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Candidate Preferences and Expectations of Election Outcomes: Evidence from the American Life Panel

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Abstract

Analysis of data from the American Life Panel shows that in the 2008 presidential election and multiple statewide elections in 2010, citizens exhibited large differences in their expectations of election outcomes. Expectations were strongly positively associated with candidate preferences, persons tending to believe that their preferred candidate is more likely to win the election. Committed supporters of opposing candidates regularly differed by 20 to 30 percent in their assessments of the likelihood that each candidate would win. This work contributes new empirical evidence on the false consensus effect, the empirical regularity that one's own preferences tend to be positively associated with perceptions of social preferences. It does so by using new measures of preferences and perceptions that enable respondents to flexibly express uncertainty. In contrast, earlier work has not allowed respondents to express uncertainty about social preferences. The present evidence concerns a setting that would a priori seem inhospitable to false consensus, in which voters have easy access to substantial common knowledge of social preferences conveyed by media reports of election polls.

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1. Introduction

Before presidential and major statewide elections, polls provide considerable public data about the voting intentions of the electorate. Most citizens have little private information about the prospects of alternative candidates. One might therefore expect that members of the public would tend to have similar expectations for election outcomes, or at least not vary systematically. To the contrary, we have observed large differences in expectations, which are strongly positively associated with candidate preferences. Individuals tend to believe that their preferred candidate is more likely to win.

To begin, we orient our work within the literature studying the association between persons' own preferences and their perceptions of social preferences. We next describe the data we analyze from two cohorts of respondents to the American Life Panel (ALP). The first period of data collection concerns a national sample interviewed before the 2008 presidential election. The second concerns multiple state-specific samples interviewed before the 2010 senatorial and gubernatorial elections. We describe several respects in which these data improve on those previously available. We then present and discuss our findings.

2. Research on Own Preferences and Perceptions of Social Preferences

Researchers who study attitudes sometimes ask persons to state their own preferences about specified subjects and to report their perceptions of social preferences. A common practice is to ask a person who is a member of group Y about subject X, about which there may be two points of view (say A and B). The wording varies across studies, but the questions go more or less as follows.

Q1. Regarding subject X, do you prefer option A or B?

Q2. What fraction of people in group Y do you think prefer each option?

Researchers have asked such questions about many subjects in varied settings. They have repeatedly found a positive association between own preferences and perceptions of social preferences.

Fabrigar and Krosnick (1995) trace this empirical regularity back to Wallen (1943), while Ross, Greene, and House (1977) begin their account with Katz and Allport (1931). Ross, Greene, and House appear to have first named the regularity *false consensus*, a term which has become widespread. Some psychologists refer to view the phenomenon as *social projection*. See Robbins and Kreuger (2005).

Psychologists seeking to explain the regularity commonly suppose that persons begin with knowledge of their own preferences and extrapolate from themselves to the group. This extrapolation is usually interpreted as a cognitive error. Thus, the adjective "false" is used as a descriptor in the term *false consensus* and the word "bias" appears often in articles on the subject.

Not all psychologists agree that extrapolation from the self to the group is in error. Dawes (1989) and Dawes and Mulford (1996) observe that the regularity can emerge from Bayesian updating in which a person begins with a prior distribution regarding social preferences, views himself as a randomly drawn member of the group, and uses observation of his own preferences to derive a posterior distribution.

The regularity has often been observed in studies of candidate preferences and expectations of election outcomes. Persons who support a given candidate tend more towards believing that he will win. Bartels (1985) cites work as early as Berelson, Lazarfeld, and McPhee (1954) while Granberg and Brent (1983) begin with Hayes (1936). See also Brown (1982), Baker *et al.* (1995), Morwitz and Pluzinsky (1996), and Nir (2011).

Interestingly, the question about social preferences has commonly been worded differently in election settings than elsewhere. If one were to apply the wording of Q1 and Q2 to voting, one might ask

V1. Regarding upcoming election X, do you expect to vote for candidate A or B?

V2. What fraction of voters do you think will vote for each candidate?

In practice, V1 is asked more or less as above but the inquiry about social preferences goes as follows:

V2A. Who do you expect will win the election, candidate A or B?

Thus, persons are not asked to predict the fraction of the vote that each candidate will receive. They are asked to predict whether this fraction will exceed one-half.

3. The ALP Data

The ALP is a longitudinal survey of Americans of age 18 and older, begun by RAND in 2006 and administered over the internet.[1] About 90 percent of respondents use their own computer to access the internet, while 10 percent were provided a laptop or Web TV.

Panel members stem from multiple sources. Until September 2009, most were recruited from outgoing participants in the Reuters/Michigan Surveys of Consumers. These persons were asked if they would be willing to participate in internet surveys. The ALP recruited from those who gave any response except "no, certainly not." Eighty percent of the ALP panelists who responded to at least one of the 2008 election surveys were recruited in this manner, while 20 percent were a snowball sample of persons generated from the Reuters/Michigan recruits.

Beginning in September 2009, new respondents have been recruited after participating in the National Survey Project (NSP), a collaboration of Stanford University and Abt SRBI. Following participation

1 See https://mmicdata.rand.org/alp/index.php/Main_Page.

in the NSP, respondents to that survey were invited to join the ALP, in which case they would receive a laptop and broadband Internet. Beginning in 2010, the ALP has also recruited through a random mail and telephone solicitation. Among respondents who participated in at least one of the 2010 election surveys, 61 percent stem from the Reuters/Michigan survey, 23 percent from the snowball sample, 15 percent from the NSP, and 1 percent from the new mailing/telephone recruitment.

We first describe the panelists recruited through August 2008, who form the basis for the sample interviewed during the 2008 presidential campaign, and those recruited through August 2010, who form the basis for the sample interviewed during the 2010 campaigns. We then explain ALP measurement of election-outcome expectations and candidate preferences in the two samples.

3.1. The 2008 and 2010 Samples

From August through October 2008, the ALP administered seven biweekly surveys with questions about the 2008 presidential election. A survey administered in November after the election asked respondents if they voted and for whom. The interview response rate per wave varied between 68 and 77 percent. 1,814 participants responded to at least one pre-election survey and to the post-election survey. Relative to the electorate, respondents were more often female (57 percent), non-Hispanic white (89 percent), middle-aged (41 percent of age 50-64), and college educated (45 percent with 16 or more years of schooling). Delavande and Manski (2010) describe these surveys in detail.

In September and October 2010, the ALP administered three biweekly surveys with questions about the 2010 senatorial and gubernatorial elections to respondents living in Arizona, California, Florida, Georgia, Illinois, Maryland, New York, Ohio, Oregon, Pennsylvania, Utah, and Wisconsin. These states had elections for both governor and senator in 2010. A survey administered in November after the election asked respondents if they voted and for whom.

In 2010, only respondents who answered the first wave were eligible to participate in later waves. The interview response rate per wave ranged between 83 percent and 91 percent. 1,143 panelists responded to the post-election wave, of whom 61 percent were female, 86 percent non-Hispanic white, 40 percent middle-aged (50-64), and 43 percent college-educated.

Non-representativeness of the electorate is a shortcoming of the ALP, but the ability to interview persons repeatedly is an advantage. Most polls are repeated cross-sections, drawing new samples each time they go into the field. Hence, one cannot compare the candidate preferences and expectations of election outcomes that persons state as an election draws nearer. The ALP enables this, as well as to compare pre-election attitudes with actual voting behavior.

To enhance consistency between the 2008 and 2010 samples, our analysis mainly focuses on wave 44 of the 2008 data and the first wave of the 2010 data. These waves were administered in the middle of September of each year.

