only available in module 2).

Our first hypothesized mechanism that might generate a difference in the way knowledge affects turnout between electoral systems is the competitiveness of districts. The association between district marginality and turnout is weak in Britain and Canada, and there is no relationship between the two in the USA. Only in Britain is there any sign that sensitivity to the marginality of the district depends on political knowledge, and in this case it is those who are most knowledgeable who respond most strongly to the intensity of competition, but the difference is small. The effect of knowledge on turnout in plurality countries is barely affected by the prevalence of safe seats.

Controlling for measures of efficacy also makes practically no difference to the way knowledge affects turnout. True, overall people in plurality systems are less likely to believe either that it matters who gets elected or that it matters whom you vote for (though this latter result is not robust to controls for other individual or institutional factors). Equally, more knowledgeable people are more likely to have positive feelings of efficacy, and those feelings are associated with higher turnout. However, there is no sign that plurality systems reduce efficacy disproportionately among low knowledge people.

Table 2
Multilevel logistic regression of turnout with electoral system and individual level variables from both CSES modules

	Coefficient	p-value
knowledge*plurality	0.12	0.00
knowledge	0.30	0.00
plurality	-0.21	0.00
mixed-member system	0.13	0.01
Does not make a difference who is in power (scale)	-0.10	0.00
Makes a difference who you vote for (scale)	0.21	0.00
Satisfied with democracy	0.30	0.00
Relative strength of preference for favourite over least preferred party	0.15	0.00
Relative strength of pref. not classifiable	0.48	0.00
Relative strength of pref. missing	-0.13	0.06
Political activism scale	0.35	0.00
Age 31 to 45	0.39	0.00
Age 46 to 60	0.91	0.00
Age 61 plus	1.22	0.00
Union member	0.22	0.00
Educational attainment score	0.11	0.00
Educational attainment missing	0.42	0.00
Female	0.03	0.25
Married	0.36	0.00
Widowed	0.12	0.11
Divorced	-0.23	0.00
Marital status missing	0.06	0.52
District margin of victory	-0.15	0.44
Effective number of parties on seats	0.21	0.00
Competitiveness of the election	0.02	0.00
Intercept	-2.12	0.00
Standard deviation of the random survey intercepts	0.48	0.00

Notes: 44 CSES module 1 and 2 surveys. N = 72773.

However, satisfaction with democracy is higher in plurality systems, but only before controlling for the difference between old and new democracies. Also the gap in satisfaction levels between those of high and low knowledge is roughly the same in plurality systems than it is elsewhere. It is, therefore, unsurprising that satisfaction with democracy does not help explain the greater knowledge gap in turnout in plurality systems.

When aggregated to the national level the relative strength of preference between parties can be considered to be a measure of the polarization of the party system. On average across CSES elections the preference gap between the favourite and least favourite party is 1.4 points lower in plurality systems, adding support to the view that party polarization is lower in plurality systems. It is also true, as hypothesized, that those with less knowledge are less likely to have strong preferences between the parties, since they are perhaps less likely to know about ideological differences between them. However, this effect of political knowledge on the relative strength of preference between parties is the same in plurality systems as it is elsewhere, so while party convergence in plurality systems helps to reduce turnout, it does not reduce it

disproportionately among less knowledgeable voters; controlling for the relative strength of preference between parties does not diminish the interaction between knowledge and turnout.

As expected, the effective number of political parties is greater in non-plurality systems, by roughly one effective party on either votes or seats. But there is little sign that this makes voting more complex and strengthens the link between turnout and knowledge. Indeed larger party systems typically witness higher turnout, but this finding is quite sensitive to which country/election level control variables are included. There is also no evidence that the effect of political knowledge on turnout depends on the complexity of the electoral system in use.

To consider the final mechanism through which we suspect the electoral system may influence turnout and the relationship between knowledge and turnout (contact from elected representatives) we must restrict the analysis to the second CSES module. Simply imposing this restriction reduces the plurality*knowledge term to borderline statistical significance in the model with all background individual and contextual variables. This seems to be primarily because the Philippines 2004 survey constitutes a greater proportion of the surveys from plurality countries, the remainder of which are represented in both modules. However, if the Philippines is excluded turnout increases with knowledge and this effect is stronger in countries with plurality systems. Given what we have so far observed it is not surprising to see that the Philippines does not fit the same mould as other plurality countries in this respect. It is not clear why; maybe it is something to do with the particularly intense and polarized presidential election that was being held at the same time. Since we have no measured variables that can account for the Filipino anomaly, we proceed with the analysis excluding this case. Table 3, therefore, excludes the Philippines but is otherwise based on the CSES module 2 surveys of legislative elections which include political knowledge and turnout questions as detailed above.

