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Résumé: Nous proposons un modèle de vote stratégique dans lequel la décision de supporter ou non un candidat dépend de B, le bénéfice associé à l'élection de ce candidat, et de V, la viabilité perçue du candidat. Nous testons ce modèle sur des données obtenues lors d'une série d'expériences dans les quelles les participants votaient dans huit élections successives, quatre suivant la règle de vote à un seul tour, et quatre suivant le vote à deux tours. Nous montrons que le même modèle s'applique aux deux systèmes, bien que l'impact de la viabilité soit légèrement plus faible dans le cas des élections à deux tours.

Abstract: We propose a model of strategic vote choice in which the decision to support or not to support a candidate depends on B, the benefit associated with the election of a given candidate, and V, the candidate's perceived viability. We test the model with data collected in a series of experiments in which the participants voted in eight successive elections, four under one round and four under two rounds. We show that the same model applies to both voting systems, though the impact of perceived viability is slightly weaker in two round elections.

Mots clés : Elections, système de vote, comportement stratégique

Key Words : Elections, voting rules, strategic behavior

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Individual vote choice in an election depends on an interplay of factors: the options that the individual can choose from, the individual's set of values and interests that induces her to prefer some options over others, the rules of the game, that is, what it takes for a candidate or a party to win, and the voter's judgment about the various candidates' chances of winning. The rules of the game are crucial, as they affect the supply of candidates as well as the strategic considerations that may induce voters not to vote for their preferred option because it is not perceived to be viable (Cox 1997).

In this paper we propose a simple model of vote choice, in which the decision to support or not to support a candidate depends on two factors. The first factor is how much the voter likes the candidate: the more one likes a candidate, the greater the propensity to vote for that candidate. The second is the candidate's viability, that is, the candidate's chances of winning the election: the stronger the candidate's viability, the greater the propensity to vote for that candidate. We test the model with an experiment in which the participants have to choose between five candidates.

The model assumes that voters attempt to maximize their expected utility, which is based on a combination on a set of preferences and expectations about likely outcomes (Abramson et al. 2005). An individual rational choice model would require a full

specification of the value of the different potential outcomes as well as the subjective probability attached by the individual that the different actions at her disposal will result in different outcomes. Such models are usually not testable directly (but see Blais et al. 2008). In this study we employ a more standard strategy (Alvarez and Nagler 2000; Bodet and Blais 2008), and we provide econometric estimates of the propensity to vote for a given candidate using a combination of *B*, the benefit that the voter would derive from the election of a given candidate, and *V*, which indicates the perceived viability of the candidate.

Because voters are assumed to decide to vote on the basis of both *B* and *V*, we predict that some of them will vote strategically, that is, they will not vote for their first choice because they do not want to waste their vote on a candidate that has little or no chance of winning (Abramson et al. 2004, 1998; Alvarez and Nagler 2000; Black 1978; Blais and Nadeau 1996; Cain 1978; Evans and Heath 1993; Fisher 1973; Karp et al. 2002; Merolla and Stephenson 2007; Ordeshook and Zeng 1997).

The benefit that a voter would derive from the election of a given candidate or party is typically measured through feeling thermometers which invite people to indicate on a 0 to 100 scale how much they like or dislike the various parties or candidates (Abramson et al. 1992, 2004, 2007; Blais et al. 2001, 2006; Ordeshook and Zeng 1997). In the experimental setting we report here, the benefit is the financial gain associated with the election of a given candidate.

Viability refers to the voter's perception as to whether a given candidate has a chance of winning. Some studies use the candidate's actual vote support in the present or previous election as a proxy (Alvarez and Nagler 2000; Alvarez, Boehmke and Nagler 2006; Ordeshook and Zeng 1997), thereby assuming that voters are able to anticipate the outcome of an election or that they form their opinions on the basis of the previous election outcome (see Blais and Bodet 2006 for an assessment), while others rely on more direct questions about the perceived chances of winning, on a 0 to 10 or 100 scale (Abramson et al. 1992, 2004, 2007; Blais et al. 2000, 2006).

