

Do Irrelevant Events Affect Voters' Decisions? Evidence from the Field

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ABSTRACT

Does information irrelevant to government performance affect voting behavior? If so, what light does this shed on our understanding of the mechanisms underlying retrospective voting? While recent studies have suggested examples of voters appearing to reward and punish incumbents for events outside of their direct control, these analyses suffer from a principal limitation: politicians may still be reasonably expected to respond to and prepare for the events that they did not cause. To more precisely test for the effects of irrelevant information, we explore the electoral impact of local college football games just before an election, truly irrelevant events that government has nothing to do with and for which no government response would be expected. We find that a win in the ten days before Election Day causes the incumbent party to receive an additional 1.6 percentage points of the vote in Senate, gubernatorial, and presidential elections, with the effect being larger for teams with stronger fan support. In addition to conducting placebo tests based on post-election games, we also demonstrate causality by using the betting market's estimate of a team's probability of winning the game before it occurs to isolate the surprise component of game outcomes. We corroborate these aggregate-level results with a survey that we conducted during the 2009 NCAA Men's College Basketball Tournament, where we find that surprising wins and losses affect approval of President Obama and assessments of the health of the country. Our results suggest that, in addition to people processing available diagnostic information about the economy and other areas, another mechanism underlying retrospective voting involves voters' general sense of well-being acting as a conduit between macroeconomic conditions and election outcomes.

Does information irrelevant to government performance affect voting behavior?

Traditional conceptions of retrospective voting conceive of voters processing diagnostic information about the health of the economy and using this information to reward and punish incumbents (e.g. Key 1966; Kramer 1971; Fiorina 1981; Kinder and Kiewiet 1981; Markus 1988; Lewis-Beck 1988). However, the correlation between a strong economy and incumbent electoral performance is observationally equivalent with the alternative mechanism of the health of the economy affecting voters' general sense of well-being, which in turn influences decision making.¹ In this study, we attempt to isolate this latter mechanism by examining voter responses to events which are unrelated to government performance. In doing so, we provide evidence for an additional mechanism underlying retrospective voting to complement the more traditional view of information processing.

Recent studies have used instances in which voters appear to credit and blame politicians for events beyond elected officials' control (such as shark attacks, floods and droughts, the international price of oil, and the state of the global economy) to argue that irrelevant events affect election outcomes (e.g. Achen and Bartels 2004; Wolfers 2009; Leigh 2009). However, these studies suffer from a principal limitation. In all of the cases in which voters appear to respond to events beyond elected officials' direct control—governors being punished for changes in the international price of oil (Wolfers 2009), national leaders being rewarded for global growth (Leigh 2009), and leaders being punished for drought and shark attacks (Achen and Bartels 2004)—incumbent politicians may be expected to prepare for or respond to those events. The government can pursue policies aimed at diversifying a state's economy, institute trade policies to change how a country interacts with the global economy, invest in preparing for

¹ Our individual-level conception of voter utility is related to Rahn's aggregate-level conception of "public mood" (Rahn 2000; Rahn et al. 1996).

natural disasters, provide aid to those adversely affected by floods and droughts, and assist the tourism-related businesses that lost customers due to shark attacks. Hence, the extant literature has not considered events that are truly *irrelevant* to government performance.

In this paper, we consider events that are entirely separate from public policy. Specifically, we examine college football outcomes that occur close to Election Day to demonstrate that irrelevant events indeed do affect voting decisions. These game outcomes create an ideal variable for our purpose, since (1) they have been shown to significantly affect people's well-being (e.g., Cialdini et al. 1976; Sloan 1979; Schwarz et al. 1987; Hirt et al. 1992; Card and Dahl 2006; Christensen et al. 2006; Wilbert-Lampen et al. 2008),² and (2) they are completely unrelated to public affairs. No government response would be expected in response to game outcomes that occur shortly before Election Day and the public would almost certainly not relate them to incumbent performance. Even the unlikely scenario where some voters attribute their favorite team's strength to the extent of government funding could not account for voters reacting to the random component of game outcomes, and our results show that voters do exactly that. We utilize point spreads from betting markets to calculate a team's probability of winning the game before it occurs (Stern 1991). By conditioning on the expected outcomes, we

² College football is one of the most-followed sports in the United States. According to the Harris Poll (2008), college football is the third most popular sport in the United States, behind professional football and baseball. When asked, "If you had to choose, which ONE of these sports would you say is your favorite?" in 2008, 30 percent answered professional football, 15 percent answered baseball, and 12 percent answered college football. College football has held its spot as the third most popular sport since the inception of this question in the Harris Poll in 1985. A variety of evidence supports the existence of a strong relationship between outcomes of popular sports and a sense of well-being for many individuals. For instance, Sloan (1979) found that anger, discouragement, irritation, frustration, sadness, and hostility increased following team failure, while happiness and satisfaction increased following a victory. Schwarz et al. (1987) reported that individuals were more satisfied with their lives after a victory of the German national soccer team whereas the opposite was true after a loss. According to a study of life satisfaction in Denmark, "winning the 1992 European Championship in football by beating Germany 2-0 in the final put Danes in such a state of euphoria that the country has not been the same since" (Christensen et al. 2006, 1289). Sports outcomes have been found to even affect health and aggression. Using emergency medical data in Germany between 2003 and 2006, Wilbert-Lampen et al. (2008) concluded that viewing a stressful soccer match of one's favorite team more than doubles the risk of an acute cardiovascular event. Moreover, upsets in professional football games have been associated with greater domestic violence (Card and Dahl 2006).

isolate the surprise component of game outcomes and use this natural experiment to identify the causal effect of college football wins and losses on election results.

Based on extant economic and psychological theories suggesting that individuals tend to display a status quo bias (e.g., Samuelson and Zeckhauser 1998; Yen and Chuang 2008), we hypothesize that victories will increase the vote share for the incumbent party, since voters may have an inflated preference for the current state of affairs when their personal sense of well-being is high.³ Indeed, we find that a victory in the ten days before the election causes the incumbent party in Senate, gubernatorial, and presidential elections to gain an average of 1.6 percentage points of the vote in the county. We show that this effect is not driven by changes in turnout. Moreover, as expected, the effect is larger in areas with stronger fan bases as measured by game attendance and whether the local team has a history of winning the national championship. The results are robust to the inclusion of county and year fixed effects, as well as county-level demographic controls. We also show that *post*-election games have no effect on voting behavior, and these placebo test results confirm our causal interpretation of the relationship between football outcomes and voting.

To supplement our evidence from county-level election results, we conducted an individual-level survey. During the 2009 NCAA Men's College Basketball Tournament, we interviewed people who lived in counties near colleges participating in the third and fourth

³ The psychology literature offers two possible channels through which events that are separate from the object of evaluation can affect voter behavior, ranging from the mechanical to the more cognitive. First, according to the *mood misattribution* affect-as-information model (Schwarz and Clore 1983; Schwarz and Clore 1988; Schwarz 1990; Clore, Schwarz and Conway 1994), voters may evaluate the incumbent more positively when they are happy, transferring their mood to the target of evaluation. Second, according to the theory of *mood-congruent priming* (Isen et al. 1978; Bower, Monteiro, and Gilligan 1978; Teasdale and Fogarty 1979; Bower 1981) voters who are thinking about politics may access more positive (negative) memories about the incumbent and interpret information more favorably (unfavorably) when they are happy (upset). Note that any effect that mood has on decision making in politics or other areas is likely to arise unconsciously. Schwarz and Clore (1983) found that mood affects judgment because rainy days depressed both moods and ratings of life satisfaction. However, when they subtly linked people's feelings to the weather before asking about life satisfaction, the effects of mood on self-reported life satisfaction disappeared.

rounds about their opinion of President Obama, and their assessment of the state of the country. We find that unexpected tournament wins increased approval of President Obama's job performance and feeling that the country is on "the right track." Thus, we combine data from the field with data from the survey context to demonstrate the external validity and robustness of our findings.