Contact from political parties clearly helps mobilizes people to vote. Reported passive contact from political parties varies dramatically, from 5% in Poland and Spain, to 56% in Ireland and 71% in Taiwan. Both SNTV, which is used for the election of 78% of the seats in Taiwan, and STV, used in Ireland, are well known for their tendency to encourage links between candidates and voters (Marsh, 2004). Leaving these cases aside, it is clear that people in plurality systems are more likely to have been contacted by a political party. Even though contact levels naturally tend to be higher where there are more parties, there is more contact from politicians in plurality countries than more proportional ones. This could be expected to weaken the effect of knowledge in plurality systems, but contact does not have a disproportionately strong effect on low knowledge people. Similarly, there is no evidence for the Cox (1999, p.404) hypothesis that the extent to which contact mobilizes people to vote depends on the party system size. However, high knowledge people are slightly more likely to report having been contacted by an elected representative, and so, if anything, the net effect of the pattern of mobilization by politicians is to strengthen the effect of knowledge on turnout in plurality relative to proportional systems.

Table 3
Multilevel logistic regression of turnout including contact from political parties

	Coefficient	p value
knowledge*plurality	0.16	0.01
knowledge	0.31	0.00
plurality	0.31	0.01
mixed-member system	0.21	0.00
contacted by a an elected politician	0.03	0.01
Does not make a difference who is in power	-0.11	0.00
Makes a difference who you vote for	0.21	0.00
satisfied with democracy	0.30	0.00
Relative strength of preference for favourite over least preferred party	0.15	0.00
Relative strength of pref. not classifiable	0.46	0.01
Relative strength of pref. missing	-0.12	0.23
Political activism scale	0.36	0.00
Age 31 to 45	0.30	0.00
Age 46 to 60	0.89	0.00
Age 61 plus	1.28	0.00
Union member	0.28	0.00
Educational attainment score	0.11	0.00
Educational attainment missing	0.31	0.06
Female	0.03	0.50
Married	0.30	0.00
Widowed	0.09	0.37
Divorced	-0.20	0.03
Marital status missing	0.21	0.38
White collar	0.13	0.03
Worker	-0.03	0.64
Farmer	-0.03	0.82
Self-employed	0.04	0.65
District margin of victory	-0.25	0.41
Effective number of parties on seats	0.14	0.00
Constant	-2.02	0.00
S.D. of the random survey intercepts	0.72	0.00

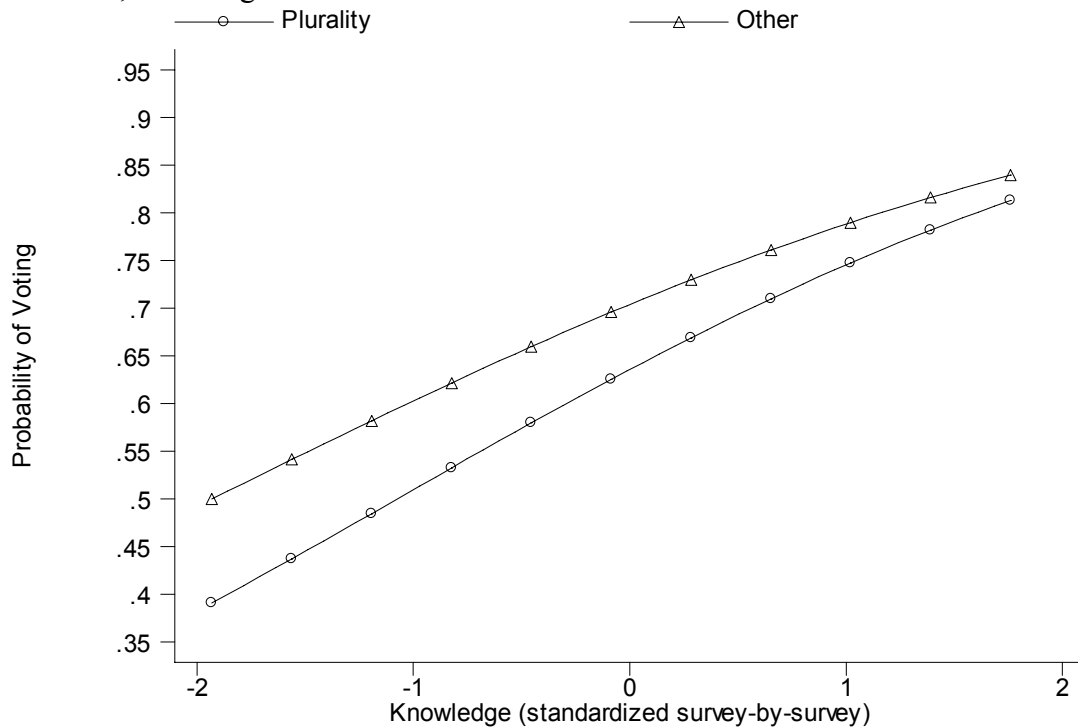
Notes: 24 CSES module 2 surveys as detailed in the case selection section above, excluding the Philippines. Baseline for SES is missing and not-classified. N = 39282.