3.2. Measuring Expectations of Election Outcomes

Persons asked to predict election outcomes may be uncertain what will occur. To enable full expression of uncertainty, one could elicit joint subjective distributions of vote totals for all the candidates. However, this would be a laborious task.

The standard practice, embodied in question V2A, does not enable respondents to express any uncertainty. When asked in a two-candidate election to state the candidate whom she expects to win, a person with probabilistic beliefs would presumably state the candidate on whom she places the higher probability of victory.

The ALP asks respondents to state their subjective probabilities that each candidate will win. The 2008 wording was:

Barack Obama is the Democratic candidate and John McCain is the Republican candidate. What do you think is the percent chance that each man, or someone else, will win the election?

Barack Obama will win ___ %
John McCain will win ___ %
Someone else will win ___ %

Similar questions were asked in 2010. For example, respondents in California were asked:

What do you think is the percent chance that each of the candidates for governor will win the election?

Jerry Brown (Democrat) ___ %
Meg Whitman (Republican) ___ %
Someone else ___ %

In both years, the ordering of candidates was randomized. Respondents whose answers did not sum to 100 received an error message and were invited to change their answers. The item response rates were 93.9 percent in 2008 wave 44 and 97.2 percent in 2010 wave 1.

These questions apply ideas about probabilistic measurement of expectations that have been implemented in numerous settings over the past twenty years. Manski (2004) describes the emergence of this field of empirical research and summarizes applications ranging from worker perceptions of job insecurity and student perceptions of the returns to schooling through expectations of income, Social Security benefits, and returns to mutual-fund investments. Hurd (2009) and Delavande, Giné, and McKenzie (2011) review additional parts of the literature. Delavande and Manski (2010) have previously analyzed the responses to 2008 ALP questions asking respondents to probabilistically predict their own voting behavior in the presidential election. The present paper is the first to study the responses to the questions seeking expectations of election outcomes.

3.3. Measuring Candidate Preferences

The ALP provides two measures of candidate preference. The first is available in both 2008 and 2010, while the second was added in 2010. Because the first measure is available in both cohorts and for other reasons, we use it in our analysis of preferences and expectations. We discuss both measures here because comparison of the two reveals a strong empirical association, corroborating the validity of the first measure.

3.3.1. Subjective Probability of Candidate Choice

In fall 2008 the ALP asked respondents to probabilistically predict their own voting behavior in the presidential election. The first question sought the subjective probability that a person placed on voting. The second elicited her probability of voting for each candidate, conditional on voting. The wording was:

If you do vote in the presidential election, what do you think is the percent chance that you will vote for:

John McCain (Republican) ___ *%*
Barack Obama (Democrat) ___ *%*
Someone else ___ *%*

Analogous questions were asked in fall 2010. For example, respondents in California were asked

If you do vote in this year's election for governor, what do you think is the percent chance that you will vote for:

Jerry Brown (Democrat) ___ *%*
Meg Whitman (Republican) ___ *%*
Someone else ___ *%*

The ordering of candidates was randomized in all cases. The item response rates were 99.4 percent in 2008 wave 44 and 96.1 percent in 2010 wave 1.

These questions allow respondents to express more nuances than questions such as V1. In theories of rational voting, responses to the probability questions are interpretable as measuring strength of candidate preference. Suppose that there are two candidates, A and B. Consider a voter named j. Suppose that when j casts her ballot, she places utilities U_{jA} and U_{jB} on the candidates and votes for the one giving the higher utility.

Suppose that prior to the election, person j is polled and asked to state the percent chance that she will vote for candidate A, should she vote. She may be uncertain how she will vote because she is aware that she may learn more about the candidates as the campaign progresses. A rational respondent will interpret the question as seeking her current probability that U_{jA} will exceed U_{jB} when she evaluates these quantities on election day. She may judge that, the stronger her current preference for A, the more likely it is that she will still prefer A on election day. If so, the probability she places on voting for A measures the strength of her current preference for A. Manski (1990, 1999) develop this reasoning. Delavande and Manski (2010) analyze the 2008 ALP data and find that stated probabilities of candidate choice are good predictors of actual voting behavior.

3.3.2. Relative Thermometer Rating

The American National Election Survey has for some time used a *thermometer scale* to measure a person's rating of candidates. The ALP added a version of this scale to its 2010 polling module. The question was presented with this introduction:

We would like to get your feelings toward some of our political leaders. You will see the name of a person and we would like you to rate that person using something we call the feeling thermometer. Ratings between 50 degrees and 100 degrees mean that you feel favorable and warm toward the person. Ratings between 0 degrees and 50 degrees mean that you don't feel favorable toward the person and that you don't care too

much for that person. You would rate the person at the 50 degree mark if you don't feel particularly warm or cold toward the person. If we come to a person whose name you don't recognize, you don't need to rate that person.

Following ANES practice, the response options permitted the respondent to state "don't know that person." The item response rate was high, being 98.0 percent in 2010 wave 1, but 18.3 percent of the respondents used the "don't know that person" option. Hence, the fraction of quantitative responses was only 79.7 percent.

The thermometer rating that a person gives to a candidate measures her feelings in abstraction. Voting choice presumably depends on a person's relative assessment of alternative candidates. To measure candidate preference, one may contrast the thermometer ratings of the candidates. For example, one might measure candidate preference by the difference in rating, which may range from -100 to +100.

3.3.3. The Empirical Association of Voting Probabilities and Relative Thermometer Ratings

Relative thermometer ratings and the percent-chance of voting for a candidate provide two measures of strength of candidate preference. It is natural to want to compare them. We can do so in 2010, when respondents were asked both questions. We use the difference between the thermometer ratings of the candidates in an election to measure their relative rating.

On each pre-election survey wave, each respondent was queried about the Democratic and Republican candidates for governor and senator. Considering the 1837 pairs of responses with complete data in wave 1, we find a strong positive correlation between voting probabilities and relative thermometer ratings. Their arithmetic and rank correlations were 0.859 and 0.871.

Table 1 provides richer information about the association between the two measures. The rows segment the relative thermometer ratings into eight groups (-100 to -75, -74 to -50, -49 to -25, -24 to 0, 1 to 25, 26 to 50, 51 to 75, 76 to 100) plus three residual groups of those who did not rate one or more candidates. The

columns describe the central tendency and spread of the percent-chance responses. The median and mean responses give two measures of central tendency. Spread can be assessed by comparison of the 25th, 50th (median), and 75th-percentile responses.

Whether measured by the median or mean, the central tendency of the percent-chance responses rises with the relative thermometer rating. This is unsurprising in light of the strong positive correlations. The spread of the percent-chance responses shows a nuanced pattern, with minimal spread at the extremes and substantial spread in the intermediate range of relative thermometer ratings.

At the extremes, respondents tend to respond identically to the thermometer and percent-chance questions. Those who give a relative thermometer rating in the range (-100 to -50) mainly state a 0 percent chance of voting Democratic, and those who give a rating in the range (51 to 100) mainly state a 100 percent chance of voting Democratic. Respondents who moderately favor the Republican candidate (-49 to -25 relative rating) usually state no more than a small chance of voting Democratic (75th percentile response is 10 percent), and those who moderately favor the Democrat (26 to 50 relative rating) usually state a high chance of voting for him (25th percentile response is 75 percent).

Respondents who mildly favor one candidate over the other vary substantially in their responses to the percent-chance question. Respondents who mildly favor the Republican (-24 to 0 relative rating) or the Democrat (1 to 25 relative rating) state highly heterogeneous chances of voting for the Democrat. The inter-quartile ranges of their percent-chance responses are 50 and 45 respectively.