The paper is organized as follows. In the first two sections, we describe the data, outline the empirical strategy used to identify the relationship between football outcomes and voting decisions, and present the results. In the third section, we report individual-level survey results that corroborate our county-level findings linking sports and political outcomes. The final section concludes by discussing the implications of the results for our understanding of political decision making and retrospective voting.

Data and Empirical Strategy

We first consider whether our empirical strategy produces results that are both internally and externally valid. While it seems sensible to assume that college football victories and losses on a given weekend are exogenous to government performance, we address potential concerns.

First, we consider threats to internal validity. It is possible that areas with college football teams are more likely to support incumbents than areas without teams. Accordingly, we only consider the subset of counties that have football teams from Bowl Championship Series (BCS) conferences. Nonetheless, although it is implausible, it could perhaps be the case that counties with stronger teams (who are more likely to win on the weekends prior to Election Day) are also more supportive of incumbents. To address this issue, we include county and year fixed effects, thereby accounting for the overall strength of the team by considering the effect of football

performance in relation to the *mean* level of the team's success over time.

In addition, as described in detail below, we use expected game outcomes as determined by the betting market to ascertain the effect of the unexpected component of the game results. We also test for balance of observable baseline characteristics across treatment groups (counties with wins versus losses on the weekend prior to Election Day). Finally, we conduct a series of placebo tests predicting voting returns with games played *after* Election Day. Null findings in the placebo tests would suggest that positive findings for the effect of pre-election games are not spurious.

A potential threat to external validity is that areas with college football teams are not representative of the country as a whole. Although this is certainly true, college football teams, unlike professional sports teams, are located in a geographically and demographically diverse subset of the country. Whereas professional teams are primarily located in metropolitan areas, college football teams play in big cities, medium-sized suburbs, as well as isolated rural areas.⁴

Data

We analyze data on voting behavior, college football outcomes, and county-level demographics for the counties or county-equivalent units that have BCS teams in the United States. These 62 teams come from the six major Division I Football Bowl Subdivision (FBS) football conferences: the Atlantic Coast Conference, the Pacific Ten, the Big Ten, the Big Twelve, the Big East, and the Southeastern Conference.⁵ The only team in our sample that does

⁴ The teams in our sample are located in 35 different states in all regions of the country.

⁵ There are in fact 66 teams from BCS conferences plus Notre Dame; however, four teams are excluded. Connecticut (UConn) and South Florida are excluded because they became a part of Division I in the last few years. UConn football moved up to Division I-A status in 2000, was included in official NCAA Division I-A statistics for the first time in 2002, and became a full Big East member in 2004. South Florida played its first football game in 1997. When they moved to the Division I Football Bowl Subdivision in 2001, they initially remained independent. They joined Conference USA in 2003 and became a member of the Big East in 2005. We also excluded Los Angeles

not play in a BCS conference is Notre Dame, an independent school with a rich football tradition (see the appendix for additional information on the teams).

For the voting data, we consider presidential, senatorial, and gubernatorial election results at the county level from 1964 to 2006, as reported by *Congressional Quarterly's* Voting and Elections Collection.⁶ All uncontested races are excluded from the analysis.⁷

To cover the same time frame as the voting data, we collected college football results from 1964-2006 to construct our key independent variable in the voting regressions: whether the football team in the county won the game preceding the election.⁸ Data on games for the five weeks prior to Election Day through two weeks after the election were also collected. We expect the football victories to have the greatest effect on voters' sense of well-being in counties with the most fan support (Branscombe and Wann 1992; Doosje et al. 1998). As the intensity of support is positively correlated with the importance of teams, we also created dummy variables in accordance with two definitions of locally-important teams: (1) whether the college was in the group of teams that had the highest average attendance from 1998-2007, and (2) whether the team has won a national championship since 1964, the first year of the data. These two categorizations are intended to produce a face valid set of teams generally considered to be college football "powerhouses" (see appendix for a description of the teams identified under

County because it has two BCS conference teams – USC and UCLA – and as such, it is unclear how to weight wins and losses from each team. Nevertheless, the findings are robust to the inclusion of either one of the two Los Angeles teams.

⁶ The first year of the presidential election data is 1964, the first year of the gubernatorial election data is 1970, and the first year of the senatorial election data is 1974. We also collected data from the previous election cycle for all three race types for use as a lagged version of the dependent variable.

⁷ We also excluded "jungle" primary elections in Louisiana, as well as special elections and elections in which the incumbent party is a third party.

⁸ All of our college football data came from an online database run by James Howell. The dataset contains game scores for college football games between 1869 and 2008, and can be accessed at: <http://homepages.cae.wisc.edu/~dwilson/rsfc/history/howell>. All bye weeks were dropped from the dataset; treating byes in the same manner as losses/ties does not change the results substantively or statistically.

these definitions).⁹

To improve the efficiency of our estimates, we control for a number of socioeconomic factors that are associated with voting behavior. Specifically, using data from Gomez et al. (2007) between 1964 and 2006, we include the following county-level demographic characteristics in our regression models: median household income, percent high school graduates (normalized for each year), percent African-Americans, a measure of how rural the county is (measured by farms per capita), and percent unemployed. For years with missing data, estimates are drawn from the Census Bureau's County and City Data Book when available. When data are unavailable for a given year, estimates are interpolated from the closest available years. Using data from the Census Bureau's Small Area Income and Population Estimates program, we also control for county-level population.¹⁰

To confirm that counties experiencing wins were similar to counties experiencing losses on observable characteristics, Table A1 in the online appendix presents a comparison of means for each of our socioeconomic variables. We find that the demographic characteristics are well-balanced across treatment groups. Furthermore, as shown in Table A2 in the online appendix, none of these socioeconomic variables predict victory in either the game immediately before the election or in the week before that, either individually or jointly ($F_{9,61} = .40$, $p = .929$ and $F_{9,61} = .50$, $p = .867$).

Empirical Strategy

We first conduct a simple difference of means test to assess the impact of college football

⁹ While generally more successful, championship and high-attendance teams lose significant numbers of games, and we leverage that variation. Among high attendance and championship teams in our dataset, 10.86 percent and 10.18 percent of teams, respectively, lose the last two games before the election. 34.84 percent and 27.99 percent of teams, respectively, lose one out of the two games before the election.

¹⁰ The data can be accessed at <http://www.census.gov/hhes/www/saipe/index.html>.

outcomes on incumbent vote share. In other words, we estimate the following difference-in-difference:

$$Impact_{it} = (V_{it}(win) - V_{it-1}(win)) - (V_{it}(loss) - V_{it-1}(loss)) \quad (1)$$

$V_{it}(win)$ and $V_{it}(loss)$ represent the incumbent party's vote share in percentage points in county i at time t after a win and loss at time t , respectively. Similarly, $V_{it-1}(win)$ and $V_{it-1}(loss)$ represent incumbent vote share in county i at time $t-1$, the previous election cycle, in counties that experienced a win and loss at time t .

We then consider the following model to obtain more precise estimates of the effect of football outcomes on voting behavior:

$$Incumbent\ Vote\ Share = f(Party's\ Previous\ Vote\ Share, Football\ Game\ Outcome, Election\ Type, Demographic\ Variables)$$

In our main regressions, we pool across presidential, senatorial, and gubernatorial elections. We also test for the possibility of differential effects across offices in the results section.

To operationalize this general model, we estimate the following regression via ordinary least squares (OLS) regression:

$$V_{it} = \alpha + \beta_1 W_{it} + \beta_2 V_{it-1} + \beta_3 P_{it} + \beta_4 G_{it} + \gamma \mathbf{x}_{it} + \varepsilon_{it} \quad (2)$$

where V_{it} represents the vote share of the incumbent party in percentage points in county i at time t , W_{it} is a dummy variable for a college football team win (with the variable being zero both for losses and ties), V_{it-1} represents the vote share of the incumbent party in the previous election cycle, P_{it} and G_{it} are dummy variables indicating presidential and gubernatorial elections, respectively, with Senate elections being the excluded category, \mathbf{x}_{it} is a vector of demographic and economic control variables, and ε_{it} is random error. In all regressions, we include demographic and economic controls to improve the efficiency of the estimated treatment effects.

We also cluster standard errors at the county level, thereby correcting for heteroskedasticity and correlation between the disturbances of observations within counties.