It is also impossible to explain away the stronger effect of knowledge on turnout in plurality countries by introducing interaction terms between political institutions and knowledge. The effect of knowledge does not seem to be weaker where there is preference voting. There is no evidence to support the view that knowledge matters more for turnout where the institutions are more complex, or where the election is less decisive because of bicameralism, federalism, presidentialism or where there is less executive responsibility more generally. There is a significant interaction between knowledge and competitiveness, but this depends entirely on Switzerland, which has a strong relationship between knowledge and turnout and is coded as completely uncompetitive because of their ‘magic formula’. Also, while it appears that knowledge matters less where there is compulsory voting (Brazil, Mexico and Peru), it is doubtful whether this really does reflect the power of mandatory voting to bring

less knowledgeable voters to the polls when the main effect of compulsory voting is in the wrong direction and far from statistically significant. So even though we might expect people with low interest or knowledge in politics to be prompted to vote compulsory voting and competitive elections, we refrain from drawing positive substantive conclusions from these unstable findings. By contrast, the statistical significance of the plurality*knowledge interaction is robust to the exclusion of any single country (not just survey) from the analysis, provided of course that the Philippines have already been excluded.

All things considered, the stronger effect of political knowledge on turnout in plurality systems is remarkably consistent. Figure 2 shows the predicted probability of voting as a function of knowledge from a model similar to that in Table 3, but with weighted data and no survey random effects. Assuming other variables are at their mean, expected turnout for people at the 5th percentile of the knowledge distribution is expected to be 40% in plurality countries, but 50% elsewhere. This 10 point gap narrows to just a couple of points for those at the 95th percentile. This is a very similar to the situation in Table 1, and a mark of how relatively little our control variables have explained of the difference between plurality and other countries in the effect of knowledge on turnout; potential reasons for why are discussed in the conclusion.

Figure 2
 Predicted probabilities of voting according to knowledge in plurality and non-plurality countries, assuming the other variables in Table 3 are at their mean



Although we have not commented on the main effects of the individual level control variables, they are typically of the magnitude and direction expected. The magnitude, direction and statistical significance of the contextual variables are generally highly sensitive to which other contextual- and individual-level variables are included in the model, generally speaking the individual-level variables capture most of the marginal

effect of institutions, but there still appear to be partial effects of institutional features that depend on controlling for certain other institutional features. At this stage we are not clear which if any of these are robust to the sample of elections and model specification and so we refrain from drawing any conclusions. For instance, note that the main effect of plurality is negative in Table 2 but (unexpectedly) positive in Table 3 - and both are statistically significant. (This difference seems to be primarily the result of there being a smaller, to the point of statistical insignificance, turnout gap between plurality and non-plurality countries in those surveys that fielded the second module than in the first module. Note also that the introduction of weights between Table 3 and Figure 2 changes the main effect of plurality again to be weakly negative.) While the knowledge*plurality interaction is, after excluding the Philippines, consistently positive and robust to model specification, the same is not necessarily true of the main effects of the electoral system, or other contextual variables.

Conclusion

The effect of political knowledge on turnout is stronger in plurality systems, with the exception of the Philippines. However, this does not appear to be explicable in terms of the mechanisms that we hypothesized. First, district marginality, which is uniquely relevant in plurality systems, has only a weak effect on turnout, and in so far as the effect of marginality depends on knowledge, it is those who are most knowledgeable who are most responsive. This weakens the link between knowledge and voting in plurality systems, but it applies only in Britain and the magnitude of the effect is very weak. Second, satisfaction with democracy and feelings of efficacy do increase turnout, but they are not particularly low in plurality systems either amongst the electorate in general or amongst those with less knowledge in particular. Third, polarization of the party system, as measured by the average relative strength of preference for a person's favourite party over their least favourite, is lower in plurality systems, and those with more political knowledge are more likely to see a greater difference between the political parties. But since the relationship between knowledge and the relative strength of preference between parties is the same in plurality systems as elsewhere, the lower polarization between parties in plurality systems does not account for the stronger relationship between knowledge and turnout. Fourth, rather than making choice more complex and reducing turnout, there is little evidence that the number of political parties affects the strength of the knowledge-turnout association after controlling for individual-level factors. Finally, if the association between knowledge and turnout is measured with an odds ratio, rather than a difference in proportions, then there is no systematic link between the level of turnout in an election and the turnout gap between people of high and low levels of political knowledge.

