Strategic Abandonment or Sincerely Second Best?

Strategic Voting in the 1999 Israeli Election

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When more than two candidates occupy a ballot, voters sometimes have a reason not to vote for the candidate they like the best. This is particularly true when polls show that a race between the voter's least preferred candidate and the voter's second choice becomes tight. As a race gets tighter, information the voter receives about the electoral prospects of her most favored candidate may alter the voter's choice. Voters who base their vote on their preferences as well as the chances a candidate has of winning are said to be strategic or sophisticated voters. Other, "sincere," voters may support their favorite candidate regardless of their chance at victory. Using data taken from two surveys of the 1999 Israeli election for Prime Minister, the authors seek to examine the relationship between voter preferences, candidate evaluations, and citizen assessment's as to the chances of each of the three main candidate's chances of winning. Starting with the question of whether or not Israeli's voters were voting for their most preferred candidate, the researchers seek to specify a model that estimates the probability that an individual voter with a prior belief in the chances of their favored candidate winning will vote for that candidate. Our analysis improves upon past research (Abramson et al. 1992) by arguing that voters were most likely to vote for their preferred candidate if that candidate was in a closely competitive race.

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Introduction: Strategic Voting

What are voters doing when they cast a vote? One simple answer would be to conceive of a vote as an expression of a straightforward preference for one candidate. Indeed, this is precisely what one would expect, if, as Ferejohn and Fiorina (1974, 1975, 1993) have argued, rational voters follow a "minimax-regret" strategy - minimizing their maximum regret. The maximum regret for these voters would be for their preferred candidate to lose because they failed to vote for him or her. Thus, to minimize this regret, a rational voter would always vote for her preferred candidate.

This strategy may fail when the voter is confronted with a choice between more than two candidates on the ballot. In these contests, many voters, whom we term "sincere" voters, may continue to support their preferred candidate regardless of that candidate's chance of winning. But at least some rational voters, whom we term "sophisticated" or "strategic" voters, may not vote for the candidate they like best. Rather, they may vote to maximize their expected utility according to a strategic calculus of voting (Riker and Ordeshook 1968, McKelvey and Ordeshook 1972) which considers not simply their (sincere) preferences but their perceptions of the probability of electoral outcomes as well. In this environment, voters weigh their affect towards a candidate against the odds of that candidate winning, under the assumption that the closer a candidate is to winning, the more efficacious is the individual's vote. As Riker (1986,78) defines it, strategic voting is "voting contrary to one's immediate tastes in order to obtain an advantage in the long run."

A strong account of strategic voting must take note that information regarding the closeness of the electoral contest, especially through media-reported polling, would have a significant impact upon voting behavior. These polls signal to the voter the viability of the

candidates - their chances of winning. In a close contest, the probability of influencing the outcome of the election looms large in voters' minds, affecting their voting calculus. Strategic voting is particularly likely when polls show that a race between a voter's least preferred candidate and the voter's second choice is close. In contrast, if the polls project a landslide there would seem to be little reason to vote strategically since the perceived probability of altering the outcome drops as the victory margin increases. The more that a voter's preferred candidate is perceived to be a non-viable candidate with little chance of winning, the greater the impetus for that voter to vote strategically by altering her vote to contribute to the victory of her second choice over her least preferred candidate. It is not just a hopeless candidacy that contributes to a "wasted" vote in strategic terms. The argument is symmetric, and voting for a candidate who is running away with the contest is just as "wasted" a vote. Thus, the information about the perceived probability of the candidate winning must be "folded" at the victory point to reflect the degree of competitiveness of the electoral race and the chance that the voter may cast a decisive vote in the election.

This account would not be complete without mentioning that on the two-way street of democracy. Not only does information about candidate viability and electoral competitiveness influence levels of strategic voting, but indications of strategic voting also influence elite behavior, such as the choices made by candidates to remain in an electoral contest or to withdraw. In the particular case considered here, the Israeli elections in 1999, all candidates but the two with the most support withdrew from the race for Prime Minister in the final days of the campaign precisely because of the levels of strategic votes they anticipated being cast.

Previous work demonstrated empirically that there has been strategic voting in American political contexts. Abramson and his colleagues (1992) use data collected by the National

Election Studies (NES) during the 1988 U.S. presidential primaries to suggest that at least some primary voters were "sophisticated," or "strategic," by incorporating their assessments of the viability of candidates in making their voting choices. Analyses of NES data also suggest that there was strategic voting in the 1968, 1980, 1992, and 1996 U.S. presidential contests (Abramson et al., 1995; Abramson, Aldrich and Rohde, 1999).

