Electoral Systems and Turnout

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Research dealing with contemporary western democracies has consistently shown that turnout is substantially higher under PR, under larger district magnitude, and under more proportional systems in general. That research has failed to explain, however, that how and why PR fosters turnout. Furthermore, the same pattern fails to be replicated in Latin America. Finally, studies that include a wide set of democracies find turnout to be higher under more proportional systems, but the reported impact is quite small. We conclude that the pattern observed in established democracies is not robust and that until we have developed a more compelling explanation for how and why PR fosters turnout, a sceptical position is justified.
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Introduction

One of the arguments for changing the electoral system is the supposition that turnout and other forms of political involvement in the Netherlands have gradually declined and that a change in the electoral system might have a positive effect on political involvement.

This article ascertains the validity of that supposition. We focus on turnout because of the lack of comparative or longitudinal data on other types of political activity. We determine whether turnout in the national legislative Dutch elections is above or below average, relative to turnout in national legislative elections elsewhere in Europe. We also look at the evolution of turnout in the Netherlands and in Europe since 1945. We are particularly interested in ascertaining whether turnout is really declining, and in specifying, if there is such a trend, when it started and whether the Dutch pattern is similar or different from what can be observed elsewhere in Europe.

Once these 'facts' are established, we proceed to our main task, which is to examine the link between the electoral system and turnout. We start by asking why we would expect the electoral system to have an effect on turnout. This

allows us to identify the mediating factors through which the electoral system might exercise its influence.

The literature has utilized three different indicators in order to ascertain the effect of electoral systems on turnout: a district magnitude variable, an electoral formula variable, and a proportionality or disproportionality index that can be construed as reflecting the combined impact of electoral formula and district magnitude. We review these studies and their findings. In the concluding section, we evaluate the potential impact of electoral system reform.

Turnout in the Netherlands and Europe

Is there a turnout 'problem' in the Netherlands? Turnout in the last two elections was 79 and 80%.[1] Is this high or low? The answer depends on one's expectation or normative view about what a 'good' turnout is. If one believes that it is a moral obligation for citizens to participate at least minimally in the political process, the fact that one citizen out of five chooses not to vote is a cause for concern. If one starts with the assumption that it is not rational for people to take time to go and vote (and to collect information in order to decide which party or candidate to support) because the probability that their vote will matter (that is, it will decide the outcome of the election) is infinitesimal (Blais, 2000), then it is truly amazing that so many do cast their vote.

A more concrete question is whether turnout in the Netherlands is particularly low or high. This calls for a comparison with relevant, 'comparable' countries. We know that turnout varies considerably across continents (Blais and Dobrzynska, 1998), and so the most appropriate reference group is the rest of Europe.

Table 1 shows mean turnout for the period 2000–2005 for democratic legislative national elections in 35 European countries. All the countries that had a score of 1 or 2 on Freedom House political rights scale for each year between 2000 and 2005 are included.[2] The countries in Table 1 are sorted according to their mean turnout: it can be seen that 17 countries have a turnout of more than 73.5%, and another 17 have a lower turnout. The median turnout in Europe therefore is 73.5%, and Dutch turnout is slightly above median European turnout.

The situation is slightly better than elsewhere, but it might be worse than it used to be. Graph 1 shows the evolution of turnout in the Netherlands since 1945. Turnout was about 95% until 1970 when voting was compulsory. It dropped by almost 15 points in the early 1970s but came back to 85% in the 1980s, and declined by another 5 points in the 1990s.