We use the percent-chance of voting for a candidate to measure candidate preference, rather than the relative thermometer rating. The two measures are strongly associated, so it suffices to use one or the other. We have much more data on the percent-chance measure. Whereas the ALP queried respondents on the percent chance of voting for a candidate in both 2008 and 2010, it obtained thermometer ratings only in 2010. When both questions were posed in 2010, the item response rate on the percent-chance question was considerably higher than the fraction of quantitative responses to the thermometer question.

4. The Association of Candidate Preferences and Election Expectations

We now study the empirical association of candidate preferences and expectations of election outcomes. We find that the ALP data strongly and persistently exhibit the empirical regularity predicted by the false consensus hypothesis. We observe substantial positive association of expectations and preferences in the 2008 presidential election and in all of the 2010 statewide elections. Disaggregation into demographic groups shows that the association occurs among both men and women, whites and blacks, less and more educated respondents. Indeed, the magnitude of the association is remarkably stable across elections and groups.

To study the association between preferences and expectations, we compare the mean expectations of persons who state different preferences. For consistency across elections, we always measure a person's preference by her stated percent chance of voting Democratic. We measure her election expectation by the percent chance she gives to the Democrat winning.

Let e denote an election and w denote an ALP wave. Let x denote the candidate preference that a person states in wave w regarding election e, and let y denote her corresponding expectation for the election outcome. Let z denote covariates, such as years of schooling or gender. We examine how the conditional mean $E(y \mid x, e, w, z)$ varies with x. That is, we study the regression of y on x among persons with covariates z interviewed in wave w about election e.

So as not to constrain the shape of a regression, it is preferable to estimate it nonparametrically and present findings graphically. However, it would take considerable space to display the regressions estimated for many values of (e, w, z). Hence, we first present nonparametric findings that do not disaggregate persons into groups. We then present more succinct logistic regressions that disaggregate by group.

We first view the ALP as a cross-sectional survey. We then exploit the longitudinal structure of the

survey. Here we examine the temporal covariation of election expectations with candidate preferences across different waves.

4.1. Nonparametric Regression Analysis

4.1.1. The 2008 Presidential Election

Figure 1A displays the estimated regression of presidential election expectations on candidate preferences among the 1488 respondents to wave 44. This and other nonparametric estimates were computed using the kernel smoothing method with Gaussian kernel and bandwidth determined by Silverman's rule of thumb. The solid curve gives the estimate while the dashed band shows a 95-percent bootstrap confidence interval.

The figure shows a rising S-shaped curve. Persons who stated a (0, 25, 50, 75, 100) percent chance of voting for Obama on average were estimated to give Obama a (40, 43, 51, 61, 65) percent chance of winning. The estimate of $E(y \mid x, e = 2008 \text{ president}, w = 44)$ barely rises as x increases from 0 to 20, rises gradually as x increases from 20 to 80, and then rises slightly as x increases from 80 to 100. The confidence interval is tight, indicating that the estimate is statistically precise across the domain of x.

Table 2A provides an alternative perspective that groups respondents into response categories instead of using the kernel method to generate a smooth curve. The table corroborates the main features of Figure 1A and adds further information. Large numbers of respondents expressed extreme percent-chance values of voting for Obama. Of the 512 respondents who stated a 0 percent chance of voting for Obama, their (25^{th}, 50^{th}, 75^{th}) percentile responses to the election expectations question were (30, 45, 50) percent. Of the 489 who stated a 100 percent chance of voting for Obama, their (25^{th}, 50^{th}, 75^{th}) percentile responses to the election expectations question were (50, 60, 80) percent. Thus, committed McCain and Obama supporters reported quite different election expectations. Each thought its candidate was more likely to win.

Table 2B provides an analogous summary of wave 51, fielded at the end of October. Of the 620

respondents who then stated a 0 percent chance of voting for Obama, their (25^{th}, 50^{th}, 75^{th}) percentile responses to the election expectations question were (48, 50, 55) percent. Of the 615 who stated a 100 percent chance of voting for Obama, their (25^{th}, 50^{th}, 75^{th}) percentile responses to the election expectations question were (60, 80, 95) percent.

Thus, respondents as a whole tended to see better prospects for election of Obama at the end of October than in mid-September. This movement in expectations was ordinally consistent with the polls, which showed greater support for Obama near the end of the campaign than earlier. Nevertheless, the regularity predicted by the false consensus hypothesis is manifest in both waves. Indeed, further analysis shows that the regularity occurs in all seven waves conducted before the election.

4.1.2. The 2010 Elections for Governor and Senator

Figures 1B and 1C display the estimated regressions of California gubernatorial and senatorial election expectations on candidate preferences in 2010 wave 1. The figures show kernel estimates of $E(y \mid x, e = 2010$ CA governor, $w = 1)$ and $E(y \mid x, e = 2010$ CA senator, $w = 1)$.

The sample of California respondents was smaller than the national sample in the 2008 presidential election, with 248 persons providing data on the election for governor and 250 on the election for senator. However, the California sample was large enough to yield reasonably precise estimates. The confidence intervals are fairly tight.

As with Figure 1A, Figures 1B and 1C show rising S-shaped curves. In the election for governor, persons who stated a (0, 25, 50, 75, 100) percent chance of voting for Jerry Brown on average were estimated to give Brown a (37, 40, 47, 54, 59) percent chance of winning. In the election for senator, persons who stated a (0, 25, 50, 75, 100) percent chance of voting for Barbara Boxer on average were estimated to give Boxer a (44, 48, 55, 62, 65) percent chance of winning.

We have analyzed the data on elections in states other than California and have repeatedly observed the

empirical regularity, albeit with less precision as the sample sizes are smaller. Rather than show a multitude of figures, Figure 1D aggregates the 2010 gubernatorial elections and provides a kernel estimate of E(y | x, e = 2010 governor, w = 1), based on the 1215 respondents in the twelve states sampled. Again we find a rising S-shaped curve. Persons who stated a (0, 25, 50, 75, 100) percent chance of voting Democratic on average were estimated to give this candidate a (32, 37, 48, 59, 63) percent chance of winning.

Table 2C, like Tables 2A and 2B, provides an alternative perspective that groups the 2010 Wave 1 gubernatorial respondents into response categories instead of using the kernel method to generate a smooth curve. Of the 411 respondents who stated a 0 percent chance of voting Democratic, their (25^{th}, 50^{th}, 75^{th}) percentile responses to the election expectations question were (15, 35, 45) percent. Of the 319 who state a 100 percent chance of voting Democratic, their (25^{th}, 50^{th}, 75^{th}) percentile responses to the election expectations question were (50, 60, 80) percent. Thus, the regularity predicted by the false consensus hypothesis appears again. It occurs as well in the data on senatorial elections, not displayed here.

4.2. Logistic Regression Analysis

We now disaggregate respondents in various ways, stratifying by gender, race, education, or state. We could perform a separate nonparametric analysis within each group, but display of so many estimates would be space consuming. We need a more succinct representation of the data.

The recurring rising S-shape of the regressions suggests use of logistic regression to fit the data. Suppose that among persons with covariates z interviewed in wave w about election e, y is related to x as follows:

$$E(y \mid x, e, w, z) = 100 \frac{\exp(\alpha_{ewz} + \beta_{ewz}x)}{1 + \exp(\alpha_{ewz} + \beta_{ewz}x)}.$$

Here (α_{ewz}, β_{ewz}) are parameters common to the triple (e, w, z).