In some analyses (Abramson et al. 1992, Ordeshook and Zeng 1997), the variable is used in its raw form, the prediction being that the propensity to vote for a candidate increases monotonously with her perceived chances. More recently Abramson et al. (2004, 2007) have used "folded" probabilities, on the basis that one should be most inclined to vote for candidates whom they like and who are uncertain to win (their chances are around 50 on the 0 to 100 scale). The underlying logic is that there is no value in voting for a candidate who is certain to win or to lose; the temptation to desert the preferred candidate is weakest when that candidate is involved in a close race (and one's vote might make the difference). In another set of studies, a distinction is made between "viable" and "unviable" candidates, and what is deemed to matter is how distant one is from being viable (Alvarez and Nagler 2000; Alvarez, Boehme and Nagler 2006; Blais et al. 2000, 2006). This approach has been applied to single-member district plurality elections, and it is based on the assumption that only the top two candidates are viable in such a system (Duverger 1951; Cox 1997). This approach, we would argue, is consistent with the

Duvergerian (or Coxian) perspective, according to which the voter's task is to ascertain the candidate's viability, and it is the one that we use in this study.

The main purpose of the study is to show that the same basic model, according to which vote choice depends on a combination of voters' preferences and their assessments of candidates' viability, applies to both one round and two round elections.

We examine two voting systems: one round plurality elections, whereby the candidate with the most votes wins, and two round majority runoff elections, whereby an absolute majority is required on the first ballot, and a second ballot between the top two contenders takes place if no candidate is elected on the first ballot, the candidate with the most votes on the second ballot being elected. These are the two most popular voting systems for the direct election of presidents in contemporary democracies (Blais, Massicotte and Dobrzynska 1997).

The standard assumption in the literature is that the model proposed here, which asserts that vote choice does not merely reflect preferences because strategic considerations play an important role, applies to one round plurality elections. Indeed, the bulk of the studies cited above have shown the presence of strategic voting in such elections. These results are consistent with the predictions of Duverger (1951) and Cox (1997).

Things are more complicated when it comes to other voting systems in general and two round elections in particular. The basic theoretical position is the Gibbard- Satterthwaite

theorem according to which no voting system is strategy-proof, and so the expectation is that assessments of viability should matter in any system.

This is indeed the starting point adopted by Cox (1997) in his treatment of two-round elections. Cox takes issue with Duverger (1951), who implied that strategic considerations did not play a role in such systems. Cox asserts that judgments about viability matter as well in two round elections. The main difference, Cox argues, is that there are two "winners" in a two round system, that is, the top two candidates that become eligible for the final second round. Because there are two winners, M (district magnitude) equals 2, and there are three (M + 1) viable candidates in two round election, rather than two in one round elections.

But Cox (1997, 137) also concedes that strategic considerations may play a weaker role in two round elections. The point is that more information is required to vote strategically in two round elections. In both types of elections, the voter has to determine whether the candidate is viable or not but in two round elections this entails trying to anticipate the possible outcomes of the first ballot and then the probable result of the second ballot under the possible runoff pairings. Cox concludes that because of this strategic voting is more complicated and probably less frequent. The logical prediction is that only the most sophisticated would make such calculations.

There has been little empirical work on the extent of strategic voting in two round elections.[1] Blais' (2003, 2004) analysis of the 2002 French presidential election produced

some intriguing findings. On the one hand, Blais found little evidence of French voters deserting their first choice because that first choice was perceived to be unviable. On the other hand, there would seem to have been substantial "inverse" strategic voting, that is, people deserting their first choice because they were certain that their first choice would make it to the second round, in order to send policy signals to the candidates. More precisely, a number of French voters in the 2002 presidential election were more or less certain that the second round would be between Chirac and Jospin and decided to vote for another non viable candidate whose issue position they liked despite the fact that their preferred choice was one of the top two contenders, possibly in the hope that their preferred viable candidate would pay more attention to an issue advanced by the non viable candidate.

