To Vote Or To Abstain? An Experimental Study

of Rational and Normative Considerations

Under First Past the Post and PR Elections

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Abstract

We examine through an experimental design how rational and normative considerations affect the decision to vote or to abstain in First Past the Post (FPTP) and Proportional Representation (PR) elections. We show that rational considerations play a larger role under FPTP and normative ones are more powerful under PR. We suggest that it is so because PR is a more complicated formula, which makes it more difficult to estimate expected benefits. We also show that under FPTP the decision to vote or not to vote is affected by the B term (the differential gain associated with the victory of one party over the other) but not by the p term (the probability of casting a decisive vote), which is inconsistent with a strict rational choice model.

To Vote Or To Abstain? An Experimental Study of Rational and Normative Considerations In First Past the Post and PR Elections

Why so many people decide to vote in an election when their chance of casting a pivotal vote is so small is one of the great paradoxes that rational choice theorists have been struggling with for a long time (Blais 2000; Grofman 1993; Levine and Palfrey 2007; Mueller 2003). Since voting is costly one would expect instrumental voters to abstain unless they are in the extremely exceptional situation of having a chance to affect the final result of the election (Riker and Ordeshook 1968). Stemming from this 'paradox of voting' a vast literature has looked at the motivations, both rational and non rational, that induce people to vote or not to vote. A good part of that literature has examined the contextual determinants of variations in turnout across space and over time (for a review see Blais 2006), while another stream of research has looked at the perceptions and attitudes that influence the decision to vote or to abstain (for a review see Blais 2007). Some recent research has examined how contextual and individual level factors interact in the process (Kittilson and Anderson 2011). This article follows the last tradition.

We examine how rational and non-rational considerations affect the decision to vote or to abstain under two different electoral systems. The focus of most research has been to determine whether turnout is higher under PR. Many studies find that this is the case (Blais & Carty 1990; Bowler et al. 2001; Ladner & Milner 1999). It is not clear, however, why it is so. The most direct impact of PR is to increase the number of parties but most studies report a negative relationship between the number of parties and turnout (Blais and Aarts 2006). It has also been suggested that PR elections are more competitive but it is not clear that this is the case (Blais and Lago 2009). We are thus left with an empirical regularity, for which we have no compelling micro foundation (Blais 2006).

The focus of our paper is different. We are interested in comparing not the overall turnout level across these two electoral systems but rather the relative import of two types of factors in the decision to vote or to abstain. More specifically, we examine how rational and normative factors play in FPTP and PR elections.

The Experiment

The experiment is as follows.[1] A group of 21 people is invited to participate in two series of ten elections. In each of these elections, there are two parties (named A and B) located respectively at 5 and 15 on a 0 to 20 scale (see Figure 1). Each participant is randomly allocated a different position on the 0 to 20 scale. One participant is thus located at each of the 21 positions. Participants are informed about the overall distribution of positions but they do not know the positions of specific individuals. They are not allowed to communicate with each other, and their position changes randomly at each election.

At each election, participants vote for party A, for party B, or they abstain. At each election a participant's gain equals 16 points minus the distance between the winning position and the participants' position. They are informed about the outcome of the election and their personal gain after each vote. How votes translate into winning positions depends on the voting rule, as explained below. There is a one point cost in voting. Ten points equal one dollar (Montreal) or one euro (Brussels).

There are two series of ten elections, one series under first past the post (FPTP) and one under proportional representation (PR). Under FPTP, the winning position is that of the party with the most votes (there is a random draw in case of a tie). Under PR, the winning position depends on the relative support given to the two parties. The winning position is a weighted average of the candidates' positions (5 and 15), where the weight given to a candidate's position is the vote share obtained by that candidate. For example, if all votes go to party A, the winning position is party A's position, 5. If all votes go to party B, the winning position is 15. If each party gets the same number of votes, the winning position is right in the middle, at 10. If 70% of the votes go to A, the winning position is 8 whereas if 70% of the votes go

[1] The experiment was programmed and conducted using software z-Tree (Fischbacher 2007). The recruitment of participants (most of them students) was undertaken by CIRANO in Montreal and Cevipol in Brussels.

to B, the winning position is 12.[2] This model of Proportional Representation intends to grasp a key feature of PR systems: that the policy is driven by more than one party, with forces proportional to their vote shares. This is the model used by Schramm and Sonnemans (1996a) in their experimental design and Ortuno-Ortin (1997), Lizzeri and Persico (2001), Laslier and Ozturck (2006), De Sinopoli and Iannantuoni (2007), and De Sinopoli et al. (2011) in their models.