Is this evolution different from that found in most European countries? Graph 1 shows the prior 5-year average among 'established' European

**Table 1** Mean Turnout in European Legislative National Elections, 2000–2004

Country	Mean turnout 2000–2004 (%)
Malta	95.7
Cyprus	91.8
Luxembourg	91.7
Belgium	91.6
Iceland	87.5
Denmark	87.1
Liechtenstein	86.7
Austria	84.3
Andorra	81.6
Italy	81.4
Sweden	80.1
Monaco	79.7
Netherlands	*79.5*
Germany	79.1
Greece	75.7
Norway	75
San Marino	73.8
Hungary	73.5
Spain	72.2
Latvia	71.2
Slovakia	70.1
Finland	69.7
Croatia	69.1
Bulgaria	66.6
Slovenia	65.5
Portugal	62.8
Ireland	62.6
Romania	61.9
France	60.3
United Kingdom	59.4
Estonia	58.2
Czech Republic	57.9
Lithuania	52.1
Poland	46.2
Switzerland	45.4

www.idea.int.
Data 2004 Lithuania, Romania, Luxembourg, Slovenia: http://www.ifes.org/eguide/
turnout2004.htm.
Data 2003 Monaco: http://www.conseilnational.mc/

democracies, that is, among those countries that have maintained a score of 1 or 2 on the Freedom House political rights scale since 1972, the year Freedom House started its ratings. Average European turnout was slightly above 80% until the late 1980s, stayed at around 80% in the 1990s, and declined a few more points in the last decade.
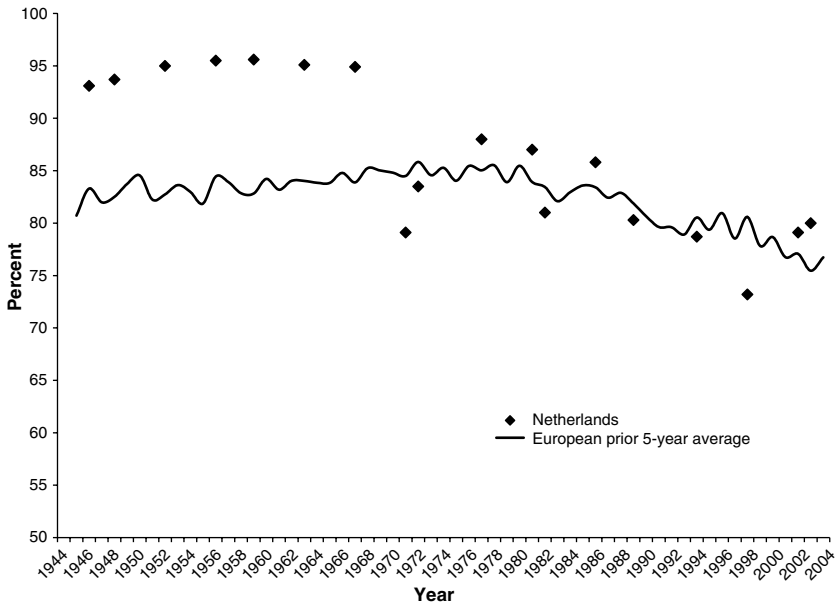
Graph 1 Turnout in the Netherlands and Europe compared, 1945–2004. www.idea.int Countries considered for 5-year average: Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Malta, Norway, Sweden, Switzerland and United Kingdom.

Graph 1 reminds us that turnout was exceptionally high in the Netherlands until compulsory voting was abolished. Dutch turnout was typically 10 points higher than the European average, and it was even slightly higher than in Belgium and Luxemburg, where voting was also compulsory. Since then, Dutch turnout has not substantially deviated from the west European norm.

In short, turnout in the Netherlands is not particularly low. There was a slight decline in the 1990s, but the decline was not more marked than elsewhere and it appears to have stopped recently.

Why Should PR and Higher District Magnitude Matter?

The general expectation is that turnout should be higher in PR systems. Why? Two main reasons are adduced. The first is that proportional representation produces more parties (for a more detailed discussion of this relationship, see the contribution to this issue by Gary Cox). The presence of more parties means that voters have more choice, that they are more likely to find a party that defends their personal interests or values. Because they are offered more choice, fewer citizens should feel indifferent or alienated from the party system.

Furthermore, the more the parties existing, the greater the total amount of mobilization by the parties during election campaigns.