1999 Israeli Election

As a multi-candidate runoff election in a country with a high degree of media-reported polling, the 1999 Israeli elections provided an excellent case to examine strategic voting outside the American context. Israelis are sophisticated consumers of political information and the Israeli media provides it incessantly. Virtually every major media source conducts weekly polls during a campaign and these poll results top the news coverage. Such an environment is the natural habitat of the strategic voter. In addition, the unique electoral rules governing recent Israeli elections are ideally suited to this investigation, as will be described below. We looked to this case, then, in anticipation of understanding the voting relationship between voter preferences, candidate evaluations, and viability assessments in a multi-candidate election. For this purpose, we used data from a representative sample collected during the election campaign by Abraham Diskin and another study conducted by Asher Arian and Michal Shamir. Abraham Diskin's survey was based upon a cluster sample of 995 respondents conducted between April 28 and May 5. The Arian and Shamir survey was based upon 1,225 respondents conducted during the six weeks before the election. Respondents were interviewed face to face by survey researchers. Both surveys were implemented while all five candidates were in the race. Both surveys included Jews and Arabs, but most of our analysis examines only the Jewish voters.

The May 17, 1999 Israeli election was the second election (1996 was the first) held under a unique hybrid semi-presidential electoral system (since repealed). In this system, a voter casts two simultaneous ballots; one presidential-style ballot for a directly elected Prime Minister with a second round between the top two vote-getters if no candidate achieves a majority in the first round. A second ballot is cast for a party list for representation in the Knesset, the Israeli parliament. Seats in the Knesset are allocated to these parties via proportional representation. Though the effects of the electoral system upon strategic voting are beyond the scope of this paper, our hypothesis is that we will find a significant degree of strategic voting in the direct election of the Prime Minister, but not in the Knesset election. We expect to find strategic voting for Prime Minister because there were high levels of antipathy across many sectors towards the incumbent Prime Minister coupled with a more than one challenger for the office. In contrast, in the Knesset, a very low threshold for representation (1.5%), and a very large district magnitude (with all seats allocated based on the national results), gives sincere voters a reasonably high chance of their preferred party being represented in Knesset.

The Campaign for Prime Minister

In this election, the incumbent Prime Minister Benjamin "Bibi" Netanyahu from the right-wing Likud party faced four challengers: Azmi Bishara, Ehud Barak, Yitzhak Mordecai and Benny Begin. In our analyses, we exclude Bishara and Begin since they were extremely marginal candidates from the start until their ultimate withdrawal. Bishara ran simply to set the precedent that an Israeli Arab nationalist could run, but was never a serious contender even in the Arab sector. Begin, the son of the late Likud icon, Prime Minister Menachem Begin, split off from the Likud to the far right because he felt that Netanyahu was a compulsive prevaricator

utterly lacking in integrity. Begin also feared the possibility that Netanyahu would implement the Wye River peace accord with the Palestinians. Though many, even on the left, respected Begin's personal honesty and integrity, his ultra-right positions regarding the peace process relegated him to a fringe candidacy before he eventually bowed out.

The two remaining candidates, Barak and Mordecai, were both significant contenders against Netanyahu. Barak had been the Chief of Staff of the Israel Defense Forces and the Defense Minister under Prime Minster Shimon Peres following the Rabin assassination. He took the helm of the center-left Labor party after the 1996 elections, when Peres lost to Netanyahu. Emulating Clinton and Blair, Barak led the party towards the center to beat Netanyahu. Though the far left considered Barak too right-wing, they acquiesced to his candidacy because they considered Netanyahu anathema. They sought Netanyahu's defeat at all costs because they blamed Netanyahu for the Rabin assassination and for setbacks in the peace process. Barak ran as the head of One Israel, a joint list from the Labor Party and two tiny parties - the religious peace party, Meimad, and David Levy's Sephardic party, Gesher.

Mordecai, a Kurdish Jew born in Iraq, was Netanyahu's Defense Minister until February 1999, shortly before the calling of early elections. Mordecai was considering leaving the Likud to ally with Netanyahu's former Finance Minister, Dan Meridor, who had already resigned. When Netanyahu discovered Mordecai's contacts with Meridor, he dismissed Mordecai immediately from his position. Mordecai then joined a new Center Party together with Meridor, Tel Aviv mayor Roni Milo and former Chief of Staff Amnon Lipkin-Shahak. They put forward a parliamentary list composed of "all-stars" from all parts of the political spectrum, united primarily by disrespect for Netanyahu and vague centrist policy aspirations and appeals to Sephardic voters.

But in the three-way race that developed between Netanyahu, Barak and Mordecai, the strategic competition was largely between Barak and Mordecai over who was the more viable challenger to Netanyahu. Indeed, Mordecai ran campaign ads that explicitly called for strategic voting until the last week of the campaign (Harris, May 12, 1999). Though polls showed him a distant third in the three-way race, he claimed that polls showed he had the best chance of defeating Netanyahu head-to-head, and, to a background of rolling dice, exhorted voters not to gamble on Barak against Netanyahu. As the campaign progressed, Barak was not only preferred to Mordecai by the voters, but was identified as the most viable candidate head-to-head against Netanyahu as well. Left without even the viability claim, Mordecai withdrew from the race the morning before the election. Barak went on to defeat Netanyahu in the first round.