Four groups performed the experiment in Montreal and four groups in Brussels. The experiments took place in January and February 2011. In each location, two groups started with FPTP elections and two groups started with PR. In each location, two groups were asked to indicate, at the time of voting, their expectations about the outcome of the election and two groups were not asked to reveal their perceptions. At the end of each session, subjects were asked to fill in a questionnaire with questions about socio-demographic variables, as well as questions about political attitudes, including questions designed to tap their sense of civic duty.

Our experimental design differs from previous research on a number of dimensions. First, the participants in our experiment are explicitly told that they are involved in an election with parties and that they have to decide whether to vote or not (and, if the former, for which party to vote for). In previous turnout experiments (see Duffy and Tavits 2008; Levine and Palfrey 2007; Schram and Sonnemans 1996a, 1996b), there is no reference at all to voting or elections. Participants are assigned to one of two groups, and they are given the choice of purchasing a token or not (at a certain cost). The winning group is the group with a plurality of tokens (under the equivalent of FPTP). Purchasing a token is equivalent to voting with a cost in our experiment, and not purchasing a token is equivalent to abstaining. The researchers explain that they avoid referring to elections and voting because 'they did not want to cue subjects' beliefs with regards to social norms or sanctions surrounding voting decisions.' (Duffy and Tavits 2008, 606). Since we are interested in both the rational and the normative motivations that drive people's decision to vote or to abstain in elections, the experiment is framed explicitly as an election, and the decision as one between voting and abstaining.[3]

Second, our experiment includes FPTP and PR elections. As far as we can tell, only one experimental study (Schram and Sonnemans 1996a, 1996b) has compared FPTP and PR. That study, however, like all others, is not framed as an election. Furthermore, the payoffs and the cost of voting are not identical in the two systems.

Third, our study includes measures of participants' expectations about the likely outcome of the election. Few studies tap subjects' perceptions, an important exception being that of Duffy and Tavits (2008), who asked people to indicate the probability that their vote would be pivotal. We are concerned that some people have great difficulty comprehending what a pivotal (or decisive) vote really means (see Esponda and Vespa 2011) and that many find it difficult to rate probabilities, especially those that are very small (Kahneman et al. 1982). For those reasons, we simply ask participants to indicate how many of the 20 other subjects they expect to vote for party A and party B, and how many they think will abstain.

Fourth, in our experiment there are 21 different positions, and the participants are assigned a new (randomly chosen) position in each election while most experiments involve only two or three positions (or groups) and the subjects stay in the same position throughout all rounds. Our approach allows for a more precise analysis of how one's position affects the decision to vote or abstain. Because positions are shifting from one election to the next, however, it is more difficult to take into account learning effects.

The Model

We test a simple model, loosely inspired from Riker and Ordeshook (1968) in which the decision to vote or to abstain is affected by three considerations: EB, the expected differential benefit that the individual will obtain if she votes rather than abstain, D, one's sense of civic duty; and C, the cost of voting.[4]

The cost of voting is one point (in both FPTP and PR elections). As it is constant across groups and individuals, it is not explicitly included in our estimations.[5]

It has been argued that the main reason why so many people vote in elections is that they feel that voting is a civic duty that the "good" citizen ought to fulfil (Blais 2000). The post-experiment questionnaire includes a set of three

[2] The logic is that the outcome of the election will be a coalition between the two parties, with the relative weight of the two parties in the coalition depending on the proportion of votes they receive.

[3] We should note that the environment that is created in these experiments may not be as 'neutral' as it may appear. In particular, the presentation in terms of groups or teams may elicit norms and strategies that are specific to collective action situations. Since we are interested in the individual act of voting we created an environment in which each participant has a unique position.

[4] EB corresponds to the BXp term in Riker and Ordeshook (1967). See below.

[5] The same approach is followed by Riker and Ordeshook (1967).

questions about sense of civic duty. Two questions are agree/disagree statements that it is the duty of every citizen to vote in an election and that it is essential that the great majority of citizens vote in elections in order to maintain democracy; the third question asks how guilty (very, somewhat, a little, not at all) the respondent would feel if she did not vote in an election. We use responses to the three questions to construct a civic duty scale that goes from 0 to 1.[6] The mean value of D is .74, with a standard deviation of .21.

We use two different measures of EB. The first corresponds to the difference in the payoff that an individual will get if she votes compared to if she abstains, given the other participants' behavior. This is the objective measure. We also have a subjective measure, which depends not on how other participants behave but rather on how someone expects the other participants to behave. To compute EB, we need to determine for which party each person would vote if she decides to participate. We simply assume that everyone votes for the party that is closest to their position.[7]

Under FPTP, EB equals 0 whenever the person's position is 10 or one's vote is not decisive. This occurs if the person's preferred party is already a winner among the other 20 participants or if it trails the other party by more than one vote. In those instances the outcome will be the same whether the person votes or abstains.

