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Do Polls Limit Wishful Thinking?

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Abstract

Previous studies of election predictions have emphasized the effect wishful thinking has on predictions. Wishful thinking was evident in predictions made by partisan respondents to the 2006 Israel Election Study, but does not fully explain the observed variation even when controlling for levels of knowledge and political engagement. To test whether this wishful thinking is the result of a failure to recall the latest polls accurately, or an inability to use this information, we showed some people the latest polls before they make their predictions using a concurrent internet survey-experiment. Others were asked to recall each party’s polling numbers. We found that showing respondents the latest polls influenced their predictions for smaller parties, but not for large, well-known parties. For well-known parties, even well-educated and politically engaged respondents did not offer predictions consistent with the polls. However, prompting respondents to recall the latest polls caused our sample to focus more closely on the polls when making their predictions.

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I. Introduction
Rational models of voter decision-making assume that voters are capable of making expected utility calculations to determine who to vote for (Riker and Ordeshook 1968; McKelvey and Ordeshook 1972; Black 1978). Recent research has pointed to three important problems with the generation of the predictions necessary to complete these expected utility calculations. First, some voters are incapable of making realistic predictions because they are not aware of the latest polls or insufficiently sophisticated to utilize the information (Lewis-Beck and Skalaban 1989, Blais and Bodet 2006). Second, knowledgeable voters may be overconfident in their abilities to offer predictions, and may ignore information like recent published polls that conflict with their judgments (Camerer and Johnson 1991, Andersson et al. 2006, Hall, Arris and Todorov 2007). Third, voters are not objective prognosticators; people’s expectations are related to their preferences. Pre-election predictions reflect what voters desire (“wishful thinking”). Although evidence of a desirability bias or projection effects is mixed outside of the world of politics (see review in Price 2000), studies of voting behavior have consistently found a strong relationship between desires and predictions (Lazarsfeld 1946, Granberg and Brent 1983, Babad 1998, Blais 2002).

In this paper, we examine how polls influence voter expectations in the 2006 Israeli Knesset election. In most countries today, polls are a ubiquitous feature of campaign coverage, and a common predictor of election results (even if not always reliable). Even though intuition would suggest that voters would be attentive to the polls, especially in a country, like Israel, where the population is relatively more attentive to politics than many other countries, most respondents to the 2006 Israel Election Study did not make predictions within the range of the polls published during the time the survey was in the field. Wishful thinking influenced predictions for two large parties.

To answer the question whether knowledge of the latest polls can decrease wishful thinking and lead voters to offer predictions more consistent with the latest polls, we administered a survey-experiment designed to test whether respondents would be more likely to use the polls when making predictions if they were either given the latest poll or asked to recall the latest polls before making their predictions. We found that providing recent poll results to voters influenced predictions of smaller parties. However, providing the latest poll results did not affect predictions of the largest parties or even small parties whose [mis-] fortunes had been highly publicized. Recalling the poll results for these big parties caused predictions to conform more to the latest polls.

II. Study rationale and literature review
Scholars differ as to what causes wishful thinking. One school attributes wishful thinking to an effort to make predictions congruent with desires. A second school of scholars attributes wishful thinking to be the result of inferences drawn from a biased sample of evidence caused by a failure to appreciate the diversity of views beyond like-minded people in their social circle (see review in Babad 1997). A related explanation for wishful thinking is that it is caused by biased recall of information such as poll results (Bar-Hillel and Budescu 1995, Levine 2007). If wishful thinking is caused by cognitive biases such
as overemphasizing the views of like-minded people or a biased recall of polling results, then providing subjects with the latest poll results should reduce wishful thinking.

It is also possible that these survey respondents are also offering snap judgments or their “gut feelings”. Malcolm Gladwell, in his popular best-seller, “Blink” (2005), argues that quick, snap judgments are often more reliable. These fast, intuitive judgments are typical of a cognitive process distinct from deliberate reasoning and often result in different choices (Stanovich and West 2000, Kahneman 2003). So, in our experiment we provide respondents with the latest polls and ask some to recall the latest polls in an effort to see if predictions from this group are different than the predictions made by respondents whose thinking process were not slowed down (so to speak). We also look at the standard deviation of the responses to see if respondents in these conditions provide answers that are more similar to others in that condition than those respondents who were just asked to give their predictions.

The tendency of knowledgeable voters to rely on their own ‘expertise’ rather than objective information may be related to wishful thinking because most informed and engaged respondents tend to be partisans and non-partisans tend to be less informed and engaged. These voters may also be cognizant of past poll volatility, or have past experiences with inaccurate polling (see Babad and Yacobos 1993). As a consequence, showing respondents the latest polls may not have much of an effect. In this case, new poll data would be little different than the poll results these respondents had likely already seen - and discounted. However, previous studies have found that knowledgeable respondents who were attentive to the polls exhibited less wishful thinking (Babad et al 1992, Babad 1997, Irwin and van Holsteyn 2002). The sample of our experiment is predominantly well-educated, knowledgeable voters, so our analysis focuses on this group.