Candidate Preferences

Table 1 reports data from the survey conducted by Diskin. That table shows the percentage of voters who ranked each candidate highest on a feeling thermometer measure of candidate preference who reported intending to vote for that most preferred candidate. There is a strong suggestion here of strategic voting. While frontrunners Barak and Netanyahu each captured 97.6% of the votes of those who preferred them to any other candidate, Mordecai captures only 68% of the votes when he is the preferred candidate. Similarly, when voters were indifferent between Mordecai and one of the frontrunners, they were much more likely to vote for the frontrunner. Eighty-six percent of those who liked Mordecai and Netanyahu the same (but more than Barak), voted for Netanyahu, and 65% of those who liked Mordecai and Barak the same voted for Barak. When indifferent between Barak and Netanyahu (but liking both better than Mordecai), it was virtually a toss-up over whom the voter would support. Nearly half of the

respondents who were indifferent between all three candidates supported Barak. These percentages are similar to the results in the American elections mentioned above (see Abramson et al. 1999). Clearly there were substantial numbers of voters who preferred Mordecai, but voted Barak or even Netanyahu. These defections among voters who preferred Mordecai were much more likely to occur than defections from either Barak or Netanyahu.

Table 1

Preferences and Choice over Prime Ministerial Candidates

Vote / Highest Preference	Barak	Netanyahu	Mordecai	Total
Barak	97.6% (327)	1.2% (4)	1.2% (4)	43.5% (335)
Netanyahu	1.6% (4)	97.6% (239)	0.8% (2)	31.8% (245)
Mordecai	23.0% (23)	9.0% (9)	68.0% (68)	13.0% (100)
B-N Tie	56.3% (9)	43.8% (7)	0% (0)	2.1% (16)
N-M Tie	4.5% (1)	86.4% (19)	9.1% (2)	2.9% (22)
B-M Tie	65.0% (26)	7.5% (3)	2.8% (11)	5.2% (40)
All Tied	46.2% (6)	30.8% (4)	23.1% (3)	1.7% (13)
Total	51.4% (396)	37.0% (285)	11.7% (90)	100% (771)

Survey: Diskin (Jewish Respondents)

Table 2 reports the similar data from the Arian-Shamir survey. Those data show a very comparable pattern. The major exception is the lower likelihood of defecting from supporting Mordechai, among those who preferred him the most. The difference is likely due to the fact

that this survey was conducted over a six-week stretch of the campaign. Mordechai's support declined over time. It is likely the case, therefore, that the strategic setting for many respondents led them to remain more likely to support his still-more viable campaign.

Table 2

Preferences and Choice over Prime Ministerial Candidates

Vote / Highest Preference	Barak	Netanyahu	Mordecai	Total
Barak	94.7% (374)	3.3% (13)	2.0% (8)	41.1% (395)
Netanyahu	4.2% (14)	94.9% (316)	0.9% (3)	34.6% (333)
Mordecai	19.6% (21)	7.5% (8)	72.9% (78)	11.1% (107)
B-N Tie	54.5% (6)	45.5% (5)	0	1.1% (11)
N-M Tie	0.4% (4)	1.4% (13)	0.2% (2)	2.0% (19)
B-M Tie	21.1% (40)	11.1% (6)	14.8% (8)	5.6% (54)
All Tied	41.7% (18)	48.8% (21)	9.3% (4)	4.5% (43)
Total	49.6% (477)	39.7% (382)	10.7% (103)	100% (962)

Survey: Arian and Shamir (Jewish Respondents)

As Table 3 shows (from the Arian and Shamir survey), a significant number of respondents indicated an inclination to vote strategically. When survey respondents were asked directly if they would change their vote if their favorite candidate had no chance of winning,

11.04% replied "yes" or "definitely yes" – again a percentage quite close to the percentage of strategic voters in the American context. We categorized nearly the same number of respondents as "sophisticated" in the sample (see Table 6a). 51% of the respondents answered that they would definitely not vote strategically. One should recall that 70% of the sample planned to vote for candidates who were expected to do well, Barak and Netanyahu. This may have made answering the question a difficult, academic exercise for many respondents who may have also been thinking that this question measured their willingness to support their candidate or parties' traditional opponent.

Table 3

Question: Would you change your vote if your candidate has no chance of winning?

Definitely No	50.8%	(502)
No	38.2%	(377)
Yes	9.7%	(96)
Definitely Yes	1.3%	(13)

Survey: Arian and Shamir

Viability Expectations

For strategic voting to take place, voters must evaluate not only candidate preferences, but viability expectations as well. Low expected viability gives a strong impetus for voters who prefer that candidate to defect strategically to their second choice. We measure viability in two ways. Diskin's survey asked the survey respondents to estimate each candidates' chances of winning. We then normalize their responses so that the answers sum to 100%. Arian and Shamir asked who the respondent thought would advance to the second round election. If the respondent expected a first round winner, then they were asked to specify who they thought it would be (see Table 4). Tables 4 and 5 show the expected election outcomes of the voters.

