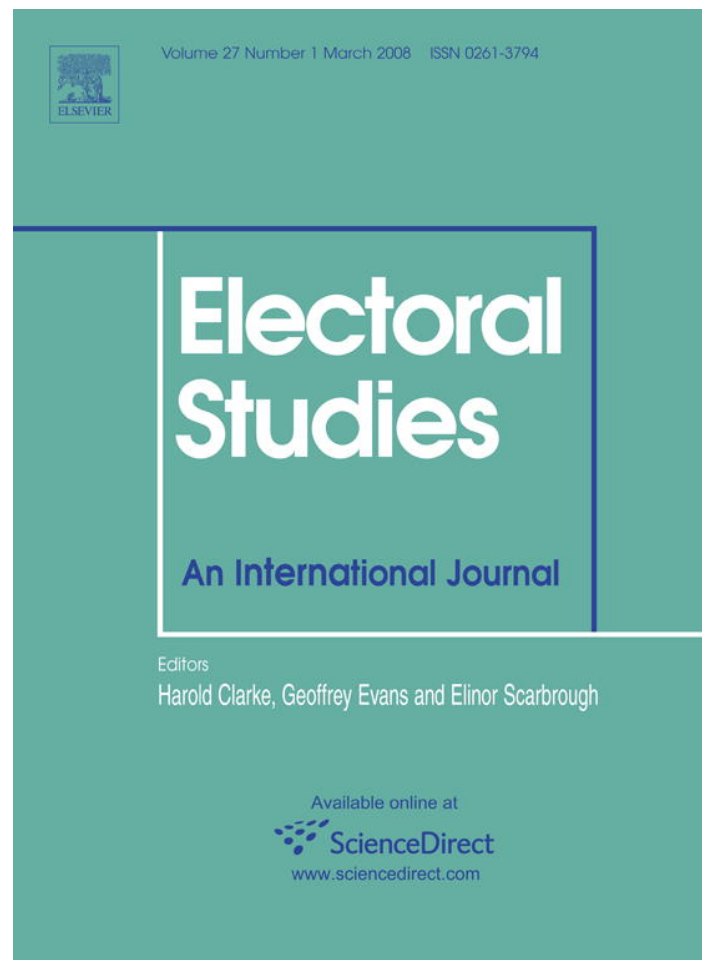


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## Disengaging voters: Do plurality systems discourage the less knowledgeable from voting?

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### Abstract

A number of studies have found that turnout tends to be lower under plurality rule than when some system of proportional representation is in place. Meanwhile, there is reason to believe that when turnout is lower, it is voters who are less knowledgeable about politics who are particularly less likely to participate. This suggests that turnout is lower under plurality rule because those with weaker motivations to vote are particularly discouraged from voting. We consider whether this is the case and if so, why. We examine four main reasons why the electoral system might influence the relationship between political knowledge and turnout: district competitiveness, mobilization efforts, efficacy, and the size and polarization of the party system. Using data from the Comparative Study of Electoral Systems project, we find that those with low levels of knowledge are indeed particularly less likely to vote under plurality rule. However, why this is the case is more difficult to ascertain.

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*Keywords:* Turnout; Comparative study of electoral systems; Political knowledge; Plurality systems

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### 1. Introduction

A number of studies have found that turnout tends to be higher under systems of proportional representation (PR) than when a plurality system is used, and that this remains the case after a variety of controls and possible confounding factors are taken into account (Blais and Carty, 1990; Blais and Dobrzynska, 1998; Jackman, 1987; Jackman and Miller, 1995; Powell, 1986). However, as Blais and Aarts (2006) note in a recent review

of this literature, the reason why this is the case has not been adequately demonstrated. Much of the argument and analysis has focused on how electoral systems affect the macro-level context within which voters vote, such as the number of parties between which they have to choose and the incentives that parties have to mobilize voters. However, to look at the macro-level context alone may be inadequate. It may be that what matters is the interaction between that context and the motivations that voters bring to an election. In other words, perhaps some kinds of voters are more likely to be influenced than others by the electoral system that is in place, and that it is only when this is taken into account that the impact of electoral systems on turnout can be adequately understood.

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Such a perspective also has implications for the debate about the merits of electoral systems. Advocates of proportional representation often cite the higher level of turnout under PR systems as an argument in their favour. But if it is the case that those who in general are less likely to vote are particularly discouraged from voting where a plurality rule is used, then a second element is added to the debate: single-member plurality produces greater inequalities in turnout. Indeed there has been increasing concern in recent years about inequalities in turnout in the wake of the apparent decline in levels of turnout generally. It is well established that those who are most marginalized in society are least likely to vote (Lijphart, 1997; and evidence cited therein). And it is sometimes assumed that if turnout falls, as it has done in many mature democracies in recent years, that this pattern will become even more apparent (Franklin, 2004; Blais, 2000). In other words, as the level of turnout falls, so the existence of differential turnout between different groups becomes more marked. If this is right then the use of a plurality electoral system rather than PR may not simply contribute to lower turnout overall, but also to greater differentials in turnout between different social groups. Such an outcome might be considered detrimental to the quality of representation (Lijphart, 1997), and therefore the efficacy and legitimacy of elections.

In this paper we look at the difference in turnout between those with differing levels of political knowledge, and how this might be affected by the electoral system. More specifically, we examine whether the difference in turnout between those with low and those with high levels of knowledge is more marked under plurality systems than under proportional representation. We then try to establish why this might be the case, focussing on four key mechanisms that might particularly affect the propensity of those with lower levels of knowledge to vote: district competitiveness; mobilization efforts by political parties; satisfaction with democracy and political efficacy; and the size and polarization of the party system. To test our propositions empirically, we use data from the Comparative Study of Electoral Systems (CSES) project, using both a two-step and a multi-level approach.

## 2. Theory and hypotheses

Political knowledge acts as a resource, thus making 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 turnout of the least knowledgeable, and

thereby strengthen the relationship between knowledge and turnout. However, there is also a strong correlation between knowledge and political interest (MacDonald et al., 1995; Bartle, 2000; Smith, 1989). Interest and, more generally, engagement in politics are likely to be associated with higher turnout, in part because those who are interested in politics will be more inclined to want to play a part in the democratic process. Those with little interest in politics lack a strong internal motivation to vote, are therefore more likely to need some external stimulus (such as a close election between polarized parties) or some encouragement from others, perhaps a party campaigner. So any system that provides relatively weak external motivation is likely to produce particularly low turnout amongst the least knowledgeable and thus a stronger relationship between knowledge and turnout.

Thus there are two principal reasons why an electoral system might particularly discourage a voter with low knowledge from voting: because the act of voting is made more complicated or (via the link between knowledge and interest) because the system provides less external stimulus to vote. We thus need to consider what impact PR and plurality systems might be thought to have on the levels of complexity and external motivation at an election. There are in fact theoretical arguments in both directions.