Given that the stronger effect of knowledge in plurality systems cannot be accounted for by the measured variables in our analysis, what might the explanation for this result be? There are a number of possibilities. First, maybe the cultural factors that Britain, Canada and the US share are more important than their use of simple plurality rule. Second, in the macro analysis the best predictor of the role of knowledge is the level of education in a society. It could be that the variance in education and knowledge is greater where average educational attainment is higher, and knowledge standardized by survey is a more powerful predictor of turnout where knowledge is in

fact more variable. However, the variance in educational attainment is actually higher where the average number of schooling years is lower, and so there is little reason to believe that the variance in knowledge is higher in high education or plurality countries. Given the political information questions are different in different countries, there is surprisingly little difference between surveys in the variance of the resulting raw knowledge scores. Furthermore, as noted in Table 1, people with the highest levels of knowledge in plurality system still have lower levels of turnout than those elsewhere; the key difference is among the least knowledgeable, and this is not a pattern that we would expect simply from unaccounted for variance *per se*. A third possibility is that the causal relationship works in the opposite direction from the one that we have hypothesized. But this seems implausible; it would imply that people learn something more about politics in the process of voting, and that voters in plurality systems learn even more than those elsewhere. Finally, it may be our hypotheses are not mistaken but rather that some of the (most crucial) aspects have not been adequately measured.

So it seems then that we have no explanation for why there is a stronger relationship between knowledge and turnout in plurality countries. While this finding may be an accident, it seems to be sufficiently strong and robust to merit further investigation. It is also substantively important for the choice between electoral systems, since it concerns values of equality and citizen participation that are held by those with majoritarian or proportional visions of democracy alike. Inequality of representation with respect to political knowledge and lower participation by the least knowledgeable are problems with the democratic process in all countries, but they are especially bad in plurality systems.

References

- Agresti, A., 1990. *Categorical data analysis*, Wiley series in probability and mathematical statistics, Applied probability and statistics. Wiley, New York.
- Anderson, C., Beramendi, P., 2005. Economic inequality, redistribution, and political inequality. Paper presented at Maxwell School, Syracuse University, 6-7 May.
- Banks, A.S., 2005. Cross-national time-series data archive. Databank International: Binghamton, NY (CD ROM).
- Barro, R.J., Lee, J.-W., 2000. International data on educational attainment: updates and implications. CID Working Paper No. 42, available from <http://www.cid.harvard.edu/ciddata/ciddata.html>
- Bartle, J., 2000. Political awareness, opinion constraint and the stability of ideological positions. *Political Studies* 48, 467-84.
- Benoit, K., 2001. Evaluating Hungary's mixed-member electoral system. In Shugart, M.S., Wattenberg, M.P. (Eds), *Mixed-member electoral systems : the best of both worlds?* Oxford University Press, Oxford, pp. 477-493.
- Bielasiak, J., 2002. The institutionalization of electoral and party systems in postcommunist states. *Comparative Politics* 34 (2), 189-+.

Birch, S., 2005. Perceptions of electoral fairness and voter turnout. Paper presented to the Annual Meeting of the American Political Science Association.

Blais, A., 2000. To vote or not to vote? The merits and limits of rational choice theory. University of Pittsburgh Press, Pittsburgh, Pa.

Blais, A., Carty, R. K., 1990. Does proportional representation foster voter turnout. *European Journal of Political Research* 18 (2), 167-181.

Blais, A., Dobrzynska A., 1998. Turnout in electoral democracies. *European Journal of Political Research* 33 (2), 24.

Blais, A., Massicotte, L., 2002. Electoral systems. In LeDuc L., Niemi R.G., Norris P. (Eds.), *Comparing Democracies 2: Elections and Voting in Global Perspective*. Sage, London.

Brockington, D., 2004. The paradox of proportional representation: The effect of party systems and coalitions on individuals' electoral participation. *Political Studies* 52 (3), 469-490.

Bromley, C., Curtice J., 2002. Where have all the voters gone? *British Social Attitudes* (19), 141-167.