Then there are cases where one's vote could be decisive, that is, there is a tie between A and B and one's vote will make A or B win, or one's closest party is trailing by only one vote and one's vote will create a tie. What is the value of EB under such circumstances? It depends on one's location. Let us take those who are from 0 to 5 (or 15 to 20). Whether A or B wins makes a difference of 10 points. However, one's vote is never completely decisive; it either breaks or creates a tie. When there is a tie, the probability of one's preferred party winning is .5. As a consequence, breaking a tie increases the probability from .5 to 1, while creating a tie moves the probability from 0 to .5. In both cases, this is an increase in probability of .5. By voting for the preferred party the expected additional gain is 5 points (.5 X 10 points). For all those whose vote could be decisive and who are located at 6 or at 14 EB equals +4. Following the same logic, it can be inferred that EB equals +3 for those at 7 and 13, +2 for those at 8 and 12, and +1 for those at 9 and 11.

Subjective EB is based on responses to a question asking each person how many of the other participants they think will vote for party A and party B and how many will abstain. These responses provide the participants' best estimates of the likely outcome. We may assume, however, that many people are uncertain about their "predictions". It is thus possible that quite a few people think that while they are unlikely to be pivotal, there is some chance that their vote will make a difference.

We capture such uncertainty through the following procedure. Consider a person at position 5 who indicates that she expects party A to get 8 votes and party B to get 6 votes, with six abstentions (excluding herself). Under such a scenario, this person cannot be pivotal, and her expected differential payoff if she votes (compared to abstaining) is 0. To take uncertainty into account, we will now assume that this person expects party A to get 7 votes with a probability of ε, 9 votes with the same probability of ε, and 8 votes with a probability of $1 - 2X\varepsilon$. The same logic applies to her estimate of party B votes. There is thus in her view the possibility of both parties getting 7 votes, in which case she will be pivotal. We present and discuss the results associated with the highest uncertainty, under which a probability of .33 is given to the score given by the respondent, as well as to the scores just above and below. We have two measures, one based on the other participants' actual vote (the objective indicator) and one based on what each person predicted about the vote distribution of the other participants (the subjective indicator).

Under PR, EB is computed in the same fashion, that is, we subtract from the gain that the participant will obtain if she votes the gain that will result if she abstains. To capture uncertainty, we also compute EB under nine scenarios where party A and party B have successively values equal to their predicted score, plus 1, or minus 1.

Our model includes two basic considerations that can affect the decision to vote or to abstain: EB, and D. EB can be characterized as a 'rational' factor, in the sense that the rational citizen will decide to vote only if her expected benefits outweigh her expected costs (Downs 1957; Riker and Ordeshook 1968). D is a normative consideration. The person with a sense of duty does not ask herself what she might gain or lose if she does (or does not) vote; she is morally motivated to do what she feels is right (Blais and Achen 2012).

We predict "rational" considerations (EB) , to have a larger impact on the turnout decision in FPTP than in PR elections. Under FPTP there are only two outcomes (A or B wins). It is easy to determine the gain associated with each outcome and to see that one's vote will make a difference only if it is a very close contest. Under PR, there is a myriad of

[6] The scale has an alpha of .7

[7] This is the case of 89% among those who did vote . We assume that those who are at position 10 would vote for party A.

potential outcomes and it becomes difficult to sort out what difference one's vote will make.[8] Our hypothesis is thus that expected benefits play a bigger role in the decision to vote or not to vote in FPTP than in PR elections.

For the same reason, we believe that normative considerations such as sense of civic duty matter more in PR than in FPTP elections. To the extent that it is more difficult for someone to ascertain whether it is in her best interest to vote or to abstain in a PR election, the participant is more prone to rely on other considerations when deciding what she should do. Many people agree with the statement that it is the duty of every citizen to vote in an election and that they would feel guilty if they failed to vote (Blais 2000, 95; Clarke et al. 2004, 251). Furthermore, those who construe voting in ethical terms are less influenced by other considerations in their turnout decision (Blais and Achen 2012). Those normative views are likely to play a larger role in an environment (PR election) where the instrumental benefits of voting are more difficult to ascertain given the great number of possible outcomes.

Findings

On average, turnout is slightly higher in FPTP (72%) than in PR (69%) elections. The difference is statistically significant but substantially small. As indicated above, our main concern is to compare the impact of expected benefits and civic duty in the two types of elections.