Previous empirical investigations have found that voters’ expectations are influenced by accessible information about the campaign from published polls (Lavrakas, Holley and Miller 1991) and historic election results (Nadeau, Niemi and Amato 1994). This information did not cause wishful thinking to disappear. Babad (1995, 1997) found that providing information like polls or historic results did not eliminate wishful thinking. Fischer and Budescu (1995) found that wishful thinking affected predictions in Israel by 1 to 4 seats (out of 120). Irwin and Van Holsteyn (2002) found that supporters of a party, at most, estimated that the party would win six more seats than the lowest estimate by non-supporters.¹

As a result of these biases, prediction accuracy is dependent on which party or parties exceed the share of the vote predicted by the polls. The impact of this bias extends beyond mere psychological curiosity since this desirability bias may cause voters to be

¹ The Netherlands have a 150-seat legislature, so six seats represent a change of only 4% in the total number of seats. This is not much different than the margin of error of most published polls and (depending on the circumstances and the size of the party) would not be considered to be completely unreasonable. However, the gain or loss of six seats would represent a dramatic shift in fortunes equal to one-sixth of the seats won by largest party (and an even greater percentage of the support for the smaller parties).
less likely to desert candidates or parties with little chance of winning (or doing well, Blais 2002, Blais and Turgeon 2004, Aldrich et al. 2005). By extension, this behavior suggests that the classic expected utility model of the vote is not accurately describing voting behavior.

III. The case: The Israeli Election of 2006

The Israeli parliamentary election on March 28, 2006 is a good case to examine the influence of polls on election predictions since the dynamics of the election were much different than any previous campaign.

Since 1977, Israeli politics have been dominated by the Labor Party on the left and the Likud on the right, but no party has ever governed alone. Oversized coalitions that exceed the minimum number of parties or seats have been common. After the previous election in 2003, Prime Minister Ariel Sharon’s Likud Party was by far the largest party in the Israeli parliament, the Knesset. Following Israel’s withdrawal from the Gaza Strip, Sharon and many of his cabinet ministers left the Likud in face of internal party opposition to the withdrawal. Sharon and his ex-Likud allies formed a new party, Kadima, with several politicians on the left, most notably former Prime Minister Shimon Peres.

Thanks to the incumbent leader’s popularity, Kadima polled very highly. Together with the most likely coalition partner, Labor, the two parties might win a majority of seats in the 120-seat Knesset. If Kadima and Labor held this support, they would not have to bargain away governing power to several small parties to form a majority coalition. As late as six weeks before the election, polls in Yedioth Ahronoth, Israel’s most widely read newspaper, predicted that the two parties would win a total of 61 seats. However, support for Kadima fell. Less than a week before election day, Yedioth Ahronoth published a poll predicting that the two parties would fall a mere four seats short of winning a majority. Under such a scenario, Kadima and Labor would have to include at least one other party in the coalition, with potentially large post-election policy-making implications.

The emergence of Kadima was not the only disruption in the Israeli party system. To the right of Likud, the nationalist bloc reorganized their party lists. The National Religious Party merged with the nationalist party on the far right, Ihud Leumi, while a predominantly secular-Russian-immigrant faction, Yisrael Beitenu, ran as an independent list. Shinui, a secular centrist party who won 15 seats in 2003 splintered into three
factions, all with negligible poll numbers. These changes diminished the value of previous election results for all voters except supporters of parties advocating the interests of ultra-Orthodox Jews and the Arab sector. As a result, there was little relevant information other than polls available to the voter wishing to make predictions.

The potential importance of the polls is magnified by Israel’s electoral system. The entire country is one district. Any poll discussed on TV or reported in the press is as relevant in one part of the country as it is in another. Furthermore, major newspapers, TV and radio outlets and internet portals are all national and all habitually report on the polls released by the other outlets. This does not mean that all voters are attentive to every detail of these polls. Twelve different parties won representation to the Knesset in 2006. It is not unusual for radio and television outlets to only mention a few parties in their report of the polls, or for the newspaper headlines to highlight nothing more than the major parties and other significant shifts. With so many parties, it may be unreasonable to suggest that even newspaper readers who read the entire poll results would be able to remember how many mandates each of these twelve parties were receiving in the polls.

Furthermore, popular accounts of the election suggested that the Israeli public was less attentive to these elections than most previous elections. Several corruption scandals embroiled members of the incumbent government and the media regularly reported that cynicism was endemic. We would not be surprised if many members of the famously attentive Israeli electorate would struggle to recall the latest poll results or make accurate predictions of the final results. On the other hand, the small parties polled rather consistent levels of support throughout the campaign (see Figure 1), so even if the respondent was not familiar with the most recent poll, they might have been able to properly place the poll results in the correct range.

IV. Data and Procedures
Israel Election Study
The 2006 Israel Election Study was a telephone survey conducted by Asher Arian of Haifa University and Michal Shamir of Tel Aviv University. A random sample of 1919 respondents was interviewed by phone from February 28 to March 23, 2006. The random sample was split into two waves, with each wave constituting its own random sample of the population. The first wave concluded on March 14 and the second wave finished after March 13. 289 interviews were conducted in Arabic, and 305 interviews were conducted in Russian. A total of 1045 respondents predicted the number of seats Kadima, Labor and Likud would win (in that order). 330 respondents were also asked to predict how many seats their favorite party was expected to win. This survey is part of a series that is repeated almost every election by these investigators. We also reference the 2003 Israel Election Study, which asked about half of its sample of 1,234 to make seat predictions for eight different parties.

We compared the respondents’ expectations to the poll results published in the Yedioth Ahronoth newspaper, Israel’s most widely read daily. A plurality (45.86%) of all Israel
Election Study respondents reported reading it daily, and its polls are also frequently quoted by other media outlets.²

**Internet Experiment**

We augmented this data with an internet survey done in Hebrew and hosted on the servers at the University of Toronto. A total of 237 interviews were conducted between March 8-27, 2006. We recruited respondents through emails sent to friends, family and academic colleagues in Israel, who were asked to forward to their friends and/or make classroom announcements. We also posted invitations to complete the survey on several blogs and in “talk-backs” to media stories about the campaign posted on Israeli news websites. These invitations expressly indicated that we were non-partisan academics interested in their predictions about the upcoming election.