Carey, J. M., Shugart, M.S., 1995. Incentives to cultivate a personal vote: a rank ordering of electoral formulas. *Electoral Studies*, 14(4), 417-439.

Comparative Study of Electoral Systems, 2005. CSES Module 1: 1996-2001. Data and documentation. <http://www.cses.org/>.

Comparative Study of Electoral Systems, 2005. CSES Module 2: 2001-2006. Data and documentation. <http://www.cses.org/>.

Cox, G.W., 1997. *Making votes count : strategic coordination in the world's electoral systems, Political economy of institutions and decisions*. Cambridge University Press, Cambridge, U.K., New York.

Cox, G.W., 1999. Electoral rules and the calculus of mobilization. *Legislative Studies Quarterly* 24, 387-419

Cox, G.W., Rosenbluth, F., Thies, M., 1998. Mobilization, social networks and turnout: evidence from Japan. *World Politics* 50, 447-72.

Crepaz, M. M. L., 1990. The impact of party polarization and postmaterialism on voter turnout - a comparative-study of 16 industrial democracies. *European Journal of Political Research* 18 (2), 183-205.

Curtice, J., Shively, P., 2000. Who represents us best? One member or many? CREST working paper 79, www.crest.ox.ac.uk/papers/p79.pdf.

- Downs, A., 1957. *An economic theory of democracy*. Harper Row, New York.
- Duverger, M., 1954. *Political parties*. Methuen, London.
- Electoral Commission, 2006. *Compulsory voting around the world*. Electoral Commission, London UK.
- Evans, G., Andersen, R. 2004. Do issues decide? Partisan conditioning and perceptions of party issue positions across the electoral cycle. *British Elections & Parties Review* 14, 18-39.
- Farrell, D., McAllister, I., forthcoming. Voter satisfaction and electoral systems: Does preferential voting in candidate-centred systems make a difference? *European Journal of Political Research*.
- Fisher, S.D., 2001. Tactical voting and tactical non-voting. CREST working paper 93, <http://www.crest.ox.ac.uk/papers/p93.pdf>.
- Fisher, S.D., forthcoming. (Change in) turnout and (change in) the left share of the vote. *Electoral Studies*.
- Fornos, C.A., Power T.J., Garand J.C., 2004. Explaining voter turnout in Latin America, 1980 to 2000. *Comparative Political Studies* 37 (8), 909-940.
- Franklin, M. N. 1999. Electoral engineering and cross-national turnout differences: What role for compulsory voting? *British Journal of Political Science* 29, 205-216.
- Franklin, M.N., 2004. *Voter turnout and the dynamics of electoral competition in established democracies since 1945*. Cambridge University Press, Cambridge.
- Gordon, S. B., Segura, G. M., 1997. Cross-national variation in the political sophistication of individuals: Capability or choice? *Journal of Politics* 59 (1), 126-147.
- Gray, M., Caul., M., 2000. Declining voter turnout in advanced industrial democracies, 1950 to 1997 - The effects of declining group mobilization. *Comparative Political Studies* 33 (9), 1091-1122.
- Heath, A., Andersen, R., Sinnott, R., 2002. Do less informed voters make mistakes? Political knowledge and electoral choice. CREST working paper 97, <http://www.crest.ox.ac.uk/papers/p97.pdf>.
- Hirczy, W., 1994. The impact of mandatory voting laws on turnout - a quasi-experimental approach. *Electoral Studies* 13 (1), 64-76.
- Hobolt, S., Klemmensen, R., 2006. Welfare to Vote: The effect of government spending on turnout. Paper presented to the Midwest Political Science Association.
- Jackman, R. W., 1987. Political-institutions and voter turnout in the industrial democracies. *American Political Science Review* 81 (2), 405-423.

Jackman, R.W., Miller, R.A., 1995. Voter turnout in the industrial democracies during the 1980s. *Comparative Political Studies* 27 (4), 467-492.

Jusko, K.L., Shively, W.P., 2005. Applying a two-step strategy to the analysis of cross-national public opinion data. *Political Analysis* 13 (4), 327-344.

Kostadinova, T., 2003. Voter turnout dynamics in post-Communist Europe. *European Journal of Political Research* 42 (6), 741-759.

Knutsen, O., 1995. Value orientations, political conflicts and left-right identification - A comparative study. *European Journal of Political Research* 28 (1), 63-93.

Lane, J. E., Ersson, S., 1990. Macro and micro understanding in political science - What explains electoral participation. *European Journal of Political Research* 18 (4), 457-465.

Lewis, J.B., Linzer, D.A., 2005. Estimating regression models in which the dependent variable is based on estimates. *Political Analysis* 13(4), 345-364.