In addition to estimating various versions of equation (2), we also estimate a set of specifications including county and year fixed effects (α_i and η_t , respectively):

$$V_{it} = \alpha_i + \eta_t + \beta_1 W_{it} + \beta_2 V_{it-1} + \beta_3 P_{it} + \beta_4 G_{it} + \gamma \mathbf{x}_{it} + \varepsilon_{it} \quad (3)$$

As discussed earlier, the inclusion of fixed effects controls for the possibility that places that tend to have stronger football programs may also have the tendency to support incumbents. Although it is likely that college football outcomes are exogenous events so that the fixed effects are not necessary to obtain unbiased coefficients, the fixed effects ensure that we are isolating the effect that within-county variation in football team performance has on voting decisions.¹¹

To determine whether our results are spurious, we conduct a series of additional tests. First, we perform a set of placebo tests, in which we ensure that games played *after* Election Day do not have any effect on the incumbent's prospects for reelection. Second, we condition on the probability of victory before the game takes place—which can be estimated using point spreads from the betting market—to isolate the random component of game outcomes, which are by definition uncorrelated with omitted variables such as team strength.

Results

We find clear evidence that the successes and failures of the local college football team before Election Day significantly influence the electoral prospects of the incumbent party, suggesting that voters reward and punish incumbents for utility changes completely unrelated to

¹¹ We also estimated a set of models predicting the vote share of the Democratic candidate with a dummy variable representing the game outcome, an indicator variable coded 1/-1 for whether the incumbent party was Democrat/Republican, the interaction between these two variables, county and year fixed effects, and the demographic controls. We obtained similar results for the effect of wins/losses both in terms of statistical significance and coefficient size to those reported here.

government performance. Table 1 reports evidence from simple difference of means tests. While the incumbent party generally receives fewer votes in the current cycle than in the previous election cycle (since the incumbent party likely did well in the county in the previous election by virtue of winning), we find that the vote share decrease for incumbents in counties that experience losses is larger than in counties that experience wins. We consider the effect of games that take place on the weekend immediately preceding the election in Panel A. In Panel B, we consider the effect of games that take place on the weekend ten days before Election Day. Finally, Panel C pools results from these two games. The impacts of an additional win for games immediately preceding the election, for games ten days before Election Day, and for the two pre-election games pooled together are 0.77 ($p=.167$), 1.12 ($p=.043$), and 0.80 ($p=.023$) percentage points, respectively.¹² The impact of a win increases to 2.28-2.80 percentage points when considering only counties with championship teams (Panel A: $\beta = 2.63$, $p=.074$, Panel B: $\beta = 2.40$, $p=.050$, Panel C: $\beta = 2.28$, $p=.011$) and high attendance teams (Panel A: $\beta = 2.80$, $p=.043$, Panel B: $\beta = 2.72$, $p=.024$, Panel C: $\beta = 2.58$, $p=.008$), respectively.

[TABLE 1 ABOUT HERE]

Basic Regression Results

In Table 2, we consider in columns (1) and (2) the effect of games that take place on the weekend immediately preceding the election. In columns (3) and (4), we consider the effect of games that take place on the weekend ten days before Election Day. While the games immediately before the election likely have the greatest effect on a voter's utility on Election Day itself, many voters make up their minds in the last full week preceding the election, a time

¹² All hypothesis tests performed in the paper are two-tailed.

during which the effects of the previous football games may significantly influence vote choice. According to the 2008 exit polls, while a majority of voters decided who to vote for by September and 4 percent decided on the day of the election, 10 percent of voters made their decisions during the last two weeks prior to Election Day (Moore 2008). Similarly, according to the 2004 American National Election Study, 15.2 percent of voters decided in the last two weeks of the election, with 9 percent deciding within the last few days. These percentages likely understate the true percentage of decisions made shortly before the election since respondents may either intentionally or inadvertently misreport the time at which they made their decisions (Hillygus 2009).

As shown in the first column in Table 2, a win by the local team on the weekend immediately preceding Election Day boosts incumbent vote share by 1.02 percentage points, a statistically significant effect ($p=.028$).¹³ Including county and year fixed effects does not substantially change the point estimate ($\beta=.92, p=.058$), alleviating concerns of omitted variables bias (see column (2) of Table 2). As shown in columns (3) and (4) of Table 2, the estimate of the electoral impact of the games that occur ten days before Election Day is slightly larger and also statistically significant ($\beta=1.18, p=.042$ when county and year fixed effects are included).

This effect does not appear to be driven by turnout. If we use turnout (measured by votes divided by voting-age population) as the dependent variable with the same predictors and year and county fixed effects, a football win has an insignificant coefficient that is close to zero in magnitude.

[TABLE 2 ABOUT HERE]

¹³ Excluding the demographic control variables produces a treatment effect of .98 ($p=.035$), which is nearly identical to the one reported in column one of Table 2, which is what we would expect if football outcomes are exogenous and orthogonal to the other predictors.

To assess the robustness of our fixed effects models, we also considered the results obtained by estimating regressions for each team individually using office dummies, the incumbent party's previous vote share, and college football wins as the independent variables.¹⁴ The average coefficient that we get from these team-by-team regressions is 1.08. Bootstrapping gives a standard deviation of 0.58 across the simulations, and 96.5 percent of the simulation estimates are greater than zero. The estimate of 1.08 is similar to the 1.02 obtained using the fixed effects regression specification for the entire sample of teams.

Placebo Tests

The causality of the effect that the outcomes of these games have on voting behavior is confirmed by a set of placebo tests, which indicate that games played *after* Election Day do not have any effect on the incumbent's prospects for reelection. As shown in columns (1) and (2) of Table 3, a win the week after the election does not significantly predict the incumbent party's vote share ($p=.685$ and $p=.841$, respectively). Moreover, the point estimates are close to zero. Columns (3) and (4) produce similar effects for the games two weeks after the election, and the point estimates are nearly equal to zero. Finally, we find evidence of a decay effect. Games played two weeks before the election do not have a significant effect on vote choice (see columns (5) and (6) of Table 3). One potential explanation for this finding is that low-information voters may be most impacted by short-term fluctuations in well-being prior to Election Day. These voters probably do not think about the election far in advance and are therefore more sensitive to uninformative shocks such as sports outcomes that occur shortly before the election.

¹⁴ To run these regressions, we omit Louisiana State University because we only have 11 observations due to dropping the non-presidential races which use the jungle primary (24 is the smallest number of observations for any other team in our sample).

[TABLE 3 ABOUT HERE]

Using the Betting Market to Control for Team Strength

The wins variable used to estimate the effect on incumbent vote share reflects both the surprise part of an individual game's outcome *and* a team's strength in a given year. However, if, for example, Ohio State defeats a weak team that it was almost certain to beat, there may be a smaller effect on voting decisions than if Ohio State defeated a team against which it might very well have lost. By conditioning on the probability of victory before the game takes place, we can construct an independent variable that isolates the surprise component of game outcomes, which is by definition uncorrelated with the other independent variables. This natural experiment enables us to confirm the causality and magnitude of the effect of college football outcomes on election results. Not surprisingly, the effect size increases somewhat, as voters appear to respond more to the surprise component of the game outcomes than they do to the component that is captured by the relative strengths of the two teams.

For college football games, the betting market provides just the information needed to determine a team's probability of victory before the game takes place. We collected data on point spreads extending back to 1985 from Covers.com that we used to estimate this probability. For example, if Ohio State is favored to beat a team by 20 points, the market is indicating that Ohio State is very likely to win the game. Academic statisticians have developed a simple formula to translate point spreads into victory probabilities (Stern 1991).¹⁵ For example, Ohio State is estimated to have a 92.5 percent chance of winning the game if it is favored by 20 points.