All respondents were asked to provide predictions of how many seats ten parties would win in the upcoming elections, including Kadima, Labor and Likud, two ultra-Orthodox parties, Shas and United Torah Judaism, the left-wing Meretz, the right wing Ihud Leumi-NRP, the hawkish Russian-dominated party, Yisrael Beitenu, the mainly-Arab socialist Hadash party, and the centrist Shinui party. On election day, these ten parties include eight of the nine largest parties, one small party (Hadash) and one party (Shinui) that failed to cross the threshold. Our survey did not include three parties that won seats in the 17th Knesset, two small Arab parties and the Pensioner’s Party, which won seven seats in a surprise performance that went unnoticed by all of the polling organizations.

Respondents to our internet survey were randomly divided into four conditions based on day of birth. About 1/3 of the respondents were assigned the control category and were simply asked to provide their predictions. Another 1/3 of the respondents were shown the latest poll results from Yedioth Ahronoth before being asked to provide their predictions. Half of the remaining respondents were asked to recall the current poll results before providing their predictions. The other half of the remaining respondents were asked to recall both the current poll results and the current number of seats held by the parties in at the time of the parliament’s dissolution.

The sample was younger, more secular and better educated than the general Israeli population. The median age of respondents was 31. 44% (N=104) of the respondents were women and 56% (N=133) were men. The vast majority of respondents hold an academic degree (90.5%, N=162). The respondents were generally very attentive to politics (see Appendix I for a detailed description). Almost all (96.19%, N=227) respondents were Jewish, but a few identified as agnostic (2.97%, N=7). Of the Jewish respondents a majority (85.96%, N=196) was secular. 9.65% (N=22) identified as traditional and only 4.39% (N=10) as religious.

Given these demographics, some would not find it surprising that the sample was skewed towards the Israeli left. 35.74% (N=84) identify with the left, and another 31.49% (N=74)

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² Differences between the various polls published in different media outlets were marginal, so we expect these polling numbers to closely reflect other polls that the respondent may have seen, especially for the large parties.
identify with the moderate left (67.23% combined). 19.15% (N=45) identified with the center, while only 9.36% (N=22) and 4.26% (N=10) identify with the moderate right and the right, respectively.

V. Results
We present our results in the following order. In the first section, we compare the predictions of the respondents to the Israel Election Study to the published polls at the survey interviews were conducted. We then analyze the data to see whose predictions were closer to the latest polls. We focus on the respondents’ level of education, engagement in politics, ideological stance and view of each party. In the final section, we examine the evidence from our experiment to see how making the poll results available influenced predictions.

1. How closely did expectations match the polls?
The Israel Election Study asked respondents to make seat predictions for Kadima, Labor and the Likud, and for the party the respondent intended to vote for if they did not intend to vote for one of these three parties. Only a minority of respondents made predictions within the range of the polls during the time the survey was in the field. The published polls expected Labor would win between 19 and 21 seats (see Figures 1 and 2). 34% of all respondents made predictions within that range, including the median. 24% expected Likud to win between 14 and 16 seats. Only 12.6% expected Kadima would win between 36 and 39 seats. Most respondents anticipated that Likud would win more than the latest polls were predicting. The median expectation was 18 seats.

The complete range of predictions for each of the three parties was quite wild. Predictions for all three parties ranged from 0 to 99 seats. Most respondents did not share the wild estimates of a few outliers; the interquartile range for each of the three parties was between 7 and 10 seats, or about one-third of the mean predictions. Because of the presence of these outliers, the median prediction is a better indicator than the mean and in the next section, we report results from median regression analyses (also known as a Least Absolute Value Model).

The median differences between the latest poll results and the predictions of respondents to the Israel Election Study were 6 for Kadima, 3 for Labor, and 5 for Likud. When we break down predictions by ideology, we find that the median predictions of respondents on the left were five seats different than those on the right for Kadima and Likud. The predictions of nationalist respondents (on the right) were the most different than the published polls. The median prediction of nationalist citizens was that Kadima would win six seats less than the polls predicted. The median prediction for Labour was one mandate less than the polls published by Yedioth Ahronoth. In contrast, nationalist Likud was expected to win five seats more than the polls predicted. Respondents who place themselves in the center and on the left made predictions more consistent with the latest polls (see Table 3). Surprisingly, these respondents expected Likud to win more seats than the polls predicted. If what we found was a desirability bias tempered by a dose of

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3 Here we quote poll results only for the period polls were actually in the field. Table 1, however, provides the full range of poll results for the entire campaign period.
reality provided by the polls, then we might expect that these respondents would expect Likud to do worse than the polls. Instead, we find that left-wing respondents’ predictions for Likud are just less optimistic than right-wing respondents.

Predictions from our internet survey were closer to the published polls. The median difference for Kadima was 4 seats or 11% of the average number of seats the party was polling at the time of the study, 2 for Labor (10%), and 3 for Likud (21%). The median difference for the smaller parties ranged from 0 for Shinui to 2 for Yisrael Beitenu and Ihud Leumi. Respondents were more likely to make a prediction consistent with the latest polls for the smallest parties. 36.9% of all respondents expected Hadash would win 3 seats, exactly what the polls were predicting. 52.7% of all respondents expected Shinui to fail to win a seat. Between 19.8% and 23.6% of all internet survey respondents offered predictions that perfectly matched the latest polls for the other four small parties. In contrast, the percentage of respondents whose predictions for the four large parties matched the latest polls ranged from 5% (Kadima) to 17.6% (Labor).