### 2.1. *The case for a stronger relationship between knowledge and turnout in plurality systems*

There are four principal mechanisms that might be thought to disincline those with low levels of knowledge in particular to vote under plurality rule. First, those with low levels of knowledge may be especially discouraged by the large number of safe seats that typically exist in plurality systems. Second, parties may be less effective at mobilising voters in plurality systems, and the lack of such mobilization has a particularly detrimental effect on the turnout of the less knowledgeable. Third, weaker feelings of efficacy and less satisfaction with democracy may be particularly prevalent among the disengaged in plurality systems. Finally, there are likely to be fewer, less polarized parties under plurality rule, making it more difficult for those with low knowledge and interest to see a reason to vote. We expand on each of these in turn.

The chances of any one vote affecting the outcome are small in all mass elections. However, in plurality systems there is noticeably less incentive to vote because in many places it is obvious who will win locally. In contrast under proportional representation it is never

clear who will be allocated the final seat in any particular district. Meanwhile, across a country as a whole, the tendency for plurality rule to manufacture a majority for the largest party in the legislature makes ‘landslides’ more likely. It may be particularly disheartening for those with little knowledge or interest in politics to face an uncompetitive election.

Meanwhile, just as there is a lack of incentive for electors to vote in safe seats in plurality systems so parties and candidates have little incentive to mobilize voters in such seats either. Indeed even those contesting marginal seats might feel their chances of election depend on their ability to appeal to a relatively small section of swing voters in their districts rather than their success in constructing a broader appeal (Carey and Shugart, 1995). In any event we can anticipate that efforts by politicians to contact people might well have more impact on those with low levels of knowledge than they do among those who would otherwise be inclined to vote anyway. If so, and if indeed mobilization is lower in plurality systems, we can anticipate that it will be turnout amongst those with low levels of knowledge that will be particularly depressed in such systems.

People who are satisfied with the way democracy works in their country and who feel that voting makes a difference are more likely to vote. Equally, 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). Some, including Blais and Carty (1990), argue that proportionality *per se* increases feelings of efficacy. Moreover, in plurality systems the predominance of safe districts might well result in lower levels of efficacy and satisfaction with democracy. Certainly Curtice and Shively (in press), show that, after controlling for mobilization and other effects, electors are more likely to believe that politicians “know what people think” or to report satisfaction with democracy in countries with PR than they are in those with single member plurality, suggesting perhaps that people appreciate the fairness of proportional systems.

Meanwhile, satisfaction with democracy and efficacy may also be boosted by mobilization. Thus Curtice and Shively (in press) show that those who report having had contact with an elected representative in the last year are more likely to believe that representatives know what people think. So if there are indeed lower levels of mobilization in plurality systems, as suggested above, this could contribute to lower satisfaction and efficacy. In any event both of these possible pathways can be expected to have a particularly strong impact on people with low levels of political knowledge should they,

as we might suppose, be more inclined anyway 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 lower than elsewhere, but also that this is particularly true of the less knowledgeable.

Plurality electoral systems are of course likely to foster two-party systems (Duverger, 1954). Meanwhile, if the salient ideological space is approximately uni-dimensional, then under such systems the two parties will have incentives to move towards the median voter position (Downs, 1957). If the major parties in plurality systems do converge, then people will have less reason to vote. Moreover, it is likely that the less knowledgeable will find it more difficult to identify differences between the parties in such circumstances, and thus will be particularly discouraged from voting.

## 2.2. *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: it could be the most knowledgeable who are most aware of and sensitive to the predominance of safe seats in plurality systems; candidates in plurality systems might 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 those with low knowledge. Again, we will discuss the arguments in turn.

First, in a plurality system it is those with more political knowledge who should be the more likely to know whether their district is safe or marginal. If so, the disincentive to vote in safe seats will be strongest for the most knowledgeable, thereby weakening the association between knowledge and turnout in plurality systems. Of course, if we follow the logic of this argument, it should be the most knowledgeable who are most likely to appreciate the pointlessness of voting in any election (Downs, 1957) and so turnout should be lower among the more knowledgeable everywhere. This of course is rarely, if ever, true. Nevertheless it does not preclude the possibility that the most knowledgeable are particularly sensitive to strategic incentives at the margin.

Second, contrary to the view that mobilization efforts are likely to be low in plurality systems because of the prevalence of safe seats, it can be argued that in fact such systems present candidates with a particularly

strong incentive to mobilize. This is because the presence of single-member districts is thought to encourage politicians to try to build a positive reputation amongst the electorate in their district—in the hope of establishing a ‘personal’ vote that will aid their re-election. In contrast, where closed party lists systems are used candidates concentrate on building their reputation among party members, in whose hands their prospects of renomination lie. Meanwhile, even in the case of more open party list systems or STV, candidates only have an incentive to appeal to party supporters rather than the public in general. Indeed [Curtice and Shively \(in press\)](#) show that contact with elected representatives is greater under systems with single-member districts (including some mixed systems) than it is where closed list PR systems are used, although not necessarily so where there are open-list multimember districts. Moreover, if plurality systems do indeed engender higher levels of mobilization as a result of attempts to generate a personal vote, not only could this mobilization have a direct impact on the propensity of the less knowledgeable in particular to vote, but also indirectly because it particularly increases system efficacy among the less knowledgeable.

Third, PR systems, and especially mixed electoral systems, are more complex than first-past-the-post, and this could make voting particularly daunting for the least knowledgeable. There are many features of non-plurality electoral systems that could help bewilder voters, including having to choose between parties each of which has a long list 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, and 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 a vote after it has been cast; figuring out the way that votes are counted in PR and mixed electoral systems can even confuse political scientists from time to time. In contrast, 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 of 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. First, with more parties the competition for government is more opaque, which in turn may affect levels of efficacy. Second, [Brockington \(2004\)](#) argues that there are more oversized (above minimum-winning) coalitions where there are more parties and this discourages electors from voting. Finally, [Cox \(1999, p.404\)](#) argues that in a more crowded field, parties may switch their efforts from mobilization to persuasion. In so far as low knowledge citizens are more easily discouraged by opaque party competition and oversized coalitions, and require more mobilization, these mechanisms could all help widen the turnout gap between people with low and high knowledge in proportional systems.

### 2.3. Additional factors

The relationship between knowledge and turnout may, however, be influenced by features of the electoral system other than its degree of proportionality. One such feature is whether voters have the chance to vote for individual candidates. If being able to vote for individuals is appreciated by voters this might encourage them to vote ([Farrell and McAllister, 2006](#); [Curtice and Shively, in press](#)). Moreover the ability to vote for individuals might particularly be appreciated by those with low levels of political knowledge, as they may find it easier to identify whom they like than they do to choose between policy platforms. If so, the effect of knowledge on turnout should be weaker where there is an element of candidate choice.

But the relationship between knowledge and turnout may not just be affected by the character of an electoral system but also by the wider constitutional structure. The direct election of an executive president, federalism and bicameralism are all associated with lower levels of 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. In contrast where the executive and legislature are separated, or where federalism or bicameralism is in place, whoever is elected to any particular office may not have much power to change things (e.g. [Franklin, 1999](#)). More complex political arrangements, and the corresponding indecisiveness of elections, may make voting harder and less appealing for people with less political knowledge in particular. Or perhaps it is mainly those with most knowledge who understand how the institutional structure complicates things, and

who thus are more likely to regard elections as unimportant. Either way, the wider constitutional arrangements could evidently also influence the strength of the relationship between knowledge and turnout.