We estimate the parameters by non-linear least squares. The resulting estimates are consistent if the regression truly is logistic. If not, we obtain a consistent estimate of the best predictor of y in the logistic family of predictor functions.

4.2.1. The 2008 Presidential Election

Table 3A presents findings for the 2008 election, giving the parameter estimates and estimated standard errors. Here and in the tables that follow, we use one covariate value as a base case. When we discuss the estimates for other covariates, we add the base-case estimates to the estimates specific to those covariate values. In performing the logistic regressions, we divided the percent-chance data on candidate preference by 100. Thus, when interpreting the tables, the reader should be aware that x is measured on a 0-1 probability scale rather than a 0-100 percent-chance scale.

As earlier, we focus on wave 44 administered in mid-September 2008. Dividing the sample by gender, the estimates for the parameters (α_{ewz}, β_{ewz}) are (-0.369, 0.969) for males and (-0.506, 1.159) for females. Dividing by race, the estimates are (-0.678, 1.520) for non-whites and (-0.427, 1.024) for whites. Dividing by education, the estimates are (-0.509, 1.571) for persons with 12 or less years of schooling, (-0.568, 1.390) for 13-15 years, and (0.105, 0.750) for 16 or more years of school. The estimates are generally very precise.

We are mainly interested in the slope parameter β_{ewz}, which measures the strength of the association between candidate preferences and election expectations. The findings suggest some detailed differences in β_{ewz} across groups, the slope parameter being larger for (females, non-whites, persons with less schooling) than for (males, whites, persons with more schooling). However, the main lesson is that β_{ewz} is positive and has similar magnitude whether one divides the sample by gender, race, or schooling. Thus, the regularity predicted by the false consensus effect appears however we stratify the sample.

The main lesson holds up when we stratify in other ways, not shown here. For example, dividing the sample into age groups shows essentially no difference in the slope parameters of younger, middle-aged, and

older persons.

4.2.2. The 2010 Elections for Governor and Senator

Tables 3B and 3C present findings for the 2010 elections. As earlier, we focus on wave 1 administered in mid-September 2010. For the sake of sample size, we aggregate elections across states when dividing the sample by group. We later will discuss state-by-state results.

Table 3B gives the findings for the gubernatorial races. Dividing the sample by gender, the estimates for (α_{ewz}, β_{ewz}) are (-0.705, 1.220) for males and (-0.793, 1.439) for females. Dividing by race, the estimates are (-0.653, 1.403) for non-whites and (-0.765, 1.393) for whites. Dividing by education, the estimates are (-0.882, 1.600) for 12 or less years of schooling, (-0.791, 1.472) for 13-15 years, and (-0.665, 1.178) for 16 or more years.

Table 3B also gives the findings for the senatorial races. Dividing by gender, the estimates are (-0.780, 1.435) for males and (-0.772, 1.447) for females. Dividing by race, the estimates are (-0.702, 1.378) for non-whites and (-0.782, 1.445) for whites. Dividing the sample by education, the estimates are (-0.907, 1.640) for 12 or less years of schooling, (-0.746, 1.480) for 13-15 years, and (-0.754, 1.369) for 16 or more years.

These findings are similar to those obtained in 2008. Indeed, the differences in parameter values across groups are even smaller here. The slope parameter is positive in every case and remarkably stable in magnitude.

Finally, Table 3C uses state as the covariate, presenting separate estimates for each gubernatorial and senatorial race. Here too the estimates are stable in magnitude. In the races for governor, the estimated slope parameter ranges from 1.016 (California) to 1.662 (Oregon). In the races for senator, the estimated slope parameter ranges from 0.763 (Utah) to 1.954 (Florida).

4.3. The Temporal Covariation of Expectations and Preferences

The above analysis treated each ALP wave as a separate cross-section. The ALP is a longitudinal survey, with the same respondents interviewed in multiple waves. This offers the opportunity to analyze the within-respondent temporal covariation of candidate preferences and election expectations.

Consider someone interviewed in adjacent waves, say waves w − 1 and w. Let $x_w - x_{w-1}$ denote the change between waves in this person's stated percent chance of voting Democratic. Let $y_w - y_{w-1}$ denote the corresponding change in the percent chance she gives to the Democrat winning. The regression $E(y_w - y_{w-1} \mid x_w - x_{w-1}, e)$ summarizes how, on average, election expectations temporally vary with candidate preferences.

Figure 2A presents a kernel estimate for the 2008 election. The sample of 7631 observations used to produce this estimate pools the data for the seven waves before the election. Thus, a respondent who participated in all waves contributes six observations. Figures 2B and 2C present analogous estimates for the 2010 elections. Here the samples pool the data for the three waves before the election, so a respondent who participated in all waves contributes two observations. The resulting sample sizes are 1917 and 1932.

Each estimate shows a mildly increasing function within its range of precise estimation. Thus, temporal changes in candidate preference are associated with ordinally consistent movements in election expectations. The confidence intervals show that the estimate is statistically precise when $x_w - x_{w-1}$ is not too large in absolute value (roughly in the range -40 to +40). Precision decreases when $x_w - x_{w-1}$ takes more extreme values. The reason is the relative abundance of observations. It is common for respondents to change their stated preference moderately from one wave to the next, but it is rare for them to report changes of more than 40 percent.

To summarize the estimates, we computed corresponding least squares fits of $y_w - y_{w-1}$ to $x_w - x_{w-1}$. Table 4 gives the results. The three sets of slope parameters, which are very precisely estimated, are quite similar in

magnitude. They are 0.258, 0.191, and 0.265 respectively. Thus, a temporal increase of one percent in a respondent's stated chance of voting Democratic tends to be accompanied by a temporal change of a fifth to a quarter of a percent in the chance she places on the Democrat winning the election.

4.4. Discussion

We have found in multiple elections, one presidential and many statewide, that the regression of election expectations on candidate preferences is a rising S-shaped curve. At the extremes, committed supporters of opposing candidates (those with 0 or 100 percent chance of voting Democratic) regularly differ by 20 to 30 percent in their assessments of the likelihood that the Democrat will win. These findings are common to males and females, non-whites and whites, and to persons with different levels of schooling. We have also found that, when persons change their candidate preferences over time, their election expectations tend to move in the same direction.

The regularity predicted by the false consensus hypothesis has been reported in many settings. We nevertheless did not expect to find such a strong and pervasive association between candidate preferences and election expectations. Many studies of false consensus concern topics regarding which there exists little or no public information about social preferences. In such circumstances, it is easy to understand that persons may extrapolate their own preferences to the community. In contrast, considerable information about social preferences in presidential and statewide elections is readily available from the many polls conducted in the months before the election.

In fall 2008, it would have been difficult for respondents not to be aware of the numerous national polls regularly assessing the presidential campaign. Polling data on the 2010 elections may not have been as commonplace, but statewide polls were undertaken and reported regularly by the media in the large states where the ALP queried panel members. We anticipated that respondents would not vary much in their

expectations for election outcomes, or at least not vary systematically. Yet respondents expressed large differences in their expectations of election outcomes, which were strongly positively associated with their own candidate preferences. It thus appears that Americans, despite having access to the same publicly available information, nevertheless inhabit disparate perceptual worlds, each to their own liking.

We will not conjecture about the cognitive processes that generate the striking empirical finding we have reported. Psychologists have long struggled to explain the false consensus effect. We do not have new ideas to offer. Our work may contribute to psychological research by providing new empirical evidence of the effect, using new measures of own preferences and of perceptions of social preference that enable respondents to express uncertainty flexibly. In contrast, earlier work has not enabled respondents to express uncertainty about social preferences. Moreover, our evidence concerns a setting that would a priori seem inhospitable to false consensus, one where persons have easy access to substantial common knowledge of social preferences conveyed by media reports of election polls.