[Table 4 About here]

Most respondents expected that Barak and Netanyahu would advance to the second round. Few thought one or the other would win in the first round, consistent with the information from the weekly polls that were published while the surveys were being administered. 79.3% of the respondents to the Arian and Shamir questionnaire expected Netanyahu to reach the second round of the multi-candidate contest, and an additional 5.5% predicted an outright first round victory in such a race. Similarly, 76.3% expected Barak to reach the second round and 6.3% expected an outright first round victory. 70.6% of the respondents expected Barak and Netanyahu to oppose each other in a run-off. Mordecai's candidacy was perceived as substantially less viable and the expectations were radically lower than for either Netanyahu or Barak. Only 12.9% of the respondents expected him to even reach the second round, with a miniscule 1.7% predicting an outright first round victory.

Table 5

Expectations of Election Outcomes

Respondent's Choice for Prime Minister by the Candidate the Respondent Believes will Win the Election

Vote \ Predicted Winner	Netanyahu	Barak	Mordecai	Total
Netanyahu	96.8% (362)	2.4% (9)	0.8% (3)	39.8% (374)
Barak	11.4% (53)	87.5% (405)	1.1% (5)	49.3% (463)
Mordecai	33.3% (34)	31.4% (32)	35.3% (36)	10.9% (102)
Total	47.8% (449)	47.5% (446)	4.7% (44)	100.0% (939)

Note: Arian and Shamir Survey

Table 5 presents the crosstab results for vote choice and expected winner. Less than 5% expected Mordecai to be the winner, and, in fact, two-thirds of his voters expected him to lose.

The expectations for Netanyahu and Barak were virtually a dead heat with 47.3% and 47.9% respectively predicting them as the winner. This perception of a tight electoral contest between Netanyahu and Barak coupled with low viability expectations for Mordecai likely fueled strategic voting by defecting Mordecai supporters. These defections may well have led to a vicious cycle of poor polling results, leading even more of Mordecai's supporters to support another candidate, further decreasing his chances. While the percentage of Barak voters (46.9%) largely mimicked victory expectations, Netanyahu's reputation did better than the actual candidacy, as the victory expectations outpaced voters (37.9%) by nearly ten percentage points. Most of those who thought Barak would win the election voted for Barak. Almost all of Netanyahu's voters expected Netanyahu to triumph.

Table 6a

Distributions of Voting Types among the Entire Electorate and by Supporters of Each Candidate

	Entire Electorate	Netanyahu Voters Only	Barak Voters Only	Mordecai Voters Only
Straightforward	76.0% (563)	86.9% (253)	75.8% (292)	***27.7% (18)***
Sincere	11.2% (83)	2.1% (6)	***9.4% (36)***	63.1% (41)
Sophisticated	9.5% (70)	8.5% (25)	***10.9% (42)***	4.6% (3)
Irrational	3.4% (25)	2.4% (7)	3.9% (15)	4.6% (3)

Arian and Shamir Survey: Jewish Respondents Only

Table 6b

	Entire Electorate	Netanyahu Voters Only	Barak Voters Only	Mordecai Voters Only
Straightforward	69.8% (518)	85.0% (237)	71.1% (270)	***13.3% (11)***
Sincere	22.2% (165)	4.7% (13)	21.8% (83)	83.1% (54)
Sophisticated	4.5% (33)	5.7% (16)	4.5% (17)	0% (0)
Irrational	3.5% (26)	4.7% (13)	2.6% (10)	3.6% (3)

Diskin Survey: Jewish Respondents Only

Putting together preferences and probabilities of winning, we get the ordinal breakdown of voter types presented in Table 6a and Table 6b for the entire electorate as well as for the supporters of each candidate. "Sincere" voters, for purposes of this analysis, are those who reported voted for their most preferred candidate despite believing that the candidate did not have the highest chance of winning. "Sophisticated" or "strategic" voters are those who believed that their second-most preferred candidate was more likely to win than their favorite, and they intended to vote for that second-best alternative. "Straightforward" voters are those who believed their most preferred candidate was the most likely to win (or had the best chance of beating their least preferred candidate) and intended to vote for their favorite. For these "straightforward" voters, their strategic choice is the same as their sincere choice so we cannot, therefore, discriminate between strategic and sincere voting strategies for these cases (Farquharson 1969). We classify most voters in both surveys as straightforward, since they thought that the candidate whom they were going to vote for was going to win.

Comparing the two surveys reveals some variation in the distribution of voter types. The Arian and Shamir data shows a slightly higher percentage of the voters are inclined to vote for the candidate they like the most and feel is going to win. More Diskin voters are categorized as "sincere." Many of the sincere respondents to Diskin survey are Barak voters. More than one in five of the Barak supporters in the Diskin survey are pessimistic about their candidate's chances of winning the election, choosing to support Barak even though they felt that he was not going to prevail in the election. More Barak and Mordecai supporters thought their candidate would win when they spoke to Arian and Shamir's investigators. More Barak voters preferred another candidate, according to Arian and Shamir. These differences may be attributed to the longer time that Arian and Shamir spent in the field. Earlier respondents presumably thought Mordecai still

had a chance of winning, and more thought Barak might lose. Responses collected after Diskin's research was complete led to a greater incidence of respondents who preferred Mordecai but made a "sophisticated" decision to vote for Barak and more Barak voters who thought (correctly) that they were voting for the winner.