Our objective is thus to test a simple model of "strategic" vote choice in which the decision to support or not to support a candidate depends on *B*, the benefit associated with the election of a given candidate, and *V*, the viability of the candidate. We wish to show that this simple model applies in two round as well as in one round elections, though viability is expected to have a slightly weaker impact in the former than in the latter, because of the greater complexity of the system. The model is tested with data collected in an experiment.

The Experiment

The protocol is as follows. There are two groups of 21 voters. In each group, eight elections are held successively, four one round and four two rounds; one group starts with one round and the other with two rounds. In each election, there are five candidates, located at five distinct points on a left-right axis that goes from 0 to 20: an extreme left candidate, a moderate left, a centrist, a moderate right, and an extreme right (see Figure 1). The set of options is identical in the two voting systems.

For each of the four elections (under the same voting system), the participants are assigned a randomly drawn position on the 0 to 20 axis. There are a total of 21 positions, and each participant has a different position. The participants are informed about the distribution of positions. After the initial series of four elections, the group moves to the second set of four elections, held under a different rule, and the participants are assigned a new position.

The participants are informed from the beginning that one of the eight elections will be randomly drawn as the « decisive » election. They are also told that they will be paid 20 euros (or Canadian dollars) minus the distance between the elected candidate's position and their own assigned position. For instance (this is the example given in the presentation), a voter whose assigned position is 11 will receive 10 euros if candidate A wins in the decisive election, 12 if E wins, 15 if B, 17 if D, and 19 if C. In the experiment (as in real life) it is in the voter's interest that the elected candidate be as close as possible to her own position. When she casts her vote, the participant is asked to indicate how she rates, on a 0 to 10 scale, each of the candidate's chances of winning the election.[2]

Four successive elections are held exactly in the same fashion under each of the two voting systems. Voting is secret.[3] The outcome of each election (of each round in the case of two round elections) is announced publicly, providing the participants with information about the relative support given to the various candidates.

We have performed six such experiments in Lille, Montreal, and Paris.[4] The basic protocol was always the same but we introduced one variant. In two experiments, we had larger groups of voters, 63 rather than 21, to see whether the same patterns hold in larger groups.[5] More precise information about each experiment is provided in Table 1.

The best outcome, for each voter, the one that yields the highest reward, is the election of the candidate who is closest to her own position. But a voter may come to the conclusion that the closest candidate has no chance of winning and the contest is between the second closest candidate (her second choice) and the most distant (her worst option). The model proposed above assumes that the voter considers not only the benefits linked to the election of the various candidates but also their viability.

The voter has to determine which candidates are viable and which ones are not. In our setup, if every voter were to vote sincerely for the candidate that is closest to her position, candidates A and E would each receive four votes, four voters have B as their closest candidate, four have D, and three have C; the last two voters (positions 8 and 12) are equally distant from C and B or from C and D.

The upshot is that candidates A and E cannot win if everyone votes sincerely. In one round elections, it takes at least five votes to win, while A and E receive only four votes each. C will win if and only if voters with positions 8 and 12 choose to vote for her (rather than for B or D, who is equally distant from their position). Otherwise B or D wins and if there is a tie between the two a random draw decides the winner. In all cases, A and E cannot win if everyone votes sincerely. The only viable candidates are B, C, and D.

In two round elections, there will be a runoff between B and D if they each get five votes, between C and a random draw among the four others if C wins five votes (then all the others get four votes), or between B or D and a random draw among the four others (then B or D has five votes and all others have four). It is impossible (again assuming sincere voting) for both A and E to make it to the second round. It is possible for either one to make it to the second round but A or E cannot win on the second round because she will then face a non extremist candidate, whose position is bound to be closer to that of a majority of voters. Again, then, B, C, and D are the three viable candidates.