Finally, we should also bear in mind that, irrespective of the electoral system in place or the nature of a country's constitutional arrangements, some elections are more keenly contested than others. The closer the outcome is thought likely to be, the more people we would expect to vote. We can anticipate, however, that this might be particularly true of low knowledge citizens who need a greater stimulus to vote. We thus might anticipate that the relationship between knowledge and turnout should be weaker where an election outcome is close.

In addition to these possibilities, there are of course many other direct influences on turnout than any analysis has to take into account. These influences exist at the country, election and individual levels. At the country or election levels, these include the level of welfare spending (Hobolt and Klemmensen, 2006), economic inequality (Anderson and Beramendi, *in press*; Solt, *in press*), and the maturity of the democracy (Bielasiak, 2002; Fornos et al., 2004). At the individual level we can expect differences in turnout by age group; educational attainment; gender; marital status; union membership (Gray and Caul, 2000); other forms of political participation; and socio-economic status (Verba et al., 1995).<sup>1</sup>

### 3. Data and methods

We test the theories we have outlined so far about how electoral systems might affect the relationship between knowledge and turnout by using data from the Comparative Study of Electoral Systems (CSES, 2003, 2006).<sup>2</sup> This project has administered a standard set of survey questions on electoral politics across an unusually wide range of countries. This makes it possible to examine how differences of context influence individual-level participation. Further details of the variables used in our analysis are given in Appendix A, but we discuss our key variable, political knowledge, here.

<sup>1</sup> We might also anticipate differences of turnout between ethnic, religious and linguistic groups, but the data on these characteristics in the data sets used here are too sparse and difficult to analyse adequately.

<sup>2</sup> In addition to the data in these two releases we also include data from the 2005 British Social Attitudes survey which were included in a subsequent final release of CSES Module 2.

There are two broad approaches to measuring political knowledge. The first focuses on knowledge of party policy positions, which has the primary virtue of clearly 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 respondents, is a relevant and comparable measure of political sophistication across countries. But there are problems with this approach. First, people are inclined to put the party they like most in the same or a similar position to where they put themselves (Evans and Andersen, 2004). Second, in some instances, such as when there has been a dramatic shift in a party's policy platform (as, for example, occurred in the case of the British Labour party between 1992 and 1997) those who are most knowledgeable (and aware of the change in the party's position) may correctly disagree with the average placement of that party by most voters (Heath et al., 2002). Finally, the meaning of the terms 'left' and 'right' varies from country to country (e.g. Knutsen, 1995) and may even 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 measure factual knowledge of the political system directly. This is the approach recommended by Zaller, following an evaluation of the advantages of different measures of political awareness on the basis of attitude stability, consistency and the relationship between attitudes and behaviour (Zaller, 1992: Appendix). Each of the CSES surveys includes three statements about the political system in their country that respondents were asked to identify as true or false. Together they provide us with a measure of political knowledge for each respondent. There are though two main problems with using these questions. First, the questions were deliberately designed so that one of them should be correctly answered by a third of respondents in that country, another by a half, and one by as many as two thirds. As a result the means and variances are much the same in each country and the questions cannot be used to judge differences in knowledge between countries. Second, 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, knowledge as measured by this approach is likely to be highly positively correlated with more immediately relevant aspects of political knowledge. Meanwhile, 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.<sup>3</sup>

Section 2 suggests that the effects of the electoral system on turnout might depend on interest in politics as well as political knowledge, but there is no measure of interest in politics in the CSES. Since interest and knowledge are very highly correlated (MacDonald et al., 1995; Bartle, 2000; Smith, 1989) any measured effects of knowledge on turnout in our analysis may in part reflect the effects of political interest. Such an interpretation is still in accordance with our theoretical expectations of the role of both political knowledge and interest.

### 3.1. 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 in 2001 (Freedom House, 2007).<sup>4</sup> Our research questions and theory apply to legislative elections and not presidential ones; we therefore exclude solely presidential elections.<sup>5</sup> Although compulsory voting does not ensure 100% turnout (Hirczy, 1994; Franklin, 1999; Electoral Commission, 2006), we exclude Belgium and Australia on the grounds that the 90% plus turnout that compulsory voting produces there means that, given the sample sizes of the surveys in those countries, it is not possible to measure adequately any differences of turnout between different groups. Those CSES surveys that did not include questions on either turnout or knowledge are also excluded. Otherwise we use as many cases as possible.

<sup>3</sup> This standardisation was undertaken after applying any weights provided with a country's data set, and further weighting to ensure that the level of reported turnout matched the official results. Our conclusions are unaffected by the decision to standardize, in part because the questions were designed to achieve a certain proportion of correct answers and thus similar distributions in each survey.

<sup>4</sup> In addition we also excluded Peru, which, although it scored 1 on the political rights scale in 2001, scored 3 or lower for all of the ten preceding years.

<sup>5</sup> This is to say that we removed surveys of elections that were for a president but not a legislature e.g. Chile 1999 and Lithuania 1997. Surveys of simultaneous presidential and legislative elections e.g. USA 2004, are included in our analysis. Although our theory focuses on electoral systems for the legislature, when there is a coincident presidential election turnout may be driven primarily by characteristics of the presidential election rather than the legislative one. We tested for effects of being in a presidential system and coincidental presidential elections, and interactions between these factors and political knowledge, but found no statistically significant effects.

Most of our analyses are based on both the CSES module 1 data (collected between 1996 and 2000) and the module 2 data (collected between 2001 and 2006) combined. However, because the variable was not recorded in module 1, any analysis that includes contact by a candidate/party is based on module 2 data only. In both cases we have access to data from four countries that use a plurality system in legislative elections, Britain, Canada, the Philippines and the USA.

### 3.2. Method

We should be aware that there is one, perhaps purely methodological, reason why the turnout gap between those of high and low knowledge might be greater in plurality systems. This is simply that turnout is lower there. Powell (1986) shows that, in general, differences in turnout by age, education, political efficacy, and interest in politics, are all very low in countries with compulsory voting and meanwhile are much greater where turnout is lower, especially in the US and Switzerland. This leads Franklin (2004) to argue 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 is not any room for big turnout differentials because practically everyone has been mobilized. Since turnout is typically higher in more proportional systems (Blais and Aarts, 2006) turnout differentials between people with high and low knowledge (or indeed between any other groups) will correspondingly be lower.

However, this argument only applies if we measure the turnout differential between two groups as the difference in the proportion voting. If instead we measure turnout differences by calculating the corresponding odds ratio, there is no *a priori* expectation that differences between groups will be wider when turnout is lower (Agresti, 1990). While the implications of turnout differentials for the quality of representation might best be viewed with differences of proportions, the toughest test of our causal hypotheses will be to use odds ratios.

In deploying these 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 Shively, 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 in 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 that are drawn. The main purpose of analysing the survey-by-survey coefficients of knowledge on turnout is not to draw strong and final conclusions, but to provide the reader with some understanding of the main patterns that we identify.