Figure 2 depicts turnout by order of elections, for the two voting rules (remember that we hold a series of 10 elections under each voting rule). Under FPTP, turnout starts at 76% and progressively declines to 71%, whereas it goes from 77% to 64% under PR. The results presented below are not affected when we control for the order of the election.

Figure 3 illustrates the relationship between turnout and the participant's position. Positions 0 and 20, 1 and 19, 2 and 18, and so on are grouped together, so that extreme positions are close to zero and positions around the middle are close to 10. Turnout reaches its peak at positions 3 (17) to 5 (15) and its bottom at position 10.

Turnout is slightly lower in Brussels (68%) than in Montreal (73%) but the difference is small. None of the patterns that are examined later are affected by the inclusion of the place of experiment as a control variable.

More importantly for our purposes, we observe no significant difference between the groups depending on whether they were invited or not to reveal their predictions about the other participants' behavior. The concern is that asking such a question might induce people to think more strategically and to come to the conclusion that the rational decision, in most cases, is to abstain. Interestingly, we do not find such an effect. In fact, turnout is slightly higher in those groups who were asked their perceptions (72%) than in those who were not asked (69%). Our nil result is similar to that reported by Duffy and Tavits (2008). Finally, turnout is the same in the first (71%) and second (70%) series of elections.

In the analyses that are presented below, we are using both objective and subjective indicators of expected benefits. One question is whether the participants are inclined to overestimate expected benefits and if so whether this overestimation declines over time. Duffy and Tavits (2008) report that subjects overestimate the probability of casting a pivotal vote, but they also find that their beliefs become more realistic in later elections. Is there wishful thinking in our experiments? If so, do perceptions become more accurate over time?

Table 1 shows the mean scores for expected benefits, both objective and subjective, in the first five and last five elections. It can be seen that expected benefits are indeed exaggerated, especially so under FPTP elections.[9] The reason is simple. People are too prone to think that their vote could break or create a tie, that is, 39% believe that their vote could be pivotal whereas this is objectively the case only 20% of the time. We thus find, like Duffy and Tavits, some wishful thinking. Interestingly, however, there is little evidence of learning in our experiments, as the amount of overestimation does not decline over time.

We now turn to the specific empirical test of our hypotheses. Note that when we use objective indicators of EB we have 8 groups, 160 elections (80 FPTP and 80 PR), and 3360 individual votes but that the numbers are divided by two when we rely on subjective indicators, since only half the participants were asked their perceptions.

Table 2 presents the relationship between sense of duty and expected benefits on the one hand and the decision to vote on the other hand, with either objective or subjective indicators of EB. Because we are interested in the differential weight of rational and normative considerations under FPTP and PR, we include EB and Duty plus a PR dummy and interaction terms between PR and EB and PR and Duty. The prediction is that EBXPR will be negative, since we expect EB to be more important under FPTP, while DutyXPR will be positive, since we predict Duty to play a more important role under PR.

[8] It could also be that because PR is perceived to be fair (a party's share of the seats is equal to its share of the votes), people are prone to infer that all votes 'count'.

[9] The analysis here is restricted to those groups who were asked to reveal their predictions, and we compare their anticipations with the actual outcome.

Column 1 of Table 2 presents the results based on objective indicators of EB. There is some support for the prediction that normative considerations have a greater impact under PR. Duty has no significant effect under FPTP and its impact in PR elections is stronger (significant at the .06 level). As for EB, it has, as expected, a strong positive effect in FPTP elections but the prediction that its effect is weaker under PR is not confirmed. These first results provide limited support for our hypotheses.

What do we find when we use subjective (and theoretically more relevant) indicators of EB? Both EB and Duty emerge as significant (though not very strongly) in FPTP elections. This time, the interaction variable is clearly significantly negative in the case of EB while it has the correct (positive) sign but is not significant for Duty.

In short, our prediction that rational considerations play a larger role under FPTP is confirmed only when using the participants' subjective perceptions while the prediction that normative factors have a bigger impact under PR is supported only when using objective indicators. There is some support for our hypotheses but it not unequivocal.