All this assumes sincere voting. The same conclusion can be reached if we allow for strategic voting. In a plurality election, strategic voting entails deserting the weakest candidates in favour of a stronger second choice, and there seems to be no reason for any voter who is closest to B, C, or D, to move to A or E.

The same verdict applies in the case of two round elections. Strategic voting usually means deserting the weakest candidates in exactly the same way as in a one round plurality election. Theoretically there is the possibility of voting for the least favoured candidate in the first round if that ensures the victory of the most favoured candidate in the second round (Cox 1997, 129). But this would seem a very risky strategy (the favoured candidate may fail to get into the runoff) especially if, as is the case in our setup, no one candidate is guaranteed to make it to the second round.

In both voting systems, therefore, candidates B, C, and D are viable, and candidates A and E are not. Indeed A and E failed to win any of the 96 elections held in the course of our experiments.

Table 2 shows the total vote share obtained by the five candidates in all these elections.[6] We distinguish one round and two round elections on the one hand and small (n=21) and large (n=63) groups on the other hand. The prediction is that there will be strategic desertion of non viable candidates (A and E) in all cases but a little less in two round elections (because the system is somewhat more complicated) and in large groups (because the probability of being pivotal is lower).

These predictions are mostly confirmed. In large groups, candidate A and candidate E obtain more votes (as anticipated) in two round elections but in small groups the pattern appears to be reversed. But what is most striking in Table 2 is how tiny the differences between the four groups are. The median difference in the vote share obtained by a given

candidate between paired groups is a mere two percentage points. Voting patterns in one round and two round elections are remarkably similar, and whether the electorate is made of 21 or 63 participants makes little difference.

Table 3 indicates the mean perceived chance of winning of the various candidates in the four types of elections. We use standardized scores, where the rating given to a candidate is divided by the total ratings given to all five candidates, to facilitate comparability across individuals. It can be seen that the perceived chances of candidates B, C, and D are much higher than those of candidates A and E. More importantly, the mean scores given to each candidate are strikingly similar across types of elections and group size.

A Model of Individual Vote Choice

Our objective is to test an individual vote choice model in which the decision to support or not to support a candidate is assumed to hinge on benefits, *B*, and perceived viability, *V*. The benefit associated with the election of a candidate is 20 euros (or Canadian dollars) minus the distance between the position of that candidate and her own position. For instance, for a voter whose position is 11, the benefit linked to the election of candidates A, B, C, D and E is respectively 10, 15, 19, 17 and 12.[7]

As indicated above, perceived viability, *V*, is tapped through a question asking participants to rate each candidate's chance of winning the election. The top contender, with the highest chances, gets the maximum value of 1. For all the other candidates, the

value of *V* equals her standardized score divided by the standardized score of the top contender. *V* varies between 0 and 1.

The expectation is that the propensity to vote for a candidate increases with the benefit associated with a candidate and with her perceived viability. We thus predict positive coefficients for both *B* and *V*. This pattern should hold for one round and two round elections alike. But strategic considerations should play slightly less, and thus *V* should have a slightly weaker coefficient, in two round elections as well as in large electorates (because the probability of casting a decisive vote is smaller).

The estimated conditional logit model is presented in Table 4. In each type of election, *B* and *V* have a positive and significant coefficient. As predicted also, *V* has a weaker coefficient in two rounds than in one round elections. Contrary to our prediction, however, the latter coefficient is not weaker in larger groups. Table 4 also shows that even controlling for *B* and *V* the participants were less prone to support extremist candidates A and E. Voters may have been tempted to avoid supporting extremist candidates when they were not sure how to vote.

The previous estimations are based on an analysis that includes all the elections that took place in our six experiments. In each experiment, we hold four successive elections under one system (one round or two rounds), which were followed by a second set of four successive elections, with the other electoral system.