Estimation of Models Based on the Multicandidate Calculus of Voting

The multi-candidate calculus of voting presumes that voters will be making their decisions on the basis of maximizing expected utility. In our case expected utility is arrived at by multiplying utility, as measured by feeling thermometer scores for the candidates, by "folded" probabilities expressing the viability of the candidates with reference to the victory point. We otherwise replicate analyses in Abramson, Aldrich, et al. (1992), by testing two statistical models based on the calculus of voting using the folded probability of winning terms.

The dependent variable in the following models is dichotomous. If the respondent voted for their most preferred candidate as measured by the feeling thermometer scores the variable is scored a one. Otherwise, the variable is given a value of zero. The independent variables are comparisons of viability expectations. The survey asked respondents to estimate the chance of the candidate winning. These responses were normalized so that the percentages summed to 100%. The data was then folded at the victory point, 50%. So, the maximum value is 0.5, with a candidate with no chance of winning and a candidate with a 100% chance of winning being assigned a value of zero. By folding the scale at the victory point, high values reflect how close the candidate is to winning an election by a single vote. Rational choice models of the vote argue that the higher the probabilities of a single vote deciding an election, the greater the chance of that vote being cast (Riker and Ordeshook 1968; McKelvey and Ordeshook, 1972). Careful

readers will note that in a three-way race for a single office, a plurality can be won by a single vote over one-third (33.33%) of the votes cast. However, in this case, an outright winner of this election required 50% of the vote. A candidate who receives one-third of the total vote plus one is only guaranteed participation in a run-off. Furthermore, research into subjective probabilities suggest that survey respondents will tend to use 50% to denote an equal probability of a candidate winning (even if the result is three candidates with 50%, 50% and 50%, see Fox 1999). So, despite some hesitations, we expect that values approaching 0.5 will capture the competitiveness of the candidate, resulting in a greater inclination to vote for that candidate rather than one expected to coast to victory or lose in a landslide.

Table 7

Did R Vote for Favored Candidate?

Probit Estimates of the Probability of Voting for the Favorite Candidate Given "Folded" Probability of the First- and Second- Ranked Candidates Winning the Election

	Coef.	Std. Err.	z
"Folded" P1	3.57	0.29	12.49
"Folded" P2	-1.36	0.28	-4.92
Constant	-0.33	0.11	-2.96

N= 880

Predicted Differences
Over select values of P

	"Folded" P1		
"Folded" P2	**Min**	**0.33**	**Max**
Min	37.0%	80.4%	92.7%
Mean	27.4%	72.3%	88.2%
0.33	21.6%	65.7%	84.1%
Max	15.6%	57.0%	78.0%

We first computed how the competitiveness of the first- and the second- ranked candidates predicted voting for the favorite candidate. We expected that the closer the probability

of the first- ranked candidate winning was to 50% (0.5), the more likely the respondent would cast her vote for the preferred candidate. However, if the likelihood that the second-ranked candidate would win approached 50% (0.5), the less likely the respondent would remain loyal to their favorite candidate. The results of the model are presented in Table 7, confirming our expectations. Both coefficients are large, statistically significant, and signed in the expected direction. We observe a particularly large likelihood to vote for the favorite candidate the closer the probability of him winning was to 50%.

The table of first differences is particularly illustrative. This table presents the estimated probability of voting for the favorite candidate at different levels of the "folded" probability of the candidate winning. We present the effect of the folded probability of the favorite candidate winning at three levels, the minimum (zero), one-third, and the maximum (0.5). We present the effect of the folded probability of the second-favorite candidate winning at four levels, the minimum (zero), the mean (0.196), one-third, and the maximum value (0.5). The mean of the folded probability of the favorite candidate winning is not presented because it is so close to one-third (0.342). One-third is included for illustration because that value includes those candidates who are expected to earn 33% of the vote band a guaranteed spot in a run-off (or a plurality in an even, three-way race).

Expectations that the favorite candidate is in a competitive race have a dramatic effect on voting behavior. As probability approaches 0.5, the likelihood of voting for the favorite candidate soars to no less than 78% or even to 92.7%, depending on the probability of the second-candidate winning. In contrast, when the favorite candidate has surely won or lost, the likelihood of voting for the favorite candidate is small (15.6 to 37%). Most of the increase in the probability of voting for the favorite candidate occurs between the minimum value and one-third.

For example, when the folded probability of the second-favorite candidate winning is held at the mean value, the likelihood that the respondent will vote for the favorite candidate rises from 27.4% to 72.3%, an increase of 45 percentage points. Between one-third and the maximum value, the likelihood of voting for the favorite rises nearly 16 percentage points to 88.2%. These results suggest that the probability of voting for the favorite candidate is sensitive to a broad notion of competitiveness rather than just 50%. As the probability of the favorite candidate winning approaches this range of values around fifty, the likelihood of voting for the favorite candidate becomes very high.

Interestingly, when moving from the minimum value to the maximum value of the folded probability of the second- ranked- candidate winning, the probability of voting for the favorite candidate goes down a nearly uniform 20 percentage points at every level of the favorite candidate's folded probability of winning the election. However, unless the favorite candidate's folded probability of winning the election is low (less than 0.28), voters are still predicted to vote for their favorite candidate.