5. Election Expectations and the Decision to Vote

Whatever cognitive processes are at work, we think it germane to investigate the implications of the empirical evidence for actual election outcomes. We are particularly interested in voter turnout. We conclude with some thoughts on this subject.

Expectations of election outcomes loom large in theories of instrumental voting. Such theories suppose that a person votes if the expected benefit exceed the expected cost. The expected benefit depends on a person's candidate preferences and her expectation that her vote will affect the outcome.

In the classical model of an isolated two-candidate election, the expected benefit of voting has been taken to be the differential utility that a person associates with election of his preferred candidate multiplied by the

probability that she places on the event that her vote would be *pivotal*; that is, would change the winner. See Downs (1957) and Riker and Ordershook (1967). The literature has long struggled with the fact that this model cannot realistically explain observed variation in turnout across elections when the electorate is large. Being pivotal means that the vote totals for the two candidates differ by no more than one vote. When the electorate is large, this outcome is extremely rare historically and unlikely prospectively. Hence, the pivotal voter model can explain variation in turnout only if one supposes that potential voters grossly overestimate the chance of being pivotal, perceive tiny costs to voting, or enormously prefer one candidate over the other.

While models of instrumental voting have traditionally assumed that the only election outcome that matters is who wins, a potential voter might think that the vote margin matters as well. She might reason that the behavior of the winner in office will depend on the strength of the mandate that he receives from the electorate. From this perspective, voting has instrumental value if it is pivotal or if marginal changes in vote margin affect the winner's behavior. Hence, expectations of vote margin may affect the decision to vote. The manner in which this occurs would depend on how persons form expectations and how they perceive the relationship between vote margin and the winner's performance in office.

We have performed exploratory work using the ALP data to examine how candidate preferences and election expectations are associated with decisions to vote. Corroborating a finding on the 2008 election reported in Delavande and Manski (2010), we have found that the likelihood of voting in 2010 increases with the strength of candidate preference. Thus, persons who state a close to even chance of voting for each candidate are less likely to vote than are those who state a high probability of voting for one of the candidates.

Conditioning on candidate preference, we have not discovered a consistent association between election expectations and turnout. A possible reason is that the ALP question on election expectations only asked respondents to state the likelihood that each candidate will win, not her subjective probability distribution for the vote margin. Elicitation of expectations for vote margin might reveal patterns not evident with the ALP data.

An additional issue complicating attempts to understand voter turnout is the American practice of holding multiple elections on a single election day. Theories of instrumental voting have generally supposed that elections occur in isolation. The cost of voting is primarily the fixed cost of travel to a polling station rather than the marginal cost of casting a ballot once there. Persons presumably make decisions to vote by jointly considering the concurrent elections occurring on election day, not one election in isolation. However, the 2008 ALP instrument only asked about the presidential election and the 2010 one only asked about two statewide races. Elicitation of candidate preferences and election expectations for a more complete set of concurrent elections might improve our understanding of the determinants of turnout.

References

Bartels, L. (1985), "Expectations and Preferences in Presidential Nominating Campaigns," *American Political Science Review*, 79, 804-815.

Berelson, B, P. Lazarsfeld, and W. McPhee (1954), *Voting*, Chicago: University of Chicago Press.

Brown, C. (1982), "A False Consensus Bias in 1980 Presidential Preferences," *Journal of Social Psychology*, 118, 137-138.

Baker, L., R. Koestner, N. Worren, G. Losier, and R. Vallerand (1995), "False Consensus Effects for the 1992 Canadian Referendum," *Canadian Journal of Behavioral Science*, 27, 214-225.

Dawes, R. (1989), "Statistical Criteria for Establishing a Truly False Consensus Effect," *Journal of Experimental Social Psychology*, 25, l-17.

Dawes R. and M. Mulford (1996), "The False Consensus Effect and Overconfidence," *Organizational Behavior and Human Decision Processes*, 66, 201-211.

Delavande, A., X. Giné, and D. McKenzie (2011), "Measuring Subjective Expectations in Developing Countries: A Critical Review and New Evidence," *Journal of Development Economics*, 94, 151-163.

Delavande, A. and C. Manski (2010), "Probabilistic Polling and Voting in the 2008 Presidential Election: Evidence from the American Life Panel," *Public Opinion Quarterly*, 74, 433-459.

Downs, A. (1957), *An Economic Theory of Democracy*, New York: Harper and Row.

Fabrigar, L. and J. Krosnick (1995), "Attitude Importance and the False Consensus Effect," *Personality and Social Psychology Bulletin*, 21, 468-479.

Granberg, D. and E. Brent (1983), "When Prophecy Bends: The Preference-Expectation Link in U.S. Presidential Elections, 1952-1980," *Journal of Personality and Social Psychology*, 45, 477-491.

Hayes, S. (1936), "The Predictive Ability of Voters," *Journal of Social Psychology,* 1936, 7, 183-191.

Hurd, M. (2009), "Subjective Probabilities in Household Surveys," *Annual Review of Economics*, 1, 543-564.

Katz, D. and F. Allport (1931), *Students' Attitudes*, Syracuse: Craftsman Press.

Manski, C. (1990), "The Use of Intentions Data to Predict Behavior: A Best Case Analysis," *Journal of the American Statistical Association*, 85, 934-940.

Manski, C. (1999), "Analysis of Choice Expectations in Incomplete Scenarios," *Journal of Risk and Uncertainty* 19, 49-66.

Manski, C. (2004), "Measuring Expectations," *Econometrica*, 72, 1329-1376.

Morwitz, V. and C. Pluzinsky (1996), "Do Polls Reflect Opinions or Do Opinions Reflect Polls?" *Journal of Consumer Research,* 23,53-67.

Nir, L. (2011), "Motivated Reasoning and Public Opinion Perception," *Public Opinion Quarterly*, forthcoming.

Riker, W. and P. Ordeshook (1968), "A Theory of the Calculus of Voting, " *American Political Science Review*, 62, 25-42.

Robbins, J. and J. Krueger (2005), "Social Projection to Ingroups and Outgroups: A Review and Meta-Analysis," *Personality and Social Psychology Review*, 9, 32-47.

Ross, L., D. Greene, and P. House (1977). "The False Consensus Effect: An Egocentric Bias in Social Perception and Attribution Processes," *Journal of Experimental Social Psychology*, 13, 279–301.

Wallen, R. (1943), "Individuals' Estimates of Group Opinion," *Journal of Social Psychology*, 17, 269-274.

Wojcieszak, M. and V. Price (2009), "What underlies the false consensus effect? How Personal Opinion and Disagreement Affect Perception of Public Opinion," *International Journal of Public Opinion Research*, 21, 25-46.