There is the possibility that the participants behaved differently in the second set of elections, because of what they had "learned" in the first set of elections (held under another voting rule). A stricter test would thus consist in restricting ourselves to the first set of elections and in comparing the determinants of vote choice under one round and two rounds in these first four "uncontaminated" elections.

Table 5 shows the total vote share obtained by the candidates in the first set of elections. The pattern is very similar to that observed in the total sample (see Table 2).

Table 6 presents our estimation of the impact of *B* and *V*. The patterns are very similar to those reported in Table 4. Each variable is statistically significant and with the expected sign for each type of election and each group size. Furthermore, we can see that, as in Table 4, *V* is only slightly less influential under two rounds than one round and that it is not weaker in larger groups.

It could be argued that the appropriate theoretical model should be an interactive one, that is, voters should support only those parties that they both like and perceive to be viable (Ordeshook and Zeng 1997; Gschwend and Meffert 2007). We did test interactive models but the results were rather ambiguous. Statistically significant interactive effects emerged only in two of the four groups (small groups with one round elections and large groups with two round elections). Furthermore, the pseudo R2 were not increased (for small groups with one round elections, the interactive model had a R2 of .59 instead of .58 for the additive model; in the case of large groups with two round elections, the pseudo R2

remained at .57). These inconsistent results are similar to those reported by Alvarez and Nagler (2000) and Blais et al. (2001), who found no significant interaction effects. This could reflect the fact that our data, especially our measure of expectations, are not precise enough to capture such nuances, or it may indicate that voter behaviour does not quite correspond to the assumptions of the utility maximizing model. Voters may rely on a simpler heuristic approach, whereby they simply "take into account" both their preferences and their perceptions of viability in a satisficing way (see Blais et al. 2008, for a more extensive exploration of that hypothesis). We have thus decided to retain the simple additive model, which seems to work quite well for the data at hand.

We have performed a number of simulations to illustrate the combined impact of *B* and *V*. The results of these simulations are presented in Tables 7 to 10. They indicate the predicted probability of voting for each candidate when *B* equals 0, 5, 10, 15, and 20 (*B* ranges from 1 to 20) and *V* equals 0, .5, and 1 (*V* ranges from 0 to 1). These figures show that the propensity to vote for a candidate increases substantially with increases in the gain associated with a given candidate and in her perceived viability. They also show that *B* matters more than *V*. For instance, the propensity to vote for a given candidate is close to nil when *B* is less than 10 even if the candidate is fully viable while the probability of voting for a candidate can reach 30% for a candidate who is strongly preferred (with a maximum *B* of 20) but who is perceived to be completely unviable (with a *V* value of 0).

Tables 7 to 10 also illustrate that the differences between the voting systems and the large and small groups are relatively minor. The most "substantial" difference concerns those

with a strong preference for a candidate, those who with a *B* of 20. It can be seen that in one round elections the propensity to vote for candidates A or E increases from about 10% when *V* equals 0 to close to about 60% when *V* equals 1; the equivalent percentages are respectively 10% and 50% in two round elections. Viability thus plays only slightly less in two round elections. Likewise, the likelihood of voting for candidates B, C, and D, is about 20% when they are perceived to be completely non viable in one round and elections and it increases to 80% when they are construed to be fully viable. The equivalent percentages in two round elections are 35% and 80%. Again the impact of viability is only slightly weaker in two round elections.

These figures confirm that the temptation to desert unviable candidates is only slightly weaker in two rounds than in one round elections. The similarities between the two voting systems are much more important than the differences.

It is also interesting to observe that the patterns are very much alike in small and large groups. We had expected that the propensity to desert unviable candidates would be stronger in smaller groups. We find no difference. This is reassuring. This suggests that the patterns that emerge in small group experiments can be generalized to middle size groups.

Conclusion

The objective of this study was to show that the same simple model of strategic vote choice, in which the decision to vote or not to vote for a candidate depends on *B*, the gain associated with the election of a given candidate, and *V*, the perceived viability of that candidate, could be applied in two round as well as in one round elections.