For a more rigorous test of whether turnout is affected by an interaction between political knowledge and the electoral system being used, we use individual level analysis. We cannot of course simply pool these national CSES surveys and ignore the fact that individual vote choices are nested within a national context, not least because this violates the assumption of the independence of the observations. We use two approaches to take account of this. The first is to undertake robust logistic regression where the standard errors take account of the fact that cases are clustered by country (Greene, 2000). The second is to employ a multilevel analysis, which allows us explicitly to model differences in voting behaviour according to national context. As well as correcting for the dependence of observations within countries, it also makes adjustments to both within and between parameter estimates that take into account the clustered nature of the data (Snijders and Bosker, 1999).<sup>6</sup> The conclusions drawn from the two approaches are the same, so only the multilevel model coefficients are presented.

#### 4. Analysis

Table 1 shows the simple individual-level relationship between standardized political knowledge and turnout in elections conducted under plurality rule, and compares it with that in elections conducted under a different rule. It provides strong initial support for our expectation that those with low levels of knowledge are more likely to abstain where the plurality rule is used than when it is not. Under both plurality and non-plurality systems around four in five of those with high levels of knowledge (that is a standardized score of more than one) claimed to have voted in the CSES surveys. But

<sup>6</sup> In the case of the two-step approach and the robust regression, the data are weighted to respect the sample, population and political weights provided by the data collectors, and the data are 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. However it was only possible to estimate the multilevel models without applying any weights.

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

Standardized Knowledge	Electoral System	
	Non-Plurality	Plurality
	% Voting	
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)

whereas just over half of those with low knowledge living in countries with non-plurality systems reported voting, less than two in five of those living under plurality rule did so.

But how consistent does this difference between plurality and non-plurality rule elections appear to be when we look separately at each election? Fig. 1 shows the percentage point difference in turnout between those with above and below average knowledge for each of the elections in our dataset, charting it against the overall level of turnout at that election. Note that in every single election turnout was higher amongst those with high knowledge than it was amongst those with low knowledge.<sup>7</sup> But the gap tended to be particularly large in plurality elections, as witnessed by the presence of Britain 2005, Canada, and the USA towards the top of Fig. 1. Even so, we should note that in Britain in 1997 the turnout gap was only around the average for all elections, while the Philippines stands out as a clear exception to the rule that the turnout gap between those with high and low levels of knowledge is stronger in plurality countries.

More importantly, Fig. 1 also alerts us to the dangers of using percentage point differences to measure the relationship between knowledge and turnout. For it is evident that the higher the overall level of turnout, the smaller the percentage point gap between those with above and those with below average knowledge tends to be. However, if we calculate the effect of knowledge on the log odds of voting, there ceases to be any statistically significant evidence that the association between knowledge and turnout depends on the level of turnout. Across all the CSES surveys there is only an insignificant correlation of  $-0.24$  between turnout and the coefficient from a logistic regression model of turnout on

<sup>7</sup> The relationship is not, however, always statistically significant. Exceptions include Israel, 1996; Philippines 2004; and Spain in both 1999 and 2000.



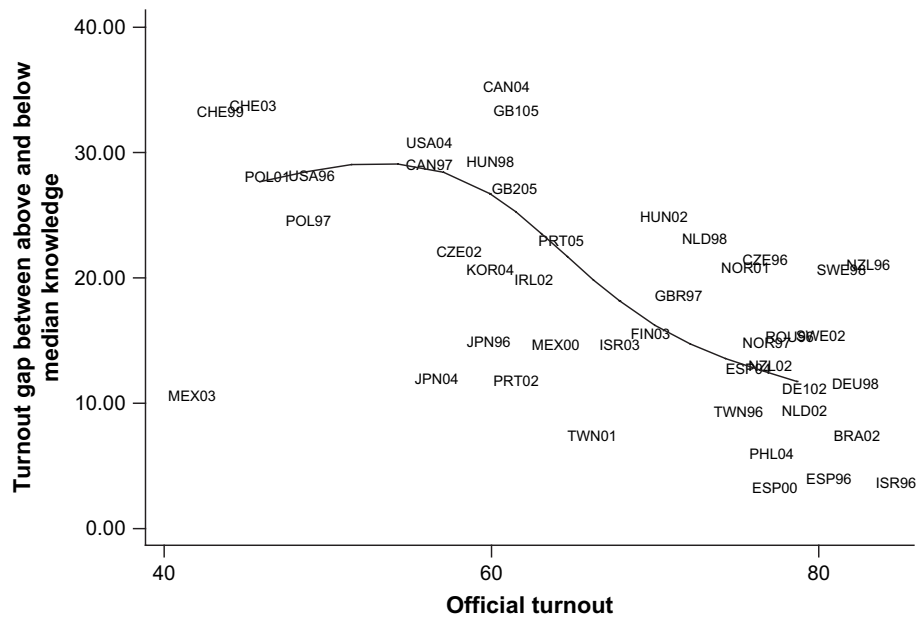


Fig. 1. Turnout gap between above and below average political knowledge against turnout.

standardized political knowledge score. Naturally, this log odds ratio measure of the strength 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. Thus in practice the between survey differences in the effect of knowledge on turnout are unlikely to depend heavily on whether we use the difference in proportions or the odds ratio as our measure of association. But since the latter is not structurally correlated with the level of turnout, the rest of our analysis is based on log odds ratios estimated using logistic regression.

We can now undertake a more formal test of whether the relationship between knowledge and turnout is stronger where the plurality rule is in place by first calculating the log odds ratio of the impact of knowledge on turnout in every survey and then undertaking a regression analysis of the resulting set of log odds ratios. If the association between knowledge and turnout is stronger under plurality rule then we should find in this analysis that a dummy variable for plurality rule elections is statistically significant. In practice we find that the relationship is only significantly stronger if we leave aside the Philippines.<sup>8</sup> With the Philippines included the resulting *p*-value is

<sup>8</sup> Note that in this analysis we simply distinguish plurality from all other systems combined. However, the results are similar if we either exclude or separate out all mixed systems, or if we distinguish mixed-member majoritarian (MMM) and mixed-member proportional (MMP) systems or if we exclude either one of the other. We found no evidence for interactions between MMM and MMP with political knowledge, either with or without further controls.

just 0.082; if it is excluded it becomes 0.014. Clearly there is a strong suggestion that the association between turnout and knowledge is usually stronger under plurality rule even if it is not always the case.<sup>9</sup>

Indeed when we undertake a simple individual-level analysis (including the Philippines) of reported turnout, where our explanatory terms are just political knowledge, use of plurality rule and the interaction between them, we find that the interaction term is statistically significant. This is true both if we use robust logistic regression and if we undertake a multilevel logistic regression with random intercepts for each survey. Moreover this is not simply a function of lower levels of overall turnout in plurality systems; if we introduce into the model an interaction between knowledge and national-level turnout this proves not to be significant.