The second reason why turnout is predicted to be higher in PR systems is that PR produces stronger competition and that stronger competition leads to higher turnout because parties invest more in mobilization efforts and voters are more likely to think that their vote may matter when and where there is a close race. The argument is that there are many safe seats in single-member constituencies, seats where there is little uncertainty about the eventual winner, and that this depresses turnout. In PR systems, on the contrary, even small parties can win seats, and so few people have the impression that their vote does not count.

These two reasons are the most-often evoked ones in the literature to support the prediction that PR fosters turnout. Jackman (1987) has suggested that PR has another consequence that could depress turnout. He points out that because PR produces more parties, it is also more likely to lead to the formation of coalition governments. The presence of coalition governments, he contends, endangers the *decisiveness* of elections. In single-member plurality systems, the story goes, there is a direct link between the outcome of the election and the formation of government: the party with most votes gets to form the government. In a PR system, the situation is more complicated; the constitution of the government depends in part on how many votes and seats each party won and also in part on backroom deals among the parties, and voters have no say about the actual coalition that is created after the election. Because elections are less decisive (and are perceived so by voters), there would be less incentive to vote.

To sum up, the theoretical literature proposes three sets of consequences that PR could have on turnout, two of them positive and one negative. If the three sets of consequences are of similar magnitude, the net effect could be slightly positive, if the last consequence is more important, there could be no overall difference, and if the first two are more substantial, PR could have a substantial positive impact.

Before reviewing the empirical findings, few points need to be clarified. First, the question as it is stated supposes a simple distinction between PR and non-PR systems, but that distinction is blurred by the rising number of mixed systems, which combine PR and plurality or majority rule (Massicotte and Blais, 1999; Shugart and Wattenberg, 2001). One option is to create a third category, but this is a moot solution since the relative importance of the PR component varies immensely from one mixed system to the other. Another solution is to construe some of these mixed systems as mostly PR, and others as mostly plurality or majority.

The second point flows from the fact that all PR systems have multi-member districts and that almost all plurality and majority systems have single-member

districts. This raises the question as to whether it is the electoral formula or district magnitude that matters. The only way to address the question is to ascertain whether turnout is systematically related to district magnitude within PR systems.

The third point is that the number of parties is assumed to produce two sets of contradictory consequences. On one hand, more parties mean more choice and more mobilization, and this fosters turnout. On the other hand, more parties usually mean coalition governments, and this depresses turnout. The only way to disentangle these effects is to compare within multi-party systems those that have coalition governments and those that do not.

Does the Electoral Formula Matter?

Table 2 provides a summary of the findings reported in those studies that have looked at the impact of the electoral formula on turnout. We confine ourselves to multivariate studies that include dummy variables for the various electoral formulas. We focus on the contrast between PR and non-PR systems, the latter being mostly plurality systems. Mixed systems are treated differentially in those studies: sometimes they are considered as a separate category and sometimes they are treated as an intermediate group; sometimes 'corrective' (dependent) systems are collapsed with PR.

Table 2 Impact of the electoral formula on turnout

Study	Cases	Impact of PR
Blais and Carty (1990)	20 industrialized countries 1847–1985 ($N = 509$)	+7.4[a]
Black (1991)	18 democracies 1980s (average turnout)	+10.8[a]
Blais and Dobrzynska (1998)	324 democratic elections 91 countries, 1972–1995	+2.6[b]
Blais et al. (2003)	150 democratic elections 61 countries, 1990–2000	+4.2[b]
Kostadinova (2003)	15 postcommunist countries 1990–2000 ($N = 51$)	+7.8[b]
Rose (2004)	European Union countries 1945–2002 ($N = 233$)	+8.8[b]

[a]Compared to plurality.
[b]Compared to non-PR systems.