Table 1: Subjective Voting Probabilities and Relative Thermometer Ratings

Difference in thermometer rating (Democrat minus Republican)	Percent chance of voting for Democrat conditional on voting				
	25th percentile	Median	75th percentile	Mean	N
-100 to -75	0	0	0	0	206
-74 to -50	0	0	0	4	215
-49 to -25	0	0	10	6	198
-24 to 0	0	30	50	29	360
1 to 25	50	65	95	65	198
26 to 50	75	99	100	84	260
50 to 75	99	100	100	94	181
76 to 100	100	100	100	98	219
DK Democrat	0	25	60	36	285
DK Republican	40	80	100	66	179
DK both	0	25	50	32	143
Total	0	45	100	46	2444

Table 2A: Candidate Preference and Election Expectations, 2008 Wave 44

Percent chance of voting for Obama conditional on voting	Percent Chance that Obama wins				
	25th percentile	Median	75th percentile	Mean	N
0	30	45	50	39	512
]0,25]	40	48	50	43	136
]25,50[	45	50	51	47	79
50	50	50	50	52	82
]50,75]	50	52	60	56	83
]75,100[	50	55	60	58	107
100	50	60	80	66	489
Total	45	50	60	52	1488

Table 2B: Candidate Preference and Election Expectations, 2008 Wave 51

Percent Chance of voting for Obama conditional on voting	Percent Chance that Obama wins				
	25^{th} percentile	Median	75^{th} percentile	Mean	N
0	48	50	55	51	620
]0,25]	45	51	60	49	81
]25,50[	49	51	60	52	38
50	50	50	60	56	61
]50,75]	55	60	75	63	53
]75,100[	60	75	85	74	81
100	60	80	95	77	615
Total	50	60	80	63	1549

Table 2C: Candidate Preference and Election Expectations, 2010 Governor Wave 1

Percent chance of voting for democrat conditional on voting	Percent Chance that Democrat wins				
	25^{th} percentile	Median	75th percentile	Mean	N
0	15	35	45	32	411
]0,25]	25	40	50	36	113
]25,50[	35	40	50	42	92
50	45	50	55	50	97
]50,75]	48	50	60	54	87
]75,100[	50	60	75	61	96
100	50	60	80	64	319
Total	33	50	60	47	1215

Table 3A: Logistic Regression of Election Expectations on Candidate Preferences, 2008 Wave 44

	Parameter Estimate	Standard Error
By years of schooling N = 1488		
Constant	-0.509	0.060
13-15 years	-0.059	0.074
16+ years	0.195	0.072
Probability p of voting for democrat conditional on voting	1.571	0.116
(13-15 years) * p	-0.181	0.137
(16+ years) * p	-0.821	0.129
By gender N = 1487		
Constant	-0.369	0.038
female	-0.137	0.053
Probability p of voting for democrat conditional on voting	0.969	0.063
female * p	0.190	0.084
By race N = 1487		
Constant	-0.678	0.135
White	0.251	0.138
Probability p of voting for democrat conditional on voting	1.520	0.169
White * p	-0.496	0.174

Table 3B: Logistic Regression of Election Expectations on Candidate Preferences, 2010 Wave 1

	Governor		Senator	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
By years of schooling N = 1215 (Gov), 1223 (Sen)				
Constant	-0.882	0.088	-0.907	0.095
13-15 years	0.091	0.104	0.161	0.111
16+ years	0.217	0.106	0.153	0.114
Probability p of voting for democrat conditional on voting	1.600	0.146	1.640	0.162
(13-15 years) * p	-0.128	0.175	-0.160	0.192
(16+ years) * p	-0.422	0.168	-0.271	0.186
By gender N = 1215 (Gov), 1223 (Sen)				
Constant	-0.705	0.056	-0.780	0.060
female	-0.088	0.073	0.008	0.079
Probability p of voting for democratic candidate conditional on voting	1.220	0.091	1.435	0.101
female * p	0.219	0.117	0.012	0.129
By race N = 1215 (Gov), 1223 (Sen)				
Constant	-0.653	0.128	-0.702	0.139
White	-0.112	0.134	-0.080	0.145
Probability p of voting for democratic candidate conditional on voting	1.403	0.176	1.378	0.191
White * p	-0.081	0.186	0.067	0.202

Table 3C: Logistic Regression of Election Expectations on Candidate Preferences, 2010, by State

	Governor N = 1215		Senator N = 1223	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Constant	-1.307	0.189	-1.465	0.194
CALIFORNIA	0.704	0.203	1.181	0.207
FLORIDA	0.558	0.216	-0.111	0.231
GEORGIA	0.396	0.231	0.402	0.239
ILLINOIS	0.661	0.222	0.988	0.225
MARYLAND	0.437	0.261	1.259	0.266
NEW YORK	1.209	0.223	1.672	0.232
OHIO	0.486	0.212	0.687	0.215
OREGON	0.700	0.276	0.961	0.295
PENNSYLVANIA	0.505	0.225	0.765	0.230
UTAH	0.080	0.245	0.249	0.247
WISCONSIN	0.624	0.233	0.845	0.238
Probability p of voting for democrat conditional on voting	1.516	0.268	1.580	0.279
CALIFORNIA *p	-0.520	0.292	-0.620	0.301
FLORIDA *p	-0.119	0.317	0.374	0.354
GEORGIA *p	0.118	0.347	-0.552	0.358
ILLINOIS *p	-0.398	0.334	-0.609	0.337
MARYLAND *p	0.085	0.375	-0.014	0.415
NEW YORK *p	-0.151	0.331	-0.642	0.341
OHIO *p	-0.154	0.311	-0.316	0.319
OREGON *p	0.146	0.409	0.349	0.430
PENNSYLVANIA *p	-0.205	0.324	-0.465	0.332
UTAH *p	-0.281	0.423	-0.817	0.458
WISCONSIN *p	-0.491	0.337	-0.287	0.347

Note: Omitted state is Arizona

Table 4: Regression of change in election expectations on Change in candidate preference

	Parameter Estimate	Standard Error
2008 Wave 44, N = 7631		
Change in percent chance of voting for Obama	0.258	0.020
Constant	1.180	0.185
2010 Wave 1, governor, N = 1917		
Change in probability of voting for Democrat	0.191	0.026
Constant	0.880	0.419
2010 Wave 1, senator, N = 1932		
Change in probability of voting for Democrat	0.265	0.031
Constant	-0.410	0.396

Figure 1A: Regression of Election Expectations on Candidate Preference, 2008 Wave 44

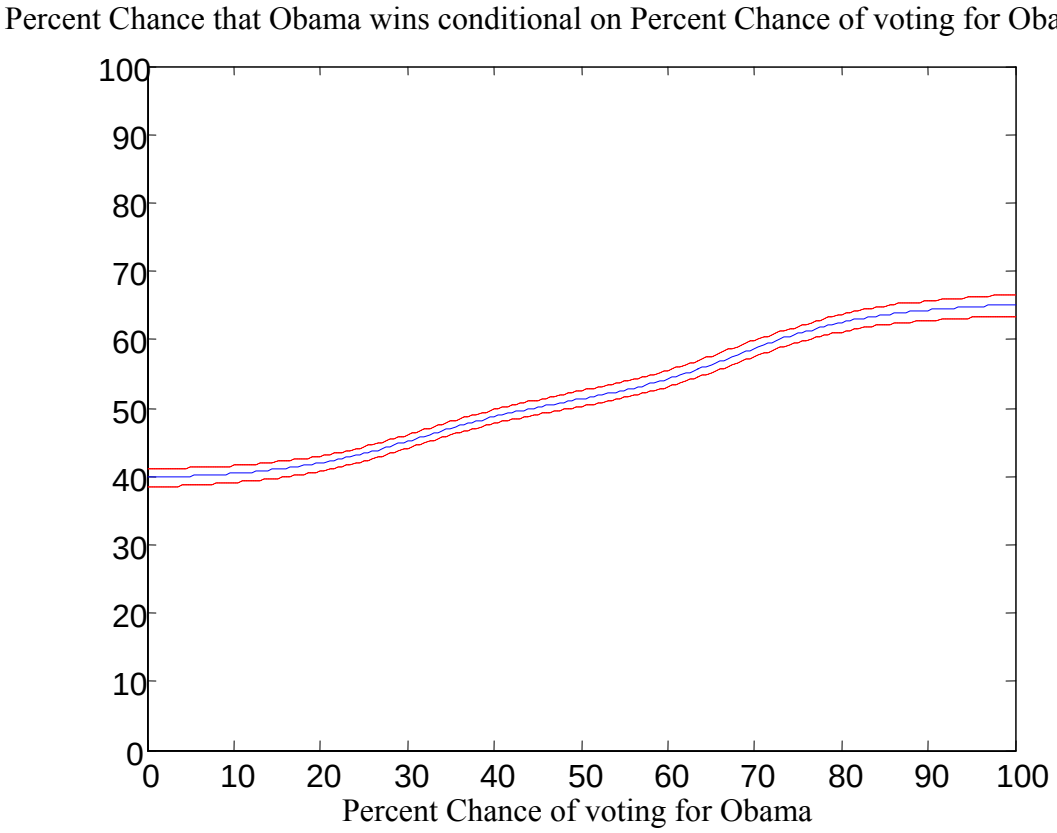

Figure 1B: Regression of Election Expectations on Candidate Preference, 2010 California Governor