To better make sense of these results, we need to look separately at the results for FPTP and PR. We focus on the findings based on the participants' perceptions, which are most directly relevant. We start with FPTP. As can be seen in Table 3 (column1) both Duty and EB affect the decision to vote in FPTP elections. We note, however, that their effects are not very strong. This raises a question about EB, which is the product of two factors: the differential payoff associated with the victory of party A rather than party B, which varies from 0 to 10 depending on one's position, and which corresponds to the B term in the Riker and Ordeshook model, and the probability of being decisive, which equals .5 if one's vote will break or create a tie and 0 otherwise. In column 2 of Table 3, we test a simple additive model in which the two components of EB, B and p, are distinguished. We can see that B is highly significant but p is not. The implication is that people are more likely to vote when the stakes are higher, that is, they will gain much more if party A (or party B) wins than the reverse (this is evident in Figure 3). But it does not appear to matter whether one's vote might be pivotal or not. In fact the coefficient for p does not even have the right sign. In column 3, we test an interactive model. According to the rational choice model, people should vote only if both B and P are not too small. We see that the interaction term is not significant. We conclude that the decision to vote in FPTP elections is driven first and foremost by one's position, which determines whether one has a lot or only little to win (or lose). Having the possibility or not of casting the decisive vote has no effect. Under FPTP, then, the importance of the election is the most influential factor, and pivotality does not matter. This provides only limited support for the rational choice model.

PR elections also produce some intriguing results. Column 1 of Table 4 shows that expected benefits are in fact negatively correlated with turnout. It seems that those who expect to gain the least are the most prone to vote, a finding that appears odd, to say the least. Why is it so? Under PR, one's expected benefit depends on the combination of two factors. The first is one's position. The closer one's position is to 10, the lower the expected benefit. All those who are at position 0 to 5 know for sure that a vote for A will tilt the winning position closer to their position. Things become messy as one's position approaches 10. Let us take someone at position 9. If she votes for party A, she will shift the winning position closer to her own position if the default winning position (if she abstains) is higher than 9 but she will shift the winning position further from her position if the default is lower than 9 (in which case her expected benefit is negative!).

The second factor that affects expected benefit is the overall group turnout. The higher the turnout is among the other members of the group, the lesser the impact of one single vote. In the extreme case where everybody else abstains, the person's vote decides whether the winning position is 5 or 15. If on the contrary, everybody else votes, one more vote for candidate A tilts the winning position towards 5, but only a tiny bit.[10] But seeing that most members of the group participate may also have the effect of increasing the propensity to vote, instead of reducing it. People, instead of calculating their expected benefit, are prone to conform to what they perceive to be the prevailing social norm (Ciadilni, Reno and Calgren 1990). This is precisely what get-out-the vote field experiments indicate: messages emphasizing that many people do vote are more effective than those emphasizing low turnout (Gerber and Rogers 2009). Group turnout can be conceived as an additional normative factor, which, like sense of civic duty, affects turnout.

Column 2 of Table 4 relates turnout to one's position (and squared position) and expected turnout among the other members of the group. We find that those who believe that turnout will be high are more inclined to vote, confirming that people are affected by the descriptive social norm. We also find that duty has an impact, as does one's position (in the predicted curvilinear way). So the reason why expected benefit has the incorrect negative sign in column 1 is because anticipating a high group turnout has a positive effect, contrary to the positive effect it should have from a strict rational choice perspective.[11]

[10] For instance, if 10 of the other members vote for party A and 10 vote for party B, the winning position if I vote for A is 9.76, compared to 10 if I abstain. The expected benefit is thus only .24.(compared to 5 if everybody abstains).

[11] Group turnout also has a positive effect in FPTP elections.

What should we then conclude about our initial hypotheses that rational considerations play a greater role in FPTP elections and normative factors have a bigger impact under PR? We do find, in line with our hypothesis, that expected benefits have a larger effect in FPTP elections (when using subjective indicators). We must note, however, that even under FPTP voters are not quite rational, in the strict sense of the term, as they do not appear to take into account whether their vote might be pivotal when deciding to vote or to abstain.

As for sense of civic duty, there is evidence that it has an effect on the propensity to vote. Even in the lab those who feel that they have a moral obligation to vote are less likely to abstain. The impact is relatively weak and is often just barely significant. Clearly the obligation to vote is not as strongly felt in the context of a lab but it is present, which may suggest that our voting experiments evoke (in a milder form) similar feelings. There is also some support for the hypothesis that sense of duty plays a larger role in PR elections. The results are not unequivocal (the interaction term is not significant in Table 2 with subjective indicators). When we have a larger N, however, that is, with objective indicators, there is a significant interaction.[12] We conclude that there is some support for the view that normative considerations play a larger role in PR elections.