Occasionally, these studies include the disproportionality index as an additional measure. To the extent possible, we focus on the findings that exclude that variable. The reason is simply that the relative disparity between seat and vote shares is to a large extent the product of the electoral system and that we should not control for that outcome if we wish to estimate the total effect of the electoral system. The same logic applies to another variable, the (effective) number of parties. When we wish to ascertain the impact of the electoral formula, we should not control for the number of parties because that number is posterior in the causal sequence.[3]

All these studies confirm the hypothesis that turnout is higher in PR elections. All studies deal with lower house national elections,[4] but the sample of elections and the control variables vary considerably, yet each study finds a positive association between PR and turnout. The impact of PR appears quite substantial, the typical difference being 7 or 8 percentage points. Yet, the two studies (Blais and Dobrzynska, 1998; Blais *et al.*, 2003) that include the largest set of countries and control variables (especially socio-economic variables) come up with smaller effects, of the magnitude of 3 or 4 percentage points. Our estimate of the impact of PR would be in the vicinity of 3 to 5 points, which is neither huge nor tiny.[5]

It is tempting to infer from this that the positive effect of PR on turnout is a well-established 'fact'; this is indeed Lijphart's (2000) verdict in a previous review of the literature. We are not quite as sanguine for two reasons. All the studies reviewed in Table 2 are crosssectional. We would have more confidence in the findings if there had been longitudinal research showing that turnout increases after a country adopts PR or decreases after a PR country moves to plurality or majority.[6] Unfortunately, no research has provided an assessment of the consequences on electoral participation of the widespread shift to PR at the beginning of the 20th century.[7] We would also feel more certain about the validity of the results if we fully grasped the reasons why PR contributes to higher turnout (see below). Still, there is relatively strong support for the view that PR fosters higher turnout.[8]

Does District Magnitude Matter?

The pioneer studies in this area (Powell, 1982, 1986; Jackman, 1987) utilized a variable, called 'nationally competitive election districts', that referred to both the electoral formula and district size but with a focus on district magnitude, as testified by the label of the variable. The variable was operationalized in the following way: 'countries with national elections by proportional representation or a national pool for some legislative districts or a simple national presidential vote are assigned a score of four; those with proportional

Table 3 Impact of district magnitude on turnout

Study	Cases	Impact[a]
Powell (1986)	15 democracies Mean turnout, 1960s	+ 5.7
	17 democracies Mean turnout, 1970s	+ 5.3
Jackman (1987)	19 democracies Mean turnout, 1960s	+ 9.4
	19 democracies Mean turnout, 1970s	+ 10.7
Jackman and Miller (1995)	22 democracies Mean turnout, 1980s	+ 8.8
Radcliff and Davis (2000)	19 democracies Mean turnout, 1970s	+ 15.2
	19 democracies Mean turnout, 1980s	+ 12.5
Pérez-Liñán (2001)	17 Latin American countries Mean turnout, 1980s	Not significant
Fornos et al. (2004)	18 Latin American countries 1980–2000 ($N = 85$)	−13.1[b]

[a]The coefficient has been multiplied by 3 because the variable ranges from 1 to 4.
[b]The coefficient has not been multiplied because almost all cases have a score of 3 or 4.

representation in large districts receive a score of three; countries with proportional representation and three to five members per district are scored two; and countries with single-member or winner take-all districts receive the lowest score of one' (Jackman, 1987, 410).

Table 3 summarizes the findings of the studies that have used this variable. There is a quite consistent pattern in those studies (Powell, Jackman, Jackman and Miller, Radcliff and Davis) pertaining to industrial democracies, which confirms the hypothesis that the larger the district, the higher the turnout. The impact of district magnitude is noticeably more modest in Powell's study than in the others. This is related, we believe, to the fact that this is the only study that did not include the number of parties. We revisit this point when we discuss the interaction between the number of parties and the electoral system (and/or district magnitude).