To that effect, we conducted a series of experiments in Lille, Montreal, and Paris in which groups of voters were invited to choose among five candidates in a series of one round and two round elections. We have shown that the vote shares of the various candidates were strikingly similar in one round and two round elections and that vote choice is similarly affected by *B* and *V*, though the impact of viability is, as expected, slightly weaker in two round elections.

Our results conform to Cox's prediction that strategic considerations come into play in two round elections as they do in one round contests. Cox speculates that strategic voting may somewhat less frequent in two round elections because the information required is somewhat more complex. Our findings indicate, however, that the differences between the two voting systems are quite small, which suggests that the information requirements do not vary much between the two systems.

One may then wonder why there are so many parties and candidates in two round legislative and presidential elections, if voters appear almost as willing to desert unviable candidates as they are in one round elections. It is not possible to offer a fully satisfactory answer to this complex question, but a couple of important points must be made.

The first point is that the electoral system is only one of the factors that affect the number of parties in the legislature or candidates in a presidential election. As Neto and Cox (1997), have argued, party fractionalization also depends on sociological factors such as social heterogeneity. We would add that some attention should be paid to other aspects of electoral laws, such as public funding, which may facilitate or hinder the survival of small parties.

The second point is that we have looked here only at the impact of the electoral system on voters' behaviour. We have shown that when voters are offered the same set of viable and unviable options they make similar choices in the two systems and that these choices are based on the same considerations.

But as a matter of fact, voters may be faced with more candidates in two round than in one round elections. And as a consequence, voter behaviour may vary across the two systems because the set of choices differs (see Blais and Loewen 2008, for a more extended discussion).

This would have at least two implications. One is that we need to think about the incentives for parties or candidates to run or not to run in an election, or to make or not to make alliances, and to think about how these incentives may differ in the two voting systems. This means that we should think about experiments in which the participants (or some of them) are the parties rather than the voters (for an intriguing study along these

lines see Goodin and et al. 2008). The second is that we need to perform other experiments with fewer or more options, and/or with a different mix of viable and unviable candidates. It may be that voter behaviour varies between the two systems only under some conditions, that in some contexts, such as the one explored here, the patterns are very similar but that differences emerge in other situations. The impact of electoral systems on voters' behaviour could well be, as are many other effects, conditional; there is an effect only in certain types of situation.

Finally, a natural extension of the present study would be to perform experiments that include some elections held under proportional representation. The conventional wisdom used to be that there is little strategic voting under PR but recent empirical research suggests that this assumption must be revisited (see Blais et al. 2006; Gschwend 2007; Abramson et al. 2008). We need to conduct experiments that will allow us to compare the incentives to vote sincerely or strategically under PR, compared to plurality and majority systems.

There is, however, one clear message that can be drawn from our research. Strategic voting does occur in two round elections. In both one round and two round elections, voters do not vote exclusively on the basis of their preferences, they also take into account the candidates' chances of winning, and they are prone to desert those candidates that appear to be unviable. The propensity to vote strategically may be slightly weaker in two round elections, it may be more context dependent, but it exists.

TABLE 1: The Experiments

Date	Location	Size	First rule
2006 December 11	Paris	21	1
2006 December 11	Paris	21	2
2006 December 13	Paris	21	1
2006 December 13	Paris	21	2
2006 December 18	Lille	21	1
2006 December 18	Lille	21	2
2006 December 18	Lille	63	1
2006 December 18	Lille	63	2
2007 February 20	Montreal	21	1
2007 February 20	Montreal	21	2
2007 February 22	Montreal	63	1
2007 February 22	Montreal	63	2

TABLE 2: Total Vote Percentage Obtained by the Candidates

	ONE ROUND		**TWO ROUND**	
	SMALL	LARGE	SMALL	LARGE
Can : A	7.5	4.0	6.9	6.8
Can : B	31.0	37.1	29.2	30.1
Can : C	24.4	29.7	27.9	27.2
Can : D	30.1	23.7	30.8	28.2
Can : E	7.0	5.5	5.2	7.6
N	668	995	671	995

NB: In the case of two round elections only the first round is considered.