Discussion and Conclusion

We have proposed a simple hypothesis according to which rational considerations (expected benefits) play a greater role in the decision to vote or to abstain in FPTP elections while normative views (sense of civic duty) matter more in PR elections. We have provided empirical support for the hypothesis through a series of experiments conducted in Brussels and Montreal. We believe that this makes sense and we are glad to report (mostly) positive findings. But more research is obviously warranted to check the robustness of our results. It would be interesting to see if similar patterns emerge with survey data. Unfortunately cross-national data sets such as CSES (Comparative Study of Electoral Systems) do not presently include the variables that are required to test the hypothesis.

More experimental research is also needed to see if we obtain similar results when changes are made to the protocol. One concern is the operationalization of proportional representation. We have used a model, utilized in previous theoretical (Ortuno-Ortin 1997; Lizzeri and Persico 2001; Laslier and Ozturck 2006; De Sinopoli and Iannantuoni 2007; De Sinopoli et al. 2011) and experimental research (Schramm and Sonnemans (2006), in which the winning position depends on the "power" of the various parties, that power being proportional to their vote share. But proportional systems are a diversified lot (Blais and Massicotte 2002), and we need to determine whether similar patterns emerge with other variants of PR. In the same vein, our elections included only two parties, which is clearly an untypical situation in PR elections, and so a logical next step is to hold elections with more than two parties.

The rational choice model does not perform as well in this study as in previous research (Duffy and Tavits 2008; Levine and Palfrey 2007).[13] Expected benefits seem to play no role in PR elections. While they are a significant factor in the decision to vote or abstain in FPTP elections, the nature of the effect does not quite correspond to the predictions of the model. More specifically, turnout seems to be driven by the B term. The subjective probability of being pivotal appears to have no impact on the propensity to vote, a result which is clearly at odds with previous findings.

What explains these divergent results? We believe that the culprit is the framing of the context. As explained above, in our experiments the participants were told that they would participate in a series of elections and that they would have to decide to vote or not. In previous research, people were told that they were to participate in an experiment in decision-making, they would be divided in two groups and they would each have to decide whether to buy a token or not. There was no mention of elections, or parties, or voting. We believe that telling people that they are involved in an election brings to the fore the standard considerations that predominate in 'real' elections, which are mainly of a normative nature. If we are right, the implication would be that people are not inclined to consider the probability of being pivotal in the context of an election but that they might be more prone to do so in other contexts that resemble the situation presented in prior experiments. After all, it makes sense to assume that people pay more attention to rational considerations in some contexts and less so in others.

[12] When we relate turnout to Duty, PR, and DutyXPR, (with an N of 3360), the interaction term is significant at .06.

[13] The rational choice model is seldom perfectly supported in previous studies. Levine and Palfrey (2007), for instance, report deviations from Nash equilibrium but find strong support for comparative statics predictions, and conclude that the results are consistent with 'equilibrium behavior of highly (but not perfectly) rational voters' (page 155). Duffy and Tavits (2008, 616) are more nuanced. On the one hand, they find that subjects overestimate the probability of being decisive. On the other hand beliefs about pivotality affect the propensity to vote they indicate that the relationship is 'strong and robust'. In the case of Levine and Palfrey, the verdict seems to be that the theory is mostly supported. For Duffy and Levine, it is partially supported. In our case, it is mostly not supported.

Whatever framing is utilized, how to measure people's subjective estimations of the probability of being pivotal remains a huge challenge. The approach adopted by Duffy and Tavits (2008) is bold and innovative. They decided to specify all the possible scenarios under which one's vote would be decisive and to ask people to indicate their estimation of the probability that their vote would be decisive on a 0 to 1 scale (with a maximum of three decimals). The advantage is that this is a direct measure of the p term in the rational choice model. The disadvantage is that the exercise appears 'artificial'. We opted for a simpler, more indirect, approach: we asked people to give their prediction of how many people would vote for party A, for party B, and would abstain. Such questions are more concrete and easier to respond to. We have used these predictions to infer how close the election was perceived to be, and we have used these perceptions as proxies for beliefs about the probability of being pivotal. We acknowledge that our measure of subjective pivotality is indirect, and the issue is whether it is possible to develop indicators that are more direct while being less 'artificial' than the one proposed by Duffy and Tavits.

In short more work needs to be done to better make sense of the results presented in this study. We hope to have made a contribution on the following fronts. First, and perhaps most directly, this research throws some doubt on the conclusions reached in previous experimental studies, which have all been supportive of the rational choice model. The results are much less positive when the experiment is framed explicitly as an election. Secondly, we hope to have demonstrated the utility of lab experiments to understand why people decide to vote or to abstain. More precisely, it is possible to include normative considerations into the lab, in this case through a questionnaire administered after the experiment. Thirdly, we hope to have shown the utility of a fresh perspective on the contrast between PR and FPTP elections. The most interesting question may be not whether turnout is higher or not under PR but rather whether people pay attention to a different set of considerations in the two types of elections.