2. Survey results: Whose predictions conformed to the polls?
We developed a model of the election predictions using Israel Election Study data to examine what explains the difference in the vote. Our dependent variable is the absolute value of the difference between the number of seats the respondent predicted the party would receive and the number of seats the party received in the last poll before the interview. The higher the value for this measure, the further the prediction is from the poll results. So, a negative sign on a coefficient means that the variable is causing the prediction to be closer to the number of seats the party held in the latest polls (see Table 3).

In our model, the difference between the polls and the respondents’ predictions depends on the respondents’ level of knowledge and political engagement and partisan views. Knowledge is measured by the number of years of education the respondent has completed, scaled to run between 11 years for everyone with less than a high school education and capped at 18 years for all those with more than two years of study beyond university. We measure engagement by the respondents’ own assessment of how much they talk about political issues, with zero being “not at all” and one being “a great amount.” We measure partisan views with two variables to see if respondents engaged in wishful thinking for the party or parties they liked best. One variable is a 10-point measure of affect towards each party and the second indicates whether the respondent identifies with the right, left or center in Israeli politics. The highest value is for identifying with the right (the nationalist bloc). We control for gender, age and the wave

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4 While these differences are small, as a percentage of the total number of seats for each party, the average error is high because these parties do not win many votes. The range of average errors rose from 9.52% for Shas to 23.53% for NRP-Ihud Leumi, and 33.33% for Hadash. This was also true in 1999, where a four seat median difference for a party like Ihud Leumi was an error greater than half of the seven seats the party actually won.

5 Since the Israel Election Study was a national, random sample representative of the population as a whole, data from the survey can be used to identify the attitudinal and demographic factors influencing predictions in ways that the internet experiment cannot.
in which the interview took place. For these regressions, we relied on a median regression analysis.\(^6\)

When controlling for affinity towards each party and the control variables, more knowledgeable and more engaged respondents offered predictions closer to the latest polls for each of the three parties. Compared to those who do not talk about politics, people who often talk about politics thought that Likud would win one seat closer to the latest polls, Labor 1.5 seats closer and Kadima would be 2.7 seats closer to the polls (see Table 3). Each additional year of schooling from high school to graduate school was predicted to bring predictions for Kadima and Labor closer to the latest polls by one-quarter seat. In other words, the model indicates that respondents with four years of university education will make predictions one seat closer to the latest polls than respondents with only a high school education when controlling for all other variables. The effect of education on predictions for Likud was smaller and we cannot be confident that it is dissimilar from zero.

Consistent with previous research that found evidence of wishful thinking, voters who liked each party expected the party to do better on election day compared to those who liked the party less. For Likud, this caused partisans to offer predictions further from the polls when controlling for all other variables. For Labor and Kadima, though, this bias actually brought their predictions closer to the latest polls. Almost a three point increase on the 10-point feeling thermometer scale is predicted to bring predictions for Kadima one seat closer to the polls. About the same difference in affect for Likud is predicted to cause predictions for Likud to move one seat further from the polls. All things being equal, our model predicts that a six-point increase in affect towards Labor would cause expectations for Labor to become one seat closer to the polls. Compared to respondents on the left and in the center, right-wing respondents tended to offer predictions for Kadima and Likud that were 1-1.5 seats more distant from the latest polls. Ideological identification, though, had no significant effect on predictions for Labor.

Holding all other variables constant, older respondents made predictions more consistent with the latest polls for each of the three parties. Compared to men, female respondents’ predictions tended to be off from the latest polls by more than a seat. As we might expect of people interviewed late in a campaign, respondents in the second wave of the survey gave predictions more consistent with the latest published polls for Kadima. However, the timing of the interview did not affect the conformity of the predictions for any other party.

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\(^6\) This model minimizes the sum of the absolute residuals instead of the sum of the residuals squared performed by OLS. To facilitate this model’s handling of our non-normal distribution, we obtained our standard errors by resampling the data (“bootstrapping”) 100 times. With these skewed independent variables, and often heteroskedastic residuals, we also ran the analyses using STATA’s robust regression routine that underweights outliers, especially those with little leverage, with few substantive differences in coefficient size or direction. However, the standard errors do tend to be different.
3. Experiment results: What if polling data was more accessible?
The differences we observe using the survey data as a consequence of less knowledge or a lack of engagement could be the result of a failure to recall the latest polls or an inability to use the polls when making predictions compared to educated and engaged respondents (Bar-Hillel and Budesiu 1995). We isolate these effects in our experiment by prompting some randomly-assigned respondents to recall the latest polls, and some to recall the latest polls and the number of Knesset seats currently held by each party. We provided another group with the results of the latest polls. We compared their predictions for ten parties to a control group that received no prompting or information, much like the respondents to the Israel Election Study. In Table 4A we present the mean prediction for each party by condition. In Table 4B we present the standard deviation of those predictions. We find that experimental effects on the conformity of the predictions to the latest polls differed by whether or not the party was one of the four largest parties (Kadima, Labor, Likud or Shas), or a small party.