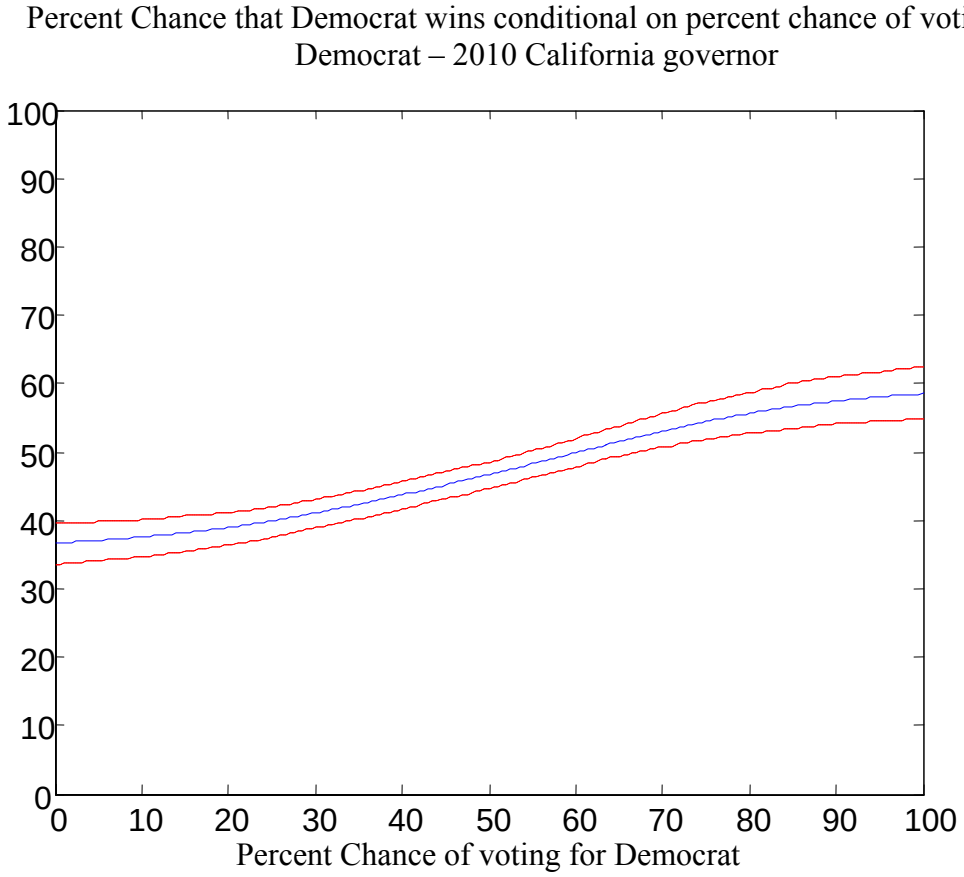

Figure 1C: Regression of Election Expectations on Candidate Preference, 2010 California Senator

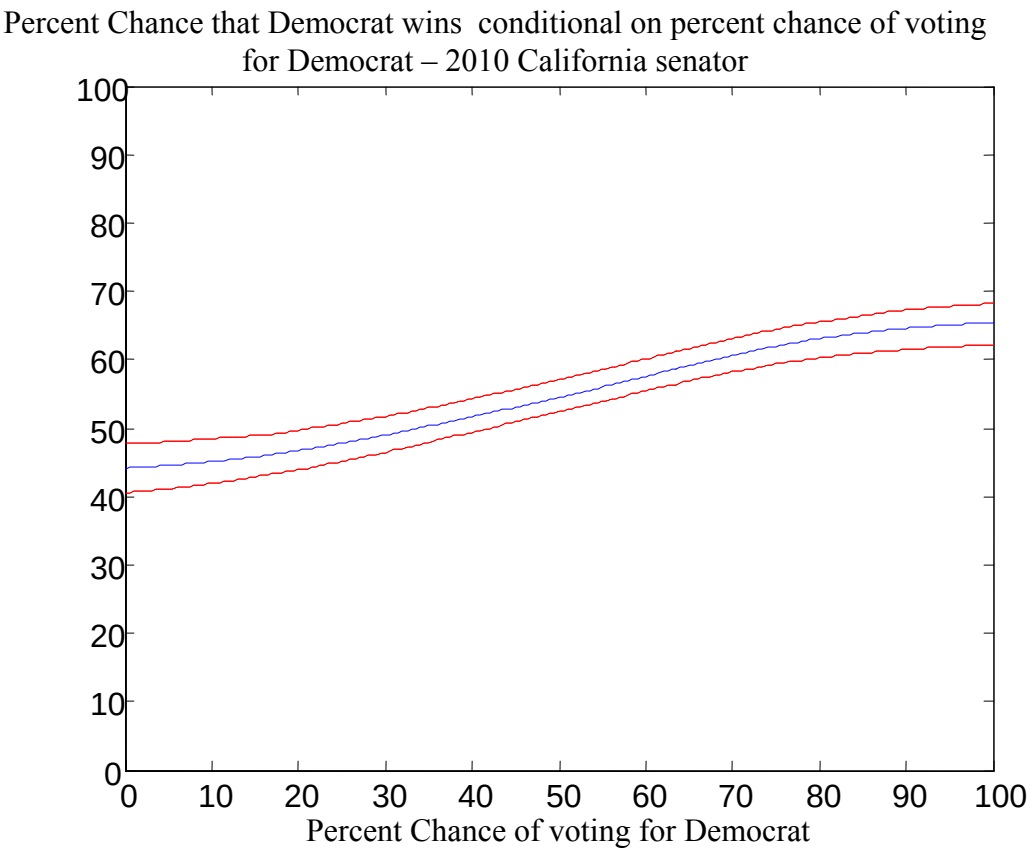

Figure 1D: Regression of Election Expectations on Candidate Preference, 2010 all governors