We utilize the estimated probabilities of victory to construct a variable that represents the

¹⁵ Where x is the point spread, a team's probability of winning can be expressed as $\Phi\left(\frac{-x}{13.89}\right)$. The favored team is defined to have a negative point spread with the other team having the positive spread of the same magnitude.

deviation of actual wins in the two pre-election games from the expected number of wins before the games occurred. This variable is a continuous variable that has support from -2 (two losses when the team was almost certain to win both games) to 2 (two wins when the team was almost certain to lose). In Figure 1a, we plot the change in incumbent party vote share against the deviation in actual wins from expected wins, and obtain an upward sloping relationship between the two variables. However, we observe a flat relationship between incumbent vote share and expected wins before the games occur (see Figure 1b). Hence, it is the unexpected and surprising component of game outcomes that appears to influence election results, not the overall strength of the team.

[FIGURE 1 ABOUT HERE]

For the remaining regressions in the paper, we pool the two pre-election games that each significantly impact incumbent vote share together and consider the average effect that the total number of wins has on incumbent party vote share. The results in columns (1) and (2) of Table 4 show a strongly significant effect of total wins on incumbent party vote share. On average, an additional win causes an increase in incumbent vote share of about 1.1 percentage points ($p=.004$).

In columns (3) and (4), we add variables to represent a team's *expected* number of wins in the two pre-election games, as determined by the betting market. Our estimated effect of wins on incumbent vote share increases when we control for expected wins. Due to our sample size falling by about half (since we only have point spread data going back to 1985), our statistical precision falls somewhat. Still, the point estimate of 1.62 in column (3) is actually larger than the effects in columns (1) and (2) and is statistically significant at the 1 percent level ($p=.008$). In column (4), we consider the effect of the deviation of the actual number of wins from the

expected number of wins. We find that this measure of football outcomes has a similar effect (1.61) as we obtained when expected wins was added as a separate control.¹⁶ The results, including the near-zero coefficient for pre-election expected wins in column (3), indicate that the surprise component of game outcomes drive our findings. As described above, the increase in the estimated effect size when we control for the expected outcome suggests that fans will react more strongly to game outcomes when those results are unexpected.

[TABLE 4 ABOUT HERE]

Heterogeneous Effects

The treatment effect of the football game is highest for the teams in our sample with the greatest fan support and fervor, further supporting the main findings. To demonstrate this heterogeneity, we first consider the twenty teams that had the highest average attendance figures from 1998-2007 (all exceeding 70,000 per game), and project this sample backwards. Although the attendance figures are from a recent time period and are constrained by factors such as stadium size, the idea here is to compile a face-valid set of the most successful and locally-important college football programs in the country (see appendix for the complete list of teams). As shown in column (2) of Table 5, controlling for county and year fixed effects, high attendance teams exhibited a treatment effect 1.78 percentage points higher than lower attendance teams, a statistically significant difference ($p=.026$). For these high-attendance teams, we estimate that the overall effect of an additional win is about 2.42 percentage points ($.64+1.78$). We estimated regressions using various sets of high attendance teams and produced similar results.

We also used an alternative definition of important, or strongly-supported, teams:

¹⁶ If we control for game spreads for our post-election placebo games, we obtain an insignificant effect as we would expect. The point estimate is slightly negative and close to zero.

whether the program has won a national championship since 1964, the first year of the data. As shown in column (4) of Table 5, controlling for county and year fixed effects, championship teams exhibited a treatment effect 1.64 percentage points higher than teams that had not won a national title, an effect that is significant at the 10 percent level ($p=.053$). For these championship teams, we estimate that the overall effect of an additional win is about 2.3 percentage points ($.66+1.64$). Hence, the treatment effects appear to be concentrated where we would theoretically expect: in the areas where college football is more important and the programs are most successful.

[TABLE 5 ABOUT HERE]

The effects of the games do not significantly nor substantially vary by office (see Tables A3 and A4 in the online appendix). Although the effect sizes are smallest for presidential races—which presumably have higher information content and media coverage as compared to the state-level races—the varying effect sizes cannot be distinguished statistically. In addition to justifying our strategy of pooling different types of elections, these results suggest that the effect of football outcomes is similar across offices and seems to be a broad, general effect. Moreover, the fact that we observe the effect in presidential races rules out alternative explanations of the results, such as politicians’ strategic abilities to tie themselves to the local team, or an increased feeling of local pride induced by a victory.

Finally, we assessed whether the effect of defeats was different from the effect of victories. In Table A5 in the online appendix, we present estimates of regressions in which we include separate dummy variables for counties that experienced two losses in the two weeks prior to the election and for counties that split the games with one loss and one win (the omitted category represents counties that experienced two wins). The effect of football on voting appears

to be approximately linear.¹⁷ The point estimates suggest that two losses are about two percentage points worse for incumbents than two wins and that one win with one loss is about one percentage point worse than two wins, so that losses are weighed equally as gains in voters' minds. In other words, wins appear to cause as much gain in welfare as losses cause a reduction in welfare, and affect election results in equal but opposite directions.

Individual-Level Evidence

To corroborate the aggregate-level evidence presented above, we leverage another set of sporting events—the games in the 2009 NCAA Men's College Basketball Tournament—to test whether sports outcomes influence political assessments at the individual level. College basketball, like college football, has a large base of intense fans that are affected by the outcome of games, especially tournament games.¹⁸ Also known as “March Madness,” the tournament consists of 64 teams and six rounds of games. It is a single elimination tournament, meaning that each game is critical.¹⁹

Data and Empirical Strategy

We conducted an original survey administered during the tournament to examine whether people's assessments of the president's job performance and the state of the country were affected by their team's performance in the tournament. The survey was conducted by Survey Sampling International (SSI) over the Internet between March 30, 2009, and April 3, 2009,

¹⁷ We also considered the possibility that the order of the wins and losses might affect voting behavior, finding no significant differences between a loss followed by a win compared to a win followed by a loss.

¹⁸ According to the Harris Poll (2008), college basketball is the sixth most popular sport in the United States, behind professional and college football, baseball, auto racing, and hockey. However, the popularity of the sport is especially heightened during the March tournament. For instance, in 2000 March Madness ratings were higher than the average rating for the NBA finals as well as the World Series (Isidore 2001).

¹⁹ Respondents answered questions about their current mental state, and the responses indicate that the game outcomes significantly affected subjects' self-reported happiness levels.

immediately after the third and fourth rounds of the tournament (the “Sweet Sixteen” and “Elite Eight” games) and before the fifth round (the “Final Four”). The games took place between March 26 and March 29. The sample²⁰ consisted of 3064 residents of regions with college basketball teams that had made it to the third round. During recruitment, a “region” with a competing team was defined as a county that has a Sweet Sixteen team, along with its ten nearest counties (as determined by county centroids) in the same state. 39.6 percent of our sample resided in regions with teams that were eliminated in Round 3, 21.6 percent resided in regions with teams that were eliminated in Round 4, and 38.9 percent resided in regions whose teams won both games over the weekend and advanced to the Final Four. As we did with the football outcomes, we isolate the surprise component of basketball wins and losses using data from betting spreads and a statistical formula that ties point spreads to the probability of victory (Wolfers 2006).²¹ Our measure of college basketball outcomes is the number of actual wins subtracted by the number of expected wins.²²

One advantage of the survey data over the aggregate data is that we do not have to assume that support for a team is necessarily tied to geographic location. In the survey, we asked respondents to identify their favorite teams.²³ Unsurprisingly, responses to this question were usually but not always tied to geographic location. If a respondent did not report a favorite team, we used the respondent’s geographical location to assign a team.²⁴

Two variables serve as our political outcomes of interest. The first dependent variable is a dichotomous measure of presidential job approval. Respondents were asked: “Do you approve or

²⁰ The survey respondents were panelists recruited by SSI that volunteered to complete online surveys, so that our sample is representative only of the population of people who volunteer for these surveys.

²¹ The formula is identical to the one shown in footnote 15 except that the standard deviation is 10.9.

²² We obtain similar results if the number of actual wins and expected wins are included as separate regressors.

²³ Specifically, we asked: “Below, please find a list of the 16 teams that are currently competing in the NCAA college basketball tournament, also known as ‘March Madness.’ Of all of these teams, which one is your favorite?”