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Table 1: Mean Expected Benefits Over Time

	5 first elections	5 last elections
FPTP	(N= 420)	(N=420)
EB (obj.)	0.80	0.72
EB (subj.)	1.07	1.04
Difference	-0.27	-0.32
PR	(N=420)	(N=420)
EB (obj.)	0.33	0.36
EB (subj.)	0.39	0.40
Difference	-0.06	-0.04

Table 2: Expected Benefits, Duty and Turnout in FPTP and PR Elections

	Objective Indicators of EB		Subjective Indicators of EB	
	Coef.	**Std. Err**	**Coef.**	**Std. Err**
EB	0.35***	0.07	0.20*	0.11
Duty	0.33	0.40	0.99*	0.57
PR	-0.18	0.46	0.88**	0.42
EBXPR	0.27	0.42	-2.70***	0.79
DutyXPR	0.89*	0.48	0.20	0.51
Constant	0.47	0.31	0.14	0.40

N =	3360	1680
Log pseudolikelihood =	-2005.83	-979.94
Pseudo R2 =	0.02	0.02

Significance Levels
0.10*
0.05 **
0.01 ***

Note: robust standard errors, with clusters by subjects.

Table 3: Decomposing Expected Benefits in FPTP Elections

	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
B	-	-	0.21***	0.03	0.18***	0.04
P	-	-	-1.13	0.96	-2.39	1.79
EB (BP)	0.20*	0.11	-	-	0.18	0.25
Duty	0.99*	0.57	1.17*	0.62	1.16*	0.62
Constant	0.14	0.40	-1.11**	0.50	-0.92	0.59
N =	840		840		840	
Log pseudolikelihood =	-477.61		-439.57		-439.25	
Pseudo R2 =	0.01		0.09		0.09	

Significance Levels
0.10*
0.05 **
0.01 ***

Note: robust standard errors, with clusters by subjects

Table 4: Decomposing Expected Benefits in PR Elections

	Coef.	Std. Err	Coef.	Std. Err
EB	-2.50***	0.77	-	-
Duty	1.19**	0.56	1.06**	0.57
Position	-	-	0.49***	0.11
Position Squared	-	-	-0.06*	0.01
Group Turnout	-	-	0.17***	0.04
Constant	1.02**	0.42	-3.16***	0.76

N =	840	840
Log pseudolikelihood =	-502.33	-475.65
Pseudo R2 =	0.02	0.07

Significance Levels
0.10*
0.05 **
0.01 ***

Note: robust standard errors, with clusters by subjects.