A. Large Parties
Prompting the respondents to recall the latest polls caused them to focus more closely on the polls when making a prediction about the largest parties. Compared to the control group and the other two treatment conditions, respondents who were asked to recall the polls prior to giving their predictions for the four largest parties, on average, offered predictions that more closely conformed to the latest polls (see Table 4A). On average, respondents in this condition also rated the polls as more reliable than respondents in the other conditions. We can be confident that this difference is not due to chance for Kadima and Labor. Substantively, though, the difference is not much more than a single parliamentary seat.

The standard deviation of the predictions of the group asked to recall the polls was also smaller than the range of predictions observed in the control condition for Kadima, Labor and Likud (see Table 4B). All three differences are statistically significant at $\text{P < 0.5}$ or better in a two-tailed test. There were no significant effects on the range of predictions for Shas. Respondents who were only asked to recall the latest polls also rated the reliability of the polls significantly higher than respondents in the other conditions. We interpret these results as evidence that recalling the latest poll results caused respondents to focus more carefully on the poll results when making predictions for the largest parties.  

Interestingly, showing the respondent the latest poll did not influence how closely expectations matched the latest polls for the largest parties. The mean predictions of those whose performances in the polls were most volatile over the course of the campaign, Kadima, Likud and Yisrael Beitenu (see Figure 1). Interestingly, the standard deviation of Labor and Shas were also higher than the standard deviation of the smaller parties across all conditions. This would seemingly indicate that predictions of the largest parties were more dispersed than predictions for the largest party. However, when the standard deviation is reported as a percentage of the mean (the coefficient of variation), we find that the differences in dispersion disappears. The coefficient of variation for all but Shinui was right around one seat, with values ranging between 0.89 (for Yisrael Beitenu) and 1.23 (for United Torah Judaism). The coefficient of variation for Shinui was almost two seats.

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7 The three highest standard deviations we observed was for the three parties whose performances in the polls were most volatile over the course of the campaign, Kadima, Likud and Yisrael Beitenu (see Figure 1). Interestingly, the standard deviation of Labor and Shas were also higher than the standard deviation of the smaller parties across all conditions. This would seemingly indicate that predictions of the largest parties were more dispersed than predictions for the largest party. However, when the standard deviation is reported as a percentage of the mean (the coefficient of variation), we find that the differences in dispersion disappears. The coefficient of variation for all but Shinui was right around one seat, with values ranging between 0.89 (for Yisrael Beitenu) and 1.23 (for United Torah Judaism). The coefficient of variation for Shinui was almost two seats.
subjects who were shown the polls did not vary from those who were given the polls. Showing respondents the polls also did not limit the dispersion of the predictions, as only the standard deviation of the predictions for Labor was smaller in this condition. Information about the latest polling results for the largest parties appear to either have been ignored or already known by many subjects, leaving predictions unaffected.

The evidence for Likud and Kadima clearly suggests that many respondents chose to ignore or discount the polls. Much like the results from the national sample from the election study, less than 3% of those who were shown Kadima’s latest poll numbers, and 8% of those who were shown Likud’s latest poll numbers, offered predictions that matched the latest poll. Despite the large numbers of left-wing respondents in our experimental sample, most respondents thought that Likud would do better than the polls predicted and Kadima would do worse regardless of the condition.

B. Smaller Parties
In contrast to what we find for the largest parties, showing the latest poll results caused the average prediction to conform more closely to the latest polls. Compared to the control, showing the latest polls to respondents caused the predictions to be, on average, a full seat closer to the latest polls for Yisrael Beitenu and United Torah Judaism, nearly that much for Shinui, and a half-seat for Hadash. This represents a 9.09% improvement in accuracy for Yisrael Beitenu, a 16.67% improvement for both United Torah Judaism and Hadash.

Being asked to recall the latest poll results did not affect how closely the average prediction conformed to the latest polls for all but one small party. From this pattern of results we infer that many respondents struggled to recall precisely the level of support these parties were receiving in the polls. Providing the polls, therefore, aided their recollections and guided their predictions. For a party like Hadash that appeals almost exclusively to Israeli Arabs, almost half of the respondents offered a prediction that exactly matched the poll we provided for them. Less than one-third of respondents in the other conditions offered the same prediction. Similarly, 36.8% of respondents who were given the polls for United Torah Judaism provided us with the same prediction as that poll. No more than 12% of the respondents in the other conditions made the same prediction as the polls. 8 25% of respondents who were given the polls for Ihud Leumi, 27.6% of the respondents who were provided with the polls for Yisrael Beitenu and 19.5% of the respondents who were given the polls for left-wing Meretz provided us with the same prediction as that poll. For the largest parties, the number of respondents providing the same prediction of the polls ranged from 2.6% to 18.2% (see Table 5).

The relatively low percentage of respondents who predicted that Meretz would win the same number of mandates as predicted by the polls is not surprising considering the left-wing partisan biases of the sample (see Appendix I). Although Meretz is a small party, many of these respondents were likely attentive to the party’s standing. Almost 80% of

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8 The notable exception was Shinui. The well-publicized turmoil besetting Shinui enabled more than half of all respondents to correctly predict that Shinui would not win any seats. Showing these respondents the latest poll did not have a significant impact on their predictions.
the respondents who were asked to recall the latest polls were no more than one seat off of the actual Yedioth Ahranoth polls at the time of the interview. Whether shown the polls or not, a majority of respondents expected Meretz to do better than the polls predicted. Respondents who recalled the latest polls were less likely to overestimate Meretz’s performance.

Asking the respondents to recall the latest polls and showing respondents the latest polls reduced the range of predictions compared to the control group. The standard deviation of the absolute value of the difference between predictions and the latest polling numbers among those who were given the latest polls was smaller for every small party except Ihud Leumi (see Table 4B). Recalling the latest polls also lowered the standard deviation for every party except Yisrael Beitenu and Hadash, suggesting that even if the respondents struggled to recall how many seats each of these parties, many still used their recollection as an anchor.