To replicate the analysis in Abramson, et al. 1992, we first measured the effect of differences in "folded" viability on the decision to vote for the favorite candidate. In Table 8, P_{12} refers to the difference in folded viability between the first- and second- ranked candidates as determined by creating an ordinal ranking based on feeling thermometer scores. P_{13} is the difference in folded viability between the first- and third-ranked candidates. High values (maximum 0.5) for these independent variables suggest that the favorite candidate's probability of winning is much closer to 50% than the second- (or third-) highest-ranked candidate. Values approaching zero reflect narrow differences in distance from 50% chance of winning. Negative values mean that the preferred candidate is less likely to be in a close race than the second

favorite. Theoretically, if the respondent believes that all three candidates are equally likely to win, the value of both independent variables is zero. Of the three possible paired comparisons only P_{12} and P_{13}, both of which should have positive parameters, are presented, since by definition $P_{23}=P_{13}-P_{12}$ (and so ought have a negative parameter).

The probit estimation of this model appears in Table 8. The overall fit of the model is strong. Both of the coefficient estimates are statistically significant and correctly signed. The impact of P_{12} is particularly large, suggesting that the competitiveness of the preferred candidate relative to the competitiveness of the second candidate is an important determinant of votes cast for the preferred candidate.

Table 8

Did R Vote for Favored Candidate?

Probit Estimates of the "Folded" Probability of Preferring to Vote for the Favorite Candidate, Given Ordinal Preferences and Differing Assessments of Candidate Viability

	Coef.	Std. Err.	z
Constant	0.26	0.05	5.07
p12	2.13	0.22	9.64
p13	0.86	0.20	4.34

N=880

First Differences

		P12	
P13	**Min**	**Zero**	**Max**
Min	**10.9%**	**43.5%**	81.6%
Zero	**21.1%**	**60.4%**	**90.8%**
Max	35.4%	**75.6%**	96.1%

This effect can be understood by considering the table of maximum and minimum differences. We present here the calculated effects of moving the value of each independent variable from zero to its minimum and maximum values. One can clearly observe how the

probability of voting for a favorite candidate rises the higher the value of each independent variable. Although the entire 3 x 3 table can be statistically estimated, only those cases highlighted in bold are arithmetically possible. For example, if P_{12} is at the maximum value of 0.5, suggesting that the favorite candidate has a 50% chance of winning while the second-highest-ranked candidates' chances are hopeless, the third candidate cannot also have a folded probability of zero. But, in this situation, P_{13} could be at its maximum possible value only if the third candidate had no chance of winning. If this was the case, the normalized probabilities would not sum to one. Since the favorite candidate cannot have a 50% chance of winning against two hopeless candidates, both independent variables cannot both be at the maximum value.

Calculating these differences allows us to estimate that when all the candidates have an equal shot at winning, this model predicts that the voter will vote for her favorite candidate 60.4% of the time. If her favorite candidate has no chance while the other two candidates are locked in a close race, there is only a 10.9% chance that she will vote for her favorite. Conversely, when the second-favorite candidate has no chance of winning, but the favorite and the least-preferred candidate are in a tight race (a realistic scenario for this election), there is a 90.8% chance that the voter will vote for her favorite. As the value of P_{13} increases, as the least preferred candidate moves further away from the fifty percent mark as compared to the favorite candidate, the chances that the respondent will vote for the most favored candidate increases. In contrast, as the least preferred candidate moves closer to the fifty- percent mark as compared to the most preferred candidate, the chances that the respondent will vote for the most favored candidate decrease. These results confirm our hypothesis that the respondent's estimates as to the chances of her most preferred candidate's chances of winning relative to her second-favorite candidate will influence the decision as to whether the respondent will defect to a lesser

preferred but more viable candidate. In short, these are the patterns that would result if voters do, indeed, reason via expected utility maximization.

[Table 9 about here]

Table 9 presents the result of a probit model designed to document more directlty the role of expected utility, by formally including utility and probability terms in expectational form. The estimates reported in Table 9 include the same dependent variable as above with three newly created independent variables, PB_{12}, PB_{13}, and PB_{23}. Each of the new independent variables is the difference in normalized folded probability of winning multiplied by the difference in expected utility as measured by normalized thermometer scores. So, PB_{jk} = ([folded] P_j – [folded] P_k)(U_j-U_k). Therefore, for example, PB_{12} is the difference between the most- preferred and second- preferred candidate's probability of winning folded at the victory point (50%) multiplied by the difference between the candidates' thermometer scores. Since the normalized thermometer score for the favorite candidate is equal to one, the difference between the two thermometer scores is always positive. Thus, the sign of P_{12} is the same as the direction for PB_{12}, and the sign of P_{13} is the same as PB_{13}. So, we expect the coefficient estimates for PB_{12} and PB_{13} to be positive. As the gap between the thermometer scores between two candidates increases, the smaller the reduction in magnitude of the PB_{12} and PB_{13} compared to the independent variables in the previous model measuring only competitiveness. A larger value for PB_{12} or PB_{13} reflects a larger relative utility for the favorite candidate, making support for the favorite candidate more likely. Conversely, we expect that the parameter estimate for PB_{23} to be negative because the more the respondent likes the second favorite candidate relative to the least favorite candidate, the more likely he will vote for the second-favorite candidate. Note that (unlike the previous model) PB_{23} is not equal to the difference in the other two variables.