Lijphart, A., 1994. *Electoral systems and party systems: a study of twenty-seven democracies*. Oxford, Oxford University Press.

Lijphart, A., 1999. *Patterns of democracy: Government forms and performance in thirty-six countries*. New Haven, CT, Yale University Press.

Lijphart, A., 1997. Unequal participation: Democracy's unresolved dilemma. *American Political Science Review* 91, 1-14.

Lutz, G., Marsh, M., forthcoming. Introduction: Consequences of low turnout. *Electoral Studies*.

MacDonald, S.E., Rabinowitz, G., Listhaug, O., 1995. Political sophistication and models of issue voting. *British Journal of Political Science* 25, 453-483

Marsh, M., 2004. None of that post-modern stuff round here: Grassroots campaigning in the 2002 Irish general election. *British Elections and Parties Review* 14, 245-267.

Norris, P., 2004. *Electoral engineering: Voting rules and political behavior*. Cambridge University Press, New York.

Plutzer, E., 2002. Becoming a habitual voter: Inertia, resources, and growth in young adulthood. *American Political Science Review* 96 (1), 16.

Powell, G.B., 1980. Voting turnout in thirty democracies: Partisan, legal, and socioeconomic influences. In: Rose, R (Ed.), *Electoral participation: A comparative analysis*. Sage, London.

Powell, G.B., 1986. American-voter turnout in comparative perspective. *American Political Science Review* 80 (1), 17-43.

- Radcliff, B., 1992. The welfare state, turnout, and the economy: A comparative analysis. *American Political Science Review* 86(2), 444-454.
- Rosenstone, S.J., Hansen, J.M., 1993. *Mobilization, participation, and democracy in America*. Macmillan, New York.
- Shugart, M.S., Wattenberg, M.P., 2001. *Mixed-member electoral systems : the best of both worlds?* Oxford University Press, Oxford.
- Smith, E., 1989. *The unchanging American voter*. University of California Press, Berkeley, CA.
- Snijders, T.A.B., Bosker, R.J., 1999. *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Sage, London.
- Tilley, J., Sturgis, P., Allum, N., 2004. *Political information and motivation: A case of reciprocal causality?* Paper presented at Nuffield College, Oxford.
- Verba, S., Schlozman, K.L., Brady, H. E., 1995. *Voice and equality: Civic voluntarism in American politics*. Cambridge, Mass., Harvard University Press.

Appendix 1 – Variables

Substantive Individual level variables of interest

Turnout: A2028 and B3004_1 or _2 were recoded to a dummy variable with 1 for those who said they voted, and those who said don't know, refused or did not vote were coded as zero. Only cases where the question appears not to have been asked are treated as missing.

Political knowledge: (A2023,4,5 and B3047_1,2,3). We standardize (i.e. rescale to zero mean and unit variance) the knowledge score (0, 1, 2 or 3 questions correct) for each survey separately.

Contact by politicians: (B3003) We use positive responses to the question from the CSES module 2 question “During the last campaign did a candidate or anyone from a political party contact you to persuade you to vote for them?” to indicate contact.

Satisfaction with the way democracy works in the country: (A3001 and B3012) This is coded as a binary variable: very or fairly satisfied versus others..

Perceptions of Efficacy: There are two questions that measure perceptions of efficacy. The first regards whether who is in power makes a difference (A3028, B3013) “Some people say it makes a difference who is in power. Others say that it does not make a difference who is in power. Using the scale on this card, (where ONE means that it makes a difference who is in power and FIVE means that it does not make a difference who is in power), where would you place yourself?”. Those who said don't know, refused or missing appear to vote at roughly the same rate as those who placed themselves at four on the scale, and so were recoded to this point. The second concerns whether voting makes a difference (A3029, B3014) “Some people say that no matter who people vote for, it won't make any difference to what happens. Others say that who people vote for can make a difference to what happens. Using the scale on this card, (where ONE means that voting won't make a difference to what happens and FIVE means that voting can make a difference), where would you place yourself?”. Those who said don't know, refused or missing appear to vote at roughly the same rate as those who placed themselves at one on the scale, and so were recoded to this point. In addition, this question is missing for the Netherlands in 2002, and so we impute these cases at the mean (3.7).

There are various other questions on the fairness of elections and whether political parties care or know what people think that would be good to use but were only asked in the first module and so we do not include this in our analysis.