FIGURE 1 : Party Positions

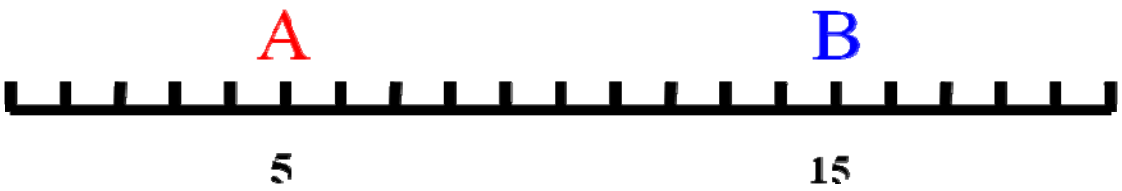

FIGURE 2 : Probability of Voting According to Order

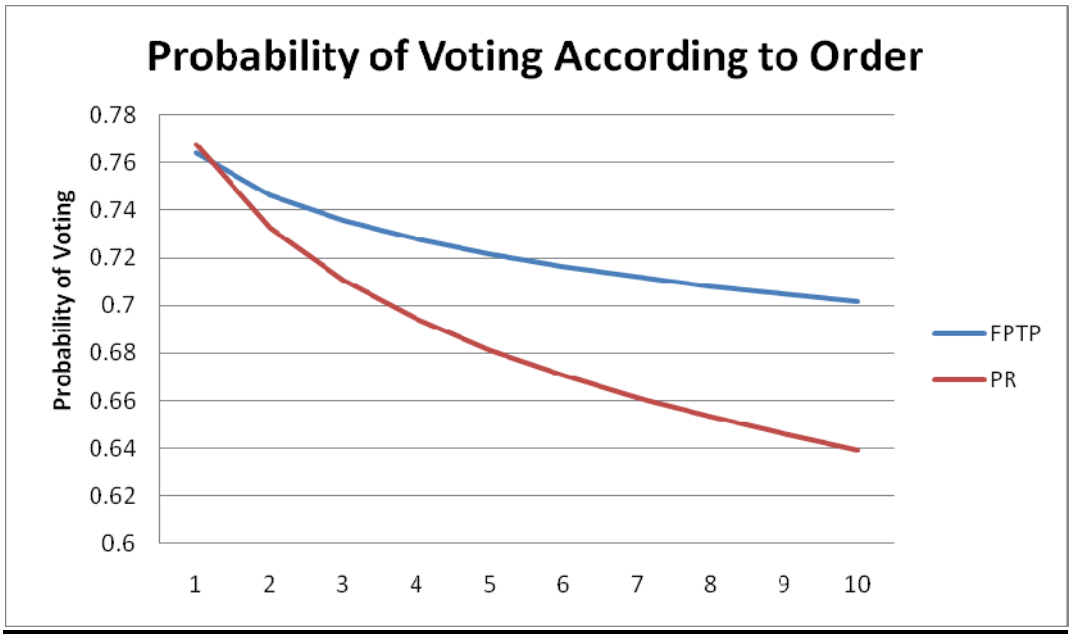
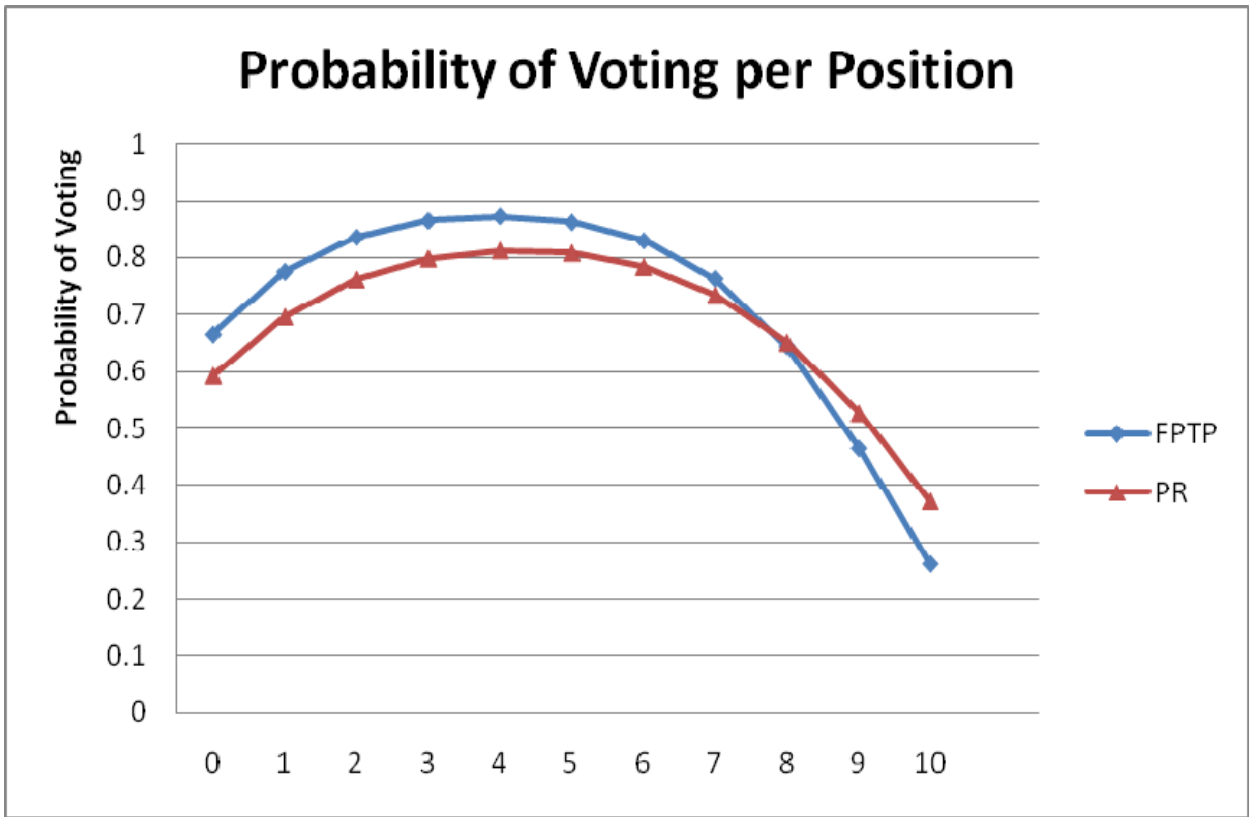
FIGURE 3 : Probability of Voting According to Position