<sup>9</sup> Quite why the knowledge gap should have been so small in the 2004 Philippines election is not clear. According to press reports the coincident presidential election was particularly intense and polarized and this might have helped bring less knowledgeable voters to the polls. However, the Filipino CSES survey shows that the average gap between a respondent's favourite and least favourite party on a like/dislike scale is, at 4.3, in line with that recorded in the other plurality countries in our data set. Electoral politics in the Philippines are sometimes supposed to be more clientelistic than in the other plurality countries. However, respondents to the Filipino survey do not report particularly high levels of contact with elected politicians (Karp and Banducci, 2006), while the relationship between contact and turnout is not particularly strong there. The Philippines is clearly a much younger and poorer democracy than our other plurality countries, but there is no new-democracy  $\times$  knowledge, or *gdp*  $\times$  knowledge interaction that can account for the apparently anomalous Filipino result.

It seems then that in general our expectation that the use of plurality rule discourages those with low levels of knowledge in particular from voting is upheld. Such a finding is of considerable normative and empirical interest. Empirically it provides us with a clue as to why turnout tends to be lower where the plurality rule is used. Normatively, it suggests that the use of plurality rule can be criticized not only on the grounds that it results in lower levels of turnout overall, but also that it produces greater inequalities of turnout between the more and less knowledgeable.

However, this still leaves us with a challenge. The first and more obvious is that we should check that our finding that there is an individual-level interaction between knowledge and plurality rule is robust in the face of the introduction of controls. The second and more interesting is whether we can account for the presence of this interaction. In particular, does the interaction begin to disappear at all once we introduce into our model terms that attempt to measure the various possible mechanisms we suggested earlier might explain why those with low levels of knowledge are particularly unlikely to vote under plurality rule?

Table 2 shows what happens when we undertake these two tasks by constructing a multilevel logistic regression model of turnout using data from both CSES modules 1 and 2.<sup>10</sup> Note that in the absence of any controls or attempts to identify possible explanatory mechanisms the coefficient for our knowledge  $\times$  plurality interaction term is 0.16. In the presence of both controls and attempts to identify explanatory mechanisms the coefficient is still 0.12. Much the same result is obtained if we use robust regression.

Moreover, we can conclude more generally, that no macro variable (measured or unmeasured) can account for the knowledge  $\times$  plurality interaction, since (after excluding the Philippines) that interaction term is robust to the inclusion of dummy variables for each survey. Therefore our main conclusions are not affected by the exclusion of any macro-level variable. Thus although we included in our original full models a wide range of variables suggested by the discussion in Section 2.3,<sup>11</sup>

we have chosen to include in the table only those that are statistically significant. However, since we cannot apply a similar logic at the individual level, all theoretically relevant and available variables at that level are included as controls to maximize the rigour of our analysis.<sup>12</sup> Evidently our finding that plurality rule discourages those with low levels of knowledge from voting is also not challenged by taking into account a wide variety of possible controls. But equally we have evidently not had much success either in accounting for its existence.

Let us consider a little further why this appears to be the case. Our first possible explanation as to why those with low knowledge might be discouraged from voting under plurality rule was the presence of a large number of safe seats. Table 2 shows that in fact the margin of victory in a respondent's district is not significantly associated with turnout. Unsurprisingly, therefore, controlling for this variable has little impact on the size of the plurality  $\times$  knowledge coefficient. Further analysis suggests that the association between district marginality and turnout is weak in Britain and Canada, while there is no relationship at all in the USA. Meanwhile, only in Britain is there any sign that sensitivity to the marginality of a district depends on political knowledge, and in any event it is those who are most knowledgeable not those who are least knowledgeable whose chances of voting are (a little) more affected by the closeness of the local contest. The introduction into our model of a knowledge  $\times$  district-margin-of-victory interaction would not improve the model or change the coefficient of the knowledge  $\times$  plurality interaction term. It seems quite clear then that plurality rule does not discourage the less knowledgeable from voting because of the presence of safe seats.

A second possible explanation that we offered is that those with low levels of knowledge were particularly unlikely to feel efficacious or satisfied with democracy. In practice controlling for measures of efficacy makes practically no difference to the way in which 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 for whom you vote (though this latter result is not robust to controls for other individual or institutional factors). Equally,

<sup>10</sup> Social class and contact by candidate/party are not considered here because they are not measured in module 1.

<sup>11</sup> These variables included the presence of preferential voting, single-member districts, the presence of federalism, the presence and strength of bicameralism, presidentialism, concurrence of presidential elections, executive responsiveness (Franklin, 2004; Banks, 2005), compulsory voting, the log ratio of seats to electors, welfare spending, educational level, tax revenue as a proportion of GDP, economic inequality, and a couple of indices of the complexity of the electoral system and the political institutions in general.

<sup>12</sup> A similar reasoning applies to the inclusion of the district margin of victory which is the only one of our contextual variables that varies between individuals within a single survey. For this reason, and because of its theoretical importance, it is retained in Table 2 despite being statistically insignificant.

Table 2  
Multilevel logistic regression of turnout with electoral-system and individual-level variables from CSES modules 1 and 2

	Coefficient	<i>p</i> -value
<b>Individual-level variables</b>		
<i>Intercept</i>	−2.12	0.00
<i>Standardized knowledge</i>	0.30	0.00
<i>Does not make a difference who is in power (scale)</i>	−0.10	0.00
<i>Makes a difference who you vote for (scale)</i>	0.21	0.00
<i>Satisfied with democracy</i>	0.30	0.00
<i>Relative strength of preference for favourite over least preferred party</i>	0.15	0.00
<i>Relative strength of pref. not classifiable</i>	0.48	0.00
<i>Relative strength of pref. missing</i>	−0.13	0.06
<i>Political activism scale</i>	0.35	0.00
<i>Age (base = 16–30)</i>		
Age 31–45	0.39	0.00
Age 46–60	0.91	0.00
Age 61 plus	1.22	0.00
<i>Union member</i>	0.22	0.00
<i>Educational attainment score</i>	0.11	0.00
<i>Educational attainment missing</i>	0.42	0.00
<i>Female</i>	0.03	0.25
<i>Marital status (base = single)</i>		
Married	0.36	0.00
Widowed	0.12	0.11
Divorced	−0.23	0.00
Marital status missing	0.06	0.52
<b>Macro-level variables</b>		
<i>District margin of victory</i>	−0.15	0.44
<i>Effective number of parties in seats (centred)</i>	0.21	0.00
<i>National-level competitiveness of the election</i>	0.02	0.00
<i>Electoral system (base = PR)</i>		
Mixed-member system	0.13	0.01
Plurality	−0.21	0.00
<b>Cross-level interaction</b>		
<i>Knowledge × plurality</i>	0.12	0.00
Standard deviation of the random survey intercepts	0.48	0.00

Notes: 44 CSES module 1 and 2 surveys.  $N = 72,773$ .

more knowledgeable people are more likely to have positive feelings of efficacy, while those feelings are associated with higher turnout. However, there is no sign that efficacy is particularly low amongst those with low knowledge who live in plurality systems. Nor is there any evidence that efficacy has a stronger impact on turnout in plurality countries.