The findings are exactly the opposite in the two studies that have examined turnout in Latin American countries. The two studies by Perez-Linan and

Fornos *et al.* show that turnout is lower, not higher, in systems with high district magnitude.[9]

These conflicting results raise a number of questions. One possibility is that the impact of district magnitude is not the same in established and non-established democracies. Note, however, that some of the studies that have looked at the impact of the electoral formula (see Table 2) have included a wide array of countries and one (Kostadinova, 2003) has even explicitly dealt with new postcommunist democracies, and in that case, the findings have been more consistent. It is also important to keep in mind that all Latin American countries, except one, are classified 3 or 4 on the district variable, and so the variance is quite limited. So Latin America does not provide an ideal terrain for ascertaining the impact of district magnitude.[10]

However, there are also problems with the studies pertaining to industrial democracies. These studies combine presidential and legislative elections and they assign Spain, a country with a very low district magnitude (Lijphart, 1994; Cox, 1997), a dubious score of 3 (on the 1 to 4 scale).[11] A more direct measure of district magnitude (or effective district magnitude; see Lijphart, 1994) would be preferable to the rough classification of district types.[12]

The empirical evidence on the impact of district magnitude is puzzling. The pioneer research of Powell and Jackman seemed to have established that larger districts contribute to higher turnout. The classification on which this research was based is, however, problematic. Furthermore, studies dealing with Latin American countries have failed to replicate these findings. Our verdict is that the pattern is ambiguous.[13]

Does Disproportionality Matter?

A number of studies have also examined the link between disproportionality (or proportionality) and turnout. Disprotionality can be conceptualized as a summary measure that takes into account both the electoral formula and district magnitude. Plurality and majority rules produce disproportional outcomes, but so do PR systems if the districts are quite small (or if there is a very high threshold).

The advantage of the disproportionality measure is that it allows us to compare all systems on one single dimension. It has one important drawback. The degree of disproportionality observed in one given election reflects not only the electoral rules but also parties' and voters' reactions to these rules. For instance, a disproportional outcome may have the effect of reducing the number of parties at the following election, which will then reduce the level of disproportionality (Cox, 1997). Disproportionality should be construed as a rough proxy for the combined effect of the electoral formula and district magnitude (plus other aspects, like the threshold).

Table 4 Impact of disproportionality on turnout

Study	Cases	Impact[a]
Jackman (1987)	19 democracies Mean turnout, 1960s	−12.5
	19 democracies Mean turnout, 1970s	−9.0
Blais and Carty (1990)	20 industrialized countries 1847–1985 ($N = 509$)	Not significant
Black (1991)	18 democracies Mean turnout, 1980s	−9.9
Jackman and Miller (1995)	22 democracies Mean turnout, 1980s	−6.8
Franklin (1996)	25 democracies Mean turnout, 1960–1995	−12.4
Blais and Dobrzynska (1998)	324 democratic elections 91 countries, 1972–1995	−2.9
Pérez-Liñán (2001)	17 Latin American countries Mean turnout, 1980s	Not significant
Fornos et al. (2004)	18 Latin American countries 1980–2000 ($N = 85$)	Not significant

[a]This is the difference in turnout between the cases with the lowest and highest levels of disproportionality. When the range was not reported, we have assumed it to be 0.15, which is the median range in those studies that have reported it.

From that perspective, disproportionality should be used as an alternative measure of the electoral system and not as an additional measure. Unfortunately, it is often included together with the electoral formula or district magnitude. The consequence is that the effect of one or the other variable may be weakened.[14]

The findings related to the effect of disproportionality are summarized in Table 4. All the studies dealing with contemporary western industrial democracies report a strong and significant negative correlation, turnout being typically 10 points lower in the most disproportional systems than in the most proportional ones (the most disproportional systems usually have a disproportionality index around 0.15 and the most proportional ones close to 0). The two studies that examine Latin American countries, for their part, find no association, as does Blais and Carty's research, the only one that incorporates a historical dimension. Blais and Dobrzynska (1998) for their

part, who include both established and non-established democracies, find a very small (although significant) effect.[15]

The findings concerning disproportionality more or less duplicate those obtained with district magnitude (and, to a certain extent, the electoral formula). If we confine ourselves to research pertaining to contemporary advanced democracies, there seems to be a consistent pattern: turnout is higher in more proportional systems with higher district magnitude. However, no such pattern appears to emerge in Latin America and the association is much weaker when a larger sample of countries is considered. The impact of electoral systems on turnout is either contingent on other contextual factors or it is much weaker than the initial pioneer studies had led us to think.