The coefficients for two variables, PB_{13} and $PB_{23,}$ were large and significant. All were signed in the expected direction. PB_{12} had a relatively smaller coefficient that was only significant at the generous 0.01 standard. This represents somewhat of a surprise and a significant difference between the Israeli case and the American case explored in Abramson, et al. 1992. That analysis found that PB_{23} was large only for Democrats, the variable's effect on Republican vote choice was small and insignificant.

PB_{12} had a large, substantively significant effect on vote for the favorite candidate in the U.S., but the table of first differences suggests that in Israel, PB_{12} only exerted a substantively large effect on voting for the favorite candidate at low levels of $PB_{13.}$ For example, when both PB_{13} and PB_{13} are at their minimum values, moving from –0.5 to 0.5 leads to a thirty percentage point increase in the likelihood of voting for the favorite candidate. In comparison, when PB_{13} is its mean, moving all the way from the minimum value to the maximum value of PB_{12} resulted in a mere nine-percentage point increase.

These findings suggests that the decision to vote for the favorite is more sensitive to the multiplicative difference in the probability of winning and the thermometer score between the first- and the least- favored candidate, not the first- and the second- preferred candidate. Increasing the value of PB_{13} by one standard deviation results in a 15 to 20 percentage point increase in the likelihood of voting for the favorite at most values of the other independent variables. A one standard deviation increase in value (0.23) from the mean (0.077), increases the probability of voting for the favored candidate to 91.2%. Our model predicts that high levels of PB_{13} result in a near-certain vote for the preferred candidate. When the other two variables are held constant at their means, but PB_{13} is at its maximum value, there is a 96.2% chance of voting

for the favorite. Even when PB_{12} is at its minimum value and PB_{23} is at its maximum value, if PB_{13} is at the maximum value there is a 49.1% chance of voting for the favorite candidate.

As expected, holding the means of both PB_{12} and PB_{13} steady and increasing the value of PB_{23} dramatically decreases the probability that the respondent will vote for the most liked candidate. PB_{23} had a large, negative impact on the likelihood of voting for the favorite candidate. This effect is especially visible when there are low values of PB_{12} and $PB_{13.}$ When PB_{13} is high, there are still high probabilities of voting for the favorite at all levels of PB_{23} unless PB_{23} has values higher than the mean plus one standard deviation. For example, when PB_{23} is held constant at its mean, PB_{13} must be lower than its mean for our model to predict a vote for another candidate.

Implications

Our main finding is that strategic voting does occur in runoff elections, nearly duplicating the results found in the American cases. This result is something of a surprise, given Duverger's account (1963). There, he argued that plurality voting would lead to two-party systems due to both psychological and "mechanical" effects. These effects would not be found in run-off systems lacking, inter alia, the psychological factor studied here as the strategic vote.

Our use of folded probability scores is an important methodological refinement. Previous research demonstrated that strategic votes are cast for the candidate with the best chance of winning, but here we present a model that shows that voters are more inclined to vote strategically in support a candidate who is in a very competitive race. This is consistent with rational choice models of voting behavior that argue that voters are motivated, in part, by the probability of their vote making a difference in the outcome of the election. Here we show that

voters are much more likely to vote for their preferred candidate if that candidate is more likely to be in a close race than their second candidate. However, when using a multiplicative variable, combining expectations of victory with utility, the difference between the first- and least-favorite candidate exerts the largest influence on voting for the favored candidate.

Israeli voters, when faced with a multi-candidate electoral contest for Prime Minister, responded overwhelmingly as rational voters, considering the viability of the candidates in addition to their sincere preferences for each candidate. When another candidate appeared to be in close competition with their least favorite candidate, they voted for this other candidate.

Though Israel has returned to a single ballot proportional representation system, this experiment with a hybrid electoral system gives scholars an opportunity to learn about voting behavior in both parliamentary and presidential systems of government. Future research into the behavior of Israeli voters under this system should help illuminate how rational, strategic considerations result in different behavior in winner-take-all and proportional contests. Our continuing exploration hopes to show how the combination of the two in the same election, and the expected coalition ramifications of a prime minister with different combinations of parties, affects the utility of the voter by directly shaping policy outcomes. Based on these results we hope to learn how strategic considerations in the Prime Ministerial election affects the voter's inclination to cast a sincere ballot for Knesset to ensure that policy is closest to their ideal point.

Table 4

Who do you think will advance to the second round?

Name:	Percent:
Outright Winner (No Second Round):	14.7% (145)
Netanyahu	
and Barak:	70.6% (698)
and Mordecai:	7.8% (77)
Barak and Mordecai:	5.1% (50)
Other Predictions	1.9% (19)
Total:	100% (989)

Source: Arian and Shamir Survey

If Respondent Picked a Candidate to Win Outright, Who Was It?