TABLE 3: Perceived Chances of Winning (mean score)

	ONE ROUND		**TWO ROUND**	
	SMALL	LARGE	SMALL	LARGE
Can : A	.06	.05	.06	.06
	(.08)	(.08)	(.08)	(.08)
Can : B	.27	.32	.28	.29
	(.14)	(.12)	(.11)	(.11)
Can : C	.31	.30	.32	.32
	(.16)	(.16)	(.15)	(.13)
Can : D	.29	.28	.29	.27
	(.13)	(.16)	(.11)	(.13)
Can : E	.08	.06	.06	.06
	(.11)	(.08)	(.08)	(.09)
N	659	995	665	986

TABLE 4: A Conditional Logit Model of Vote Choice

	ONE ROUND		**TWO ROUND**	
	SMALL	LARGE	SMALL	LARGE
Gain	.45***	.55***	.46***	.52***
	(.03)	(.03)	(.03)	(.02)
Viability	3.53***	3.86***	2.35***	2.40***
	(.27)	(.25)	(.23)	(.20)
Can : A	.16	.-1.33***	-1.11***	-1.21***
	(.30)	(.28)	(.28)	(.25)
Can : B	.39*	.12	-.04	-.04
	(.16)	(.12)	(.15)	(.13)
Can : D	.28	-.82***	-.13	-.07
	(.16)	(.15)	(.14)	(.13)
Can : E	-.52	-1.36***	-1.49***	-1.13***
	(.29)	(.29)	(.30)	(.24)
Pseudo R2	.58	.63	.54	.57
N	655	986	664	977

*: Significant at .05; **: Significant at .01; ***: Significant at .001.

TABLE 5: Total Vote Percentage Obtained by the Candidates (First Set of Elections)

	ONE ROUND		TWO ROUND	
	SMALL	LARGE	SMALL	LARGE
Can : A	7.5	4.8	6.0	7.1
Can : B	29.1	35.3	28.3	30.5
Can : C	27.3	36.9	33.6	24.2
Can : D	24.9	15.5	27.8	29.1
Can : E	9.9	6.7	4.5	7.7
N	333	496	336	508

TABLE 6: A Conditional Logit Model of Vote Choice (First Set of Elections)

	ONE ROUND		TWO ROUND	
	SMALL	LARGE	SMALL	LARGE
Gain	.36***	.52***	.43***	.58***
	(.03)	(.04)	(.04)	(.04)
Viability	3.15***	3.42***	2.62***	2.73***
	(.34)	(.36)	(.38)	(.29)
Can : A	-.10	-1.35***	-.90*	-1.17**
	(.35)	(.36)	(.43)	(.38)
Can : B	.26	.16	.19	-.09
	(.20)	(.16)	(.22)	(.19)
Can : D	.15	-1.09***	.00	.07
	(.20)	(.21)	(.21)	(.19)
Can : E	-.07	-1.56***	-1.48***	-1.12***
	(.34)	(.40)	(.46)	(.33)
Pseudo R2	.49	.57	.51	.61
N	325	490	334	487

*: Significant at .05; **: Significant at .01; ***: Significant at .001.