VI. Discussion
Our results indicate that when making predictions about election outcomes in a volatile environment like Israel in 2006 many respondents offer predictions that do match the latest published polls. For two large parties, Kadima and the Likud, most respondents did not even offer predictions that fell within the full range of published polls for the parties.

Consistent with Babad, Hills and O’Driscoll (1992) and Irwin and Van Holsteyn (2002, but not Babad 1995), we find that high levels of education and a greater engagement in politics caused predictions to be more in sync with the latest polls. However, our experiment indicated that giving respondents the latest published poll did not change predictions for the largest parties and many educated and engaged respondents did not offer predictions consistent with these poll results.

If respondents make predictions that differ from the latest polls due to a lack of awareness (see Blais and Bodet 2006), we should find that these respondents would make predictions more consistent with the latest polls after we gave them the polls. This, however, was only true for small parties, with whom respondents may not have been very familiar. By using the polls for the small parties, the respondents clearly demonstrated that they have the tools to use poll results when making predictions. These respondents chose not to rely extensively on these polls when asked to predict the fortunes of the largest parties. Respondents who were shown the latest published polls made predictions that neither closely matched those polls nor differed significantly from predictions made by respondents who were not shown this information. Instead, these respondents discounted the latest polls when making predictions.

Our findings are difficult to reconcile with work by Fischer and Budescu (1995) and Bar-Hillel and Budescu (1995) that emphasize the role of biased recall of information or biases in selective patterns of interactions as an important factor driving wishful thinking. If this was the case, we might expect that providing information about the latest polls would at least reduce the magnitude of these biases. They did not. Nor did we witness
more evidence of wishful thinking for parties like Labor and Meretz that our secular, educated respondents would be most likely to support.

Predictions of how many seats Likud will win were consistent with neither an informational based account of wishful thinking nor with one stressing the need to reconcile preferences and predictions. Even though nationalist respondents expected Likud to do better than respondents on the left, most respondents on the left still thought that Likud would do better than the polls were predicting. We speculate that this is a function of past experiences. Before the establishment of Kadima, Likud was a much larger party. Furthermore, Likud’s vote share had exceeded poll predictions in the past (Babad and Yacobos 1993). In the face of this history, respondents on both the right and the left appeared to disbelieve the poll results even though, for those on the left, these polls were congruent with their wishes. Ultimately, Likud won 12 seats, even less than the polls predicted.

We concur with Price (2000), that one motivation for the discounting of the polls results is the respondents’ partisan biases. However, wishful thinking does not fully explain the observed variation. Left-wing respondents thought that Likud would do better than the polls indicated, while predictions for Kadima were consistently less than support indicated by the polls. It is conceivable that these respondents might have also considered other information like Likud’s past performance, or the widespread view of commentators (see Verter 2006) who interpreted Kadima’s slow decline in the polls as a developing trend.

It is revealing that asking respondents to recall the latest polls did cause the respondents’, on average, to make predictions more consistent with the latest polls. This seems to suggest that forcing people to think carefully about the latest polls induces them to give those poll results more weight. Otherwise, people are more likely to give more weight to other considerations, and/or rely on snap judgments. Whether a snap judgment or a prediction process more reliant on other information, in these circumstances, predictions were more likely to reflect one’s desires. The process of recollecting the latest polls, though, really only matters when the respondents are well aware of those poll results (for large parties, and for our skewed sample, Meretz).

In 2006, the accuracy of these predictions had more to do with the dynamics of the campaign than the predispositions of the respondents. On election day, Kadima and Likud won fewer seats than the polls, or the survey respondents, expected. Consequently, left-wing respondents were more accurate in their predictions for Likud, while right-wing respondents were more accurate when predicting Kadima’s success. In absolute terms, respondents to our internet survey more accurately predicted the success of smaller parties, many of whom exhibited little volatility in the pre-election polls.

More research needs to be done to understand the process of how people make expectations. Differences between deliberative predictions and those made in a snap may be even larger in the context of a larger, more representative survey, or with respondents who were not explicitly informed prior to being interviewed that they were invited to
complete a questionnaire focusing on their predictions and given the time to deliberate before commencing the questionnaire. These results might also be productively compared to an election with less volatile results.
References


Appendix I: Description of internet sample

A total of 237 interviews were conducted using a web-based questionnaire during the period March 8-27, 2006.

Demographics
The median age of respondents was 31, with 43.88% female respondents \( (N=104) \) and 56.12% males \( (N=133) \). A large majority of respondents hold an academic degree (90.5%, \( N=162 \)), and the median number of schooling years for all respondents was 16 \( [25/75 = 14, 20] \). Almost all (96.19%, \( N=227 \)) respondents were Jewish, while few identified as agnostic (2.97%, \( N=7 \)) as religious. Most respondents were natives of Israel (82.2%, \( N=194 \)), 5.93% (\( N=14 \)) were born in the former Soviet Union and 4.66% were born in North America. A few respondents were born in Central-Eastern Europe (2.97%), Northern Africa (1.27%), the Near East (1.27%), Australia, South Africa or Latin America (0.85%), and Western Europe (0.85%).