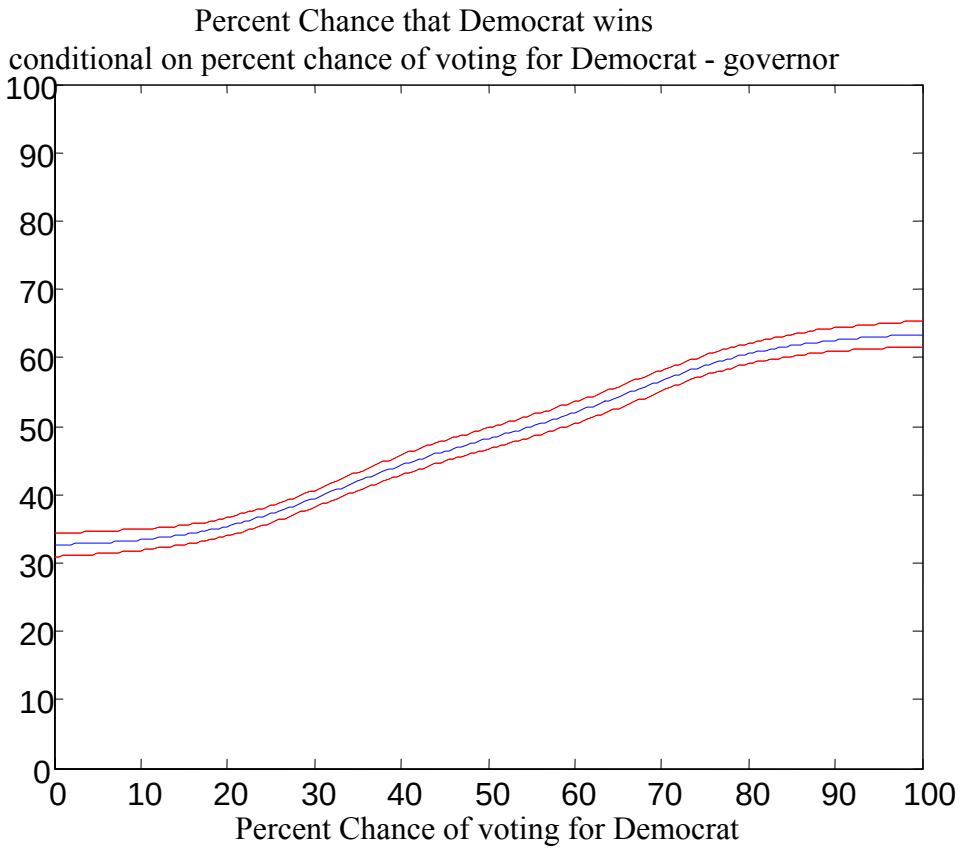

Figure 2A: Regression of Change in Election Expectations on Change in Candidate Preference, 2008 Wave 44

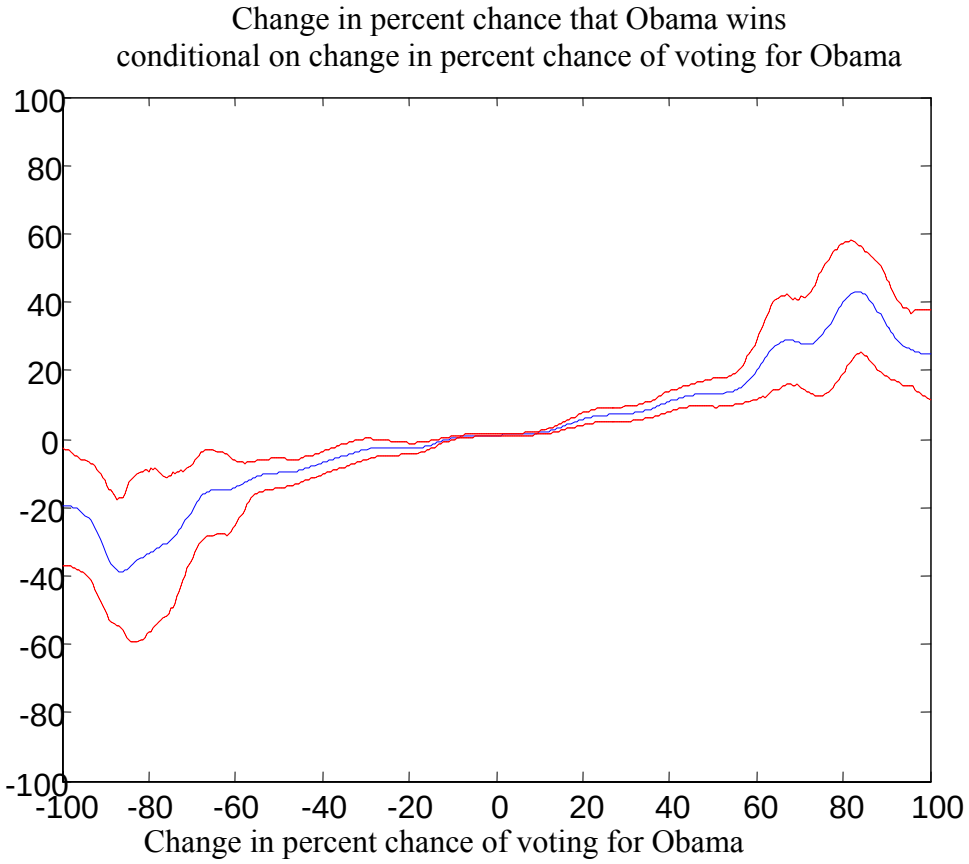

Figure 2B: Regression of Change in Election Expectations on Change in Candidate Preference, 2010 all governors

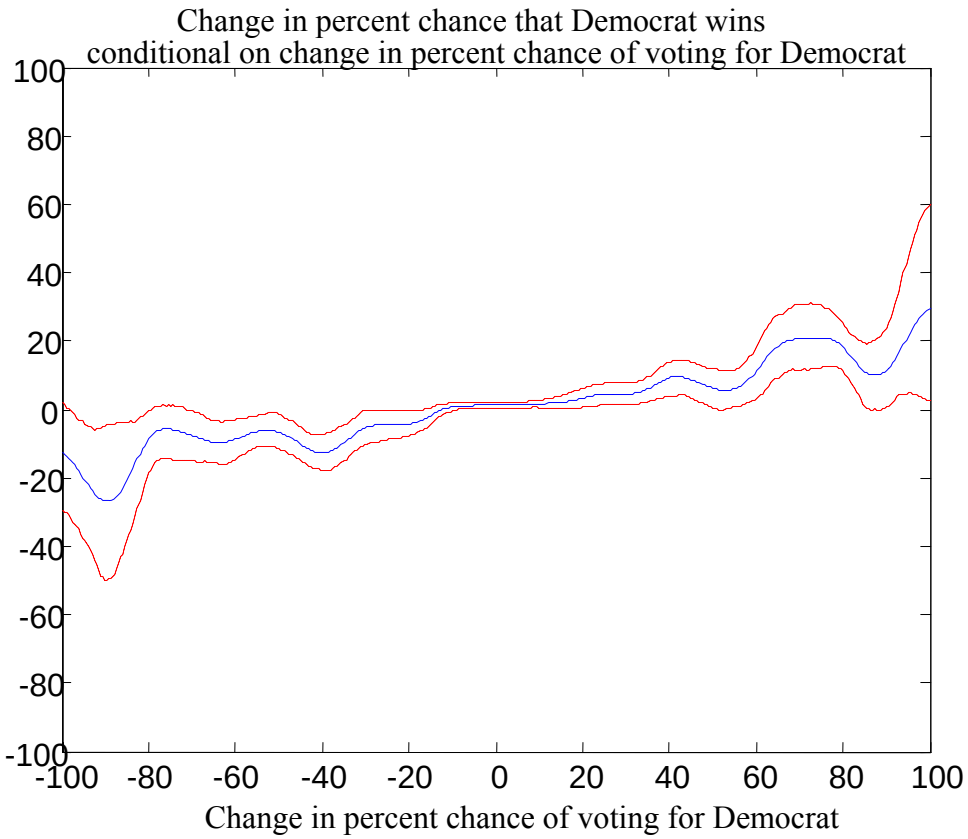

Figure 2C: Regression of Change in Election Expectations on Change in Candidate Preference, 2010 all senators