Turnout and the Number of Parties

Proportional representation (or larger districts) could foster turnout because it produces more parties, thus providing voters with more choice and more mobilization. On that account, there should be a positive association between the number of parties and turnout. As suggested by Jackman, however, multi-party systems usually produce coalition governments, which make elections less decisive.

What is the relationship between the number of parties and turnout? Table 5 summarizes the findings. Most studies report a negative relationship, with the significant exceptions being those dealing with Latin American countries.[16] So we are left with the conclusion that if PR fosters turnout, it is not because there are more parties; in fact, it could be despite the presence of more parties.

It should be pointed out that the interpretation advanced for the negative relationship, that elections are perceived to be less decisive when voters know that the government will be formed only after deals between the parties, is only a supposition. Blais and Carty (1990) and Blais and Dobrzynska (1998) explicitly test the hypothesis that, everything else being equal, elections that produce single-party majority governments have a higher turnout (because they are more decisive), and both studies report that the hypothesis is not borne out.

These results are disquieting. The most direct consequence of a more proportional system is to allow for more parties, but having more parties does not increase turnout, it might depress it.

An alternative explanation is that turnout is depressed in single-member districts by the presence of many safe seats (Franklin, 2004). There are problems with that interpretation as well. First, there are also safe seats in PR systems, and it remains to be determined whether there are many more safe seats in non-PR systems. Second, most of the studies reviewed here already incorporate a 'competitiveness' measure, and so that dimension is taken into account.[17] Third, while closeness of the race has been shown to affect turnout

Table 5 Number of parties and turnout

Study	Cases	Finding
Jackman (1987)	19 democracies Mean turnout, 1960s and 1970s	Negative
Blais and Carty (1990)	20 industrialized countries 1847–1985 ($N = 509$)	Negative
Black (1991)	18 democracies 1980s (average turnout)	Not significant
Jackman and Miller (1995)	22 democracies Mean turnout, 1980s	Negative
Blais and Dobrzynska (1998)	324 democratic elections 91 countries, 1972–1995	Negative
Radcliff and Davis (2000)	19 democracies Mean turnout, 1970s and 1980s	Negative
Pérez-Liñán (2001)	17 Latin American countries Mean turnout, 1980s	Not significant
Kostadinova (2003)	15 post-communist countries 1990–2000 ($N = 51$)	Negative
Fornos et al. (2004)	18 Latin American countries 1980–2000 ($N = 85$)	Not significant

in single-member constituencies and perceptions of closeness have been shown to increase the propensity to vote, the impact of a close election (and by implication, the impact of lack of competition) is strikingly small: 'a close election is likely to increase turnout by a few percentage points' (Blais, 2000, 78). It is hard to see how differential competitiveness between PR and non-PR systems could produce a substantial turnout gap.

In the same way as that it is not clear that more proportional systems foster higher turnout, it is not clear how and why this effect is produced, if there is one. We can, however, rule out the most obvious culprit. If turnout is lower in more disproportional systems, it is not because there are fewer parties.

Turnout and Party Mobilization

Another reason that has been advanced for why PR could foster turnout is party mobilization. The argument is two-fold: first, PR increases party

mobilization, simply because there are more parties in the running or perhaps because there are fewer safe seats in PR and greater competitiveness induces parties to invest more effort in getting out the vote, and second, party mobilization increases turnout.

There is strong supportive evidence for the second proposition. Turnout is higher in those constituencies or districts where parties or candidates spend or mobilize more, and individuals who are contacted by parties are much more likely to vote, even controlling for a host of individual predispositions (Cox and Munger, 1989; Rallings and Trasher, 1990; Rosenstone and Hansen, 1993; Wielhouwer and Lockerbie, 1994; Clarke *et al.,* 2004).