²⁴ Of course, some of these individuals may only be casual fans of college basketball. As described below, we asked a question to assess the heterogeneity of the treatment effect.

disapprove of the way Barack Obama is handling his job as President?” Respondents were coded as a 1 if they approved (69.5 percent of respondents) and 0 if they disapproved. The second dependent variable comes from respondents’ answers to the standard right track/wrong track question: “Generally speaking, do you feel things in this country are heading in the right direction or do you feel things are heading down the wrong track?” Respondents were coded 1 if they felt things were heading in the right direction (55.9 percent of respondents), and 0 if they felt things were heading down the wrong track. Both political attitude measures have long histories in public opinion surveys. George Gallup introduced the presidential job approval rating in the late 1930s, and the right track/wrong track question was first asked in February 1979 (Gallup and Newport 2006). Moreover, the two measures are closely linked to voting decisions; expressing disapproval or thinking the country is on the wrong track is highly correlated with voting against the incumbent party (Oskamp and Schultz 2005).

In order to assess the effect of college basketball tournament victories on presidential approval and the right track/wrong track measure, we estimate logistic regressions predicting each dependent variable. We consider the following general model to assess the effect of college basketball outcomes on the aforementioned political attitudes:

$$\textit{Political Attitude} = f(\textit{Basketball Game Outcomes}, \textit{Fan Intensity}, \textit{Party Identification}, \\ \textit{Demographic Variables})$$

We control for a number of demographic factors that are associated with political attitudes: (1) gender, coded as a dummy for whether the respondent is female; (2) dummy variables representing education levels, with “did not graduate from high school” as the omitted category; (3) race, coded as a dummy for whether the respondent identifies him/herself as white; (4) unemployment, coded as a dummy for whether the respondent describes him/herself as

“temporarily laid off” or “unemployed”; (5) party identification; and (6) age.²⁵ Finally, we consider a fan intensity measure in our model based upon two variables. Respondents were asked: “How supportive are you of the [TEAM NAME]?”²⁶ and “How closely have you been following the NCAA college basketball tournament, also known as ‘March Madness?’”²⁷ The intent of these questions is to identify individuals who both are attached to the team and who were likely to be exposed to information about the game outcomes. Those who answered at least “somewhat supportive” to the first question and at least “a little closely” to the second question were coded as 1 (32.2 percent of respondents), and all others were coded as 0.

Results

The successes and failures of a person’s favorite college basketball team during the tournament (adjusting for expectations) appear to influence assessments of presidential performance and evaluations of the health of the country. As shown in Table 6, surprising wins boost both presidential approval and belief that the country is on the right track. The coefficient on “Number of wins – E (number of wins)” in column (1) ($\beta = .13, p = .084$) is significant at the 10 percent level. Substantively, moving from zero adjusted wins to one adjusted win (holding all other variables at their medians) is associated with an approximately 1.6 percentage point increase in approving of Obama’s job performance, which is similar to the effect size in the aggregate-level data.

In column (2) of Table 6, we interact the basketball variable with the fan intensity

²⁵ All measures are recoded to lie between 0 and 1 before conducting the analyses. Statistical significance is not affected by recoding.

²⁶ The name of the favorite team specified by the respondent was piped into this question.

²⁷ The response options to the first question were “extremely supportive,” “very supportive,” “somewhat supportive,” “a little supportive,” and “not at all supportive.” The response options to the second question were “extremely closely,” “very closely,” “somewhat closely,” “a little closely,” and “not at all closely.”

dummy variable described above. We find that intense fans who were “treated” with unexpected wins and losses exhibited a significantly larger effect of basketball outcomes on their political judgments than did other respondents who care less about their team’s performance. The coefficient on the interaction term ($\beta = .30, p = .06$) is significant at the 10 percent level. The average treatment effect comes entirely from these intense fans. Adding the main effect with the coefficient for the interaction term, we find that the treatment effect of an unexpected win for intense fans is about 3.3 percentage points, an effect that is significant at the 1 percent level ($p = .010$).²⁸

[TABLE 6 ABOUT HERE]

Findings are comparable when analyzing the right/wrong track measure as the dependent variable. As shown in column (3) of Table 6, surprise wins increase an individual’s propensity to state that things are “heading in the right direction” ($\beta = .18, p = .005$). This estimate suggests that an unexpected win increases the likelihood of thinking the country is on the right track by about 4.3 percentage points. As shown in column (4), when we interact wins with fan intensity, we find that the effect of an adjusted win on intense fans is significantly higher than the effect on non-intense fans ($\beta = .24, p = .09$). Adding the main effect with the coefficient for the interaction term, we find a treatment effect of 7.6 percentage points among intense fans ($p = .003$). Hence, the contemporary, individual-level data comport with the historical, aggregate-level data quite closely.

Discussion

This paper provides strong evidence that voting decisions are affected by irrelevant

²⁸ For both the approval and right track/wrong track measures, we also tested for interactive effects with education, gender, age, employment status, race, and party identification, and found no significant moderating relationships.

events that have nothing to do with the competence or effectiveness of the incumbent government. As discussed above, analyzing the effects of sporting outcomes provides a cleaner test than other environments considered in previous research, since no government action is taken or would be expected to be taken in preparation for or in response to game outcomes. Our results suggest the presence of a mechanism of retrospective voting that is different from the mechanism traditionally considered by scholars such as Key, Kramer, Fiorina, Kinder, and Kiewiet. Our findings do not suggest that the traditional mechanism is incorrect, but that another underlying mechanism may also help to explain voter's decisions. In addition to the standard information processing explanation for why voters respond to macroeconomic conditions, for example, another reason why we observe the strong correlation between economic performance and the probability of incumbent reelection may be that voters' general sense of well-being serves as a conduit between the state of the economy and electoral outcomes.

Our findings suggest a variety of important implications for understanding the cognitive processes underlying voting behavior. If unrelated events affect political judgment, a voter's opinions and feelings in any given area are likely to affect that voter's perceptions of other aspects of an incumbent's performance or personality. For example, a voter who is presented with negative information about the local economy may perceive a separate news story about the president's foreign policy in a less positive light. Alternatively, a negative campaign advertisement designed to elicit fear or anger may affect voters' retrospective assessments of candidates' performance in office. Hence, our results have implications for understanding elite incentives and strategies to manipulate voter perceptions of their own well-being.

Future research could more fully investigate the implications of voters responding to events that are entirely unrelated to politics, including how elite behavior is affected by voter

decision making. We view our empirical results as laying the groundwork for future theoretical advances. Just as many models in economics are being amended to account for the behavioral reality that real-world decision makers often make predictable mistakes (Ariely 2008), models of voting behavior may provide greater insight when they account for the anomalies that sometimes affect political decision making.

Appendix: College Football Teams²⁹

BCS Teams: Of the 119 Division I Football Bowl Subdivision (FBS) college teams, we consider the 66 Bowl Championship Series (BCS) eligible teams. Division I FBS football does not have a formal tournament to determine an undisputed national champion. Instead, FBS schools play in a series of postseason bowl games, culminating in the BCS National Championship Game, which attempts to crown a single national champion.

Alabama	Illinois	Nebraska	Syracuse
Arizona	Indiana	North Carolina	Tennessee
Arizona State	Iowa	North Carolina State	Texas
Arkansas	Iowa State	Northwestern	Texas A&M
Auburn	Kansas	Notre Dame	Texas Tech
Baylor	Kansas State	Ohio State	UCLA*
Boston College	Kentucky	Oklahoma	USC*
California	Louisiana State	Oklahoma State	Vanderbilt
Cincinnati	Louisville	Oregon	Virginia
Clemson	Maryland	Oregon State	Virginia Tech
Colorado	Miami (Florida)	Penn State	Wake Forest
Connecticut*	Michigan	Pittsburgh	Washington
Duke	Michigan State	Purdue	Washington State
Florida	Minnesota	Rutgers	West Virginia
Florida State	Mississippi	South Carolina	Wisconsin
Georgia	Mississippi State	South Florida*	
Georgia Tech	Missouri	Stanford	

Championship Teams: Schools that have won an Associated Press (AP), United Press International (UPI) or USA Today Coaches' Poll national championship since 1964 are denoted as "championship teams."