Meanwhile satisfaction with democracy is in fact higher, not lower in plurality systems, albeit only before controlling for the age of a democracy. At the same

time, while those with high knowledge are more likely to be satisfied with democracy, this is no more apparent amongst those living in plurality systems than amongst those living elsewhere. Equally the relationship between satisfaction with democracy and turnout does not seem to depend on the electoral system. It is, little wonder then that taking into account satisfaction with democracy does not help explain the knowledge × plurality interaction.

Third, we suggested that those with low knowledge might be disinclined to vote under plurality rule because of an apparent lack of choice. Under plurality rule politics tends to be dominated by two parties that are ideologically close to each other. Indeed our model suggests—contrary to much previous research (Blais and Aarts, 2006; Brockington, 2004)—that turnout is indeed higher the larger the effective number of parties, even after controlling for the electoral system. However, there is not any sign that having more parties affects the strength of the relationship between turnout and knowledge. Meanwhile, there is some evidence that the parties are less likely to be regarded as polarized in plurality elections. The perceived degree of polarization can be measured by the distance between where the average voter places their favourite party on a like/dislike scale and where they place their least preferred party. On average this relative preference gap is 1.4 points lower in elections held in plurality systems than elsewhere. At the same time, those with less knowledge are less likely to have strong preferences between the parties, perhaps because they are less likely to know about the ideological differences between them. Although these conditions could produce a knowledge × plurality interaction effect on turnout, controlling for the relative strength of preference between parties does not in practice appear to diminish the size of the knowledge × plurality interaction. Moreover, the effect of political knowledge on the relative strength of preference between parties appears to be roughly the same in plurality systems as it is elsewhere. So even though those with low knowledge need more external motivation to vote, there is no sign that turnout among low knowledge voters is especially sensitive to the relative strength of preference between the parties.

There was one final possible mechanism that we suggested. This was that voters are less likely to be mobilized in plurality elections and that this would particularly impact adversely on those with low levels of knowledge. To consider this possibility we have to restrict our analysis to the second CSES module, as it is only this module that includes any measure of mobilization. In fact simply imposing this restriction reduces the plurality × knowledge

term to borderline statistical significance once all background individual and contextual variables are included. This seems to be primarily because respondents from the 2004 Philippines survey now constitute a greater proportion of the respondents from plurality countries. However, if the Philippines is excluded, then the knowledge  $\times$  plurality interaction remains statistically significant, and this is the approach adopted in Table 3. Otherwise the table is based on the same procedure as Table 2, and we can see that for the most part the key coefficients in Table 3 are similar to those in Table 2.<sup>13</sup>

Our measure of mobilization is whether a respondent said that they were contacted by a candidate or party during the election campaign, in order to try and procure their vote. The incidence of such mobilization, which is certainly positively associated with turnout, varies dramatically, from 5% in Poland and Spain, to as much as 56% in Ireland and 71% in Taiwan. Both the single non-transferable vote, which is used for the election of 78% of the seats in Taiwan, and the single transferable vote, as used in Ireland, are well known for their tendency to encourage links between candidates and voters (Marsh, 2004). However, leaving these extreme cases aside, people in plurality systems are more likely to report having received contact (on average 39% do so) than are those living elsewhere (20%). This might be expected to weaken the effect of knowledge on turnout in plurality systems. However, it is those with high levels of knowledge who are slightly more likely to report having been contacted by an elected representative so, if anything, the net effect of the higher level of contact in plurality systems should strengthen the relationship between knowledge and turnout. However, we can see that the inclusion of our mobilization variable fails to have much impact on our knowledge  $\times$  plurality interaction, which is still as high as 0.16.

We need in any event to bear in mind that the causal direction between mobilization and turnout is not clear. It may be that politicians are more likely to contact those who are more likely to vote, even after controlling for knowledge. This might help explain why contact does not have a stronger relationship with turnout amongst those with low levels of knowledge, even though we would expect their turnout to depend more on whether they have been mobilized.

We have now exhausted all of the mechanisms that we argued might explain why knowledge has a stronger relationship with turnout in plurality systems than

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

	Coefficient	<i>p</i> -value
<b>Individual-level variables</b>		
<i>Intercept</i>	−1.39	0.00
<i>Standardized knowledge</i>	0.31	0.00
<i>Contacted by candidate/party</i>	0.38	0.00
<i>Does not make a difference who is in power (scale)</i>	−0.11	0.00
<i>Makes a difference who you vote for (scale)</i>	0.22	0.00
<i>Satisfied with democracy</i>	0.26	0.00
<i>Relative strength of preference for favourite over least preferred party</i>	0.15	0.00
<i>Relative strength of pref. not classifiable</i>	0.51	0.00
<i>Relative strength of pref. missing</i>	−0.08	0.41
<i>Political activism scale</i>	0.33	0.00
<i>Age (base = 16–30)</i>		
Age 31–45	0.30	0.00
Age 46–60	0.87	0.00
Age 61 plus	1.23	0.00
<i>Union member</i>	0.24	0.00
<i>Educational attainment score</i>	0.10	0.00
<i>Educational attainment missing</i>	0.40	0.02
<i>Female</i>	0.02	0.59
<i>Marital status (base = single)</i>		
Married	0.29	0.00
Widowed	0.08	0.46
Divorced	−0.24	0.01
Marital status missing	0.18	0.45
<i>Class (base = missing or unclassified)</i>		
White collar	0.17	0.01
Worker	−0.05	0.47
Farmer	−0.06	0.67
Self-employed	0.08	0.37
<b>Macro-level variables</b>		
<i>Effective number of parties in seats (centred)</i>	0.20	0.00
<i>National-level competitiveness of the election</i>	0.02	0.00
<i>Electoral system (base = PR)</i>		
Mixed-member system	0.11	0.10
Plurality	−0.05	0.61
<b>Cross-level interactions</b>		
<i>Knowledge <math>\times</math> plurality</i>	0.16	0.01
Standard deviation of the random survey intercepts	0.42	0.00

Notes: 24 CSES module 2 surveys as detailed in the case selection section above, excluding the Philippines.  $N = 39,282$ .

elsewhere. The positive knowledge  $\times$  plurality interaction term that we identified is robust in the face of all the operationalizations of the possible explanatory mechanisms that we identified as well as the inclusion of a host of individual- and macro-level control variables,

<sup>13</sup> Note that social class is also included as a control variable in this model.