The empirical evidence does not confirm the first proposition. In fact, party mobilization appears to be weaker in PR systems. On one hand, the introduction of a mixed system in New Zealand seems to have reduced the level of party mobilization (Vowles, 2002). Moreover, a comparative analysis of seven countries indicates that party contact is weaker and has a smaller effect on turnout in PR countries (Karp, Banducci and Bowler, forthcoming).

The conclusion must therefore be that if PR fosters turnout, it is not because parties are more prone to mobilize voters.

And the Ballot?

The extant literature has ascertained the impact of the electoral system on turnout by comparing turnout in countries or elections with different electoral formulas or district magnitude or degree of disproportionality. One aspect of electoral systems that has been neglected is the ballot structure. Do some forms of ballot foster turnout?

One criticism that is addressed to standard close list system is that it does not allow voters to express their views about individual candidates (Blais, 1991). A voter who is indifferent about the parties but has strong preferences about specific candidates is likely to feel frustrated and could well decide to abstain. Thus the prediction that, everything else being equal, turnout in PR systems will be lower when and where voters are not given the opportunity to express a 'personal' vote.

That hypothesis has hardly been examined in the literature. Karvonen (2004, 223) finds no interpretable relationship between the possibilities for preferential voting and electoral turnout. Our data on cross-national variations in turnout in Europe, summarized in Table 1, also do not seem to confirm the hypothesis. The six PR countries where voters vote for a candidate (Finland, Ireland, Luxemburg, the Netherlands, Poland and Switzerland) have a median turnout of 66%, which is almost the same

as in the five countries (Bulgaria, Norway, Portugal, Spain and Romania) with a closed list (the median is 67%).

In short, we know preciously little about the impact of ballot structure on turnout. When we look at the situation in Europe, however, it would appear that people are *not* more inclined to vote when they are offered the opportunity to express their views about the candidates.

Conclusion

Research dealing with contemporary western democracies has consistently shown that turnout is substantially higher under PR, under larger district magnitude, and under more proportional systems in general.

That research has failed to explain, however, how and why that effect is produced. The most direct consequence of PR is to increase the number of parties and that same research shows that turnout tends to decline when there are more parties. That surprising result is usually interpreted as meaning that elections are less decisive when there are coalition governments (which are more likely in multiparty systems) and that turnout is reduced when elections are perceived to be less decisive. That interpretation is not directly supported by the empirical evidence. Even if that interpretation is valid, the bottom line is that the extant research has not succeeded in specifying how and why PR fosters turnout.[18]

Does the same pattern hold beyond the small set of established democracies? Kostadinova's study, which deals with post-communist countries, suggests that it does. As the author concludes, 'institutional arrangements have effects similar to those found in Western democracies' (Kostadinova, 2003, 755). However, the situation is completely different according to the two studies that have examined Latin American countries. Electoral systems seem to have no systematic effect on turnout in that region.

To complete the picture, the studies that include the widest set of democracies (Blais and Dobrzynska, 1998; Blais *et al.*, 2003), both established and non-established, find turnout to be higher under more proportional systems, but the reported impact is quite small.

One reading of the literature is that PR fosters turnout, except in one region of the world (Latin America). We find that reading too optimistic. The nil findings reported in Latin America suggest that the patterns observed in the small set of established democracies may not be robust. Until we have developed a more compelling explanation for how and why PR increases turnout, it seems to us that skepticism is well justified. Regarding the effect of turnout on the proposed electoral system for the Netherlands (a change within the class of proportional systems), it seems safe to assume that this would be minimal and negligible.

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Notes

1 We define turnout as the percentage of registered voters who cast a vote. Many studies and publications use the 'voting age population' instead of the number of registered voters for the denominator of turnout. The latter measure has some important shortcomings. The denominator includes people who do not have the right to vote, aliens or (in many countries) prisoners. McDonald and Popkin (2001) have shown that the apparent decline in turnout in the US is entirely due to the increase in aliens and prisoners who do not have the right to vote. Furthermore, voting age population is not measured at the time of the election but at the time of the latest census, which can be out of date. For a more extensive justification, see Aarts and Wessels (2005), Blais and Dobrzynska (1998), and Franklin (1996, 2004).