Alabama	Georgia	Michigan State	Penn State
Clemson	Georgia Tech	Nebraska	Pittsburgh
Colorado	Louisiana State	Notre Dame	Tennessee
Florida	Miami (Florida)	Ohio State	Texas
Florida State	Michigan	Oklahoma	USC*

High Attendance Teams: The 20 Division I football teams with an average attendance rate that exceed 70,000 per game from 1998-2008 are attendance leaders, and denoted "high attendance teams."³⁰

Alabama	Georgia	Notre Dame	Tennessee
Auburn	Louisiana State	Ohio State	Texas
Clemson	Michigan	Oklahoma	Texas A&M
Florida	Michigan State	Penn State	Wisconsin
Florida State	Nebraska	South Carolina	USC*

²⁹ * indicates that the school was excluded from the dataset for the following reasons: (1) more than one BCS school is in the same county or (2) the school was admitted into the BCS very recently.

³⁰ See <http://www.ncaa.org/wps/ncaa?key=/ncaa/ncaa/sports+and+championship/general+information/stats/football/attendance/index.html>. Our results are not sensitive to having 20 high attendance teams. Results are similar if we shrink or expand our list.

References

- Achen, Christopher H., and Larry M. Bartels. 2004. "Blind Retrospection: Electoral Responses to Droughts, Flu, and Shark Attacks." Estudio/Working Paper 2004/199.
http://www.march.es/ceacs/publicaciones/working/archivos/2004_199.pdf
- Ariely, Daniel. 2008. *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. New York: Harper Collins
- Bower, Gordon H. 1981. "Mood and Memory." *American Psychologist* 36: 129-148.
- Bower, Gordon H, Kenneth P. Monteiro, and Stephen G. Gilligan. 1978. "Emotional Mood as a Context of Learning and Recall." *Journal of Verbal Learning and Verbal Behavior* 17: 573-585.
- Branscombe, Nyla R., and Daniel L. Wann 1992. "Physiological Arousal and Reactions to Outgroup Members During Competitions that Implicate an Important Social Identity." *Aggressive Behavior* 18: 85-93.
- Card, David, and Gordon Dahl. 2006. "Professional Sports and Domestic Violence." Working Paper, UC Berkeley.
- Christensen, Kaare, Anne H. Herskind, and James W. Vaupel. 2006. "Why Danes are Smug: Comparative Study of Life Satisfaction in the European Union." *British Medical Journal* 333: 1289-91.
- Cialdini, Robert B., Richard J. Borden, Avril Thorne, Marcus R. Walker, Stephen Freeman, and Lloyd R. Sloan. 1976. "Basking in Reflected Glory: Three (Football) Field Studies." *Journal of Personality and Social Psychology* 34: 366-375. .
- Clore, Gerald L., Schwarz, Norbert, and Conway, Martin A. 1994. "Affective Causes and Consequences of Social Information Processing. In *The Handbook of Social Cognition*, eds. R.S. Wyer and T. Srull. 2nd Ed. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Congressional Quarterly Voting and Elections Collection*. 2006. Washington, DC: Congressional Quarterly.
- Covers.com. <http://www.covers.com/> (May 30 2009).
- Doosje, Bertjan, Nyla R. Branscombe, Russell Spears, and Antony S. R. Manstead. 1998. "Guilty by Association: When One's Group Has a Negative History." *Journal of Personality and Social Psychology* 75: 872-886.
- Fiorina, Morris P. 1981. *Retrospective Voting in American National Elections*. New Haven, CT: Yale University Press.
- Gallup, Alec, and Frank Newport. 2006. *The Gallup Poll: Public Opinion 2005*. Lanham, MD: Rowman and Littlefield.
- Gomez, Brad T., Thomas G. Hansford, and George A. Krause. 2007. "The Republicans Should Pray for Rain: Weather, Turnout, and Voting in U.S. Presidential Elections." *Journal of Politics* 69: 649-663.
- Hillygus, D. Sunshine. 2009. "The Dynamics of Voter Decision Making in 2008." Paper presented at the 2009 Center for the Study of American Politics Conference. New Haven, CT.

- Hirt, Edward R., and Dolf Zillmann, Grant A. Erickson, and Chris Kennedy. 1992. "Cost and Benefits of Allegiance: Changes in Fans' Self-Ascribed Competencies After Team Victory Versus Defeat." *Journal of Personality and Social Psychology* 63: 724-738.
- Howell, James. 2008. "James Howell's College Football Scores." <http://homepages.cae.wisc.edu/~dwilson/rsfc/history/howell>.
- Inter-university Consortium for Political and Social Research. *General Election Data for the United States, 1950-1990*. Ann Arbor, MI: Inter-university Consortium for Political and Social Research.
- Isen, Alice M., Thomas E. Shalcker, Margaret Clark, and Lynn Karp. 1978. "Affect, Accessibility of Material in Memory, and Behavior: A Cognitive Loop?" *Journal of Personality and Social Psychology* 36: 1-12.
- Isidore, Chris. 2001. "CBS Has Pick of Winners." *CNN.com*, March 14. http://money.cnn.com/2001/03/14/companies/ncaa_cbs/index.htm (May 7, 2009).
- Key, V. O. 1966. *The Responsible Electorate: Rationality in Presidential Voting 1936-1960*. Cambridge, MA: Harvard University Press.
- Kinder, Donald R. and D. Roderick Kiewiet. 1981. "Sociotropic Politics: The American Case." *British Journal of Political Science* 11: 129-61.
- Kramer, Gerald H. 1971. "Short-term Fluctuations in U.S. Voting Behavior: 1896-1964." *American Journal of Political Science* 65: 131-143.
- Leigh, Andrew. 2009. "Does the World Economy Swing National Elections?" *Oxford Bulletin of Economics and Statistics*. Forthcoming.
- Lewis-Beck, Michael S. 1988. *Economics and Elections: The Major Western Democracies*. Ann Arbor: University of Michigan Press.
- Markus, Gregory B. 1988. "The Impact of Personal and National Economic Conditions on the Presidential Vote: A Pooled Cross-Sectional Analysis." *American Journal of Political Science* 32: 137-154.
- Moore, David. 2008. "Exit Polls and the Undecided Voters." *Pollster.com*, November 7. http://www.pollster.com/blogs/exit_polls_and_the_undecided_v.php (May 7, 2009).
- National Collegiate Athletic Association. 2009. *NCAA Football Attendance*. <http://www.ncaa.org/wps/ncaa?key=/ncaa/ncaa/sports+and+championship/general+information/stats/football/attendance/index.html> (May 30, 2009).
- National Election Studies (www.electionstudies.org). 2004. *The 2004 National Election Study [dataset]*. Ann Arbor, MI: University of Michigan, Center for Political Studies.
- Oskamp, Stuart, and P. Wesley Schultz. 2005. *Attitudes and Opinions*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Rahn, Wendy M. 2000. "Affect as Information: The Role of Public Mood in Political Reasoning." In *Elements of Reason*, eds. Arthur Lupia, Matthew D. McCubbins, and Samuel L. Popkin. Cambridge: Cambridge University Press, 130-151.
- Rahn, Wendy M., Brian Kroeger, and Cynthia M. Kite. 1996. "A Framework for the Study of Public