Answers deduced from victory predictions

Name:	Percent:
Netanyahu	37.2% (54)
Barak	42.8% (62)
Mordecai	11.7% (17)
Other	8.3% (12)
Total:	100% (145)

Survey: Arian and Shamir

Table 9

Probit Estimates of the Probability of Preferring to Vote for the First- or Second-highest-ranked Candidate, Given Normalized, Multiplicative Utility and Viability Measures

	Coef.	Std. Err.	z	P>|z|
PB_{12}	0.78	0.45	1.71	0.087
PB_{13}	2.57	0.35	7.40	0.000
PB_{23}	-2.38	0.42	-5.66	0.000
Constant	0.27	0.05	5.12	0.000

N= 880

Differences:

PB23 Min

PB12	Min	-StDev	Mean	+StDev	Max
PB13					
Min	41.6%	54.6%	59.3%	63.8%	71.4%
Mean-StDev	71.2%	81.3%	84.4%	87.0%	91.0%
Mean	88.3%	93.6%	94.9%	96.1%	97.5%
Mean+StDev	96.6%	98.4%	98.8%	99.2%	99.5%
Max	99.1%	99.6%	99.8%	99.8%	99.9%

PB23 Mean-StDev

PB12	Min	-StDev	Mean	+StDev	Max
PB13					
Min	21.6%	32.4%	36.7%	41.3%	49.6%
Mean-StDev	49.5%	62.4%	66.8%	71.0%	77.8%
Mean	73.1%	82.8%	85.7%	88.2%	91.8%
Mean+StDev	89.4%	94.2%	95.5%	96.5%	97.9%
Max	96.3%	98.3%	98.7%	99.1%	99.5%

PB23 Mean

PB12	Min	-StDev	Mean	+StDev	Max
PB13					
Min	10.6%	18.0%	21.2%	24.8%	31.9%
Mean-StDev	31.8%	44.3%	49.0%	53.8%	62.0%
Mean	56.2%	68.7%	72.7%	76.5%	82.5%
Mean+StDev	78.4%	86.8%	89.2%	91.2%	94.1%
Max	90.8%	95.1%	96.2%	97.1%	98.2%

PB23 Mean+StDev

PB12	Min	-StDev	Mean	+StDev	Max
PB13					
Min	4.4%	8.4%	10.4%	12.7%	17.6%
Mean-StDev	17.5%	27.3%	31.4%	35.7%	43.8%
Mean	38.1%	51.1%	55.8%	60.4%	68.3%
Mean+StDev	62.8%	74.4%	78.1%	81.4%	86.5%
Max	80.7%	88.4%	90.6%	92.4%	95.0%

PB23 Max

PB12	Min	-StDev	Mean	+StDev	Max
PB13					
Min	0.5%	1.2%	1.6%	2.1%	3.5%
Mean-StDev	3.4%	6.8%	8.5%	10.5%	14.8%
Mean	11.7%	19.4%	22.9%	26.6%	34.0%
Mean+StDev	28.7%	40.8%	45.5%	50.2%	58.5%
Max	49.1%	62.1%	66.5%	70.7%	77.5%

Bibliography

Abramson, Paul R., John H. Aldrich, Phil Paolino, and David W. Rohde. 1992. "'Sophisticated' Voting in the 1988 Presidential Primaries." American Political Science Review 88 (March):55-69.

Abramson, Paul R., John H. Aldrich, Phil Paolino, and David W. Rohde. 1995. "Independent and Third Party Candidates in American Politics: Wallace, Anderson, and Perot." PoliticalScience Quarterly 110 (Fall):545-74.

Abramson, Paul R., John H. Aldrich, Phil Paolino, and David W. Rohde. 2000. "Challenges to the American Two-Party System: Evidence from the 1968, 1980, 1992, and 1996 Presidential Elections." Political Research Quarterly 53 (December).

Abramson, Paul R., John H. Aldrich, and David W. Rohde. 1999. Change and Continuity in the 1996 and 1998 Elections. Washington, DC: CQ Press.

Duverger, Maurice. 1963. Political Parties: Their Organization and Activity in the Modern State. Translated by Barbara North and Robert North. New York: Wiley.

Ferejohn, John A., and Morris P. Fiorina. 1974. "The Paradox of Not Voting: A Decision Theoretic Analysis." American Political Science Review 68 (June):525-36.

Fox, Craig R. 1999. "Strength of Evidence, Judged Probability and Choice under Uncertainty. Cognitive Psychology 38:167-189.

McKelvey, Richard D. and Peter C. Ordeshook, "A General Theory of the Calculus of Voting," in Mathematical Applications in Political Science, ed. by J. Herndon and J. Bernd, vol. 6, Charlottesville, University of Virginia Press.

Riker, William H. 1986. The Art of Political Manipulation. New Haven, CT: Yale University Press.

Riker, William H., and Peter C. Ordeshook. 1968. "A Theory of the Calculus of Voting." American Political Science Reivew 62 (1) (March):25-42.