Background individual level control variables

Political Participation: Those who participate in political activities that require more effort than voting, are highly likely to vote whether or not they are contacted by a political party, and any such contact is unlikely to make much difference. We therefore construct a simple additive scale from the module 2 questions B3042_1, 2, and 3, and B3001_1 and _2, to indicate the number (none to five) of the following activities that the respondent participated in over the past five years: contacting a

politician or government official either in person, or in writing, or some other way; taking part in a protest, march or demonstration; and working together with people who shared the same concern; talked to other people to persuade them to vote for a particular party or candidate; and showed support for a particular party or candidate by, for example, attending a meeting, putting up a poster, or in some other way. Our hypothesis is, therefore, that the effect of passive contact with parties will be lower for those who are more politically active.

Party preference gap: This measures the difference between the strength of feeling for the favourite party (i.e. the one with the best score of those rated) and that for the least favourite (i.e. the one with the worst score of those rated). The ratings are based on question A3020/B3037 which uses a scale from 0 meaning strongly dislike to 10 meaning strongly like. Those who see a big difference between the parties have more reason to vote, and this operationalization has been shown to work well for Britain (Fisher 2001).

Educational attainment: (A2003, B2003) This is coded as a score from 0 (None) to 7 (University graduate), with a separate dummy variable for those who were coded as other, don't know or missing.

Gender: (A2002, B2002) Women coded 1 and men 0

Age: (A2001, B2001) Grouped into four categories, 30 or younger, 31-45, 46-60, and 60+.

Marital Status: (A2004, B2004)

Union Membership of respondent and others in the household: (A2005, B2005, A2006, B2006) A dummy variable for union member was created, with all others coded 0.

Socio economic status (B2012) INSERT CODING Available for module 2 only.

Contextual Variables

Electoral System: The Japan 2004 survey was based on an election for the upper house (of councillors), otherwise the coding of electoral systems and ratio of MPs to electors, is based on elections to the lower house. All the systems in our sample of CSES surveys were either plurality, PR or mixed-member electoral systems.

Plurality: The plurality systems in the CSES sample are all single-member simple plurality and they are Britain, Canada, and the US. The Philippines is also coded as plurality despite having 23 PR seats, since the overwhelming majority (212) of seats are single member districts with simple plurality rule.

Mixed-member systems, MMP, and MMM: Following Shugart and Wattenberg (2001) we divide mixed electoral systems into those that are more proportional and those that are more majoritarian. The Mixed-Member Majoritarian (MMM) countries are Hungary, Japan, Mexico, Taiwan, and Korea. The Mixed-member Proportional (MMP) countries are Germany and New Zealand. All of these countries are coded also coded as *mixed*. Hungary is sometimes considered to be halfway between MMP and MMM (Benoit 2001), but we code it as MMM since it definitely is not as

proportion as Germany and New Zealand, for which we explore the possibility that these systems behave roughly as straight PR systems do.

PR: After excluding elections which were solely for a President, and countries with extremely high turnout as a result of compulsory voting, there were no majoritarian systems in the CSES sample. PR countries are all countries which are neither mixed nor plurality.

Single-Member Districts: Whether or not there are single-member districts somewhere in the system, whether single-member simple plurality or mixed; these include Canada, Britain, Germany, Hungary, Japan (lower house), South Korea, Mexico, New Zealand, the Philippines, and the US.

Preference Voting: We define this to be any instance where voters have the opportunity to vote for a candidate of their choosing rather than simply a party list. All plurality and mixed member systems have preferential voting, at least in part, and PR countries with preference voting are Brazil, Czech Republic, Denmark, Finland, Ireland, Netherlands, Peru, Poland, Slovenia, Sweden and Switzerland (Blais and Massicotte, 2002).

Institutional Structure: We code the institutional characteristics with dummy variables as follows.

Federalism: The federal states in our sample are Brazil, Canada, Germany, Mexico, Spain, Switzerland, and the US.

Bicameralism: We use the Lijphart (1999) four point scale: 1, Unicameralism; 2, Weak bicameralism with asymmetrical and congruent chambers; 3, Medium bicameralism with asymmetric and incongruent chambers; and 4, Strong bicameralism with symmetric and incongruent chambers including Germany, Switzerland and the US.

Presidentialism: The CSES countries with presidential systems according to Lijphart's (1999) definition of a popularly elected head of government with a non-collegial executive are Brazil, Israel, Mexico, Peru, the Philippines, and the US.