- Mood.” *Political Psychology*. 17: 29-58.
- Samuelson, William, and Zeckhauser, Richard. 1988. “Status Quo Bias in Decision Making.” *Journal of Risk and Uncertainty* 1(1): 7–59.
- Schwarz, Norbert, Fritz Strack, Detlev Kommer, and Dirk Wagner. 1987. “Soccer, Rooms, and the Quality of Your Life: Mood Effects on Judgments of Satisfaction with Life in General and with Specific Domains.” *European Journal of Social Psychology*, 17, 69–79.
- Schwarz, Norbert. 1990. “Feelings as Information: Information and Motivational Functions of Affective States” In *Handbook of Motivation and Cognition: Foundations of Social Behavior*, eds. R. M. Sorrentino and E. T. Higgins. New York: Guilford Press.
- Schwarz, Norbert, and Gerald L. Clore. 1983. “Mood, Misattribution, and Judgments of Well-Being: Informative and Directive Functions of Affective States.” *Journal of Personality and Social Psychology* 45: 513–523.
- Schwarz, Norbert, and Gerald L. Clore. 1988. “How Do I Feel about It? The Informative Functions of Affective States.” In *Affect, Cognition, and Social Behavior*, ed. Klaus Fiedler and Joseph P. Forgas. Toronto: Hogrefe International, 44-62.
- Sloan, Lloyd R. 1979. “The Function and Impact of Sports for Fans: A Review of Theory and Contemporary Research.” In *Sports, Games and Play: Social and Psychological Viewpoints*, ed. J. H. Goldstein. Hillsdale, NJ: Erlbaum.
- Stern, Hal. 1991. “On Estimating the Probability of Winning a Football Game,” *The American Statistician* 45: 179-183.
- Teasdale, John D., and Sarah J. Fogarty. 1979. “Differential Effects of Induced Mood on Retrieval of Pleasant and Unpleasant Events from Episodic Memory.” *Journal of Abnormal Psychology* 88: 248-257.
- The Harris Poll. 2008. “Professional Football Still America’s Favorite Sport.” February 5.
- U.S. Census Bureau. 2008. *Small Area Income and Populations Estimates*, <http://www.census.gov/hhes/www/saipe/index.html>
- Wilbert-Lampen, David Leistner, Sonja Greven, Tilmann Pohl, Sebastian Sper, Cristoph Volker, Denise Guthlin, Andrea Plasse, Adreas Knez, Helmut Kuchenhoff, and Gerhard Steinbeck. 2008. “Cardiovascular Events during World Cup Soccer.” *The New England Journal of Medicine* 358: 45-483.
- Wolfers, Justin. 2006. “Point Shaving: Corruption in NCAA Basketball.” *American Economic Review Papers and Proceedings*. 96(2): 279-283.
- Wolfers, Justin. 2009. “Are Voters Rational? Evidence from Gubernatorial Elections. Working Paper. Wharton School of Business.
- Yen, HsiuJu Rebecca, and Shih-Chieh Chuang. 2008. “The Effect of Incidental Affect on Preference for the Status Quo.” *Journal of the Academy of Marketing Science*. 36(4): 522-537.

Table 1: Impact of College Football Outcomes on Change in Incumbent Vote Share

	Loss Before Election (1)	Win Before Election (2)	Impact (3)	
<u>Panel A: Week of Election</u>				
All Major Teams ($N = 1786$)	-2.68 (0.47)	-1.91 (0.43)	0.77 [1.40]	
Championship Teams ($N = 530$)	-4.42 (1.38)	-1.79 (0.69)	2.63* [1.89]	
High Attendance Teams ($N = 537$)	-4.25 (1.22)	-1.45 (0.72)	2.80** [2.18]	
<u>Panel B: One Week Before Election</u>				
All Major Teams ($N = 1770$)	-3.06 (0.43)	-1.94 (0.46)	1.12** [2.11]	
Championship Teams ($N = 514$)	-4.31 (1.02)	-1.91 (0.80)	2.40** [2.11]	
High Attendance Teams ($N = 522$)	-4.28 (1.05)	-1.56 (0.78)	2.72** [2.47]	
	2 Losses Before Election (1)	1 Win & 1 Loss Before Election (2)	2 Wins Before Election (3)	Impact (4)
<u>Panel C: All Games in Ten Days Before Election</u>				
All Major Teams ($N = 1632$)	-3.36 (0.58)	-2.17 (0.55)	-1.74 (0.58)	0.80** [2.34]
Championship Teams ($N = 471$)	-5.93 (1.88)	-3.64 (1.24)	-1.36 (0.87)	2.28** [2.83]
High Attendance Teams ($N = 483$)	-6.13 (1.85)	-3.25 (1.12)	-0.84 (0.92)	2.58*** [2.98]

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed). Mean changes in incumbent vote shares and standard errors (in parentheses) are reported. The impact and t-statistic (in brackets) for the null hypothesis of equality in means is reported in rightmost columns. Impact estimates are corrected for clustering at the county level

Table 2: The Effect of Football Game Outcomes on Incumbent Party Vote Share

	Week of Election		One Week Before	
	(1)	(2)	(3)	(4)
Football team win before the election	1.02** (.46)	0.92* (.47)	1.51*** (.55)	1.18** (.57)
Incumbent's previous vote percentage	.44*** (.06)	.50*** (.06)	.44*** (.06)	.50*** (.06)
President	-4.05*** (.58)	-3.30*** (.67)	-3.82*** (.62)	-3.11*** (.71)
Governor	-2.57*** (.58)	-3.33*** (.64)	-2.67*** (.62)	-3.43*** (.68)
Percent black in the county	.02 (.04)	-.04 (.12)	-.01 (.04)	-.05 (.13)
Percent high school graduates	-.13 (.36)	-.35 (.59)	-.18 (.37)	-.22 (.7)
Farms per capita	61.01 (46.45)	92.83 (89.09)	60.81 (40.25)	73.17 (85.12)
Unemployment rate	.06 (.10)	.07 (.20)	.03 (.10)	-.12 (.19)
Per-capita income	-.05 (.59)	-1.15 (1.30)	-.31 (.60)	-2.98** (1.17)
Log Population	.163 (.26)	1.37 (2.15)	.28 (.26)	3.70* (2.04)
Constant	28.00*** (5.62)	6.65 (26.82)	27.32*** (5.70)	-9.49 (26.73)
Year fixed effects?	N	Y	N	Y
County fixed effects?	N	Y	N	Y
R-squared	.197	.338	.195	.333
<i>N</i>	1786	1786	1770	1770

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed). Dependent variable is vote for the incumbent party. Regression standard errors, corrected for clustering at the county level, are in parentheses. Senator is the excluded category for the office.

Table 3: Placebo Tests

	One Week After		Two Weeks After		Two Weeks Before	
	(1)	(2)	(3)	(4)	(5)	(6)
Football team win before the election	0.22 (0.53)	0.10 (0.50)	0.00 (0.61)	-0.04 (0.53)	0.50 (0.49)	0.15 (0.44)
Incumbent's previous vote percentage	0.46*** (0.05)	0.52*** (0.05)	0.42*** (0.06)	0.49*** (0.06)	0.43*** (0.06)	0.49*** (0.06)
President	-4.09*** (0.56)	-3.43*** (0.66)	-3.80*** (0.60)	-3.11*** (0.62)	-4.23*** (0.57)	-3.68*** (0.63)
Governor	-2.59*** (0.60)	-3.40*** (0.66)	-2.18*** (0.66)	-3.05*** (0.73)	-2.89*** (0.62)	-3.68*** (0.66)
Percent black in the county	0.01 (0.04)	-0.04 (0.12)	0.02 (0.04)	-0.02 (0.16)	0.00 (0.05)	-0.07 (0.15)
Percent high school graduates	0.13 (-0.34)	-0.22 (-0.67)	-0.12 (-0.34)	-0.37 (-0.54)	-0.29 (-0.39)	-0.25 (-0.62)
Farms per capita	25.73 (55.22)	83.74 (122.74)	62.92 (48.58)	64.46 (81.48)	59.25 (51.55)	95.28 (102.15)
Unemployment rate	-0.01 (0.11)	-0.02 (0.20)	0.03 (0.11)	0.00 (0.22)	0.07 (0.11)	-0.10 (0.19)
Per-capita income	0.14 (0.55)	-1.34 (1.05)	0.46 (0.59)	-1.52 (1.03)	0.05 (0.61)	-1.68 (1.08)
Log Population	0.20 (0.27)	2.61 (2.06)	0.05 (0.26)	3.625** (1.80)	0.14 (0.27)	1.32 (2.05)
Constant	26.45*** (5.56)	9.20 (26.40)	28.95*** (5.57)	-15.23 (24.01)	29.50*** (6.07)	28.59 (26.15)
Year fixed effects?	N	Y	N	Y	N	Y
County fixed effects?	N	Y	N	Y	N	Y
R-squared	.208	.344	.188	.334	.192	.337
<i>N</i>	1821	1821	1778	1778	1792	1792

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed). Dependent variable is vote for the incumbent party. Regression standard errors, corrected for clustering at the county level, are in parentheses. Senator is the excluded category for the office.