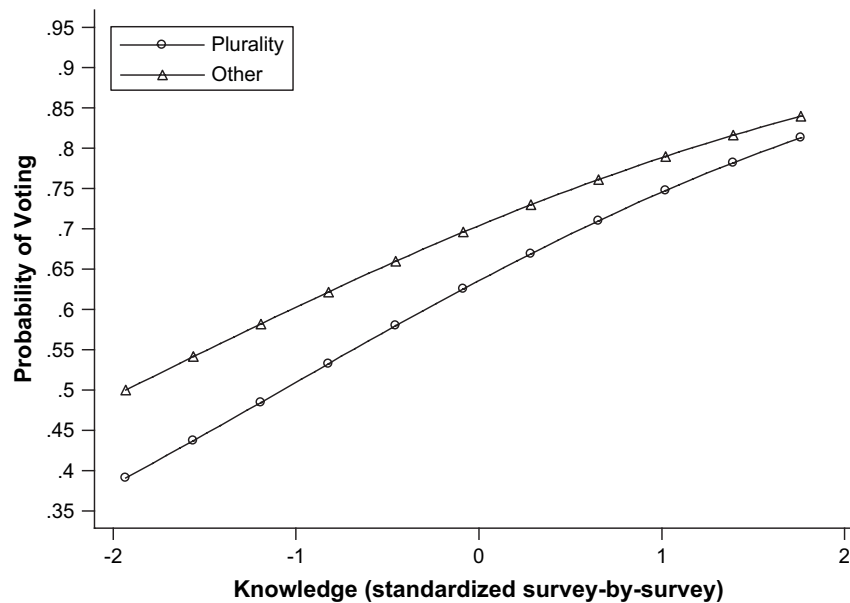


Fig. 2. Predicted probabilities of voting according to knowledge in plurality and non-plurality countries, assuming the other variables in Table 3 are at their mean.

survey fixed effects, and various interactions between knowledge and our control variables. Moreover, it is also impossible to explain away the stronger relationship between knowledge and 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 structure of institutions is more complex, or where the election is less decisive. And while there is a significant interaction between knowledge and the national competitiveness of an election, this depends entirely on Switzerland, which has a strong relationship between knowledge and turnout and is coded as completely uncompetitive because of its ‘magic formula’.<sup>14</sup>

All things considered, the stronger relationship between political knowledge and turnout in plurality systems is remarkably consistent.<sup>15</sup> Fig. 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 picture to that presented in our initial bivariate analysis in Table 1, and indicates how the inclusion of control and potential explanatory variables has largely failed to account for the stronger relationship between knowledge and turnout in plurality elections.

## 5. Conclusion

Our analysis has both helped to unravel one puzzle, while at the same time creating another. Although it has frequently been demonstrated that turnout tends to be lower where plurality rule is used, analysts have been rather less successful in determining why this is the case (Blais and Aarts, 2006). We have made some progress in that regard. We have demonstrated that, the Philippines apart, it is amongst those with low levels of knowledge that turnout is particularly low under plurality rule. Those with high levels of knowledge in contrast are little affected by the character of the electoral system. Moreover we have demonstrated that this finding is not simply a consequence of the fact that differences in turnout are likely to be lower when overall turnout is higher. Rather, turnout is lower under plurality rule

<sup>14</sup> It does appear that knowledge matters less in the two countries with compulsory voting that were still included in our analysis (Brazil and Mexico). However, it is doubtful whether this really does reflect the power of mandatory voting to bring less knowledgeable voters to the polls as the main effect of compulsory voting is in the wrong direction and far from statistically significant.

<sup>15</sup> In addition to the previously mentioned robustness checks, the statistical significance of the plurality  $\times$  knowledge interaction is robust to the exclusion of any single survey or single country from the analysis, provided of course that the Philippines have already been excluded.

because those who in any election are less motivated to vote are particularly discouraged from doing so—with the consequence that not only is the level of turnout lower under plurality rule, but that inequalities in turnout are greater too.

But this of course leaves us with a new puzzle: why are those with low levels of knowledge particularly discouraged from voting under plurality rule. Our efforts to unravel this puzzle have been less successful. District marginality, which is uniquely relevant in plurality systems, has only a weak effect on turnout, and in any event it is those who are most knowledgeable who are most affected. Voters report greater contact with elected politicians in plurality elections, not less. 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. Party systems are less polarized in plurality systems while those with less political knowledge are less likely to see a large difference between the political parties. But as the relationship between knowledge and 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. Meanwhile there is little evidence that the number of political parties affects the strength of the association between knowledge and turnout.

Why might we have been unable to unravel our new puzzle? One consideration undoubtedly to be borne in mind is that we have only had access to data for a relatively small number of countries that use the plurality rule. Essentially we have ascertained that there is something different about the relationship between knowledge and turnout in three countries: Britain, Canada and the US. It may be that it is some other feature that these three countries have in common other than plurality rule that accounts for our finding. However, what this might be is unclear.

True, one feature is that all three countries have in common is a high level of educational attainment (Barro and Lee, 2000). Moreover, one pattern that we did uncover in our analyses is that the relationship between knowledge and turnout tends to be stronger the higher the level of education in a society. Meanwhile at the individual level education is the best predictor of political knowledge (Milner and Grönlund, 2004). So it could be that the variance in education and knowledge is greater where average educational attainment is higher, with the consequence that (standardized) knowledge is more strongly associated with turnout. However, the variance in educational attainment is actually higher where the

average level of attainment is lower, and so there is little reason to believe that the variance in knowledge is higher in more educated or plurality countries. Furthermore, the key difference in turnout is among the least knowledgeable, and this is not a pattern that we would expect simply from unaccounted variance *per se*.<sup>16</sup>

Meanwhile, according to Franklin (2004), both changes over time and cross-national differences in turnout can largely be explained by socialization effects that influence whether someone becomes an habitual voter or not (Plutzer, 2002). In particular, he shows that whether someone becomes an habitual voter is affected by the political circumstances (including the electoral institutions and competitiveness of the elections) at the time when an elector comes of age. If this is correct then the plurality  $\times$  knowledge interaction we have uncovered might be an artefact of particularly high turnout among particularly knowledgeable cohorts in plurality countries as a result of contingent historical circumstances. Indeed, in contrast to the position in other countries in our study, there is a consistent significant positive correlation between age and political knowledge in each of Britain, Canada and the US. However, we find no evidence of systematic differences between plurality and non-plurality countries in the effect of age group on turnout, while the plurality  $\times$  knowledge interaction term is robust to allowing for this possibility or indeed the more general scenario of different relationships between age and turnout in each survey.

We should of course also bear in mind that the reason why we have been unable to account for our knowledge  $\times$  plurality interaction might be that the causal relationship works in the opposite direction from the one that we have hypothesized. Perhaps knowledge is a consequence of rather than an influence on voting? But if this were the case we would be left with the need to explain why voters learn more from the act of voting under plurality rule than under other electoral systems. That they do seems implausible.

Rather than attempting to dismiss our finding we would suggest it indicates where further research needs to be concentrated if we are to understand why plurality rule results in lower turnout. Clearly one possibility why we have been unable to solve our puzzle is that the measures available to us of the possible mechanisms that we

<sup>16</sup> Another possibility is that the quality of measurement of political knowledge in the three countries is substantially better than that elsewhere. However, according to the Cronbach's alpha, the reliability of the three-item knowledge scale is not significantly different in the plurality countries than elsewhere, and controlling for the alpha in our analysis does not change our conclusions.

have tried to tap may have been less than adequate and that effort should be placed on trying to measure them more accurately. At the same time, our finding is in any event of interest in its own right as it adds a new dimension to the debate about the relative merits of plurality rule and more proportional systems—that the former may not only result in less participation but also more unequal participation. It seems unlikely that advocates of plurality rule will find such a pattern easy to defend.

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### Appendix A. Variables

Those variables whose details are given in the text or whose coding is straightforward are not mentioned here. Details of macro-level variables not included in Table 2 or 3 are also not included. References to Axxxx and Bxxxx are references to question numbers in the first and second module CSES datasets respectively.