The socio-economic composition of the sample was mainly middle class. 8.66% \( (N=20) \) said that their household spent well below the monthly median for Israeli households (10,400 NIS for a four person household). 12.12% \( (N=28) \) of respondents spend slightly below the average, while 23.81% \( (N=55) \) spend about the median amount. 38.53% of respondents spend slightly above the average household \( (N=89) \), and 16.88% said they spend well above the average \( (N=39) \).

Political orientation
Most respondents lean towards the Israeli left. 35.74% \( (N=84) \) identify with the left, while 31.49% \( (N=74) \) identify with the moderate left (67.23% combined). Still a large portion identifies with the center (19.15%, \( N=45 \)), whereas only 9.36% \( (N=22) \) and 4.26% \( (N=10) \) identify with the moderate right and the right, respectively. Only 9.28% \( (N=22) \) are party members. 44.73% \( (N=106) \) favour a particular party but are not members, whereas 45.99% \( (N=109) \) do not favour any particular party at all.

Political engagement and knowledge
Most respondents are attuned to current affairs, if to judge by their newspaper readership. Only 17.8% \( (N=42) \) reported reading a daily paper less frequently than once a week. 12.29% \( (N=29) \) read a paper about once a week, while 13.56% \( (N=32) \) read the papers two to three times a week. 40.68% \( (N=96) \) reported reading one daily paper almost every day, whereas 15.68% \( (N=37) \) read more than one daily paper almost every week. Most respondents (52.74%, \( N=125 \)) discuss politics with family members and friends very frequently, while 35.44% \( (N=84) \) do so rarely. Only 2.95% \( (N=7) \) never talk about politics, while 8.86% \( (N=21) \) do so almost all the time.

The election campaign period was characterized by constant publication of polls, and most respondents were aware of them. In the two weeks preceding the interview date, the median answer for the number of times respondents noticed polls published in the media was 3 \( [25/75=2, 5] \) \( \text{mean}=4.8 \). Respondents in general view the polls as trustworthy, awarding them a median reliability score of 70 on a 100 scale \( [25/75=60, 80] \) \( \text{mean}=66.45 \).

We measured respondents’ political knowledge using a 4-point scale, compiled from the results of a task of matching five politicians to their respective parties. This exercise proved that most respondents possessed quite extensive political knowledge. The mean score was 3.47 (SD=0.79) and the median was 4 \( [25/75=3,4] \). Only 12.72% of respondents scored 2 or lower \( (N=29) \).
Table 1: Polls, Expectations and Final Results - 2006

<table>
<thead>
<tr>
<th></th>
<th>Kadima</th>
<th>Labor</th>
<th>Likud</th>
<th>Shas</th>
<th>NRP</th>
<th>Yisrael Beitenu</th>
<th>UTJ</th>
<th>Meretz</th>
<th>Hadash</th>
<th>Shinui</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003 Results</td>
<td>--</td>
<td>(19+3)</td>
<td>38</td>
<td>11</td>
<td>(5+8)</td>
<td>--</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Polls minimum</td>
<td>34</td>
<td>17</td>
<td>11</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Polls maximum</td>
<td>44</td>
<td>23</td>
<td>16</td>
<td>11</td>
<td>9</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Expectations</td>
<td>minimum</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Expectations maximum</td>
<td>52</td>
<td>32</td>
<td>40</td>
<td>28</td>
<td>18</td>
<td>15</td>
<td>35</td>
<td>17</td>
<td>12</td>
<td>26</td>
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<tr>
<td>Final Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003 Results</td>
<td>29</td>
<td>19</td>
<td>12</td>
<td>12</td>
<td>9</td>
<td>11</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Mean Expectation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>33.6</td>
<td>20.4</td>
<td>17.5</td>
<td>9.6a</td>
<td>7.9a</td>
<td>7.6a</td>
<td>4.9a</td>
<td>5.8a</td>
<td>3.2a</td>
<td>1.5a</td>
</tr>
<tr>
<td>Maximum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median distance from election result</td>
<td>6</td>
<td>1</td>
<td>5</td>
<td>-2</td>
<td>-1</td>
<td>-3</td>
<td>-1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>as a percentage of final result</td>
<td>20.7</td>
<td>5.3</td>
<td>41.7</td>
<td>-16.7</td>
<td>-11.1</td>
<td>-27.3</td>
<td>-16.7</td>
<td>20</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Median distance of prediction from last poll</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>as a percentage of avg. polls</td>
<td>10.8</td>
<td>10</td>
<td>20.7</td>
<td>9.5</td>
<td>23.5</td>
<td>20</td>
<td>18.2</td>
<td>20</td>
<td>33.3</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(a): Respondents in the Israel Election Study were asked their prediction only for the three big parties (Kadima, Labor, and Likud) and the party they intended to vote for. The mean expectations quoted here for seven smaller parties are based on responses to our internet survey-experiment.

Table 2 Predictions by R's ideology

<table>
<thead>
<tr>
<th>Ideological self-placement</th>
<th>Kadima</th>
<th>Labor</th>
<th>Likud</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left (Dove)</td>
<td>35 (-2)</td>
<td>20 (1)</td>
<td>15 (1)</td>
<td>208</td>
</tr>
<tr>
<td>Center</td>
<td>35 (-2)</td>
<td>20 (0)</td>
<td>18 (3)</td>
<td>459</td>
</tr>
<tr>
<td>Right (Nationalist)</td>
<td>30 (-6)</td>
<td>20 (-1)</td>
<td>20 (5)</td>
<td>374</td>
</tr>
<tr>
<td>All</td>
<td>35 (-4)</td>
<td>20 (0)</td>
<td>18 (4)</td>
<td>1043</td>
</tr>
</tbody>
</table>

Source: Israel Election Study, 2006
Table 3: Whose predictions conformed to the polls?