Table 4: Isolating the Surprise Component of College Football Outcomes

	(1)	(2)	(3)	(4)
Total football team wins in two weeks before the election	1.17*** (.34)	1.10*** (.37)	1.62*** (.61)	—
Incumbent's previous vote percentage	.43*** (.06)	.50*** (.06)	.63*** (.07)	.63*** (.07)
President	-3.99*** (.66)	-3.19*** (.76)	-3.97*** (1.17)	-3.93*** (1.17)
Governor	-2.67*** (.62)	-3.48*** (.7)	-2.86*** (1.02)	-2.86*** (1.02)
Percent black in the county	-.002 (.04)	-.054 (.12)	.26** (.11)	.25** (.11)
Percent high school graduates	-.10 (.40)	-.03 (.69)	1.00 (1.92)	1.47 (1.88)
Farms per capita	74.53* (44.71)	65.19 (86.83)	443.26 (352.85)	408.69 (354.56)
Unemployment rate	.05 (.11)	.01 (.21)	-.30 (.51)	-.25 (.52)
Per-capita income	-.58 (.64)	-2.75** (1.37)	-.66 (3.05)	-.18 (2.94)
Log Population	.36 (.27)	2.07 (2.2)	10.05 (6.83)	8.61 (6.64)
Expected number of wins	—	—	-.16 (1.37)	—
Wins – Expected number of wins	—	—	—	1.61*** (.61)
Constant	26.64*** (5.82)	15.71 (27.9)	-106.20 (82.99)	-87.64 (80.42)
Year fixed effects?	N	Y	Y	Y
County fixed effects?	N	Y	Y	Y
R-squared	.193	.335	0.39	0.39
<i>N</i>	1632	1632	838	838

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed). Dependent variable is vote for the incumbent party. Regression standard errors, corrected for clustering at the county level, are in parentheses. Senator is the excluded category for the office.

Table 5: Heterogeneity by Level of Fan Support

	(1)	(2)	(3)	(4)
Total football team wins in two weeks before the election	.70* (0.37)	.64 (0.42)	.92** (0.39)	.66 (0.43)
Incumbent's previous vote percentage	.43*** (0.06)	.50*** (0.06)	.43*** (0.06)	.50*** (0.06)
President	-3.97*** (0.66)	-3.18*** (0.76)	-3.95*** (0.66)	-3.18*** (0.76)
Governor	-2.66*** (0.62)	-3.49*** (0.71)	-2.69*** (0.62)	-3.49*** (0.70)
Percent black in the county	-.002 (0.04)	-.05 (0.12)	-.009 (0.04)	-.06 (0.13)
Percent high school graduates	-.15 (0.40)	-.01 (0.67)	-.24 (0.42)	-.05 (0.68)
Farms per capita	71.44* (42.92)	52.75 (81.33)	56.31 (44.72)	45.60 (83.02)
Unemployment rate	.03 (0.11)	-.01 (0.21)	.02 (0.11)	-.07 (0.22)
Per-capita income	-.61 (0.65)	-2.93** (1.32)	-.56 (0.65)	-2.99** (1.34)
Log Population	.36 (0.29)	1.73 (2.26)	.30 (0.28)	1.70 (2.25)
High attendance team x total football team wins	1.77** (.85)	1.78** (.78)	—	—
Championship team x total football team wins	—	—	1.47* (0.89)	1.64* (0.83)
Year fixed effects?	N	Y	N	Y
County fixed effects?	N	Y	N	Y
R-squared	.195	.336	.195	.336
N	1632	1632	1632	1632

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed). Dependent variable is vote for the incumbent party. Regression standard errors, corrected for clustering at the county level, are in parentheses. Senator is the excluded category for the office. Indicators for championship and high attendance teams are included in columns (1) and (3), respectively. Those coefficients and the constant for the regression are not reported.

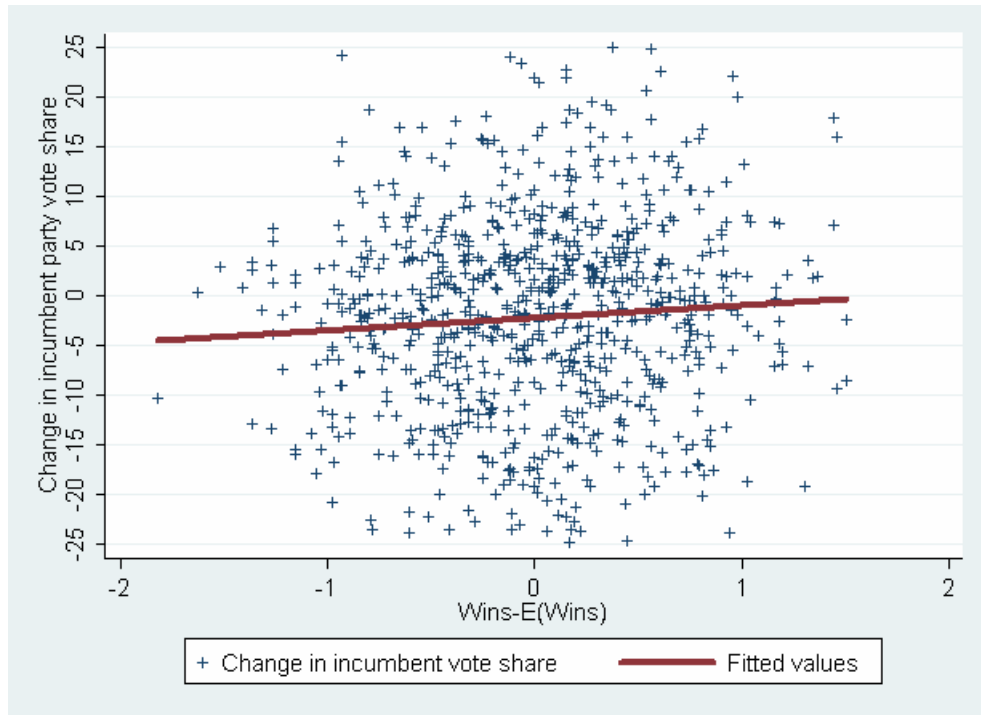
Table 6: The Effect of College Basketball Victories on Political Attitudes

Dependent Variable:	Presidential Approval		Right/Wrong Track	
	(1)	(2)	(3)	(4)
Number of wins – E (number of wins)	.13* (.07)	.04 (.09)	.18*** (.06)	.12 (.08)
Strong supporter	—	.30*** (.10)	—	.31*** (.09)
Team advanced to Final Four x strong supporter	—	.30* (.16)	—	.24* (.14)
Female	.21** (.10)	.25** (.10)	.19** (.09)	.22* (.09)
High School	.20 (.22)	.17 (.22)	.22 (.20)	.20 (.20)
Some College	.19 (.22)	.15 (.22)	.51*** (.19)	.47** (.20)
Associates Degree	.18 (.25)	.14 (.25)	.38* (.22)	.34 (.22)
Bachelors Degree	-.04 (.23)	-.11 (.23)	.34 (.21)	.28 (.21)
Graduate Degree	.16 (.26)	.12 (.26)	.63*** (.24)	.61** (.24)
White	-.72*** (.15)	-.69*** (.16)	-.77*** (.12)	-.74*** (.12)
Unemployed	.13 (.13)	.14 (.13)	.17 (.11)	.19* (.11)
Republican	-2.17*** (.09)	-2.20*** (.09)	-1.61*** (.08)	-1.63*** (.08)
Age	-.29 (.22)	-.27 (.22)	.33* (.20)	.35* (.20)
Pseudo R-squared	.21	.21	.14	.14
N	3064	3064	3064	3064

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed). Coefficients from logistic regression; standard errors in parentheses. Constant for the regression is not reported.

Figure 1: Isolating the Surprise Component of College Football Outcomes

(a) The effect of the unexpected component of game outcomes on change in incumbent vote share



(b) The effect of the expected component of game outcomes on change in incumbent vote share