#### A.1. Individual-level variables

*Turnout:* (A2028 and B3004\_1) A dummy variable where 1 means the respondent said they voted, and 0 means they said “don’t know”, refused or did not vote. Only those cases where the question appears not to have been asked are treated as missing.

*Contact by candidate/party:* (B3003) Positive responses to 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?” are taken to indicate contact.

*Does not make a difference who is in power (scale):* (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

were missing appear to have voted at roughly the same rate as those who placed themselves at four on the scale, and so were recoded to this point.

*Makes a difference who you vote for (scale):* (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, (again a one to five scale), where would you place yourself?” Those who said, “don’t know”, refused or were missing appear to have voted at roughly the same rate as those who placed themselves at one on the scale, and so were recoded to this point. In addition, data for this question are missing for the Netherlands in 2002, and so we impute these cases at the mean (3.7).

*Satisfied with democracy:* (A3001 and B3012) This is coded as a binary variable: very or fairly satisfied versus others.

*Relative strength of preference for favourite over least preferred party:* This is based on question A3020/B3037, which asked respondents to indicate how much they liked or disliked each of the principal parties in their country on a scale from 0, meaning to strongly dislike, to 10, meaning strongly like. The relative preference score is the difference between the score given to the party they most liked and the score given to the party they least liked. Separate dummy variables are created for those respondents for whom the relevant data are missing or not classifiable.

*Political activism scale:* A simple additive scale constructed from questions B3042\_1, 2, and 3, and B3001\_1 and \_2, to indicate the number (none to five) of the following activities in which the respondent had participated over the previous five years: contacted a politician or government official either in person, in writing, or in some other way; took part in a protest, march or demonstration; worked 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.

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

#### A.2. Contextual variables

*District margin of victory:* In single member plurality systems this is the difference between the proportion

(not percentage) of the district vote won by the winner and that secured by the candidate who came second. Elsewhere its value is zero. This information is not available for the Philippines and so is imputed at the mean of 0.2.

*National-level competitiveness of the election:* The 'win margin' of the governing party or parties in the legislature calculated according to the following formula: 50% of seats won by parties in the government. The measure thus ranges from –50 to +50. We prefer this measure to the difference between the vote share won by the two largest parties as used for example by Blais and Dobrzynska, 1998, and Kostadinova, 2003, because it is better able to capture the closeness of the election race for government power. This measure does, however, present us with a problem in those countries where the executive is appointed independently of the legislature. In the USA, we use the difference between the winning party and the losing party in seats in the House of Representatives. In Taiwan, we calculate the difference in seats between the parties supporting the president and those in opposition. In Switzerland, we regard all parties in the national executive, or *Bundesrat*, as governing parties.

*Electoral System:* All the systems in those elections covered by our sample of CSES surveys were either plurality, mixed-member electoral or straightforward PR systems. *Plurality:* Single-member simple plurality as used in Britain, Canada, USA, and the Philippines. We leave aside the fact that 23 of the 235 seats in the Philippines are elected by PR). *Mixed-member systems:* These are defined following Shugart and Wattenberg (2001). In more detailed analysis (discussed in footnote 8 but not presented) this category was subdivided into Mixed-Member Majoritarian (MMM) and Mixed-member Proportional (MMP). In all other cases a version of PR was used. Except in the case of the 2004 survey in Japan which covered an election for the upper house (of councillors), the coding is based on elections to the lower house.

## References

- Agresti, A., 1990. *Categorical Data Analysis*. Wiley Series in Probability and Mathematical Statistics, Applied Probability and Statistics. Wiley, New York.
- Anderson, C.J., Beramendi, P. Income, inequality and electoral participation. In: Beramendi, P., Anderson, C.J. (Eds.), *Democracy, Inequality and Representation*. Russell Sage Foundation, New York, in press.
- Banks, A.S., 2005. *Cross-National Time-Series Data Archive* (CD ROM). Databank International, Binghamton, NY.
- 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, 467–484.
- Bielasiak, J., 2002. The institutionalization of electoral and party systems in postcommunist states. *Comparative Politics* 34 (2), 189–210.
- 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., Aarts, K., 2006. Electoral systems and turnout. *Acta Politica* 41, 180–196.
- 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.
- 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.
- 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.
- The Comparative Study of Electoral Systems, 2003. CSES Module 1 Full Release [dataset]. Center for Political Studies. University of Michigan, Ann Arbor, MI. <http://www.cses.org> (producer and distributor). August 4, 2003.
- The Comparative Study of Electoral Systems, 2006. CSES Module 2 Fourth Advance Release [dataset]. Center for Political Studies. University of Michigan, Ann Arbor, MI. <http://www.cses.org> (producer and distributor). April 10, 2006.
- 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, New York.
- Cox, G.W., 1999. Electoral rules and the calculus of mobilization. *Legislative Studies Quarterly* 24, 387–419.
- Curtice, J., Shively, P. Who represents us best? One member or many? in: Klingemann, H.-D. (Ed.), *The Comparative Study of Electoral Systems*. Oxford University Press, Oxford, in press.
- 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.
- Evans, G., Andersen, R., 2004. Do issues decide? Partisan conditioning and perceptions of party issue positions across the electoral cycle. *British Elections and Parties Review* 14, 18–39.
- Farrell, D., McAllister, I., 2006. Voter satisfaction and electoral systems: does preferential voting in candidate-centred systems make a difference? *European Journal of Political Research* 45 (5), 723–749.
- 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.
- Freedom House, 2007. *Freedom in the World Country Ratings, 1972–2007* (online). Available from <http://www.freedomhouse.org/uploads/fiw/FIWAIScores.xls> (accessed April 2007).



- Greene, W., 2000. *Econometric Analysis*, fourth ed. Prentice-Hall, Upper Saddle River, NJ.
- 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.
- Karp, J.A., Banducci, S.A., 2006. Party mobilization and political participation in new and old democracies. Paper presented to the Annual Meeting of the American Political Science Association, Philadelphia, PA.
- 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.
- 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 University Press, Oxford.
- Lijphart, A., 1997. Unequal participation: democracy's unresolved dilemma. *American Political Science Review* 91, 1–14.
- 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.
- Milner, H., Grönlund, K., 2004. The determinants of political knowledge in a comparative perspective. Paper presented to the Annual Meeting of the American Political Science Association, Chicago, IL.
- Plutzer, E., 2002. Becoming a habitual voter: inertia, resources, and growth in young adulthood. *American Political Science Review* 96 (1), 16.
- Powell, G.B., 1986. American-voter turnout in comparative perspective. *American Political Science Review* 80 (1), 17–43.
- 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 Modelling*. Sage, London.
- Solt, F. Economic Inequality and Democratic Political Engagement. *American Journal of Political Science*, in press.
- Verba, S., Schlozman, K.L., Brady, H.E., 1995. *Voice and Equality: Civic Voluntarism in American Politics*. Harvard University Press, Cambridge, MA.
- Zaller, J., 1992. *The Nature and Origins of Mass Opinion*. Cambridge University Press, Cambridge.