Table 7 : Estimated Probabilities of Voting for a Candidate Depending on the Values of *B* and *Viability* (One Round, Small Group)

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	2	12	**A**
0.5	0	0	1	8	37	
1.0	0	1	5	28	72	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	4	21	**B**
0.5	0	0	2	15	52	
1.0	0	1	10	42	82	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	2	13	**C**
0.5	0	0	1	9	40	
1.0	0	1	6	30	75	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	3	20	**D**
0.5	0	0	2	14	49	
1.0	0	1	10	40	80	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	1	7	**E**
0.5	0	0	1	5	25	
1.0	0	0	3	18	59	

Table 8 : Estimated Probabilities of Voting for a Candidate Depending on the Values of *B* and *Viability* (One Round, Large Group)

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	0	6	**A**
0.5	0	0	0	3	24	
1.0	0	0	1	14	56	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	4	30	**B**
0.5	0	0	2	19	62	
1.0	0	1	11	48	88	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	3	22	**C**
0.5	0	0	1	13	55	
1.0	0	1	7	40	85	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	2	15	**D**
0.5	0	0	1	9	39	
1.0	0	0	5	28	70	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	1	6	**E**
0.5	0	0	0	3	24	
1.0	0	0	2	15	56	

Table 9 : Estimated Probabilities of Voting for a Candidate Depending on the Values of *B* and *Viability* (Two Round, Small Group)

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	2	13	**A**
0.5	0	0	1	5	28	
1.0	0	0	2	13	51	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	1	7	35	**B**
0.5	0	0	2	17	58	
1.0	0	1	7	35	78	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	1	6	33	**C**
0.5	0	0	2	15	57	
1.0	0	1	6	33	79	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	1	7	34	**D**
0.5	0	0	2	17	56	
1.0	0	1	7	35	77	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	1	9	**E**
0.5	0	0	0	3	22	
1.0	0	0	1	10	42	

Table 10 : Estimated Probabilities of Voting for a Candidate Depending on the Values of *B* and *Viability* (Two Round, Large Group)

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	1	13	**A**
0.5	0	0	0	4	28	
1.0	0	0	1	11	51	

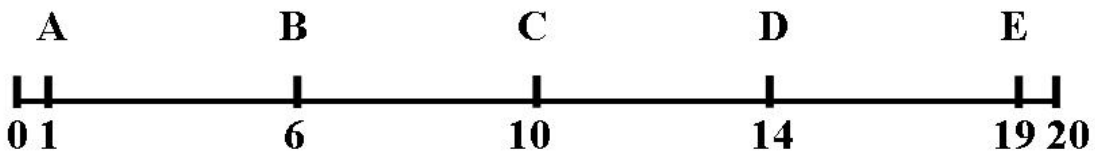
Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	1	6	37	**B**
0.5	0	0	2	16	60	
1.0	0	0	5	33	80	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	4	34	**C**
0.5	0	0	1	13	59	
1.0	0	0	4	30	81	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	5	35	**D**
0.5	0	0	1	15	58	
1.0	0	0	4	32	79	

Viability\ B	**0**	**5**	**10**	**15**	**20**	**Candidate**
0	0	0	0	1	14	**E**
0.5	0	0	0	4	30	
1.0	0	0	1	12	52	

Figure 1: Positions of the Candidates on the Left/Right Axis



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NOTES

[1] Abramson et al. (2004, 2007) examine the 1999 Israeli Prime Ministerial election which was technically a two round election but they treat it as a single round election because it was decided on the first ballot and all but two candidates had withdrawn by election day.

[2] For two round elections, participants were asked to indicate, on the first ballot, the candidates' chances of making it to the second round, and, on the second round, the chances of winning the election. We use the former in our analyses.

[3] It was possible to leave a blank ballot but very few participants did so. There were 23 blank ballots in the experiments reported here, that is, 0.69% of total ballots.

[4] We also performed four experiments in which the candidates' perceived chances were not tapped. For an overview of the findings see Blais et al. (2007).

[5] In one of the "large group" experiments, a mistake occurred, and the number of participants in the two sessions held in adjacent rooms was 61 and 64. This has no practical effect on the findings.

[6] Note that in the case of two round elections we consider only vote choice in the first round throughout the paper.

[7] It could be argued that the expected benefit is one eight of those numbers because there are eight elections and only one (randomly chosen) counts. We keep undivided numbers for sake of simplicity.