<table>
<thead>
<tr>
<th></th>
<th>Kadima</th>
<th>Labor</th>
<th>Likud</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave of Interview</td>
<td>-1.33***</td>
<td>-0.34*</td>
<td>-0.17*</td>
</tr>
<tr>
<td>Years of Education</td>
<td>-0.25**</td>
<td>-0.23***</td>
<td>-0.1*</td>
</tr>
<tr>
<td>Talk often about politics</td>
<td>-2.74***</td>
<td>-1.57***</td>
<td>-1.05*</td>
</tr>
<tr>
<td>Affect towards the party</td>
<td>-0.36***</td>
<td>-0.17***</td>
<td>0.39***</td>
</tr>
<tr>
<td>Right [Nationalist] Ideology</td>
<td>0.9***</td>
<td>-0.15*</td>
<td>0.45**</td>
</tr>
<tr>
<td>Age</td>
<td>-0.03**</td>
<td>-0.02*</td>
<td>-0.02**</td>
</tr>
<tr>
<td>Women</td>
<td>1.82***</td>
<td>1.58***</td>
<td>1.26***</td>
</tr>
<tr>
<td>Constant</td>
<td>8.58***</td>
<td>5.55***</td>
<td>2.59***</td>
</tr>
</tbody>
</table>

Negative coefficients mean an increase in the independent variable brings prediction closer to the number of seats in the last poll.
Table 4A: Average difference between predictions and actual poll results, by experimental condition.

<table>
<thead>
<tr>
<th>Means</th>
<th>Large Parties</th>
<th>Small Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kadima</td>
<td>Labor</td>
</tr>
<tr>
<td>Recall Current Seats &amp; Polls</td>
<td>6.9</td>
<td>3.1</td>
</tr>
<tr>
<td>Recall Polls</td>
<td>4 a</td>
<td>1.9 a, c</td>
</tr>
<tr>
<td>Given Polls</td>
<td>5.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Control</td>
<td>5.1</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Shaded cells identify condition with average prediction closest to actual poll results. T-test results, assuming unequal variance: a = significantly less mean of all other categories at P < 0.05, c = significant from control at P < 0.05 (one-tailed test).

Source: Internet Experiment.

Table 4B: Standard deviations of difference between predictions and actual poll results, by experimental condition.

<table>
<thead>
<tr>
<th>Std. Dev.</th>
<th>Large Parties</th>
<th>Small Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kadima</td>
<td>Labor</td>
</tr>
<tr>
<td>Recall Current Seats &amp; Polls</td>
<td>6.1</td>
<td>3.8</td>
</tr>
<tr>
<td>Recall Polls</td>
<td>3.8 a, c</td>
<td>1.8 a, c</td>
</tr>
<tr>
<td>Given Polls</td>
<td>5.1</td>
<td>2.5 c</td>
</tr>
<tr>
<td>Control</td>
<td>4.2</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Shaded cells identify condition with lowest standard deviation. Results of variance comparison tests: a = significantly less than standard deviation of all other categories at P < 0.05, c = significant from control at P < 0.05 (one-tailed test).

Source: Internet Experiment.
Table 5: Percentage of respondents who made predictions exactly the same as the latest poll

<table>
<thead>
<tr>
<th></th>
<th>Kadima</th>
<th>Labor</th>
<th>Likud</th>
<th>Shas</th>
<th>Ihud</th>
<th>Leumi-NRP</th>
<th>Yisrael Beitenu</th>
<th>United Torah Judaism</th>
<th>Meretz</th>
<th>Hadash</th>
<th>Shinui</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recall Current Seats</strong></td>
<td>2.6%</td>
<td>17.9%</td>
<td>5.1%</td>
<td>15.4%</td>
<td>20.5%</td>
<td>23.1%</td>
<td>12.8%</td>
<td>20.5%</td>
<td>25.6%</td>
<td>55.3%</td>
<td></td>
</tr>
<tr>
<td><strong>Recall Polls</strong></td>
<td>8.3%</td>
<td>22.9%</td>
<td>8.3%</td>
<td>10.4%</td>
<td>22.9%</td>
<td>19.1%</td>
<td>8.5%</td>
<td>22.9%</td>
<td>35.4%</td>
<td>55.3%</td>
<td></td>
</tr>
<tr>
<td><strong>Given Polls</strong></td>
<td>2.6%</td>
<td>18.2%</td>
<td>7.8%</td>
<td>11.8%</td>
<td>25.0%</td>
<td>27.6%</td>
<td>36.8%</td>
<td>19.5%</td>
<td>46.7%</td>
<td>54.1%</td>
<td></td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>6.3%</td>
<td>10.8%</td>
<td>4.6%</td>
<td>9.2%</td>
<td>18.5%</td>
<td>13.8%</td>
<td>12.3%</td>
<td>23.1%</td>
<td>33.3%</td>
<td>47.7%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Internet Experiment.
Figure 1: Yedioth Ahronoth Polls and Final Election Returns

Source: Polls published in Yedioth Ahronoth.
* Yedioth Ahronoth and most other outlets often grouped supporters of each of the Arab Parties together when they published their poll results. The final results include the mandates won by three parties: Ream-Ta’al (4), Hadash (3), and Balad (3). In our experiment, we asked respondents about Hadash’s electoral support.
Figure 2 Polls, Expectations and Results - Three Main Parties, 2006

Source: Polls published in Yedioth Ahronoth and responses to the Israel Election Study 2006