2 The Freedom House political rights scale has been applied by Freedom House to all countries in the world since 1972. The scale is based on an assessment of 10 political rights and 15 political liberties in each country. The resulting scale runs from 1 to 7, with the range 1–2.5 labeled as 'free', 3–5 as 'partly free', and 5.5–7 as 'not free'. Refer to: www.freedomhouse.org, accessed on 20 March 2006.

3 See Blais and Dobrzynska (1998) for a justification of a sequential model in which party system variables are entered only in the last stage.

4 Rose (2004) also examines elections to the European Parliament and finds a 13-point effect for PR.

5 This estimate is in the mid-range of reported effects in the cited studies. Note that Black's estimate of the difference between PR and plurality is 10.8 points only after adding three country dummy variables; without these dummy variables, the difference is 4.8 points.

6 In New Zealand, turnout did increase slightly in the first election (1996) after the adoption of a mixed (dependent) system, but it fell in the subsequent (1999) election. The 1996 increase seems to have been associated with a modest increase in the sense of political efficacy (Karp and Banducci, 1999). The 1999 decline appears to be related to reduced party mobilization (Vowles, 2002).

7 Such an exercise would be fraught with huge difficulties, however, as the shift to PR occurred as the same time as the suffrage was being broadened (Boix, 1999; Blais *et al.*, 2005), and it may be impossible to disentangle the two effects.

8 Blais and Dobrzynska (1998) also test whether turnout is different in dependent and independent mixed systems. Their findings suggest that the main contrast is between PR and mixed dependent systems on one hand and all other systems on the other hand. Norris (2004, 162) examines turnout worldwide (including non-democratic elections) and reports that mean turnout is 75% in PR systems, 68% in 'majoritarian' systems, 72% in mixed dependent systems, and 69% in mixed independent systems.

9 The coefficient is not statistically significant in Pérez-Liñán (2001).

10 Latin America does offer the advantage that all electoral systems are PR or mixed. No study has looked at the effect of district magnitude *per se*, controlling for the electoral formula, that is, within PR systems.

11 Jackman (1987) excludes Spain.

12 Pérez-Liñán (2001, 286) did test a model with average district magnitude, but the variable came out insignificant.

13 We note that in Powell (1986, 25), the variable is not statistically significant, contrary to what is indicated in the table.

14 This is the approach utilized by Blais and Dobrzynska (1998). Radcliff and Davis (2000, 134) note that they did not include disproportionality because of its high correlation (and conceptual redundancy) with district magnitude.

15 They report a stronger impact, however, within PR systems.

16 The variable is not quite significant in Black (1991), but it has the correct sign.

17 It must be acknowledged, however, that competitiveness is not usually measured at the constituency level.

18 Our review focuses on aggregate level studies that examine the link between electoral systems and turnout, as the question that we address is whether overall turnout is affected by electoral systems. Another avenue would be to determine whether the individual decision to vote or not to vote can be explained differently in PR and non-PR systems, although the comparative analysis of surveys conducted in different countries (with CSES data, for instance). There have been few such analyses. Blais (2000) examines voting in nine countries with different electoral systems and concludes, 'the most important socio-economic characteristics that are associated with voting are strikingly similar among these nine countries' (p 52). Brockington (2002), using CSES data, reports that the presence of non-minimal-winning coalitions reduces turnout, which seems to support Jackman's interpretation. It is unclear, however, whether these results are driven by the inclusion of Switzerland, a country with very low turnout and without minimal-winning coalitions. For their part, Jusko and Shively (2005), again using CSES data, show that the relationship between individuals' level of information and the propensity to vote is stronger where there are more parties competing in an election, thus suggesting that turnout is reduced in multiparty systems because of higher information costs. The problem is that information questions are not easily comparable across countries. In contrast, Brockington (2002) does *not* find education to be more strongly correlated with turnout in more complex larger party systems. All in all, the individual level evidence does not clarify the ambiguous findings obtained in aggregate level studies.