Executive Responsiveness: Following Franklin (2004) we use a modified version of the Banks (2005) 'parliamentary responsibility' variable (s21f7), which measures the extent to which a premier must depend on the support of a majority in the lower house of a legislature in order to remain in office. For the years covered by the CSES, Brazil, Mexico, Peru, the Philippines, and the US are coded as 0 because of the complete separation of the (Presidential) executive from the legislature; Switzerland is also coded as 0 because of the magic formula that has kept the party composition of the Federal Council constant from 1954 to 2003; Bulgaria, Korea, Poland, and Romania, are coded as 1 to indicate that effective responsibility is limited; and the remainder of our cases are coded as 2 indicating the premier's constitutional and effective dependency upon a legislative majority for continuation in office. Note that the Banks data goes up to 2003 only and we therefore used the 2003 code for elections since then. Also Banks codes Germany as if there were no premier in 2002, which we take to be a mistake and recode to 2.

Presidential elections: There were presidential elections in conjunction with parliamentary elections for Brazil, Israel, Mexico (2000 but not 2003), Peru, Philippines, and the USA.

Compulsory voting: Dummy variable coded positively for Brazil, Mexico, and Peru.

Margin of victory in the district: This is the difference in the proportion (not percentage) of the district vote between the district winner and the district runner-up in single-member plurality systems (calculated from A/B4004_A to F), and zero elsewhere. This is not available for the Philippines and so is imputed at the mean of 0.2.

Log ratio of seats to electors: Following Curtice and Shively (2000) we consider the natural log of the ratio of elected politicians at the national level.

National competitiveness: To measure the ‘competitiveness of the race’ in each election, we include an indicator of the win margin of the executive (governing party/parties). The win margin is operationalised as the majority (or minority) of seats controlled by the governing party in the legislature.¹ The smaller the win margin of the governing coalition, the more competitive the election. Most studies measure ‘closeness of the race’ as the difference in vote shares obtained by the two strongest parties (see Blais and Dobrzynska 1998; Kostadinova 2003). Yet, we believe that this measurement suffers from two problems. First, vote shares will not adequately capture ‘competitiveness’ in highly disproportionate systems. For example, the British Labour party were only 3 percentage points ahead of the Conservatives in the share of the vote in 2005, but thanks to the bias in the electoral system they secured an overall majority that is about average for the post-war period in the UK, with 55% of the seats compared with 31% for the Conservatives. Second, the difference between the two largest parties may be an appropriate measure in two-party systems. But given that most countries in our sample have multi-party systems with coalition governments, we are more interested in examining the difference between the two government alternatives. Hence, we measure the difference between the seat share for the governing coalition and 50% to arrive at what we believe is a more appropriate measure of ‘closeness of the race’. However in rare cases, our measure will fail to capture the true competitiveness of an election, if for example a competitive election campaign results in a very large ‘rainbow coalition’ (as was the case in the last German election). But to the best of our knowledge, cases of this nature do not occur in our sample of elections.

Complexity: We consider two summary composite measures. The first of the complexity of the political system and the election, which is given by the following combination of the (mainly dummy) variables described above: $\frac{1}{4}$ (bicameralism index) + federalism + presidentialism + mixed + transferable vote + $\frac{1}{2}$ (for PR systems with preferential voting) + plurality. The resulting score theoretically runs from 0 to 5; in practice only Portugal scores a perfect zero, while Brazil, Mexico and the US are joint top with a score of 3.75. The second is of the complexity of the

¹ This is calculated using the following formula: 50- % of seats controlled by parties in government. The measure thus ranges from -50 to 50. This measure presents us with a problem in the cases where the executive is appointed independently of the legislature. In the US, we use the difference between the winning party and the losing party. In Taiwan, we calculate the difference between the parties supporting the president and those in opposition. Finally, in Switzerland, we count all parties in the national executive, *Bundesrat*, as governing parties.

electoral system alone and is given by mixed + transferable vote + preferential voting within PR systems.

Party system size: We consider both the effective number of parties on votes (enpv) and seats (enps). Note that Brazil is a major outlier with 8.5 effective parties on seats and 9.5 on votes; more than two more than the next largest party system (Israel in 2003). We therefore consider whether results related to the party system size are sensitive to the inclusion of this case.

Welfare spending: The measure of welfare spending is constructed by calculating government spending on health, education and other social services as a percentage of GDP. Data from the International Monetary Fund's International Financial Statistics (IMF/IFS) are employed in order to have a valid cross-national measure

Education level: Average educational attainment of the total population aged 25 and over, Imputed +/- 3 years from time of data collection (Barro and Lee 2000)

Tax revenue as % of GDP: International Monetary Fund's International Financial Statistics (<http://ifs.apdi.net/imf/about.asp>). Note this variable is missing for the Philippines.

Inequality: Gini coefficient from the Luxembourg Income Study (www.lisproject.org) imputed +/- 3 years from time of data collection.